



Theater Missile Defense Extended Test Range Supplemental Environmental Impact Statement - Eglin Gulf Test Range

Volume 2 of 2

Final

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Prepared for:
Thomas J. Kennedy, Major, USAF
Director of Test, Theater Missile Defense
46 OG/OGM
205 West D Ave, Suite 241
Eglin AFB, FL 32542-6866

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COVER SHEET

THEATER MISSILE DEFENSE EXTENDED TEST RANGE EGLIN GULF TEST RANGE FINAL SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT

- a. Proponent: Ballistic Missile Defense Organization
- b. Cooperating Agencies: U.S. Air Force, U.S. Army, U.S. Navy, Federal Aviation Administration, U.S. Coast Guard, and U.S. Fish and Wildlife Service.
- c. Proposed Action: The proposed action is to enhance the capability of the Eglin Gulf Test Range (EGTR) to conduct Theater Missile Defense (TMD) programs. This document supplements the *TMD Extended Test Range Final EIS* (U.S. Army Space and Missile Defense Command, 1994) by identifying new launch and support locations, sensor operations, launch preparation activities, and missile flight tests and intercepts in the EGTR, encompassing the counties of Monroe, Gulf, Escambia, Santa Rosa, Okaloosa, Walton, Bay, and Franklin in the State of Florida.
- d. Designation: Final Supplemental Environmental Impact Statement
- e. Public Review Process: The public review period for the Draft SEIS document was from February 6, 1998, through April 3, 1998, and responses to all comments received during this period were incorporated in the Final SEIS. Public hearings were held during the week of March 9, 1998.
- f. Abstract: The Ballistic Missile Defense Organization proposes to enhance the capability of the EGTR to conduct TMD programs. The Proposed Action would include the selection and construction of land-launch facilities; modification of land, sea-surface, and airspace safety zones; the amendment of range operation and support management procedures; and the subsequent conduct of TMD missile system test and training flights within the enhanced EGTR. The preferred alternative would involve target and interceptor launch and support activities at Eglin Air Force Base (AFB) sites including Santa Rosa Island and Cape San Blas; Air Drop or air-launch of target missiles; and possible Navy AEGIS ship-launch of interceptor missiles. Alternatives would include target launch and support activities at alternative locations in the Florida Keys (Cudjoe Key or Saddlebunch Keys), target missile launch from a sea-launch vessel, and interceptor launch from offshore platforms off the coast of Santa Rosa Island and Cape San Blas. The No-action Alternative that does not provide extended test capabilities for TMD testing and training in the EGTR is also considered.

Potential environmental impacts associated with these actions are considered in the Final SEIS for the following categories: air quality, airspace use, biological resources, cultural resources, geology and soils, hazardous materials and wastes, land and water use, noise, safety, socioeconomics, transportation, utilities, visual aesthetics, and water resources.

- g. Inquiries on this document should be directed to the Eglin Public Affairs Office:

Ms. Janet Tucker
AFDTC/EM-PAV
501 Deleon St., Suite 101
Eglin AFB, FL 32542
(850) 882-4435

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FOREWORD

This Supplemental Environmental Impact Statement (SEIS) analyzes the potential environmental consequences of a proposal to enhance the Eglin Gulf Test Range (EGTR) to enable extended range testing and training operations using Theater Missile Defense (TMD) missile systems. TMD is designated to provide regional defenses against present and future conventional, chemical, biological, or nuclear ballistic, cruise, or air-to-surface guided missiles that can endanger deployed U.S. forces as well as U.S. friends and allies throughout the world. The proposal calls for the launch of target missiles from aircraft or land sites. These target missiles would be intercepted by interceptor missiles launched from ships or land sites. The intercepts would occur in the airspace over the Gulf of Mexico.

The proposed action would involve target and interceptor launch and support activities at alternative locations at Eglin Air Force Base (AFB) including Santa Rosa Island and Cape San Blas; Air Drop or air-launch of target missiles; and possible Navy AEGIS ship-launch. All intercepts would occur in the airspace over the Gulf of Mexico, which would also be the location for air-launches of target missiles and ship-launches of interceptors. Alternatives include target launch and support activities at alternative locations in the Florida Keys (Cudjoe Key or Saddlebunch Keys); target missile launch from a sea-launch vessel in the Gulf of Mexico; and interceptor launch from offshore platforms in the Gulf of Mexico off the coast of Santa Rosa Island or Cape San Blas.

The Final TMD Extended Test Range SEIS-EGTR has two volumes. The first volume includes an Executive Summary, Acronyms and Abbreviations, a Glossary, section 1 (Program Overview), section 2 (Description of Alternatives Including the Proposed Action), and section 3-4, numbered as section 3 (Affected Environment and Environmental Consequences and Mitigations). The second volume includes section 5 (Public Review Comments and Responses), section 6 (References), section 7 (List of Preparers), technical appendices, the distribution list, and the index.

Section 1 of the SEIS, Program Overview, presents the background, purpose, and need for the TMD Extended Test Range EGTR program. Section 2, Description of Alternatives Including the Proposed Action, describes the proposed action and the current available alternatives that have been identified as fulfilling the purpose and need of the program. A no-action alternative that does not provide extended test capabilities for TMD in the EGTR is also described in this section.

In this SEIS, the presentation of the Affected Environment and Environmental Consequences has been combined into a single section identified as section 3-4. In this unified section, the presentation of existing and future environmental baseline conditions for each of the 14 environmental resource areas is directly followed by a discussion of the potential impacts of the proposed project and alternatives, including appropriate mitigations.

Section 5 of the SEIS (Public Review Comments and Responses) describes how responses were made to the comments received from agencies and the public. This section contains copies of every comment received and responses to each.

DOCUMENT ORGANIZATION

VOLUME 1



EXECUTIVE SUMMARY



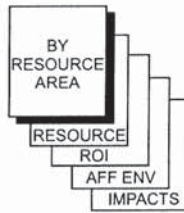
SECTION 1.0 PROGRAM OVERVIEW



SECTION 2.0 DESCRIPTION OF ALTERNATIVES INCLUDING THE PROPOSED ACTION

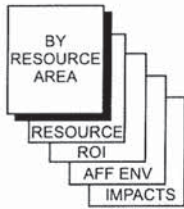


SECTION 3.0-4.0 AFFECTED ENVIRONMENT, ENVIRONMENTAL IMPACTS, AND MITIGATIONS

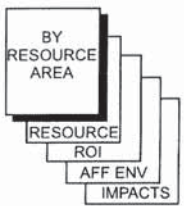


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5.0 Public Review Comments and Responses

5.0 PUBLIC REVIEW COMMENTS AND RESPONSES

The *Theater Missile Defense (TMD) Extended Test Range (ETR) Supplemental Environmental Impact Statement (SEIS)—Eglin Gulf Test Range (EGTR)* public review and comment period began on 13 February 1998, 1 week following the publication of the Notice of Availability (NOA) in the *Federal Register*. The public comment period ended on 3 April 1998. Some government agency comments were received after the ending date but were included in the review comments.

Copies of the Draft SEIS were made available for public review at several locations within the region of influence of the proposed TMD program.

- Okaloosa-Walton Community College Library, Niceville
- Okaloosa-University of West Florida Library, Fort Walton Beach
- Gulf County Library, Port St. Joe
- Key Largo Public Library, Key Largo
- Monroe County Public Library, Marathon
- Monroe County Public Library, Key West
- Florida Keys Community College Library, Key West

The following methods were used to notify the public of upcoming public hearing meetings:

- NOA announcement in the *Federal Register*
- Paid advertisements placed in four local newspapers including the *Northwest Florida Daily News*, *Panama City Herald*, *The Key West Citizen*, and *The Keynoter*
- Media releases to newspapers, radio, and television

Four public hearing on the Draft SEIS were between the 9th and 13th of March 1998 in Fort Walton Beach, Port St. Joe, and the Florida Keys. Table 5.0-1 lists the locations and dates of these meetings.

Table 5.0-1: Public Hearing Locations, Dates, and Actual Times

Meeting Location	Date	Times
Fort Walton Beach, Radisson Beach Resort	9 March 1998	5:00 – 8:00 p.m.
Port St. Joe, Port St. Joe High School	10 March 1998	5:00 – 8:00 p.m.
Key West, Harvey Government Center	12 March 1998	5:00 – 10:00 p.m.
Marathon, Marathon Government Center	13 March 1998	5:00 – 9:00 p.m.

During the initial hour of each public hearing, an informal information session was held to encourage the public to talk with project leaders. During this time, the public was encouraged to sign in at the registration desk, to complete a speaker's card if they wanted to make a statement at the public hearing, and to complete an address form if they wanted to receive a copy of the Final SEIS or its Executive Summary. A log of public and agency attendees was maintained for each hearing although registration was not required. A fact sheet summarizing the proposed action to enhance the Eglin Gulf Test Range to test Theater Missile Defense systems was provided to all attendees. This fact sheet provided an overview of the preferred action and alternatives and summarized the findings of the Draft SEIS including potential environmental impacts and mitigations. Copies of the Draft SEIS were also made available to the public at the registration table. Other handouts included a welcome/agenda for each public hearing meeting location, instructions on how to be heard and how to get more information, written comment forms, and cards for commentor registration and document mailing list.

Following the information hour, the public was invited to attend the Public Hearing. The moderator began the formal presentation by explaining the format of the meeting which included:

- Introduction, Mr. Lewis Michaelson
- Maj Tom Kennedy, AFDTTC, Eglin AFB, described the proposed action and alternatives and presented the findings of the Draft SEIS
- Public Comment Session
- Closing Remarks, Mr. Michaelson

A transcript of the full text of each public hearing is included in section 5.3 of the Final SEIS.

Public comments on the Draft SEIS were received in several different ways. Public hearing attendees were invited to make formal statements, which were recorded by a court reporter at each meeting. A total of 51 individuals spoke at the public hearings and their comments were documented in four recorded transcripts. A list of the individuals who spoke at the public hearings, designated PT-0001 through PT-0051, and copies of the transcripts, are included in section 5.3.1.

Written comments on the Draft SEIS were received in various formats over the course of the public comment period. Initially, some prepared information was submitted to the moderator by speakers during each public hearing. In addition, written comment forms which were made available during registration were either returned at the conclusion of the public hearings or forwarded by mail. Finally, some individuals and several Federal, state, and local agencies submitted letters of comment. In these three forms, written comments were received from 69 individuals representing themselves or private and public organizations. A list of the individuals, including their organization or agency affiliation where applicable, and copies of their transmittals are included in section 5.1.1. Written comments are designated PW-0001 through PW-0069.

In addition to transcript and written comments, the public was encouraged to e-mail comments to a mailbox designated for receipt of public comments: tmd@eglin.af.mil. Twelve e-mails were received during the public comment. A list of the individuals who sent e-mails, and copies of the documents received are included in section 5.2.3. E-mail documents are designated PE-0001 through PE-0012.

Every transcript, written letter/comment, and e-mail was reviewed as it was received. Each document was assigned a unique number and then was carefully reviewed to identify the environmental resource area and specific topic of individual comments and issues that were presented. Each of these identified issues was highlighted and numbered sequentially. For example, if the tenth speaker presented in a transcript document (PT-0010) provided comments on 7 separate topics, those comments were numbered PT-0010.01 through PT-0010.07. A summary of each comment, its environmental resource area and topic was then entered into a database by the given identification number. This database was then used to sort and categorize all comments to the Draft SEIS so that appropriate and consistent responses could be provided.

The process of responding to comments required reaching a thorough understanding of the issues being presented and then determining the appropriate action to be taken. In some cases, the comment was a declarative statement not requiring a direct response, but one that did need to be noted in the context of overall public review. Other comments identified corrections or new information that was directly included in the text of the Final SEIS.

The largest number of comments received posed questions about the methodologies, analyses, and conclusions for various environmental resource impacts and mitigations presented in the Draft EIS. For each of these comments, a specific response was prepared—occasionally requiring the acquisition of new data and the preparation of additional analyses. New information and analysis supporting or changing the conclusions of the Draft SEIS was incorporated into the text of the Final SEIS as well as in the response to comments section.

Chapter 5 of the Final SEIS presents reproductions of all the original documents that were received during the public hearing comment period and provides direct responses to every issue included in those documents. The organization of chapter 5 provides a separate comment/response section for each of the three types of comment documents:

- 5.1 Written Comment Documents
 - 5.1.1 Written Comments
 - 5.1.2 Response to Written Comments
- 5.2 E-Mail Comment Documents
 - 5.2.1 E-Mail Comments
 - 5.2.2 Response to E-Mail Comments
- 5.3 Transcript Comment Documents
 - 5.3.1 Transcript Comments
 - 5.3.2 Response to Transcript Comments

The first table in each section provides a index of the names and assigned identification numbers of individuals that submitted comments on the Draft SEIS. To follow comments and responses for a specific individual, find their commentor number (e.g., PW-0042, PE-0003, PT-0021) in the appropriate document list; locate their document with sequentially numbered comments; and, use the comment numbers to identify corresponding responses in the response table.

All documents and comments that were received during the public review period for the Theater Missile Defense, Extended Test Range, Supplemental Environmental Impact Statement were treated equally regardless of the form or commentor. Each comment was carefully documented, thoroughly read and evaluated, and provided with a response. Volume 2 of the Final SEIS includes the public comments and prepared responses. The National Environmental Policy Act requires the analysis of all reasonable alternatives to the proposed action. In accordance with CEQ guidelines, this SEIS includes sufficient analysis to inform the public and decision makers of potential environmental impacts resulting from the preferred action and alternatives and to assist in the decision making process.

5.1 WRITTEN COMMENT DOCUMENTS

Individuals who commented on the Draft SEIS in written form are listed in table 5.1-1 along with their respective commentor identification number. This number can be used to find the written document that was submitted and to locate the corresponding table on which responses to each comment is provided.

5.1.1 WRITTEN COMMENTS

Exhibit 5.1-1 presents reproductions of the written comment documents that were received in response to the Draft SEIS. Comment documents are identified by commentor ID number, and each statement or question that was categorized as addressing a separate environmental issue is designated with a sequential comment number.

5.1.2 RESPONSE TO WRITTEN COMMENTS

Table 5.1-2 presents the responses to comments to the Draft SEIS that were received in written form. Responses to specific comments can be found by locating the corresponding commentor ID number and sequential comment number identifiers.

Table 5.1–1: Public Comments on the Draft SEIS (Written Documents)

Commentor and Affiliation	ID Number
Apalachee Regional Planning Council	P-W-0055
Blazevic, R. L.	P-W-0031
Cairns, Duncan J., North West Florida Water Management District	P-W-0052
Canneto, Frank; ANR Pipeline Company	P-W-0036
Causey, Billy D.; Florida Keys National Marine Sanctuary Program	P-W-0043

Table 5.1-1: Public Comments on the Draft SEIS (Written Documents) (Continued)

Cofer, Elizabeth	P-W-0009
Cofer, Elizabeth	P-W-0020
Couvillion, Keith J.; Texaco Exploration and Production, Inc	P-W-0064
Cox, Cox	P-W-0023
Deut, Jane	P-W-0039
Drake, Susan	P-W-0027
FKNMS Advisory Council	P-W-0011
Freeman, Shirley; Commissioner, County of Monroe	P-W-0060
Freeman, Shirley; Monroe County Commissioner	P-W-0002
Gerbnacht, Helen	P-W-0034
Germer, Suzanne	P-W-0019
Golden, Jim	P-W-0041
Griffin, Lynn; Office of Intergovernmental Programs, Florida Department of Environmental Protection	P-W-0049
Gulf County	P-W-0056
Hadden, Alexander	P-W-0001
Halloran, George	P-W-0046
Hanley, Mari	P-W-0063
Hare, James N.	P-W-0025
Hartman, Bradley; Director, Florida Game and Fresh Water Fish Commission	P-W-0068
Hendricks, M.E.	P-W-0033
Henize, Dennis	P-W-0004
Henize, Dennis	P-W-0015
Henize, Dennis	P-W-0016
Hind, Martin S	P-W-0024
Hoffman, Wayne; National Audubon Society	P-W-0008
Hulsey, John, South Florida Regional Planning Council	P-W-0053
Illegible	P-W-0035
Jones, Michael	P-W-0018
Lee, James H.; Office of Environmental Policy and Compliance, U.S. Dept. of the Interior	P-W-0066
Lowe, Donald S.	P-W-0003
Magill, Mary	P-W-0032
Marine Fisheries Commission	P-W-0051
Marple, Richie Anne	P-W-0045

Table 5.1-1: Public Comments on the Draft SEIS (Written Documents) (Continued)

Martin, Terence N.; Office of Environmental Policy and Compliance, U.S. Dept. of the Interior	P-W-0038
Mc Arthur, Phil and Jane	P-W-0028
McGee, William; Cape San Blas Taxpayers Association	P-W-0059
Moody, Richard	P-W-0062
Morrison, Michael, et al; Last Stand -petition against missile testing in the Florida Keys	P-W-0069
Mueller, Heinz J.; Chief, Office of Environmental Assessment, U.S. Environmental Protection Agency, Region 4	P-W-0065
Musselman, David	P-W-0021
Orlandi, Robin; Board of Directors of Reef Relief	P-W-0014
Percy, George W.; Division of Historical Resources, Florida Department of State	P-W-0050
Pfeiffer, Steven G.; State of Florida, Dept. of Community Affairs	P-W-0067
Poole, Samuel E. III; South Florida Water Management District	P-W-0042
Probert P.E., Daniel	P-W-0061
Rebosio, Gianne T.	P-W-0017
Richardson, Drew; Professional Association of Diving Instructors	P-W-0037
Richardson, Drew, Professional Association of Diving Instructors	P-W-0013
Richardson, Drew, Professional Association of Diving Instructors	P-W-0012
Rosenblatt, Sol	P-W-0007
Simonds, Lois	P-W-0058
Slack, James J.; South Florida Field Office, Fish and Wildlife Service	P-W-0022
Thorpe, Paul; Northwest Florida Water Management District	P-W-0057
unsigned	P-W-0026
unsigned	P-W-0029
unsigned	P-W-0030
unsigned	P-W-0047
Weeks, Vicki	P-W-0010
West Florida Regional Planning Council	P-W-0054
Wheeler, Kathy	P-W-0044
Whitfield, Estus D.; Environmental Policy/Community and Economic Development Unit, Office of the Governor, State of Florida	P-W-0048
Wright, Bruce	P-W-0040
Wright, David C. Ph.D.	P-W-0006
Wright, David C. Ph.D.; Union of Concerned Scientists	P-W-0005

P-W-0001
COMMENT
NUMBER

SUMMARY OF THE VIEWS OF
THE MISSILE TASK FORCE
PRESENTED BY SANDY HADDEN
MARCH 12 AND 13, 1998

My name is Alexander Hadden. I am a retired attorney. My comments this evening are intended as a summary of the views presented by this Task Force.

The focus of the Task Force has been to assess how well the draft SEIS portrays the impact on the Keys of launching target missiles here. We find the document as it stands to be incomplete, superficial and in some respects, distorted.

Our first concern is human health and safety. Nowhere in the SEIS is there any focus on the possibility of serious accident. It neither quantifies nor even mentions the possibility that human error, equipment or system failure, sudden wind or meteorological change, or a combination of such factors might result in a destructive distribution of debris or toxic emissions beyond the Launch Hazard Area. Of particular concern is the extremely short distance from the launch site to the edge of the LHA on its populated side. The fashion in which the LHA was magically shrunk when it was discovered that it included settled areas seems to us to highlight the document's lack of objectivity. Also, more detail is needed on the timing of the trigger mechanism in the event of an accidental firing in the direction of a populated area.

The SEIS likewise fails to explain why the launch site here should be so much closer to populated areas than it is at other sites. There is no other US missile test site that is nearly so close. The launch sites in northern Florida, for example, will be from platforms 5 to 13 miles offshore of Eglin Air Force Base. Are there special circumstances that might justify a departure in the Keys from the safety precautions proposed there? If so, the SEIS fails to mention them.

Our second concern is the environment. The analysis understates the potential impact of introducing large quantities of hydrochloric acid into a region of high humidity and shallow sea water, and it fails to focus at all on the consequences of such imposition on the fragile alkaline environment of the Keys.

We also concur with the concerns raised by the Marine Sanctuary and the Wildlife Service. We urge that these issues be addressed in the final SEIS.

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A third concern is transportation. The Overseas Highway is the sole conduit for automobile traffic, drinking water, electric power, hospital and medical services, food and every other vital service required by our entire population. The impact of the missile proposal on this lifeline corridor is not addressed at all in the draft SEIS. What would be the effect of this heavy new traffic burden on normal and essential traffic patterns? And God forbid that there should be an accident that takes out a bridge, for example, but should there not be some contingency planning that would take such possibilities into account?

In conclusion, there is a real possibility of the failure of a missile launch. We can conceive of no other rural location in the US where the consequences of such an accident would be more devastating. Such a failure could result in the dispersal of flammable and toxic materials and chunks of missile hardware into areas where people live, or involve the accidental explosion of a missile being transported on US 1. It is not enough to say that the chances of such events happening in the Keys are "minimal." Disasters of this sort have happened in the past and they could happen here.

We hope that the final SEIS will look much harder and deeper into these real risks and find ways to treat them that would be both more detailed and more convincing.

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P-W-0002
COMMENT
NUMBER

My name is Shirley Freeman and I am a Monroe County Commissioner.

Welcome to our beautiful new commission chambers here at the Harvey Government Center at Historic Truman School.

As a County Commissioner I wanted to fully analyze and respond to the Draft Supplemental Environmental Impact Statement. To assist me in analyzing this document, I have been fortunate enough to be able to call upon a team of scientists and others who have volunteered their time and expertise to examine the Draft SEIS with a fine tooth comb.

Their findings are this document has many fine attributes but is woefully lacking in evidence which leads to some of the conclusions concerning the ecological treasure we call the Florida Keys. It falls short in consideration of the possible toxic damage from chemical discharge and physical fallout that would affect the health and safety of our citizens, our sensitive environment which includes a national marine sanctuary, and our unique tropical atmosphere.

Now I will introduce the team. Each member has lived in the Florida Keys for six to 20 years. Each will speak to you in their area of expertise. It is my job to introduce them and give their credentials.

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P-W-0002
COMMENT
NUMBER

Gerry Girard

Mr. Girard is a retired airline captain of 37 years service, was a member of the board of a telecommunications company, and is an avid outdoorsman.

Topic: General Comments

Elizabeth Cofer

Mrs. Cofer is a Duke University graduate with a BA in zoology and a MA degree in education and enjoyed a 20 year career as chemistry teacher.

Cudjoe, FL

Topic: Traffic and Transportation

Donald Lowe

Mr. Lowe has a MA degree in Physics. As a research manager for Bendix Aerospace Systems Division, he directed programs related to ballistic missile launch and re-entry measurements. He served as US Naval Ordnance Representative to the United Kingdom.

Cudjoe, FL

Topic: Noise and Visual Aesthetics

Comments on Draft SEIS
12 March, 1998
Donald S. Lowe

Honorable Commissioners, DoD Representatives, and Interested and Concerned Citizens. Thank you for the opportunity to express my views on the Draft SEIS. I will speak only on two issues, aesthetics and noise. For sake of brevity, I will discuss the Cudjoe site, but the comments apply to the Saddlebunch Keys as well.

Most of the views around the proposed launch sites are judged in the study to have minimal scenic attractiveness. What can I say except that beauty is in the eyes of the beholder. I for one love these low lying mangrove islands set in sparkling water. That is why most of us live down here at the end of the earth. The report further concludes that the 40' tall, 90' long assembly building will only slightly alter the scenic integrity of the area. Such a building will be very dominant here in the Keys where buildings are restricted by code to a height of less than 35'.

As for human reaction to noise, the study averages the day night background noise level over a year. The color figure on the left shows the noise level for Cudjoe. This is derived from land use classification and noise statistics. Yellow represents a 55 dB noise level, about that used in conversation. From this modeling, it is estimated that 4% of Cudjoe residents are unhappy with their noise environment. When the noise from 12 Hera launches is added (the figure on the right) the noise in most of the populated area (yellow) remains the same, and the percent of people unhappy with their noise environment remains at 4%. How can this be? It is because the short impulse of noise is time averaged over an entire year thereby reducing its level a factor of about 500,000 (60 minutes/hour, 24 hours/day, and 365 days/year). This methodology is clearly

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wrong for analyzing the effects of a short burst of noise. A dynamite blast could rupture one's eardrums without measurably affecting the yearly averaged noise level. Actual noise measurements of a Hera launch are more helpful toward understanding launch noise. The next figure, taken from the study, plots rookeries and sound levels with respect to the Cudjoe launch pad. The noise level at 5 miles is 93 dB. This is equivalent to the sound of a full speed freight train at 30 feet. Who could sleep through that and once wakened would not listen intensely to determine whether or not one should dive for cover? No studies were cited as to the possible psychological scarring of the residents by this type of disturbance. Regarding wildlife, however, it is noted that at least one rookery will experience 121 dB of noise which is the threshold of pain in humans. The study reports that birds will leave their nests but will return. The study concludes that there will be no long term effects. Where is the scientific evidence?

I beg you to take the necessary steps to correct what I perceive to be misleading conclusions in the Draft SEIS. The launch noise will disturb both humans and wildlife, and the exact degree will not be known without an extensive scientific investigation. The scenic quality and character of the site will dramatically change with the launch operations. The impacting costs on residents, tourism, and overall quality of life have not been quantitatively analyzed to determine the true cost of launching missiles from the Keys. The decision to launch ballistic missiles near populated areas in a sanctuary is far too important to be based on "trust me" judgements. It should be based on hard, quantitative, scientific evidence which this study sadly lacks. Thank you.

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P-W-0004
COMMENT
NUMBER

Comments by Dennis Henize, on SAFETY - LAUNCH HAZARD AREA
(TMD EIS Public Hearings, Florida Keys, March 12/13, 1998)

For neighbors within a few miles of the proposed launch sites, safety is the most crucial issue. The original Theater Missile Defense EIS cites a nominal Launch Hazard Area of 4.5 miles for the Hera missile. When the Keys were first looked at as a launch site, the Hera LHA shrank to 9,000 feet, about the distance to US1. That was when BMDO thought that nobody lived north of US1 on Cudjoe Key. When that error was pointed out, the LHA further shrank to 6,500 feet, less than 1.25 mile.

The red shaded area at the bottom of the LHA is the area carved out of the LHA because my wife and I and 22 other families were found to be living there.

Shrinking the LHA is rationalized by promising to blow up an errant missile sooner if it heads toward us than if it goes off-course in some other direction. There are many problems with that, and it is no comfort. For one thing, it only means a higher probability of a missile having to be destroyed after launch, and for every such failed launch, there'd have to be another one. Building a higher probability of failure into an inherently dangerous activity, *simply because the site is too close to human population*, shows astoundingly poor planning!

The 6,500 foot Launch Hazard Area is far from being prudent and conservative, and does not consider any of several worst-case mishaps. It takes into account the debris dispersal for an exploding Hera on or directly above the launch pad, but not any of several plausible failure modes in which the missile moves some distance in the wrong direction and then explodes.

A type of mishap representing just one such failure is presented in a report published last week by David Wright, a physicist with MIT and the Union of Concerned Scientists. Dr. Wright's report analyzes the 6,500 foot Launch Hazard Area proposed for Cudjoe Key. The same study would apply to the Saddlebunch site. It describes a failure mode in which debris from a flight terminated due to a particular directional control failure a few seconds after launch could cause debris to land outside the LHA, more than 2 miles from the launch site.

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The report concludes:

"This analysis concludes that an LHA of 1.5 miles is not justified on technical grounds. There appear to be possible malfunctions of the Hera missile that could result in debris outside the 1.5 mile LHA even if the flight is terminated very early. While the probability of such a malfunction is not known, similar events have occurred in the recent past. These results therefore mean that the official launch hazard area determined by BMDO for the proposed Cudjoe Key site is too small."

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The Launch Hazard Area is inadequate in other respects as well. Patterns of falling debris from an accident should *not* be the *only* criteria for determining the LHA. Noise and shock waves from potential explosions, and chemical clouds from potential accidents must be considered.

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Your EIS acknowledges that explosions could result in compression waves of 2.0 psf overpressure, strong enough to cause minor structure damage, as far away as 1.9 miles. There are at least 23 homes that close. The Launch Hazard Area is not big enough.

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With respect to the chemical cloud from a combustion accident, both of the dispersion models used in the EIS' Air Quality sections show that the highest concentrations of hydrogen chloride are *outside* the Launch Hazard Area. The Launch Hazard Area is not big enough.

There simply is not enough wide-open space anywhere in the Keys for a Launch Hazard Area that takes into account the very launch hazards that are acknowledged in the EIS.

**A Technical Assessment
of the Launch Hazard Area in Cudjoe Key, Florida**

David C. Wright*
Union of Concerned Scientists &
Security Studies Program, MIT

March 6, 1998

Summary

The US Ballistic Missile Defense Organization (BMDO) has been considering using a site in Cudjoe Key, Florida to launch Hera test missiles as part of the program to develop theater missile defenses.

A standard safety precaution is to define a launch hazard area (LHA) around a missile launch site that represents areas that might be showered with debris in the event of a malfunction during the launch of the missile. If the LHA of a proposed launch site would include areas containing schools, housing, etc., the location cannot be used as a launch site.

The Army has stated that the nominal LHA for Hera missile launches is 4.5 miles (7.2 kilometers) in all directions around the launch site.¹

The LHA determined by BMDO for the Cudjoe Keys launch site, however, extends only about 1.5 miles (2.4 km) in the direction opposite to the planned flight path of the missile.² If the LHA were larger in that direction, it would include homes and the launch site would not be allowed.

The purpose of this assessment is to understand if a reduction in the LHA by a factor of three—from a nominal 4.5 miles to 1.5 miles—can be justified on technical grounds. It describes a technical analysis of where debris could land as a result of malfunction and termination of a launch of a Hera missile early in flight.

This analysis concludes that an LHA of 1.5 miles is not justified on technical grounds. There appear to be possible malfunctions of the Hera missile that could result in debris outside the 1.5 mile LHA even if the flight is terminated very early. While the probability of such a malfunction is not known, similar events have occurred in the recent past. These results therefore mean that the official launch hazard area determined by BMDO for the proposed Cudjoe Key site is too small.

* David Wright is a Senior Staff Scientist at the Union of Concerned Scientists in Cambridge, MA and a Research Fellow in the Security Studies Program at MIT. He received his Ph.D. in physics from Cornell University in 1983. One of his main areas of expertise is the technical analysis of missile systems.

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Determining the Launch Hazard Area

The military's description of how a launch hazard area (LHA) is determined can be found on the Eglin Air Force Base web site at tw1.eglin.af.mil/46mtd/lha.htm. The first step is to determine the LHA in the absence of wind, which could shift the debris pattern. The description states:

"Certain areas cannot be located within an LHA. Examples include housing, schools, and office buildings. If a protected area lies within the calculated *Debris Hazard Area—No Wind* for a proposed site, then that site cannot be used for missile launches." (emphasis original)

While wind may shift the pattern of debris and increase the size of the LHA for a particular launch depending on weather conditions, it cannot decrease the size of the LHA from the "LHA-No Wind" (called the "Debris Hazard Area—No Wind" above). Thus if a calculation of the debris pattern from an aborted launch in the absence of wind shows that debris could fall on the protected areas listed above (housing, schools, and office buildings), the launch site cannot be used. As a result, the calculations in this paper are done assuming there is no wind.

Calculating the LHA-No Wind

The Eglin web page states that the LHA-No Wind is determined by a computer model that calculates where debris would land if the missile had to be destroyed after launch. The computer model attempts to take into account malfunctions of the missile that send the missile off its intended course. The LHA description states:

"Every five seconds of flight, the model forces the missile off its flight path for five seconds."

The computer then calculates where debris from a missile destroyed at that time would land, and that information is used to calculate the LHA-No Wind. In response to questions on this point, the BMDO has said that early in flight it might not wait for five seconds after a malfunction to terminate the flight but could do so a couple of seconds earlier.

Checking the BMDO's Calculation of the LHA-No Wind at Cudjoe Key

The details behind the BMDO's calculation of the LHA-No Wind at the Cudjoe Key site are not publicly available. However, considerable information is known about the Hera test missile, allowing the trajectory of the missile to be calculated under normal operating conditions and under various types of malfunctions. Assuming a missile launch is aborted at some point on the trajectory, the pattern of debris can be calculated using standard assumptions about atmospheric drag on the debris.

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In my calculations I have assumed reasonable "worst-case" malfunctions of the Hera missile that should be taken into account in determining the LHA-No Wind. These calculations are described in detail in the Appendix.

Results of the Calculations

The calculations described in the Appendix show that reasonable assumptions about possible malfunctions of the Hera missile would result in debris falling 1.6-2.1 miles farther behind the launch site. Thus, this debris would land outside of the official LHA-No Wind that has been presented by BMDO for the Cudjoe Key site.

These results therefore mean that the official LHA-No Wind determined by BMDO for the proposed Cudjoe Key site is too small.

What is the probability of malfunction of the missile?

The probability of a malfunction that would cause a Hera missile to veer out of control is not publicly known. However, there are numerous examples of such a malfunction. The news report of a malfunction of an Ariès rocket in 1991 that is attached at the end of this report gives an example of such a malfunction, in that case caused by a software rather than hardware problem.

It is, however, possible to say something about the overall reliability of Minuteman missiles. Since the Hera missile consists of the upper two stages of a Minuteman II missile, these reliability figures may give some indication of the reliability that can be expected of Hera. It is important to keep in mind, however, that there are many failure modes that do not involve the guidance and control system of the missile, which is the failure mode considered here. In most cases discussed below, the failure mode is not publicly known.

- Between 1969 and 1989, the Minuteman II missile underwent 101 operational test and evaluation (OT&E) flight tests.³ Of these, 15 were failures, giving a reliability of 85%.
- Between 1971 and 1989, the Minuteman III missile, which is an upgrade to the Minuteman II, underwent 136 OT&E flight tests.⁴ Of these, 17 were failures, giving a reliability of 87.5%.
- Between 1985 and 1992, there were 12 launch attempts for Minuteman I missiles⁵ that had been refurbished for use as space launch vehicles in much the same way that Minuteman II components have been refurbished for use in Hera. On two of these flights (20 January 1987 and 24 October 1992) the missile malfunctioned and was destroyed during flight by a range safety officer. A third launch attempt (20 January

References

- ¹ US Army Space and Strategic Defense Command, *Theater Missile Defense Hera Target Systems: Environmental Assessment*, January 1994, p. 1-30; US Army Space and Strategic Defense Command, *Wake Island: Environmental Assessment*, January 1994, p. 1-21; US Army Space and Strategic Defense Command, *Theater Missile Defense Extended Test Range: Draft Environmental Impact Statement*, January 1994, p. 2-16.
- ² *Theater Missile Defense Extended Test Range Supplemental Environmental Impact Statement - Eglin Gulf Test Range (draft)*, prepared for Major Thomas J. Kennedy, Director of Test, Theater Missile Defense, Eglin AFB, FL, 6 February 1998, 3-428.
- ³ Steven Flank, "Flight Test Restrictions and Reliability Analysis for Ballistic Missiles: An Analytic Framework," May 1991, unpublished.
- ⁴ *Ibid.*
- ⁵ The launch dates were obtained from Jeffrey Geiger in the Base Historian's Office at Vandenberg Air Force Base (personal communication, 14 December 1992).

1992) failed when the first stage motor failed to ignite. Thus for this eight-year period, the reliability was 9 of 12, or 75%. Even ignoring the launch that never got off the ground gives a reliability of 9 of 11, or 82%.

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Appendix: Description of Calculation Of Debris Dispersion

Calculation of the Nominal Hera Trajectory

The technical parameters for the Hera missile are well known from several sources.¹ The Hera is built from surplus Minuteman missile components. For the two-stage version of the Hera, the first stage is an SR19 booster, which is the Minuteman II second stage. This stage has a total mass of 16,000 pounds (lb) (7,270 metric tonnes (te)), contains 13,725 lb (6,236 te) of propellant, and has a nominal burn time of 64 seconds. The motor generates approximately 56,100 lb (250,000 newtons) of thrust. This stage is roughly 11 feet (3.4 meters) long and has a diameter of 4.3 feet (1.3 meters).

The second stage is an M57A1 booster, which is the Minuteman II third stage. This stage has a total mass of 4,422 lb (2,010 te), contains 3,650 lb (1,659 te) of propellant, and can burn for up to 60 seconds. This motor generates a thrust of roughly 16,900 lb (75,000 newtons). This stage is roughly 7 feet (2.1 meters) long and has a diameter of 3.3 feet (1 meter).

The Hera payload section has a mass of roughly 3400 lb (1.55 te), and is roughly 10 feet (3 meters) long.

Given these technical parameters, one can integrate the equations of motion on a computer to calculate the trajectory of the missile. The program used for these calculations includes an atmosphere and calculates the effects of atmospheric drag on the missile trajectory using standard methods.²

Using the parameter values given above, these calculations give a trajectory essentially identical to that provided by the Air Force for the nominal Hera trajectory.³ In these calculations, I have assumed the Hera travels vertically for a short time (5 seconds) before lateral thrust is applied to begin turning the missile. (I also considered a case in which the missile flies vertically for only 3 seconds and found that the results are insensitive to this number.)

Estimation of Debris Pattern After a Missile Malfunction

This section describes how I calculated the debris pattern from an aborted launch. Some relevant details of the missile, such as the maximum turn it can undergo, are not publicly

¹ "The Hera Target Missile," Ballistic Missile Defense Organization (BMDO) Fact Sheet 96-018, April 1996; David Hughes, "Hera to Challenge THAAD this Month," *Aviation Week and Space Technology*, 11 March 1996, 59; Thomas Cochran et al., *Nuclear Weapons Database, Volume 1: US Nuclear Weapons* (Cambridge, MA: Ballinger, 1983), p. 113.
² For a description of the program, see L. Gronlund and D. Wright, "Depressed Trajectory SLBMs," *Science and Global Security* 3, 1992, 101-160.
³ This data was provided to Mr. Dennis Henzlin by Maj. Thomas Kennedy, Theater Missile Defense Test Manager, Eglin Air Force Base.

available. However, it is possible to estimate these parameters to give highly plausible predictions of the debris pattern.

The LHA is calculated by assuming the missile undergoes what the military calls a "worst turn" at various points along the missile trajectory. A "worst turn" is a turn that the missile is physically capable of achieving and that is the most problematic in terms of dispersing debris. The missile is then allowed to travel in that direction for five seconds before the flight is aborted.

When the flight is aborted, pieces of the missile will follow ballistic paths to the ground, with the path of each piece determined by its ballistic coefficient⁴ (weight-to-drag ratio) and its speed and direction at the time of thrust termination of the missile. The LHA-No Wind is then determined by considering such "worst turns" in all directions away from the intended path and finding an envelope outside of which none of the debris falls.

BMDO officials have stated that, early in flight, the flight might be terminated before the missile is allowed to travel for five seconds after a "worst turn." In the calculations in this paper, we assume the flight is aborted only three seconds after a "worst turn."

I consider a particular case in which the missile flies on the nominal Hera trajectory for nine seconds. At that point the missile is travelling at about 417 ft/s (127 m/s) and is at an altitude of about 1970 ft (600 meters). The velocity vector is about 84.5 degrees with respect to the horizontal. A malfunction is assumed to occur at that point in the missile's guidance and control system that causes the missile to begin to turn in the opposite direction (still in the plane of the trajectory) for three seconds. The turning is caused by aerodynamic lift forces on the missile body that result when lateral thrust of the rocket motor generates a non-zero angle of attack. Since this is occurring at low altitudes where the atmospheric density is large, the lift forces are strong and can cause the missile to turn rapidly. The majority of the missile's thrust, however, is still accelerating the missile. After three seconds, the missile's speed has increased to 558 ft/s (170 m/s) and it has climbed to about 3280 ft (1 km) in altitude, and is approximately above the launch point. We assume that the "worst turn" results in the missile velocity being at an angle of 40-45 degrees with respect to the horizontal, which would maximize the dispersal of debris.

There is good evidence that the missile could withstand such a turn, based on the behavior of the Trident II missile on 21 March 1989, when it failed its first launch attempt at sea. (See figure 1.) A malfunction of the guidance and control system caused the missile to fly in a circle of roughly 300 foot (90 meter) diameter, and it did so for a short time without breaking up. Eventually, as the missile began to spiral inward, the turning rate and resulting atmospheric forces became high enough that the missile broke apart. However, an analysis of the Trident trajectory shows that the middle part of its flight occurred at atmospheric densities and at speeds comparable to those in the Hera case described above. This strongly suggests that the Hera could undergo a turn of the type assumed above without breaking up before the flight is aborted.

⁴ The ballistic coefficient β is defined as $\beta = W/C_D A$, where W is the weight of the object, C_D the drag coefficient, and A is the projected area perpendicular to the motion of the object.

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ENVIRONMENTAL IMPACT STATEMENT RESPONSE 3/12/98
SOL ROSENBLATT

THANKS FOR GIVING ME THE OPPORTUNITY TO PRESENT SOME SOLID ROCKET EMISSION OBSERVATIONS MADE DURING MY 3 1/2 YEARS AS A SOLID ROCKET DEVELOPMENT CHEMIST FOR THE POLARIS MISSILE PROGRAM.

1. FOR HERA, 1.5 TONS OF HCl GAS EMITTED PER LAUNCH. THIS GAS COMBINES IN A HUMID OR EXCESS WATER ENVIRONMENT WITH 3 TONS OF WATER, WHICH BRINGS DOWN THE HCl IN THE FORM OF 4 1/2 TONS OF HCl ACID RAIN. A FEW DROPS OF THIS ACID WILL REDUCE THE PH OF A GALLON OF WATER TO BELOW 7 INSTANTANEOUSLY, WHICH AUTHOR OF THIS ENVIRONMENTAL IMPACT STATEMENT CONSIDERS HIMSELF OR HERSELF VERSED WELL ENOUGH IN THE CHEMICAL BALANCE OF OUR BACKWATERS, THAT HE OR SHE IS WILLING TO GAMBLE THAT INTRODUCING 4 1/2 TONS OF HCl ACID INTO THIS SHALLOW ENVIRONMENT, FOR EACH LAUNCH, WILL NOT CAUSE A DELETERIOUS CHAIN REACTION ? - THIS FRAGILE ENVIRONMENT WHERE WE STILL ARE TRYING TO LEARN THE REASON FOR OUR REEFS MYSTERIOUS DYING OFF AT THE RATE OF BETWEEN 4-10% PER YEAR.

THE CLAIM IS MADE THAT ONLY 20% OF THE HCl IN THE PRESENCE OF WATER COMBINES TO FORM HYDROCHLORIC ACID.
WHAT HAPPENS TO THE 80% BALANCE?
COULD IT BE THAT ONLY 20% WAS DETECTED BECAUSE:

1. THERE WAS AN ASSUMPTION THAT THE WATER PRODUCED BY THE COMBUSTION WAS THE LIMITING WATER AVAILABLE FOR COMBINING WITH THE HCl.
2. THAT AT THE TEMPERATURE OF THE EXHAUST, ONLY A CERTAIN AMOUNT OF WATER WAS AVAILABLE.
3. THAT THE LOW DESERT HUMIDITY AT FORT WINGATE, NEW MEXICO LIMITED THE WATER AVAILABLE, AND ALTERED READINGS.
THE FACT IS THAT IN THE PRESENCE OF EXCESS WATER OR HIGH HUMIDITY AT STANDARD TEMPERATURES AND PRESSURES, ALL THE HCl GAS COMBINES WITH WATER.

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CLAIM THAT HCl AND/OR HYDROCHLORIC ACID CLOUDS EASILY MIX WITH THE AIR AND DISPERSE:

1. WARM UPDRAFTS ARE PRODUCED BY THE EXOTHERMIC REACTION OF GASEOUS HCl AND MOIST AIR, PLUS THE UPDRAFT CAUSED BY THE COMBUSTION OF THE PROPELLANT - BOTH WILL CAUSE THE EXHAUST TRAIL TO RISE AND FORM AN HCl CONTAINING CLOUD IN A HUMID ENVIRONMENT OF SLOW MOVING AIR. IN ADDITION, THERE WILL BE AN UPDRAFT DUE TO THE HEAT OF CONDENSATION, AS HCl ACID VAPOR CONDENSES INTO LARGER DROPLETS GIVING UP ITS HEAT OF VAPORIZATION, ADDING TO THE UPDRAFT. UNTIL THE HYDROCHLORIC ACID DROPLETS SUFFICIENTLY COOL TO COALESCE TO A WEIGHT WHERE THEY FALL AS HYDROCHLORIC ACID RAIN. THIS CLOUD, ALSO CONTAINING VERY FINE ALUMINUM OXIDE PARTICLES STICKS AROUND, LIKE A SMOKE CLOUD DOES AFTER A FIREWORKS DISPLAY, AND MOVES AS A UNIT, WITHOUT EASILY DISPERSING.

2. ASSUMING THE NORMAL CASE SCENARIO, WHERE LAUNCH WEATHER CONDITIONS ARE CHOSEN TO BE CALM, THEREFORE WITH MINIMUM AIR TURBULENCE, WE CAN EXPECT THE HCl EXHAUST TRAILS ACID CONTENT FORMED AS ABOVE TO RAIN ESSENTIALLY STRAIGHT DOWN FROM THE EXHAUST TRAIL SURROUNDING THE LAUNCH HAZARD AREA. ALSO, ESSENTIALLY ALL THE GASEOUS HCl CONTENT OF THE EXHAUST WILL REACT AS SOON AS IT IS GENERATED WITH THE HIGH WATER CONTENT OF OUR HUMID ENVIRONMENT, FORMING A HEAVIER HYDROCHLORIC ACID CLOUD, THAN ITS SURROUNDING AIR, AND WHEN EVEN SLIGHTLY COOLED, WILL RAIN DOWN ON OUR SHALLOW WATERS AND CORAL HEADS.
THIS ACID CLOUD, BEING HEAVIER THAN A NORMAL CLOUD, WILL THEREFORE TEND TO BE LESS PRONE TO DISSIPATION BY AIR TURBULENCE, AND FALL MORE RAPIDLY.

3. SINCE MOST OF THE ROCKET FUEL IS BURNED AT THE BEGINNING OF A LAUNCH, AND THE ROCKET'S ACCELERATION IS SLOWEST AT THE BEGINNING, WE CAN EXPECT MOST OF THE HCl CONTENT OF THE PROPELLANT'S

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EXHAUST GASES TO FALL CLOSER TO THE LAUNCH SITE, RATHER THAN AVERAGE ALONG ITS PATH OF TRAJECTORY.

UNBURNED PROPELLANT

1. THE TOXICOLOGICAL EFFECT OF UNBURNED SOLID ROCKET PROPELLANT MUST BE ADDRESSED, IF THE ROCKET CHAMBER ACCIDENTALLY OR IS PURPOSEFULLY DESTROYED, ALLOWING UNBURNED PROPELLANT AND ENGINE FRAGMENTS TO ENTER INTO OUR SURROUNDING SHALLOW WATERS. A DOCUMENTED EVENT DESCRIBING SUCH AN OCCURRENCE WAS THE FAILURE OF ORIANA 5 LAUNCHED BY THE EUROPEAN SATELLITE CONSORTIUM IN FRENCH GUYANA. THE SLOW MOVING SALT WATER LAGOON SURROUNDING THE ARCHPELAGO IS NOT TOO UNLIKE OUR SHALLOW SALT WATER SURROUNDING ISLANDS. IT WAS REPORTED, BY OBSERVERS IN THE LAUNCH AREA, THAT THE LAUNCH HAZARD AREA WAS TOXICOLOGICALLY DAMAGED, AS INDICATED BY A CHANGE IN THE WATER COLOR, ABSENCE OF FISH, AND LOSS OF PLANT LIFE.

SOLID ROCKET PROPELLANT IS MORE THAN 80% AMMONIUM PERCHLORATE, A VERY POWERFUL OXIDIZER, BOUND IN A CONTIGUOUS COATING OF A POLYMERIC BINDER. THIS IS NOT A CONTINUOUS ENCAPSULATING COATING BUT A CONTIGUOUS COATING, WHICH MEANS LOTS OF GAPS SURROUNDING THE OXIDIZER. THE BINDER, IN THE CASE OF HERA, IS A POLYBUTADIENE RUBBER, AND IS VERY PRONE TO ULTRAVIOLET LIGHT AIDED OXIDATION WHERE THE COATING BREAKS DOWN, BECOMING BRITTLE. WHEN CAST INTO A ROCKET CHAMBER, WHERE UV LIGHT CANNOT REACH THE BINDER, THIS PROPELLANT HAS A PRACTICAL AGING CYCLE. HOWEVER, IF THIS PROPELLANT SHOULD BE LYING IN OUR WARM OXYGEN RICH, SUN DRENCHED SHALLOW WATERS, THE BINDER WOULD SOON BE DEGRADED, ALLOWING THE CONSTANT RELEASE OF TOXIC AMMONIUM PERCHLORATE INTO THE WATERS, LIKE A TIME RELEASE POISON PILL, FOR MANY YEARS.

STUDIES PREPARED ON BEHALF OF THE AIR FORCE HAVE CORROBORATED THAT A SLOW DISSOLUTION (LEACHING) OF AMMONIUM PERCHLORATE DOES OCCUR FROM THE HERA BINDING. HOWEVER, TO COUNTER THE DANGER OF ITS EFFECT, THEY QUOTE THE DEPARTMENT OF SANITATION OF RUSSIA.

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WHICH MADE STUDIES, AND CONCLUDED THAT AMMONIUM PERCHLORATE IS NOT A PROBLEM IN A MARINE ENVIRONMENT. THE RUSSIANS DID NOT INDICATE WHAT KIND OF MARINE ENVIRONMENT THAT THE TESTS WERE CARRIED OUT IN. THEY MAY HAVE TESTED IN LARGE, COLD, DEEP SEA ENVIRONMENTS, NOT IN SLOW MOVING, WARM SHALLOW LAGOONS, WHERE CONCENTRATION EFFECTS ARE OF A DIFFERENT ORDER. THERE ARE NO SUBTROPICAL AREAS IN RUSSIA, AND THEREFORE THESE TESTS MAY HAVE NO VALIDITY IN OUR WATERS. ALSO, THE RUSSIANS MAINTAIN AND TOLERATE THE MOST TOXIC CHEMICAL AND NUCLEAR DUMPS IN THE WORLD, AND THEIR LOW STANDARDS FOR SAFETY CAUSE LIFE EXPECTANCIES, IN THESE AREAS, TO BE 30% LESS THAN IN OTHER PARTS OF RUSSIA. I DON'T THINK, THEREFORE, THAT WE CAN TRUST THE CRITERIA BY WHICH THEY SET THEIR STANDARDS OF SAFETY.

2. THE AIR FORCE ONLY CONSIDERED THE MECHANICAL ENERGY OF IMPACT OF FRAGMENTS AND ACCOMPANYING SHOCK WAVES OF A DESTROYED ROCKET ON THE FISH OR MAMMALS IN THE VICINITY, AND NOT THE TOXIC IMPACT OF THE CHEMICALS. FURTHERMORE, GATHERING THESE CHUNKS OF MISSILE FRAGMENTS CAN BE DIFFICULT, AS THE CHAMBERS WHICH CONTAIN THE PROPELLANT ARE OFTEN MADE OF FIBERGLASS OR OTHER NON METALLICS, WHICH ARE NOT EASILY FOUND BY METAL DETECTORS.

OTHER ISSUES:

1. HCl ACID, AS A PARTICULATE?

HCl IS A GAS IN EQUILIBRIUM WITH WATER, NOT A PARTICLE.

2. DIFFERENT GEOGRAPHY IN THE KEYS, VERSUS THE PANHANDLE.

BOTH OUR CLIMATE AND WATERS ARE DIFFERENT, AS THE PANHANDLE OFFSHORE WATERS GENERALLY ARE DEEPER AND FASTER, AND THEY HAVE SOIL AND NO CORAL HEADS.

3. THE AIR FORCE DE-EMPHASIZES THE CORROSIVE EFFECT OF HYDROCHLORIC ACID, BY INDICATING THAT IT IS PRESENT IN ALL OUR

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STOMACHS. THE STOMACH HAS EVOLVED, OVER THE MILLENNIUMS, TO BE RESISTANT TO ACID HYDROLYSIS, OR SELF DIGESTION, MOST OF THE TIME. NATURE HAS CAREFULLY CHOSEN HCl TO BE A COMPONENT OF THE DIGESTIVE PROCESS, BECAUSE AT A PH OF 2, IT IS ALMOST A UNIVERSAL AND POWERFUL SOLVENT, AS IT CAN HELP IN BREAKING DOWN VIRTUALLY EVERYTHING WE EAT. TO GIVE YOU A PERSPECTIVE, A PH OF 2, CORRESPONDING TO THE ACIDITY OF OUR STOMACHS, IS PRODUCED WHEN 19 DROPS OF 37% HYDROCHLORIC ACID IS ADDED TO 1 QUART OF WATER.

HOWEVER, OUR FRAGILE ENVIRONMENT HAS GONE TOTALLY IN THE OPPOSITE DIRECTION, E.G. ESTABLISHED FOR ITSELF A BASIC OR ALKALINE ENVIRONMENT OF ABOUT PH 8, GOVERNED BY OUR CORAL BEDS, WHICH ARE COMPOSED PRINCIPALLY OF BASIC CALCIUM CARBONATE. ALL THE SURROUNDING WILDLIFE HAS FLOURISHED IN THIS ALKALINE ENVIRONMENT, AND DEPENDS ON IT. LOWER THE PH, AND EVERYTHING CAN CHANGE.

4. HAS THE AIR FORCE EVER MEASURED THE FLOW IN OUR BACKWATER LAGOONS, CUL DE SACS, AND SHALLOW SEA GRASS BANKS. TO DETERMINE THE TRUE CONCENTRATION EFFECTS OF A DROP IN PH IN THESE AREAS? THE AIR FORCE DATA DEPENDS ON TYPICAL GULF WATER FLUSHING, SEA WATER BUFFERING, AND LARGER MIXING VOLUMES, TO NEUTRALIZE THE HYDROCHLORIC ACID. THESE LARGE WATER MIXING VOLUMES AND CURRENT EFFECTS DO NOT EXIST IN OUR BACKWATERS.

ANY HCl ACID FORMATION CONCLUSIONS, BASED ON NEW MEXICO DATA (5% HUMIDITY), IS MEANINGLESS IN THE KEYS.

THERE ARE UNCONTROLLABLE FACTORS, WHICH ARE AFFECTING OUR SURROUNDING WATERS, SUCH AS PESTICIDES, WHICH OUR GOVERNMENT OUTLAWED YEARS AGO, AND WHICH ARE STILL CARRIED BY THE CURRENTS UP FROM SOUTH AMERICA, AND KILLING OUR FISH. CORAL DAMAGING HURRICANES AND WARMING OF OUR WATERS ARE A CONSTANT THREAT. WHERE WE CAN PRESERVE, WE MUST DO ALL WE CAN TO SAVE OUR ENVIRONMENT, AND NOT CONTRIBUTE TO ITS DEMISE.

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Thank You. I am Wayne Hoffman, Research Scientist with the National Audubon Society, based in Tavernier.

I have been a resident of the Florida keys for over 11 years, and have undertaken a variety of studies of Keys animals and plants.

I understand that launches from the Keys are not currently the preferred alternative. I am happy about this, but still, I find the documentation of the risk of this alternative to our environment to be woefully inadequate. I believe it is important that the final EIS either rule out this alternative completely, or else provide accurate and comprehensive information on its effects on our environment.

I will confine my remarks today to the potential effects of proposed missile launches on the natural biota of the Keys. My general message is "The Draft EIS consistently underestimates the damage to the wildlife and plants of the Keys likely to result from this proposed project."

Some specifics:

1. Tables 3.2.3-1 and 3.2.3-2, on Page 3-260, are so inadequate their inclusion is puzzling. In the text they are referred to, and I quote "Other fish present in the Gulf of Mexico are listed in tables 3.2.3-1 and 3.2.3-2." These tables list 10 and 9 fish species, respectively. In fact, the northern Gulf of Mexico has over 400 resident fish species, and we have numerous additional ones here in the Keys.

2. On Page 3-372-373: The description of the vegetation of the Cudjoe ROI is inadequate. In particular the statements about the pinelands fail to recognize that these tropical pinelands are significant threatened habitats, very different from the pinelands that dominate much of the temperate southeast. About the only thing these pinelands have in common with the pinelands on Eglin Air Force Base is the presence of a pine-dominated canopy. I find it puzzling that palms are not mentioned as understory components, and the nature of the herbaceous understory is not even hinted at.

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3. Several of the sites proposed for facilities are described as "already disturbed" with no further description of their vegetation. This dismissal ignores the fact that several of the endangered plants of the Keys are inhabitants of open sites, including fire-maintained habitats, salt-barren habitats, and disturbed sites.

4. Over the last 2 years the state of Florida has added numerous Keys species to its endangered and threatened plant species lists. It appears that these new listings were not considered in developing Table 3.3.3-1, p. 3-375.

5. The bird list in the text on pp 3-373 and 3-375 is grossly inadequate in describing the importance of the ROI to migratory birds and other wildlife. Numerous additional species use the area. In fact the small keys just north of the Aerostat base, within about 1 km of ground zero, host an important nesting concentration of Reddish Egrets, as well as Great White Herons and several other waterbird species. The White-crowned Pigeon also nests commonly in the ROI including areas quite close to the proposed launch sites.

6. Table 3.3.3-2, (p. 3-376) purporting to list "Wildlife with Federal or State Status That Occur or Potentially Occur Near Florida Keys Sites" is very incomplete. It appears that the writers may not be aware of the revised editions of the series Rare and Endangered Biota of Florida that have appeared over the last several years. In addition to the species in this table, Magnificent Frigatebird, Great White Heron, Great Egret, Yellow-crowned Night-Heron, Wilson's Plover, Royal Tern, Sandwich Tern, and Black Skimmer are potentially at enough risk to be included. In addition, at least 20 species of terrestrial invertebrates listed as Threatened or as Species of Special Concern appear to live in the ROI. These include 3 species of tree snails, a crab, a spider, a whip scorpion, 2 crickets, a beetle, and 11 species of butterflies. In addition, numerous coral species are listed. I do not know which ones occur in the ROI, but their status needs to be addressed.

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7. On P. 3-386 is stated: If the activities take place during the months of February through October..." In fact disturbance can occur in any month of the year in our tropical climate. Similarly, p. 3-390 Our Bald Eagles nest in winter, into early spring, not spring-summer.

8. P. 3-389 It is stated that construction activities are "unlikely to affect" (sea turtles). Lighting after dark can disorient hatching sea turtles, and some nesting does occur within range of these sites. Any new lighting of all the sites needs to be described, and potential effects on turtles assessed.

9. P. 3-390 Nearest rookeries 5.5 - 7 km away: This is not correct - some wading bird nesting has been documented at about 1 km from the aerostat facility.

10. The Draft EIS completely ignores potential direct effects of HCL deposition on wildlife. I do not think we should assume that a mist of highly acidic HCL rain would be harmless to the eyes of a Bald Eagle or Reddish Egret, for example.

Final comment: EIS needs to address biotic impacts of accident scenarios: explosion on the pad, or at base of tower; termination by safety officer of the course observation etc.

You know the accidents that can happen. Spell them out and assess their effects.

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The Draft of the Secondary Environmental Impact Statement is a misleading study of a unique environment. It is not applicable to the Florida Keys.

Monroe County is a chain of nearly nine hundred islands below the Florida mainland. South of the Overseas Highway chain is the only easily accessible, shallow water, living Coral Reef in the United States.

Wrapped around these islands lie 250 square miles of low water and wild mangrove islands providing a life-sustaining nursery for marine and bird life.

North is Florida Bay, already under intense scrubby by state and federal pollution control experts for over a decade.

The ecological environment here is so fragile, that the state of Florida has declared Monroe County an Area of Critical State Concern. Our water quality, population density, traffic density, land use, marine resources, and EVEN our rate of growth is severely regulated.

This is the only county in America primarily made up of islands, strung together by 41 bridges, for 120 miles, with ONE road. Imagine where you live with all of the vehicular traffic necessary for your daily existence confined to ONE road. Now add all your water supply and electrical power to that same, mostly two lane road and you have the reality of our daily lives.

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Recognizing this unique environment, the federal government, as far back as 1908, began designating refuges in Monroe County. Today, the Great White Heron National Wildlife Refuge, the Key West National Wildlife Refuge, the Crocodile Lake National Wildlife Refuge, and the National Key Deer Refuge exist here. The Key Deer and the American crocodile exist only in the keys.

Superimposed over all of this is the federally mandated Florida Keys National Marine Sanctuary. Established in 1990, it covers two thousand eight hundred square miles from Biscayne National Park to the Dry Tortugas and expressively forbids the type of activity contemplated in this draft.

This is the only county in the continental United States in a subtropical zone with consistent high humidity. The keys lie in the northern trades and enjoy the highest, daily averaged, sustained winds in the continental United States.

Hosts of endangered marine life, attempting to make a comeback, exist in our near shore waters and around the coral reef. On land surrounding the proposed site, the endangered Silver Rice Rats habitat extends from Cudjoe to the Saddle bunch keys and no where else. The endangered Florida Marsh Bunnies habitat extends from Big Torch to the Saddlebunch and is the rarest mammal in the keys.

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The last remaining stands of tropical hardwood hammocks are on Cudjoe Key and Sugarloaf Key. Pine rockland is unique in the world, a globally endangered ecosystem lying alongside the launch hazard area boundary on Sugarloaf Key.

Wetlands surround both proposed sites so that any mishap will spill directly into the marine environment affecting fish, invertebrates, and defoliating the native flora.

In recent letters to Congressman Deutsch, General Lyles, director of BMDO, stated that the land launch alternative, from the Florida Keys, is "unlikely to be approved" in his final decision. Admiral West, deputy director of BMDO, listed launches from this area as "other alternatives being analyzed."

We believe that the launching of missiles from the Florida Keys should not be an alternative and suggest you amend the draft to state exactly that.

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Good Evening Ladies and Gentlemen,

Thank you for taking the time to listen to our input on this important issue. I have come here tonight wearing a variety of hats, and I would like to begin by reading into the record, a resolution passed by the Florida Keys National Marine Sanctuary Advisory Council on which I sit as the Florida Keys dive industry representative. (read resolution)

The second item I would like to read for the record is a letter from the Professional Association of Dive Instructors, the largest certifying agency in the world. (read letter)

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Finally, I would like to speak as a resident of the Florida Keys and a citizen of this great country. In a letter to Rep. Peter Deutsch, dated November 24, 1992, Lieutenant General Lester Lyles wrote "The Keys target launch sites are a technically viable alternative and will still be under consideration in the Supplemental EIS. However, Keys target launch sites are no longer part of the Proposed Action. The Keys (and the sea launch) target launch alternatives are unlikely to be approved in my final decision, unless operational and testing requirements change. He also wrote "only in an emergency threatening our national security, would I consider changing the Proposed Action", referencing his decision to establish a new Proposed Action stating that launching targets from the southern Gulf would be from aircraft.

It is not that I doubt Lieut. Gen. Lyles sincerely, but it is precisely this type of statement, which I have heard expressed in a number of forums, from a number of personnel involved in this process, that I find unsettling. Perhaps we can call it the Watergate syndrome, or maybe the Ollie North - Iran/Contra syndrome, or maybe just a healthy scepticism that has derived from any one of a number of other government actions that occurred under the aegis of national security concerns.

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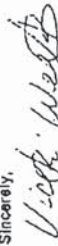
As we evolve away from a cold war mentality and economy, perhaps it is time we began working on a definition of national security that lends more weight to the stability and economic impact generated by long term sustainable resource utilization than to the theatrics of the latest, formerly in favor, currently out of favor, arms industry customer.

According to data compiled by the Natural Heritage Data Base for the Nature Conservancy, there are 43 animals listed as of state special concern, 11 animals and one plant on the state threatened species list, 7 animals and 27 plants on the state endangered species list, as well as 11 animals and one plant on the federal threatened or endangered lists, all within a five mile radius of the proposed missile site. In an area whose economy is directly based on natural resource based tourism, the loss of even one of these species would be unfortunate indeed.

Even if there is never an accident or mistaking, the toxic by-products released into the air and waters surrounding the proposed sites, have absolutely no potential upside with regard to the health of our fragile environment. They may cumulatively act to push one or more species over the brink of extinction. Neither our environment nor our economy can afford a further loss of diversity and the resulting ecological imbalance.

I would ask that you move to permanently remove the Florida Keys from any future Proposed Action regarding the establishment of missile test sites. Thank you for your time.

Sincerely,



Vicki Weeks

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RESOLUTION
by the

Florida Keys National Marine Sanctuary Advisory Council

Now be it resolved on this twelfth day of March, 1998, by the Sanctuary Advisory Council to the Florida Keys National Marine Sanctuary, that...

Whereas the proposed or contemplated launching of target missiles from land sites in the Florida Keys or waters within the boundaries of the Florida Keys National Marine Sanctuary is incompatible with Public Law 101-605 (H.R. 5909), SEC. 3.(a) which states it is the policy of the United States to protect and preserve living and other resources of the Florida Keys marine environment, and

Whereas the United States Department of Defense has issued a draft supplemental impact statement contemplating the Florida Keys as a site for launching target missiles, and

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Therefore, the members of the Sanctuary Advisory Council oppose said missile launching, and


Further, the members of the Sanctuary Advisory Council do hereby make the following recommendation to Sanctuary Managers:

Send a formal request to the United States Department of Defense to abandon all proposed or contemplated plans for future launching of target missiles from land sites in the Florida Keys or waters within the boundaries of the Florida Keys National Marine Sanctuary. This action must take place prior to April 3, 1998, when the comment period for the impact statement closes.

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Drew Richardson
Senior Vice President,
Training, Education and Memberships


11 March 1998

Ms. Vickie Weeks
Ms. Sheri Appelis
Mr. Howard Singer, President
Key West Association of Dive Operators
Environmental Committee
c/o Captain's Corner Dive Center
511 Greene St.
Key West, FL 33040

FAX: 305-292-5019

Dear Vickie:

Enclosed please find a copy of a letter sent by PADI expressing official opposition to the missile launch test site plan. We are in close communication with our lobbyist Bob Harris, who is responding on behalf of PADI and our members at the Congressional and gubernatorial level.

Sincerely,

Drew Richardson
Sr. Vice President
PADI Worldwide Corporation


DR:pt
cc: Mike Kurczewski

PADI WORLDWIDE CORP. 1251 East Dyer Road #100 • Santa Ana, CA 92705-5603 U.S.A. • 100.729.7234 • 714.540.7234 • Fax 714.540.2609
Members: Austria, Canada, Europe, Japan, New Zealand, Norway, Singapore, Sweden, United Kingdom, United States

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02



Drew Richardson
Senior Vice President,
Training, Education and Memberships


11 March 1998

Thomas J. Kennedy, Major
USAF
Director of Test, Theater Missile Defense
48 OG/OGM
205 West Avenue, Suite 241
Eglin, AFB FL 32542-6888

Dear Major Kennedy:

On behalf of the Florida based recreational diving community of dive centers and instructor members of the Professional Association of Diving Instructors, I wish to express our official opposition to the proposed Hera Class ballistic missile launch site on Saddlebunch and Cudjoe Keys, which are on the edge of the Great White Heron National Wildlife Refuge and pose a negative environmental impact to the area.

We request that the project be re-examined in this context for an alternate solution.

Sincerely,

Drew Richardson
Sr. Vice President
PADI Worldwide Corporation

DR:pt
cc: The Honorable Lawton Chiles, Governor, State of Florida
Representative Peter Deutsch
Representative Debbie Horan
Senator Deryl Jones
Senator Connie Mack
Senator Bob Graham
Lt. General Lester Lyles
Ms. Janet Tucker, Eglin Air Force Base, Office of Public Affairs
Bob Harris, Esq.
Vickie Weeks

PADI WORLDWIDE CORP. 1251 East Dyer Road #100 • Santa Ana, CA 92705-5603 U.S.A. • 100.729.7234 • 714.540.7234 • Fax 714.540.2609
Members: Austria, Canada, Europe, Japan, New Zealand, Norway, Singapore, Sweden, United Kingdom, United States

P-W-0014
COMMENT
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March 12, 1998
Comments on the Draft TMD Extended Test Range SEIS-Eglin Gulf Test Range
from Robin Orland, member Board of Directors of Reef Relief
(Comments to be put into the public record)

The SEIS is entirely inadequate to address the specialized environmental concerns of the Florida Keys. It fails to establish background ecological parameters based on local studies or to realistically represent the overall impacts of TMD testing in the Keys. For example:

- The SEIS concludes that missile launches will be isolated events with temporary impacts, at the same time stating that each launch requires a thirty day preparation period followed by a two to five day cleanup. With as many as 24 annual launches proposed, it doesn't take a rocket scientist to figure out that this amounts to a continuous occupation and disturbance of launch support sites. These are not temporary impacts.

-The majority of the SEIS's conclusions are based on data from previous studies done far outside of the Florida Keys. Air Quality findings derive from Open Burn Open Detonation Modeling conducted in the Utah desert. This methodology has no EPA approval in the first place and it is difficult to think of an environment more unlike the Keys in terms of moisture, which is the determining factor in calculating how much hydrochloric acid will "rain out" from launch exhaust emissions. (To quote, "because missile systems associated with the proposed action do not use excess water, it is assumed that no more than 20% of the total hydrogen chloride would be converted into acid".) How accurately this scenario models launches that will be 100% surrounded by seawater and conducted in a humid environment isn't examined.

-The SEIS describes the launches as "discrete air emissions events" yet each launch generates 13,800 lbs of total exhaust, including 221 lbs of hydrochloric acid. Multiplied by 12 monthly launches, at least 2,650 lbs of corrosive acid would be entering our fragile environment each year. The SEIS characterizes this as "temporary short term increases in water acidity." It also notes that "acidification of water generally results...in lower oxygen levels." Yet no data is provided to evaluate the oxygen requirements of seagrass beds, mangrove nurseries or other potential aquatic receptors or how they will be affected. This is a glaring oversight in light of the ongoing eutrophication problems that have been experienced in Florida Bay and nearshore waters and the tremendous efforts and expenditures that are being made to understand and correct these problems.

-Furthermore, the SEIS states that because the Key's major coral reef tracts are located on the Atlantic side, they fall outside of the "Region of Influence" affected by launches. This does not take the well documented tidal flushing of Bay waters out across the reef tract into account. Any degradation of Bay water quality has the potential to impact sensitive reef ecosystems.

-The general conclusion of the SEIS regarding acidification and other environmental impacts resulting from launches can be summed up "dilution is the solution to pollution." In a fragile ecosystem such as the Keys that is already coping with the impacts of coastal development and agricultural pollution, the dilution potential has been exhausted. Impacts from missile testing such as the reduction in dissolved oxygen will only serve to accelerate the cascade of coastal eutrophication and other risks to this ecosystem. This is not an acceptable alternative.

Speaking on behalf of the Board of Directors of Reef Relief and thousands of our local and national members who deeply value the unique and irreplaceable natural resources of the Florida

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Keys and who believe that this ecosystem deserves the highest level of protection, we ask that you once and for all remove the Keys from any potential or alternative missile launch site lists. The SEIS doesn't begin to adequately research or address the complex needs of our diverse ecosystem and the costs of conducting adequate, accurate research would be prohibitive. Missile testing produces no benefits and many deficits for the ecological, economical and cultural resources of the Florida Keys; this is a Sanctuary, not a test range and we ask that you respect that reality and the fact that many people have worked for years to preserve and protect these islands and their surrounding waters. Those people will never give up the fight against missile testing in the Keys.

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Comments by Dennis Henize, on SAFETY - LAUNCH HAZARD AREA, NOISE IMPACTS, AIR QUALITY, VISUAL IMPACT (TMD EIS Public Hearing, Marathon, Florida, March 13, 1998)

At last night's hearing in Key West, I said that the 6,500 foot Launch Hazard Area for Hera launches in the Keys is not large enough. I cited a recent study prepared by a senior staff scientist at the Union of Concerned Scientists and MIT, which concluded that in some plausible mishaps, debris could travel 2 or miles from the launch site, well outside the LHA.

The red shaded area at the bottom of the LHA is the area carved out of the LHA because my wife and I and 22 other families live there.

And I stated that the LHA should take into account, but does not, at least two other launch hazards that are identified in the EIS: compression waves from potential explosions, and chemical clouds from potential combustion accidents. The Draft SEIS acknowledges that launch pad explosions could cause overpressures of 2 pounds per square foot at a distance of 1.9 mile, enough to cause minor structural damage. At least 23 homes are closer than that.

With respect to chemical clouds resulting from potential combustion accidents, the Draft SEIS acknowledges that the highest concentrations of hydrogen chloride would fall outside the Launch Hazard Area. In fact, results of the EPA-approved model used to estimate HCl concentrations showed levels in excess of the Short-term Public Emergency Guidance Level, at distances of 2 and 3 miles from the launch site. Then a "more refined" model was used, one not yet approved by EPA or the state of Florida, and wouldn't you know it, it shows the HCl levels below the guidance level. But very significantly, even the more refined model still shows that the highest concentrations fall outside the LHA. Given that fact, and that there is not agreement on the exact amounts, it is obvious that the LHA is insufficient to encompass this hazard.

The LHA should be sufficiently large to encompass the full extent of ALL the launch hazards identified in the SEIS, which it definitely does NOT. Sixty-five hundred feet is not sufficient, much less conservative.

NOISE-

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The Draft LHA cites plenty of technical information about noise, but obscures the issue by using methodology that looks at the impact of missile launch noise averaged over long periods. The Draft SEIS also considers "sensitive noise receptors", the Sugarloaf School and a day-care on Cudjoe, 3 or more miles away, and ignores that hundreds of homes are closer than that, some as near as 1.5 mile. And using very bizarre methods, it concludes that the percentage of Cudjoe residents who would be "highly annoyed" by noise from missile launches are already "highly annoyed" by everyday sounds. That's nonsense. The SEIS also says that ambient noise on Cudjoe is from aircraft, while, in fact, very few aircraft fly over Cudjoe, especially northern Cudjoe, because of restricted airspace surrounding the aerostat.

VISUAL AESTHETICS-

What can be said about something so subjective, except that the SEIS rates the view of the backcountry from the Blimp Road boat ramp as "minimal" as it is now. This artist's rendition doesn't show the aerostat because it's usually flying. Rating this view as "minimal" underscores just how little appreciation for the Keys the preparers of this document have. The Draft SEIS then concludes that this view, having sprouted a missile facility, will retain "moderate" visual integrity. I don't think so.

This is not an impact statement at all. It underestimates impacts on human safety, and it does not even attempt to seriously examine long-term effects on ecosystems peculiar to the Keys. With respect to several critical issues, it is merely a statement of wishful thinking.

The Final EIS should eliminate the Keys as even an alternative, as the Draft SEIS does NOT support its findings of negligible impacts.

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limited to nonexistent, however what is there, is crucial to the existing wildlife.

Sea-water:

Although no environmental studies have been identified which specifically evaluate the fate of ammonium perchlorate, in the marine environment, in one study, involving propellant submerged in seawater, the penetration was about one-half inch per month. What about after ten years?

The seagrass beds and scattered coral heads are extremely sensitive habitats for a wide variety of aquatic organisms, including several Federal and state listed species of mammals, turtles, and fish.

Launch Mishap:

An early flight termination of a Hera target missile could result in the second stage booster impacting within the LHA, or elsewhere. This second stage booster... could explode on impact. The amount of energy from the explosion that is propagated underwater could injure marine mammals in the vicinity. The threshold of effect on marine mammals is still under analysis.

Noise:

Birds: (Remember these launches are to be at night)

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Short duration high intensity noise levels could cause roosting birds in the area to flush off their nests.

The nearest eagle nest is approximately 4 Km away - 103dB.

The increased activity at the site may result in a temporary disturbance to wildlife in the area, particularly those species that use the mangroves, tidal marsh, and shallow nearshore waters in the immediate vicinity of the launch site, such as turtles, various protected wading and shore birds, and the white-crowned pigeon.

The launch noise would generally extend over a 5.6-mile radius and may cause nesting and foraging birds to react by either becoming alert or temporarily leaving nests.

The nearest rookeries for colonial nesting birds on Little Crane, Sawyer, and Johnston keys are located 3.4 to 4.3 miles from the site and would experience peak noise levels of 93 dB. Riding Key (northwest of Cudjoe Key) is the fifth most important nesting site for great white herons. Missiles will be at least 6,562 feet above any rookeries. (115 dB)

Due to the approximately 60 second duration of the target launch noise, the only animals that would likely be

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affected are those within the 90 dB and greater contours.
(Not shown) on their chart

Sources of ambient noise at the proposed Cudjoe Key launch site include aircraft traffic from the NASKW airfield and the Key West International Airport.

Noise contours from the 1989 NASKW study show that the smallest contour in the study does not overlay the Cudjoe Key noise ROI.

You can't have it both ways! The study stopped 9 miles short of Cudjoe Key. Air traffic is further limited over the Cudjoe launch site by Restricted Area 2916, which keeps aircraft away from the blimps.

Turtles:

As launch preparation activities would be done primarily during night time hours, sea turtles coming on shore at night to nest at Sawyer Key, 4.3 miles from the site, could be minimally affected - 95 dB.

There is some chance of some debris washing onshore after launches. Such debris could entangle or harm wildlife.

Port-a-potties:

For 30 days before a launch, rest personnel would be present at the site. The total number of launches at

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Cudjoe Key would not exceed 12 per year. This basically assures permanent duty for ten years.

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Potable water for Cudjoe Key shows a 395% increase. Wastewater is assumed to be the same quantity as potable water.

Other Errors and Inconsistencies:

The mainland portion of Monroe County includes Everglades National Park, the Big Cypress National Preserve, and the City of Miami. Wrong!

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The Cudjoe Gardens Marina is located 1.9 kilometers southwest of the Cudjoe Key site and includes six boat ramps and a marina. Wrong twice!

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The conversion of Kg to pounds for aluminum oxide in the table on 3-14 is incorrect. This error is carried forward.

13

Missiles would not be shipped with initiators or other explosive devices.

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The Hera missile is considered a D.O.D. Class 1,1 Explosive -- these represent an explosion hazard that affects almost the entire load instantaneously. Proposed TMD target vehicles include various components and rocket motors that are considered explosive materials.

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The worst case scenario would involve a booster with DOD class 1.1 explosives, such as the second stage of the Hera missile, which is shipped with the destruct assembly attached. In the remote event of a severe accident, there is potential that a DOD class 1.1 missile component could detonate, initiating the destruct system and burning the propellant and releasing hydrogen chloride.

Safety:

Monroe County Emergency Planning will respond to any significant event, which would include all locations within approximately 1,000 feet of U.S., 1, and any secondary connecting roads, bridges, and adjacent locations along selected shipping routes.

A transportation mishap could knock out our telephone, cable TV, electrical power, water, food supply and means to evacuate, since all of these are within 1,000 feet of U.S., 1, and along the entire transportation route.

Emergency Response Plan: Appendix J does not cover Cudjoe or Saddlebunch, only Eglin AFB. Eglin AFB has the following resources available:

1. An on scene commander,
2. Crisis action team,
3. Initial response element,

Comment Sheet

for the
Theater Missile Defense (TMD)
Extended Test Range (ETR)
Supplemental Environmental Impact Statement (SEIS) —
Eglin Gulf Test Range (EGTR)

Thank you for attending this meeting. Please use this sheet to write down comments that you have regarding the SEIS. Your comments must be received by Ms. Nish by April 3, 1998 to ensure they are considered in the Final SEIS.

1) It's not true that the Florida Keys is an area with low density of population because millions of tourists come to visit the Florida Keys and the cities that are on the Gulf side. Please see the statistics about.

2) It's not true that the disturbance to wildlife is temporary because it will start from the time that started the site preparation and will last for years after the last launch. Animals are not like robots, you cannot push a button to ask them to leave and to come back. Everyday we can see dolphins and whales that lose their hearings apparently, and so on the hearken. We saved dolphins.

Please place form in the comment box or mail to:

Ms. Linda Nish
46 OG/OGM-TMD
205 West D. Ave., Suite 241
Eglin AFB, FL 32542-6866

Prudence Rebecca
ph. 305.745-1412
781 Superloop Blvd
33042 Gulf Bldg, FL



March 1998

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Comment Sheet

for the
Theater Missile Defense (TMD)
Extended Test Range (ETR)
Supplemental Environmental Impact Statement (SEIS) —
Eglin Gulf Test Range (EGTR)

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of dolphins between Key West and Supercol. The noise and the pollution of the water are their problems. 3) It's not true that the deposition of aluminum oxide and hydrogen chloride on soil will be small because the rain can bring the depositing materials into the shallow water of the Gulf and will last there forever and will grow in quantity from the first launch to the last. Fishes will be contaminated and all the food chain will be affected. Don't we have enough cancers and leukemia nowdays? People come here to recover their body from the polluted areas where they

Please place form in the comment box or mail to:

Ms. Linda Ninh
46 OGGM-TMD
205 West D. Ave, Suite 241
Eglin AFB, FL 32542-6866

francetech@rehois



March 1998

Comment Sheet

for the
Theater Missile Defense (TMD)
Extended Test Range (ETR)
Supplemental Environmental Impact Statement (SEIS) —
Eglin Gulf Test Range (EGTR)

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like; everybody knows how hard is the life in the big cities everywhere in the world. It's important the quality of the life and if we lose our clean air water wildlife, food, we loose our life and the missiles will not have the power to give back what we are going to destroy now.

4) The Gulf of Mexico is the only sea that America has. It looks like the Mediterranean sea because it is a small area and anything happens in the air, in the water or the crops stays there forever. The crops and all the ecosystem will not be the same.

Please place form in the comment box or mail to:

Ms. Linda Ninh
46 OGGM-TMD
205 West D. Ave, Suite 241
Eglin AFB, FL 32542-6866

francetech



March 1998

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Comment Sheet

for the
Theater Missile Defense (TMD)
Extended Test Range (ETR)
Supplemental Environmental Impact Statement (SEIS) —
Eglin Gulf Test Range (EGTR)

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5) It's not true that the water acidity will increase for short time because the air will be polluted and the rain will be acid too. I can see in Italy and in other European countries hundreds of chestnuts distinguished by the acidity of the rain. It took centuries to raise the heavy-hill forests of these wonderful chestnuts and in few years big areas show just dead trees. The soil and the rain are so acid that it's impossible to grow the chestnuts again. What about our mangroves here? In the world there are no mangroves you can see mangroves like in

Please place form in the comment box or mail to:

Ms. Linda Ninh
46 OG/OGM-TMD
205 West D. Ave, Suite 241
Eglin AFB, FL 32542-6866



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Comment Sheet

for the
Theater Missile Defense (TMD)
Extended Test Range (ETR)
Supplemental Environmental Impact Statement (SEIS) —
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Florida are very like. Just few areas in Guatemala and in Bolivia. It's enough to see the Hong Kong area it talks by itself. The air is important because when it is polluted the rain is polluted too. The clouds are polluted and the wind brings the clouds everywhere (in the everglades also). So I say that this action is wrong in the Gulf of Mexico and not only in the Florida Keys.

6) It's not true that it will be just a temporary impacts on commercial fishing, shipping and recreation in LTA because in few months we can lose the quite atmosphere

Please place form in the comment box or mail to:

Ms. Linda Ninh
46 OG/OGM-TMD
205 West D. Ave, Suite 241
Eglin AFB, FL 32542-6866



March 1998

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Comment Sheet

for the
Theater Missile Defense (TMD)
Extended Test Range (ETR)
Supplemental Environmental Impact Statement (SEIS) —
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of the Golf of Mexico. People come from north America from Europe
to snorkel, swim, dive, watch the wild life, relax and
see just the noise of the nature, wind, birds. Try to think
about somebody that is planning his vacation and
knows that the Golf of Mexico is the place where the
missiles fly in the sky. I'm quite sure that it will
be the ruin of all the commercial activities of the
area.

And now just few words about myself:
I live in Suwannee since 5 years ago but just for
6/7 months a year. My husband and I come

Please place form in the comment box or mail to:
Ms. Linda Ninh
46 OG/OGM-TMD
205 West D. Ave, Suite 241
Eglin AFB, FL 32542-6866

Linda Ninh



March 1998

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here after that my husband had his hem moroid
transplant in Seattle, WA. His doctor told him that
to completely recover a warm winter and no
pollution should be the best. So we came and
bought a lot and met our first house, in order to
obtain from US government, a visa that allows to
spend more months in the states, we bought another
house and we're holding the kind one so we could have
a EG VISA as inventors. That visa counts us 30 years
all year in Florida and live once a year. We invested
all our money in this country for two good reasons;
1) Very important for the new life that Alberto had.
After his transplant, from doctor Paul Weiden
of Virginia Mason in Seattle.

2) The Florida Keys are the last Paradise under
the American flag. We do love this country, Alberto
says that his kid, American and half Mexican but,
if the Golf will be polluted we have to see eventually
and to leave because Alberto's immune system
doesn't work right in presence of pollution and
we don't want that he can relapse.

Linda Ninh

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And what about the little children. Their immune
 system is very fragile too, not everybody can have
 the same effects in polluted areas. The ecosystem
 is innocent and fragile like a newborn baby
 and cannot defend itself. Everything on
 our planet is in danger if we don't take good
 care.
 I do apologise for my English and I hope it's
 enough understandable.
 God bless you and help you to take the
 right decision about (the way for that)
 God bless UNITED STATES OF AMERICA.
 Thank you very much
 for your kind attention
 Sincerely
 Fulvia Lodise Polino

01

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04

8 March 1998

Comments on the Theater Missile Defense Extended Test Range
Draft Supplemental Environmental Impact Statement (DSEIS)

1) Egin Gulf Test Range (EGTR) capabilities
 Section 1.3 asserts that EGTR has the capability to fill a gap in testing against mid-range targets and offers "a unique capability" for testing new TMD systems. However, tests against mid-range targets with interceptors over water were already envisioned for the Kwajalein Missile Range in the 1994 TMD Extended Test Range EIS. (See Fig. 2-2.30). These tests would have involved sea-launched targets, which is one of the alternatives considered in the DSEIS. Presumably air-drop or air-launch targets could also be used at the Kwajalein Missile Range (KMR) and at the Pacific Missile Range Facility (PMRF). The final SEIS should discuss these other options and compare their impacts with those at EGTR.
 The only capability at EGTR that does not exist at KMR appears to be for land launches of both targets and interceptors for targets with ranges about 800 kilometers. This would require launches of targets from the Florida Keys, which is not part of the preferred alternative of the Proposed Action. In fact, the 24 Nov. 1997 letter to Florida Rep. Deutsch from the Ballistic Missile Defense Organization (BMDO) Director Gen. Lester Lyles stated that launches from the Keys "are unlikely to be approved in my final decision." The final SEIS should include a copy of Gen. Lyles' letter along with a detailed justification for not selecting the Keys as launch sites.

2) Treaty restrictions on targets launched at sea
 The DSEIS mentions test restrictions from the START Treaty. On page 2-10 it is asserted that the START bans target launches from sea-based platforms. On page 2-17, it is stated that targets launched from ships would have to have ranges less than 600 kilometers to comply with START. This apparently refers to START Article V, paragraph 18a, which prohibits tests and deployment of "ballistic missiles with a range in excess of 600 kilometers, or launchers of such missiles, for installation on waterborne vehicles, including free-floating launchers, other than submarines." However, the DSEIS does not mention restrictions from the Intermediate-Range Nuclear Forces (INF) Treaty, which appear to impose even tighter constraints. In particular, INF Article VII, paragraph 12d restricts launches of intermediate-range missiles used for research and development so that "the launchers for such booster systems are fixed, emplaced above ground and located only at research and development launch sites which are specified in the Memorandum of Understanding." The Jan. 1994 TMD Extended Test Range EIS does explicitly refer to the INF restrictions in the following statement on page 2-10:
 "In order to comply with the Intermediate-Range Nuclear Force (INF) Treaty, mobile and fixed sea launch platforms for targets would be located no more than 500 km (311 mi) from the planned target impact point."
 The final SEIS needs to address these INF restrictions.

3) Treaty restrictions on air-drop targets
 On page 2-15, the DSEIS states, "Current treaty interpretations allow air delivery of targets from less than 600 kilometers (372.8 miles) from the predicted impact point if no intercept occurred." The final SEIS should explicitly indicate what treaty is being

interpreted and explain why the requirement for a fixed launcher in INF Article VII, paragraph 12d does not prohibit air-drop launches with range greater than 300 kilometers.

4) Treaty restrictions on air-launch targets
On page 2-17, the DSEIS discusses use of the Pegasus missile, which is launched from a cargo aircraft and has a wing that provides lift while the first-stage rocket motor provides thrust. It is stated that, "The wing design of the Pegasus allows for lift after the missile is released from the aircraft, which complies with current treaty interpretations." The final SEIS needs to indicate what treaty is being interpreted and discuss the interpretation in more detail. The statement in the DSEIS may refer to the ban on air-to-surface ballistic missiles (ASBMs) in START Article V, paragraph 18d and also to the Fourth Agreed Statement, which indicates that the ASBM definition "is not intended to describe any missile that sustains flight, or any missile the payload of which sustains flight, through the use of aerodynamic lift over any portion of its flight path." However, use of Pegasus to deliver targets with ranges between 500 and 5,500 kilometers appears to violate the INF Treaty requirement that the launcher be fixed. In addition, because Pegasus has the capability to place objects into orbit, it would appear to have the capability to deliver targets with ranges greater than 3,500 kilometers and with re-entry velocities exceeding 5 km/sec. Such targets are not allowed for TMD tests by the ABM-TMD Demarcation Agreements signed on 26 Sept. 1997. The final SEIS needs to discuss INF and ABM-TMD Demarcation restrictions on use of Pegasus for TMD tests.

5) Missile reliabilities
The DSEIS contains no information about the failure rates of the missiles that would be used. The final SEIS should include this information and estimate the probability of a launch failure for the 240 tests over the 10-year period being used to estimate cumulative impacts. Publicly-available information indicates 1 Hera failure (in the 8th test on 17 Nov. 1997) in 8 launches. The Orbital Access web site table "Pegasus Mission History" indicates 2 failures and 1 "Mixed-Result" in 20 launches.

6) Explosive Safety Quantity Distance (ESQD)
Page 2-32 of the DSEIS gives the ESQD as 950 feet and Fig. 2.2-2-3 has an ESQD circle of radius 950 feet around the potential target launch pad on Cudjoe Key. These ESQD's conflict with the value of 1,250 feet for the Hera missile given on page 1-29 of the 1994 TMD Hera Target Systems Environmental Assessment. The final SEIS needs to explain why the ESQD was reduced.

7) Launch Hazard Areas (LHA)
The final SEIS needs more detailed discussion of how the LHA boundaries were determined. This is particularly necessary whenever the distance between the launch pad and the LHA boundary is less than 7.2 km, which is given as the nominal LHA radius for Hera in three previous environmental analyses. (See page 2-16 of the 1994 TMD Extended Test Range EIS, page 1-30 of the 1994 TMD Hera Target Systems Environmental Assessment, and page 1-21 of the 1994 Wake Island Environmental Assessment.) The final SEIS should indicate how quickly the Range Safety Officer needs to send the signal to the flight termination system so that debris from an off-course flight will be contained within the shortest distance from the launch pad to the LHA boundary at the four target launch

sites shown in Figs. 2.1.3-2 through 2.1.3-5.

8) Analysis of previous accidents as possible launch failures
Section 2.1.3.7 of the DSEIS indicates that advance planning for "mishaps" is done and that the Range Safety Officer can terminate the flight of an off-course missile using the Flight Termination System. However, safety systems can malfunction and people can make mistakes so it is useful to examine past launch failures and analyze the impacts of similar failures for target launches at the sites considered in the DSEIS. Two failures which seem relevant are the 20 Aug. 1991 Anes failure at Cape Canaveral and the Minuteman failure at Vandenberg AFB on 15 June 1993. The Anes missile went off course by nearly 90 degrees but the Range Safety Officer did not activate the flight termination system until 23 seconds after liftoff. The report (Red Tigriss Incident Report dated 23 Aug. 1991) on this failure indicated that pieces of debris fell on land as far as 13,500 feet from the launch pad. The Minuteman at Vandenberg AFB did not pitch to the west as planned but instead continued vertically upward after liftoff. The Range Safety Officer terminated the flight at 8 seconds and pieces of burning debris (including the 2nd and 3rd stages) hit the ground about 5600 feet south-east of the launch pad (i.e. in the direction mostly opposite to the intended trajectory). According to newspaper reports, the brush fires started by this debris burned 400 acres on base plus 600 acres off base. A failure like this for a launch from Santa Rosa Island could have devastating consequences for the residential areas on the coast north of the island, which are about 1.5 miles from the launch pad. (See Fig. 3.1.7-2.)

9) Target missile reentry vehicles
On page 2-43, the DSEIS gives a typical target reentry vehicle mass as 2,400 kg. This hardly seems typical for intermediate-range missiles. For example, page 1-5 of the 1994 TMD Hera Target Systems Environmental Assessment gives a mass of 820 kg for the Hera ballistic target vehicle. The final SEIS should give the masses of the reentry vehicles for the various target missiles considered.

Michael Jones
Michael Jones
Dept. of Physics & Astronomy
Univ. of Hawaii
2505 Correa Road
Honolulu, Hawaii 96822

Comment Sheet

for the
*Theater Missile Defense (TMD)
Extended Test Range (ETR) —
Supplemental Environmental Impact Statement (SEIS) —
Eglin Gulf Test Range (EGTR)*

Thank you for attending this meeting. Please use this sheet to write down comments that you have regarding the SEIS. Your comments must be received by Ms. Ninh by April 3, 1998 to ensure they are considered in the Final SEIS.

Dear Ms. Ninh,

I submit this letter as a plea to

reconsider the proposed site or buffer

let alone the wild life and damaged

species what about the humans

that would definitely be impacted

by missile operations from what let

alone the missile to use case.

We would love to live out our lives

as we have in Dodge Gardens. Please

let this be possible. Sincerely,

Mrs. August Berner

21091 Barat Ave East

Cudahy, Ky. 40301

Please place form in the comment box or mail to:
Ms. Linda Ninh
46 OGM-TMD
205 West D. Ave, Suite 241
Eglin AFB, FL 32542-6866

March 1998

♻️ PLEASE ON RECYCLED PAPER

TRANSPORTATION

Elizabeth S. Cofert

I and ~~of~~ my friends and neighbors are pleased that the land missile launch from the Florida Keys is not presently under active consideration. However, an Environmental Impact Statement (draft) has been prepared and public hearings are being held. It appears to me and others that the door has been left open a little bit at the present time and possibly more open as to the future.

I think the Keys will become much less desirable as a launch site in the future as our traffic and environmental problems are getting worse rather than better. We are already designated by the State of Florida as an Area of Critical Concern. We are in a National Marine Sanctuary as well as a Wildlife Refuge for the Great White Heron. The current Environmental Statement (EIS) falls short of answering questions we have regarding these sensitive areas as well as many other concerns.

Very little information was given and little attention paid, or so it appears, to the transportation of the missile from Florida City to the proposed launch site. U. S. 1 is referred to as the principal artery into the Keys when in fact it is the ONLY artery into the Keys. The word artery might well be replaced by path as the traffic is so heavy at times that it is stopped or moves at a crawl. We fear that vital travel would be delayed by the missile convoy: such as fire fighting equipment; emergency medical vehicles; police response and necessary medical travel. Our services available to deal with any emergencies are limited: there are only two hospitals along this route (plus one in Key West) and all the fire departments located along this route are volunteer in nature. The EIS states that emergency vehicles will be let through.

The question then becomes HOW and WHERE? The road has 2.5 miles of four lane roads and 95 miles of two lane roads. There are 29 bridges as well which allow little or no room for passing of emergency vehicles. Has consideration been given to the special problems that might occur during hurricane season? Would the keys be able to be evacuated without delay?

Is there danger of a fire or explosion while the missile is in transit in the event of a collision with another vehicle? If yes, could this damage a bridge? Our bridges are our life line, among other things carrying our only fresh water to us. All our utilities are vulnerable in this scenario as well as our food supply. The EIS has a description of a fire fighting plan, but it appears to be one of Eglin Air Force Bases' plans. Will fire fighting equipment from Eglin accompany the convoy?

Another concern is the absence of a current traffic study in the EIS. Extrapolations are made from older studies that may well have been extrapolations themselves. For example, the EIS predicts that the traffic in the year 2005 will be up 18% on Cudjoe Key, down 9% on Summerland Key and down 11% on Big Pine Key. Essentially the same traffic is on this entire stretch. And if the traffic EVER goes down on Big Pine, it will be amazing as well as a miracle. Our traffic is very heavy now and getting worse every year. Over half our population excluding Key West centers on U.S. 1 and it is our only way out.

Other questions not answered are how fast will the convoy be traveling? what time of day or night will this travel take place? Has thought been given on how to handle civil disobedience should it occur? It seems obvious to me that the EIS is seriously flawed, inadequate and incomplete.

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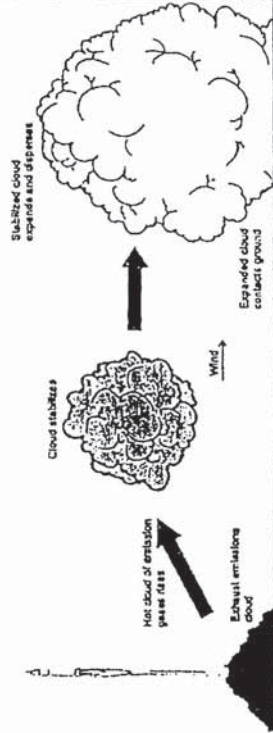
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DAVE MUSTELMAN C.G.P.O.A



10 to Scale

Representative
Exhaust Plume

Figure 3.1.1-2

Draft TMD ETR SEIS - Eglin Gulf Test Range

3-15

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becomes more mobile in the environment. Such would be the case caused by the acid rain produced by a launch.

High aluminum concentrations have caused massive fish dieoffs. When this happens it is practically impossible to reestablish populations because of the changed water chemistry and absence of food sources

HCL - Hydrogen chloride will dissolve in water to form hydrochloric acid. Hydrochloric acid is a strong acid. It is not uncommon for neighborhoods or even whole towns to require evacuation during a spill. At concentration levels below the threshold for smell or taste, hydrochloric acid can cause sneezing, laryngitis, chest pain, hoarseness and a feeling of suffocation. Skin burns, inflammation, and ulceration of the nasal septum can also occur.

Hydrogen chloride gas rapidly turns to hydrochloric acid on contact with moisture on the skin, in perspiration and in mucous membranes. Most of the ensuing damage is caused by the acidity, which can often be tasted as a sharp stinging sensation even before it can be smelled. Irritation is mainly to the eyes, nose throat, and airways, but also to the mouth and skin.

Hydrogen chloride and hydrochloric acid are toxic to plants, causing leaf burns and internal damage.]

The major by products of combustion of a Hera missile are carbon monoxide, water, hydrogen chloride, nitrogen dioxide, and aluminum oxide. (2-13) Hydrogen chloride reacts with water to form hydrochloric acid... This acid may have an adverse effect on plants or on the alkalinity of soils and exposed surface water. Acidification of water generally results in higher solubility of minerals and lower oxygen levels until the acid is neutralized. Acidification of soils may lead to increased plant mortality...depending on the species' resistance to acidity. (3-17)

Hydrogen chloride is emitted from the motor (missile) as a gaseous exhaust component. Water (from the exhaust, and open sources, or from the atmosphere) readily scavenges the hydrogen chloride from the exhaust cloud and forms hydrochloric acid. (K-5)

Humidity levels (in the Keys) reflect the maritime environment. The mean average humidity is 75 percent, and does not vary significantly by month. (3-357)

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[Notes: The use of braces, "{}" indicate the authors comments. A series of periods, "... " indicates a break in the text. Brackets "[]" indicate other references, and references to Draft SEIS pages are enclosed in "()" parenthesis.

Please take note the words, "can, may, might, could, should, etc., throughout the text of the SEIS. They imply uncertainty; and indicate the need for further study.

The term pH is used to denote the strength of acids and alkalis. A pH of 7.0 is considered neutral. The more acidic, the lower the pH; the higher the pH the more alkaline. Zero is the lowest number and 14 the highest. Each single number of increase or decrease indicates ten-fold change. That is a pH of 4.0 is ten times more acidic than a pH of 5.0.

Purpose: The purpose of this presentation is to show that even the Draft SEIS demonstrates that a launch from the Keys is unthinkable. It is likely that a single launch would produce more hazard to the population, human, animal and plant, than that which all of the environmental restraints placed upon us, the citizens, would or could produce in many years. The factual conclusions of the SEIS clearly demonstrate that the mitigation summary is wrong. It is wrong because of a lack of factual data derived from this environment, lack of understanding of the geography of the Keys, and our dependence on the U.S. 1 centered life-link.

It is not the purpose of this presentation to humiliate the BMDO, but rather to emphasize the conflicting data in their own study. It is understood that the Airforce and BMDO have a need for this project. However, the Keys and the Gulf of Mexico should be ruled out as a setting for these tests. The commerce, delicate waters surrounding the Keys, and proposed flight path dictate a reevaluation of the entire project utilizing the Elgin Test Range. Other testing ranges are available.)

[From: TOXICS A TO Z - University of California Press - 1991

ALUMINUM - Patients undergoing kidney dialysis suffered dementia when using water in the machines from which the aluminum had not been removed. It was found that patients suffering from Alzheimer's disease had high concentrations of aluminum in their brains. It is suspected, although not yet proven, to be a factor in the development of this disease.

Aluminum does not dissolve readily in water that is neutral in acidity, but as water gets either increasingly acidic or alkaline, it dissolves more readily and therefore

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Normal target launch operations may result in the release of airborne exhaust products, which may adversely affect the health of persons in the immediate vicinity of a launch site. Also, during target launch operations there is the potential for a launch mishap, which results in explosion, whole-body impact, or debris impact. These effects are limited to the alternative launch locations (Cudjoe Key and Saddlebunch Keys). Launch operations present both occupational and non-occupational safety and health issues. (3-464)

Due to the initial heat generated by combustion the exhaust plume tends to rise and drift while cooling. (3-14) & Diagram

Maximum exposure occurs at 1.94 km. HCL remains above the safe level from some point before 1.94 km to a point between 3.0 and 4.0 km.

Where the initial screening indicated there may be a potential for exceedances beyond the LHA, an additional refined analysis was undertaken... (3-16)

The first analysis was a general screening to determine if the amounts of pollutants emitted had the potential to cause exceedances of National or state ambient air quality standards or applicable health-based guidance levels. Those scenarios which the initial screening indicated had a potential to exceed the standards... were subjected to additional refined modeling to better determine the potential concentrations of the applicable pollutant(s). ..., therefore no further action was required. (K-1)

While weather conditions and patterns in Florida differ substantially from those at the Fort Wingate launch complex, a similar lack of impacts would be anticipated for normal launches at the proposed launch sites. (3-18) Preliminary analysis of the emissions monitored during a recent launch of the Hera at Ft. Wingate, New Mexico... (It is) not specifically approved by EPA or the state of Florida... it has been successfully used ... at Dugway Proving Ground... Utah - Western Desert Test Center, 1996.

Refined analysis of potential air quality impacts ... was specifically developed to estimate impacts to air quality due to open burning or detonation of explosives and fuels ...

A release height ... was selected. The elevated release height will tend to underpredict concentrations near the launch site. However, this impact is negligible due to the LHA ... (K-3)

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{if all fuel is consumed, some of the by-products would be:}
Aluminum oxide - 5,063 pounds;
Hydrogen chloride - 3,815 pounds (K-5)

{This amounts to approximately 10,039 pounds of concentrated HCL}

into the waters:

Deposition of hydrogen chloride onto the adjacent waters would not accumulate as the natural buffering of sea water and brackish estuarine waters would quickly neutralize the localized increased acidity. Currents in the local Gulf waters would also flush such acidic concentrations into larger mixing volumes. (3-393)

The coastal marsh ecosystem of the Florida Keys is a valuable and protected resource of the Florida Keys. The coastal marshes are a complex system of shallow water bays and basins surrounded by hundreds of mangrove-fringed keys and developed shorelines. ... Although these tidal passes allow for water exchange, the cluster of islands protects the reef tract from the outflow of seasonally variable Gulf of Mexico water. (3-534)

... the average depth of water on the Gulf of Mexico side is only 1.8 meters (6 feet) 3-425)

...most of these channels are shallow ... 1.97 feet. see 3-427)

{I don't think we have any true estuaries on Cudjoe Key. While it may be true that the onshore water is brackish, it does not readily mix with that offshore. Further, the water off Cudjoe Key is relatively shallow. For this reason, the pH would not be buffered quickly. The flow in this shallow water would be expected to be turbulent. Hydrochloric acid is denser than seawater (1.2 vs. 1.025) and would tend to sink into the lower turbulent area. By the time enough flushing occurred, the damage may well have already been done. An assault on nature of this magnitude must surely require more study, to say nothing of the accumulated affect that 12 launches per year over ten years would have. The buildup of acid and aluminum on near-shore waters would certainly be significant.)

In addition to providing habitat for many marine animals, these coastal marsh areas serve as buffers during hurricanes and tropical storms... Because of the area's low population density, low level of industrial development, and lack of major rivers, concentrations of chemical contaminants are generally low. (3-524)

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Fresh-water supplies:
Chloride levels in these lenses are too high for human consumption, but are suitable for most irrigation purposes and provide the major source of drinking water for wildlife. (3-414) Shallow, fresh water in the Florida Keys is limited to nonexistent. (3-527) {What is there, is crucial.}

Sea-water:
Although no environmental studies have been identified which specifically evaluate the fate of ammonium perchlorate {fuel} in the marine environment... In one study, involving propellant pieces (ammonium perchlorate and HTPB {binder}) submerged in seawater, water penetration was limited to about 1.3 centimeters (0.5 inch) over a period of one month. (3-352) {What about ten years?}

The seagrass beds and scattered coral heads are extremely sensitive habitats for a wide variety of aquatic organisms, including several Federal and state listed species of mammals, turtles, and fish. (3-377)

Overland Transport to Site:
The Hera missile is considered a D.O.D. Class 1.1 Explosive - Explosives that have a mass explosion hazard (one that affects almost the entire load instantaneously). - (Glossary)

Launch Mishap:
An early flight termination of a Hera target missile could result in the second stage booster impacting within the LHA (or elsewhere). This second stage booster... could explode on impact. The amount of energy from the explosion that is propagated underwater could injure marine mammals in the vicinity. The threshold of effect on marine mammals is still under analysis. (3-271)

Noise:
Birds: {Remember these launches are to be at night}
Short duration high intensity noise levels could cause roosting birds in the area to flush off their nests. (3-372)

The nearest eagle nest is approximately 4 Km away (3-389) - 103dB (3-391), louder than a freight train at full speed from 30 feet, jackhammer at 10 feet and a B-747 at 1,000 feet. (3-130)

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The increased activity at the site may result in a temporary disturbance to wildlife in the area, particularly those species that use the mangroves, tidal marsh, and shallow nearshore waters in the immediate vicinity of the launch site, such as turtles, various protected wading and shore birds, and the white-crowned pigeon. (3-389)

The launch noise would generally extend over a 9-kilometer (5.6-mile) radius area and may cause nesting and foraging birds to react by either becoming alert or temporarily leaving nests... (The 9.0 kilometer radius is not on the chart.)

The nearest rookeries for colonial nesting birds on Little Crane, Sawyer, and Johnston keys are located 5.5 to 7.0 kilometers (3.4 to 4.3 miles) from the site and would experience peak 93 dB noise levels... Riding Key (northwest of Cudjoe Key) is the fifth most important nesting site for great white herons (U.S. Department of the Interior, 1997). Missiles will be at least 2,000 meters (6,562 feet) above any rookeries downrange. {115 dB - louder than a rock concert (110 dB) but below the threshold of pain for humans (120 dB)} (3-390)

Due to the short duration of the target launch noise (approximately 60 seconds), the only individuals that would likely be affected are those within the 90 dB and greater contours shown in figure 3.3.3-10. (The figure does not show a 90 dB contour; and linear regression analysis shows discontinuities in the data).

Sources of ambient noise at the proposed Cudjoe Key launch site include aircraft traffic from the NASKW airfield and the Key West International Airport... Noise contours from the 1989 NASKW... study show that the... smallest contour calculated in the study does not overlay the Cudjoe Key noise ROI. (3-447) {You can't have it both ways. The study stopped at the 60-dB contour (normal conversation) about 9 miles west of Cudjoe Key. Air traffic is further limited over the Cudjoe launch site by Restricted Area 2916 (surface to 14,000 feet) which keeps aircraft away from the aerostats (blimps). See 3-370 and 3-449}

Turtles:
As launch preparation activities would be done primarily during night time hours, sea turtles coming on shore at night to nest at Sawyer Key, 7 kilometers (4.3 miles) from the site could be minimally affected. {95 dB - louder than a freight train (88 dB), but not as loud as a jackhammer (96 dB)}

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... although there is some chance of some debris washing onshore after launches. Such debris could entangle or harm wildlife. (3-392)

Port-potties:
For 30 days before a launch, test personnel would be present at the site. The total number of launches at Cudjoe Key would not exceed 12 per year. (This basically assures permanent duty for ten years)

Potable water for Cudjoe Key Table 3.3.12-1 shows a 395% increase. Wastewater is assured to be the same quantity as potable water consumption. The mainland portion of Monroe County includes the Everglades National Park, the Big Cypress National Preserve, and the city of Miami.

The Cudjoe Gardens Marina is located 1.9 kilometers (no it isn't) (3 miles) southwest of the Cudjoe Key site and includes six boat ramps (no it doesn't) and a marina. (3-429)

{The conversion of Kg to pounds for Aluminum oxide in the table on 3-14 is incorrect. The conversion factor is 2.205 and not 2.149. This error is also carried forward to the last paragraph on 3-353.}

Summary:
... it is possible that some of the natural resources required for the operation of the program may be restored to their pre-project conditions.

The ... program would not generally involve the use of resources to such an extent that they would become fully consumed or destroyed. As a result, potential irreversible and irretrievable commitments of resources would be very limited, and would occur only for certain biological and cultural resources. (3-534)
{Please expand on which biological and cultural resources would be irreversibly

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The worst case scenario would involve a booster with DOD class 1.1 explosives, such as are the second stage of the Hera missile, because they are shipped with the destruct assembly attached. In the remote event of a severe accident, there is potential that a DOD class 1.1 missile component could detonate, initiating the destruct system and burning the propellant, releasing hydrogen chloride, which are considered explosive materials.

Safety:
... in the event of a significant event (which) would include all locations within approximately ... 1,000 feet of the shipping route. This can include U.S. 1 and any secondary connecting roads, bridges, and adjacent locations along selected

{All Emergency Response Plan references site Appendix J (3-154, 160) Appendix J does not cover Cudjoe or Saddlebunch, only Eglin AFB. The Airforce has the following resources available at Eglin, to name a few:

1. An on scene commander
2. Crisis action team
3. Initial response element
4. Range safety office
5. Ground safety element
6. Director of civil engineering
7. Explosive ordnance disposal
8. 96th Medical group
9. Base fire department
10. HAZMAT response team
11. Security police
12. Bioenvironmental engineering
13. Communications group.

Our local volunteer fire departments and sheriffs do not have these resources or equipment necessary to handle the challenge.}

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We are only told that a computer model did it. The discussion is woefully lacking in its applicability to section 4.0 should be a summary of proposed environmental impacts and mitigation. A statement on 2-76 sums up their feelings, "Potential safety impacts for all environmental resources were evaluated for both normal interceptor and human health risks. The increased risk to mission personnel and the general public due to TMD mishaps would be negligible." In almost all of the thirteen categories the mitigation was "None required. Short-term and temporary-none sanitation they recommended port-a-potties. In this last case, the previous reference to length of stay should be considered.

Summary:

The TMD Extended Range Program would not generally involve the use of resources to such an extent that they would become fully consumed or destroyed. As a result, potential irreversible and irrefragable commitments of resources would be very limited, and would occur only for certain biological and cultural resources (3-534).

3.1.8.1 Resource Description and Evaluative Methods

Noise is usually described as unwanted sound. Characteristics of sound include amplitude, frequency, and duration. Sound can vary over an extremely large range of amplitudes. The decibel (dB), a logarithmic unit that accounts for the large variation in amplitude, is the accepted standard unit for the measure of sound. Noise levels of common sources are provided in table 3.1.8-1.

Table 3.1.8-1: Noise Levels of Common Sources

Source	Noise Level (dBA)	Comment
Air raid siren	120	at 15.2 meters (50 feet) threshold of pain
Rock concert	110	
Airplane, 747	102.5	at 304.3 meters (1,000 feet)
Jackhammer	98	at 3.0 meters (10 feet)
Power lawn mower	96	at 0.9 meters (3 feet)
Football game	98	Crowd size: 65,000
Freight train at full speed	88 - 95	at 8.1 meters (30 feet)
Portable hair dryer	86 - 77	at 0.3 meters (1 foot)
Vacuum cleaner	85 - 78	at 1.5 meters (5 feet)
Long range airplane	80 - 70	inside
Conversation	60	
Typical suburban background	50	
Big city	44	
Quiet urban nighttime	42	
Quiet suburban nighttime	38	
Library	34	
Bedroom at night	30	
Audiometric hearing (average) best	10	Threshold of hearing without hearing loss

Source: Chubb, 1984.

Because an individual's reaction to noise and attitude toward noise sources varies, it is impossible to accurately predict how an individual will react to a particular noise. However, when entire communities are considered, community reaction to noise may be represented with a high degree of confidence.

3-130

Drift TMD ETR SEIS - Eglin Gulf Test Range



United States Department of the Interior

FISH AND WILDLIFE SERVICE
South Florida Ecosystem Office
P.O. Box 2476
Vero Beach, Florida 32961-2476

January 27, 1998

FEB - 2 1993

Linda Nish
46 OGJGCM
205 West D Avenue, Suite 241
Eglin AFB, FL 32542-6866

RE: Preliminary Draft SEIS for Theater Missile Defense system in the Eglin Gulf Test Range

Dear Ms. Nish:

Thank you for the copies of the Preliminary Draft Supplemental Environmental Impact Statement (SEIS) dated January 5, 1998. To reiterate, this letter represents the combined responses from three U.S. Fish and Wildlife Service (FWS) field offices responsible for reviewing the Preliminary Draft SEIS (document). Accordingly, the Panama City Field Office provided comments on TMD activities proposed for Eglin AFB; the South Florida Field Office in Vero Beach provided comments on TMD activities occurring in the lower Florida Keys; and the Florida Keys National Wildlife Refuge (NWR) on Big Pine Key provided comments since both potential launch sites in the lower Florida Keys (Cudjoe Key and the Saddlebunch Keys) occur adjacent to refuge boundaries. This letter provides general and specific comments addressing the TMD system's potential effects to threatened and endangered species, migratory birds, nondomestic fish, and wetland habitats.

GENERAL COMMENTS

As we stated previously in our review of the Coordinating Draft SEIS, we re-emphasize that the current document does not adequately address our concerns regarding potential effects to Federal trust resources and land management responsibilities. We remain concerned with several issues associated with the proposed action.

1. The effects of ground vibrations from missile or interceptor launches on wildlife, specifically federally listed sea turtle embryos and hatchlings, will need to be evaluated. Data from the space shuttle and Titan/Delta rocket launches at Kennedy Space Center and their potential effects on sea turtles nesting on nearby Canaveral National Seashore could be used for comparison.
2. The effects of launch activities (e.g., human disturbances, noise impacts) on the following species nesting within the five-mile radius of the Launch Hazard Areas (LHA) for Eglin AFB

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(Santa Rosa Island and Cape San Blas) needs to be evaluated: loggerhead sea turtle (*Caretta caretta*), green sea turtle (*Chelonia mydas*), and bald eagle (*Haliaeetus leucocephalus*).

3. The effects of prelaunch and launch activities on populations of the following species existing within the LHA for both Cudjoe Key and Saddlebunch Key needs to be evaluated: silver rice rat (*Oryzomys argentatus*); Lower Keys marsh rabbit (*Sylvilagus palustris hefneri*); transient Key deer (*Odocoileus virginianus clemens*); bald eagle, and eastern indigo snake (*Drymarchon corais cooperi*). These activities could interfere with the FWS' recovery efforts for listed species in the Keys, such as repatriating the Key deer to Cudjoe Key.

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3. The effects of prelaunch and launch activities on shorebird and wading bird rookeries within the LHA for both the Florida panhandle and the Florida Keys needs to be evaluated. Avifauna, especially in the Florida Keys, are already subjected to significant stress from noise and disturbance. Currently, nesting populations of wading birds are continuously disturbed by the ever increasing presence of humans, such as tour boats around their rookeries. Furthermore, as nesting birds take flight in response to prelaunch and launch activities, they leave their nests exposed to predators, such as the magnificent frigatebird (*Fregata magnificens*), and to the elements. Flushing birds as such unnecessarily expends valuable energy that may otherwise be used for hunting, foraging, and/or maintenance. Thus, we view the launching of target missiles from land-based facilities in the Florida Keys as another level of stress these birds must endure. The cumulative effect of these existing stresses along with the added stress from the proposed action may result in changing the reproductive behavior of nesting birds (e.g., decreased fecundity) and force them to seek other potential nest areas, which are becoming increasingly limited in availability and suitability. Details of the specific mitigative measures designed to ameliorate these effects are lacking in the document.

06

4. The proposed action is inconsistent with the Congressional designation of "wilderness areas" for 2,278 and 1,900 acres in the Great White Heron NWR and National Key Deer Refuge, respectively. Specifically, wilderness areas are "an area of Federal land retaining its primeval character and influence, without permanent habitation, which is protected and managed so as to preserve its natural conditions such that it (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable; and (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation . . ." (Wilderness Act of 1964). Furthermore, "wilderness areas . . . shall be administered in such a manner as will leave them unimpaired for future use and enjoyment as wilderness" (30 CFR 35.2).

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5. The effects of the proposed action (e.g., visual pollution of wilderness areas, the impact on wilderness solitude, the recreational and economic impact to the highly desired "wilderness experience") on wildlife and human users in federally-designated areas (e.g., Great White Heron NWR, Florida Keys National Marine Sanctuary, wilderness areas) needs to be evaluated.

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Page 3-177, Table 3.3.3.2: The nesting season for bald eagles is from October 1 to May 15 in the southeast region of the United States. The table incorrectly illustrates the eagle's breeding season from November 1 to early August.

Page 3-180: Again, information on nesting, foraging, wading, and colonial birds is incomplete.

Page 3-180, § 2: There are no pibelands on Saddlebunch Key.

Page 3-189, Figure 3.3.1.0: The figure is inaccurate and the rookery data is incomplete. For example, many of the rookeries are depicted in open water. Also, Riding Key (just north of Cudjoe Key) is the fifth most important nesting site for great white herons.

Page 3-198, Figure 3.3.1.15: As before, the figure is inaccurate, the rookery data is incomplete, and rookeries are depicted in open water.

Page 3-424, § 1: land snapper should be lane snapper.

Page 3-428, § 3 and 4: The surface area protected by the Great White Heron NWR is approximately 192,494 acres (780 square kilometers or 300 square miles). The purpose of the Great White Heron NWR is "as a refuge and breeding ground for great white heron, other migratory birds, and other wildlife." Also, "for use as an inviolate sanctuary, or for other management purposes for migratory birds" (16 U.S.C. 7150). The surface area protected by the National Key Deer Refuge is approximately 8,542 acres (35 square kilometers or 13 square miles). The purpose of the National Key Deer Refuge is "to protect and preserve in the national interest the Key deer and other wildlife resources in the Florida Keys" (71 Stat. 412, 8-22-57) and "to conserve...fish or wildlife which are listed as endangered species or threatened species...or...plants" (16 U.S.C. 1534). The National Key Deer Refuge is incorrectly abbreviated as KDNWR. Also, there is no mention of the designated "wilderness areas" in this section on Protected Areas.

Page 3-430, § 1: Wildlife Management Areas of the Florida Keys National Marine Sanctuary were adopted zones originally designated in the 1992 Management Agreement for Submerged Lands (MA-44-098) between the FWS and the State of Florida for the specific management of critical habitat. Figure 3.3.7-4 is incorrectly referenced in this paragraph as Figure 3.3.7-4.

Page 3-432, last §: Saddlebunch Key site is also located within the Great White Heron NWR. The are several Wildlife Management Areas within the LHA of Saddlebunch Key: Marvin Key, Soipe Keys, Mud Key, Lower Harbor Keys, Cayo Aqua, Bay Key, Sawyer Key.

Page 3-436, Figure 3.3.7.7: Federal lands should be distinguished between military property and conservation/preservation land.

P-W-0022 COMMENT NUMBER
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SPECIFIC COMMENTS

The word "Apalachicola" continues to be misspelled on maps throughout the document. Also, we were incorrect in our last review citing the scientific name of the Gulf sturgeon as *Acipenser oxyrinchus desotoi*. The correct spelling is *Acipenser oxyrinchus desotoi*. The Florida Keys National Wildlife Refuge is a common title to refer to four refuges within the Keys: Crocodile Lakes NWR, National Key Deer Refuge, Great White Heron NWR, and Key West NWR. Any reference to a particular refuge or refuges should identify them specifically.

Page 3-137, Table 3.1.1.1: The scientific name for the Santa Rosa beach mouse is *Peromyscus polionotus leucocapillus*.

Page 3-138, § 1: The Santa Rosa beach mouse should also be included in the list of mammals occurring on Santa Rosa Island.

Page 3-151, Figure 3.1.1.13: Either add green turtles to legend or replace loggerhead turtles with sea turtles.

Page 3-158, § 8: Additional mitigation efforts should include prohibiting nighttime activity during the sea turtle nesting and hatching season from May 1 through October 31 and monitoring TMD activities for potential effects on sensitive species with the implementation of remedial actions as necessary.

Page 3-160, § 2: It should be mentioned that Site D-3A is within the nest protection zone as identified in the FWS management guidelines for bald eagles. The guidelines recommend limitations on activities that could affect bald eagles depending on the time of year, type of activity, and distance from the nest.

Page 3-162, Figure 3.1.1.16: Seabird should be shorebird in the legend.

Page 3-164, § 2: Additional mitigation efforts should include prohibiting nighttime activity during the sea turtle nesting and hatching season from May 1 through October 31 and monitoring TMD activities for potential effects on sensitive species with the implementation of remedial actions as necessary.

Page 3-262, Table 3.2.3.3: *Caretta caretta* should be *Caretta caretta*.

Page 3-267: Eastern Gulf of Mexico live-bottom habitats should be described, in addition to coral and bank reef habitats. The Minerals Management Service has funded numerous studies to identify and describe these habitat types.

Page 3-371: Information on nesting, foraging, wading, and colonial birds is incomplete. The flat and mangrove islands are used extensively by wading birds.

P-W-0022	COMMENT NUMBER
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cc: FWS, Panama City, FL (Attn: Lorina Patrick)
 Florida Keys NWR, Big Pine Key, FL (Attn: Susan White)
 NMFS, Miami, FL
 GFC, Marathon, FL
 DEP, Marathon, FL
 DCA, Marathon, FL

P-W-0022	COMMENT NUMBER
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33 Page 1-442, Figure 3.1.7-10. Again, Federal lands should be distinguished between military property and conservation/preservation land.

34 Page 3-501, ¶ 2. There is significant coral reef development in the lower Keys. Big Pine Key is in the lower Keys, whereas Marathon (incorrectly referred to as Marathon Key) is in the middle Keys. The chain of islands west of the Seven-mile Bridge is considered the lower Keys. Key deer are primarily on Big Pine and No Name keys and transient to Cudjoe and Sugarloaf keys. The Forest Service's Visual Resource Management System may be an inappropriate tool to rate the scenic attractiveness of the Florida Keys' "backcountry" and mangrove habitats.

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38 Appendix L: GSMFC1995 is not listed in the Acronyms and Abbreviations section nor is it listed in the References section; does GSMFC refer to the Gulf Fisheries Management Council? Green turtle nesting on Santa Rosa Island and Cape San Blas should be included in the narrative. Information regarding the distinction between loggerhead nesting sub-populations and recovery potential should be included in the narrative. This is based on genetics studies conducted by Brian Bowen and his associates at the University of Florida.

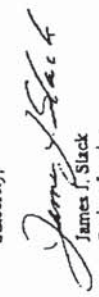
39

40 After reviewing the document, we are still concerned with the potential adverse effects of the proposed action on fish and wildlife resources. As a cooperating agency in the NEPA process, we have attempted to identify gaps in the information provided within the document as well as to note any inaccuracies. Specifically, the document does not provide the mitigative measures necessary to offset adverse effects to our trust resources and land management responsibilities as a result of target launch activities proposed in the Florida Keys. Furthermore, we do not believe that the adverse effects (e.g., noise impacts to nesting avifauna) of launching target missiles from the Keys can be ameliorated. As such, the Preliminary Draft SEIS is incomplete in its current form. We will continue to coordinate with your agency prior to completing the Final SEIS on fish and wildlife issues that need to be addressed as part of the environmental review process. In conclusion, it is the FWS' recommendation that the Florida Keys be eliminated from consideration as an alternative launch site for target missiles in the Eglin Gulf Test Range.

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Thank you for the opportunity to provide comments on the Preliminary Draft SEIS. If you have any questions regarding the contents of this letter, please contact Lorina Patrick (Panama City Field Office at 850/769-0552), Susan White (Florida Keys NWR at 305/872-2239) or Kalani Cairns of our office at 561/562-3909.

Sincerely,


 James F. Slack
 Project Leader
 South Florida Field Office



DEPARTMENT OF DEFENSE
BALLISTIC MISSILE DEFENSE ORGANIZATION
7100 DEFENSE PENTAGON
WASHINGTON, DC 20301-7100

AQT

JUN - 2 1995

Mr. Ron D. Cox
6521 Hiwassee
Panama City, FL 32404

Dear Mr. Cox:

Lieutenant General O'Neill has asked me to respond to your letter of May 20, 1995. The Theater Missile Defense Extended Test Range Environmental Impact Statement presented the environmental analyses to conduct defensive ballistic missile testing at each of four ranges. It did not consider defensive testing against cruise missiles. The Record of Decision was based not only on environmental considerations, but also on the other program factors of cost, performance, and schedule. Consequently, even though testing at Eglin AFB had the least environmental impact, the desired test performance could not be met. Should any of the four factors of cost, schedule, performance and environment impact change, then Eglin may be reconsidered. In fact, there are several concepts in the formulation stage which may lead to ballistic missile defense testing at Eglin. *I.E. REMOVED THE WHEEL!*

Thank you for your interest in our program.

Sincerely,

ANDREW J. FALLON
Colonel, USA
Director, Test & Evaluation



DEPARTMENT OF DEFENSE
BALLISTIC MISSILE DEFENSE ORGANIZATION
7100 DEFENSE PENTAGON
WASHINGTON, DC 20301-7100

AQT

FEB 6 1998

To Concerned Public, Organizations, and Commenting Agencies:

Please find enclosed a copy of the Theater Missile Defense Statement (TMD) Extended Test Range Draft Supplemental Environmental Impact Statement (DSEIS) for Eglin Gulf Test Range (EGTR) and Notice of Availability for the Proposed TMD test programs. Additional copies of the DSEIS or Executive Summary may be requested by e-mail to "tmd@eglin.af.mil" or by sending a written request to:

Ms. Linda Ninh
46 OG/OGM-TMD
205 West D Avenue, Suite 241
Eglin AFB, FL, 32578-6866

Comments on the DSEIS can also be sent to the addresses above. In order to consider your comments for the final SEIS, please ensure comments are received by April 3, 1998.

Sincerely,

BRIAN R. MOSS
Captain, USN
Director, Test and Engineering
Resources

Enclosures:
As stated

TW/MC

13 FEB 98

CONGRATULATIONS - AFTER MUCH TIME & TAX \$ YOU HAVE FIGURED OUT THE OBVIOUS; CHOSE E.G.T.R. I'VE SUPPORTED THIS LOGICAL CHOICE SINCE DAY ONE. HOWEVER I WOULD FEEL EVEN BETTER IF:

- A. USAF WAS ALLOWED COMPLETE OVERSIGHT
- B. AN ADJUNCT TO THE TMDR WAS TO DEFEND THE FBHARDUE AGAINST ERRANT NAVY TOWNSHIP TESTS
- C. TO EVEN THINK ABOUT FKTR IN THE KEYS, IS PROOF-POSITIVE YOU EJS IS PURE EYEWASH, *from 201 by U.M.S. MISSOURI (RET)*

Commenter Registration Card

Name Martin Stephentub
 Affiliation Prime USA 5154
 Address 2206 S.W. 10th Ave

Please turn in this card at the registration table.
 The moderator will call on you to speak when it is your turn.
 Please limit your comments to 4 minutes.

*Due to CHILDREN'S ENTRY
 MY SHOT COMMENT PLEASE:
 I HAD A TOP SECRET ATOMAR,
 OFFERS EYES ONLY, CRYPTO
 CLEARANCE - I WORK IN A SECURE
 SENSITIVE MESSAGE CENTER - THIS
 PROJECT CANNOT BE ALLOWED TO
 GET OFF THE DRAWING BOARD - WHAT
 MY RIGHT TO BE DELETED FROM THE
 THE PEOPLE IN THE GUT SPEAKING OUR
 MOUTH & AN ANSWER LIKE THIS.*

Table ES-1. Comparison of the Environmental Consequences of the Alternatives (Continued)

Environmental Resource	Candidate Test Areas										
	W. Oahu	W. Maui	W. Hawaii	W. Kauai	W. Niihau	W. Lanai	W. Molokai	W. Oahu	W. Maui	W. Hawaii	W. Kauai
Eight AFB	0	0	0	0	0	0	0	0	0	0	0
Some Puka Island	0	0	0	0	0	0	0	0	0	0	0
Cape San Blas	0	0	0	0	0	0	0	0	0	0	0
Sea Launch	0	0	0	0	0	0	0	0	0	0	0
Flight Center	0	0	0	0	0	0	0	0	0	0	0
Western Range	0	0	0	0	0	0	0	0	0	0	0
Sea Moses Island	0	0	0	0	0	0	0	0	0	0	0
Vandenberg AFB	0	0	0	0	0	0	0	0	0	0	0
San Clemente Island	0	0	0	0	0	0	0	0	0	0	0
Sea Launch	0	0	0	0	0	0	0	0	0	0	0
Flight Center	0	0	0	0	0	0	0	0	0	0	0
Kwajalein Missile Range	0	0	0	0	0	0	0	0	0	0	0
USMKA	0	0	0	0	0	0	0	0	0	0	0
Wake Island	0	0	0	0	0	0	0	0	0	0	0
Sea Launch	0	0	0	0	0	0	0	0	0	0	0
Flight Center	0	0	0	0	0	0	0	0	0	0	0

no impact low significance impact significant impact

Comment Sheet

for the
Theater Missile Defense (TMD)
Extended Test Range (ETR)
Supplemental Environmental Impact Statement (SEIS) ---
Eglin Gulf Test Range (EGTR)

Thank you for attending this meeting. Please use this sheet to write down comments that you have regarding the SEIS. Your comments must be received by Ms. Nindh by April 3, 1998 to ensure they are considered in the Final SEIS.

IF YOU ARE LAUNCHING FROM PLATFORMS WHY NOT LAUNCH THE MISSILE FROM PLATFORM

IS YOUR ONLY FILING 12 MONTHS FROM THE KEYS HOW MANY TEST FIRINGS WOULD BE DONE

YOU SAID THAT THE WIND CAN EFFECT THE FLIGHT OF THE MISSILE OFF TO THE SIDE OF THE HORIZON WHERE HAWKS ARE

I LIVE IN THE SOUTH DIVISION KEY HAVEN AND THE WIND IS SO SHALLOW AND SO LOW IN BY ISLANDS THAT THE TIDE GAUGE IS ONLY ABOUT 10 INCHES SO THE WIND CAN'T PUSH FAST ENOUGH TO KICK THE GAUGE DOWN.

THEY'VE ISLANDS ABOUT 5 MILES OFF OF KEYS WHY CAN'T YOU LAUNCH FROM THESE ISLANDS AND THE CITY TORTUGA

Please place form in the comment box or mail to:

Ms. Linda Nindh
46 OG/OGM-TMD
205 West D. Ave, Suite 241
Eglin AFB, FL 32542-6866



March 1998

01

Ms. Linda Nindh
46 OG/OGM-TMD
205 West Ave., Suite 241
Eglin AFB, FL 32542-6866

Dear Ms. Nindh,

I live on Cudjoe Key, and am therefore extremely interested in receiving copies of Volumes I & II of:

Theater Missile Defense
Extended Test Range
Supplemental Environmental Impact Statement
Eglin Gulf Test Range

Please send them as soon as you can to:

James N. Hare
1152 Coates Lane
Summerland Key, FL 33042

Thank you for your time.

Sincerely,

James N. Hare

Comment Sheet

for the
Theater Missile Defense (TMD)
Extended Test Range (ETR)
Supplemental Environmental Impact Statement (SEIS) —
Eglin Gulf Test Range (EGTR)

Thank you for attending this meeting. Please use this sheet to write down comments that you have regarding the SEIS. Your comments must be received by Ms. Ninh by April 3, 1998 to ensure they are considered in the Final SEIS.

SUSAN DRAKE
P.O. BOX 4311
Key West, FL 33041

Our shallow waters surrounding
the Florida Keys are especially
the huge nursery for 400+
fish species - and shall
fish. What an insane place
to play with sharks
via a nursery.

Please place form in the comment box or mail to:
Ms. Linda Ninh
46 OG/OGM-TMD
205 West D. Ave, Suite 241
Eglin AFB, FL 32542-6866



March 1998

01

Comment Sheet

for the
Theater Missile Defense (TMD)
Extended Test Range (ETR)
Supplemental Environmental Impact Statement (SEIS) —
Eglin Gulf Test Range (EGTR)

Thank you for attending this meeting. Please use this sheet to write down comments that you have regarding the SEIS. Your comments must be received by Ms. Ninh by April 3, 1998 to ensure they are considered in the Final SEIS.

I must be repeating what many have said
before me. There are too many people, too much
environmental impact, & too many tourists
to use the Florida Keys for war games.
As tax payers, business people, &
the voting public we don't want it.

Phil June 5 MacArthur

33042

Please place form in the comment box or mail to:
Ms. Linda Ninh
46 OG/OGM-TMD
205 West D. Ave, Suite 241
Eglin AFB, FL 32542-6866



March 1998

02

Comment Sheet

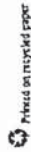
for the
Theater Missile Defense (TMD)
Extended Test Range (ETR)
Supplemental Environmental Impact Statement (SEIS) —
Eglin Gulf Test Range (EGTR)

Thank you for attending this meeting. Please use this sheet to write down comments that you have regarding the SEIS. Your comments must be received by Ms. Ninh by April 3, 1998 to ensure they are considered in the Final SEIS.

NO TESTS, NO FIGHTS, NO BUILDINGS —
IT'S A MANKIND SOLUTION — NOT STRATEGIC
MISILES WILL BE OK THOUGH. THAT'S THE TAKE AWAY
THINKING THAT THE WORLD HANGING AT US.
ARE YOU PEOPLE THINKING AT ALL!!!
BUT NATION TREASURES THIS FUTURE, NEAR UNIVERSE
ECO SYSTEM & YOU. WASTE BILLIONS & ENERGY
ON IDEAS LIKE THIS. 1998-TIME TO STOP
YOUR SILLY GAMES. PLEASE AKE MAKE IMPROVEMENT
THINGS FIRST.

Please place form in the comment box or mail to:

Ms. Linda Ninh
46 OG/OGM-TMD
205 West D. Ave, Suite 241
Eglin AFB, FL 32542-6866



March 1998

01

Comment Sheet

for the
Theater Missile Defense (TMD)
Extended Test Range (ETR)
Supplemental Environmental Impact Statement (SEIS) —
Eglin Gulf Test Range (EGTR)

Thank you for attending this meeting. Please use this sheet to write down comments that you have regarding the SEIS. Your comments must be received by Ms. Ninh by April 3, 1998 to ensure they are considered in the Final SEIS.

My opinion is that no proof of the necessary
effects of this bombing of Kyo. What is available —
as it was not accurate in the Vietnam War — Though
it took years before they admitted this.

Also, my daughter was recently asked to be
extended for problems at the Lorton Boudle plant of
Peace Washington. They insisted that she was needed
for a fair start of the effort that looks over the
town plant had on residents. Since she was born and
lived before the plant was built, I believe the defense
department has no regard for the health or for the lives
of citizens.

Please place form in the comment box or mail to:

Ms. Linda Ninh
46 OG/OGM-TMD
205 West D. Ave, Suite 241
Eglin AFB, FL 32542-6866



March 1998

01

3-12-98 R.L. BLAZEVIC
MISILE TESTING 3052 RIMBERA DR
KEY WEST, FL. KEY WEST 33091

The missile testing has caused me to consider the safety of my family, the residents, their children and damage to our environment. Even with the aircraft launching there has been much exaggerated propaganda about possible danger in the runway testing. I have lived in the Keys for forty years and have three daughters and four grandsons who live here. The County and City leaders are responsible for dealing with facts rather than emotional comments of those who twisted and exaggerate the risks involved. The two volumes of the 800 page Environmental Study indicate the extreme attention to detail and the extraordinary effort to consider every possible factor to ensure safety. At certain, very important parts about the Florida Key > Many residents are not considering the extreme danger that we are exposed to every day that is much more hazardous than an occasional missile launch. The constant exposure to injury and death on Highway 1 from speeding illegal passing, carbo drivers and the huge expensive gasoline trucks which continue 24 hours a day and seven days a week. There is not 100 tons, 1,000 tons, but 10,000 times more dangerous than any missile launch. There are 50 passenger aircraft that are fuel laden potential bombs over crowded airways occur each day as aircraft pass low over the high school. 90 per cent of aircraft accidents occur on take off and landing. The high school was

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built on the end of the runway 25 years after the airport was built. With the extreme every day danger; why hasn't the public insisted that a deactivating high school be moved to a safer area. This is far more dangerous than the Sugarloaf School location. The long term exposure of the toxic dump that the Ponce de Leon and Keweenaw Marine Sports Complex are built on has been ignored. > Constant vigilance makes it imperative that we continually test all the weapons we have developed to protect the men and women who have no control of when they are sent to protect our interests. I was in high school in World War II and was drafted into Naval Aviation. The emotional being issued any survival in the Korean and Viet Nam Wars. Having assessed our aircraft exploding from anti-aircraft fire, and some camping being strafed and bombed gave me a much better perspective than those who have never been there. Our greatest and emotional natural danger and tragedy is that we have lost more young people to drugs than to wars. The exaggerated environmental damage is nothing compared to what we build and tolerate here done every day to the Keys. The reef is much destroyed. Sea and Overseas Market will sell water, ponds, fish and marijuana stores which are now Top parking lots. Big Pine Key had four buildings along the highway, less than 50 residents and no stores. When was all the objection while all the

environmental destruction was going on with the full drying of entire areas, and the thousands of contaminating components were being installed. The residents avoid the responsibility waiting for federal grants to replace the components because they want a newer and sleeker boat. Residents fail to protect the ten Yacht Club system tanks at Garrison Bight, the cess pit in Hilton Haven, and the sewage rejection well at the Garrison Bight entrance. The City dumps ten million gallons of sewage every day into the Channel and the tide brings it back twice a day for us to swim in. The sewage plant in Stock Island dumps their sewage into the pond water ponds in the City Bay Cause. I live in a canal in Key West that is sewage polluted and is a stormwater runoff despite the impermeable Clem Water Out of 1975. Mention has been made of some impacts, but I have 65 ducks for an acre through the front and back windows 18 hours a day and even day a week, but they are not going to close the airport. I will understand the unjustified fears of those who oppose the missile testing. I do not resent the new sewer tanks who have helped to determine the quality of life in the Keys. I do resent the arrogance of those who oppose a mythical transparency or a revised permit. A minimal response by testing required to secure the survival of some people and animals. Essential testing has to be performed immediately and to accept the responsibility is a mature response to a national need.

Comment Sheet

for the
Theater Missile Defense (TMD)
Extended Test Range (ETR)
Supplemental Environmental Impact Statement (SEIS) —
Eglin Gulf Test Range (EGTR)

Thank you for attending this meeting. Please use this sheet to write down comments that you have regarding the SEIS. Your comments must be received by Ms. Nimah by April 3, 1998 to ensure they are considered in the Final SEIS.

I am definitely not in favor of missile testing in the Ft. Keys - after listening to the many speakers it is my opinion that Ft. Keys needs to be kept off the list of alternative sites.

Mary Magill

Please place form in the comment box or mail to:

Ms. Linda Ninh
46 OGQGM-TMD
205 West D. Ave, Suite 241
Eglin AFB, FL 32542-6866



March 1998

Comment Sheet

for the
Theater Missile Defense (TMD)
Extended Test Range (ETR)
Supplemental Environmental Impact Statement (SEIS) —
Eglin Gulf Test Range (EGTR)

Thank you for attending this meeting. Please use this sheet to write down comments that you have regarding the SEIS. Your comments must be received by Ms. Ninh by April 3, 1998 to ensure they are considered in the Final SEIS.

I completely oppose any
missiles in Key West or any
part of the Keys, whether land,
sea, or air. Actually, I oppose
any missiles anywhere.

Theresa E. Hendricks

Please place form in the comment box or mail to:
Ms. Linda Ninh
46 OG/OGM-TMD
205 West D. Ave., Suite 241
Eglin AFB, FL 32542-6866



March 1998

01

Comment Sheet

for the
Theater Missile Defense (TMD)
Extended Test Range (ETR)
Supplemental Environmental Impact Statement (SEIS) —
Eglin Gulf Test Range (EGTR)

Thank you for attending this meeting. Please use this sheet to write down comments that you have regarding the SEIS. Your comments must be received by Ms. Ninh by April 3, 1998 to ensure they are considered in the Final SEIS.

The single most important issue at this
point is that the public response to
this issue at this date will be
another has been affected by the media
coverage. The first Page of the Kuhl Citizen
newspaper that the trip are to long
being considered as a joke. The radio
announcements which played as jokes and
comments that made during Public Services Announcements
about this meeting that would lead the public
to believe that this is a nuisance for the
trip. If in fact this
is not true the public has
been misled and I'm sure
that people would have made
the 50 (50 fifty miles) mile round trip drive go

Please place form in the comment box or mail to:
Ms. Linda Ninh
46 OG/OGM-TMD
205 West D. Ave., Suite 241
Eglin AFB, FL 32542-6866



March 1998

02

P-W-0034
COMMENT
NUMBER

Comment Sheet

for the
Theater Missile Defense (TMD)
Extended Test Range (ETR)
Supplemental Environmental Impact Statement (SEIS) —
Eglin Gulf Test Range (EGTR)

Thank you for attending this meeting. Please use this sheet to write down comments that you have regarding the SEIS. Your comments must be received by Ms. Ninh by April 3, 1998 to ensure they are considered in the Final SEIS.

It is clear that there is
no valid reason to consider
using the Florida Keys as a
missile test site.

I feel sure that reason
will prevail

Stefan Gombach
NAMI/KEY west

2225 Sudbury Avz, Key West

Please place form in the comment box or mail to:
Ms. Linda Ninh
46 OG/OGM-TMD
205 West D. Ave, Suite 241
Eglin AFB, FL 32542-6866



March 1998

03

P-W-0035
COMMENT
NUMBER

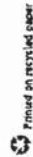
Comment Sheet

for the
Theater Missile Defense (TMD)
Extended Test Range (ETR)
Supplemental Environmental Impact Statement (SEIS) —
Eglin Gulf Test Range (EGTR)

Thank you for attending this meeting. Please use this sheet to write down comments that you have regarding the SEIS. Your comments must be received by Ms. Ninh by April 3, 1998 to ensure they are considered in the Final SEIS.

I am already opposed to ANY missiles
in the Florida Keys. *Just keep what we*

Please place form in the comment box or mail to:
Ms. Linda Ninh
46 OG/OGM-TMD
205 West D. Ave, Suite 241
Eglin AFB, FL 32542-6866



March 1998

01

P-W-0036
COMMENT
NUMBER



March 13, 1998

Ms. Linda Ninh
46/OG/OGM-TMD
205 West D Avenue, Suite 241
Eglin AFB, Florida 32357-8866

RE: Request for DEIS and DSEIS for Flight Testing of Theater Missile Defense (TMD) Systems

Dear Ms. Ninh:

On behalf of ANR Pipeline Company (ANR), I would like to request a copy of the Draft Environmental Impact Statement (DEIS) and Draft Supplement Environmental Impact Statement (DSEIS).

Please send the information to my attention at the following address:

Frank Canuto
ANR Pipeline Company
500 Renaissance, RC612
Detroit, Michigan 48243-1902

Thank you and I look forward to receiving this information.

Sincerely,

Frank Canuto
Environmental Affairs

ANR Pipeline Company
A MEMBER OF THE COASTAL COMPANY GROUP
FOR ENVIRONMENTAL SERVICES - SERVING SINCE 1969

01

P-W-0037
COMMENT
NUMBER



Draw Richardson
Senior Vice President,
Training, Education and Memberships

11 March 1998

Thomas J. Kennedy, Major
USAF
Director of Test, Theater Missile Defense
48 OG/OGM
205 West Avenue, Suite 241
Eglin, AFB FL 32354-2-8866

Dear Major Kennedy:

On behalf of the Florida based recreational diving community of dive centers and instructor members of the Professional Association of Diving Instructors, I wish to express our official opposition to the proposed Hera Class ballistic missile launch sites on Saddlebunch and Cudjoe Keys, which are on the edge of the Great White Heron National Wildlife Refuge and pose a negative environmental impact to the area.

We request that the project be re-examined in this context for an alternate solution.

Sincerely,

Drew Richardson
Sr. Vice President
PADI Worldwide Corporation

DRipt

cc: The Honorable Lawton Chiles, Governor, State of Florida
Representative Peter Deurtch
Representative Debbie Horan
Senator Deryl Jones
Senator Connie Mack
Senator Bob Graham
Lt. General Lester Lyles
Ms. Janet Tucker, Eglin Air Force Base, Office of Public Affairs
Bob Harris, Esq.
Vickie Weeks

PADI WORLDWIDE CORP., 1521 East Oyer Road #100 • Santa Ana, CA 92706-6605 U.S.A. • 800 720 7334 • 714 540 7234 • Fax 714 540 3400
Worldwide Offices: Australia, Canada, Europe, Japan, New Zealand, Norway, Singapore, Sweden, United Kingdom, United States

02

01



United States Department of the Interior

OFFICE OF THE SECRETARY
Washington, D.C. 20240

ER 98/146

MAR 11 1998

Ms. Linda Ninh
46 OG/OGM-TMD
205 West D Avenue, Suite 241
Eglin AFB, Florida 32578-6866

Dear Ms. Ninh:

This is in regard to the request for the Department of the Interior's comments on the Draft Supplemental Environmental Impact Statement for the Theater Missile Defense Extended Test (TMD) Range, Eglin Gulf Test Range (EGTR), Eglin AFB, Florida.

This is to inform you that the Department will have comments, but will be unable to reply within the allotted time. Please consider this letter as a request for an extension of time in which to comment.

Our comments, if any, should be available by April 15, 1998.

Sincerely,

Terence N. Martin

Terence N. Martin
Team Leader, Natural Resources
Management
Office of Environmental Policy
and Compliance

P-W-0038
COMMENT
NUMBER

01

Comment Sheet

for the
Theater Missile Defense (TMD)
Extended Test Range (ETR)
Supplemental Environmental Impact Statement (SEIS) —
Eglin Gulf Test Range (EGTR)

Thank you for attending this meeting. Please use this sheet to write down comments that you have regarding the SEIS. Your comments must be received by Ms. Nimb by April 3, 1998 to ensure they are considered in the Final SEIS.

Don't need a 44' or larger tank about
US #1 will allow traffic to the up
traffic. We have no alternative
what's occurred an accident to low
also concerned about safety increase of
accident on missile launch
Too much chance of top in fall out to
sumo & spray fauna much too
close to houses to total.

Lane Cant
Angie Ray

Please place form in the comment box or mail to:

Ms. Linda Nimb
46 OG/OGM-TMD
205 West D. Ave, Suite 241
Eglin AFB, FL 32542-6866



March 1998

01
02
03

Comment Sheet

for the
Theater Missile Defense (TMD)
Extended Test Range (ETR)
Supplemental Environmental Impact Statement (SEIS) —
Eglin Gulf Test Range (EGTR)

Thank you for attending this meeting. Please use this sheet to write down comments that you have regarding the SEIS. Your comments must be received by Ms. Nimb by April 3, 1998 to ensure they are considered in the Final SEIS.

I think it is leaving to consider heading
missile. From such a view and flight ecological
resources as the Florida Keys for the Pentagon to
claim cost effectiveness as the reason to use the Keys
rather than the western Pacific is not credible. I
suspect confusion and misstatement of the proposal
involved in the real version. I was also troubled by
the misinformation in the environmental impact study
and the glib assurances of the low chance of
misshape. Bruce Wright 1307 Laurel St
Key West, FL 33040

Please place form in the comment box or mail to:

Ms. Linda Nimb
46 OG/OGM-TMD
205 West D. Ave, Suite 241
Eglin AFB, FL 32542-6866



March 1998

02

P-W-0041
COMMENT
NUMBER

P-W-0042
COMMENT
NUMBER

COUNTY: St. Johns
Message:
DATE: 02/23/98
COMMENTS DUE - 2 WKS: 02/26/98
CLEARANCE DUE DATE: 03/30/98
SALE: FL 9812240949CR

WATER MANAGEMENT DISTRICTS
Community Affairs
Open Space and Wetlands
Northwest Florida Fish Commission
OTTRD
State
Transmission

Northwest Florida Fish Commission
X South Florida Water

Project Description:
Department of Defense - Theater Missile Defense (TMD) Extended Test Range Draft Supplemental Environmental Impact Statement (DSEIS) for 15th Air Force Range and Range of Availability for the Proposed TMD Test Program - Florida.

To: Florida State Clearinghouse
Department of Community Affairs
2555 Shumard Oak Boulevard
Tallahassee, FL 32399-2100
(904) 922-6446 (EC 292-6446)
(904) 414-0478 (FAX)

Federal Consistency

No Comment
 Comments Attached
 Not Applicable

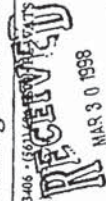
No Comments/Consistent
 Consistent/Comments Attached
 Inconsistent/Comments Attached
 Not Applicable

From: Division Bureau: REVELATION PFT.
Reviewer: JEAN GOLDEN (Orig.: 561-687-6974)
Date: 3/12/98



South Florida Water Management District

3301 Gun Club Road, West Palm Beach, Florida 33406 - (561) 852-2045
TDD (561) 852-2045 FAX (561) 852-2045 TTS 1-800-432-2045



GOV 04-12 RF: 98303

March 27, 1998

State of Florida Clearinghouse

Ms. Cherie Trainor
Florida State Clearinghouse
Department of Community Affairs
2555 Shumard Oak Boulevard
Tallahassee, FL 32399-2100

Subject: Theater Missile Defense Extended Test Range (SAI #9612240949CR)
Draft Supplemental Environmental Impact Statement

Dear Ms. Trainor:

In response to your request, South Florida Water Management District (SFVMD) staff has reviewed the Draft Supplemental Environmental Impact Statement (DSEIS) for the above-referenced proposal for consistency with the Florida Coastal Zone Management Program (FCMP).

Projects reviewed by the SFVMD pursuant to the FCMP are reviewed for consistency with the provisions of Chapter 373, F.S. (Florida Water Resources Act of 1972, as amended), as well as the programs and regulations developed thereunder. Chapter 373, F.S. provides the authority to regulate the withdrawal, diversion, storage, and consumptive uses of water, the construction and operation of stormwater management systems, and work in, on, or over surface waters or wetlands. Chapter 373, F.S. also provides authority to acquire and manage land, to conduct research and investigations into all aspects of water resource management, and to disseminate information relating to the water resources of the state to public and private users. While overall responsibility for administration of most of this act rests with the Florida Department of Environmental Protection (FDEP), most of the implementation is delegated to the five water management districts.

Among the alternatives addressed in the DSEIS are target launch and support activities in the Florida Keys (Cudjoe Key or Saddlebunch Key). These are the only activities proposed within the jurisdictional boundaries of the SFVMD.

Based on an analysis of the mandatory enforceable provisions and recommended policies of the core FCMP statutes and implementing rules administered by the SFVMD, the proposed target launch sites in the Florida Keys are inconsistent with the achievement of the SFVMD's projects, programs, and objectives.

Governing Board:
Frank Williamson, Jr., Chairman
Eugene K. Penta, Vice Chairman
Mitchell W. Berger

Richard A. Mashok
Michael D. Nimon
Minum Singer

Verla M. Carrer
William E. Graham
William Hammond

Samuel E. Poole III, Executive Director
Michael Skayson, Deputy Executive Director

Mailing Address: P.O. Box 24688, West Palm Beach, FL 33416-4688

Ms. Cherie Trainor
March 27, 1998
Page 2

The above determination is based on the following:

- (1) The proposed target launch facilities in the Florida Keys will require an Environmental Resource Permit (ERP). The requirement for an ERP is not listed in Appendix N (Potential Permits) of the DSEIS. Please be advised that, although SFWMD staff has had some discussions with FDEP staff regarding permitting responsibility for this project, a final decision has not been made as to whether the FDEP or SFWMD will be responsible for the review of this project.
- (2) According to the DSEIS, use of the Saddlebunch Key site will result in disturbance to unaltered uplands (1.79 acres) and wetlands (2.2 acres) while use of the Cudjoe Key site will not disturb any previously unaltered upland or wetland areas. Section 373.14, F.S. requires the avoidance and minimization of wetland impacts. Once the applicant has demonstrated that impacts to wetlands have been avoided or minimized to the extent practicable, any remaining wetland losses must be mitigated. The DSEIS does not address avoidance and minimization of wetland impacts for the Saddlebunch Key site as required under Chapter 373.414, F.S. Although the DSEIS states that "specific mitigation measures will be developed in consultation with the appropriate agencies," no details regarding the proposed mitigation activities are provided.
- (3) Although the DSEIS addresses direct impacts to both sites, the potential for secondary or cumulative impacts at either location are not addressed, as required under Chapter 373.414, F.S.
- (4) The wetland boundaries and acreages existing on the proposed target launch sites have not been field verified by SFWMD environmental staff. Consequently, the applicant-estimated wetland boundaries and acreages may vary significantly from the actual acreages based on the Statewide Wetland Delineation Rule (Chapter 62-340, F.A.C.). If the applicant-estimated wetland acreage is significantly lower than actual on-site acreages, additional on or off-site mitigation may be necessary to meet the SFWMD's minimum mitigation requirements. The DSEIS does not provide any details regarding proposed on or off-site wetland mitigation activities.

- (5) The DSEIS indicates that an increase in water acidity will result from missile launching at these sites. Please be advised that the surrounding water bodies are classified as an Outstanding Florida Water (OFW) and an Aquatic Preserve. Consequently, any increase in acidity of surrounding water bodies would not be in compliance with State Water Quality Standards, as set forth in Chapter 62-302, F.A.C.

Ms. Cherie Trainor
March 27, 1998
Page 3

- (6) Most of the target launch and support activities proposed in the Keys are within the boundaries of the Florida Keys National Marine Sanctuary. SFWMD staff has concerns regarding implementation of the proposed activities within the boundaries of a wildlife refuge. This area is designated as critical habitat for the silver rice rat and also supports numerous other listed species. The proposed activities are projected to impact foraging habitat for numerous species and have the potential to displace nesting areas. Prior to project implementation, the applicant must demonstrate minimization of any potential adverse impacts, as required under Chapter 373.414, F.S. After the applicant has demonstrated minimization of any potential adverse impacts, a mitigation plan must be submitted which offsets potential impacts related to the proposed project. The DSEIS (Page 3-403) indicates that a mitigation plan will be developed in coordination with several agencies. However, the SFWMD is not included. The SFWMD should be included in any coordinated effort to develop a plan to offset any potential adverse impacts (not just listed species) incurred as a result of project implementation.

- (7) The DSEIS indicates that aluminum oxide and hydrogen chloride may be spilled on the ground during the proposed target launch activities. Staff has concerns related to the potential for this material to enter the groundwater and contaminate wetlands or other surface waters due to the high transmissivity of the soils in the Keys. Please be advised that containment of this material may be recommended if target launch activities are implemented in the Keys. Prior to any missile launching, additional information regarding the toxicity of this material and a demonstration of material containment will be required.


- (8) The breakdown products of the exhaust gases could potentially form harmful acids. These acids could adversely impact the surrounding area by altering surrounding vegetation, the vegetative community structure, and acidifying surrounding waters. Please be advised that the extent of the potential impacts will require quantification and measures to mitigate for these impacts prior to project implementation.

- (9) The DSEIS indicates that runoff will be allowed to sheetflow from impervious areas to adjacent waters (i.e., no stormwater management facilities are proposed for these sites). Please be advised that a stormwater management plan will be required prior to construction activities at either of these sites as part of the ERP application review process.

The above comments only address concerns related to activities proposed within the jurisdictional boundaries of the SFWMD. Staff considers activities proposed outside of

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**National Florida
Marine Keys
Sanctuary Program**



Mailing Address
Administrative Office
PO Box 500368
Marathon, FL 33050

Shipping Address
5550 Overseas Hwy. - Main House
Marathon, FL 33050

Pursuant to letters from Lester Lyles to Congressman Peter Deutch dated November 24, 1997 and Thomas Johnson to Virginia Wetherall dated December 23, 1997, we understand that the Keys are no longer in the proposed action and it is unlikely that the Keys will be approved in the final decision unless operational and testing requirements change. June Cradick of my staff recently spoke to Lt. Col. Lehner of your office concerning this matter. Lt. Col. Lehner stated the Keys are no longer an active option. The purpose of this letter is to reaffirm our commitment to protecting the marine resources of the Florida Keys and again request the missile testing initiative be located elsewhere. As this proposal is in draft form, I will further identify areas of concerns that should be addressed in the preparation of the final EIS for this project.

The following is a list of issues that come in direct conflict with existing Florida Keys National Marine Sanctuary (FKNMS) regulations. The relevant section of our regulations is cited for each issue.

Issue #1: Disruption of wilderness character in the Florida Keys

The Supplemental EIS states:

"Virtually all of the unoccupied vegetated area surrounding the proposed sites on Cudjoe, Saddlebunch, Sugarloaf, and Boca Chico Keys are jurisdictional wetlands regulated under the Clean Water Act. Furthermore, mangroves are protected by state law."

12

Ms. Cherie Trainor
March 27, 1998
Page 4

SFWMD boundaries as a potential secondary impact. These activities will require thorough evaluation during the ERP application review process.

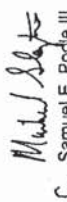
Please note that staff plans to present this inconsistency finding to our Governing Board at their next regularly-scheduled meeting (April 16, 1998) for their concurrence with this finding. Staff will advise you regarding the Governing Board's action on this item.

The SFWMD's inconsistency finding is based exclusively upon the information contained in the DSEIS. It is without prejudice towards full consideration of a modified proposal which addresses the potential for adverse impacts outlined in this letter.

SFWMD staff are available to meet with the applicant to further discuss the issues and concerns raised in this letter. If the applicant plans to proceed with either of the alternative target launch sites in the Keys, the applicant should coordinate any such efforts with our staff (and/or the appropriate staff from FDEP) prior to finalization of the SEIS or submittal of any permit applications.

If any of the above requires additional clarification or if we can be of further assistance, please do not hesitate to contact Jim Golden, Senior Planner in the Regulation Department, at (561) 687-8862.

Sincerely,


Samuel E. Podie III
Executive Director
South Florida Water Management District

SEP/jig

c: Jim Golden

13

02

It was also noted that Federal and State threatened species have been reported on Cudjoe, Boca Chica and Sugarloaf Keys. Further, Cudjoe Key surrounding the aerospace facility has been designated as critical habitat under Endangered Species Act (ESA) 50 CFR 17.95.

Within the Definitions section of the FKNMS regulations at 15 CFR §922.162:

"(a) The following definitions apply to the Florida Keys National Marine Sanctuary regulations. To the extent that a definition appears in §922.3 and this section, the definition in this section governs."

"Act" means the Florida Keys National Marine Sanctuary and Protection Act, as amended, (FKNMSPA) (Pub. L. 101-605), and the National Marine Sanctuaries Act (NMSA), also known as Title III of the Marine Protection, Research and Sanctuaries Act, as amended, (MPRSA) (16 U.S.C. 1431 et seq.).

Adverse effect means any factor, force, or action that independently or cumulatively damages, diminishes, degrades, impairs, destroys, or otherwise harms any Sanctuary resource, as defined in section 302 (8) of the NMSA (16 U.S.C. 1432 (8)) and in this section, or any of the qualities, values, or purposes for which the Sanctuary is designated."

By definition, the FKNMS is mandated to protect the Keys resources from any adverse effect by regulating activities affecting them. This was in order to protect, preserve and manage and thereby ensure the health, integrity and continued availability of the conservation, ecological, recreational, research, education, historical and aesthetic resources and qualities of these areas.

Issue #2: Toxic emissions from solid fuel rockets that may enter the marine environment and injure marine resources; Damage to mangroves and vegetation due to launch activities; Negative effects to the natural resources due to launching and launch accidents.

Section 4 of the Supplemental EIS states:

- 1) that the greatest concentrations of exhaust products would be released near the ground and with less exhaust being released in any specific area as the missile increases its speed;
- 2) the effect of 12 launches per year may permanently remove or degrade vegetation close to the launch pad;
- 3) cumulative impacts, over the 10-year period the launch activities could result in an overall loss of plant species diversity and total vegetation cover, and this loss could be due to the deposition of hydrogen chloride;

Theater Missile Defense Extended Test Range (EMDS) comments
From the Florida Keys National Marine Sanctuary
Page 7

- 4) if an accident occurs on the launch pad, the explosion and resultant fire could harm Federally or state listed species of nesting or wintering wading birds and shorebirds or their habitat;
- 5) impacts from launch-related activities could result in changes in water chemistry due to deposition of launch emissions, chemicals and missile debris.

Section of 15 CFR §922.163 - Prohibited activities-Sanctuary-wild states:

(3) Alteration of, or construction on, the seabed. Drilling into, dredging, or otherwise altering the seabed of the Sanctuary, or engaging in prop-dredging, or constructing, placing or abandoning any structure, material, or other matter on the seabed of the Sanctuary ...

(4) Discharge or deposit of materials or other matter: (i) Discharging or depositing from within the boundary of the Sanctuary, any material or other matter, except: (A) Fish, fish parts, chumming materials, or bait used or produced incidental to and while conducting a traditional fishing activity in the Sanctuary; (B) Biodegradable effluent incidental to vessel use and generated by a marine sanitation device approved in accordance with section 312 of the Federal Water Pollution Control Act, as amended (FWPCA), 33 U.S.C. 1322 et seq.;

(11) Possession or use of explosives or electrical charges. Possessing, or using explosives, except powerheads, or releasing electrical charges within the Sanctuary.

Issue #3: Disturbance of marine waterfowl through interference with nesting, feeding and breeding behaviors in the sensitive backcountry environment.

There are threatened and endangered species of birds; such as bald eagles, white-crowned pigeons, and peregrine falcons, within the areas of evaluation and within a Wildlife Management Area. Any impacts to the habitats or disturbances to the marine waterfowl should be done with consideration of the rules under the National Wildlife Refuge System (16 U.S.C)

Within the Supplemental EIS, section 4.2.3.1.3, it was stated there would be a slight chance of direct mortality of protected bird species. Within 16 U.S.C. under (c) Prohibited and permitted activities, it states:

"it shall be unlawful at any time, by any means or in any manner, to pursue, hunt, take, capture, kill, attempt to take, capture, or kill, possess..., any migratory birds, any part, nest, or eggs of any such bird..."

Theater Missile Defense Extended Test Range (EMDS) comments
From the Florida Keys National Marine Sanctuary
Page 7

05

"No person shall knowingly disturb, injure, cut, burn, remove, destroy, or possess any real or personal property of the United States, including natural growth, in any area of the System."

Issue #4: Negative impacts on marine resources from secondary vessel activity associated with the rocket facility.

- 1) increased activity at the site may result in the disturbance of the wildlife;
- 2) use of aircraft and patrol vessels could increase the chance of striking protected species;
- 3) increased vessel activity to support the upland facility could be of concern due to the shallow surrounding waters. Improper vessel activity within these areas could result in prop dredging, scarring and vessel groundings.

Section of 15 CFR §922.163 Prohibited activities - Sanctuary-wide states:

(b) Operation of vessels. (i) Operating a vessel in such a manner as to strike or otherwise injure coral, seagrass, or any other immobile organism attached to the seabed, including, but not limited to, operating a vessel in such a manner as to cause prop-scarring.

(iv) Operating a vessel in such a manner as to injure or take wading, roosting, or nesting birds or marine mammals. (v) Operating a vessel in a manner which endangers life, limb marine resources, or property.

Although military activities within the Sanctuary are allowed and may be exempted from FKNMS provisions pending consultation with the Superintendent of the FKNMS, new military activities should be modified so that they are not likely to destroy, or significantly injure Sanctuary resources. If an activity conducted by the Department of Defense is determined to have caused resource damage, they are responsible for taking appropriate actions to cease, respond or mitigate the harm and restore or repair the damage.

If you would like to discuss these comments, or have any questions, please feel free to contact me at (305) 743-2437.

Sincerely,

Billy D. Causey
Billy D. Causey
Sanctuary Superintendent

Theater Missile Defense Extended Test Range (TMDETS) comments
From the Florida Keys National Marine Sanctuary
Page 4

Comment Sheet

for the
Theater Missile Defense (TMD)
Extended Test Range (ETR)
Supplemental Environmental Statement (SEIS) —
Eglin Gulf Test Range (EGTR)

Thank you for attending this meeting. Please use this sheet to write down comments that you have regarding the SEIS. Your comments must be received by Ms. Nimb by April 3, 1998 to ensure they are considered in the Final SEIS.

01

1) THERE IS ONLY ONE 2 LANE ROAD DOWN THE LOWER KEYS, TO HAVE TO DRIVE MISSILES & SUPPORT VEHICLES & PERSONNEL IN ON IT IS BAD IDEA. THERE IS THE CHANCE THIS ROAD MAY HAVE TO BE CLOSED. I LIVE IN BIG PINE (HAWAIIAN TAXPAYER), MY DAUGHTER, MARYALYN & JED ARE IN KEY WEST. THE VOLUME OF TRAFFIC MAKES THE RIDE SLOW & FRUSTRATING ALREADY.

02

2) THERE HAS BEEN THE WHITE NEON REFUSE "OUT BACK" FOR DECADES, AND THE MARINE SANCTUARY. DON'T HARM THEM WITH INCIDENTAL FUEL SPILLS OR FLAME DEBRIS AT NOISE!

03

3) SCHOOLS ARE TOO CLOSE TO YOUR MOORED SITE (AND NEIGHBORHOODS)

04

4) I DON'T WANT THE NOISE. AND A LOT MORE UNIMPROVED SPT.

Sincerely,
Kathleen Whelan

Please place form in the comment box or mail to:

Ms. Linda Nimb
46 OGI/OGM-TMD
205 West D. Ave, Suite 241
Eglin AFB, FL 32542-6866



Kathy Whelan
29760 Johnson Road
Big Pine Key, FL 33003-3119



Printed on recycled paper

P-W-0045
COMMENT
NUMBER

Richie Anne Marple
1106 Via De Luna Drive
Pensacola Beach, Florida 32561-2266

Ma Linda Nimb
46 OGDUM-TMD
205 West D Avenue, Suite 241
Eglin AFB, Florida 32578-6866

March 27, 1998

Dear Ms Nimb:

Thank you for the opportunity to review and comment on the draft Theater Missile Defense Extended Test Range Supplemental Environmental Impact Statement-Bullfinch Gulf Test Range, Volume 1 and 2, dated 6 February 1998 (herein referred to as the document). My comments are filed as a resident of Santa Rosa Island and relate only to statements of fact made in reference to Santa Rosa Island.

Comment 1 (Ref. Cover Sheet, ES-8

The National Environmental Policy Act (NEPA) requires that all aspects of a proposed action be evaluated. References to the participation of the U. S. Navy are given in the presentation of facts in the document, but the impact evaluation portion of the document does not include analysis of the actions which would be required for the Navy to participate. It would be appropriate to either eliminate all references to the participation of the U.S. Navy AESSOS ship-launch effort, or fully include such an effort in the evaluation.

Comment 2 (Overview, page ES-3

This section gives a limit to the overall project as proposed. The limit is a 10-year period of operation. The succeeding sections of the DSEIS use a singular evaluation, not an impact evaluation times 10. Each section should be re-evaluated to include the required cumulative impact of the proposed action; that is, the number of test events per year times a 10-year period of operation.

Comment 3 (Section 2.1, page 2-1

The document states, "a flight test or test event means either a target missile flight, an interceptor missile flight, or an intercept of a target missile." The document repeatedly refers to 24 target launches and up to 48 interceptor launches per year. This would mean according to the document definition there could be 24 targets intercepted by 24 interceptors with a balance of 24 interceptors, this translates to a possible 48 events per year not 24. The entire evaluation portion of the document refers to 24 events per year. The document needs to be consistent.

Comment 4 (Section 2.3, page 2-73

The list of considerations for selection of a lead launch site include
o Site must not impact major highway or waterway traffic
In most cases the Launch Hazard Area (LHA) will always include the Gulf Intracoastal Waterway

P-W-0045
COMMENT
NUMBER

Page 2 of 4

Richie Marple

and, dependent on the predictive model for the LHA, may include Highway 98 when discussing the Santa Rosa Island Site A-15. If, for the purposes of this comment we limit the number of events to 24 per year, these two major traffic ways will be closed one hour prior to the launch and possibly up to 4 hours for the event 24 times per year for an overall period of 10 years. Such a closure will definitely have an undesirable impact. These two traffic ways are main east-west transportation arteries.

Comment 8 (General

Is Site A-15 within Okaloosa County as stated, or is it in Santa Rosa County?

Comment 6 (Section 3.1.1.1, 3.1.1.4.1

Setback sites separated from the main facility by five miles or greater or by a major highway require a separate PSD permit review. Highway 98 separates Site A-15 from Eglin proper. The review determines if NAAQS have been exceeded. In the case of Eglin Site A-15 such a review should produce a PSD Exemption for Site A-15. This section makes no reference to compliance to this requirement of the Clean Air Act.

Comment 7 (Section 3.1.2.4.1, pages 3-31, 3-33

Once again inconsistent reference is made to the launch event window. If the LHA is cleared one hour prior to the event, and the event window itself is 4 hours, the total for the event is 5 not 4 hours. If there are only 24 events, which is another point of inconsistency within the document, then the maximum airspace scheduling is 120 hours not 96. If there are actually 48 possible events, the schedule is 240 hours per year.

Comment 8 (Section 3.1.3.3.1, page 3-38

The statement is made, "Santa Rosa Island is not open to the public." Perhaps the author meant that the federal property at Site A-15 on Santa Rosa Island is closed to the public. Santa Rosa Island is a public recreation island.

Comment 9 (Section 3.1.1.1

There is no analysis of the Navarre Bridge which must be crossed in order to access Site A-15 by road. Can the bridge tolerate the weight of the transport vehicles required for this project? Does the height and/or width of the tollbooth provide access for the required transport vehicles? If the Navarre Bridge is restrictive, the only other road access is through the Pensacola Beach Bridge and its tollbooth. If this became the case, the increased traffic load through the recreation, business, and residential sections of Pensacola Beach has not been analyzed.

Comment 10 (Section 3.1.1.2

Historically, water supplies for the purpose of fighting fires on Santa Rosa Island have been less than dependable. Provisions for this eventuality should be included in the evaluation.

Comment 11 (Section 3.2.10.3


The displacement of commercially important fisheries caused by increased activity, debris,

Page 4 of 4

Richie Marple

assessment to residents and businesses based, in part, on hours of readiness time. This project may increase the assessment rates to the public unless the document is changed to reflect otherwise.

My best wishes for a successful and safe project.



Richie Arme Marple

11 (cont)

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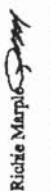
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Richie Marple 

some booms, etc. should be included in the analysis. Mitigation, or compensation, may be required of the federal agency causing the impact when a particular fishing zone is impacted. Reviewers may want to consider the case law applicable to the Strategic Petroleum Reserve (Department of Energy) and the Shrimpharmer's Association of Texas. Since the TMD project depends on the same weather windows which provide openings for commercial fishermen, there is potential for decreased revenues to commercial and recreational fishermen within Zone 9. The evaluation in this section, page 3-223, should be reconsidered based on the accurate presentation of clearance times of 5 hours, not 4, and on the accurate number of test events over a 10 year period.

Comment 12/Section 3.4.11.2
Shipping considerations completely disregarded the Port of Pensacola and the effect of the project on the Port. To disregard the Port of Pensacola is the equivalent of disregarding Hurtburt Field as part of the USAF because it falls in the lower percentile by landmass of all USAF facilities. Because a Port is not in the top ten does not mean it is not adjacent to the project and the interruption of shipping to this Port is not directly affected. It is suggested this Port be evaluated when considering A-15 as the location. Since commercial shipping costs include fuel and daily charter-hire rates, avoidance procedures do provide increased economic effects to commercial shipping, proper analyses of these effects should be considered in the DSEIS.

Comment 13/Appendix I, Section 3.2, page 1-7
Statements of time for roadblocks are not consistent with other statements in the document relative to clearance of the LHA. According to other statements within the document the very minimum a roadblock would be active is 2 hours; the maximum activation could be 5 hours.

Comment 14/Appendix I, Sections 2.12, 2.16, 4.2
Local fire departments are volunteer in nature with perhaps an additional complement of one or two experienced professionals. The extent of hazardous material training usually extends only to level 1 (Awareness). This minimal training is not sufficient to allow the use of these departments in response to possible hazardous events associated with this project. However, because of the outstanding environmental program maintained by the USAF it would seem appropriate for the USAF to offer onsite HAZWOPER training to the members of the fire departments which may be called upon through mutual aid agreements.

Summary:
In principle, I do not disagree with the mission of this project; but, I believe a consistent evaluation has not been provided throughout the document; therefore, the choice of alternatives may be defective. It would seem the "platform" alternative may provide the least amount of impact to local transportation, the least amount of threat of fire due to a mishap, and the least amount of impact to local emergency services (a minimally staffed Florida Marine Patrol, volunteer fire departments, and the Sheriff's Department). Additionally, most Florida counties support their fire and sheriff departments through a Municipal Services Benefit Unit (MSBU)

Comment Sheet
for the
Theater Missile Defense (TMD)
Extended Test Range (ETR)
Supplemental Environmental Impact Statement (SEIS) —
Eglin Gulf Test Range (EGTR)

Thank you for attending this meeting. Please use this sheet to write down comments that you have regarding the SEIS. Your comments must be received by Mr. NINH by April 3, 1998 to ensure they are considered in the Final SEIS.

16 This idea wasn't so serious
it would actually be funny. We
don't need protection from our
"enemies" we need protection from
our government who originates
the this kind of non-thinking
Even the "information" you passed out
was flawed. You can fool some of the
people some of the time, etc. etc. This
could be a script for a Mel Brooks movie.

Please place form in the comment box or mail to:
Ms. Linda Ninh
46 OQ/OQGM-TMD
205 West D. Ave, Suite 241
Eglin AFB, FL 32542-6866

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March 1998

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Comment Sheet
for the
Theater Missile Defense (TMD)
Extended Test Range (ETR)
Supplemental Environmental Impact Statement (SEIS) —
Eglin Gulf Test Range (EGTR)

Thank you for attending this meeting. Please use this sheet to write down comments that you have regarding the SEIS. Your comments must be received by Mr. NINH by April 3, 1998 to ensure they are considered in the Final SEIS.

Send the missile to an existing test range somewhere -
Don't waste money and trash a new environment with yet
another test range. People are sick & tired of military waste.

① The SEIS failed to adequately describe the actual effects
of the missile testing on the surrounding. E.g. - The hydrochloric
acid will "temporarily increase the acidity of the water" - But
what effect will that have on sea creatures? NONE? Will
they all die? Will they stop reproducing? Will they grow
bigger? @ The noise "avenging" was ridiculous. Who cares
about the average noise level over a year's time? What
is important is the volume of noise during a launch, and
how it will affect people and nature.
Don't put these missiles in the test - It's a
flawed and foolish plan. Your "experts" who sort up
Please place form in the comment box or mail to:
Ms. Linda Ninh
46 OQ/OQGM-TMD
205 West D. Ave, Suite 241
Eglin AFB, FL 32542-6866

John Holman - 16 Alton Haven - Key West, FL
33040

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STATE OF FLORIDA
Office of the Governor
 THE CAPITOL
 TALLAHASSEE, FLORIDA 32399-0001

LAWTON COULTER
 GOVERNOR

March 31, 1998

Ms. Linda Ninh
 46 OG/DGM-TMD
 205 West D Avenue, Suite 241
 Eglin AFB, Florida 32578-6866

Dear Ms. Ninh:

The Governor's Environmental Policy, Community and Economic Development Unit appreciates the opportunity to review and comment on the Department of Defense - Ballistic Missile Defense Organization's (BMDO) Theater Missile Defense Extended Test Range Draft Supplemental Environmental Impact Statement for the Eglin Gulf Test Range (DSEIS).

The Air Force Development Test Center (AFDTC) located at Eglin Air Force Base (AFB) is managing the DSEIS with the environmental documentation prepared by the U.S. Army Space and Missile Defense Command (USASMDC) in Huntsville, Alabama. The Eglin AFB staff and the USASMDC have provided opportunities for public review and input on the proposed Eglin Gulf Test Range proposal, including state, federal and local briefings, public scoping meetings, and other presentations at locations in the Florida Keys, as well as northwest Florida.

The Florida Keys has been designated by the Florida Legislature as an "area of critical state concern" and is one of the most environmentally sensitive areas in the state. The state has worked, in concert with local governments and federal agencies, to foster environmental programs to protect this "one of a kind" area in Florida.

In a letter dated November 24, 1997, Lieutenant General Lester Lyles notified the state that the Keys alternative was no longer being considered for missile testing. We support the decision by the BMDO to seek alternative locations to test the mid-range missiles/interceptor capabilities. Further, we understand that if the national security is threatened, the BMDO may reconsider missile testing in the Keys. We request to be kept apprised on this matter and, if another alternative should come under consideration in the future, the state would need to review the environmental documentation regarding the Theater Missile Defense Extended Test Range Site.

We encourage the BMDO to consider comments from the state's reviewing agencies concerning permitting requirements, water quality issues regarding Santa Rosa Sound and St. Joe Bay, and wetland impacts. The Department of State's Division of State Historical Preservation Office

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State of Florida Clearinghouse

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Ms. Linda Ninh
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(SHPO) has discussed the future of the two U. S. Coast Guard buildings and the light house located on Cape San Blas with the Gulf County Historical Preservation Office, the U. S. Coast Guard and Eglin Air Force Base personnel. Of particular concern to the SHPO is the preservation of the light house lens. We ask that you keep SHPO informed of any future negotiations on these issues.

We appreciate the opportunity to assist the Department of Defense - BMDO in the coordination and review of the draft SEIS on the Theater Missile Defense Extended Test Range.

Sincerely,

Esus D. Whitfield

Esus D. Whitfield, Policy Coordinator
 Environmental Policy/Community and
 Economic Development Unit

EDW/mmt

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Department of Environmental Protection

Majority Soneman Douglas Building
3900 Commonwealth Boulevard
Tallahassee, Florida 32399-3000

Virginia B. Wehner
Secretary

March 31, 1998

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APR 02 1998

Ms. Cherie Trainor
Florida State Clearinghouse
Department of Community Affairs
2555 Shumard Oak Boulevard
Tallahassee, Florida 32399-2100

State of Florida Clearinghouse

Re: Theater Missile Defense (TMD) Extended Test Range Draft Supplemental Environmental Impact Statement (DSEIS) for Eglin Gulf Test Range and Notice of Availability for the Proposed TMD Test Programs, Florida

SAI: FL9612240949CR

Dear Ms. Trainor:

The Department of Environmental Protection reviewed the Department of Defense Ballistic Missile Defense Organization (BMDO) proposal to expand the theater missile Defense Eglin test range within the Gulf of Mexico. The proposal initially considered alternative target launch sites to be located in the Florida Keys, either at Saddlebunch or Cudjoe Key. Construction at Saddlebunch Key, a U.S. Navy facility, would impact 1.79 acres of mangrove and salt marsh wetlands while construction at Cudjoe Key, an existing Air Force installation, would have less impact on habitat in the area. However, both sites presented significant concerns for environmental impact to land and water resources of the Keys and surrounding waters.

The Department of Defense (DOD) now is proposing a preferred alternative for missile testing which does not launch from either of the sites located in the Keys, or the waters of the Florida Keys National Marine Sanctuary (FKNMS). The department concurs that testing outside of the Keys area of impact is a more acceptable approach to conducting these tests; however, should launch sites in the Keys of surrounding waters be revisited as an alternative at a later date and a launch site within the Keys or the FKNMS become desirable, a supplemental revision of the Draft Supplemental Environmental Impact Statement (DSEIS) document should be developed and circulated for review by the State.

The following comments refer to the adequacy of the DSEIS and the evaluation of alternatives, specifically those launch sites located within the Keys or the FKNMS.

Protect Creative and Manage Florida's Environment and Natural Resources
Forward an original paper.

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Introduction

The State of Florida signed the Florida Keys National Marine Sanctuary (FKNMS) Management plan in January 1997. Therefore, proposed conflicts with the management plan are of primary concern to the State. The following is a list of issues which reflect conflicts between the Keys launch sites and existing sanctuary regulations. Regulations and statutes are referenced after the identification of each issue when applicable.

Issue #1: Discrepancy with the "Water Resource Regulations" Section

The following was stated within volume 2 of the referenced Supplemental Environmental Impact Statement, under appendix B, the "Water Resource Regulations" Section:

"Florida Keys National Marine Sanctuary Management Plan of 1996 - This management plan sets up a process for current and future changes in fishing activities including prohibitions, gear restrictions and permits within the Sanctuary."

This statement does not correctly define the management plan program goals or regulations. National marine sanctuaries are built around distinctive natural and historical resources whose protection and beneficial use require comprehensive planning and management. Sanctuary regulations address not only fishing activities, but also regulate activities that affect sanctuary resources or qualities.

Issue #2: Volume 1, 2.0 "Description of Alternatives including the Proposed Action"

According to the Supplemental Environmental Impact Statement, "Cudjoe Key and Saddlebunch Key are the alternative candidates for target launch locations."

Should the Florida Keys sites be used as alternative sites, several construction activities have been identified as being necessary to prepare the areas as launch sites. These construction activities would include dredging and filling in areas the DSEIS has identified as "jurisdictional wetlands regulated under the Clean Water Act." In addition, the DSEIS notes that Federal and state threatened species have been reported on Cudjoe, Boca Chica and Sugarloaf Keys. Furthermore, the majority of Cudjoe Key has been designated as critical habitat under the ESA (50 CFR 17.95).

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By definition, the FKNMS is mandated to protect the Keys resources from any adverse effects. Authorization for this mandate is found in 15 CFR, Section 922.162 which states:

"(a) The following definitions apply to the Florida Keys National Marine Sanctuary regulations. To the extent that a definition appears in Section 922.3 and this section, the definition in this section governs."

"Acts means the Florida Keys National Marine Sanctuary and Protection Act, as amended, (FKNMSPA) (Pub. L. 101605), and the National Marine Sanctuaries Act (NMSA), also known as Title 111 of the Marine Protection, Research, and Sanctuaries Act, as amended, (MPRSA) (16 U.S.C. 1431 et seq.). Adverse effect means any factor, force, or action that independently or cumulatively damages, diminishes, degrades, impairs, destroys, or otherwise harms any Sanctuary resource, as defined in section 302(8) of the NMSA (16 U.S.C. 1432(8)) and in this section, or any of the qualities, values, or purposes for which the Sanctuary is designated."

In addition to Federal regulations, Chapter 161.5, F.A.C., states:

"The Legislature further recognizes that these coastal areas are among Florida's most valuable resources and have extremely high recreational and aesthetic value which should be preserved and enhanced. " It is the intent of the Legislature that the most sensitive portions of the coastal area shall be managed through the imposition of strict construction standards in order to minimize damage to the natural environment, private property, and life. "

Should either of the Florida Keys sites become a preferred alternative, it will be necessary for the SEIS to address in greater detail potential impacts to the sanctuary and consistency of the project with Federal and State statutes.

Issue #3: Toxic emissions from solid fuel rockets that may enter the marine environment and injure marine resources; Damage to mangroves and vegetation due to launch activities; Negative effects to the natural resources due to launching and launch accidents.

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Under section 2.4 "Comparison of Alternatives" it was stated:

At Cudjoe Key, site preparation and targetflight test activity would result in minimal environmental impacts for biological resources, land and water use, noise, socioeconomic, transportation, and water resources; potential impacts on other resources would be negligible.

That statement does not completely agree with the previous draft of the Supplemental EIS, Section 4, which outlined the following projections:

1) the greatest concentrations of exhaust products would be released near the ground and less exhaust being released in any specific area as the missile increases its speed;

2) the effect of 12 launches per year may permanently remove or degrade vegetation close to the launch pad;

3) Cumulative Impacts, over the 10-year period the launch activities could result in an overall loss of plant species diversity and total vegetation cover. This loss could be due to the deposition of hydrogen chloride;

4) If an accident occurs on the launch pad, the explosion and resultant fire could harm Federally or State listed species of nesting or wintering wading birds and shorebirds or their habitat; and,

5) Impacts from launch-related activities could result in changes in water chemistry due to deposition of launch emissions, chemical stimulants and missile debris.

These two drafts contain different opinions on possible resource damage. The SEIS should define "minimal damage" and explain how the impacts listed in the earlier draft were determined to be minimal. Also, the SEIS should recognize that the following activities are prohibited by Section 922.163, 15 CFR:

"3) Alteration of, or construction on, the seabed. Drilling into, dredging, or otherwise altering the seabed of the Sanctuary, or engaging in prop-dredging; or constructing, placing or abandoning any structure, material, or other matter on the seabed of the Sanctuary...."

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(4) Discharge or deposit of materials or other matter. (i) Discharging or depositing from within the boundary of the Sanctuary, any material or other matter, except:
(A) Fish, fish parts, chumming materials, or bait used or produced incidental to and while conducting a traditional fishing activity in the Sanctuary; (B) Biodegradable effluent incidental to vessel use and generated by a marine sanitation device approved in accordance with section 312 of the Federal Water Pollution Control Act, as amended, (FWPCA), 33 U.S.C. 1322 et seq.;....

(11) Possession or use of explosives or electrical charges. Possessing, or using explosives, except powerheads, or releasing electrical charges within the Sanctuary."

The following statutory citations relate to the issues identified above and also mandate either prohibitions or constraints related to proposed activities which cause pollution; cause, authorize, create, suffer or allow an imminent hazard to occur or continue; cause, place or deposit solid waste in or on land or water in a manner not approved by the DEP: Sections 403.161; 403.727; and, 403.708, F.S., respectively.

Issue #4: Disturbance to Marine waterfowl through interference with nesting, feeding and breeding behaviors in the sensitive backcountry environment.

There are threatened and endangered species of birds; such as bald eagles, white-crowned pigeons, and peregrine falcons, within the areas evaluated and within a Wildlife Management Area. Any impacts to the habitats or disturbances to the marine waterfowl should be done with consideration of the rules under the National Wildlife Refuge System (16 U.S.C.).

Within the DSEIS, section 3.3.3.4.1, it was stated that:

"The heat and noise of launch events may cause mortality to those animals in the immediate vicinity (15 meters/50 feet) of the launch pad that were not previously frightened away by increased human activity. Deposition of hydrogen chloride and aluminum oxide emissions... could cause some spotting and browning of plants.... The long-term result would be some loss of biodiversity in the immediate vicinity of the launch pad."

However, these acts are either prohibited or require permits through 16 U.S.C. Section (c) Prohibited and permitted activities, which states:

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"It shall be unlawful at any time, by any means or in any manner, to pursue, hunt, take, capture, kill, attempt to take, capture, or kill, possess..., any migratory bird, any part, nest, or eggs of any such bird"

"No person shall knowingly disturb, injure, cut, burn, remove, destroy, or possess any real or personal property of the United States, including natural growth, in any area of the System;"

Also, under Section 61.302, Florida Statutes, it is unlawful to discharge domestic, industrial, agricultural, or other man-induced non-thermal components which are present in concentrations which are carcinogenic, mutagenic, or teratogenic to human beings, wildlife or welfare.

Issue #5: Negative impacts to marine resources from secondary vessel activity associated with the rocket facility were outlined as follows:

- 1) increased activity at the site may result in disturbance to the wildlife;
- 2) use of aircraft and patrol vessels could increase the chance of striking protected species;
- 3) increased vessel activity to support the upland facility could be of concern due to the shallow surrounding waters. Improper vessel activity within these areas could result in prop dredging, scarring and vessel groundings.

Under 15 CFR, Section 922.163, Sanctuary-wide activities which could act to constrain the above activities include the following:

(5) *Operation of vessels. (i) Operating a vessel in such a manner as to strike or otherwise injure coral, seagrass, or any other immobile organism attached to the seabed, including, but not limited to, operating a vessel in such a manner as to cause prop-scarring.*

(iv) *Operating a vessel in such a manner as to injure or take wading, roosting, or nesting birds or marine mammals. (v) Operating a vessel in a manner which endangers life, limb, marine resources, or property.*

Although existing military activities within the sanctuary are allowed and may be exempted from FKNMS provisions pending consultation with the Director of the FKNMS, new military activities would need to be modified so that they are not likely to destroy, or significantly injure Sanctuary resources. If an activity conducted by the DOD is determined to have or cause resource damage, the DOD would need to take

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appropriate actions to cease, respond or mitigate the harm and restore or repair the damage.

Issue #6: Permit Requirements:

Any expanded activities within the Florida Keys will require an Environmental Resource Permit (ERP) from either this agency or the South Florida Water Management District. This ERP requirement was not mentioned in Appendix N, which outlines the required permits. Section 373.414, Florida Statutes also requires the minimization and avoidance of wetland impacts which would be involved in the Saddlebunch Key alternative. Impact to those wetlands would need to be avoided and minimized prior to acceptance of a plan for mitigation. The DSEIS did not clearly outline this requirement.

Based on the information provided, it appears construction of support facilities in the Northwest region of the state will primarily be on uplands. In the event construction will impact wetlands, Wetland Resource Permits will be required. For more assistance regarding wetland permitting processes and standards, please contact Ms. Connie Kristoff at the Northwest District Office, (850)595-8300. The proposed construction will also require stormwater discharge permits. For more information, please contact Mr. Cliff Street also at the above mentioned number.

The DSEIS indicated that water acidity will occur as a result of missile launches from the Keys sites. However, it should be pointed out that the waters surrounding the Keys are classified as Outstanding Florida Waters and also within an Aquatic Preserve, protected from degradation by Chapter 62-302, F.A.C. Any changes in water chemistry would need to be accompanied by reasonable assurances that the project would not degrade water quality standards. Further, it was stated that aluminum oxide and hydrogen chloride may be spilled during the proposed target launch activities. Control of these substances would be required in conjunction with a stormwater management plan which provides assurances that water quality degradation would not occur.

Conclusion

The DSEIS did not adequately address the above issues. Since the preferred alternative is an offshore launch site outside of the FKNMS further analysis of impacts to the Keys or the FKNMS may not be warranted at this time. However, if the Air Force determines at a later date that its testing program should include a launch site in the Keys, the EIS should be supplemented with a complete evaluation of the above issues.

In addition, the DSEIS did not include a federal consistency determination as required by the Coastal Zone Management Act. The final EIS should include an appropriate

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determination in accordance with the requirements of 15 CFR 930, Subpart C, and address consistency of project impacts with the DEP's statutory authorities in the Florida Coastal Management Program, specifically Chapters 373, 403, 161, 370, 253, and 258, Florida Statutes.

We appreciate the opportunity of commenting on this proposal. If you have any questions regarding this letter please call either Mr. Robert Hall or me at (850)487-2231.

Sincerely,

Lynn Griffin
Office of Intergovernmental
Programs

cc: G.P. Schmahl
Anna Marie Hartman
Ron Blackburn

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Captain Brian W. Moss
April 1, 1998
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Do not understand the following statement on Page 3-82, paragraph 1. "Relocation closer to the launch pad would bring the structures into closer proximity to the coastline, therefore increased exposure to noise is not anticipated as a result of relocation."

Page 3-82, paragraph 2. It would be more accurate to say "Rehabilitation of ~~one of~~ both of the keeper's quarters...."

After-the-fact damage assessment and mitigation is not a viable alternative for historic resources. See Page 3-534, paragraph 3.5.2 as well - "Once a site is disturbed, it may be stabilized and protected from further deterioration, but it cannot be repaired to its original condition". Why not?

Throughout the document in the cultural resources sections statements are made such as no historical resources (shipwrecks or archaeological sites) are "present" or "there are no sites." Even though an area has been subjected to a cultural resource assessment survey, undiscovered sites or properties may exist. Therefore it would be more appropriate to use a phrase such as "no resources have been identified, or no resources have been encountered" in the underwater site or the land site. Unexpected discoveries of cultural resources are always a possibility and provisions for such occurrences have to be addressed.

Page 3-531, paragraph 3.4.4. "The information resulting from the inadvertent loss of some potentially eligible sites should be useful in future efforts to manage the remaining resources." This statement makes this office uncomfortable and wish to be able to coordinate further discussions regarding the Cape San Blas site avoidance and mitigation measures with the Air Force prior to the completion of the final EIS.

We apologize for being brief, but are trying to provide comments prior to meeting tomorrow in Washington. We will be more than glad to provide more explanations or meet with SEIS preparers. If you have any questions concerning our comments, please do not hesitate to contact us. Your interest in protecting Florida's historic properties is appreciated.

Sincerely,
George W. Percy
George W. Percy, Director
Division of Historical Resources
and
State Historic Preservation Officer

GWP/KJK
xc: Cherie L. Trainor, State Clearinghouse

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MEMBERS OF THE FLORIDA CABINET
Secretary of State
Historic Palm Beach County Preservation Board
Historic Pinellas County Preservation Board
Historic St. Augustine Preservation Board
Historic Tallahassee Preservation Board
Historic Tampa/Hillsborough County Preservation Board
Preservation Board of Art

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State of Florida Clearinghouse

In Reply Refer To:
Laura A. Kammerer
Historic Preservationist Supervisor
Project File No. 981373

FLORIDA DEPARTMENT OF STATE
Secretary of State
DIVISION OF HISTORICAL RESOURCES

April 1, 1998

Captain Brian W. Moss
Director, Test & Engineering Resources
Department of the Air Force
Ballistic Missile Defense Organization
7100 Defense Pentagon
Washington, DC 20301-7100

RE: Theater Missile Defense Extended Test Range Draft Supplemental Environmental Impact Statement for Eglin Gulf Test Range
Florida

Dear Captain Moss:

In accordance with the procedures of the National Historic Preservation Act, the National Environmental Policy Act and Florida's Coastal Management Program, this office has reviewed the referenced Draft Supplemental Environmental Impact Statement (SEIS). Pursuant to our responsibilities we will address those sections of the SEIS addressing possible impacts to historic properties listed, or eligible for listing, in the National Register of Historic Places. Please see note the following concerns and comments:

It is the opinion of this office that the potential impacts to the historic lighthouse and keeper's quarters located at Cape San Blas, Gulf County will be more than "minimal". The potential noise induced vibration impacts may be very significant. We believe the launch noise or sonic boom will adversely affect the lighthouse lens. If the impacts to the properties are so significant that they would have to be relocated for protection, this would constitute an adverse effect and a significant impact.

Launches from Cudjoe Key and Sania Rosa Island may have significant impacts on historic resources.

We noted that paleontological resources were included throughout the SEIS document under the cultural resources sections. These are not cultural resources - they pre-date any human life in Florida.

DIRECTOR'S OFFICE
R.A. Gray Building • 500 South Bronough Street • Tallahassee, Florida 32399-0250 • (904) 488-1480
FAX: (904) 488-3353 • WWW Address: <http://www.doa.state.fl.us>
 HISTORIC PRESERVATION (904) 488-2233 • FAX: 922-0496
 ARCHAEOLOGICAL RESEARCH (904) 487-2399 • FAX: 414-2207
 HISTORICAL MUSEUMS (904) 488-1481 • FAX: 921-2503

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COMMENT
NUMBER

COUNTY: State
 Message: DATE: 02/23/98
 COMMENTS DUE DATE: 02/26/98
 CLEARANCE DUE DATE: 03/30/98
 MAIL: FL9812240848CR

STATE AGENCIES
 Community Affairs
 Environmental Protection
 Game and Fresh Water Fish Comm
 Marine Fisheries Commission
 OTTED
 State
 Transportation

WATER MANAGEMENT DISTRICTS
 Northwood Florida WMD
 South Florida WMD

OTHER POLICY UNITS
 Environmental Policy & ED

The attached document requires a Coastal Zone Management Act/Federal Coastal Management Program consistency evaluation and is categorized as one of the following:
 - Federal Assistance in State or Local Government (16 CFR 604, Subpart F)
 - Federal Assistance in State or Local Government (16 CFR 604, Subpart F)
 - Other Federal Activity (16 CFR 604, Subpart G). Federal Agencies are required to furnish a consistency determination for the State's concurrence or objection.
 - Other Confidential Staff Expedient, Development or Production Activities (16 CFR 604, Subpart H). Operators are required to provide a consistency certification for state concurrence/objection.
 - Federal Licensing or Permitting Activity (16 CFR 604, Subpart D). Such projects will only be evaluated for consistency when there is not an analogous state license or permit.

Project Description:
 Department of Defense - Theater Missile Defense (TMD) Extended Test Range Deck Environmental Impact Statement (EIS) for Eigh Gulf Test Range and Helios of Availability for the Proposed TMD Test Programs - Florida.

To: Florida State Clearinghouses
 Department of Community Affairs
 2655 Shumard Oak Boulevard
 Tallahassee, FL 32399-2100
 (850) 922-8438 (SC 202-5438)
 (904) 144-0479 (FAX)

Federal Consistency
 No Comment
 Consistent/Comments Attached
 Inconsistent/Comments Attached
 Not Applicable

From: Division Bureau
 Reviewer: Sherry Schuchert
 Date: 3/2/98

P-W-0052
COMMENT
NUMBER

COUNTY: State
 Message: DATE: 02/23/98
 COMMENTS DUE DATE: 02/26/98
 CLEARANCE DUE DATE: 03/30/98
 MAIL: FL9812240949CR

STATE AGENCIES
 Community Affairs
 Environmental Protection
 Game and Fresh Water Fish Comm
 Marine Fisheries Commission
 OTTED
 State
 Transportation

WATER MANAGEMENT DISTRICTS
 X Northwood Florida WMD
 South Florida WMD

OTHER POLICY UNITS
 Environmental Policy & ED

The attached document requires a Coastal Zone Management Act/Federal Coastal Management Program consistency evaluation and is categorized as one of the following:
 - Federal Assistance in State or Local Government (16 CFR 604, Subpart F)
 - Federal Assistance in State or Local Government (16 CFR 604, Subpart F)
 - Other Federal Activity (16 CFR 604, Subpart G). Federal Agencies are required to furnish a consistency determination for the State's concurrence or objection.
 - Other Confidential Staff Expedient, Development or Production Activities (16 CFR 604, Subpart H). Operators are required to provide a consistency certification for state concurrence/objection.
 - Federal Licensing or Permitting Activity (16 CFR 604, Subpart D). Such projects will only be evaluated for consistency when there is not an analogous state license or permit.

Project Description:
 Department of Defense - Theater Missile Defense (TMD) Extended Test Range Deck Environmental Impact Statement (EIS) for Eigh Gulf Test Range and Helios of Availability for the Proposed TMD Test Programs - Florida.

To: Florida State Clearinghouses
 Department of Community Affairs
 2655 Shumard Oak Boulevard
 Tallahassee, FL 32399-2100
 (850) 922-8438 (SC 202-5438)
 (904) 144-0479 (FAX)

Federal Consistency
 No Comment/Consistent
 Comments Attached
 Inconsistent/Comments Attached
 Not Applicable

From: Division Bureau
 Reviewer: RMD, Ben. Gou. d. Pa. Puy,
Priscilla J. Cairns
 Date: 3 March 1998



VIA FACSIMILE AND MAIL

RECEIVED
MAR 16 1998

State of Florida Clearinghouse

March 12, 1998

Ms. Cherie Trainor
Florida State Clearinghouse
Florida Department of Community Affairs
2555 Shumard Oak Boulevard
Tallahassee, Florida 32399-2100

RE: SRPPC #98-0307, SAI #FL961224094CR - Request for comments on the Theater Missile Defense Extended Test Range Draft Supplemental Environmental Impact Statement for the Eglin Gulf Test Range, U.S. Department of Defense, Boca Chica, Cudjoe, Fleming and Saddlebunch Keys, Monroe County.

Dear Ms. Trainor:

We have reviewed the above-referenced permit application and have the following comments:

- Council staff is greatly concerned about the impacts this project could have on the water quality, wildlife habitat and the overall ecological integrity of the region. The project should be consistent with the goals and policies of the Monroe County and City of Key West comprehensive plans and their corresponding land development regulations and the goals and policies of the Florida Keys National Marine Sanctuary Management Plan.
- Staff recognizes the location of the alternative test launch sites' launch hazard areas in the Florida Keys National Marine Sanctuary, the Key Deer National Wildlife Refuge and the Great White Heron National Wildlife Refuge, natural resources of regional significance as designated in the Strategic-Regional Policy Plan of South Florida (SRPP). Staff recommends that, if the use of these alternative sites is pursued, 1) impacts to the natural systems be minimized to the greatest extent feasible and 2) the Department of Defense determine the extent of sensitive marine life and vegetative communities in the vicinity of the project and protect and or mitigate disturbed habitat. This will assist in reducing the cumulative impacts to native plants and animals, wetlands and deep water habitat and fisheries that the goals and policies of the SRPP seek to protect.
- The goals and policies of the SRPP, in particular those indicated below, should be observed when making decisions regarding this project.

P-W-0053
COMMENT
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P-W-0053
COMMENT
NUMBER

Ms. Cherie Trainor
March 12, 1998
Page 2

Strategic Regional Goal

3.1 Eliminate the inappropriate uses of land by improving the land use designations and utilize land acquisition where necessary so that the quality and connectedness of Natural Resources of Regional Significance and suitable high quality natural areas is improved.

Regional Policies

3.1.1 Natural Resources of Regional Significance and other suitable natural resources shall be preserved and protected. Mitigation for unavoidable impacts will be provided either on-site or in identified regional habitat mitigation areas with the goal of providing the highest level of resource value and function for the regional system. Endangered faunal species habitat and populations documented on-site shall be preserved on-site. Threatened faunal species and populations and species of special concern documented on-site, as well as critically imperiled, imperiled and rare plants shall be preserved on-site unless it is demonstrated that off-site mitigation will not adversely impact the viability or number of individuals of the species.

3.1.2 Direct inappropriate uses of land that are not consistent with the protection and maintenance of natural resource values away from Natural Resources of Regional Significance and suitable natural resource areas.

3.1.9 Degradation or destruction of Natural Resources of Regional Significance, including listed species and their habitats will occur as a result of a proposed project only if:

- a) the activity is necessary to prevent or eliminate a public hazard, and
- b) the activity is in the public interest and no other alternative exists, and
- c) the activity does not destroy significant natural habitat or identified natural resource values, and
- d) the activity does not destroy habitat for threatened or endangered species, and
- e) the activity does not negatively impact listed species that have been documented to use or rely upon the site.

3.1.10 Proposed projects shall include buffer zones between development and existing Natural Resources of Regional Significance and other suitable natural resources. The buffer zones shall provide natural habitat values and functions that complement Natural Resources of Regional Significance values so that the natural system values of the site are not negatively impacted by adjacent uses. The buffer zones shall be a minimum of 25 feet in width. Alternative widths may be proposed if it is demonstrated that the alternative furthers the viability of the Natural Resource of Regional Significance, effectively separating the development impacts from the natural resource or contributing to reduced fragmentation of identified Natural Resources of Regional Significance.

3.1.11 Implement monitoring and maintenance of Natural Resources of Regional Significance and other suitable natural resources so that an Overall Positive Gain in quality and quantity of the Natural Resources of Regional Significance is achieved. The monitoring of the Natural Resources of Regional Significance shall be included on all projects that have not been demonstrated to not adversely impact the resource or associated listed species.

Ms. Cherie Trainor
March 11, 1998
Page 3

3.1.19 Uses of the land shall be consistent with the sustained ecological functioning of the Natural Resources of Regional Significance and suitable adjacent natural buffer areas and will be based upon the radius required to provide protection to the natural system and associated inhabitants. The radius will vary in size depending upon the resource or species that is to be protected.

Strategic Regional Goal

3.2 Develop a more efficient and sustainable allocation of the water resources of the region.

Regional Policies

3.2.6 When reviewing proposed projects and through the implementation of the SRPP, discourage water management and proposed development projects that alter the natural wet and dry cycles of Natural Resources of Regional Significance or suitable adjacent buffer areas or cause functional disruption of wetlands or aquifer recharge areas.

3.2.9 Require all inappropriate inputs into Natural Resources of Regional Significance to be eliminated through such means as; redirection of offending outfalls, suitable treatment improvements or retrofitting options.

3.2.10 The discharge of freshwater to Natural Resources of Regional Significance and suitable adjacent natural buffer areas shall be designed to imitate the natural discharges in quality and quantity as well as in spatial and temporal distribution.

3.2.11 Existing stormwater outfalls that do not meet or improve upon existing water quality or quantity criteria or standard, or cause negative impacts to Natural Resources of Regional Significance or suitable adjacent natural buffer areas shall be modified to meet or exceed the existing water quality or quantity criteria or standard. The modification shall be the responsibility of the outfall operator, permittee or applicant.

Strategic Regional Goal

3.3 Achieve improved air quality throughout the region through a reduction of transportation related impacts and the increased use of natural plantings.

Regional Policies

3.3.6 Proposed development shall be reviewed with respect to the potential for related impacts to the regional air quality, and negative impacts eliminated or effectively mitigated.

Strategic Regional Goal

3.4 Improve the protection of upland habitat areas and maximize the interrelationships between the wetland and upland components of the natural system.

Regional Policies

3.4.4 Require the use of ecological studies and site and species specific surveys in projects that may impact natural habitat areas to ensure that rare and state and federally listed plants and wildlife are identified with respect to temporal and spatial distribution.

Ms. Cherie Trainor
March 12, 1998
Page 4

3.4.5 Identify and protect the habitats of rare and state and federally listed species. For those rare and threatened species that have been scientifically demonstrated by past or site specific studies to be relocated successfully, without resulting in harm to the relocated or receiving populations, and where *in-situ* preservation is neither possible nor desirable from an ecological perspective, identify suitable receptor sites, guaranteed to be preserved and managed in perpetuity for the protection of the relocated species that will be utilized for the relocation of such rare or listed plants and animals made necessary by unavoidable project impacts. Consistent use of the site by endangered species, or documented endangered species habitat on-site shall be preserved on-site.

3.4.6 Require the protection of listed species identified in ecological studies of proposed project areas by such means as, the isolation of suitable habitat or relocation of the individuals to suitable Natural Resources of Regional Significance or other suitable natural areas with sufficient carrying capacity consistent with the requirements of Policies 3.4.1, 3.4.2, 3.4.3, 3.4.4, and 3.4.5.

3.4.7 Natural system corridors shall include upland as well as wetland habitat areas to facilitate the re-establishment of regional system ecological values and functions.

3.4.8 Remove invasive exotics from all Natural Resources of Regional Significance and associated buffer areas. Require the continued regular and periodic maintenance of areas that have had invasive exotics removed.

3.4.9 Required maintenance shall insure that re-establishment of the invasive exotic does not occur.

3.4.10 Local governments shall be encouraged to require invasive exotic removal as a condition of development approvals.

3.4.11 Local governments shall be encouraged to remove invasive exotics from government property.

Strategic Regional Goal

3.8 Enhance and preserve natural system values of South Florida's shorelines, estuaries, benthic communities, fisheries, and associated habitats, including but not limited to, Florida Bay, Biscayne Bay and the coral reef tract.

Regional Policies

3.8.1 Enhance and preserve natural shoreline characteristics through requirements resulting from the review of proposed projects and in the implementation of ICE, including but not limited to, mangroves, beaches and dunes through prohibition of structural shoreline stabilization methods except to protect existing navigation channels, maintain reasonable riparian access, or allow an activity in the public interest as determined by applicable state and federal permitting criteria.

3.8.2 Enhance and preserve benthic communities, including but not limited to seagrass and shellfish beds, and coral habitats, by allowing only that dredge and fill activity, artificial shading of habitat areas, or destruction from boats that is the least amount practicable, and by encouraging permanent mooring facilities. Dredge and fill activities may occur on

**FLU WA STATE CLEANING USE
RPC INTERGOVERNMENTAL COORDINATION
AND RESPONSE SHEET**

SALR: FLW12490CK DATE: 02/29/88

COMMENTS DUE TO CLEARINGHOUSE: 02/14/88

AREA OF PROPOSED ACTIVITY: COUNTY: Size

FEDERAL ASSISTANCE DIRECT FEDERAL ACTIVITY FEDERAL LICENSE OR PERMIT OCS

PROJECT DESCRIPTION
Department of Defense - Theater Missile Defense (TMD) Extended Test Range Dm3 Supplemental Environmental Impact Statement (DEIS) for Eight Oaif Test Range and Notices of Availability for the Proposed TMD Test Program - Florida.

ROUTING:
RPC
South Fl. RPC
X West Florida RPC
Apalachicola RPC

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State of Florida Clearinghouse

PLEASE CHECK ALL THE LOCAL GOVERNMENTS BELOW FROM WHICH COMMENTS HAVE BEEN RECEIVED; ALL COMMENTS RECEIVED SHOULD BE INCLUDED IN THE RPC'S CLEARINGHOUSE RESPONSE PACKAGE. IF NO COMMENTS WERE RECEIVED, PLEASE CHECK "NO COMMENT" BOX AND RETURN TO CLEARINGHOUSE.

COMMENTS DUE TO RPC: #04691

NO COMMENTS.
(IF THE RPC DOES NOT RECEIVE COMMENTS BY THE DEADLINE DATE, THE RPC SHOULD CONTACT THE LOCAL GOVERNMENT TO DETERMINE THE STATUS OF THE PROJECT REVIEW PRIOR TO FORWARDING THE RESPONSE PACKAGE TO THE CLEARINGHOUSE.)

NOTES:
ALL CONCERN OR COMMENTS REGARDING THE ATTACHED PROJECT (INCLUDING ANY RPC COMMENTS) SHOULD BE SENT IN WRITING BY THE DUE DATE TO THE CLEARINGHOUSE. PLEASE ATTACH THIS RESPONSE FORM AND REFER TO THE SAL # IN ALL CORRESPONDENCE.
IF YOU HAVE ANY QUESTIONS REGARDING THE ATTACHED PROJECT, PLEASE CONTACT THE STATE CLEARINGHOUSE AT (904) 922-5031 OR SUNCOM 272-5431.

Ms. Cherie Trainor
March 12, 1998
Page 5

submerged lands in the Florida Keys only as permitted by the Monroe County Land Development Regulations. It must be demonstrated pursuant to the review of the proposed project features that the activities included in the proposed project do not cause permanent, adverse natural system impacts.

3.8.3 As a result of proposed project reviews, include conditions that result in a project that enhances and preserves marine and estuarine water quality by:

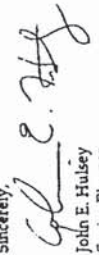
- a) improving the timing and quality of freshwater inflows;
- b) reducing turbidity, nutrient loading and bacterial loading from wastewater facilities, vessels;
- c) reducing the number of improperly maintained stormwater systems; and
- d) requiring port facilities and marinas to implement hazardous materials spill plans.

3.8.4 Enhance and preserve commercial and sports fisheries through monitoring, research, best management practices for fish harvesting and protection of nursery habitat and include the resulting information in educational programs throughout the region. Identified nursery habitat shall be protected through the inclusion of suitable habitat protective features including, but not limited to:

- a) avoidance of project impacts within habitat areas;
- b) replacement of habitat area impacted by proposed project; or
- c) improvement of remaining habitat area within remainder of proposed project area.

3.8.5 Enhance and preserve habitat for endangered and threatened marine species by the preservation of identified endangered species habitat and populations. For threatened species or species of critical concern, on-site preservation will be required unless it is demonstrated that off-site mitigation will not adversely impact the viability or number of individuals of the species.

Thank you for the opportunity to comment. We would appreciate being kept informed on the progress of this project. Please do not hesitate to call if you have any questions or comments.

Sincerely,

John E. Hulsey
Senior Planner
JEH:kg

cc: Timothy McGarry, Monroe County Planning
Ted Strader, City of Key West Planning

P-W-0056
COMMENT
NUMBER

**FLORIDA STATE CLEARINGHOUSE
LOCAL GOVERNMENT COORDINATION
ROUTING SHEET**

SAT # FL9124096CR DATE: 02/12/94
 COMMENTS DUE TO RPC: 849598

AREA OF PROPOSED ACTIVITY: COUNTY: Steele

FEDERAL ASSISTANCE DIRECT FEDERAL ACTIVITY FEDERAL LICENSE OR PERMIT OCS

PROJECT DESCRIPTION:
 Department of Defense - Theater Missile Defense (TMD) Extended Test Range Draft Supplemental Environmental Impact Statement (DEIS) for Eight Gulf Test Range and Notice of Availability for the Proposed TMD Test Program - Florida.

ROUTING:

RPC

Local Governments
 Bay County
 Santa Rosa County
 Gulf County

South FL RPC
 West Florida RPC
 Appalachia RPC

RECEIVED
 MAR 17 1998
 STATE OF FLORIDA
 PLANNING COUNCIL

RECEIVED
 MAR 10 1998
 374
 PLANNING COUNCIL

IF YOU HAVE NO COMMENTS, PLEASE CHECK HERE AND RETURN FORM TO RPC:
 ALL CONCERNS OR COMMENTS REGARDING THE ATTACHED PROJECT SHOULD BE SENT IN WRITING BY THE DUE DATE TO THE REGIONAL PLANNING COUNCILS SHOWN BELOW. PLEASE REFER TO THE SAT # IN ALL CORRESPONDENCE.

Mr. Mike Donovan
 Appalachia Regional Planning Council
 314 East Central Avenue
 Room 119
 Marietta, FL 32424

IMPORTANT: PLEASE DO NOT SEND COMMENTS DIRECTLY TO THE CLEARINGHOUSE!
 IF YOU HAVE QUESTIONS REGARDING THE ATTACHED PROJECT OR THE INTERGOVERNMENTAL COORDINATION PROCESS, PLEASE CONTACT THE STATE CLEARINGHOUSE. IF YOU HAVE QUESTIONS REGARDING THE FEDERAL CONSISTENCY REVIEW PROCESS, PLEASE CONTACT THE FLORIDA COASTAL MANAGEMENT PROGRAM. THE TELEPHONE NUMBER FOR BOTH PROGRAMS IS (904) 922-5438 OR SUNCOM 272-5431.

01

P-W-0055
COMMENT
NUMBER

**FLORIDA STATE CLEARINGHOUSE
RPC INTERGOVERNMENTAL COORDINATION
AND RESPONSE SHEET**

SAT # FL9124096CR DATE: 02/12/94
 COMMENTS DUE TO CLEARINGHOUSE: 027468

AREA OF PROPOSED ACTIVITY: COUNTY: Steele

FEDERAL ASSISTANCE DIRECT FEDERAL ACTIVITY FEDERAL LICENSE OR PERMIT OCS

PROJECT DESCRIPTION:
 Department of Defense - Theater Missile Defense (TMD) Extended Test Range Draft Supplemental Environmental Impact Statement (DEIS) for Eight Gulf Test Range and Notice of Availability for the Proposed TMD Test Program - Florida.

ROUTING:

RPC

Local Governments
 Bay County
 Santa Rosa County
 Gulf County

South FL RPC
 West Florida RPC
 Appalachia RPC

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 MAR 17 1998
 STATE OF FLORIDA
 PLANNING COUNCIL

RECEIVED
 FEB 27 1998
 374
 PLANNING COUNCIL

PLEASE CHECK ALL THE LOCAL GOVERNMENTS BELOW FROM WHICH COMMENTS HAVE BEEN RECEIVED; ALL COMMENTS RECEIVED SHOULD BE INCLUDED IN THE RPC'S CLEARINGHOUSE RESPONSE PACKAGE. IF NO COMMENTS WERE RECEIVED, PLEASE CHECK "NO COMMENT" BOX AND RETURN TO CLEARINGHOUSE.

COMMENTS DUE TO RPC: 849598

Bay County
 Santa Rosa County

NO COMMENTS. (IF THE RPC DOES NOT RECEIVE COMMENTS BY THE DEADLINE DATE, THE RPC SHOULD CONTACT THE LOCAL GOVERNMENT TO DETERMINE THE STATUS OF THE PROJECT REVIEW PRIOR TO FORWARDING THE RESPONSE PACKAGES TO THE CLEARINGHOUSE.)

NOTES:

ALL CONCERNS OR COMMENTS REGARDING THE ATTACHED PROJECT INCLUDING ANY RPC COMMENTS SHOULD BE SENT IN WRITING BY THE DUE DATE TO THE CLEARINGHOUSE. PLEASE ATTACH THIS RESPONSE FORM AND REFER TO THE SAT # IN ALL CORRESPONDENCE.
 IF YOU HAVE ANY QUESTIONS REGARDING THE ATTACHED PROJECT, PLEASE CONTACT THE STATE CLEARINGHOUSE AT (904) 922-5438 OR SUNCOM 272-5431.

01

P-W-0057
COMMENT
NUMBER

NORTHWEST FLORIDA WATER MANAGEMENT DISTRICT
MEMORANDUM

TO: Duncan Cairns, Chief, Bureau of Environmental Management and Planning
FROM: Paul Thorpe, Assistant Water Resource Planner
DATE: March 3, 1998
SUBJECT: Draft SEIS for Theater Missile Defense Test Range, SAIF FL8612240949CR
FILE: H:\p_thorpe\comment\NEPA\TMD 840303

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Based on the Draft Supplemental EIS submitted, District staff have concerns about the proposed action with regard to wastewater treatment, nonpoint source pollution, and wetland impacts. Additionally, page 3-232 incorrectly states that the waters of St. Joe Bay subject to Project are Class III. These are Class II waters according to Section 62-302.800 (3) (b), Florida Administrative Code (F.A.C.).

Both Santa Rosa Sound and St. Joe Bay are receiving increasing cumulative impacts which may degrade their habitat quality and threaten their viability as recreational and shellfish waters. It would appear that surface water quality may be impacted by increased effluent from septic systems and increased nonpoint source pollution via stormwater runoff during both construction of new facilities and implementation of the proposed action. The proposed actions should involve full consideration of the status of the affected waters. The affected portions of both Santa Rosa Sound and St. Joe Bay are Class II (shellfish propagation and harvesting) waters, and St. Joe Bay is also an Aquatic Preserve and Outstanding Florida Water (OPW). As an OPW, any degradation of water quality, including due to indirect impacts, is prohibited in accordance with Section 62-302.700, F.A.C. Additionally, both Santa Rosa Sound and St. Joe Bay are Surface Water Improvement and Management (SWIM) priority waterbodies, which represents a public commitment to their protection.

Consideration should also be given to whether it would be feasible to avoid or further minimize wetland impacts, such as those planned for Cape San Blas. Additionally, new impervious surfaces should be minimized, the suitability of soils for septic tank use should be evaluated, and all stormwater runoff should be captured and treated on site.

P-W-0057
COMMENT
NUMBER



NORTHWEST FLORIDA WATER MANAGEMENT DISTRICT
Project Review Form

TO: State Clearinghouse
Department of Community Affairs
2855 Shumard Oak Boulevard
Tallahassee, FL 32399-2106

DATE: March 3, 1998

SUBJECT: Project Review: Intergovernmental Coordination
Title: Dept. of Defense-Theater Missile Defense (TMD) Extended Test Range
Draft Supplemental Environmental Impact Statement (SEIS) for
Eglin Gulf Test Range and Notice of Availability for the Proposed
TMD Test Programs-Florida
SAIF: FL8612240949CR

The District has reviewed the subject application and attachments in accordance with its responsibilities and authority under the provisions of Chapter 373, Florida Statutes. As a result of review, the District has the following responses:

- ACTION**
- No Comment.
 - Supports the project.
 - Objects to the project; explanation attached.
 - Has no objection to the project; explanation optional.
 - Cannot evaluate the project; explanation attached.
 - Project requires a permit from the District under _____.

- DEGREE OF REVIEW**
- Documentation was reviewed.
 - Field investigation was performed.
 - Discussed and/or contacted appropriate office about project.
 - Additional documentation/research is required.
 - Comments attached.

SIGNED: *M. J. Cairns*
Duncan Jay Cairns
Chief, Bur. Env. & Res. Plng.

P-W-0058
COMMENT
NUMBER

Comment Sheet

for the
Theater Missile Defense (TMD)
Extended Test Range (ETR)
Supplemental Environmental Impact Statement (SEIS) —
Eglin Gulf Test Range (EGTR)

Thank you for attending this meeting. Please use this sheet to write down comments that you have regarding the SEIS. Your comments must be received by Ms. NINH by April 3, 1998 to ensure they are considered in the Final SEIS.

I ask that any plans to launch missiles from the Florida Keys be abandoned by the Air Force. Like most of the Keys residents who attended the SEIS meeting this would be key level. I find this study flawed. I live who live in the Keys are in a delicate environmental area. Building has been drastically limited and regulations should be placed on water, bird, and reef. It is an environment even consider launching missiles from our area.

Lois Simonds
401 Spanish Main
Cudjoe Key, Fla.
33042

Please place form in the comment box or mail to:
Ms. Linda Ninh
46 OG/OGM-TMD
205 West D. Ave, Suite 241
Eglin AFB, FL 32542-6866



March 1998

P-W-0059
COMMENT
NUMBER

Cape San Blas Taxpayers Association
POST OFFICE BOX 544, PORT St. Joe 32456

March 17, 1998

Ms. Linda Ninh
46 OG/OGM-TMD
205 West D. Ave, Suite 241
Eglin AFB, FL 32542-6866

Dear Ms. Ninh:

This Association has surveyed it's member property owners here at Cape San Blas. 91 members, or about one fifth of the total property owners object to the use of Cape San Blas for the selected missile launching site.

At the SEIS briefing no new information was presented to indicate that any other site was offered as an alternative in this proposed test action. I believe that this process of selection should have been subjected to the same selection process as the one three years ago, when several alternative sites were offered.

Your SEIS briefing papers show that there are environmental damages to the land and waters when launches are made. This area is in the St. Joseph Bay Aquatic Preserve, and the impact of launch actions certainly is not consistent with the objectives of an Aquatic Preserve.

Cape San Blas is not the low population density it once was. The population is growing regularly and is expected to increase rapidly as the Port St. Joe and Gulf County activities for economic development take effect. This area will become much more of a tourist and beach retirement and vacation spot, with appropriate infrastructure. The missile launching activity will be a deterrent to economic growth. Here in a small county steady economic growth will be needed as the main industry (the paper mill) slows and eventually goes out of production.

We are concerned that the nesting sea turtles and bald eagle nest will be impacted. We do not believe that the elimination of 1.6 acres of wet land should be required. Since the Department of Defense does not fully and actively utilize all of it's ranges and bases, it would seem reasonable that another location could be found.

Potential damage to the lighthouse and the adjacent historic quarters could be avoided by finding another launch site. Gulf County government is trying to acquire and preserve this area for the people. In a small county where funds are scarce, expenditure of dollars to fix something you damage in launch activity is an unnecessary expense.

Since your plan does not include any substantial or regular inflow of funds to the county for the activities planned, it does not help the County cope with the logistics of your presence here. I feel certain that unless some method of funding to help the local government is worked out, this activity will end up a drain on our local taxpayers.

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4. *The natural biota of the Keys are misunderstood and understated. The impact of land launch activity on wildlife and plants is underestimated. An abundance of resource material exists from which an accurate listing of biota can be developed. The reassessment described in (1.) above will provide a more accurate estimate of the nature and dispersal of hazardous materials from which a better estimate of environmental impact can be made.*

06

5. *Averaging the periodic, night-time sound blast of a Hera launch into the year round low level noise of the Keys in order to reach the conclusion that it is of no consequence is contrived and absurd. The discussion of the impact of the proposed activity on nearby residents needs to be rational, complete and credible.*

07

6. *There is no assessment of the impact of the proposed activity on real estate values and tax revenues. The impact on values and revenues as the result of adopting the land launch alternative requires assessment as does the consequence of an accidental failure.*

These are important issues that need to be acknowledged and addressed in the Final SEIS.

Sincerely,

Shirley Freeman
Commissioner Shirley Freeman
Monroe County, Florida

cc: Ms. Linda Ninh - Eglin AFB

01

I am writing to summarize my concerns, and those of the citizens of Monroe County, regarding the serious deficiencies in the Draft Supplemental Environmental Impact Statement (DSEIS) for the Eglin Gulf Test Range (EGTR). The deficiencies in the assessment of the land launch alternatives at Cudjoe and Saddlebunch Keys were identified in testimony at the public hearings in Key West and Marathon on March 12 and 13, 1998. That testimonies of thoughtful and technically competent individuals, copies of which are in your possession, merit your closest attention. The most important deficiencies in the DSEIS that were identified in the hearings were:

1. *The failure to assess the short and long term effects of the repetitive launching of the Hera missile in the shallow water, high humidity environment of the Lower Keys. Of particular concern is the failure to provide a relevant assessment of the formation and dispersal of Hydrochloric acid in an environment similar to that in the Keys. The DSEIS does not address the toxicological effects of unburned solid rocket propellant that may remain in the environment following a launch failure.*
2. *The reduction in the size of the launch hazard area (LHA) from 4.5 miles to 1.5 miles from the closest human habitation. No discussion was provided of the rationale for departing from established practices. We are particularly concerned about the school and the homes that exist within 4.5 miles of the launch site.*
3. *The failure to discuss in a meaningful way the impact that periodic missile convoys will have on the vital artery that is U.S. Route 1. Size, speed and timing of convoys are not disclosed nor are the specifics of their impact on traffic or emergency response systems.*

02

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04



COUNTY OF MONROE
530 WHITEHEAD STREET
KEY WEST, FLORIDA 33040

Shirley Freeman
County Commissioner

305-293-2430
FAX 305-292-3577
bocchie@mail.satec.fl.us

March 31, 1998

Lieutenant General Lester Lyles
Department of Defense
Ballistic Missile Defense Organization
7100 Defense Pentagon
Washington, D.C. 20301-7100

Dear General Lyles,

Daniel C. Probert, P.E.
 3728 Flagler Avenue
 Key West, FL 33940-4529
 (305) 294-7243

After attending the Key West public forum on 12 March 1998, I feel that the team fielded by Commissioner Freeman presented a rather strong case to show flaws in the draft SEIS. The factual level of the material presented might be questioned because of the presenter's emotional feelings due to their geographic proximity to the proposed launch areas.

I have advocated a sea launch as the preferred site almost since the inception of the program. It eliminates most of the environmental complaints since it would move the launch site a significant geographic distance from any population.

I understand that the Army is already building an un-powered sea launch platform. They may not be using the best approach, but in any event I think they have the right concept for this geographic location. I would like for the Army to know that an excellent maritime support activity exists in Key West at the Naval Air Warfare Center Detachment (NAWC Det).

Missiles could be assembled at Eglin, loaded on the launch platform and towed to the desired launch location. They could be highway transported to Bradenton and craned aboard the launch platform. Bradenton (by Tampa) has an ordnance handling area and is convenient to I-75. Or they could be trucked down to the Navy ordnance storage facility on Fleming Key (near Key West) and loaded aboard subject platform.

The NAWC Det has an ordnance certified vessel capable of craning over 100,000 pounds with only 12 feet of draft. This shallow draft allows it to utilize most dockside facilities.

I would like to suggest that you move the sea launch option up to a preferred status in your SEIS. I would also like to see a Memorandum Of Understanding (MOU) in place with the NAWC Det and make this program even more of a joint services project. The NAWC Det presently provides maritime services to the Air Force to support the tracking towers in the Tactical Air Combat Training System (TACTS) range. These are located in an area which would encompass a likely sea launch site.

NOTE: A copy of an area chart is attached.

Daniel Probert 3/28/98

Dan Probert 3/28/98

P-W-0061
 COMMENT
 NUMBER

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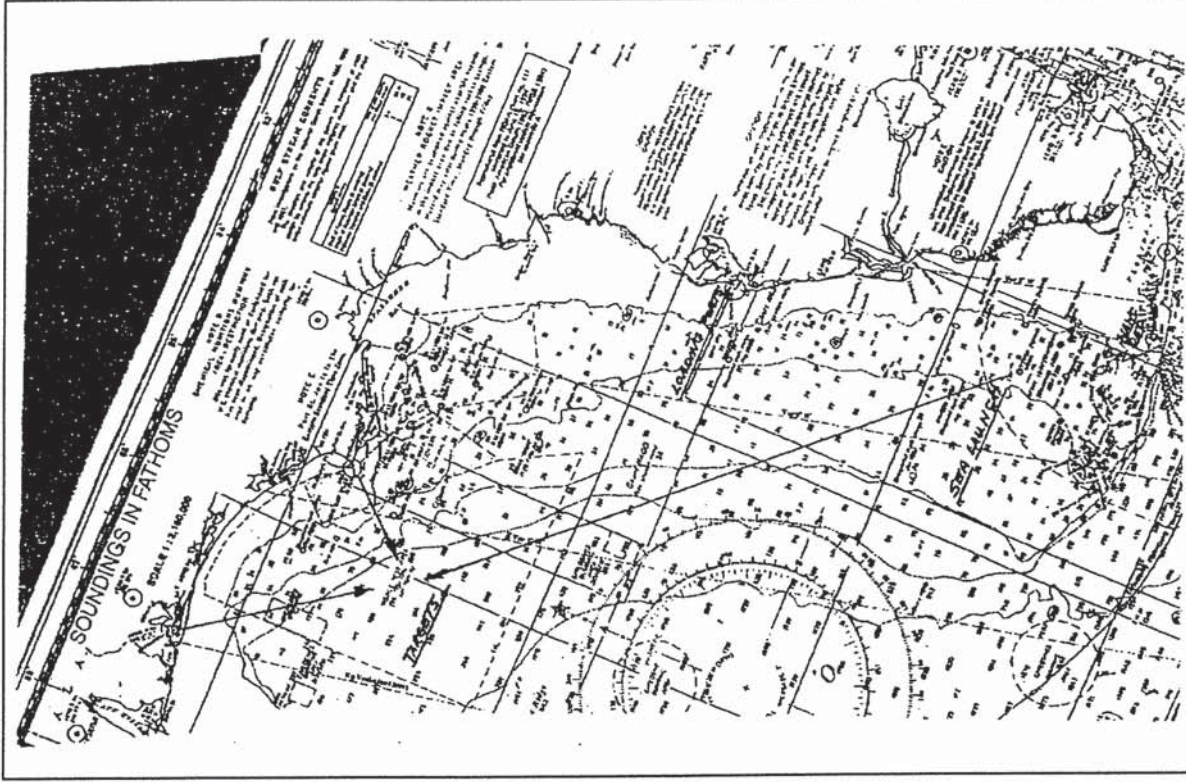
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were collected in 1997. Using the degraded figure of 20% reduction of value the adjusted value would be \$468 million and reduced taxes paid to Monroe County \$1.6 million. This multiplied by the ten year proposed USAF launch schedule, not adjusted for inflation or appreciation in today's dollars would amount to a loss of \$15.7 million - not an insignificant amount.

In the worst case example (and not an unlikely occurrence), a missile demolition within ten seconds of flight could reduce the real estate values by 50% and possibly making 20-50 residences permanently uninhabitable. Extend to the full LHA and the five mile radius, the personal loss in property values would be \$292.5 million tax base revenues reduced to \$3.9 million. An astounding amount of \$39.4 million loss over 10 years (not adjusted for inflation in today's dollars) would be realized.

The omission of this data in the EIS for SEIS is unacceptable. A full review of real estate values must be included in the final EIS and be reviewed by our local tax office, the real estate board and the county commissioners.

There are absolutely no good reasons for launching missiles from the Keys - not environmentally, not financially and not logically.

Sincerely,



Richard Moody
918 White Street
Key West, FL 33040
(305) 296-5624

cc: Congressman Peter Deutch
Representative Debbie Horan
Ms. Linda Niah - Eglin AFB

P-W-0062 COMMENT NUMBER	01
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Lieutenant General Lester Lytes
Department of Defense
Ballistic Missile Defense Organization
7100 Defense Pentagon
Washington, D.C. 20301-7100

Dear General Lytes,

As with all Environmental Impact Studies (EIS) an economic impact survey must be included. This survey should include not just personnel expenditures, local procurement, and salary impacts but it must include the effects on real estate, both in respect to value up or down and the desirability to the human habitat.

I don't have a dog in this fight. I don't own real estate in the Cudjoe/Saddlebunch area, and I don't sell or deal in real estate. I don't have any interest in living in the Cudjoe/Saddlebunch area however I do own property and am long time resident of Key West. I am a member of the missile task force that made a presentation March 7, 1998 in Key West.

The proposed activity regarding missile firing of up to twelve per year for ten years is a significantly active schedule. The proposed estimate is budgeted at \$6 million per event and \$720 million over the 10 year life of the testing program. All these funds will be spent in and around Eglin AFB. Less than half of one percent will be spent in the Keys. According to the SEIS, this will be spent on temporary duty (TDY-food and lodging). There is no indication of salaries or any full time civil service employees or wage earners/s taxpayers in Monroe County. I believe this is the main reason for the glaring omission from the Air Force EIS.

The desirability of property and the degradation of the environment in the launch hazard areas (LHA) has become painfully apparent. The possibility of a launch disaster has been ratcheted up considerably. All this will have a negative impact on real estate values. A recent unscientific survey of Realtors, appraisers and tax assessors has rendered some disturbing figures. It is estimated that a degradation of value as much as 20 to 35% can occur under the ambitious testing schedule. A disaster could reduce property values as much as 50 - 60% depending on proximity to the LHA.

This loss includes commercial, residential and unimproved property appraisals as well as the possibility for resale and the desirability to relocate in the LHA. This will not only translate into serious financial loss to the homeowner but to the tax base in Monroe County.

The taxing districts of 100B and 100C will be the most heavily impacted. The total value of these two districts is \$585 million. County tax revenues of \$7.9 million

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what kind and what amount of plant and animal kills will occur from each launch due to toxic rocket emissions, debris and chemical residue?
Along with the adverse environmental impacts we've had in the gulf from red tide, El Niño and coral reef loss during the past few years (all of which we have little control) my question is...do we need one more adverse intrusion such as missile launches (which we can control) over the gulf of Mexico?! NOT!

Coastal cleanup of dead fish, autopsies of dead manatees and protection of coral reefs all cost taxpayers, you and me, lots of money. Missile launches cost taxpayers lots of money too. Why can't you come up with a plan that won't cost us taxpayers more in years of cleanup and lost revenues due to lost tourist income. No one wants to go to Florida's beautiful beaches littered with dead smelly fish!

Respectfully,
Mari T. Hanley
1-011823
Mrs. Mari T. Hanley
1001 Double Eagle Ct.
New Smyrna, FL 32111
Naturalist with Lee County
Park, Florida

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Comment Sheet

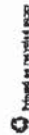
for the
Theater Missile Defense (TMD)
Extended Test Range (ETR)
Supplemental Environmental Impact Statement (SEIS) —
Eglin Gulf Test Range (EGTR)

Thank you for attending this meeting. Please use this sheet to write down comments that you have regarding the SEIS. Your comments must be received by Ms. Nimb by April 3, 1998 to ensure they are considered in the Final SEIS.

- ① I am opposed to Missile Testing over the Gulf of Mexico completely.
- ② How many successfully completed launches are you planning for and in how many years? Have you estimated the total effect for each fall of these launches on our young EIS estimates for only one launch? Reported launches can not only have an immediate but also long term detrimental as each launch can compare the effects of each previous launch, thus preventing ecosystem recovery. At the past few years, the above incidents have been plagued by red tide along the gulf. A link has been associated with coastal runoff and mainland major rivers emptying into the gulf. Has red tide been severely affected fish, or other marine life, especially the manatees, which have had serious mortality rates from it. Have you considered and measured —

Please place form in the comment box or mail to:

Ms. Linda Nimb
46 OGOOGM-TMD
205 West D. Ave, Suite 241
Eglin AFB, FL 32542-8866



March 1998



Texaco Exploration and Production Inc
 OFFICE DIVISION

P O Box 6252
 New Orleans, LA 70160
 504 524 8811

March 31, 1998

Ms. Linda Ninh
 46 OGJOGM-TMD
 205 West D Avenue, Suite 241
 Eglin AFB, FL 32578-6866

Re: Theater Missile Defense-Extended Test Range
 Eglin Gulf Test Range
 Supplemental Environmental Impact Statement (SEIS)
 Comments on Draft SEIS

Dear Ms. Ninh;

Texaco Exploration and Production Inc. (TEPI) welcomes this opportunity to submit comments on the Ballistic Missile Defense Organization's Draft Supplemental Environmental Impact Statement (SEIS) covering the proposed action to enhance the capability of the Eglin Gulf Test Range (EGTR) to conduct Theater Missile Defense (TMD) testing or training activities. The Draft SEIS supplements the TMD Extended Test Range Final EIS prepared by the U.S. Army Space and Missile Defense Command in 1994.

TEPI is a wholly owned subsidiary of Texaco Inc. a fully integrated international energy company engaged in all aspects of the oil and gas business in the United States and around the world. Texaco Inc.'s activities include, but are not limited to, exploring, producing, refining, transporting and marketing crude oil, natural gas and various refined products. Texaco Inc. and certain of its subsidiary companies have held and operated oil and gas leases in the Gulf of Mexico since 1936. TEPI currently owns and operates numerous federal and state leases throughout the Gulf of Mexico including leases located in the existing EGTR and the proposed TMD launch hazard, booster drop, and debris impact areas.

TEPI recommends the Ballistic Missile Defense Organization select the No-action Alternative for the TMD program in the EGTR. Under this alternative no TMD tests or training activities would be conducted in the Eastern Gulf of Mexico. Current and future oil and gas activities would therefore not be adversely affected.

TEPI has reviewed the Draft SEIS as it applies to oil and gas activities in the proposed TMD launch hazard, booster drop, and debris impact areas, known collectively as the clearance areas, and is concerned about the impact conducting TMD testing and training in this area of the Gulf of Mexico will have on oil and gas activities. Even though there

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are only a few federal leases currently located in the clearance areas, in the future this may not be the case. It is anticipated the United States government will offer for lease, under future Five (5) Leasing Programs, federal acreage located in the Eastern Gulf of Mexico Planning Area. At this time the Department of the Interior plans to conduct one lease sale (Sale 181) in late 2001 covering only a small portion of the Eastern Gulf of Mexico Planning Area. It is believed this will be an extremely active sale as access to the Eastern Gulf of Mexico continues to be an industry priority. If in fact oil and gas leasing activity increases in the Eastern Gulf of Mexico, subsequent drilling and development will follow increasing the possibility of conflicts arising with the Department of Defense (DOD) activities including the proposed TMD training and testing program. The impact on future oil and gas leasing activity needs to be addressed in the Draft SEIS.

It is our understanding DOD and the Department of Interior (DOI), a few years ago, executed a Memorandum of Agreement/Understanding regarding their respective regulated activities in the EGTR. As a result of this agreement a mechanism was established to allow military and oil and gas activity to be conducted in the Eastern Gulf of Mexico with minimal impact on DOD or DOI regulated activities. Historically this mechanism has allowed oil and gas drilling to be conducted within certain areas of the EGTR, at specific times with little interference with military training and testing. There, however, have been no oil and gas discoveries commercially developed to date in federal waters in the Eastern Gulf of Mexico even though this is about to change as noted in the Draft SEIS.

Federal leases located in the EGTR contain stipulations that specify obligations to the military oil and gas Lessees must address prior to and during operations conducted on any lease in the EGTR. The military has requested operators of leases in the EGTR execute documents referred to as "Operating Agreements" prior to beginning any activity on a lease. These Operating Agreements detail the specific military obligations Lessees must address as stipulated in the lease. The oil and gas industry has operated under these Operating Agreements for many years and understands the risk associated with conducting oil and gas activities in the EGTR. What is not clear is how the proposed TMD testing and training activities will effect the current DOD/DOI understanding regarding oil and gas operations on existing and future leases located in the clearance areas. Will new stipulations be added to new leases issued in the EGTR? Will regulations be modified to address existing leases located in the EGTR? If new operational procedures are to be followed, what are those procedures and how will those new procedures impact future activities on current and future oil and gas leases?

In addition to the above, we are very concerned about the total size of the clearance areas proposed under the Draft SEIS. A composite of the clearance areas depicts an area that encompasses a large portion of the Eastern Gulf of Mexico Planning Area. If new obligations are placed on the oil and gas industry as a result of TMD activities, and these obligations are more prohibitive and/or restrictive than existing obligations, creation of

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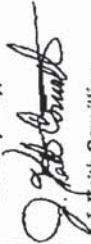
the TMD testing and training area in the Eastern Gulf of Mexico could seriously inhibit future oil and gas leasing, drilling and development activities.

Our final comments deal with oil and gas developments located in the clearance areas. Even though this is not an immediate problem, it is one that most likely will occur in the future. Offshore in the Central and Western Planning Areas of the Gulf of Mexico, most oil and gas discoveries have been located in shallow water and developed using conventional oil and gas production systems. These systems have historically been fixed legged platforms attached to the seafloor with production decks and facilities located above the surface of the water. Oil and/or gas wells are normally drilled from these structures or from remote locations and tied back to the platform via pipelines. Platforms typically remain in place until production ceases and the wells are permanently plugged and the structures removed. The Draft SEIS does not address the specific impact associated with traditional oil and gas production platforms located in the TMD clearance area. Evacuating personnel can be easily accomplished given proper advanced notice; however, protecting a structure that cannot be readily removed from falling debris is another matter. Production platforms contain pipes, vessels, tanks, engines and other equipment that could be damaged or destroyed from falling debris. In addition, the majority of the piping and vessels located on platforms are under pressure and would not react favorably to being punctured or severely jarred. Escaping natural gas or leaking oil from damaged equipment would have a serious impact on the environment. Even wells completed on the seafloor and tied back to a central production facility could be in jeopardy of being damaged from falling debris as that debris falls through the water column before settling on the bottom. These are issues we believe need to be addressed in the Draft SEIS.

In summary, TEPL appreciates the opportunity to comment on the Draft SEIS and supports the Ballistic Missile Defense Organization's No-action Alternative as the preferred action to take regarding the proposed TMD testing and training area in the EGTR.

Should there be any questions regarding the above, do not hesitate contacting the undersigned at (504) 680-1321 [Fax No. (504) 680-6858] or by e-mail at scoville@texascom.com.

Yours very truly,



J. Keith Couvillion
Land Manager - OCS

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 4
ATLANTA FEDERAL CENTER
100 ALABAMA STREET, S.W.
ATLANTA, GEORGIA 30303-3164

APR 3 1988

Captain Brian W. Moss
U.S. Department of Defense
Ballistic Missile Defense Organization
7100 Defense Pentagon
Washington, DC 20301-7100

Subject: Draft Supplemental Environmental Impact Statement (DSEIS) for the Theater Missile Defense (TMD) Extended Test Range at Eglin Air Force Base (EAFB) Gulf Test Range (EGTR), FL

Dear Captain Moss:

Pursuant to Section 309 of the Clean Air Act and Section 102 (2)(C) of the National Environmental Policy Act (NEPA), EPA, Region 4 has reviewed the subject document, an evaluation of the potential consequences associated with development and operational flight testing of TMD systems. Specifically, the DSEIS examines missile launch and support locations, facility construction, launch preparation activities, missile flight tests, radar and optical tracking operations, and intercept tests in the Gulf of Mexico. The preferred alternative involves the large/interceptor launch from facilities at EAFB together with target launches from an air configuration array or possibly a Navy ship.

TMD missile testing is being expanded to determine the capabilities of U.S. Department of Defense (DOD) weapon systems to intercept enemy missiles with medium-range ballistic characteristics, i.e. trajectories of 550 to 1,100 kilometers. Currently there are no plans by DOD to use EGTR for this type testing, however, in the event circumstances change and use of this facility becomes warranted, its NEPA documentation would be completed.

EGTR is a logical site for a mid-range test area. In 1985, it conducted approximately 10,000 missions similar to those envisioned within this testing protocol. Three principal types of TMD training/testing activities were examined in the DSEIS: (1) target launches from land at EAFB and/or from aircraft above the Gulf of Mexico, (2) interceptor launches from EAFB and/or ships, (3) interception of the target missile (launched from Florida Keys) by the interceptor over the Gulf of Mexico and EGTR. All constituent elements of the testing have important ramifications which are assessed in the text.

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Most tests would include a launch of a target missile, tracking by range and interceptor missile sensors, launch of an interceptor missile, intercept, and debris (missile components, penetration aids, etc.) impact into the Gulf of Mexico. The "intercept box" remote location together with its restricted access during testing limit the more obvious societal concerns. Associated safety considerations and procedures to address them have been elaborately devised and are noted for rigorous enforcement. For example, notwithstanding their great distance from the shore, debris impact and booster drop areas are repeatedly modeled for most likely "splash-down" locations. Moreover, the area will be cleared prior to and during testing via standard notification procedures. Similar determinations are made in/around the launch site to maximize the safety of mission personnel and adjacent residents during the test periods.

If/when DOD begins testing, maximum use would be made of existing infrastructure and facilities at ground-based launch sites. Modification and/or any new construction needs would be relatively small; in many cases the launch vehicles are motorized, portable structures which are merely moved after launch events. Road, rail, and air transportation will be necessary to bring components to launch sites, but volumes are considered incidental in comparison to existing traffic on roadway systems servicing the area. Given the value of the launch equipment, stringent safety monitoring is in place during transport. The same restrictions are in force for transporting the missile propellants and other associated hazardous materials necessary to operate the various missile systems.

To add an additional measure of safety to the proposed testing, offshore launch platforms could be used to enlarge the safety clear zone during actual testing. These structures would involve incrementally more construction impacts than the shore-based mobile vans which are merely parked on existing hardstands. However, long-term adverse effects of the structure, per se, are probably negligible and would compare to an equivalently-sized fishing pier. In fact, it was assumed that these platforms may function as habitat (vertical structure) after construction activities subside. Further, their use would obviate the relatively minor wetland impacts at the land based interceptor launch site, viz., A-15 and D-3A. More importantly, the need to recurrently restrict vehicle traffic during launches would be removed. On the other hand, the impact(s) of air emissions from missile engines on local water quality and associated biota remain undetermined, but should be examined in the final document. We suggest that a long-term monitoring plan be developed to ascertain the impacts of these emissions.

Air drop and ship target launch testing modes appear to have lesser overall impact(s) than their shore-based counterparts. More importantly, the societal implications associated with using the launch site at Saddlebunch/Cudjoe Key would be eliminated. However, there are other considerations which must be taken into account, viz., strategic arms treaty (START) stipulations. For example, while the technology to launch long-range target missiles from a towed ship platform is available, their use would have to be restricted to a 600-kilometer arc to avoid treaty violations. Use of platforms to launch targets is similarly restricted. Hence, all technically practical options are not necessarily available for other compelling reasons.

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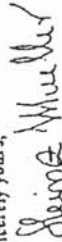
While testing activities in the mid-Gulf do not affect the public at large, there are nevertheless some impacts. Shipping and commercial airline interest must take these tests into consideration when planning schedules and routes. Since this could be a new mission, there is an additive effect to its implementation. It was noted that these tests would add approximately 100 hours to the current use of the existing restricted areas. The significance of this increase remains to be determined, but is unavoidable.

Target launches from Santa Rosa/Cape San Blas would result in direct adverse impacts to wetland habitat and possible disturbance of sensitive species by increased human activity. Additional construction would convert less than 10 acres of natural areas to various testing facilities. Launch emissions consisting elevated concentrations of hydrogen chloride may cause some leaf necrosis beyond the construction site. Heat generated by the rocket motor during lift-off may also cause some adverse effects to adjacent vegetation, but the EIS did not consider these significant impacts. Overall, the effects of TMD testing can be mitigated by design changes, or if that proves infeasible, by compensation. However, in our opinion, there are a few instances, e.g., noise effects on wildlife and permanent removal of vegetation, where the impacts appear unavoidable/unmitigable and would just have to be considered a cost of the TMD training.

On the basis of our review, a rating of "EC-2" has been assigned the preferred alternative. That is, we have some environmental concerns about the future testing using the air/sea launch options, some additional information/exposition in the final document will be necessary. However, in the event that land-based target launches from the Florida Keys were to become an active alternative, our reservations would be pronounced. The objections we have in this regard are detailed in the attached Comments. If the latter scenario eventuates, we suggest that additional NEPA coordination both with the public and federal/State agencies will have to be accomplished.

If you wish to discuss this matter further, Dr. Gerald J. Miller (404-562-9626) of my staff will serve as initial point of contact.

Sincerely yours,



Heinz J. Mueller, Chief
Office of Environmental Assessment

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SPECIFIC COMMENTS

We believe that there are practical alternatives to the use of the Florida Keys launching sites. It is our understanding that the U.S. Army Kwajalein Atoll long-range test facility in the Pacific can deal with targets with flight distances greater than 1,100 km (683 miles). With modification, this facility could accommodate testing missiles with the theater flight parameters with acceptable societal/environmental outcomes. On the other hand, the Sandieburch and Cudjoe Key options could have some significant consequences to the Keys and especially the Florida Keys National Marine Sanctuary (FKNMS).

This preserve was created with the signing of HR5909 (Public Law 101-605, Florida Keys National Marine Sanctuary and Protection Act) on 16 November 1990. The Sanctuary encompasses 2,800 square nautical miles of nearshore waters extending from just south of Miami to Dry Tortugas. The designation was made in recognition of its unique character and diversity of the marine environment. NOAA has prepared a Final Management Plan/Environmental Impact Statement for the FKNMS that was implemented on July 1, 1997. The Water Quality Protection Program for the Sanctuary that was prepared by EPA and the State of Florida at the direction of Congress is included in the Final Management Plan.

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Missiles launched from sites in the Florida Keys would conflict with goals, objectives, mandates, and regulations of the FKNMS. This operational clash includes:

Further degradation of the wilderness character of the Florida Keys "back country", i.e., virtually all of the unoccupied vegetated areas surrounding the proposed sites in the Keys are jurisdictional wetlands and sea grass beds regulated by State and federal laws. In addition, federal and State threatened species have been reported from the lower Keys and the area surrounding the airstat facility on Cudjoe Key; the latter has been designated as Critical Habitat under the Endangered Species Act. The proposed launch sites are in or immediately adjacent to the Great White Heron National Wildlife Refuge which was designated by Congress as a "Wilderness." NOAA using the FKNMS process is mandated to protect resources of the Keys from adverse effects. This includes assuring the health, integrity, and continued availability of the ecological, recreational, research, education, historical, and aesthetic resources and qualities of these areas. In our opinion, construction and operation of missile launching facilities at the proposed locations in the Keys is not consistent with the wilderness character and other, more environmentally friendly uses of these environs.

Damage to sensitive plant and animal resources is likely. The impacts of approximately 12 launches per year for ten years could result in significant and long-lasting detrimental impacts to vegetation and marine life. In addition, water quality could be detrimentally affected. Chemical fallout from solid fuel target missiles includes aluminum oxide and hydrogen chloride compounds that could lead to plant mortality within the fallout zone. The potential physical impacts due to an

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accidental explosion at the launch pad could have long-term effects on surrounding vegetation and animal communities. Noise from missile launches would have negative impacts on bird and animal life (roosting, nesting, feeding and breeding behaviors) and the tranquility of the wilderness. Increased numbers and activities of aircraft and vessels in the launch and target zones increase the chance of negatively impacting wildlife resources. All proposed launch sites in the Keys are adjacent to shallow waters; improper vessel activities in those areas could result in propeller dredging, sea grass/coral impacts, vessel groundings, and other damages to the ecological resources.

If you wish to discuss any of the above matters in greater detail, Dr. Bill Kruczynski, EPA Program Scientist, at the FKNMS can be contacted at (305) 743-0537.

Relative to air quality, it does not appear as if any of the subject testing/training activities will negatively impact the continued attainment of the National Ambient Air Quality Standards (NAAQS). However, a minor error was noted in Table 3.1.1-1-National and Florida Ambient Air Quality Standards. The new standard for ozone is an eight-hour standard during which time the average can not exceed 0.08 ppm. The one-hour standard, which is still in effect in existing ozone nonattainment areas elsewhere, is 0.12 ppm averaged over one hour. The table transposes the two standards; however, it was noted that the EGTR area is in attainment for other standards. If you wish to discuss any air issues further, Mr. Dale Aspy (404-562-9041) will serve as point of contact.

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United States Department of the Interior

OFFICE OF THE SECRETARY
OFFICE OF ENVIRONMENTAL POLICY AND COMPLIANCE
Richard B. Russell Federal Building
75 Spring Street, S.W.
Atlanta, Georgia 30303

April 14, 1998

ER-98/146

Ms. Linda Ninh
46 OG/OGM-TMD
205 West "D" Ave., Suite 241
Eglin AFB, FL 32578-6866

RE: DSEIS for the Theater Missile Defense Extended Test Range
Eglin AFB, FL

Dear Ms. Ninh:

The Department of the Interior has reviewed the referenced document, as requested. The enclosed comments are a compilation of comments received from the bureaus within this Department.

If there are questions related to fish and wildlife resources, please contact Bruce Bell, Fish and Wildlife Service, at 404/679-7089. If there are questions related to oil and gas leasing operations, please contact Archie Melancon at 703/787-1547. If you have other questions concerning these comments, you may reach me at 404/331-4524.

Thank you for the opportunity to review the draft supplement EIS.

Sincerely,

James H. Lee
Regional Environmental Officer

these birds must endure. The cumulative effect of these existing stresses along with the added stress from the proposed action may result in changing the reproductive behavior of nesting birds (e.g., decreased fecundity) and force them to seek other potential nest areas, which are becoming increasingly limited in availability and suitability. Details of the specific mitigative measures designed to ameliorate these effects are lacking in the document.

The proposed action is inconsistent with the Congressional designation of "wilderness areas" for 2,278 and 1,900 acres in the Great White Heron NWR and National Key Deer Refuge, respectively. Specifically, wilderness areas are "an area of Federal land retaining its primeval character and influence, without permanent habitation, which is protected and managed so as to preserve its natural conditions such that it (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable; and (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation" (Wilderness Act of 1964). Furthermore, "wilderness areas . . . shall be administered in such a manner as will leave them unimpaired for future use and enjoyment as wilderness" (50 CFR 35.2).

The effects of the proposed action (e.g., visual pollution of wilderness areas, the impact on wilderness solitude, the recreational and economic impact to the highly desired "wilderness experience") on wildlife and human users in federally-designated areas (e.g., Great White Heron NWR, Florida Keys National Marine Sanctuary, wilderness areas) needs to be evaluated.

The document should identify ongoing natural resource monitoring and management programs at Cape San Blas and Santa Rosa Island. Eglin AFB has a history of strong environmental management and much of their existing programs may need to be continued or expanded to address endangered species issues regarding the project.

Furthermore, a more complete description of potential mitigative actions to reduce impacts on federally listed species should be included in the document. These actions could include changes in TMD activity protocol and schedules during species reproductive or migration seasons (sea turtles and shorebirds), incorporation of existing FWS management guidelines (bald eagle), and studies to determine or evaluate effects of the proposed action (e.g., noise, vibration, and human presence) and implementation of remedial actions as necessary.

The document contains little discussion of oil and gas operations in the Eastern Gulf, and the conclusion that "TMD activities would

THEATER MISSILE DEFENSE EXTENDED TEST (TMD) RANGE
EGLIN GULF TEST RANGE (EGTR)
EGLIN AFB, FLORIDA

ER-98/146

GENERAL COMMENTS

The Fish and Wildlife Service (FWS) believes the current document does not adequately address concerns regarding potential effects to Federal trust resources and land management responsibilities. The effect of ground vibrations from missile or interceptor launches on wildlife, specifically federally listed sea turtle embryos and hatchlings, still needs to be evaluated. Data from the space shuttle and Titan/Delta rocket launches at Kennedy Space Center and their potential effects on sea turtles nesting on nearby Canaveral National Seashore could be used for comparison.

The effects of launch activities (e.g., human disturbances, noise impacts) on the following species nesting within the five-mile radius of the Launch Hazard Areas (LHA) for Eglin AFB (Santa Rosa Island and Cape San Blas) needs to be evaluated: loggerhead sea turtle (*Caretta caretta*), green sea turtle (*Chelonia mydas*), and bald eagle (*Haliaeetus leucocephalus*).

The effects of pre-launch and launch activities on populations of the following species existing within the LHA for both Cudjoe Key and Saddlebunch Key needs to be evaluated: silver rice rat (*Oryzomys argentatus*); Lower Keys marsh rabbit (*Sylvilagus palustris hefneri*); transient Key deer (*Odocoileus virginianus clavium*); bald eagle; and eastern indigo snake (*Drymarchon corais couperi*). These activities could interfere with the FWS's recovery efforts for listed species in the Keys, such as repatriating the Key deer to Cudjoe Key.

The effects of prelaunch and launch activities on shorebird and wading bird rookeries within the LHA for both the Florida panhandle and the Florida Keys needs to be evaluated. Avifauna, especially in the Florida Keys, are already subjected to significant stress from noise and disturbance. Currently, nesting populations of wading birds are continuously disturbed by the ever increasing presence of humans, such as tour boats around their rookeries. Furthermore, as nesting birds take flight in response to prelaunch and launch activities, they leave their nests exposed to predators, such as the magnificent frigatebird (*Fregata magnificens*), and to the elements. Flushing birds unnecessarily expend valuable energy that may otherwise be used for hunting, foraging, and/or maintenance. Thus, the launching of target missiles from land-based facilities in the Florida Keys is another level of stress

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have little effect on the oil and gas exploration use in the Gulf of Mexico" (section 3.2.7, page 3-256) is not supported. The DSEIS does not adequately evaluate the impacts of the proposal to oil and gas operations in the Eastern Gulf. To improve the analysis, we encourage a more extensive coordination with Minerals Management Service (MMS). The document also does not address alternatives which would allow oil and gas activities to proceed with minimal interference from the proposal such as modified impact areas, timing of missile testing activities and oil and gas activities, or some combination of these two and perhaps other procedures. Additional consultation between the MMS and the Air Force would be useful to develop alternatives and/or mitigating measures which will allow both oil and gas operations and missile testing without unduly interfering with either use of the area and to improve the analysis in the SEIS regarding reasonably foreseeable oil and gas activities and the cumulative effects of OCS oil and gas activities and DOD activities.

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The Air Force proposes to conduct 24 test events per year over a 10 year period (except in 1999 when it conducts 55 tests) from all test ranges. The number of test events per year if carried out without close cooperation with MMS, poses a significant conflict with exploration for oil and gas resources. Drilling for these resources may take up to 150 days in the Eastern Gulf of Mexico. During that time period drilling rigs/ships are rarely easily evacuated or moved from the site. The preferred alternative in Section 2.2.1.1 would impact 98 leases within the Eastern Gulf of Mexico and with the proposed TMD testing schedule, without the consideration of additional alternatives or mitigation, it could prevent or hinder oil and gas exploration on those leases.

11

The analysis is based on the current status of activity in the EGOM and not on potential OCS build-out which will likely occur during the life of the missile testing program. When assessing the impact to OCS oil and gas activities, the SEIS states that, "No surface structures associated with oil and gas extraction are currently located in the EGOM planning area." However over the life of the testing program, OCS platforms could be sited in the Air Force's "Interceptor debris and Evacuation" areas. Omitting this information and associated impact analysis is an oversight that could affect the conclusion of "little effect to oil and gas use."

12

Oil and gas operations are only mentioned in two tables and in Section 3.2.7 (Gulf of Mexico: Land and Water Use). There is no discussion of the economic implications of conflicts between this proposal and oil and gas activities (indeed the only "socioeconomic" discussion involves commercial fishing); there is no mention of airspace use conflicts with oil and gas related

12(cont)

helicopter flights; safety to oil and gas operations and structures is not addressed; nor is there any discussion of transportation in general involving oil and gas activities. In addition, the SEIS omitted other analysis such as: economic impacts associated with enhanced structural design, construction delays, production delays, personnel evacuation; impact to routine operations such as hampered support vessel transit (air and water) during testing; impeded platform construction, and halted production; impacts to human safety and platform integrity from debris striking a platform; impacts to the existing and future leases (e.g., Could this testing program inhibit existing lessees from exercising lease rights? Will new mitigation be required of leases issued from Sale 181?).

13

The current 5-year OCS leasing program schedules only one OCS lease sale in the Eastern Gulf. This sale is currently scheduled for late 2001. The decision process for that sale, lasting about 3 years, will begin with a Call for Information and Nominations/Notice of Intent to Prepare an EIS and will include extensive consultations with the States, Federal Agencies, and other interested parties. This proposed sale may result in the issuance of additional leases in the Eastern Gulf, followed by as yet unknown levels of exploration and development activity. A decision on whether or not there may be additional lease sales scheduled in the Eastern Gulf in the future will be made in the context of the development of the next 5-year program which would cover the years 2002-2007. There are a number of currently active leases in the Eastern Gulf. Considerable exploration has already been accomplished, and development plans are being formulated. The DSEIS needs to address these reasonably foreseeable activities and how the proposal will impact them.

14

The DSEIS does not address pre-lease geological or geophysical activities in the EGOM area. Permits are issued to companies to collect data and information. Stipulations attached to a C&G permit require the operator to coordinate there use in an area with the various military groups that require notification. The effects of evacuation on seismic activities should be addressed.

SPECIFIC COMMENTS

15

Page 3-18: The correct spelling for the Gulf sturgeon is *Acipenser oxyrinchus desotoi*. The Santa Rosa beach mouse should also be included in the list of mammals occurring on Santa Rosa Island.

16

Page 3-39, Table 3.1.1-1: *polionotus* should be *polionotus*.

23	<p>to the overview, the SEIS will have a "scenario" to more accurately evaluate the full impact of its testing program on OCS activities.</p> <p>Other OCS activity information presented in the EIS is not used in the evaluation. For example, the SEIS lists the right-of-way applications associated with constructing three pipelines in the EGOM but does not assess impacts to the future pipe laying/construction activities from any of the potential impact sources of the testing program (e.g., evacuation of surface vessels). Further, the information on the plans for Destin Dome 1 and 2 and Pensacola 881 is out of date. These were approved September 5, 1997. The discussion should include details regarding the proposed facilities. MMS has also recently been informed that further development activities may be proposed in the near future in this area.</p>
24	<p>Pages 3-377, § 5: Information on nesting, foraging, wading, and colonial birds is incomplete.</p>
25	<p>Page 3-382, § 3: Again, information on nesting, foraging, wading, and colonial birds is incomplete.</p>
26	<p>Page 3-391, Figure 3.1.1.1-10: The figure is inaccurate and the rookery data is incomplete. For example, many of the rookeries are depicted in open water.</p>
27	<p>Page 3-409, Figure 3.1.1.1-15: As before, the figure is inaccurate, the rookery data is incomplete, and rookeries are depicted in open water.</p>
28	<p>Page 3-433, § 1: Wildlife Management Areas of the Florida Keys National Marine Sanctuary were adopted zones originally designated in the 1992 Management Agreement for Submerged Lands (MA-44-086) between the FWS and the State of Florida for the specific management of critical habitat.</p>
29	<p>Page 3-439, Figure 3.1.1.7-7: Federal lands should be distinguished between military property and conservation/preservation lands.</p>
30	<p>Page 3-445, Figure 3.1.1.7-10: Again, Federal lands should be distinguished between military property and conservation/preservation lands.</p>
31	<p>Page 3-530: There is no mention of oil and gas activities in Section 3.4 (Relationship Between Uses of the Environment and the Maintenance and Enhancement of Long-Term Productivity), even though subsections include such topics as "Airspace Use", "Geology and</p>

17	<p>Page 3-61, § 5: It should be mentioned that Site D-3A is also within the nest protection zone as identified in the FWS's habitat management guidelines for bald eagles. The guidelines recommend limitations on activities that could affect bald eagles depending on the time of year, type of activity, and distance from the nest.</p>
18	<p>Page 3-238: The SEIS inaccurately describes the jurisdiction of air regulation. In Section 3.2.1.2 Region of Influence, Air Pollution Emissions Sources, the first paragraph states, "Platform emissions are controlled by Outer Continental Shelf regulations." Although the OCSLA regulates OCS facilities in the Western and Central Gulf of Mexico, it does not cover those located offshore Florida. The sentence should be replaced with: "Jurisdiction over OCS-related emissions is shared: the U.S. Environmental Protection Agency regulates OCS emissions offshore Florida and the U.S. Department of the Interior regulates OCS emissions offshore the remaining Gulf Coast States."</p>
19	<p>Page 3-267, § 3: Eastern Gulf of Mexico live-bottom habitats in addition to coral and bank reef habitats should be described. The Minerals Management Service has funded numerous studies to identify and describe these habitats.</p>
20	<p>Page 3-288: Some of the SEIS's descriptions of OCS activities in the EGOM Planning Area are either unneeded, out-of-date, or incomplete. The discussion about Pensacola Block 889 is unnecessary because Mobil Oil does not intend to proceed with exploratory drilling and this discussion could be deleted.</p>
21	<p>Page 3-298, § 3: The information regarding Chevron's Destin Dome 56 Unit Development and Production Plan completeness review is out of date. The plan proposes a manned Central Production Facility complex with 14 satellite platforms spread over 10 blocks with numerous flowlines to connect the platforms as well as a 30" export pipeline. It was deemed complete by the MMS on August 12, 1997. The Notice of Intent to Prepare an EIS was published in the Federal Register on August 22, 1997. The EIS process will take about 2 years. The MMS has provided the Air Force and it's EIS contractor with extensive information concerning the DD 56 Unit; however, the information was not considered. It is noteworthy that in Table ES-2 the alternative to test over Matagorda Island, Texas, was eliminated because of the lack of "appropriate safety areas, trajectories overfly existing oil rigs." Yet, the 18 proposed structures in the DD 56 Unit are not considered.</p>
22	<p>Additionally, the OEDC Exploration and Production discussion is incomplete because it does not mention the future surface structures associated with that project. If these changes are made</p>

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environmental review process. The FWS recommends that the Florida Keys be eliminated from consideration as an alternative launch site for target missiles in the Eglin Gulf Test Range.

While development and testing of missile defense systems and other DOD activities in the Eastern Gulf are very important, the OCS oil and gas program in the Gulf of Mexico, including the Eastern Gulf, is also of importance to the nation. While MMS believes the impacts of this proposal to activities associated with OCS oil and gas activities are not "negligible" as stated in the DSEIS, we believe that, with additional analysis of potential impacts, and reasonable mitigating measures, that potential impacts can be avoided or minimized. Decisions by DOB and DOI regarding the near- and long-term effects of their respective programs in the Eastern Gulf should be made based on complete and sound information and in the context of the importance of these programs to the National interest.

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Soils", "Land and Water Use", "Safety", "Socioeconomics", and "Transportation".

Tables 1.1.13-14, 13-2: The Forest Service's Visual Resource Management System may be an inappropriate tool to rate the scenic attractiveness of the Florida Keys' "backcountry" and mangrove habitats.

Appendix A: The MMS Gulf of Mexico Region should be added as an agency to be notified for upcoming launch activities. The MMS is not listed in Appendix A, page 1-11.

Appendix B: The OCS Lands Act (43 U.S.C. 1331-1356, as amended) should be mentioned in Appendix B (Laws and Regulations Considered); it was not.

Appendix D: Appendix D (Draft Air Drop Environmental Assessment) should consider oil and gas operations.

Appendix I: The Draft Evacuation Plan does not mention oil and gas operations specifically; it should, since moving personnel out of the area and securing platforms and equipment (if such is possible considering the operations in question here) is not a trivial matter and will require considerable advance notice and will entail considerable costs.

Appendix J: Information regarding the distinction between loggerhead nesting sub-populations and recovery potential should be included in the narrative. This is based on genetics studies conducted by Brian Bowen and his associates at the University of Florida. This information provides support on the importance of conserving the Florida panhandle sea turtle population.

After reviewing the document, FWS is still concerned with the potential adverse effects of the proposed action on fish and wildlife resources. As a cooperating agency in the NEPA process, FWS attempted to identify gaps in the information provided within the document as well as to note any inaccuracies. Specifically, the document does not provide the mitigative measures necessary to offset adverse effects to trust resources and land management responsibilities as a result of target launch activities proposed in the Florida panhandle and, in particular, the Florida Keys. Furthermore, FWS does not believe that the adverse effects (e.g., noise impacts to nesting avifauna) of launching target missiles from the Keys can be ameliorated. As such, the Draft SEIS is incomplete in its current form. FWS will continue to coordinate with Your agency prior to completing the Final SEIS on fish and wildlife issues that need to be addressed as part of the



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 Secretary

April 13, 1998

Ms. Linda Ninh
 Department of Defense
 46 OG/OGM-TMD
 205 West D Avenue, Suite 241
 Eglin Air Force Base, Florida 32378-6866

RE: U.S. Air Force - Department of Defense - Theater Missile Defense (TMD) Extended Test Range - Draft Supplemental Environmental Impact Statement - Eglin Gulf Test Range and Notice of Availability for Proposed TMD Test Programs - Florida
 SAL: FL9612240949CR

Dear Ms. Ninh:

The Florida State Clearinghouse, pursuant to Presidential Executive Order 12372, Gubernatorial Executive Order 95-559, the Coastal Zone Management Act, 16 U.S.C. §§ 1451-1464, as amended, and the National Environmental Policy Act, 42 U.S.C. §§ 4321, 4331-4333, 4341-4347, as amended, has coordinated a review of the above-referenced Draft Supplemental Environmental Impact Statement (DSEIS).

The Department of Community Affairs (Department), designated as the State's lead coastal agency pursuant to section 306 of the Federal Coastal Zone Management Act, 16 U.S.C. section 1436(c), and section 380.22, Florida Statutes (F.S.), hereby notifies the Air Force that implementation of the preferred alternative identified in the DSEIS is consistent with the Florida Coastal Management Program (FCMP). However, based on the information contained in the DSEIS, implementation of any alternative which includes land launches from the Florida Keys would be inconsistent with the FCMP.

The State of Florida understands and appreciates the fact that the Air Force does not currently intend to initiate land launches from the Florida Keys; therefore, further action is not currently required to address the problems associated with the use of the Florida Keys sites. If the Air Force decides to reconsider the use of any sites in the Florida Keys, the concerns identified by our reviewing agencies as enclosed and summarized below, must be addressed in a revised DSEIS. If necessary, the revised DSEIS should be provided to the Florida State Clearinghouse for interagency review.

The Department of State (DOS) and the Northwest Florida Water Management District (NWFWM) have expressed concerns regarding the implementation of the preferred alternative. The

2355 SHUMARD OAK BOULEVARD • TALLAHASSEE, FLORIDA 32399-2100
 Phone: 850.488.8466/Suncom 378.8466 FAX: 850.931.0767/Suncom 391.0781
 Internet address: <http://www.state.fl.us/comaff/ide4.htm>

NOTICE: The Department of Community Affairs is the lead agency for the Florida State Clearinghouse. For more information, contact the Florida State Clearinghouse at (904) 488-8466.
 Florida State Clearinghouse
 1111 North Florida Avenue
 Tallahassee, Florida 32304
 Telephone: (904) 488-8466
 Fax: (904) 488-8466
 E-mail: clearinghouse@state.fl.us

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Ms. Linda Ninh
 April 13, 1998
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The Air Force is advised that the concerns identified by the DOS and the NWFWM must be addressed prior to the implementation of the preferred alternative.

The DOS indicates that missile launches and other project activities at Cape San Blas could result in adverse impacts to the historic lighthouse and keeper's quarters and may affect historic resources at Santa Rosa Island and Cudjoe Key. The DOS also notes that the statements in the DSEIS which suggest otherwise are inaccurate. Therefore, the Air Force is advised to coordinate with the DOS prior to completion of the final Environmental Impact Statement (FEIS) to ensure that the proposed action is revised to avoid and/or minimize impacts to historic and archaeological resources. Please refer to the enclosed DOS comments.

The NWFWM indicates that the proposed project may result in adverse impacts to wetlands and the water quality of St. Joe Bay and Santa Rosa Sound, which are both designated as Class II waters (shellfish harvesting and propagation) and Surface Water Improvement and Management priority water bodies. St. Joe Bay is also an Aquatic Preserve and an Outstanding Florida Water; therefore, degradation of water quality is prohibited by Rule 62-302.700, Florida Administrative Code (F.A.C.). The NWFWM recommends additional evaluation of potential impacts and the incorporation of additional measures designed to minimize wetland impacts and to improve stormwater and wastewater treatment. Please refer to the enclosed NWFWM comments.

The Environmental Policy/Community and Economic Development Unit, Executive Office of the Governor (EOG); Florida Game and Fresh Water Fish Commission (FGFWFC); Department of Environmental Protection (DEP); South Florida Water Management District (SFWMD); and South Florida Regional Planning Council (SFRPC) indicate that the Florida Keys is an environmentally sensitive area of regional significance. The Florida Keys and surrounding waters are subject to protection through special federal and state designations and management plans including the Florida Keys National Marine Sanctuary, Florida Keys Area of Critical State Concern, pursuant to section 380.05, F.S.; Outstanding Florida Water; and Aquatic Preserve. Several endangered and threatened species, as well as significant wetland and marine habitat, also occur in the area. Impacts to the area's resources must be thoroughly evaluated in a revised DSEIS if the Air Force revises its plans to include land launches from the Florida Keys. If a revised DSEIS is prepared, the DSEIS should identify specific measures designed to avoid and minimize potential impacts to wetlands and which ensure that state water quality standards are not violated.

If target launch sites in the Florida Keys are selected, a state Environment Resource Permit issued by the DEP or SFWMD will be required. As noted by the SFWMD, primary, secondary and/or commutative impacts to wetlands, surface water and ground water of the Florida Keys described in the DSEIS are inconsistent with the requirements of section 373.414, F.S.; the discussion of impacts to wetlands, surface water and ground water must be revised to comply with section 373.414, F.S. Specifically, section 373.414, F.S., requires that impacts to wetlands and critical habitat be avoided or

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minimized and when impacts cannot be avoided, mitigation must be provided. The DSEIS does not address these requirements. If the project is revised to include the Florida Keys, the Air Force is advised to coordinate closely with the SFWMD to ensure compliance with the Chapter 373, F.S. requirements. Please refer to the enclosed comments for further detail of these issues.

The Department, pursuant to its role as the state land planning and emergency management agency, indicates that Appendix J - Draft Emergency Response Plan contains incomplete or inaccurate information regarding notification procedures and time frames for informing local authorities and other government agencies of impending launches, accidents, evacuation and response activities. Some of the sections of the Plan relating to communication and notification do not include the Department's Division of Emergency Management (DEM). The Air Force is required to notify the DEM of planned launches, mishaps and HAZMAT incidents and to coordinate all activities and information concerning scheduled launches and emergency incidents with the DEM. Please refer to the Department's enclosed comments.

Thank you for the opportunity to review this project. If you have any questions regarding the letter, please contact Cherie Trainor, Clearinghouse Coordinator, at (850) 922-5438 or the address above.

In accordance with 15 CFR 930.42(c), a copy of this letter has been sent to the U.S. Department of Commerce, NOAA, Office of Ocean and Coastal Resource Management. Please be advised that pursuant to 15 CFR 930, subpart G, mediation by the Secretary of the U.S. Department of Commerce may be sought by the Air Force, if the Air Force decides to initiate land based launches from the Florida Keys in the absence of federal consistency concurrence from the State of Florida.

Sincerely,


G. Steven Pfeiffer
Assistant Secretary

GSP/rk

Enclosures

cc: Jeff Benoit, Office of Ocean and Coastal Resource Management
Evaus D. Whitfield, EOG
George Percy, DOS
Duncan Jay Cairns, NFWFMD
Bradley J. Hartman, FGFWFC
Lyn Griffith, DEP
Samuel E. Poole, III, SFWMD
John Hulsey, SFRPC

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Ms. Karl Akers
February 24, 1998
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diverse wading bird populations adjacent to the proposed launch locations. Removal of the Florida Keys launch sites from the Proposed Action effectively removes this concern, and makes the overall proposal much more acceptable. Should the Proposed Action change to include the Florida Keys as a missile launch site, please notify us so that we may initiate additional coordination.

Sincerely,

Bradley I. Hartman
Bradley I. Hartman, Director
Office of Environmental Services

BJH/pf
ENV 8-4-1
Enclosure

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FLORIDA GAME AND FRESH WATER FISH COMMISSION

QUINTON L. REDDING, COS. MIAMI
MRS. GILBERT W. KEMPFFREY, THOMAS B. MIBLER, JAMES L. "JAMIE" ADAMS JR., JULIE K. MOKRIS
Lakeland
Tallahassee
Tallahassee

ALLAN I. ROBERT, P.A. Director
VICTOR J. MILLER, Assistant Executive Director
Tallahassee

OFFICE OF ENVIRONMENTAL SERVICES
BRADLEY I. HARTMAN, Director
PARKWAY CENTER BUILDING
100 S. GADSDEN ST.
TALLAHASSEE, FL 32304-1000
(904) 488-6641
FAX (904) 915-3617
TDD (904) 488-6943

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Mr. Karl Akers
Florida State Clearinghouse
Department of Community Affairs
2555 Shumard Oaks Boulevard
Tallahassee, Florida 32399-2100

Mr. Department of Defense, BMDO Theater
Missile Defense Testing, Draft SEIS,
Manassas County

Dear Ms. Akers:

The Office of Environmental Services of the Florida Game and Fresh Water Fish Commission has reviewed the Draft Theater Missile Defense Extended Test Range Supplemental Environmental Impact Statement-Eglin Test Range (SEIS) dated 6 February 1998. We offer the following comments in addition to our previous comments (see enclosed letter dated 22 January 1998) on this proposed project.

The Department of Defense Ballistic Missile Defense Organization (BMDO) has proposed to test theater missile defense (TMD) in the Eglin Test Range located off of the west coast of Florida in the Gulf of Mexico. Initially, the BMDO Proposed Action included a land-based missile launch site to be located in the Florida Keys, at either Cudjoe Key or Saddlebunch Key. The Cudjoe Key site is an existing U.S. Air Force facility, and construction would not have significantly impacted native habitats. Construction at the Saddlebunch site, a U.S. Navy facility, would have resulted in the destruction of 1.79 acres of mangrove and salt marsh wetlands. Our previous letter outlines the specific concerns associated with construction of a missile launch facility at these locations.

On 24 November 1997, the director of the BMDO amended the Proposed Action in the SEIS to state that launching targets from the southern Gulf of Mexico would be from aircraft. The land-based Florida Keys missile launch sites were moved to the category of Alternatives Considered. Although the Florida Keys launch sites are analyzed in the SEIS for procedural reasons, their selection as launch sites is unlikely to be approved.

We support the BMDO's decision to remove the Florida Keys launch sites from the proposed action. We were initially concerned that the proposed TMD activities may adversely impact wildlife in the Florida Keys, notably the Lower Keys marsh rabbit, silver rice rat, and the

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LAST STAND
PETITION AGAINST MISSILE TESTING IN THE FLORIDA KEYS

I support Last Stand in opposing a plan for Eglin Air Force base to locate any missile testing site in the Florida Keys. Such testing would endanger human life and local land, air and marine environments which are now part of the State and Federally mandated Florida Keys National Marine Sanctuary. Further it would negatively affect the local quality of life and further congest US 1. The only reason given for testing here is that it is cost effective. Last Stand deplores the argument that dollars are more important than human lives and the priceless Florida Keys environment.

- | PRINT NAME | PRINT ADDRESS | SIGNATURE |
|-------------------|--|--------------------------|
| Michael Thompson | 8411 Lynn Ave NW Miami FL 33141 | <i>Michael Thompson</i> |
| Lauren McLaughlin | 4762 28th AV. N. SE. LA. 33713 | <i>Lauren McLaughlin</i> |
| Kati Barber | 240 HARRIS AVE. K.W. FL 33010 | <i>Kati Barber</i> |
| Jade Lennington | 3775 Deer Wagon Ml 49659 | <i>Jade Lennington</i> |
| Alisa Spencer | St Riviera Drive K.W. FL 33010 | <i>Alisa Spencer</i> |
| Abelito Peralta | 3522 Emerald Drive Doral FL 33126 | <i>Abelito Peralta</i> |
| Artemio DeWitt | 25514 4th St. NW Lakeland FL 34001 | <i>Artemio DeWitt</i> |
| Wende Stewart | 310 Matilda St. Coconut Grove FL 33134 | <i>Wende Stewart</i> |
| Tia Williams | 310 Matilda St. Miami FL 33134 | <i>Tia Williams</i> |
| D. Ann Clark | 3098 Oakland Forest Dr. Ft. Lauderdale FL 33309 | <i>D. Ann Clark</i> |
| Barbara Klein | 3055 S. Oakland Forest Dr. Ft. Lauderdale FL 33309 | <i>Barbara Klein</i> |
| Green Price | 59 Hickory Lane Ft. Lauderdale FL 33309 | <i>Green Price</i> |
| Joe Hood | 4099 Virginia Ave Ft. Lauderdale FL 33309 | <i>Joe Hood</i> |
| Anthony Klen | 804 Eisenhower K.W. FL 33010 | <i>Anthony Klen</i> |
| Jackie Johnson | 1647 Lakeshore Dr. Ft. Lauderdale FL 33309 | <i>Jackie Johnson</i> |

RETURN TO: LAST STAND, PO BOX 146, KEY WEST FL 33041

LAST STAND
PETITION AGAINST MISSILE TESTING IN THE FLORIDA KEYS

I support Last Stand in opposing a plan for Eglin Air Force base to locate any missile testing site in the Florida Keys. Such testing would endanger human life and local land, air and marine environments which are now part of the State and Federally mandated Florida Keys National Marine Sanctuary. Further it would negatively affect the local quality of life and further congest US 1. The only reason given for testing here is that it is cost effective. Last Stand deplores the argument that dollars are more important than human lives and the priceless Florida Keys environment.

- | PRINT NAME | PRINT ADDRESS | SIGNATURE |
|-------------------|--|--------------------------|
| Wanda Dukes | 5587 St. Paul Ave Ft. Lauderdale FL 33309 | <i>Wanda Dukes</i> |
| Risa Vaccaro | 997 Carleton Ln Ft. Lauderdale FL 33304 | <i>Risa Vaccaro</i> |
| Dennis Clark | 1400 NW 13th Ave Ft. Lauderdale FL 33304 | <i>Dennis Clark</i> |
| MARY PIERCE | 902 FLEMING Miami Beach FL 33139 | <i>Mary Pierce</i> |
| Bruce Tracy | 4745 NE Miami Ct. Hialeah FL 33127 | <i>Bruce Tracy</i> |
| Thomas E. Barber | 21 MUNDEN RD. NEWARK DE 19711 | <i>Thomas E. Barber</i> |
| Laura Leigh Lopez | 130 NE 10th St. Ft. Lauderdale FL 33304 | <i>Laura Leigh Lopez</i> |
| Ronald W. Cox | 126 NE 10th St. Ft. Lauderdale FL 33304 | <i>Ronald W. Cox</i> |
| Ronels Shriman | 14011 50th Ave. NW Palm Beach Gardens FL 33418 | <i>Ronels Shriman</i> |
| POSTAGE | 14011 50th Ave. NW Palm Beach Gardens FL 33418 | <i>POSTAGE</i> |
| Michael Ray | 723 Camille Ave. Ft. Lauderdale FL 33304 | <i>Michael Ray</i> |
| Nell Boland | 155 S. Miami Ave. Ft. Lauderdale FL 33304 | <i>Nell Boland</i> |
| Anthony Loy | 3450 Redstone Dr. Ft. Lauderdale FL 33309 | <i>Anthony Loy</i> |
| Scott Turbe | 1533 Northcutt Way Ft. Lauderdale FL 33304 | <i>Scott Turbe</i> |
| Diane Gauthier | 750 Paula Court Ft. Lauderdale FL 33304 | <i>Diane Gauthier</i> |
| Wanda Dukes | 5587 St. Paul Ave Ft. Lauderdale FL 33309 | <i>Wanda Dukes</i> |

RETURN TO: LAST STAND, PO BOX 146, KEY WEST FL 33041
THANK YOU!

LAST STAND
PETITION AGAINST MISSILE TESTING IN THE FLORIDA KEYS

I support Last Stand in opposing a plan for Eglin Air Force base to locate any missile testing site in the Florida Keys. Such testing would endanger human life and local land, air and marine environments which are now part of the State and Federally mandated Florida Keys National Marine Sanctuary. Further it would negatively affect the local quality of life and further congest US 1. The only reason given for testing here is that it is cost effective. Last Stand deplors the argument that dollars are more important than human lives and the priceless Florida Keys environment.

- | PRINT NAME | PRINT ADDRESS | SIGNATURE |
|---------------------|--|------------------------|
| 1. Wm Reese | 530 Gannell St | <i>Wm Reese</i> |
| 2. E. Joshua | 705 Forest St | <i>E. Joshua</i> |
| 3. J. E. Hoff | PO Box 517 | <i>J. E. Hoff</i> |
| 4. S. Campbell | 73 GARDNER DR. TARRANT, TX 78159 | <i>S. Campbell</i> |
| 5. M. HULLIS | 200 Belle Vista Way #102 P.O. Box 33412 Naples, FL 34104 | <i>M. HULLIS</i> |
| 6. Gary Bailey | 1559 continental | <i>Gary Bailey</i> |
| 7. Michele Mack | 222 W. W. Wood St. Wabash, Mich 49781 | <i>Michele Mack</i> |
| 8. Allen Blacklock | 1488 A. D. Bygones Rd. Oklawaha, FL 32957 | <i>Allen Blacklock</i> |
| 9. Mark Archer | 327 Spruce, Kenilworth, NJ 07033 | <i>Mark Archer</i> |
| 10. Linda Gorman | 11742 Colman Rd. Littleton, CO 80120 | <i>Linda Gorman</i> |
| 11. Victor Germanis | 11247 Colman Rd. Littleton, CO 80120 | <i>Victor Germanis</i> |
| 12. Lisa Germanis | 11742 Colman Rd. Littleton, CO 80120 | <i>Lisa Germanis</i> |
| 13. Jodie Reever | 8909 Autumn Ave. Albany, GA 31707 | <i>Jodie Reever</i> |
| 14. Richard Reever | 2889 Autumn Ave. Albany, GA 31707 | <i>Richard Reever</i> |
| 15. M. Lisa | 3163 STANFORD ST. HUNTSVILLE, AL 35894 | <i>M. Lisa</i> |
| 16. Rachel Miller | 602 White Birch St. Littleton, CO 80120 | <i>Rachel Miller</i> |

RETURN TO: LAST STAND, PO BOX 146, KEY WEST, FL 33041
THANKS V!!!

LAST STAND
PETITION AGAINST MISSILE TESTING IN THE FLORIDA KEYS

I support Last Stand in opposing a plan for Eglin Air Force base to locate any missile testing site in the Florida Keys. Such testing would endanger human life and local land, air and marine environments which are now part of the State and Federally mandated Florida Keys National Marine Sanctuary. Further it would negatively affect the local quality of life and further congest US 1. The only reason given for testing here is that it is cost effective. Last Stand deplors the argument that dollars are more important than human lives and the priceless Florida Keys environment.

- | PRINT NAME | PRINT ADDRESS | SIGNATURE |
|-----------------------------|---------------------------------------|-------------------------------------|
| 1. Rebecca Minto | 122 Prince Rd. Montevideo, NJ 2004 | <i>Rebecca Minto</i> |
| 2. Pam DeMaio | 316 Woodland Rd. Roswell, GA 30085 | <i>Pam DeMaio</i> |
| 3. David DeMaio | 316 Woodland Rd. Roswell, GA 30085 | <i>David DeMaio</i> |
| 4. Deborah & Michael McKean | 18 E. Harrison Ave. Babylon, NY 11702 | <i>Deborah & Michael McKean</i> |
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RETURN TO: LAST STAND, PO BOX 146, KEY WEST, FL 33041
THANKS V!!!

Table 5.1-2: Responses to Written Comments

Commentor and Affiliation	Comment Number	Resource Area	Section & Page	RESPONSE
Hadden, Alexander	P-W-0001.01	Launch mishap	3.1.9.4	In accordance with the Council on Environmental Quality guidelines, this SEIS includes sufficient analysis to inform the public of potential environmental impacts resulting from the preferred action and alternatives and to assist in the decision making process. In preparing this analysis, the most recent and available data was used to characterize the existing environments of all potential sites. The analysis of the risk probabilities of each missile flight test is conducted prior to acceptance of that flight test program by the range. Each equipment failure or human error possibility is considered and incorporated into the risk assessment for each flight test. No test will be accepted by the Air Force Development Test Center commander until he is satisfied that the risk analysis complies with Air Force and the Department of Defense safety policies.
	P-W-0001.02	Safety	2.1.3.2.3 3.1.9.2	The Launch Hazard Area is drawn to protect community resources. The size of a Launch Hazard Area is a function of the flexibility the Range Safety Officer has. The larger the Launch Hazard Area, the more flexibility there is in terms of acceptable launch conditions and anomaly response time. The fixed variable is the commitment to conduct all test activities so that mishap debris does not exit the designated Launch Hazard Area.
	P-W-0001.03	Safety	3.1.9.2	The Launch Hazard Area was designed to avoid requiring the evacuation of private property or occupied dwellings. The residences of Cudjoe Key have been recognized since the first site visit to the Keys. The Launch Hazard Area has not been shrunk. Each Launch Hazard Area is individually designed for the site, the missile, and the environs around the site. As stated previously, the more constrained a Launch Hazard Area, the more restrained the Range Safety Officer.
	P-W-0001.04	Launch mishap	2.1.3.3.7	As described in the Draft SEIS, the Flight Termination System is a linear shaped charge. The Flight Termination System is initiated by a radio command from the Range Safety Officer using doubly redundant systems.
	P-W-0001.05	Safety	2.1.3.2.3	Current missile launch locations on Santa Rosa Island and Cape San Blas involve similar distances to inhabited areas, and test launches have been performed safely.
	P-W-0001.06	Safety	2.1.3.2.3	This proposal is not a departure from safety precautions. The launch sites proposed at Santa Rosa Island and Cape San Blas are on land. The off-shore platforms are in the Other Alternatives Considered category, just like the Florida Keys.
	P-W-0001.07	Water quality-Keys	3.1.14.4 3.2.14.4 3.3.14.4	The National Aeronautics and Space Administration has prepared numerous environmental impact assessments and conducted long-term environmental monitoring to support the decisions to conduct rocket launches from the Kennedy Space Center, FL. These launch activities occur in a physical environment similar to that of the Florida Keys. The Space Shuttle launches cause local environmental impacts primarily through formation of a launch cloud that produces acidic deposition. This launch cloud results from the interaction of exhaust of the solid rocket boosters and deluge water. Primary constituents include aluminum oxide and hydrochloric acid. The deposition resulting from a Shuttle launch and from a Hera launch differ primarily in scale. The total exhaust from a Shuttle is 2,427,000 pounds, 460,000 of which is hydrogen chloride. The total exhaust from a Hera is 13,820 pounds, 3,078 pounds of which is hydrogen chloride. The Hera emits one half of one percent of the Shuttle exhaust. Hydrogen chloride near-field deposition rates from the Shuttle range up to 125g/m ² , while those from the Hera do not exceed 1.64g/m ² . This is 1.3 percent of the deposition rate of the Shuttle. The near field for the Shuttle is considered 1.5 kilometers from the launch pad. The near-field from the Hera launch would be 60 meters from the launch pad. The pH of shallow marine waters in the Florida Keys range from a low of 7.3 near Saddlebunch and Cudjoe Keys to a high of 8.2 near Plantation Key. Average alkalinity measurements range from a low of 119 mg/L calcium carbonate near Plantation Key to a high of 137 mg/L calcium carbonate near Harrison Canal (Florida Department of Environmental Protection, 1996). If it were to rain shortly after a missile launch, the hydrogen chloride present in the exhaust plume would be dissolved in the rain droplets, which would result in a temporary reduction in rainfall pH. Calculations were conservative in that 100 percent of the 1,399 kilograms of hydrogen chloride present in the exhaust plume was assumed to be dissolved in rain droplets (as opposed to a maximum of 20 percent under normal conditions.) Due to the high buffering capacity of the shallow marine waters, rainwater falling on nearby surface waters would result in no decrease in the pH levels. Deposition of hydrogen chloride at a rate of no more than 1.64g/m ² over the area of this water body would not decrease the pH more than 0.1 unit.
	P-W-0001.08	Transportation-Keys	3.3.11.4.2	Scheduling of missile transport and other Theater Missile Defense test-related traffic would be coordinated with local agencies to avoid peak traffic hours and minimize potential effects on local traffic movement. Emergency vehicles would not be affected by Theater Missile Defense test activities, since they will not close the Overseas Highway.
	P-W-0001.09	Transportation-Keys	3.3.11.4	Estimates of the probability of an accident involving a truck carrying missile components on the Overseas Highway range from 2.63 to 6.89 per million vehicle-kilometers. Using the high value, there is a probability of 0.0012 of a truck accident per launch.

Table 5.1-2: Responses to Written Comments (Continued)

Commentor and Affiliation	Comment Number	Resource Area	Section & Page	RESPONSE
	P-W-0001.10	launch mishap	3.1.9.2	The Launch Hazard Area was designed to avoid requiring the evacuation of private property or occupied dwellings. The residences of Cudjoe Key have been recognized since the first site visit to the Keys. Each Launch Hazard Area is individually designed for the site, the missile, and the environs around the site. As stated previously, the more constrained a Launch Hazard Area, the more restrained the Range Safety Officer. Should the Keys be selected, an emergency response plan would be developed in cooperation with local emergency response authorities for the Florida Keys prior to any launches.
	P-W-0001.11	Transportation-Keys	3.1.9.4	Estimates of the probability of an accident involving a truck carrying missile components on the Overseas Highway range from 2.63 to 6.89 per million vehicle-kilometers. Using the high value, there is a probability of 0.0012 of a truck accident per launch.
	P-W-0001.12	Transportation-Keys	3.1.9.4	There has never been an explosion involving the truck transport of missile components; therefore, the probability of an accident resulting in an explosion is much lower than the probability of an accident.
	P-W-0001.13	Transportation-Keys	3.1.9.4	The analysis of the risk probabilities of each missile flight test is conducted prior to acceptance of that flight test program by the range. The system failure mode analysis and attendant risk probability calculations for each failure mode are calculated. Each equipment failure or human error possibility is considered and incorporated into the risk assessment for each flight test. No test will be accepted by the Air Force Development Test Center commander until he is satisfied that the risk analysis complies with Air Force and the Department of Defense safety policies.
Freeman, Shirley County Commissioner, Monroe County	P-W-0002.01	Draft SEIS		In accordance with the Council on Environmental Quality guidelines, this SEIS includes sufficient analysis to inform the public of potential environmental impacts resulting from the preferred action and alternatives and to assist in the decision making process. In preparing this analysis, the most recent and available data was used to characterize the existing environments of all potential sites.
	P-W-0002.02	Launch emissions	3.1.1.4 3.3.1.4	The National Aeronautics and Space Administration has prepared numerous environmental impact assessments and conducted long-term environmental monitoring to support the decisions to conduct rocket launches from the Kennedy Space Center, FL. These launch activities occur in a physical environment similar to that of the Florida Keys. The Space Shuttle launches cause local environmental impacts primarily through formation of a launch cloud that produces acidic deposition. This launch cloud results from the interaction of exhaust of the solid rocket boosters and deluge water. Primary constituents include aluminum oxide and hydrochloric acid. The deposition resulting from a Shuttle launch and from a Hera launch differ primarily in scale. The total exhaust from a Shuttle is 2,427,000 pounds, 460,000 of which is hydrogen chloride. The total exhaust from a Hera is 13,820 pounds, 3,078 pounds of which is hydrogen chloride. The Hera emits one half of one percent of the Shuttle exhaust. Hydrogen chloride near-field deposition rates from the Shuttle range up to 125g/m ² , while those from the Hera do not exceed 1.64g/m ² . This is 1.3 percent of the deposition rate of the Shuttle. The near-field for the Shuttle is considered 1.5 kilometers from the launch pad. The near field from the Hera launch would be 60 meters from the launch pad. The pH of shallow marine waters in the Florida Keys range from a low of 7.3 near Saddlebunch and Cudjoe Keys to a high of 8.2 near Plantation Key. Average alkalinity measurements range from a low of 119 mg/L calcium carbonate near Plantation Key to a high of 137 mg/L calcium carbonate near Harrison Canal (Florida Department of Environmental Protection, 1996). If it were to rain shortly after a missile launch, the hydrogen chloride present in the exhaust plume would be dissolved in the rain droplets, which would result in a temporary reduction in rainfall pH. Calculations were conservative in that 100 percent of the 1,399 kilograms of hydrogen chloride present in the exhaust plume was assumed to be dissolved in rain droplets (as opposed to approximately 20 percent under normal conditions.) Due to the high buffering capacity of the shallow marine waters, rainwater falling on nearby surface waters would result in no decrease in the pH levels.

Table 5.1-2: Responses to Written Comments (Continued)

Commentor and Affiliation	Comment Number	Resource Area	Section & Page	RESPONSE
Lowe, Donald S.	P-W-0003.01	Visual Aesthetics	3.1.13.4 3.3.13.4	To better assess the visual impact of constructing a missile assembly building or erecting a 50 foot tall missile on a site, a visual simulation for each vantage point photograph used in the Draft SEIS has been prepared (sections 3.1.13.1 and 3.2.13.1.) The photographic visual simulations are published in the Final SEIS section 3.1.13.4 for the Panhandle sites and section 3.2.13.4 for the Keys sites. It is apparent in reviewing these photographs that neither the building nor the missile are visible from most accessible vantage points. The view from those closer vantage points will include the existing military buildings as well as the new Missile Assembly Building and missile. The new buildings will be seen in the context of the existing military facilities.
	P-W-0003.02	Visual Aesthetics-Keys	3.1.13.2	State and local regulatory requirements, some of which are derivative of Federal statutes, are recognized in the planning process. Military projects on military land comply with applicable state and Federal regulations. The building height restriction does not apply.
	P-W-0003.03	Noise	3.1.8.1 3.3.8.1	The SEIS provides both single event levels and weighted averages to provide as much information on noise occurrences and effects as possible. See section 3.1.9.4 of the Final SEIS for additional discussion of potential noise impacts.
	P-W-0003.04	Noise	3.1.8.1 3.3.8.1	The SEIS provides both single event levels and weighted averages to provide as much information on noise occurrences and effects as possible. There will be high maximum noise levels resulting from missile launches. These levels will last for less than 60 seconds.
	P-W-0003.05	Noise	3.1.8.4 3.3.8.4	There may be startle effects among the population. Prior notification of scheduled launches should reduce some of the anxiety of hearing brief loud noise events.
	P-W-0003.06	Biology-Keys	3.3.3.4	Studies of launch effects at Cape Canaveral have shown that birds disturbed by launch noise normally return to their nest soon after the launch event.
	P-W-0003.07	Noise	3.1.8.4 3.3.8.4	The SEIS provides both single event levels and weighted averages to provide as much information on noise occurrences and effects as possible.
	P-W-0003.08	Visual Aesthetics-Keys	3.3.13.4	The facilities and operations that would be required for Theater Missile Defense activities in the Keys would not be greatly different from the existing facilities and operations on these sites.
	P-W-0003.09	Socioeconomic	3.1.10.4 3.3.10.4	Socioeconomic impacts are addressed in sections 3.1.10.4, 3.2.10.4 and 3.3.10.4. An evaluation of quality of life is outside the scope of this document.
	P-W-0003.10	Draft SEIS	1.2 1.3	The National Environmental Policy Act requires the analysis of all reasonable alternatives to the proposed action. The Program Overview in section 1 explains the factors that will be considered in making the final decision following the completion of the Final SEIS. In accordance with the Council on Environmental Quality guidelines, this SEIS includes sufficient analysis to inform the public of potential environmental impacts resulting from the preferred action and alternatives and to assist in the decision making process.
Henize, Dennis	P-W-0004.01	Safety-Keys	Appendix G	Appendix G of the Draft SEIS described the method of establishing a Launch Hazard Area. Each Launch Hazard Area is different, depending on the available land launch trajectory, type of missiles, and distance to populated areas or structures. Less operational constraints, such as permissible wind conditions at the time of launch and the reaction time of the Range Safety Officer are required when more land is available for a Launch Hazard Area. Conversely, more operational constraints are required when less land is available. The geographic extent of the Launch Hazard Area and the operational constraints associated with it are established for each site to ensure that the launch can be safely conducted. This is done in accordance with Air Force Development Test Center policies and procedures to ensure that the general public will be protected to an individual and collective risk significantly less than the average public exposure. A Launch Hazard Area of 4.5 miles was never proposed for the Hera launch sites at Santa Rosa, Cape San Blas, or Cudjoe or Saddlebunch Keys. The 4.5 mile figure was originally associated with the Fort Wingate launch site. However, even at Fort Wingate, the eventual Launch Hazard Area was significantly less than 4.5 miles northeast of the launch site due to the existence of a school or residence.

Table 5.1-2: Responses to Written Comments (Continued)

Commentor and Affiliation	Comment Number	Resource Area	Section & Page	RESPONSE
	P-W-0004.02	Launch mishap	2.1.3	The Launch Hazard Area is drawn to protect community resources. The size of a Launch Hazard Area is a function of the flexibility the Range Safety Officer has. The larger the Launch Hazard Area, the more flexibility there is in terms of acceptable launch conditions and anomaly response time. The fixed variable is the commitment to conduct all test activities so that mishap debris does not exit the designated Launch Hazard Area. An inquiry is held following any launch mishap to fully document and understand all system anomalies. No launch will be scheduled until all issues raised during the inquiry are resolved.
	P-W-0004.03	Safety-Keys		The Launch Hazard Area considers the case of the missile flying in the wrong direction prior to any destruct action occurring.
	P-W-0004.04	Safety-Keys		We acknowledge but do not agree with Dr. David Wright's conclusions.
	P-W-0004.05	Noise-Keys		We acknowledge but do not agree with Dr. David Wright's conclusions. Section 3.3.8.4 of the Draft SEIS addressed the issue of shock waves from explosions within the Launch Hazard Area. The Launch Hazard Area is drawn to protect community resources. The size of a Launch Hazard Area is a function of the flexibility the Range Safety Officer has. The larger the Launch Hazard Area, the more flexibility there is in terms of acceptable launch conditions and anomaly response time. The fixed variable is the commitment to conduct all test activities so that mishap debris does not exit the designated Launch Hazard Area.
	P-W-0004.06	Noise-Keys		The 2.0 pounds per square foot explosion is due to a complete Hera stage 2 impacting the ground or the water. In the case of a mishap, the Range Safety Officer may prescribe destroying the second stage prior to impact to prevent this explosion.
	P-W-0004.07	Safety-Keys		As the Draft SEIS states, while models predict the highest possible concentration at ground level outside the Launch Hazard Area, the highest predicted concentration at ground level is less than the short-term public exposure guidelines.
Wright, David C. Ph.D. Union of Concerned Scientists	P-W-0005.01	Safety	Appendix G	Appendix G of the Draft SEIS described the method of establishing a Launch Hazard Area. Each Launch Hazard Area is different, depending on the available land, launch trajectory, type of missiles and distance to populated areas or structures. Less operational constraints, such as permissible wind conditions at the time of launch and the reaction time of the range safety officer are required when more land is available for a Launch Hazard Area. Conversely, more operational constraints are required when less land is available. The geographic extent of the Launch Hazard Area and the operational constraints associated with it are established for each site to ensure that the launch can be safely conducted. This is done in accordance with Air Force Development Test Center policies and procedures ensuring that the general public will be protected to an individual and collective risk significantly less than the average public exposure. A Launch Hazard Area of 4.5 miles was never proposed for the HERA launch sites at Santa Rosa Island, Cape San Blas or Cudjoe or Saddlebunch Keys. The 4.5 mile figure was originally associated with the Fort Wingate launch site. However, even at Fort Wingate, the eventual Launch Hazard Area was significantly less than 4.5 miles Northeast of the launch site due to the existence of a school.
	P-W-0005.02	Safety-Keys	Appendix G	Operational constraints at the Cudjoe were specifically considered in the design of the Launch Hazard Area such that it would not include these homes. These are the same procedures used at every other launch site.
	P-W-0005.03	Safety-Keys	Appendix G	We acknowledge but do not agree with Dr. David Wright's conclusions.
	P-W-0005.04	Safety-Keys	Appendix G	We acknowledge but do not agree with Dr. David Wright's conclusions.
	P-W-0005.05	Safety-Keys	Appendix G	We acknowledge but do not agree with Dr. David Wright's conclusions.
	P-W-0005.06	Safety-Keys	Appendix G	We acknowledge but do not agree with Dr. David Wright's conclusions.
	P-W-0005.07	Safety-Keys	Appendix G	We acknowledge but do not agree with Dr. David Wright's conclusions.

Table 5.1-2: Responses to Written Comments (Continued)

Commenter and Affiliation	Comment Number	Resource Area	Section & Page	RESPONSE
	P-W-0005.08	Launch mishap	Appendix G	Data is not releasable (sensitive material). While specific information is not releasable to the public, the missile has been tested and flown at White Sands Missile Range. The Launch Hazard Area has been determined, and the reliability of the missile will meet the safety (flight determination) standard and procedures. The Eglin range safety office has determined that the missile components of the flight test meets the safety launch procedures.
Wright, David C. Ph.D.	P-W-0006.01	Safety	Appendix G	We acknowledge but do not agree with Dr. David Wright's conclusions.
Rosenblatt, Sol	P-W-0007.01	Launch emissions	3.1.14.4 3.2.14.4 3.3.14.4	The total exhaust from a Hera launch is 13,820 pounds, 3,078 pounds of which is hydrogen chloride, with 221 pounds of hydrochloric acid deposited in the vicinity of the launch pad. The Hera near-field deposition rates do not exceed 1.64g/m ² . Deposition of 1.64g/m ² on brackish or sea water will not decrease the pH level.
	P-W-0007.02	Launch emissions	3.3.1.4	See answer above.
	P-W-0007.03	Florida Keys-reef	3.3.3.3	Comment noted.
	P-W-0007.04	Launch emissions	3.1.14.4 3.3.14.4	The balance of the hydrogen chloride is airborne transported to the far-field and may be deposited there at rates far lower than the near-field rates. Far-field deposition is sufficiently dispersed and variable launch to launch that successive launches seldom affect the same areas. No changes in plant community or structure due to cumulative effects of far-field deposition have been seen. National Aeronautics and Space Administration environmental monitoring of ten years of space shuttle launches at the Kennedy Space Center indicate that large quantities of hydrogen chloride combined with the sound suppression deluge water can deposit large amounts of hydrochloric acid on the land and waters immediately adjacent to the shuttle launch pad. This monitoring indicates that no more than 17 percent of the hydrogen chloride is deposited in the near-field of the launch pad even in the optimum conditions for combining hydrogen chloride and water into hydrochloric acid.
	P-W-0007.05	Launch emissions	3.1.14.4 3.3.14.4	See response above.
	P-W-0007.06	Launch emissions	3.1.14.4 3.3.14.4	See response above.
	P-W-0007.07	Launch emissions	3.1.1.4 3.3.1.4	The total exhaust from a Hera launch is 13,820 pounds, 3,078 pounds of which is hydrogen chloride, with 221 pounds of hydrochloric acid deposited in the vicinity of the launch pad. The remaining hydrogen chloride could be deposited in the far-field. Far-field deposition is sufficiently dispersed and variable from launch to launch that successive launches seldom affect the same areas.
	P-W-0007.08	Launch emissions	3.1.1.4 3.3.1.4	See response above.
	P-W-0007.09	Launch emissions	3.1.1.4 3.3.1.4	The solid propellant in the first stage of the missile burns at a constant rate from initial launch through burn out. Since the missile is accelerating from the launch pad during its first few seconds of flight, a slightly greater level of emissions occur near the earth's surface.
	P-W-0007.10	Hazardous wastes	3.1.9.4	Potential safety and health impacts of normal launch activities are addressed in section 3.1.9.4 of the Final SEIS. This same section addresses potential safety and health consequences in the event of a launch mishap.

Table 5.1-2: Responses to Written Comments (Continued)

Commentor and Affiliation	Comment Number	Resource Area	Section & Page	RESPONSE
	P-W-0007.11	Launch failure	3.1.9.4 3.1.14.4 3.2.14.4 3.3.14.4	National Aeronautics and Space Administration conducted an evaluation of the effects of missile systems in the marine environment as part of the EIS prepared for its Sounding Rocket Program. It concluded that the release of hazardous materials and decaying propellant would be rapidly diluted within a marine environment, and except in the immediate vicinity of the debris, would not be found in concentrations identified as producing any adverse effects. (National Aeronautics and Space Administration, 1973) The dissolution of ammonium perchlorate when in a polybutadiene rubber binder would be minimal because the binder is not water soluble. Additional studies provide findings that indicate that ammonium perchlorate would not result in significant changes in pH and nitrogen levels.
	P-W-0007.12	launch mishap	3.1.14.4 3.2.14.4	See response above.
	P-W-0007.13	Launch mishap	3.3.14.4	There is little literature extant because ammonium perchlorate is not disposed of in the marine environment in the United States. The Soviet literature was a source, not necessarily an endorsement.
	P-W-0007.14	Hazardous waste	3.3.14.4	Citing the literature did not propose using Soviet safety criteria. The findings were that ammonium perchlorate in fresh water environment does not substantially affect the biochemical consumption of oxygen, nor the processes of growth among saprophytic microflora.
	P-W-0007.15	Launch mishap	3.1.9.4 3.2.14.4	Potential ecological consequences of a launch mishap are addressed in section 3.1.9.4 of the Final SEIS.
	P-W-0007.16	Launch emissions	3.1.1.1	Hydrogen chloride is a gas. Hydrochloric acid is hydrogen chloride in aqueous form. At standard temperature and pressure, it is a liquid. Due to similarities of dispersion and deposition mechanics, liquids and solids are both considered particulates.
	P-W-0007.17	Water quality-Keys	3.1.14.3 3.2.14.3 3.3.14.3	The affected environments of the Panhandle, the Gulf of Mexico, and the Florida Keys are described in the respective resource areas of the Draft SEIS.
	P-W-0007.18	Water quality	3.1.14.3 3.2.14.3 3.3.14.3	Deposition of hydrogen chloride at a rate of no more than 1.64g/m ² over the area of this water body would not decrease the pH more than 0.1 unit. The alkaline environment buffers the effect of acid deposition, reducing the acidification from a given amount of acid deposition.
	P-W-0007.19	Water quality-Keys	3.1.14.3 3.2.14.3 3.3.14.3	See response above.
	P-W-0007.20	Water quality-Keys	3.3.14.4	There has not been a flow measurement. Deposition of hydrogen chloride from a Hera launch, at a rate of no more than 1.64g/m ² , would decrease pH by no more than 0.1 unit. At this rate, water pH levels would return to pre-launch levels very rapidly even with low flow and mixing.
	P-W-0007.21	Launch emissions	3.1.1.1	Models use mathematical formulas to calculate the probable result of a series of factors that may affect emissions dispersion. These include such things as: wind speed, humidity, release height of the emissions, atmospheric stability, and mixing layer altitude, among others. For the purposes of this analysis we varied each model parameter to produce the most conservative (worst) result for each step in the model. The result was the highest possible predicted concentration and the greatest distance that could result from the launch of a Hera missile at any location. The results did not reflect the climate of New Mexico, the Keys, or any other specific location, but the worst possible combination of climatic conditions. The calculated results yield greater emission concentrations than would be realistically be expected.

Table 5.1-2: Responses to Written Comments (Continued)

Commentor and Affiliation	Comment Number	Resource Area	Section & Page	RESPONSE
Hoffman, Wayne National Audubon Society	P-W-0007.22 P-W-0008.01	General Draft SEIS	1.0	In so far as these are quantifiable, they are addressed, otherwise they are beyond the scope of this document. No decision has yet been made about which alternative may be selected. The National Environmental Policy Act requires the analysis of all reasonable alternatives to the proposed action. The Program Overview in section 1 explains the factors that will be considered in making the final decision following the completion of the Final SEIS. In accordance with the Council on Environmental Quality guidelines, this SEIS includes sufficient analysis to inform the public of potential environmental impacts resulting from the preferred action and alternatives and, to assist in the decision making process.
	P-W-0008.02	Draft SEIS	1.0	In accordance with the Council on Environmental Quality guidelines, this SEIS includes sufficient analysis to inform the public and decision makers of potential environmental impacts resulting from the preferred action and alternatives and to assist in the decision making process. In preparing this analysis, the most recent and available data was used to characterize the existing environments of all potential sites including those in the Florida Keys. Primary field investigations were to verify and supplement existing data.
	P-W-0008.03	Biology-Keys	3.2.3.3	The listed species presented in the SEIS were obtained from the Florida Game and Fresh Water Fish Department and the U.S. Fish and Wildlife Service and are specific to the Region of Influence for each alternative site.
	P-W-0008.04	Biology-Keys	3.3.3.3	In accordance with the Council on Environmental Quality guidelines, this SEIS includes sufficient analysis to inform the public of potential environmental impacts resulting from the preferred action and alternatives and to assist in the decision making process. In preparing this analysis, the most recent and available data was used to characterize the existing environments of all potential sites including those in the Florida Keys.
	P-W-0008.05	Biology-Keys	3.3.3.4	It is recognized that endangered or threatened species may utilize previously disturbed areas. Potential impacts to endangered plants at alternative sites in the Florida Keys sites are discussed in section 3.3.3.4 of the Final SEIS.
	P-W-0008.06	Biology-Keys	3.3.3.3	The listed species presented in the SEIS were obtained from the Florida Game and Fresh Water Fish Department and the U.S. Fish and Wildlife Service and are specific to the Region of Influence for each alternative site.
	P-W-0008.07	Biology-Keys	3.3.3.3	See response above.
	P-W-0008.08	Biology-Keys	3.3.3.3	See response above.
	P-W-0008.09	Biology-Keys	3.3.3.3	This information has been included in section 3.3.3.3 of the Final SEIS.
	P-W-0008.10	Biology-Keys	3.1.3.4 3.3.3.4	Low pressure sodium lighting away from the beach would be used to minimize potential impacts. See section 3.1.3.4 and 3.3.3.4 in the Final SEIS.
	P-W-0008.11	Biology-Keys	3.3.3.3	This information has been included in section 3.3.3.3 in the Final SEIS.
	P-W-0008.12	Biology-Keys	3.1.3.4 3.3.3.4	Wildlife that remained in the immediate launch area (near field) during a test could be affected by launch emissions. Previous test programs have shown that most wildlife leave the launch area prior to a launch event due to human presence and activity, hence the potential for harm is extremely small.
	P-W-0008.13	Launch mishap	3.1.9	Potential impacts to biological resources result from a launch mishap are addressed in section 3.1.9 of the Final SEIS. Small scale habitat destruction, individual displacement, and incidental mortality are acknowledged in the near-field launch area.
Cofer, Elizabeth	P-W-0009.01	Utilities-Keys	3.3.11.3	The importance of Highway 1 to the Florida Keys has been recognized. An early alternative site was eliminated because it would have required closing Highway 1.

Table 5.1-2: Responses to Written Comments (Continued)

Commentor and Affiliation	Comment Number	Resource Area	Section & Page	RESPONSE
	P-W-0009.02	Land Use-Keys	3.1.7.3 3.3.7.3	The affected environments of the Panhandle, the Gulf of Mexico, and the Florida Keys are described in the respective resource areas of the Draft SEIS. The status of the refuges has been recognized in the Draft SEIS.
	P-W-0009.03	Land Use-Keys	3.3.7.3 3.3.7.4	The Launch Hazard Area for the alternative target launch sites on the Keys does overlap the Florida Keys National Marine Sanctuary, about 4.3 percent of the Florida Keys National Marine Sanctuary is in the Cudjoe Key Launch Hazard Area and 1.6 percent of the Florida Keys National Marine Sanctuary is in the Launch Hazard Area for the Saddlebunch Keys (see section 3.3.7 in the Final SEIS). New military uses in the Florida Keys National Marine Sanctuary are permitted but would require specific consultation. This consultation would require that any proposed action be designed and implemented so that potential impacts to any habitat or species be 1) avoided to the extent possible, 2) minimized when avoidance is not possible, and 3) mitigated to compensate for potential long-term adverse effects. Consultation with the Director of the National Marine Sanctuary began early in the planning process for the Theater Missile Defense testing program and is ongoing. If the Keys are selected they would continue.
	P-W-0009.04	Air quality-Keys	3.1.1.3 3.2.1.3 3.3.1.3	The affected environments of the Panhandle, the Gulf of Mexico, and the Florida Keys are described in the respective resource areas of the Draft SEIS.
	P-W-0009.05	Biology-Keys	3.3.3.3	The presence of the Silver Rice Rat at alternative sites in the Keys was discussed in section 3.3.3.3 of the Draft SEIS.
	P-W-0009.06	Biology-Keys	3.3.3.3	The presence of the Lower Keys Marsh Rabbit at alternative sites in the Keys was discussed in section 3.3.3.3 of the Draft SEIS.
	P-W-0009.07	Biology-Keys	3.3.3.3	Normal launch activities would not result in adverse impacts to the hardwood hammocks or pine rockland.
	P-W-0009.08	Biology-Keys	3.1.9.4 3.3.3.4	The 404 (b) (1) permit process would be used to evaluate and minimize any potential impacts on jurisdictional or non-jurisdictional wetlands affected by the proposed or alternative actions for Theater Missile Defense testing. This permit, issued by the U.S. Army Corps of Engineers in coordination with the State of Florida, would evaluate specific areas affected by the program once they are more precisely defined during the final planning and design process.
	P-W-0009.09	Alternatives-Keys	1.0	The National Environmental Policy Act requires the analysis of all reasonable alternatives to the proposed action. Section 1.0, Program Overview, explains the factors that will be considered in making the final decision after the Final SEIS is completed.
Weeks, Vicki	P-W-0010.01	General		Thank you for submitting these resolutions.
	P-W-0010.02	General		Thank you for submitting this letter.
	P-W-0010.03	Program	1.0	Comment noted.
	P-W-0010.04	Program	1.0	Comment noted.
	P-W-0010.05	Biology-Keys	3.1.3.3 3.3.3.3	The listed species presented in the SEIS were obtained from the Florida Game and Fresh Water Fish Department and the U.S. Fish and Wildlife Service and are specific to the Region of Influence for each alternative site.
	P-W-0010.06	Launch emissions	3.1.1.3 3.3.1.3	According to the Biological Assessment, no species would be jeopardized by the Theater Missile Defense test program.
	P-W-0010.07	Alternatives-Keys	1.0	No decision has yet been made about which alternative may be selected. The National Environmental Policy Act requires the analysis of all reasonable alternatives to the proposed action. Section 1.0, Program Overview, explains the factors that will be considered in making the final decision after the Final SEIS is completed.

Table 5.1-2: Responses to Written Comments (Continued)

Commentor and Affiliation	Comment Number	Resource Area	Section & Page	RESPONSE
FKNMS Advisory Council	P-W-0011.01	Alternatives-Keys		Comment noted.
	P-W-0011.02	Alternatives-Keys		Comment noted.
Drew Richardson, Professional Association of Diving Instructors	P-W-0012.01	Alternatives-Keys		Comment noted.
	P-W-0012.02	Alternatives	1.0	The National Environmental Policy Act requires the analysis of all reasonable alternatives to the proposed action. Section 1.0, Program Overview, explains the factors that will be considered in making the final decision after the Final SEIS is completed.
Drew Richardson	P-W-0013.01	Alternatives-Keys		Comment noted.
Orlandi, Robin, Board of Directors of Reef Relief	P-W-0014.01	Draft SEIS	1.0	In accordance with the Council on Environmental Quality guidelines, this SEIS includes sufficient analysis to inform the public of potential environmental impacts resulting from the preferred action and alternatives and to assist in the decision making process. In preparing this analysis, the most recent and available data was used to characterize the existing environments of all potential sites including those in the Florida Keys. Primary field investigations were to verify and supplement existing data.
	P-W-0014.02	Launch activity	1.4	Should one of the sites in the Florida Keys be selected for Theater Missile Defense testing, no more than 12 launch events would occur in any year. There is no plan to establish a permanent presence should the Florida Keys be selected. Cumulative impacts for each project alternative and environmental resource are presented at the end of the Environmental Impacts and Mitigations section for each resource in chapter 3 of the Draft and Final SEIS. Depending on the specific resource, cumulative impacts may or may not be additive in nature. For example, the utilities used by program activities would be fully additive, deposition of launch emissions on nearby soil would be somewhat additive, and noise events separated by a one month period would not be additive.
	P-W-0014.03	Air Quality	3.1.1.2; 3.3.1.2	The most recent and available data was used to characterize the existing environments of potential sites in the Florida Keys. Primary field investigations were to verify and supplement existing data. The Open-Burn Open-Detonation Dispersion Model is a model that calculates predicted depositions using worst case climatological parameters such as wind speed, humidity, and temperature. The results of the model represent the greatest concentrations of emissions that could occur under any conditions.

Table 5.1-2: Responses to Written Comments (Continued)

Commentor and Affiliation	Comment Number	Resource Area	Section & Page	RESPONSE
	P-W-0014.04	Air Quality-Keys	3.3.1.4	The National Aeronautics and Space Administration has prepared numerous environmental impact assessments and conducted long-term environmental monitoring to support the decisions to conduct rocket launches from the Kennedy Space Center, FL. These launch activities occur in a physical environment similar to that of the Florida Keys. The Space Shuttle launches cause local environmental impacts primarily through formation of a launch cloud that produces acidic deposition. This launch cloud results from the interaction of exhaust of the solid rocket boosters and deluge water. Primary constituents include aluminum oxide and hydrochloric acid. The deposition resulting from a Shuttle launch and from a Hera launch differ primarily in scale. The total exhaust from a Shuttle is 2,427,000 pounds, 460,000 of which is hydrogen chloride. The total exhaust from a Hera is 13,820 pounds, 3,078 pounds of which is hydrogen chloride. The Hera emits one half of one percent of the Shuttle exhaust. Hydrogen chloride near field deposition rates from the Shuttle range up to 125g/m ² , while those from the Hera do not exceed 1.64g/m ² . This is 1.3 percent of the deposition rate of the Shuttle. The near-field for the Shuttle is considered 1.5 kilometers from the launch pad. The near-field from the Hera launch would be 60 meters from the launch pad. The pH of shallow marine waters in the Florida Keys range from a low of 7.3 near Saddlebunch and Cudjoe Keys to a high of 8.2 near Plantation Key. Average alkalinity measurements range from a low of 119 mg/L calcium carbonate near Plantation Key to a high of 137 mg/L calcium carbonate near Harrison Canal (Florida Department of Environmental Protection, 1996). If it were to rain shortly after a missile launch, the hydrogen chloride present in the exhaust plume would be dissolved in the rain droplets, which would result in a temporary reduction in rainfall pH. Calculations were conservative in that 100 percent of the 1,399 kilograms of hydrogen chloride present in the exhaust plume was assumed to be dissolved in rain droplets (as opposed to a maximum of 20 percent under normal conditions). Due to the high buffering capacity of the shallow marine waters, rainwater falling on nearby surface waters would result in no decrease in the pH levels. Deposition of hydrogen chloride at a rate of no more than 1.64g/m ² over the area of this water body would not decrease the pH more than 0.1 unit.
	P-W-0014.05	Launch emissions	3.3.1.4	Comment noted.
	P-W-0014.06	Biology	3.3.3.4	The proposal would not cause a sufficient change in water oxygenation to warrant an evaluation of the baseline requirement for oxygen. See section 3.3.3 of the SEIS.
	P-W-0014.07	Biology-Keys	3.3.14.4	Normal launch activities would not affect the reef ecosystem. In the unlikely case of a launch mishap, no debris would fall on reef tracts which are outside the Launch Hazard Area. Mishap debris would have incidental small scale impacts on water quality in the immediate vicinity. This would not be enough to be measured after flushing through the Keys channels.
	P-W-0014.08	Water quality-Keys	3.3.14.4	See response to Comment P-W-0014.04.
	P-W-0014.09	Alternatives-Keys	1.0	No decision has yet been made about which alternative may be selected. The National Environmental Policy Act requires the analysis of all reasonable alternatives to the proposed action. Section 1.0, Program Overview, explains the factors that will be considered in making the final decision after the Final SEIS is completed.
	P-W-0014.10	Alternatives-Keys		Comment noted.
Henize, Dennis	P-W-0015.01	Safety-Keys	Appendix G	The Launch Hazard Area was designed to avoid requiring the evacuation of private property or occupied dwellings. The residences of Cudjoe Key have been recognized since the first site visit to the Keys. Each Launch Hazard Area is individually designed for the site, the missile, and the environs around the site.
	P-W-0015.02	Noise-Keys	3.3.8.4	The Launch Hazard Area is drawn to protect community resources. The size of a Launch Hazard Area is a function of the flexibility the Range Safety Officer has. The larger the Launch Hazard Area, the more flexibility there is in terms of acceptable launch conditions and anomaly response time. The fixed variable is the commitment to conduct all test activities so that mishap debris does not exit the designated Launch Hazard Area.

Table 5.1-2: Responses to Written Comments (Continued)

Commentor and Affiliation	Comment Number	Resource Area	Section & Page	RESPONSE
	P-W-0015.03	Air Quality	3.1.1.4 3.1.9.4	The TSCREEN PUFF model predicts concentrations at various distances from the launch point. For a normal launch, there were no exceedances. For a launch mishap scenario, TSCREEN PUFF indicated potential exceedance beyond the Launch Hazard Area. In that case, per Environmental Protection Agency guidance, using the more refined model, Open-Burn Open-Deonation Dispersion Model, indicated that there would not be exceedance of Occupational Safety and Health Administration occupational exposure standards or short term public emergency guide lines beyond the Launch Hazard Area.
	P-W-0015.04	Safety-Keys	Appendix G	The Launch Hazard Area is developed to conduct all test activities so that mishap debris does not exit the designated Launch Hazard Area.
	P-W-0015.05	Noise	3.1.8.4 3.3.8.4	The SEIS provides both single event levels and weighted averages to provide as much information on noise occurrences and effects as possible. There will be high maximum noise levels resulting from missile launches. These levels will last for less than 60 seconds.
	P-W-0015.06	Visual Aesthetics-Keys	3.1.13.4 3.3.13.4	The perceived degree of change is subjective. To assist in the comparison of vistas, visual simulations have been provided in sections 3.1.1, 3.4 and 3.3.13.4 of the Final SEIS to illustrate potential visual impacts of Theater Missile Defense facilities.
	P-W-0015.07	Draft SEIS	3.1.3.4 3.3.3.3 3.5	In accordance with the Council on Environmental Quality guidelines, this SEIS includes sufficient analysis to inform the public of potential environmental impacts resulting from the preferred action and alternatives and to assist in the decision making process. In preparing this analysis, the most recent and available data was used to characterize the existing environments of all potential sites. Potential human health and safety impacts were evaluated with respect to existing Environmental Protection Agency and Occupational Safety and Health Administration standards. Cumulative impacts for each project alternative and environmental resource are presented at the end of the Environmental Impacts and Mitigations section for each resource in chapter 3 of the Final SEIS.
	P-W-0015.08	Alternatives-Keys	1.0	No decision has yet been made about which alternative may be selected. The National Environmental Policy Act requires the analysis of all reasonable alternatives to the proposed action. Section 1.0, Program Overview, explains the factors that will be considered in making the final decision after the Final SEIS is completed.
Hemize, Dennis	P-W-0016.01	General		Comment noted.
	P-W-0016.02	Noise	3.3.3.4	Potential impacts on shorebird and wading bird rookeries are presented in section 3.3.3.4 of the Final SEIS.
	P-W-0016.03	Noise	3.3.8.3	See response above.
	P-W-0016.04	Noise	3.3.8.3	Comment noted.
	P-W-0016.05	Noise	3.3.8.3	Comment noted.
	P-W-0016.06	Biology-Keys	3.3.3.4	Potential impacts on sea turtles are presented in section 3.3.3.4 of the Final SEIS. Low pressure sodium lighting aimed away from the beach are proposed to minimize potential impacts.
	P-W-0016.07	Launch debris	3.1.3.4	Comment noted.
	P-W-0016.08	Utilities	3.3.12.4	There is no plan to establish a permanent presence should the Florida Keys be selected. Sanitary wastes would be disposed and treated off-site at approved wastewater treatment facilities.
	P-W-0016.09	Utilities-Keys	3.3.12.4	Bottled water would be provided to support personnel to reduce demands on local drinking water supplies. See section 3.3.14.4 of the Final SEIS.
	P-W-0016.10	Land Use-Keys	3.3.7.3	Comment noted; this has been corrected in section 3.3.7.3 in Final SEIS.
	P-W-0016.11	Land Use-Keys	3.3.7.3	Comment noted; this has been corrected in section 3.3.7.3 in Final SEIS.

Table 5.1-2: Responses to Written Comments (Continued)

Commentor and Affiliation	Comment Number	Resource Area	Section & Page	RESPONSE
	P-W-0016.12	Launch emissions-AIO2	3.1.1.3	This information has been corrected in the Final SEIS (table 3.1.1.4).
	P-W-0016.13	Transportation	3.3.11.4	Stage 2 of the Hera missile is shipped with the Flight Termination System attached to the motor casing. The Flight Termination System is not shipped with initiators attached. Without initiators, the Flight Termination System would not detonate.
	P-W-0016.14	Transportation	3.3.11.4	If the Flight Termination System did function, it would split the casing of the Stage 2 motor casing. This split may initiate a fire in the mass of the Stage 2 propellant. There would not be a detonation since the propellant is not configured in a pressure vessel; both ends of the motor are open in shipping.
	P-W-0016.15	Transportation	3.3.11.4	See previous response.
	P-W-0016.16	Transportation-Keys	3.1.9.4	Should a vehicle accident damage the booster, it is more likely to burn than explode. The booster motors are shipped with both ends open, so any fire would not result in sufficient compression for an explosion or propulsion. In fact, the propellant has less equivalent energy per mass than gasoline. A gasoline truck has a greater likelihood of exploding in an traffic accident than does a missile transport truck.
	P-W-0016.17	Safety-Keys	3.3.11.4 3.1.9.4	Should one of the sites in the Keys be selected for Theater Missile Defense testing, a specific emergency response plan (similar to the example in appendix J) would be prepared and implemented.
Rebosio, Gianne T.	P-W-0017.01	Socioeconomic	3.3.10.4	The most recent and reliable data concerning tourism in the Keys was compiled by a consortium that comprised National Oceanic and Atmospheric Administration, the Monroe County Tourist Development Council, the Nature Conservancy, the U.S. Forest Service, the Bicentennial Volunteers and the University of Georgia. The study, titled Linking the Economy and Environment of Florida Keys/Florida Bay, estimated that there were 2.54 million tourist visits made to the Keys between June 1995 and May 1996 (Visitor Profiles: Florida Keys/Key West, November 1996, Leeworthy and Wiley, National Oceanic and Atmospheric Administration).
	P-W-0017.02	Biology	3.1.3.4 3.2.3.4 3.3.3.4	Sections 3.1.3.4, 3.2.3.4, and 3.3.3.4 of the Draft SEIS address the long-term impacts to biological resources.
	P-W-0017.03	Biology-Gulf	3.2.3.4	The short-term noise events and low hydrogen chloride deposition rates of launch activities are not sufficient to affect marine mammals.
	P-W-0017.04	Geology and Soils	3.1.5.4 3.3.5.4	The maximum possible near-field or far-field hydrogen chloride deposition rates for a Hera launch would not exceed the buffering capacity of the soils or waters in the vicinity of the launch. Repeated launches may accumulate effects in the near-field of the Hera launch pad, causing loss of plant diversity and diminished buffering capacity and fertility of the soils.
	P-W-0017.05	General	3.1.9.4	Comment noted.
	P-W-0017.06	Socioeconomics	3.1.10.4 3.3.10.4	Comment noted.
	P-W-0017.07	General		The potential effects of Theater Missile Defense testing and training activities on the Gulf of Mexico are addressed in section 3.2 of the Draft SEIS.
	P-W-0017.08	Water quality	3.1.1.4 3.3.1.4	The volume of hydrogen chloride emitted by the target missile in the volume of air it transits is negligible and does not contribute to acid rain.
	P-W-0017.09	Biology-Keys	3.3.3.3	The presence of mangroves at alternative sites in the Keys was discussed in section 3.3.3.3 of the Draft SEIS.

Table 5.1-2: Responses to Written Comments (Continued)

		RESPONSE	
Commentor and Affiliation	Comment Number	Resource Area	Section & Page
	P-W-0017.10	Air Quality-Keys	3.1.1.4 3.2.1.4 3.3.1.4
	P-W-0017.11	Program	Comment noted.
	P-W-0017.12	Socioeconomics	Comment noted.
	P-W-0017.13	Socioeconomics	3.3.10.4 Over 78 percent of the visits were made by car, less than 9 percent by air and a little over 12 percent by cruise ship. Visitor preference for destinations within the Keys varied greatly. The most popular location, by a substantial margin, was Key West, with over 55 percent of the visits being made there. The least popular destination was the Lower Keys, which received just under 12 percent of the total visits. Furthermore, fewer than 5 percent of visits were made solely to the Lower Keys, compared to almost 40 percent of visits which were spent exclusively in Key West. The Visitor Participation Survey, which is described as the most comprehensive ever conducted in the region, further emphasizes the relatively minor role that the Lower Keys plays in the Keys tourist economy. The top three activities in which visitors participated were sightseeing and attractions (55 percent participation rate), beach activities (34 percent) and visiting museums and historical sites (33 percent). The top rated activity in the Lower Keys was viewing wildlife/nature study in which 5.8 percent of all visitors to the Keys participated.
	P-W-0017.14	General	Comment noted.
	P-W-0017.15	General	Comment noted.
Jones, Michael	P-W-0018.01	Alternatives	1.1 As described in section 1.1 of the Draft SEIS, this document supplements the Theater Missile Defense Extended Test Range EIS that evaluated four alternative ranges, including Eglin AFB; it analyzes new alternatives within the Eglin Gulf Test Range.
	P-W-0018.02	Alternatives	1.0 No decision has yet been made about which alternative may be selected. The National Environmental Policy Act requires the analysis of all reasonable alternatives to the proposed action. The Program Overview in section 1.0 explains the factors that will be considered in making the final decision following the completion of the Final SEIS.
	P-W-0018.03	Program	2.1.2 The discussion of detailed treaty requirements is outside the scope of the EIS. The Department of Defense treaty compliance group determines the applicable treaties to missile testing. It has been determined that short range ship and air launch of target missiles is treaty compliant.
	P-W-0018.04	Program	2.1.2 See response above.
	P-W-0018.05	Program	2.1.2 See response above.
	P-W-0018.06	Launch mishap	3.1.9.4 In accordance with the Council on Environmental Quality guidelines, this SEIS includes sufficient analysis to inform the public of potential environmental impacts resulting from the preferred action and alternatives and to assist in the decision making process. In preparing this analysis, the most recent and available data was used to characterize the existing environments of all potential sites. The analysis of the risk probabilities of each missile flight test is conducted prior to acceptance of that flight test program by the range. The system failure mode analysis and attendant risk probability calculations for each failure mode are calculated. Each equipment failure or human error possibility is considered and incorporated into the risk assessment for each flight test. No test will be accepted by the Air Force Development Test Center commander until he is satisfied that the risk analysis complies with Air Force and the Department of Defense safety policies.
	P-W-0018.07	Safety	2.1.3.2.3 The required minimum fragment distance is 900 feet. Air Force Manual 91.201, Explosive Safety Standards, allows for a reduction in the minimum fragment distance of 1250 feet when the Potential Explosion Site is located in a sparsely populated area. The following is the reference from AFM 91.201, Table 3.3, Column 9, Line 28, Note 60: "Sparsely populated locations reduce the minimum 1,250 foot fragment distance to 900 feet (270 meters) if the PES does not exceed 11,400 pounds (5140 kilograms). Allow no more than 25 persons in any sector bounded by the sides of a 45 degree angle, with the vertex at the Potential Explosion Site, and the 900 feet and 1250 feet arcs from the Potential Explosion Site."

Table 5.1-2: Responses to Written Comments (Continued)

Commentor and Affiliation	Comment Number	Resource Area	Section & Page	RESPONSE
	P-W-0018.08	Safety	Appendix G	Appendix G of the Draft SEIS described the method of establishing a Launch Hazard Area. Each Launch Hazard Area is different, depending on the available land, launch trajectory, type of missiles, and distance to populated areas or structures. Fewer operational constraints, such as permissible wind conditions at the time of launch and the reaction time of the range safety officer are required when more land is available for a Launch Hazard Area. Conversely, more operational constraints are required when less land is available. The geographic extent of the Launch Hazard Area and the operational constraints associated with it are established for each site to ensure the launch can safely be conducted. A Launch Hazard Area of 4.5 miles was never proposed for the Hera launch sites at Santa Rosa, Cape San Blas or Cudjoe or Saddlebunch Keys. The 4.5 mile figure was originally associated with the Fort Wingate launch site. However, even at Fort Wingate, the eventual Launch Hazard Area was significantly less than 4.5 miles Northeast of the launch site due to the existence of a school or residence.
	P-W-0018.09	Launch mishap	3.1.9.3	Comment noted.
	P-W-0018.10	DOPAA	2.1.2.1	Hera target missile reentry vehicles vary in configuration and mass to replicate threat reentry vehicles. Typical reentry vehicles mass ranges from approximately 448 kilograms (1,650 pounds) to 884 kilograms (1,950 pounds).
Germer, Suzanne	P-W-0019.01	Alternatives-Cudjoe	1.0	No decision has yet been made about which alternative may be selected. The National Environmental Policy Act requires the analysis of all reasonable alternatives to the proposed action. Section 1.0, Program Overview, explains the factors that will be considered in making the final decision after the Final SEIS is completed. Air quality and noise impacts to humans are addressed in sections 3.3.1.4 and 3.3.8.4 of the Draft and Final SEIS.
Cofar, Elizabeth	P-W-0020.01	Alternatives-Keys	1.0	No decision has yet been made about which alternative may be selected. The National Environmental Policy Act requires the analysis of all reasonable alternatives to the proposed action. Section 1.0, Program Overview, explains the factors that will be considered in making the final decision after the Final SEIS is completed.
	P-W-0020.02	Draft SEIS	3.3	In accordance with the Council on Environmental Quality guidelines, this SEIS includes sufficient analysis to inform the public of potential environmental impacts resulting from the preferred action and alternatives and to assist in the decision making process. In preparing this analysis, the most recent and available data was used to characterize the existing environments of all potential sites including those in the Florida Keys. Should either of the alternative sites in the Keys be selected, there would be further consultation with Federal and State agencies.
	P-W-0020.03	Transportation-Keys	3.3.11.3	The evaluation of potential traffic impacts on Highway 1 in the Draft SEIS forecast an increase in traffic volume by 2005 (including Theater Missile Defense-related vehicles) of 0.3 to 1.5 percent on a peak day of activity. Since baseline forecasts of traffic for the same year show that most of the segments of U.S. 1 would be operating at or above design capacity during peak times, project traffic would exacerbate this situation.
	P-W-0020.04	Safety -Keys	3.1.11.3 3.3.11.3	The ability to control the movement of missile components is important to the overall safety of the proposed Theater Missile Defense testing system. A specific evacuation plan for the missile and other test-related components and non-critical personnel would be implemented at the first notice of potential hurricane activity. This would ensure that Theater Missile Defense-related evacuation movements would precede standard public evacuation plans and would not interfere with the planned process.
	P-W-0020.05	Transportation	3.1.9.4 3.3.11.4	Estimates of the probability of an accident involving a truck carrying missile components on the Overseas Highway range from 2.63 to 6.89 per million vehicle-kilometers. Using the high value, there is a probability of 0.0012 of a truck accident per launch. Since there has never been an explosion involving the truck transport of missile components, the probability of an accident resulting in an explosion is much lower than the probability of an accident.
	P-W-0020.06	Transportation	3.1.9.4 3.3.11.4	Transportation of the missile segments would involve standard freight transports and would not require a convoy. Emergency procedures for all contingencies would be established through cooperative agreements with local public safety agencies. No specific fire fighting vehicles would accompany the shipment, although all vehicles would be equipped with standard fire suppression equipment.
	P-W-0020.07	Transportation-Keys	3.3.11.3	In preparing this analysis, the most recent and available data was used to characterize the existing environments of all potential sites including those in the Florida Keys.
	P-W-0020.08	Transportation-Keys	3.3.11.3	Traffic volumes over multiple segments of a highway can differ considerably on the basis of the origin and destination of vehicles entering and exiting the highway. Section 3.3.11 of the Final SEIS notes that traffic volumes on U.S. 1 are currently at or near its design capacity.

Table 5.1-2: Responses to Written Comments (Continued)

Commentor and Affiliation	Comment Number	Resource Area	Section & Page	RESPONSE
	P-W-0020.09	Transportation	3.3.11.3	Missile components would normally be shipped by standard freight transport vehicles and would not involve a convoy. Standard safety and security precautions would be employed where necessary to ensure that movement of emergency vehicles is not hindered.
	P-W-0020.10	Transportation	3.3.11.3	See response above.
	P-W-0020.11	Safety	3.3.11.3	Local law enforcement personnel would maintain order in cases of civil disobedience.
	P-W-0020.12	Draft SEIS		Comment noted.
Muselman, David	P-W-0021.01	Draft SEIS		Since an environmental impact analysis is a prediction of potential program impacts should one or more of its alternatives be implemented, it is traditional to use the conditional tense to describe possible future outcomes.
	P-W-0021.02	launch effects		Comment noted.
	P-W-0021.03	Draft SEIS	3.1._.3 3.2._.3 3.3._.3	In accordance with the Council on Environmental Quality guidelines, this SEIS includes sufficient analysis to inform the public of potential environmental impacts resulting from the preferred action and alternatives and to assist in the decision making process. In preparing this analysis, the most recent and available data was used to characterize the existing environments of all potential sites including those in the Florida Keys. A list of available mitigations to avoid or minimize potential environmental impacts has been included at the end of each resource evaluation in chapter 3 of the Final SEIS.
	P-W-0021.04	Draft SEIS		Comment noted.
	P-W-0021.05	Alternatives-Keys	1.0	No decision has yet been made about which alternative may be selected. The National Environmental Policy Act requires the analysis of all reasonable alternatives to the proposed action. Section 1.0, Program Overview, explains the factors that will be considered in making the final decision after the Final SEIS is completed.
	P-W-0021.06	General	3.1.9.4	Comment noted.
	P-W-0021.07	Water Quality	3.3.14.4	Environmental monitoring at Kennedy Space Center has shown that during the period of reduced pH, metals became more soluble and their concentrations in the water column increased dramatically. As normal pH levels returned to the area (within 24 to 72 hours), metal concentrations returned to pre-launch levels. "To date no long-term elevations of metal concentrations on the water column have been observed." The predicted near-field deposition rates from Theater Missile Defense testing will be less than 1 percent of the deposition rates for the Space Shuttle.
	P-W-0021.08	Water Quality	3.3.14.4	Environmental monitoring at Kennedy Space Center found that fish kill was a direct result of acidification of shallow surface waters resulting from deposition of up to 1,700 kilograms of hydrogen chloride on the surface layer of a lagoon in the immediate vicinity of the launch pad. This deposition resulted in pH reduction of 6 to 7 points. By comparison a normal Hera launch would deposit hydrogen chloride at a rate of no more than 1.64g/m ² over near-field water bodies and would decrease the pH by less than 0.1 units. As a result, only incidental fish mortality would be expected. No fish species would be jeopardized by the Theater Missile Defense test program.
	P-W-0021.09	Air Quality	3.3.14.3	The total exhaust from a Hera launch is 13,820 pounds, 3,078 pounds of which is hydrogen chloride, with 221 pounds of hydrochloric acid deposited in the vicinity of the launch pad. The remaining hydrogen chloride could be deposited in the far-field. Far-field deposition is sufficiently dispersed and variable from launch to launch that successive launches seldom affect the same areas. The most recent and available data was used to characterize the existing environments of potential sites in the Florida Keys. Primary field investigations were to verify and supplement existing data. The Open-Burn Open-Detonation Dispersion Model is a model that calculates predicted depositions using worst case climatological parameters such as wind speed, humidity and temperature. The results of the model represent the greatest concentrations of emissions that could occur under any conditions.

Table 5.1-2: Responses to Written Comments (Continued)

Commentor and Affiliation	Comment Number	Resource Area	Section & Page	RESPONSE
	P-W-0021.10	Water Quality-Keys	3.3.14.4	Environmental monitoring at Kennedy Space Center has shown that during the period of reduced pH, metals became more soluble and their concentrations in the water column increased dramatically. As normal pH levels returned to the area (within 24 to 72 hours), metal concentrations returned to pre-launch levels. "To date no long-term elevations of metal concentrations on the water column have been observed." The predicted near-field deposition rates from Theater Missile Defense testing will be less than 1 percent of the deposition rates for the Space Shuttle. Deposition of hydrogen chloride from a Hera launch, at a rate of no more than 1.64g/m ² , would decrease pH by no more than 0.1 unit. At this rate, water pH levels would return to pre-launch levels very rapidly with no long-term elevation.
	P-W-0021.11	Water Quality-Keys	3.3.14.4	Potable water is supplied to the Florida Keys by the Florida Keys Aqueduct Authority. Fresh water impoundments are recognized as important to local wildlife.
	P-W-0021.12	Launch mishap	3.2.14.4 3.3.14.4	Ammonium perchlorate would only be introduced into the Gulf of Mexico in the unlikely event of a launch mishap. The slow process of hydration would continue until the material was completely saturated. These quantities of ammonium perchlorate distributed over a wide area of the Gulf would not be considered toxic to the environment.
	P-W-0021.13	Noise	3.3.8.4	See section 3.3.8.4 in the Final SEIS.
	P-W-0021.14	Noise	3.3.3.3	See section 3.3.8.4 in the Final SEIS.
	P-W-0021.15	Noise	3.3.8.3	The AICUZ study was developed by the Naval Air Station, Key West to evaluate their noise environment, not that of Cudjoe Key. See section 3.3.8.3 in the Final SEIS.
	P-W-0021.16	General	3.3.12.4	There is no plan to establish a permanent presence should the Florida Keys be selected.
	P-W-0021.17	Land Use-Keys	3.3.7.3	This has been corrected in section 3.3.7.3 in the Final SEIS.
	P-W-0021.18	Land Use-Keys	3.3.7.3	This has been corrected in section 3.3.7.3 in the Final SEIS.
	P-W-0021.19	Safety-Keys	Appendix J	Should one of the sites in the Keys be selected for Theater Missile Defense testing, a specific emergency response plan (similar to the example in appendix J) would be prepared and implemented.
	P-W-0021.20	Safety-Keys		Should the Keys be selected, MOAs with local officials on how to handle these situations would be developed. Appropriate officials would be consulted.
	P-W-0021.21	Safety-		Comment noted.
James J. Slack, South Florida Field Office, Fish and Wildlife Service	P-W-0022.00	Draft SEIS		This letter was submitted prior to release of the Draft SEIS. All comments were incorporated into the Draft SEIS prior to its release.
	P-W-0022.01	Draft SEIS		In accordance with the Council on Environmental Quality guidelines, this SEIS includes sufficient analysis to inform the public of potential environmental impacts resulting from the preferred action and alternatives and to assist in the decision making process. In preparing this analysis, the most recent and available data was used to characterize the existing environments of all potential sites including those in the Florida Keys. Should either of the alternative sites in the Keys be selected, there would be further consultation with Federal and State agencies.
	P-W-0022.02	Biology	3.1.3.4	Comment noted.

Table 5.1-2: Responses to Written Comments (Continued)

Commentor and Affiliation	Comment Number	Resource Area	Section & Page	RESPONSE
	P-W-0022.03	Biology-Eglin	3.1.3.4 3.3.3.4	Comment noted.
	P-W-0022.04	Biology-Keys	2.1.3 3.3.3.4	Comment noted.
	P-W-0022.05	Biology-Keys	3.3.3.4	Potential impacts on shorebird and wading bird rookeries are presented in section 3.3.3.4 of the Final SEIS.
	P-W-0022.06	Draft SEIS	3.1.3.4 3.3.3.4	Should an alternative be selected, the specific mitigations will be documented in the Record of Decision. A mitigation plan, describing the specific measures, will be developed and implemented prior to beginning site preparation and test activities.
	P-W-0022.07	Land Use-Keys	3.3.7.4	The conservation land uses including the refuges that you mention are a critical part of the resource management program for the Florida Keys. The alternative target launch sites on Cudjoe Key and Saddlebunch Keys are located on land owned by the Department of Defense and are designated for military use. The Launch Hazard Area for these alternative sites does, however, overlap the National Marine Sanctuary and several wildlife refuges. New military uses in these areas are permitted but would require specific consultation with appropriate Federal and state resource agencies.
	P-W-0022.08	Biology-Keys	3.3.3.3 3.3.7.3	Military activities associated with Theater Missile Defense site preparation and test preparation on military land would have minimal effect on the wilderness area. The missile launch would be intrusive, but of short duration, no more than once a month.
	P-W-0022.09	Land use-Keys		Comment noted.
	P-W-0022.10	Biology-Eglin	3.1.3.3	Comment noted.
	P-W-0022.11	Biology-Eglin	3.1.3.3	Comment noted.
	P-W-0022.12	Biology-Eglin	3.1.3.3 3.3.3.3	Comment noted.
	P-W-0022.13	Biology-Eglin	3.1.3.4	Low pressure sodium lighting aimed away from the beach are proposed to minimize potential impacts.
	P-W-0022.14	Biology-Eglin	3.1.3.3	Comment noted.
	P-W-0022.15	Biology-Eglin	3.1.3.3 3.3.3.3	Comment noted.
	P-W-0022.16	Biology-Eglin	3.1.3.4 3.3.3.4	Comment noted.
	P-W-0022.17	Biology	3.1.3.3 3.3.3.3	Comment noted.
	P-W-0022.18	Biology-Eglin	3.2.3.3	Comment noted.
	P-W-0022.19	Biology-Gulf	3.3.3.3	Comment noted.

Table 5.1-2: Responses to Written Comments (Continued)

Commenter and Affiliation	Comment Number	Resource Area	Section & Page	RESPONSE
	P-W-0022.20	Biology-Keys	3.1.3.3 3.3.3.3	Comment noted.
	P-W-0022.21	Biology-Keys	3.3.3.3	Comment noted.
	P-W-0022.22	Biology-Keys	3.3.3.3	Comment noted.
	P-W-0022.23	Biology-Keys	3.3.3.3	Comment noted.
	P-W-0022.24	Biology-Keys	3.3.3.3	Comment noted.
	P-W-0022.25	Biology-Keys	3.3.7.3	Comment noted.
	P-W-0022.26	Biology-Keys	3.3.3.3 3.3.7.3	Comment noted.
	P-W-0022.27	Land Use-Keys	3.3.7.3.2	Comment noted.
	P-W-0022.28	Land Use-Keys	3.3.7.3	Comment noted.
	P-W-0022.29	Land Use-Keys	3.3.7.3.2	Comment noted.
	P-W-0022.30	Land Use-Keys	3.3.7.3.2	Comment noted.
	P-W-0022.31	Land Use-Keys	3.3.7.3	Comment noted.
	P-W-0022.32	Land Use-Keys	3.3.7.3	See response above.
	P-W-0022.33	Land Use-Keys	3.3.3.3	Comment noted.
	P-W-0022.34	Biology-Keys	3.3.7.3	Comment noted.
	P-W-0022.35	Land Use-Keys	3.3.3.3.1	Comment noted.
	P-W-0022.36	Biology-Keys	3.3.3.3.1	Comment noted.
	P-W-0022.37	Visual Aesthetics-Keys	3.1.13.2 3.3.13.2	The Forest Service's methodology provides a basis to compare visual setting before and after any modification or addition. The perceived degree of change is subjective. To assist in the comparison of vistas, visual simulations have been provided in sections 3.1.13.4 and 3.3.13.4 of the Final SEIS to illustrate potential visual impacts of Theater Missile Defense facilities.
	P-W-0022.38	General		This acronym refers to the Gulf States Marine Fisheries Commission.
	P-W-0022.39	Biology-Keys	3.1.3.3	Comment noted.
	P-W-0022.40	Draft SEIS	3.1.13.4 3.3.3.4	Should an alternative be selected, the specific mitigations will be documented in the Record of Decision. A mitigation plan, describing the specific measures, will be developed and implemented prior to beginning site preparation and test activities.

Table 5.1-2: Responses to Written Comments (Continued)

Commentor and Affiliation	Comment Number	Resource Area	Section & Page	RESPONSE
	P-W-0022.41	Biology-Keys	1.0	In accordance with the Council on Environmental Quality guidelines, this SEIS includes sufficient analysis to inform the public of potential environmental impacts resulting from the preferred action and alternatives and to assist in the decision making process. In preparing this analysis, the most recent and available data was used to characterize the existing environments of all potential sites including those in the Florida Keys. No decision has yet been made about which alternative may be selected. The National Environmental Policy Act requires the analysis of all reasonable alternatives to the proposed action. Section 1.0, Program Overview, explains the factors that will be considered in making the final decision after the Final SEIS is completed.
Ron Cox	P-W-0023.01	Alternatives	1.0	No decision has yet been made about which alternative may be selected. The National Environmental Policy Act requires the analysis of all reasonable alternatives to the proposed action. Section 1.0, Program Overview, explains the factors that will be considered in making the final decision after the Final SEIS is completed.
Hind, Martin S	P-W-0024.01	General		Comment noted.
Hare, James N.	P-W-0025.01	General		Shipped 17 March 1998.
unsigned	P-W-0026.01	Alternatives	2.1.1.2,2.2	Launch of missiles that can be defined as ICBMs from a fixed platform are prohibited by treaty.
	P-W-0026.02	Program	1.4	If a target launch site in the Keys is chosen, no more than 12 launches would be scheduled in any year; however, there would probably less.
	P-W-0026.03	Air Quality-Keys	3.1.1.3 3.3.1.3	The prevailing winds have historically averaged 2 meters per second (7 feet per second) in a southeasterly direction in the summer and 4 meters per second (12 feet per second) in a northeasterly direction in the winter in the Florida Keys. These conditions were used in the calculations of exhaust depositions. The concentration of emissions would be far below permissible health levels by the time wind borne pollution reached residential areas.
	P-W-0026.04	Water Quality-Saddlebunch	3.3.1.4 3.3.14.4	Deposition of hydrogen chloride from a Hera launch, at a rate of no more than 1.64g/m ² , would decrease pH by no more than 0.1 unit. At this rate, water pH levels would return to pre-launch levels very rapidly even with low flow and mixing.
	P-W-0026.05	Alternatives	2.3	Section 2.3 of the Draft and Final SEIS presents the range of site alternatives that were originally evaluated for the Theater Missile Defense program. Specific factors that eliminated these alternatives from further consideration are summarized.
Drake, Susan	P-W-0027.01	Biology-Keys		Comment noted.
Mc Arthur, Phil and Jane	P-W-0028.01	Alternatives-Keys	3.3.10.3	It is not proposed to conduct war games from the Florida Keys.
	P-W-0028.02	Alternatives-Keys		Comment noted.
unsigned	P-W-0029.01	Land use-Keys		It is not proposed to launch anti-ballistic missiles from the Florida Keys.
	P-W-0029.02	Program		Comment noted.
	P-W-0030.01	Program		Comment noted.
Blazevic, R. L.	P-W-0031.01	Draft SEIS		Comment noted.
Magill, Mary	P-W-0032.01	Alternatives-Keys	1.0	Comment noted.
Hendricks, M.E.	P-W-0033.01	Alternatives-Keys		Comment noted.

Table 5.1-2: Responses to Written Comments (Continued)

Commentor and Affiliation	Comment Number	Resource Area	Section & Page	RESPONSE
Gerbnacht, Helen	P-W-0034.01	Draft SEIS		Comment noted.
	P-W-0034.02	Draft SEIS		Comment noted.
	P-W-0034.03	Alternatives-Keys		Comment noted.
illegible	P-W-0035.01	Alternatives-Keys		Comment noted.
Canneto, Frank Pipeline Company	P-W-0036.01	Draft SEIS		Shipped 18 March 1998.
Richardson, Drew Professional Association of Diving Instructors	P-W-0037.01	Alternatives-Keys		Comment noted.
	P-W-0037.02	Alternatives	1.0	No decision has yet been made about which alternative may be selected. The National Environmental Policy Act requires the analysis of all reasonable alternatives to the proposed action. The Program Overview in section 1.0 explains the factors that will be considered in making the final decision following the completion of the Final SEIS.
Martin, Terence N. Office of Environmental Policy and Compliance, U.S. Dept. of the Interior	P-W-0038.01	Draft SEIS		Comment noted.
Deut, Jane	P-W-0039.01	Transportation-Keys	3.3.11.4	The evaluation of potential traffic impacts on U.S. 1 forecast an increase in traffic volume in 2005 (including Theater Missile Defense-related vehicles) of 0.3 to 1.5 percent on a peak day of activity. Since baseline forecasts of traffic for the same year show that most of the segments of U.S. 1 would be operating at or above design capacity during peak times, project traffic would exacerbate this situation.
	P-W-0039.02	Safety	3.3.11.4	Estimates of the probability of an accident involving a truck carrying missile components on the Overseas Highway range from 2.63 to 6.89 per million vehicle-kilometers. Using the high value, there is a probability of 0.0012 of a truck accident per launch.
	P-W-0039.03	Biology-Keys		A detailed discussion of the various risks associated with missile testing are described in section 3.1.9 for normal and mishap scenarios. The primary role of the range safety officer is to ensure the safety of the public. This is done in accordance with Air Force Development Test Center policies and procedures ensuring that the general public will be protected to an individual and collective risk significantly less than the average public exposure. Specifically, one of the safety mechanisms is to establish a Launch Hazard Area as described in section 2.1.5 in the SEIS.
Wright, Bruce	P-W-0040.01	Program		Comment noted.
	P-W-0040.02	Draft SEIS		Comment noted.

Table 5.1-2: Responses to Written Comments (Continued)

Commentor and Affiliation	Comment Number	Resource Area	Section & Page	RESPONSE
Golden, Jim	P-W-0041.01	Draft SEIS		Comment noted.
Poole, Samuel E. III, South Florida Water Management District	P-W-0042.01	Land Use-Keys	3.3.7	Comment noted.
	P-W-0042.02	Land Use-Keys	Appendix N	Once a decision is made on which sites or sites would be included in the Theater Missile Defense test program, an Environmental Resource Permit would be obtained from either the Florida Department of Environmental Protection or the South Florida.
	P-W-0042.03	Biology-Keys	3.3.3	The 404 (b) (1) permit process would be used to evaluate and minimize any potential impacts on jurisdictional or non-jurisdictional wetlands affected by the proposed or alternative actions for Theater Missile Defense testing. This permit, issued by the U.S. Army Corps of Engineers in coordination with the State of Florida, would evaluate specific areas affected by the program once they are more precisely defined during the final planning and design process. Additional mitigations for wetlands have been included in section 3.3.3.4 of the Final SEIS.
	P-W-0042.04	Draft SEIS	3.3.3	Cumulative impacts for each project alternative and environmental resource are presented at the end of the Environmental Impacts and Mitigations section for each resource in chapter 3 of the Draft and Final SEIS.
	P-W-0042.05	Biology-Keys	3.1.3 3.3.3	See response P-W-0042.03 above.
	P-W-0042.06	Water Quality-Keys	3.1.14 3.3.14	The OFW status of the waters surrounding the Keys is recognized in the Draft SEIS. Deposition of hydrogen chloride from a Hera launch, at a rate of no more than 1.64g/m ² , would decrease pH by no more than 0.1 unit. At this rate, water pH levels would return to pre-launch levels very rapidly with no long-term elevation.
	P-W-0042.07	Land Use-Keys	3.3.7	As described in the Draft SEIS, the Launch Hazard Area for the alternative target launch sites on the Keys does overlap the Florida Keys National Marine Sanctuary; about 4.3 percent of the Florida Keys National Marine Sanctuary is in the Cudjoe Key Launch Hazard Area and 1.6 percent of the Florida Keys National Marine Sanctuary is in the Launch Hazard Area for the Saddlebunch Keys (see section 3.3.7 in the Final SEIS). New military uses in the Florida Keys National Marine Sanctuary are permitted but would require specific consultation. This consultation would require that any proposed action be designed and implemented so that potential impacts to any habitat or species be 1) avoided to the extent possible, 2) minimized when avoidance is not possible, and 3) mitigated to compensate for potential long-term adverse effects.
	P-W-0042.08	Biology	3.1.3.4 3.3.3.4	Comment noted.
	P-W-0042.09	Geology & Soils-Keys	3.1.5.4 3.3.5.4	Aluminum oxide and hydrogen chloride are bound in the solid rocket motor binder matrix, polybutadiene rubber. This material has the consistency of rubber, and will not spill on site. Aluminum oxide and hydrogen chloride are combustion products and will be deposited on the ground and water in low rates after a launch. This is addressed in the air quality section, the geology and soils section and the water section of the Draft SEIS.

Table 5.1-2: Responses to Written Comments (Continued)

Commentor and Affiliation	Comment Number	Resource Area	Section & Page	RESPONSE
	P-W-0042.10	Launch emissions	3.1.1.4	<p>The National Aeronautics and Space Administration has prepared numerous environmental impact assessments and conducted long term environmental monitoring to support the decisions to conduct rocket launches from the Kennedy Space Center, FL. These launch activities occur in a physical environment similar to that of the Florida Keys. The Space Shuttle launches cause local environmental impacts primarily through formation of a launch cloud that produces acidic deposition. This launch cloud results from the interaction of exhaust of the solid rocket boosters and deluge water. Primary constituents include aluminum oxide and hydrochloric acid. The deposition resulting from a Shuttle launch and from a Hera launch differ primarily in scale. The total exhaust from a Shuttle is 2,427,000 pounds, 460,000 of which is hydrogen chloride. The total exhaust from a Hera is 13,820 pounds, 3,078 pounds of which is hydrogen chloride. The Hera emits one half of one percent of the Shuttle exhaust. Hydrogen chloride near field deposition rates from the Shuttle range up to 125g/m², while those from the Hera do not exceed 1.64g/m². This is 1.3 percent of the deposition rate of the Shuttle. The near field for the Shuttle is considered 1.5 kilometers from the launch pad. The near field from the Hera launch would be 60 meters from the launch pad. The pH of shallow marine waters in the Florida Keys range from a low of 7.3 near Saddlebunch and Cudjoe Keys to a high of 8.2 near Plantation Key. Average alkalinity measurements range from a low of 119 mg/L calcium carbonate near Plantation Key to a high of 137 mg/L calcium carbonate near Harrison Canal (Florida Department of Environmental Protection, 1996). If it were to rain shortly after a missile launch, the hydrogen chloride present in the exhaust plume would be dissolved in the rain droplets, which would result in a temporary reduction in rainfall pH. Calculations were conservative in that 100 percent of the 1,399 kilograms of hydrogen chloride present in the exhaust plume was assumed to be dissolved in rain droplets (as opposed to approximately 20 percent under normal conditions). Due to the high buffering capacity of the shallow marine waters, rainwater falling on nearby surface waters would result in no decrease in the pH levels.</p>
	P-W-0042.11	Water Quality	3.1.14.4	<p>It is recognized that the small increases in impervious surfaces required for program facilities could increase nonpoint source pollution. Final design planning and engineering will minimize the creation of new impervious surfaces and will establish procedures systems to minimize untreated surface runoff from program-related sites.</p>
	P-W-0042.12	Land use-Keys		<p>Comment noted.</p>
	P-W-0042.13	Land use-Keys		<p>Comment noted.</p>
Causey, Billy D. Florida Keys National Marine Sanctuary Program	P-W-0043.01	Land use-Keys	1.0	<p>No decision has yet been made about which alternative may be selected. The National Environmental Policy Act requires the analysis of all reasonable alternatives to the proposed action. Section 1.0, Program Overview, explains the factors that will be considered in making the final decision after the Final SEIS is completed.</p>
	P-W-0043.02	Land Use-Keys	3.3.7.4	<p>The Launch Hazard Area for the alternative target launch sites on the Keys does overlap the Florida Keys National Marine Sanctuary; about 4.3 percent of the Florida Keys National Marine Sanctuary is in the Cudjoe Key Launch Hazard Area and 1.6 percent of the Florida Keys National Marine Sanctuary is in the Launch Hazard Area for the Saddlebunch Keys (see section 3.3.7 in the Final SEIS). New military uses in the Florida Keys National Marine Sanctuary are permitted but would require specific consultation. The disruption of a normal test event would consist of a loud noise (similar to the takeoff of a commercial jet aircraft) no more than once a month. Should either of these sites be selected, consultation with Federal and state resource agencies would establish specific mitigations to avoid or minimize the disturbance of protected areas. Consultation with the Director of the National Marine Sanctuary began early in the planning process for the Theater Missile Defense testing program and is ongoing.</p>

Table 5.1-2: Responses to Written Comments (Continued)

Commentor and Affiliation	Comment Number	Resource Area	Section & Page	RESPONSE
	P-W-0043.03	Launch emissions	3.3.1.4	The National Aeronautics and Space Administration has prepared numerous environmental impact assessments and conducted long term environmental monitoring to support the decisions to conduct rocket launches from the Kennedy Space Center, FL. These launch activities occur in a physical environment similar to that of the Florida Keys. The Space Shuttle launches cause local environmental impacts primarily through formation of a launch cloud that produces acidic deposition. This launch cloud results from the interaction of exhaust of the solid rocket boosters and deluge water. Primary constituents include aluminum oxide and hydrochloric acid. The deposition resulting from a Shuttle launch and from a Hera launch differ primarily in scale. The total exhaust from a Shuttle is 2,427,000 pounds, 460,000 of which is hydrogen chloride. The total exhaust from a Hera is 13,820 pounds, 3,078 pounds of which is hydrogen chloride. The Hera emits one half of one percent of the Shuttle exhaust. Hydrogen chloride near field deposition rates from the Shuttle range up to 125g/m ² , while those from the Hera do not exceed 1.64g/m ² . This is 1.3 percent of the deposition rate of the Shuttle. The near field for the Shuttle is considered 1.5 kilometers from the launch pad. The near field from the Hera launch would be 60 meters from the launch pad. The pH of shallow marine waters in the Florida Keys range from a low of 7.3 near Saddlebunch and Cudjoe Keys to a high of 8.2 near Plantation Key. Average alkalinity measurements range from a low of 119 mg/L calcium carbonate near Plantation Key to a high of 137 mg/L calcium carbonate near Harrison Canal (Florida Department of Environmental Protection, 1996). If it were to rain shortly after a missile launch, the hydrogen chloride present in the exhaust plume would be dissolved in the rain droplets, which would result in a temporary reduction in rainfall pH. Calculations were conservative in that 100 percent of the 1,399 kilograms of hydrogen chloride present in the exhaust plume was assumed to be dissolved in rain droplets (as opposed to approximately 20 percent under normal conditions). Due to the high buffering capacity of the shallow marine waters, rainwater falling on nearby surface waters would result in no decrease in the pH levels.
	P-W-0043.04	Biology-Keys	3.3.3.4	Potential disturbance of marine waterfowl is addressed in section 3.3.3.4 in the Final SEIS.
	P-W-0043.05	Biology-Keys	3.3.3.4	All patrol activity required for the Theater Missile Defense test program would be provided by the U.S. Coast Guard and Florida Marine Patrol who are familiar with navigation along the coast and the administration of coastal regulations.
	P-W-0043.06	Land Use-Keys	3.3.7.4	Comment noted.
Wheeler, Kathy	P-W-0044.01	Transportation-Keys	3.3.11.4.1, 3.3.11.4.2	In the SEIS, the evaluation of potential traffic impacts on U.S. 1 forecast an increase in traffic volume in 2005 (including Theater Missile Defense-related vehicles) of 0.3 to 1.5 percent on a peak day of activity. Since baseline forecasts of traffic for the same year show that most of the segments of U.S. 1 would be operating at or above design capacity during peak times, project traffic would exacerbate this situation. There are no plans to close Highway 1.
	P-W-0044.02	Biology-Keys	3.3.7.4	In the SEIS the evaluation of potential impacts to wildlife and sensitive habitats concludes that the risk of disturbance or harm to these resources is extremely small. Hazardous waste management plans, spill prevention plans, and spill recovery procedures have been established to minimize the probability of spills and to assure quick and thorough clean-up should a spill ever occur. The likelihood of a launch mishap is very remote, and the safety procedures that been put in place would minimize any potential damage to these protected areas.
	P-W-0044.03	Safety-Keys	Appendix G	The schools are outside the proposed Launch Hazard Area. Each Launch Hazard Area is different, depending on the available land launch trajectory type of missiles and distance to populated areas or structures. Less operational constraints, such as permissible wind conditions at the time of launch and the reaction time of the range safety officer are required when more land is available for a Launch Hazard Area. Conversely, more operational constraints are required when less land is available. The geographic extent of the Launch Hazard Area and the operational constraints associated with it are established for each site to ensure the launch can safely conducted.
	P-W-0044.04	Noise	3.3.8.4	Comment noted.
Marple, Richie Anne	P-W-0045.01	Draft SEIS	1.0	The Navy is a cooperating agency for this SEIS. The Navy's possible participation in proposed Theater Missile Defense testing in the Eglin Gulf Test Range and the potential environmental impacts of this participation have been evaluated in the Draft and Final SEIS.
	P-W-0045.02	Draft SEIS		Cumulative impacts for each project alternative and environmental resource are presented at the end of the Environmental Impacts and Mitigations section for each resource in chapter 3 of the Draft and Final SEIS.

Table 5.1-2: Responses to Written Comments (Continued)

Commentor and Affiliation	Comment Number	Resource Area	Section & Page	RESPONSE
	P-W-0045.03	Program	1.4	The maximum Theater Missile Defense program requirement would involve up to 24 testing and/or training activities occurring in the Eglin Gulf Test Range during each year. Multiple interceptor testing (2 per target) could require that up to 48 interceptor missiles be launched each year. See sections 1.4 and 2.1 of the Final SEIS.
	P-W-0045.04	Transportation-Santa Rosa	3.1.11.4 3.2.11.4	Highway 98 does not fall in the proposed Launch Hazard Area. The Intracoastal Waterway would be closed for periods up to 4 hours per test event, no more often than 24 times per year.
	P-W-0045.05	Land use-Eglin	3.1.7	Site A.15 is located in Santa Rosa County.
	P-W-0045.06	Air Quality	3.1.1.4.1	Site A-15 air quality impacts are described in section 3.1.1.4.1.
	P-W-0045.07	Airspace	3.3.2.4	The proposed action is for 24 test events per year requiring clearance of airspace for no more than 4 hours per test event.
	P-W-0045.08	Land use-Eglin	3.1.7.3.1	Section 3.1.7.3.1 of the Draft SEIS describes the two parcels of Air Force land on Santa Rosa Island. These two are not open to the public. Site A-15 is on the western parcel.
	P-W-0045.09	Transportation-Santa Rosa	3.1.11.4.1	Access over the Navarre Bridge is not proposed. Access would be through Ft. Walton Beach.
	P-W-0045.10	Safety-Santa Rosa	3.1.12.4.1	There is a fire station onsite and water to provide adequate fire fighting capability.
	P-W-0045.11	Socioeconomics	3.2.10.4	The socioeconomic effects of the proposal are addressed in sections 3.1.10.4, 3.2.10.4, and 3.3.10.4 of the Draft SEIS. Economic dislocation of commercial fisheries is estimated to be less than 1 percent per year.
	P-W-0045.12	Transportation-Santa Rosa	3.2.11.4	Section 3.2.11.4 of the Draft SEIS addresses the impacts of Theater Missile Defense testing on maritime traffic within the Gulf of Mexico. Pensacola is not in the list of top ten shipping volume ports, but is displayed in figure 3.2.11-1 with 1.6 million tons per year.
	P-W-0045.13	Transportation	3.2.11.4	The Launch Hazard Area would be cleared for no more than 4 hours at one time. Roads within the proposed Launch Hazard Area would be closed for no more than 4 hours, likely much less.
	P-W-0045.14	Safety	3.1.9.4	In accordance with current Air Force operational agreements with the local fire departments, training would be provided if needed.
	P-W-0045.15	Draft SEIS	1.0	In accordance with the Council on Environmental Quality guidelines, this SEIS includes sufficient analysis to inform the public of potential environmental impacts resulting from the preferred action and alternatives and to assist in the decision making process.
	P-W-0045.16	Alternatives	2.1.1.2.2	The platform launch alternative is in the other categories considered category just like the Florida Keys.
	P-W-0045.17	Socioeconomics	3.1.10.4 3.3.10.4	The Theater Missile Defense test program would not generate additional demand for public services provided by local governments and resulting fiscal impacts would be minimal. Memoranda of Agreement would be reached with local governments describing the support.
Halloran, George	P-W-0046.01	Biology-Keys	3.2.3.4 3.3.3.4	The potential impacts to marine animals are addressed in sections 3.2.3.4 and 3.3.3.4.
	P-W-0046.02	Noise	3.1.8.4 3.3.8.4	The SEIS provides both single event levels and weighted averages to provide as much information on noise occurrences and effects as possible. There will be high maximum noise levels resulting from missile launches. These levels will last for less than 60 seconds.
	P-W-0046.03	Land use-Keys		Comment noted.
	P-W-0046.04	Draft SEIS	5.0	Comment noted.

Table 5.1-2: Responses to Written Comments (Continued)

Commentor and Affiliation	Comment Number	Resource Area	Section & Page	RESPONSE
	P-W-0046.05	Alternatives	1.0	The National Environmental Policy Act requires the analysis of all reasonable alternatives to the proposed action. Section 1.0, Program Overview, explains the factors that will be considered in making the final decision after the Final SEIS is completed.
	P-W-0046.06	Land use-Keys	1.0	Comment noted.
No Name	P-W-0047.01	Program		Comment noted.
Whitfield, Estus D., Environmental Policy/Community and Economic Development Unit, Office of the Governor, State of Florida	P-W-0048.01	Land use-Keys	3.0	Thank you for the DSEIS comments provided in your letter dated 31 March 1998. We greatly appreciate the time you and your staff have spent in reviewing and commenting on the DSEIS. We will continue to coordinate with your office during development of the Final SEIS, anticipated for release in August 1998. We recognize the area's designation as an "area of critical state concern" and have designed the proposal to avoid or minimize potential environmental impacts.
	P-W-0048.02	Alternatives-Keys	1.0	No decision has yet been made about which alternative may be selected. The National Environmental Policy Act requires the analysis of all reasonable alternatives to the proposed action. Section 1.0, Program Overview, explains the factors that will be considered in making the final decision after the Final SEIS is completed. As you are aware, the Florida Keys sites are no longer under consideration as part of the preferred alternative. If future requirements indicate a need to further address potential use of either Cudjoe or Saddlebunch Keys, additional Federal and state agency consultation and a supplemental biological assessment will be accomplished for those specific areas. This Biological Assessment would be fully coordinated with all appropriate resource agencies and would incorporate site-specific mitigations developed in cooperation during the consultation process.
	P-W-0048.03	Draft SEIS		All comments prepared by state agencies will be carefully will be considered in the decision process for the Theater Missile Defense test program..
	P-W-0048.04	Cultural-Cape San Blas	3.1.4.4	Coordination with the Florida State Historic Preservation Office has continued throughout the environmental assessment process for the Theater Missile Defense testing program. A determination of National Register of Historic Places eligibility for any site selected in the Record of Decision would be conducted prior to any site preparation and flight test activity. Specific mitigations for the lighthouse on Cape San Blas have been included in section 3.1.4.4 of the Final SEIS.
Griffin, Lynn, Office of Intergovernmental Programs, Florida Department of Environmental Protection	P-W-0049.01	Alternatives-Keys	3.1.3.4 3.3.3.4	No decision has yet been made about which alternative may be selected. The National Environmental Policy Act requires the analysis of all reasonable alternatives to the proposed action. Section 1.0, Program Overview, explains the factors that will be considered in making the final decision after the Final SEIS is completed. Land use and water impacts are addressed in sections 3.3.7.4 and 3.3.1.4.4 of the Draft and Final SEIS.
	P-W-0049.02	Alternatives-Keys	1.0	In accordance with the Council on Environmental Quality guidelines, this SEIS includes sufficient analysis to inform the public of potential environmental impacts resulting from the preferred action and alternatives and to assist in the decision making process. In preparing this analysis, the most recent and available data was used to characterize the existing environments of all potential sites including those in the Florida Keys.
	P-W-0049.03	Land Use-Keys	3.3.7.	Comment noted.
	P-W-0049.04	Land Use-Keys	3.3.3.4	In accordance with the Council on Environmental Quality guidelines, this SEIS includes sufficient analysis to inform the public of potential environmental impacts resulting from the preferred action and alternatives and to assist in the decision making process. In preparing this analysis, the most recent and available data was used to characterize the existing environments of all potential sites including those in the Florida Keys.

Table 5.1-2: Responses to Written Comments (Continued)

Commentor and Affiliation	Comment Number	Resource Area	Section & Page	RESPONSE
	P-W-0049.05	Launch emissions	3.1.1.4 3.3.1.4	Environmental monitoring at Kennedy Space Center has shown that during the period of reduced pH, metals became more soluble and their concentrations in the water column increased dramatically. As normal pH levels returned to the area (within 24 to 72 hours), metal concentrations returned to pre-launch levels. "To date no long-term elevations of metal concentrations on the water column have been observed." The predicted near-field deposition rates from Theater Missile Defense testing will be less than 1 percent of the deposition rates for the Space Shuttle. Deposition of hydrogen chloride from a Hera launch, at a rate of no more than 1.64g/m ² , would decrease pH by no more than 0.1 unit. At this rate, water pH levels would return to pre-launch levels very rapidly. The potential impacts of launch emission on marine resources are addressed in sections 3.1.3.4, 3.2.3.4, and 3.3.3.4 of the Final SEIS. Potential ecological impacts of a launch mishap are presented in section 3.1.9, 3.2.9, and 3.3.9.
	P-W-0049.06	Draft SEIS		Preliminary review documents that were prepared prior to the release of the Draft SEIS were work-in-progress documents for internal review. The information and conclusions presented in these earlier documents were preliminary and did not reflect the full data and analysis included in the Draft SEIS.
	P-W-0049.07	Biology-Keys	3.3.7.4 3.3.3.3	The alternative target launch sites on Cudjoe Key and Saddlebunch Keys are located on land owned by the Department of Defense and are designated for military use. The Launch Hazard Area for these alternative sites does, however, overlap the National Marine Sanctuary and several wildlife refuges (see section 3.3.7 in the Final SEIS). New military uses in these areas are permitted but would require specific consultation with appropriate Federal and state resource agencies. See sections 3.1.3.4 and 3.3.3.3 in the Final SEIS for proposed mitigations. Should an alternative be selected, the specific mitigations will be documented in the Record of Decision. A mitigation plan, describing the specific measures, will be developed and implemented prior to beginning site preparation and test activities.
	P-W-0049.08	Land Use-Keys	3.1.14.4 3.3.14.4	All patrol activity required for the Theater Missile Defense test program would be provided by the U.S. Coast Guard and Florida Marine Patrol who are familiar with navigation along the coast and the regulations that apply to the area.
	P-W-0049.09	Land use-Keys	Appendix N	Once a decision is made on which sites or sites would be included in the Theater Missile Defense test program, the appropriate permit applications will be made.
	P-W-0049.10	Water quality Keys	3.3.14.4	Deposition of aluminum oxide and hydrogen chloride during normal launch activities is addressed in sections 3.1.4.4, 3.2.1.4.4, and 3.3.1.4.4. Both of these chemicals are bound into a solid rocket motor fuel matrix of polybutadiene rubber binder and could not spill. The handling, transportation, storage, use and disposal of hazardous materials or wastes required for the Theater Missile Defense test program would be in accordance with the Department of Defense, Air Force, and Navy regulations and instructions. The life cycle control and management of all toxic and hazardous substances ensures that they are not enter pathways to human or ecological exposure.
	P-W-0049.11	Land use-Keys	3.3.7.4	In accordance with the Council on Environmental Quality guidelines, this SEIS includes sufficient analysis to inform the public of potential environmental impacts resulting from the preferred action and alternatives and to assist in the decision making process. In preparing this analysis, the most recent and available data was used to characterize the existing environments of all potential sites including those in the Florida Keys.
	P-W-0049.12	Land Use-Keys	3.3.7.4	A letter from the Florida Department of Community Affairs dated April 13, 1998 stated "implementation of any alternative which includes land launches from the Florida Keys would be inconsistent with the FCMP."
Percy, George W. Division of Historical Resources, Florida Dept. of State	P-W-0050.01	Cultural-Cape San Blas	3.1.4.4	Noise-induced vibration could cause significant impacts. However, as no definitive studies exist on such impacts, a conclusive statement as to the exact effects is impossible. Noise-induced vibration could adversely affect the lighthouse lens. Specific mitigations for the lighthouse on Cape San Blas have been included in section 3.1.4.4 of the Final SEIS. Relocation is proposed as an option to avoid possible impacts. If mutually acceptable mitigations are included in the document to protect the lens in place, adverse effects may be avoidable. Suggest that the lens be removed only for the duration of the testing program.
	P-W-0050.02	Cultural-Eglin	3.1.4.4	Potential impacts to historic resources on Cudjoe Key and Santa Rosa Island are addressed programmatically in the text of the SEIS. As the eligibility of these resources is unknown, the document does not attempt to determine specific impacts. However, the document states that should launch options that require alteration of these resources be chosen, a determination of eligibility would be conducted and appropriate mitigations developed in consultation with the State Historic Preservation Office.
	P-W-0050.03	Cultural	3.1.4.4	Comment noted.

Table 5.1-2: Responses to Written Comments (Continued)

Commentor and Affiliation	Comment Number	Resource Area	Section & Page	RESPONSE
	P-W-0050.04	Cultural-Eglin	3.1.4.4	This statement has been modified in section 3.1.4.4 of the Final SEIS.
	P-W-0050.05	Cultural-Eglin	3.1.4.4	This statement has been modified in section 3.1.4.4 of the Final SEIS.
	P-W-0050.06	Cultural	3.1.4.3	This statement is in reference to the removal of archaeological material from its original context. A distinction between historic structures and archaeological sites has been included in section 3.1.4.4 of the Final SEIS.
	P-W-0050.07	Cultural-Eglin	3.1.4.4	This statement has been modified in sections 3.1.4.4, 3.3.4.4 and 3.5 of the Final SEIS.
	P-W-0050.08	Cultural-Eglin	3.5	This statement has been deleted from section 3.5 of the Final SEIS.
Marine Fisheries Commission	P-W-0051.01	Draft SEIS		Comment noted.
Cairns, Duncan J., North West Florida Water Management District	P-W-0052.01	Draft SEIS		Comment noted.
Hulsey, John, South Florida Regional Planning Council	P-W-0053.01			The Draft SEIS was not a permit application.
	P-W-0053.02	Land Use-Keys	3.3.7.4	The planning and siting process for the proposed Theater Missile Defense test program in the Eglin Gulf Test Range considered many factors in identifying alternative sites including mission requirements, environmental conservation, human and ecological health and land use compatibility. The alternative target launch sites on Cudjoe Key and Saddlebunch Keys are located on land owned by the Department of Defense and are designated for military use. New military uses in these areas are permitted. Should either of these sites be selected, consultation with Federal and state resource agencies would establish specific mitigations to avoid or minimize the disturbance of protected areas.
	P-W-0053.03	Land use-Keys	3.3.7.4	When a decision is made selecting one or more alternative sites for Theater Missile Defense testing, consultation with Federal and state resource agencies will establish specific mitigations to avoid or minimize the disturbance of protected areas. These mitigations will be documented in the Record of Decision. A mitigation plan, incorporating specific measures, will be developed and implemented prior to initiation of site preparation and test activities. See sections 3.1.3.4 and 3.3.3.3 in the Final SEIS for proposed mitigations.
	P-W-0053.04	Land Use-Keys	3.3.7.4	See previous response.
West Florida Regional Planning Council	P-W-0054.01	Draft SEIS		Comment noted.
Apalachee Regional Planning Council	P-W-0055.01	Draft SEIS		Comment noted.
Gulf County	P-W-0056.01	Draft SEIS		Comment noted.

Table 5.1-2: Responses to Written Comments (Continued)

Commentor and Affiliation	Comment Number	Resource Area	Section & Page	RESPONSE
Thorpe, Paul Northwest Florida Water Management District	P-W-0057.01	Water quality- Keys		Comment noted.
	P-W-0057.02	Water quality- Eglin	3.1.14.4	Normal launch activities would not result in appreciable adverse impacts to water quality in the Gulf of Mexico. Should a launch mishap occur, efforts would be made to recover the debris and propellant.
	P-W-0057.03	Biology-Eglin	3.3.3.4	The 404 (b) (1) permit process would be used to evaluate and minimize any potential impacts on jurisdictional or non-jurisdictional wetlands affected by the proposed or alternative actions for Theater Missile Defense testing. This permit, issued by the U.S. Army Corps of Engineers in coordination with the State of Florida, would evaluate specific areas affected by the program once they are more precisely defined during the final planning and design process.
	P-W-0057.04	Water quality	3.3.14.4	It is recognized that the small increases in impervious surfaces required for program facilities could increase nonpoint source pollution. If either of these sites is selected, final design planning and engineering will minimize the creation of new impervious surfaces and will establish procedures systems to minimize untreated surface runoff from program-related sites.
Simonds, Lois	P-W-0058.01	Alternatives- Keys	1.0	No decision has yet been made about which alternative may be selected. The National Environmental Policy Act requires the analysis of all reasonable alternatives to the proposed action. Section 1.0, Program Overview, explains the factors that will be considered in making the final decision after the Final SEIS is completed.
McGee, William Cape San Blas Taxpayers Association	P-W-0059.01	Alternative-Cape San Blas	1.1	As described in section 1.1 of the Draft SEIS, this document supplements the Theater Missile Defense Extended Test Range EIS that evaluated four alternative ranges, including Eglin AFB; it analyzes new alternatives within the Eglin Gulf Test Range.
	P-W-0059.02	Water quality- Eglin	3.1.3.4 3.3.3.4	Comment noted.
	P-W-0059.03	Socioeconomics- Cape San Blas	3.3.10.4	The real estate values within an area are directly related to the levels of income and employment that occur within the area. Socioeconomic impact studies that have been prepared by the Air Force over the past decade have shown that housing values and military programs are generally positively related. The areas near Eglin AFB and Vandenberg AFB, which are both installations where missile testing occurs, have experienced generally stable and appreciating property values. The only negative changes in housing values that have been recorded resulted from mission reductions and base closures that have occurred. Since the proposed Theater Missile Defense test program would not have an appreciable effect on income or employment levels at any of the alternative test sites, no related changes in property or housing value would be expected.
	P-W-0059.04	Biology-Eglin	1.0	No decision has yet been made about which alternative may be selected. The National Environmental Policy Act requires the analysis of all reasonable alternatives to the proposed action. Section 1.0, Program Overview, explains the factors that will be considered in making the final decision after the Final SEIS is completed. The 404 (b) (1) permit process would be used to evaluate and minimize any potential impacts on jurisdictional or non-jurisdictional wetlands affected by the proposed or alternative actions for Theater Missile Defense testing. This permit, issued by the U.S. Army Corps of Engineers in coordination with the State of Florida, would evaluate specific areas affected by the program once they are more precisely defined during the final planning and design process.
	P-W-0059.05	Cultural-Eglin	1.0	Coordination with the Florida State Historic Preservation Office has continued throughout the environmental assessment process for the Theater Missile Defense testing program. A determination of National Register of Historic Places eligibility for any site selected in the Record of Decision would be conducted prior to any site preparation and flight test activity. Specific mitigations for the lighthouse on Cape San Blas have been included in section 3.1.4.4 of the Final SEIS.
	P-W-0059.06	Socioeconomic	3.3.10.4	The Theater Missile Defense test program would not generate appreciable additional demand for public services provided by local governments and resulting fiscal impacts would be minimal.

Table 5.1-2: Responses to Written Comments (Continued)

Commentor and Affiliation	Comment Number	Resource Area	Section & Page	RESPONSE
Freeman, Shirley Commissioner, County of Monroe	P-W-0060.01	Draft SEIS		Responses to comments made during the public hearing are included in Volume 2 of the Final SEIS.
	P-W-0060.02	Water quality- Keys	3.3.14.4	Environmental monitoring at Kennedy Space Center has shown that during the period of reduced pH, metals became more soluble and their concentrations in the water column increased dramatically. As normal pH levels returned to the area (within 24 to 72 hours), metal concentrations returned to pre-launch levels. "To date no long-term elevations of metal concentrations on the water column have been observed." The predicted near-field deposition rates from Theater Missile Defense testing will be less than 1 percent of the deposition rates for the Space Shuttle. Deposition of hydrogen chloride from a Hera launch, at a rate of no more than 1.64g/m ³ , would decrease pH by no more than 0.1 unit. At this rate, water pH levels would return to pre-launch levels very rapidly. Potential impacts of launch mishaps, including the effects of unburned solid rocket propellant is presented in section 3.1.9.4 of the Draft and Final SEIS.
	P-W-0060.03	Safety	Appendix G	Appendix G of the SEIS describes the method of establishing a Launch Hazard Area. Each Launch Hazard Area is different, depending on the available land launch trajectory type of missiles and distance to populated areas or structures. Less operational constraints, such as permissible wind conditions at the time of launch and the reaction time of the range safety officer are required when more land is available for a Launch Hazard Area. Conversely, more operational constraints are required when less land is available. The geographic extent of the Launch Hazard Area and the operational constraints associated with it are established for each site to ensure the launch can safely be conducted. A Launch Hazard Area of 4.5 miles was never proposed for the Hera launch sites at Santa Rosa Island, Cape San Blas or Cudjoe or Saddlebunch Keys. The 4.5 mile figure was originally associated with the Fort Wingate launch site. However, even at Fort Wingate, the eventual Launch Hazard Area was significantly less than 4.5 miles Northeast of the launch site due to the existence of a school or residence.
	P-W-0060.04	Transportation- Keys	3.3.11.4	Transportation of the missile segments would involve standard freight transports and would not require a convoy. Emergency procedures for all contingencies would be established through cooperative agreements with local public safety agencies. No specific fire fighting vehicles would accompany the shipment, although all vehicles would be equipped with standard fire suppression equipment. The evaluation of potential traffic impacts on U.S. 1 forecast an increase in traffic volume in 2005 (including Theater Missile Defense-related vehicles) of 0.3 to 1.5 percent on a peak day of activity. Since baseline forecasts of traffic for the same year show that most of the segments of U.S. 1 would be operating at or above design capacity during peak times, project traffic would exacerbate this situation.
	P-W-0060.05	Biology-Keys	3.3.3.3	In accordance with the Council on Environmental Quality guidelines, this SEIS includes sufficient analysis to inform the public of potential environmental impacts resulting from the preferred action and alternatives and to assist in the decision making process. In preparing this analysis, the most recent and available data was used to characterize the existing environments of all potential sites including those in the Florida Keys.
	P-W-0060.06	Noise	3.1.8.4 3.3.8.4	The SEIS provides both single event levels and weighted averages to provide as much information on noise occurrences and effects as possible. See section 3.1.9.4 of the Final SEIS for additional discussion of potential noise impacts.
	P-W-0060.07	Socioeconomics	3.1.10.4 3.3.10.4	The real estate values within an area are directly related to the levels of income and employment that occur within the area. Socioeconomic impact studies that have been prepared by the Air Force over the past decade have shown that housing values and military programs are generally positively related. The areas near Eglin AFB and Vandenberg AFB, which are both installations where missile testing occurs, have experienced generally stable and appreciating property values. The only negative changes in housing values that have been recorded resulted from mission reductions and base closures that have occurred. Since the proposed Theater Missile Defense test program would not have an appreciable effect on income or employment levels at any of the alternative test sites, no related changes in property or housing value would be expected.
Probert, Daniel P.E.	P-W-0061.01	Draft SEIS		Comment noted.
	P-W-0061.02	Alternatives	2.1.2.1.2, 2.2.2.1.3	Sections 2.1.2.1.2 and 2.2.2.1.3 of the Draft and Final SEIS describes the mobile sea-launched target. The National Environmental Policy Act requires the analysis of all reasonable alternatives to the proposed action. Section 1.0, Program Overview, explains the factors that will be considered in making the final decision after the Final SEIS is completed.
	P-W-0061.03	Alternatives	2.1.2.1.2, 2.2.2.1.3	Comment noted.
	P-W-0061.04	Alternatives	2.1	Comment noted

Table 5.1-2: Responses to Written Comments (Continued)

Commentor and Affiliation	Comment Number	Resource Area	Section & Page	RESPONSE
	P-W-0061.05	Alternatives	2.1	Comment noted.
	P-W-0061.06	Alternatives	1.0	No decision has yet been made about which alternative may be selected. The National Environmental Policy Act requires the analysis of all reasonable alternatives to the proposed action. Section 1.0, Program Overview, explains the factors that will be considered in making the final decision after the Final SEIS is completed.
Moody, Richard	P-W-0062.01	Socioeconomic	3.3.10.4	The real estate values within an area are directly related to the levels of income and employment that occur within the area. Socioeconomic impact studies that have been prepared by the Air Force over the past decade have shown that housing values and military programs are generally positively related. The areas near Eglin AFB and Vandenberg AFB, which are both installations where missile testing occurs, have experienced generally stable and appreciating property values. The only negative changes in housing values that have been recorded resulted from mission reductions and base closures that have occurred. Since the proposed Theater Missile Defense test program would not have an appreciable effect on income or employment levels at any of the alternative test sites, no related changes in property or housing value would be expected.
	P-W-0062.02	General	3.3.10.4	Comment noted.
	P-W-0062.03	Socioeconomic	3.3.10.4	There are no plans for a Theater Missile Defense permanent party presence in Monroe County.
	P-W-0062.04	Socioeconomic	3.3.10.4	The real estate values within an area are directly related to the levels of income and employment that occur within the area. Socioeconomic impact studies that have been prepared by the Air Force over the past decade have shown that housing values and military programs are generally positively related. The areas near Eglin AFB and Vandenberg AFB, which are both installations where missile testing occurs, have experienced generally stable and appreciating property values. The only negative changes in housing values that have been recorded resulted from mission reductions and base closures that have occurred. Since the proposed Theater Missile Defense test program would not have an appreciable effect on income or employment levels at any of the alternative test sites, no related changes in property or housing value would be expected.
	P-W-0062.05	Socioeconomic	3.3.10.4	See previous response.
	P-W-0062.06	Socioeconomic	3.3.10.4	See previous response.
	P-W-0062.07	Socioeconomic	3.3.10.4	See previous response.
	P-W-0062.08	Socioeconomic	3.3.10.4	See previous response.
Hanley, Mari	P-W-0063.01	Alternatives-Keys		Comment noted.
	P-W-0063.02	Program	1.4 2.1	The maximum Theater Missile Defense program requirement would involve up to 24 testing and/or training activities occurring in the Eglin Gulf Test Range during each year. There are no more than 12 target missile launches per year proposed from the Florida Keys alternative site.
	P-W-0063.03	Draft SEIS	3.1.4 3.2.4 3.4.4	Cumulative impacts for each project alternative and environmental resource are presented at the end of the Environmental Impacts and Mitigations section for each resource in chapter 3 of the Draft and Final SEIS. Depending on the specific resource, cumulative impacts may or may not be additive in nature. For example, the utilities used by program activities would be fully additive, deposition of launch emissions on nearby soil would be somewhat additive, and noise events separated by a one month period would not be additive.
	P-W-0063.04	Biology	3.2.1.4 3.3.1.4.4	In the SEIS the evaluation of potential impacts to wildlife and sensitive habitats concludes that the risk of disturbance or harm to these resources is extremely small. Hazardous waste management plans, spill prevention plans, and spill recovery procedures have been established to minimize the probability of spills and to assure quick and thorough clean-up should a spill ever occur. The likelihood of a launch mishap is very remote and the safety procedures that have been put in place would minimize any potential damage to these protected areas.
	P-W-0063.05	Draft SEIS		Comment noted.
	P-W-0063.06	Socioeconomics	3.1.10.4 3.3.14.4	Comment noted.
Couvillion, Keith J. Texaco Exploration and Production, Inc	P-W-0064.01	Land and Water Use-Gulf	1.0	No decision has yet been made about which alternative may be selected. The National Environmental Policy Act requires the analysis of all reasonable alternatives to the proposed action. The Program Overview in section 1 explains the factors that will be considered in making the final decision following the completion of the Final SEIS. In accordance with the Council on Environmental Quality guidelines, this SEIS includes sufficient analysis to inform the public of potential environmental impacts resulting from the preferred action and alternatives and, to assist in the decision making process.

Table 5.1-2: Responses to Written Comments (Continued)

Commenter and Affiliation	Comment Number	Resource Area	Section & Page	RESPONSE
	P-W-0064.02	Land and Water Use-Gulf	3.2.7.4	It is uncertain where and when oil and gas exploration facilities would be constructed in the areas of the Gulf of Mexico potentially affected by the Theater Missile Defense test program. Any evaluation of potential impacts would be speculative. Prior to the siting of such oil and gas facilities, appropriate environmental documentation for these projects would need evaluate all environmental issues including the presence of Theater Missile Defense and other military test program in the Gulf. Comment noted.
	P-W-0064.03	Land and Water Use-Gulf	3.2.7.4	Comment noted.
	P-W-0064.04	Land and Water Use-Gulf	3.2.7.4	A Memorandum of Agreement will be developed with the Mineral Management Service to accommodate Theater Missile Defense testing in the Expanded Eglin Gulf Test Range. Procedures for scheduling, notification, clearance and mitigation for Theater Missile Defense launch activities will be developed in cooperation with Minerals Management Service and other Federal resource agencies. Comment noted.
	P-W-0064.05	Land and Water Use-Gulf	3.2.7.4	Comment noted.
	P-W-0064.06	Land and Water Use-Gulf	3.2.7.4	A Memorandum of Agreement will be developed with the Mineral Management Service to accommodate Theater Missile Defense testing in the Expanded Eglin Gulf Test Range. Procedures for scheduling, notification, clearance and mitigation for Theater Missile Defense launch activities will be developed in cooperation with Minerals Management Service and other Federal resource agencies. These issues would be considered in the planning for these oil facilities in the Gulf. It is assumed that Air Force test activities would be considered the Mineral Management Service. The National Environmental Policy Act documentation.
	P-W-0064.07	Land and Water Use-Gulf	3.2.7.4	No decision has yet been made about which alternative may be selected. The National Environmental Policy Act requires the analysis of all reasonable alternatives to the proposed action. The Program Overview in section 1 explains the factors that will be considered in making the final decision following the completion of the Final SEIS. In accordance with the Council on Environmental Quality guidelines, this SEIS includes sufficient analysis to inform the public of potential environmental impacts resulting from the preferred action and alternatives and, to assist in the decision making process. Comment noted.
Mueller, Heinz J. Chief, Office of Environmental Assessment, U.S. Environmental Protection Agency, Region 4	P-W-0065.01	Draft SEIS		Comment noted.
	P-W-0065.02	Draft SEIS		This Final SEIS is the completed NEPA documentation.
	P-W-0065.03	Air Quality	3.2.1.4	The Final SEIS does propose air quality monitoring as part of an overall mitigation program. Comment noted.
	P-W-0065.04	Draft SEIS		Comment noted.
	P-W-0065.05	Land & Water Use, Airspace		Appropriate planning and notification would minimize potential delays to shipping and commercial air traffic. Comment noted.
	P-W-0065.06	Draft SEIS		Comment noted.
	P-W-0065.07	Draft SEIS		Comment noted.
	P-W-0065.08	Draft SEIS		Comment noted.

Table 5.1-2: Responses to Written Comments (Continued)

Commentor and Affiliation	Comment Number	Resource Area	Section & Page	RESPONSE
	P-W-0065.09	Draft SEIS		Comment noted.
	P-W-0065.09	Draft SEIS		Comment noted.
	P-W-0065.10	Draft SEIS		Comment noted.
Lee, James H. Office of Environmental Policy and Compliance, U.S. Dept. of the Interior	P-W-0066.01	Biology	3.1.3 3.3.3	The sand habitat in which sea turtle nests are generally located would normally attenuate the brief vibration caused by the low-frequency sound pressure of a target launch. No known effects on embryos and hatchlings would be expected to result from launch test vibration. Data from the launches at Kennedy Space Center has been incorporated in sections 3.1.3 and 3.3.3 of the Final SEIS.
	P-W-0066.02	Biology-Eglin	3.1.3.4	Section 3.1.3.4 of the SEIS addresses these issues.
	P-W-0066.03	Biology-Keys	3.3.3.4	Potential impacts to listed species at alternative sites in the Florida Keys are discussed in section 3.3.3.4 of the Final SEIS.
	P-W-0066.04	Biology	3.1.3.4 3.3.3.4	See sections 3.1.3.4 and 3.3.3.4 in the Final SEIS for proposed mitigations. Should an alternative be selected, the specific mitigations will be documented in the Record of Decision. A mitigation plan, describing the specific measures, will be developed and implemented prior to beginning site preparation and test activities.
	P-W-0066.05	Land use-Keys	3.3.7.4	Comment noted.
	P-W-0066.06	Land use-Keys	3.3.7.4	Comment noted.
	P-W-0066.07	Environment-Eglin	3.1.3.4	Eglin AFB has an active natural and cultural resources management program, including monitoring programs for sea turtles.
	P-W-0066.08	Biology-Eglin	3.1.3.4 3.3.3.4	See sections 3.1.3.4 and 3.3.3.4 in the Final SEIS for proposed mitigations. Should an alternative be selected, the specific mitigations will be documented in the Record of Decision. A mitigation plan, describing the specific measures, will be developed and implemented prior to beginning site preparation and test activities.
	P-W-0066.09	Geology and Soils	3.2.7.4	A Memorandum of Agreement will be developed with the Minerals Management Service to accommodate Theater Missile Defense testing in the Eglin Gulf Test Range. Procedures for scheduling, notification, clearance and mitigation for Theater Missile Defense launch activities will be developed in cooperation with Minerals Management Service and other Federal resource agencies.
	P-W-0066.10	Geology and Soils	3.2.7.4	The maximum Theater Missile Defense program requirement would involve up to 24 testing and/or training activities occurring in the Eglin Gulf Test Range during each year. Multiple interceptor testing (2 per target) could require that up to 48 interceptor missiles be launched each year. See sections 1.4 and 2.1 of the Final SEIS. The potential for 55 tests in 1999 includes testing at all ranges including White Sands Missile Range, WMR, and KMR. A Memorandum of Agreement will be developed with the Minerals Management Service to accommodate Theater Missile Defense testing in the Expanded Eglin Gulf Test Range. Procedures for scheduling, notification, clearance, and mitigation for Theater Missile Defense launch activities will be developed in cooperation with Minerals Management Service and other Federal resource agencies.
	P-W-0066.11	Geology and Soils	3.2.7.4	It is uncertain where and when oil and gas exploration facilities would be constructed in the areas of the Gulf of Mexico potentially affected by the Theater Missile Defense test program. Any evaluation of potential impacts would be speculative. Prior to the siting of such oil and gas facilities or initiation of exploration operations, appropriate Minerals Management Service environmental documentation for these projects would need to evaluate all environmental issues including the presence of Theater Missile Defense and other military test program in the Gulf.

Table 5.1-2: Responses to Written Comments (Continued)

Commentor and Affiliation	Comment Number	Resource Area	Section & Page	RESPONSE
	P-W-0066.12	Geology and Soils	3.2.7.4	Comment noted.
	P-W-0066.13	Geology and Soils	3.2.7.4	Comment noted.
	P-W-0066.14	Geology and Soils	3.2.7.4	Comment noted.
	P-W-0066.15	Biology		Comment noted.
	P-W-0066.16	Biology	3.1.3.3	Comment noted.
	P-W-0066.17	Biology-Cape San Blas	3.1.3.3 3.3.3.3	Comment noted.
	P-W-0066.18	Air Quality	3.2.1.3	Comment noted.
	P-W-0066.19	Biology-Gulf	3.2.3.3.	Comment noted.
	P-W-0066.20	Geology and Soils	3.2.7.3	Comment noted.
	P-W-0066.21	Geology and Soils	3.2.7.3	Comment noted.
	P-W-0066.22	Geology and Soils	3.2.7.3 3.2.7.4	Comment noted.
	P-W-0066.23	Geology and Soils	3.2.7.3 3.2.7.4	Comment noted.
	P-W-0066.24	Biology-Keys	3.3.3.3	Comment noted.
	P-W-0066.25	Biology-Keys	3.3.3.3	Comment noted.
	P-W-0066.26	Biology	3.3.3.3	Comment noted.
	P-W-0066.27	Biology	3.3.3.3	Comment noted.
	P-W-0066.28	Land use-Keys	3.3.7.3	Comment noted.
	P-W-0066.29	Land use Keys	3.3.7.4	Military and non-military Federal lands on Cudjoe Key are illustrated in figure 3.3.7.2 in the Final SEIS. Conservation and preservation lands for the lower Florida Keys are presented in figure 3.3.7.4.
	P-W-0066.30	Land use Keys	3.3.7.4	See previous response.
	P-W-0066.31	Geology and Soils	3.2.7.4	This has been added to 3.4.5

Table 5.1-2: Responses to Written Comments (Continued)

Commenter and Affiliation	Comment Number	Resource Area	Section & Page	RESPONSE
	P-W-0066.32	Visual Aesthetics	3.1.13.1 3.3.13.1	The Forest Service's methodology provides a basis to compare visual setting before and after any modification or addition. The perceived degree of change is subjective. To assist in the comparison of vistas, visual simulations have been provided in sections 3.1.1.3.4 and 3.3.13.4 of the Final SEIS to illustrate potential visual impacts of Theater Missile Defense facilities.
	P-W-0066.33	Geology and Soils	3.2.7.4	Minerals Management Service Gulf of Mexico Region has been added to the notification list in the Final SEIS.
	P-W-0066.34	Geology and Soils		The OCS Lands Act has been included in the List of Regulations on the Final SEIS.
	P-W-0066.35	Geology and Soils	3.2.7.4	The Air Drop EA is a programmatic environmental assessment and does not address specific impacts at any of the candidate Air Drop test locations.
	P-W-0066.36	Geology and Soils	3.2.7.4	A Memorandum of Agreement will be developed with the Minerals Management Service to accommodate Theater Missile Defense testing in the Eglin Gulf Test Range. Procedures for scheduling, notification, clearance, and mitigation for Theater Missile Defense launch activities will be developed in cooperation with Minerals Management Service and other Federal resource agencies.
	P-W-0066.37	Biology-Eglin	3.1.3.4 3.3.3.4	Comment noted.
	P-W-0066.38	Biology	3.3.3.4	Specific mitigations that would avoid or minimize potential adverse impacts have been identified in the Final SEIS for each environmental resource. Section 3.3.3.4 in the Final SEIS addresses proposed mitigations for biological resources. Should an alternative be selected, the specific mitigations will be documented in the Record of Decision. A mitigation plan, describing the specific measures, will be developed and implemented prior to beginning site preparation and test activities. No decision has yet been made about which alternative may be selected. The National Environmental Policy Act requires the analysis of all reasonable alternatives to the proposed action. The Program Overview in section 1 explains the factors that will be considered in making the final decision following the completion of the Final SEIS. In accordance with the Council on Environmental Quality guidelines, this SEIS includes sufficient analysis to inform the public of potential environmental impacts resulting from the preferred action and alternatives and, to assist in the decision making process.
	P-W-0066.39	Geology and Soils	3.2.7.4	Comment noted.
Pfeiffer, Steven G. State of Florida, Dept. of Community Affairs	P-W-0067.01	Land Use	3.3.7.4 3.1.3.4 3.3.3.4	The alternative target launch sites on Cudjoe Key and Saddlebunch Keys are located on land owned by the Department of Defense and are designated for military use. The Launch Hazard Area for these alternative sites does, however, overlap the National Marine Sanctuary and several wildlife refuges (see section 3.3.7 in the Final SEIS). New military uses in these areas are permitted but would require specific consultation with appropriate Federal and state resource agencies. See sections 3.1.3.4 and 3.3.3.4 in the Final SEIS for proposed mitigations. Should an alternative be selected, the specific mitigations will be documented in the Record of Decision. This mitigation plan, which would avoid or minimize potential adverse impacts on protected areas, would be developed and implemented prior to initiating site preparation and test activities.
	P-W-0067.02	Alternatives-Keys		In accordance with the Council on Environmental Quality guidelines, this SEIS includes sufficient analysis to inform the public and decision makers of potential environmental impacts resulting from the preferred action and alternatives and to assist in the decision making process. In preparing this analysis, the most recent and available data was used to characterize the existing environments of all potential sites including those in the Florida Keys. Primary field investigations were to verify and supplement existing data.
	P-W-0067.03	Water quality-Eglin		Comment noted.

Table 5.1-2: Responses to Written Comments (Continued)

Commentor and Affiliation	Comment Number	Resource Area	Section & Page	RESPONSE
	P-W-0067.04	Cultural-Cape San Blas	3.1.7.4	Coordination with the Florida State Historic Preservation Office has continued throughout the environmental assessment process for the Theater Missile Defense testing program. A determination of National Register of Historic Places eligibility for any site selected in the Record of Decision would be conducted prior to any site preparation and flight test activity. Specific mitigations for the lighthouse on Cape San Blas have been included in section 3.1.4.4 of the Final SEIS.
	P-W-0067.05	Water Quality-Eglin	3.1.13.4 3.3.13.4	Environmental monitoring at Kennedy Space Center has shown that during the period of reduced pH, metals became more soluble and their concentrations in the water column increased dramatically. As normal pH levels returned to the area (within 24 to 72 hours), metal concentrations returned to pre-launch levels. "To date no long-term elevations of metal concentrations on the water column have been observed." The predicted near-field deposition rates from Theater Missile Defense testing will be less than 1 percent of the deposition rates for the Space Shuttle. Deposition of hydrogen chloride from a Hera launch, at a rate of no more than 1.64g/m ² , would decrease pH by no more than 0.1 unit. At this rate, water pH levels would return to pre-launch levels very rapidly with no long-term elevation. The 404 (b) (1) permit process would be used to evaluate and minimize any potential impacts on jurisdictional or non-jurisdictional wetlands affected by the proposed or alternative actions for Theater Missile Defense testing. This permit, issued by the U.S. Army Corps of Engineers in coordination with the State of Florida, would evaluate specific areas affected by the program once they are more precisely defined during the final planning and design process. Should an alternative be selected, the specific mitigations to avoid or minimize potential environmental impacts will be identified in the Record of Decision. A mitigation plan, prepared in consultation with Federal and state resource agencies, will be developed and implemented prior to initial site preparation and test activities. Additional mitigations for wetlands have been included in section 3.3.3.4 of the Final SEIS.
	P-W-0067.06	Water quality	3.3.3.4	See response above.
	P-W-0067.07	Water quality		Once a decision is made on which sites or sites would be included in the Theater Missile Defense test program, an Environmental Resource Permit would be obtained from either the Florida Department of Environmental Protection or the South Florida. This permit has been added to Appendix N, Potential Permits, in the Final SEIS. The 404 (b) (1) permit process would be used to evaluate and minimize any potential impacts on jurisdictional or non-jurisdictional wetlands affected by the proposed or alternative actions for Theater Missile Defense testing. This permit, issued by the U.S. Army Corps of Engineers in coordination with the State of Florida, would evaluate specific areas affected by the program once they are more precisely defined during the final planning and design process. Should an alternative be selected, the specific mitigations to avoid or minimize potential environmental impacts will be identified in the Record of Decision. A mitigation plan, prepared in consultation with Federal and state resource agencies, will be developed and implemented prior to initial site preparation and test activities. Additional mitigations for wetlands have been included in section 3.3.3.4 of the Final SEIS.
	P-W-0067.08	Safety		The Draft Emergency Response Plan has been modified to reflect these notification requirements. See Appendix J of the Final SEIS.
Hartman, Bradley Director, Florida Game and Fresh Water Fish Commission	P-W-0068.01			Comment noted.
	P-W-0068.02			Comment noted
	P-W-0068.03			Comment noted

Table 5.1.1-2: Responses to Written Comments (Continued)

Commentor and Affiliation	Comment Number	Resource Area	Section & Page	RESPONSE
Morrison, Michael et al; Last Stand - petition against missile testing in the Florida Keys	P-W-0069.01	Program		Comment noted

5.2 E-MAIL COMMENT DOCUMENTS

Individuals who commented on the Draft SEIS in e-mail form are listed in table 5.2-1 along with their respective commentor identification number. This number can be used to find the e-mail document that was submitted and to locate the corresponding table on which responses to each comment is provided.

5.2.1 E-MAIL COMMENTS

Exhibit 5.2-1 presents reproductions of the e-mail comment documents that were received in response to the Draft SEIS. Comment documents are identified by commentor ID number, and each statement or question that was categorized as addressing a separate environmental issue is designated with a sequential comment number.

5.2.2 RESPONSE TO E-MAIL COMMENTS

Table 5.2-2 presents the responses to substantive comments to the Draft SEIS that were received in e-mail form. Responses to specific comments can be found by locating the corresponding commentor ID number and sequential comment number identifiers.

Table 5.2–1: Public Comments on the Draft SEIS (E-Mail Documents)

Commentor and Affiliation	ID Number
Fender, Heyward	P-E-0010
Frank, Mr. & Mrs. Burt	P-E-0003
Frank, Dan and Pam	P-E-0007
Girard Jr, Harlowe D.	P-E-0006
Henize, Dennis	P-E-0005
Hurlburt, Mary	P-E-0002
Kanter, Charles	P-E-0011
Ludwig, Carol E., Lt. Col. USAF	P-E-0008
Marsh, William	P-E-0001
Moran, Robert J.; National Ocean Industries Association	P-E-0009
Palmerton, Dr. & Mrs. Keith E.	P-E-0004
Thiel, Don; Cape San Blas Camping Resort	P-E-0012

P-E-0001
COMMENT
NUMBER

From: William A. Marsh
To: emd@eglin.af.mil
Subject: SEIS for Proposed Enhancement of the Eglin Gulf Test Range to
test Theater Missile Defense Systems
Date: Thursday, March 19, 1998 1:25PM

I attended the public hearing for the subject SEIS on March 13, 1998 at the Marathon, Florida Government Center. I was shocked at what I heard. The proposed alternative to use Cudjoe Key or Saddlebunch Keys as land based launch sites for target missiles can best be described by one word. Bizarre! The alternative to use a mobile sea launch platform can best be described as a pipe dream. The capability is still on the drawing boards and is not operational..

While the proposal was presented in a very professional manner using the latest in technology to make the presentation, the content (which is much more important) was sadly deficient and lacking in adequate factual data.

In more detail, following are my concerns over the potential environmental impacts of the proposed action and alternatives presented as they related to Cudjoe Key and Saddlebunch Keys:

Air Quality - No information was presented which described the impact on Air Quality in a worst case scenario. That is, the destruction of a missile on the launch pad, within the LHA, or down range.

Airspace use - The proposed testing would require the rerouting of commercial and private aircraft. It would impact traffic in the area.

Biological Resources - The SEIS does not describe in any way the nature of the "temporary disturbance to wildlife" that would result following a worst case scenario. The impact is dismissed in a rather cavalier fashion with no data to support the conclusion. The same could be said of the impact of an A-bomb on Hiroshima.

Geology and Soils - Once again, the SEIS only addresses a successful launch. Addition study is required to determine the impact of a catastrophic failure.

Hazardous Material and Waste - Once again, only successful testing has been considered.

Land and Water Use - The Monroe County Commission has stated that the proposed use is not compatible with the County Comprehensive Plan! The LHA has been reduced in size to disguise the overlap of non-Federal parcels. It is obvious that no one with marine experience has adequately investigated the impact on water based activities. Clearance of the area for short periods is not practical. At any given time, there are hundreds, if not thousands, of sailboats traversing the area. These vessels are, for the most part, not capable of speeds in excess of 6 mph. In four hours, they could travel a maximum of 24 statute miles. Interdicting these vessels would be a monumental task. In addition, there are charter vessels which make their livelihood from the millions of visitors to the Keys who come from all over the world. Weather conditions dictate when they can go out. Canceling their operations during a good weather window could put them out of business and severely

P-E-0001
COMMENT
NUMBER

impact the use of the Keys as a tourist destination. Collateral impacts would be the reduction of motel rentals, restaurant business and every other tourist oriented activity. And then there are the commercial fisherman who must pull their traps and catch fish when conditions are right.

Noise - Again, the worst case scenario is not considered. Even the successful launch noise and air pressure is dismissed and compared to the noise of a hair dryer! The noise and pressure waves created by successful A-bomb testing could also be dismissed as temporary.

Safety - Data from credible sources say that missile debris resulting from a plausible accident could be scattered up to 2 miles in the wrong direction. The 6500 foot LHA is clearly not realistic. The LHA does not include any number of events which could cause a missile to travel in the wrong direction and then explode. The LHA does not cover other launch hazards which are clearly identified in the DEIS.

Socioeconomic - See land and water use. The temporary impact on commercial fisherman is severe and, in many cases, cannot be properly mitigated.

Transportation - No data was presented that identified the impact of any abnormal disturbance (such as an accident on one of our many bridges) to the Keys. Not only is US 1 the major artery from Key Largo to Key West, it is the only artery. Severing this artery, even for a short time, would cause a severe impact. This artery not only carries traffic, it also is our only water and electricity conduit. The traffic study presented indicates that the traffic in Big Pine is less than Cudjoe. How can that be? All traffic to and from Cudjoe from the mainland must pass through Big Pine.

Utilities - The DEIS does not adequately address the quality of the electric service in the Keys. We suffer frequent outages of varying duration due to any number of causes.

Visual Aesthetics - Target missile launch pad and buildings are a major impact. Please require the Final SEIS contains graphic representations of the are before and after the construction of the proposed facilities.

Water Resources - The DEIS does not attempt to estimate the volume of water available for the HCL to mix with. There is nothing in the DEIS that shows the effects of HCL on the delicate sea grass beds adjacent to both areas. These sea grass beds are so fragile that a mariner anchoring or touching these beds is subject to severe fines which could be in the hundreds of thousands of dollars. Also, there are several families nearby that rely on water collected in cisterns as their sole source of water. The effects of HCL and Aluminum Oxide on their drinking water is not even mentioned. Fresh water resources required by the wildlife (including endangered species) are very limited. The quantity of fresh water available and the impact of HCL and Aluminum Oxide on that water are not covered.

In summary, the DEIS I reviewed does not adequately address many serious issues. If it did, the proposed use of the Florida Keys would immediately be removed from consideration and the expanded use of the Eglin Gulf Test Range in any manner would be brought into question.

As a private citizen I feel very frustrated that my concerns will not be seriously considered by the "steamroller" that is coming in my direction. It is putting me, other citizens, and a very fragile ecological subsystem, unique in the world, in harm's way.

P-E-0002
COMMENT
NUMBER

01

From: MaryPat183
To: tmd@eglin.af.mil
Subject: Key West Missiles
Date: Friday, March 20, 1998 6:46PM

No, No, a thousand times No. Please do not jeopardize the environment. There is absolutely no reason to test missiles off Key West. It SHOULD NOT even be considered as an alternative site.

Thank you.

Mary Hurlburt
Swanton, OH

P-E-0003
COMMENT
NUMBER

01

> From: NanaPoppa
> To: tmd@eglin.af.mil
> Subject: missile site
> Date: Thursday, March 19, 1998 3:14PM
> Add my name along with my husband's name to the list of people opposed to any
> sort of missile site here in the Keys. The devastation would be horrendous to
> us
> and our home. Mr. and Mrs. Burt Frank , Big Pine Key, 33043
>
>

P-E-0004
COMMENT
NUMBER

01

> From: KGeep
 > To: tmd@eglin.af.mil
 > Subject: Theatre missile testing
 > Date: Monday, March 23, 1998 11:30PM

> Dear Sir,
 > My wife and I are very strongly opposed to the idea of testing
 > theatre defense systems in the Gulf of Mexico. Please note that we
 > believe it
 > would be a grievous mistake to risk upsetting the delicate
 > environmental
 > balance of South Florida and especially the Florida Keys.
 > E.
 > Palmerton

P-E-0005
COMMENT
NUMBER

01

> From: DHenize
 > To: tmd@eglin.af.mil
 > Subject: EGTR Draft SEIS Comment
 > Date: Friday, March 27, 1998 3:28AM

> Please see that these comments are addressed in the Final EGTR Theater
 > Missile
 > Defense SEIS.

> >
 > >
 > RELIABILITY of the Hera missile:
 > This issue was raised many times in the scoping process, yet it is not
 > mentioned in the Draft SEIS. Given that the proposed action includes
 > reducing
 > the Hera's nominal Launch Hazard Area (1994 Theater Missile Defense
 > EIS) by
 > over a factor of 3, launching Hera target missiles approximately 3
 > times
 > closer to several hundred homes in the Keys than they are to even
 > isolated
 > homes elsewhere, the missile's reliability is very relevant. Previous
 > claims
 > by BMDO of 99.6% reliability for the Hera are known to be highly
 > exaggerated;
 > even if 99.6% were valid as the probability only that catastrophic
 > accidents
 > wouldn't happen, it's not good enough for justifying launches
 > unprecedentedly
 > close to populations, for in the course of 120 launches, that failure
 > has a
 > 48% chance of occurrence. That is NOT insignificantly small. //

> >
 > The Final SEIS needs to fully address reliability of the Hera missile,
 > including all components and systems which propel and control its
 > flight.
 > >
 > >

02

03

P-E-0005
COMMENT
NUMBER

04

- > The LAUNCH HAZARD AREA:
- > The explanation of development of LHA (Appendix G) is inadequate. It is even
- > more simplified than the extremely over-simplistic presentation on the TMD Web site.
- > The final SEIS needs to include complete and detailed information relevant to reducing the Hera's nominal LHA by over 300% in order to place Hera launches directly adjacent to neighborhoods.
- > The SEIS needs to disclose the exact times by which the nominal "worst turn plus 5 seconds" criterion for flight termination would be reduced.
- > Since human error cannot be ruled out, and in fact is the cause for many missile failures, the Final SEIS needs to include discussion of the impact of potential human error in critical situations such as a missile pitching over away from its intended trajectory, at critical times when small fractions of a second are significant.
- > Even discounting "error", it must be considered that reaction time varies from person to person. Significant reduction in the nominal "5 seconds to terminate" will require action in short enough time to be near the range of variation in human reaction time.
- >
- >
- >
- > General comment on the Draft SEIS:
- > Many issues that were brought up in the scoping process are simply not addressed in the Draft SEIS. The preparers of the SEIS should go back over
- > all the input received during the scoping process, and include, in the Final SEIS, discussion of all issues.
- >
- > Having read the Draft SEIS, I can only conclude that it is inadequate in ways too numerous to mention. Most issues are addressed very superficially, and most of the conclusions of minimal impact are not at all supported by facts contained in the document.
- >
- > Overall, the document is very poorly prepared, and shows even minimal

P-E-0005
COMMENT
NUMBER

10

- > or no proofreading at all. The address for TMD is incorrect on the cover;
- > the document contains ridiculous oversights, such as placing the City of Miami in Monroe County. It should not be the job of the concerned public to find such things wrong with the document. The careless mistakes are inexcusable even in a Draft.
- >
- > Content-wise, the Draft SEIS is nothing short of scientific fraud.
- >
- >
- > Conclusion:
- > The safety and reliability issues for the Hera launches, and other issues relating to the reduced Launch Hazard Areas for the proposed Hera target sites, simply cannot be resolved.
- >
- > Cumulative impact on wildlife and habitat have not been addressed, and legitimate study of impacts on the various Keys ecosystems would take considerable time and expense.
- >
- > I strongly urge that the Final SEIS eliminate consideration of the Keys launch proposals as even alternative actions.
- >
- >
- > Dennis Henize
- > PO Box 421162
- > Summerland Key, FL 33042-1162

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P-E-0005
COMMENT
NUMBER

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Exhibit 5.2-1: Reproductions of E-Mail Comment Documents (Continued)

P-E-0006
COMMENT
NUMBER

From: jghdg@junco.com
To: tmc@eglin.af.mil
Subject: The SEIS for the proposed missile tests from the Florida keys
Date: Thursday, March 26, 1998 2:56PM

The Draft of the Secondary Environmental Impact Statement is a misleading study of a unique environment. It is not applicable to the Florida Keys.

Monroe County has the only easily accessible, shallow water, living Coral Reef in the United States.

There are thousands of acres of shallow water and wild mangrove islands providing a life-sustaining nursery for marine and bird life surrounding the proposed sites.

The area from the Everglades through Florida Bay to the coral reef is already under intense scrutiny by federal and state pollution control experts and would only suffer more damage from highly toxic chemicals during normal launches.

The ecological environment here is so fragile, that the state of Florida has declared Monroe County an Area of Critical State Concern.

The water quality, population density, traffic density, land use, marine resources, and EVEN the rate of growth is strictly regulated. The proposed land and water use is not compatible with the Monroe County Comprehensive Land Use Plan

This is the only county in America primarily made up of islands, strung together by 41 bridges, for 120 miles, with ONE road. That ONE road carries all the traffic necessary for our daily living: food and supplies, emergency and medical transportation, school buses, and all of our water and electricity.

I reside in Sugarloaf Shores, a seven hundred lot plated subdivision within five miles of the LHA. There are approximately 550 homes already built

and a few more are added every quarter, giving this area an assessed valuation of nearly six hundred million dollars. There are two other major sub-divisions on

Cudjoe key closer to the LHA with similar property values. The economic impact of monthly missile launches would greatly reduce the property value of all our homes according to recent Real Estate studies. Monroe County already suffers

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P-E-0006
COMMENT
NUMBER

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the highest average per capita property tax in the state and an even greater tax burden would have to be assumed by the other tax payers in the county for our devalued property.

Recognizing this unique environment, the federal government, as far back as 1908, began designating specific wildlife areas in Monroe County. Today there are four refuges and two contain the only Key Deer and American crocodiles in the U.S.

Superimposed over all of this is the federally mandated Florida Keys National Marine Sanctuary. Established in 1990, it covers two thousand eight hundred square miles from Biscayne National Park to the Dry Tortugas and expressly forbids the type of activity contemplated in this draft.

This is the only county in the continental United States in a subtropical zone with consistent high humidity. Missile exhaust would spew out HCL that would quickly combine with water in the atmosphere to make about 10,000 pounds of concentrated hydrochloric acid. Wind effects have not been properly considered in chemical cloud disbursement scenarios.

. On land surrounding the proposed site, the endangered Silver Rice Rats habitat extends from Cudjoe to the Saddle bunch keys and no where else. The endangered Florida Marsh Rabbits habitat extends from Big Torch to the Saddlebunch and is the rarest mammal in the keys.

The last remaining stands of tropical hardwood hammocks are on Cudjoe Key and Sugarloaf Key. Pine rockland is unique in the world, a globally endangered ecosystem lying alongside the launch hazard area boundary on Sugarloaf Key.

Wetlands surround both proposed sites so that any mishap will spill directly into the marine environment affecting fish, invertebrates, and defoliating the native flora.

The Ballistic Missile Defense Organization continues to regard this area as a viable alternative. We believe that launching missiles from the Florida Keys should not be an alternative and suggest you amend the draft to state exactly that.

Should any of the above be construed to be an indictment of, or anti-U.S. Air Force in any way, please be advised that my father and I both proudly wore that uniform. After a distinguished career, he was buried in Arlington National Cemetery in 1983.

Sincerely,
Harlowe D. Girard, Jr.
P.O.Box 440052

Exhibit 5.2-1: Reproductions of E-Mail Comment Documents (Continued)

P-E-0007
COMMENT
NUMBER

> From: NoPyrrz1
> To: tmd@eglin.af.mil
> Subject: Missile Test Site
> Date: Wednesday, March 25, 1998 1:34PM
>
> Major Kennedy,
> Please add my wife's and my name to the list of those opposed to
> the testing of theater missiles in the Florida Gulf. We feel that in our
> many years of travelling to the Florida Keys and the Everglades that it has
> been adversely affected by too many attacks from various sources that have
> done irreparable harm to the fragile ecosystem.
> We firmly believe in a strong military force and can see the need
> for testing of theater weapons, but we feel this is not a sound choice for
> a test area. Thank you for your consideration.
>
> Sincerely,
> Dan and Pam Frank
>

01

P-E-0008
COMMENT
NUMBER

> From: Carol Ludwig
> To: tmd@eglin.af.mil
> Subject: TMD DSEIS
> Date: Friday, April 03, 1998 10:47AM
>
> Maj Kennedy,
> I reviewed the Draft SEIS dated 6 Feb 98 and have no comments.
> The FAA reviewer at Southern Region indicated to me that he had no
> comments on the document. Also, I understand that Hq FAA
> Environmental specialists will attend a meeting in the near
> future to discuss their views on the document.
>
> Carol E. Ludwig, Lt Col, USAF
> AFREP
> FAA Southern Region
>

01

P-E-0009
COMMENT
NUMBER

> From: Bob Moran
> To: tmd@eglin.af.mil
> Subject: EGTR
> Date: Wednesday, April 08, 1998 5:01PM
> April 8, 1998
>
> Ms. Linda Ninh
>
> The EGTR information package signed by Captain Brian W. Moss lists an
> internet address for information on the proposed action. The address
> listed is as follows:
> <http://hwl.eglin.af.mil/46tmd/tmd.htm>
>
> I have been unable to access this address and retrieve the
> information.
> Do I have the correct address? Is the information still available?
>
> Thank you.
>
> Robert J. Moran
> Director, Government Affairs
> National Ocean Industries Association
> 1120 G Street, N.W. Suite 900
> Washington, DC 20005
> (202) 347-6900
> (202) 347-8650
> bobm@noia.org

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COMMENT
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> From: Spalts, Michael
> To: TMD,
> Cc: Wright, Newell
> Subject: Comments
> Date: Friday, April 03, 1998 1:01PM
>
> Received on Apr. 3, 1998 at 1030 hrs., by Mike Spalts.
> Comments by Mr. Heyward Fender, 863-2996:
>
> 1. Were native Americans included in the planning?
> 2. Were all the Keys looked at?
>
> VR
> Mike
>

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P-E-0011
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From: KISSCOOK
To: lmd@eglin.af.mil
Subject: Missiles In The Gulf of Mexico
Date: Friday, April 03, 1998 2:49PM

Charles E. Kandler
234 49th Street, Ocean
Marathon, Florida 33050
305-743-0626 Tel & Fax
e-mail: kisscook@aol.com

TO:
Vice President, Al Gore
Secretary of Defense, William Cohen
Secretary of the Air Force
Florida Governor Lawton Chiles
Senator Connie Mack
Senator Bob Graham
Congressman Richard Deutch
Florida State Senator Daryl Jones
State Representative Debbie Horan
Monroe County Mayor Emeritus, Shirley Freeman

THE FLORIDA KEYS FACE A MILITARY THREAT! The threat comes from a domestic source rather than a foreign one!

The United States Department of Defense, Ballistic Missile Defense Organization (BMDO) under the direction of Lieutenant General Lester L.

Lyles using incomplete data and 1941 attitudes, desires to turn one of the most ecologically sensitive, busiest and most prosperous area of the United States into a live ammunition missile testing range.

The program Lieutenant General Lester L. Lyles and the BMDO is proposing a program that would construct a missile launching site in the lower "Fabulous Florida Keys." Missiles launched from the Keys would then be intercepted and destroyed (hopefully) by other missiles launched from Eglin Air Force Base, some 800 miles to the north, across the Gulf of Mexico. This scenario presents the following catastrophic problems.

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1. The proposed missile Keys site in the midst of four (4) extremely sensitive major ecological preserve areas, any military usage of any kind would be devastating. (see report generated by Monroe County Mayor Emeritus, Shirley Freeman)

2. The Fabulous Florida Keys, permanent population 80,000 but hosting up to four million visitors per year, has many businesses and attractions that cannot possibly survive the economic uncertainty of unscheduled (depending upon weather) monthly missile launches. This is forcing Fisherman, (both commercial and recreational) tour boats, bird watchers, sailors, intercity ferries and a host of others that depend upon the same good weather to operate as do the missile launchers, to compete for the territory.

2. (cont.) Disruption of those businesses will have devastating consequences to the flourishing tourist business in the Fabulous Florida Keys. Even though cash payments for disrupted business is allocated, there is no possible mitigation, no amount of money will make up for these losses! Not even fishermen who have obligations under federal and state statute.

No where considered is the interruption and physical threat to scheduled airlines, oil rigs, freighters, barge traffic, sailboats and law enforcement personnel. Since these are heavily traveled international waters, many vessel operators do not speak English nor monitor VHF radio nor read the published "Notice To Mariners."

3. The Florida Keys are a chain of islands linked together by a single, two-lane highway (US Rt. 1) which carries not only 100% of our traffic and sustenance but our single water line and our electric power lines. There are no alternate routes to the Keys! Missiles must be trucked by convoy for 110 miles over this precarious but very crowded two-lane highway with 41 two-lane bridges to reach their destination. An accident would cut off the entire county and the City of Key West. An explosion on a bridge would sabotage the County and might create panic when visitors found they could not leave

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and residents found there were no fresh supplies, water or electricity. Nowhere in General Lester L. Lyles report does he cover the very real probability of civil disobedience based upon the very real threat to safety, livelihood and ecology. Nowhere in the seis report does General Lester L. Lyles acknowledge that there is any more than just "temporary" damage will occur. His definition of "temporary" is absurd. He considers dropping thousands of pounds of acid into a critical biological area a "temporary" disturbance.

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4. General Lester L. Lyles is placing us in harm's way. The Fabulous Florida Keys are only ninety (90) miles from Cuba, a nation with which the United States is currently holding an embargo. A nation with a mercurial, unpredictable dictator that last year, shot down two US civilian aircraft. Three times in recent years, Cuban planes landed in the Keys on US soil completely undetected, this means to us, on the front lines, that any hostilities will probably occur here first and the Air Force is unable to protect us. The question for us is: Is creating a missile base in the Keys saber-rattling? It certainly seems like an open act of aggression to us. We are the people who will absorb the destruction if it comes to that.

5. Based on the evidence outlined above and the myriad documents presented to ourselves and to the appropriate agencies, we can only conclude that General Lester L. Lyles is incompetent and unfit for the command he has and, therefore, we call for his immediate relief from duty.

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It is obvious to all of us that General Lester L. Lyles has a world-view based on the 1941 model, that he has used data based on woefully out-of-date research and expressed a cavalier disregard for the ecology, industry and safety of the very people he is pledged to defend.

He is wasting and has wasted millions in taxpayer dollars trying to promote this ludicrous scheme when a few phone calls to other government agencies could have given him all the information he needed. For instance, NOAA Marine Sanctuary, US Fish & Wildlife both testified against this proposal as have

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every other involved government agency.

It should be blatantly obvious, even by the shoddy report presented by General Lester L. Lyles that the Gulf Of Mexico and The Fabulous Florida Keys are no longer appropriate places for missile testing. Anybody with a reasonable world-view can see that times and priorities have changed. It is no longer feasible to test ANY live ammunition weapons ANYWHERE in the Gulf of Mexico.

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We are patriots to the core. We are proud to pay our taxes and demand the best air force and the best defense money can buy. That does not mean we must not take into account a new reality based upon demographic change. Take the missile testing to a safer, more suitable location.

As our elected representatives, we expect you to take immediate action on this very serious issue.

Yours truly,

Charles E. Kanter

CC: Newspapers

PS

Instilled in me during my military experience was the principle that the job of the military was to seek out and destroy the enemy. That means we messed up his neighborhoods, not ours!

P-E-0012
COMMENT
NUMBER

From: CapeSanBla
To: tmd@eglin.af.mil
Cc: gccofc@digitalexp.com; AThorpe363@aol.com
Subject: TMD Extended Test Range Supplemental EIS (SEIS)
Date: Friday, April 03, 1998 11:13AM

Ms. Linda Ninh
April 3, 1998
U.S. Army Space and Strategic Defense Command
ATTN.: CSSD-EN-V
Post Office Box 1500
Huntsville, AL 35807-3801

Subject: TMD Extended Test Range Supplemental EIS (SEIS)

I am providing a response to the Draft SEIS for TMD Extended Test Range. My comments are directed toward various deficiencies or areas not addressed in the document. In general, I am disappointed in the overall quality of the SEIS as published. I especially take issue with the "best case" approach taken in the document, especially when it comes to socioeconomic impacts. Also, it is less than specific when it comes to the timing of these tests, which is a key issue when considering socioeconomic impact.

The bulk of the Cape San Blas busy season is compacted into several weeks in the spring, and several weeks in mid summer. This is why I asked for specific dates and times for the tests, such that I can evaluate the impact on our business. Since this information was not provided, I can only plan for a "worst case" scenario as to the impact on our business. The best case approach has also led to the inference that the tests will have only positive impacts on our

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However, the economy here will most certainly be impacted when we experience long lines of halted traffic on our roads, and closed beaches at times when we would otherwise be our busiest. The saying "timing is everything" is quite appropriate for our situation.

05

The document speaks frequently of the "4 hours" during which the beaches will be closed for tests. I could live with this if procedures are implemented to insure that closures are kept as close to 4 hours as possible. I understand that there can be delays or complications that can extend the closure of the launch hazard area. However, past experience indicates that even though it may have been your intention to close the beach for only 4 hours, the barricades remained in place for 2 to 4 weeks. Possibly, this was a staffing issue. Also, since RADAR emission was not mentioned in the document, we can assume that this was used as an excuse for past closures exceeding 4 hours. Please address this issue as necessary to insure that barricades are set up and removed on a timely basis, thus minimizing the impact to our businesses (e.g., new procedures, additional staff, etc.).

06

I requested that the document address the road closure issue by examining queue lengths at specific test times and locations. This was intended to provide information to us to (again) assess impact to our business. The document has responded only with traffic increases due to additional test personnel. If roads are closed for 4 or more hours during our busy season, there could be a long line of vehicles on the road in front of our business. This could effectively shut us down for the duration of the test because no one could enter our facility. Campers are by

Exhibit 5.2-1: Reproductions of E-Mail Comment Documents (Continued)

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definition "mobile", so if they are blocked from our entrance, they will go somewhere else (that is if they can turn around). What this all boils down to is that the timing of these tests is critical. Testing during peak season would certainly be a problem. The SEIS needs to address the issue from a worst case standpoint.

The main focus of the economic impact section of the document appears to be that the additional people required to run these tests will spend money for supplies and services, resulting in a positive economic impact. Again, the impact is unclear because the document does not consider peak season impact. Last year (1997), we were booked solid from April through Labor Day. Although there are more rentals being built, the popularity of this area will continue to fill rentals to capacity for the foreseeable future. So, the test personnel will either displace tourists, or will have to stay off the cape. There are other similar capacity issues, which if applied to peak season numbers will result in little or no impact to our economy. Again, the document needs to address worst case scenarios and provide realistic projections of the impacts.

As a final note, our business (Cape San Blas Camping Resort) was not mentioned as one of the campgrounds in the area (where others are name). I made it perfectly clear in our previous cover letter that we are located 100 feet from the Air Force's property line at Cape San Blas (Eglin site D-3)/ it is also clear from our name and our response that we are a camping facility. An error such as this is not in itself very alarming, but it has taken away any confidence that I have in the rest of the report. If an omission of a non-technical nature such as this exists, what else has been overlooked?

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Kindly respond that you have received this email. Thank you in advance for including more detail regarding these issues in your study.

Sincerely,
Don Thiel
Cape San Blas Camping Resort
P.O. Box 645
Port St. Joe, FL 32457
E-Mail: CapeSanBlas@aol.com

cc: via E-Mail: tmd@eglin.af.mil
gccofc@digitalexp.com
athorpe363@aol.com

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P-E-0012
COMMENT
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Table 5.2-2: Responses to E-Mail Comments

Commentor and Affiliation	Comment Number	Resource Area	Reference Section & Page	RESPONSE
William Marsh	P-E-0001.01	Air Quality	3.1.1.4.1, 3.1.9.4, 3.3.9.4	Potential air quality impacts resulting from a launch mishap are addressed in section 3.1.9 of the Draft and Final SEIS. As sections 3.1.1.4.1 and 3.1.9.4 of the Draft SEIS explain, the TSCREEN PUFF model predicts concentrations at various distances from the launch point. For a normal launch, there were no exceedances. For a launch mishap scenario, TSCREEN PUFF indicated potential exceedance beyond the Launch Hazard Area. In that case, per EPA guidance, using the more refined model, OBODM, indicated that there would not be exceedance beyond the Launch Hazard Area. The OBODM is a model that calculates predicted depositions using worst case climatological parameters such as wind speed, humidity, and temperature. The results of the model represent the greatest concentrations of emissions that could occur under any conditions.
	P-E-0001.02	Airspace Use	3.1.2.4, 3.2.2.4, 3.3.2.4	Rerouting and rescheduling of air traffic would be requested through the appropriate Federal Aviation Administration regional control center. Such air traffic adjustments would have less effect on annual average air traffic patterns than would normal rerouting for inclement weather over parts of the Gulf of Mexico or Florida. Air traffic in the area of the launch site by the implementation of a launch firing area.
	P-E-0001.03	Biology	3.1.9.4	The worst-case scenario for a launch mishap could be the combustion of most of a missile's propellant on or near the launch pad. This type of mishap would create extreme temperatures and pressures, scarring or burning living organisms in the immediate vicinity of the pad. Considerable levels of preparation activities prior to a launch should generally cause most wildlife to leave the area. In order to avoid or minimize potential impacts to remaining wildlife, mitigative actions would be coordinated with the U.S. Fish and Wildlife Service and the Florida Department of Environmental Protection. These actions could include relocation of the individuals or postponement of the launch. If a mishap were to occur, hazardous waste specialists would immediately respond to the site to remove toxic and other debris from the area to prevent residual effects on wildlife.
	P-E-0001.04	Geology and Soils	3.1.9, 3.2.9, 3.3.9	The Safety sections (3.1.9, 3.2.9, and 3.3.9) of the SEIS provide a discussion of the human and ecological risks of the proposed test program under normal and mishap conditions. Potential impacts of a catastrophic failure under a full range of mishap scenarios are presented for each environmental resource in section 3.1.9 of the Draft and Final SEIS.
	P-E-0001.05	Hazardous materials and wastes	3.1.6.4, 3.2.6.4, 3.3.6.3	Sections 3.1.9, 3.2.9, and 3.3.9 of the SEIS provide a discussion of the safety of the proposed test program under normal and mishap conditions.
	P-E-0001.06	Land Use-Keys	3.3.7.4	The planning and siting process for the proposed Theater Missile Defense test program in the Eglin Gulf Test Range considered many factors in identifying alternative sites including mission requirements, environmental conservation, human and ecological health, and land use compatibility. The alternative target launch sites on Cudjoe Key and Saddlebunch Keys are located on land owned by the Department of Defense and are designated for military use. New military uses in these areas are permitted. The Launch Hazard Area was designed to avoid requiring the evacuation of private property or occupied dwellings. The residences of Cudjoe Key have been recognized since the first site visit to the Keys. The Launch Hazard Area has not been shrunk. Each Launch Hazard Area is individually designed for the site, the missile, and the environs around the site. As stated previously, the more constrained a Launch Hazard Area, the more restrained the Range Safety Officer.
	P-E-0001.07	Land and Water Use	2.1.3.2.3, 3.3.7.4	Prior public notice of test event schedules would be publicized, posted in marinas, and noted in Notices to Mariners. Radar surveillance prior and during the test would enable the test officer to monitor the marine traffic in the area. It is believed that with the cooperation of the Florida Marine Patrol, the Coast Guard, and the boating public, the area can be cleared for the period to assure safe testing.
	P-E-0001.08	Socioeconomics	3.1.10.4, 3.2.10.4, 3.3.10.4	The socioeconomic effects of the proposal are addressed in sections 3.1.10.4, 3.2.10.4, and 3.3.10.4 of the Draft SEIS. Economic dislocation of commercial fisheries is estimated to be less than 1 percent per year. Over 78 percent of the visits to the Florida Keys were made by car, less than 9 percent by air, and a little over 12 percent by cruise ship. Visitor preference for destinations within the Keys varied greatly. The most popular location, by a substantial margin, was Key West, with over 55 percent of the visits being made there. The least popular destination was the Lower Keys, which received just under 12 percent of the total visits. Furthermore, fewer than 5 percent of visits were made solely to the Lower Keys, compared to almost 40 percent of visits which were spent exclusively in Key West. The Visitor Participation Survey, which is described as the most comprehensive ever conducted in the region, further emphasizes the relatively minor role that the Lower Keys play in the Keys tourist economy. The top three activities in which visitors participated were sightseeing and attractions (55 percent participation rate), beach activities (34 percent), and visiting museums and historical sites (33 percent). The top rated activity in the Lower Keys was viewing wildlife/nature study in which 5.8 percent of all visitors to the Keys participated.

Table 5.2-2: Responses to E-Mail Comments (Continued)

Commentor and Affiliation	Comment Number	Resource Area	Reference Section & Page	RESPONSE
William Marsh, cont.	P-E-0001.09	Noise	3.1.9.4, 3.3.9.4	The potential environmental impacts of a launch mishap on all environmental resources including noise are addressed in section 3.1.9 of the Draft and Final SEIS. The noise analysis provides both single event levels and weighted averages to provide as much information on noise occurrences and effects as possible. In addition, potential noise impacts on biological resources are addressed in section 3.1.3.4 and 3.3.3.4 of the Draft and Final SEIS. Minor damage to structures may occur within 3 kilometers (1.9 miles) of the mishap. Exposure to an impulsive noise with an SPL equal to or greater than 140 dBA may cause temporary or permanent hearing loss in people within 1,000 meters (3,280 feet) of the mishap. Noise effects of a launch mishap would have a startling effect on wildlife, with possible incidental mortality. The near-field disruption of a normal test event would consist of a loud noise (similar to the takeoff of a commercial jet aircraft) no more than once a month.
	P-E-0001.10	Safety-Keys	3.1.9.4, 3.3.9.4	Public safety is a primary concern for all range operations. The safety limits defined by the Launch Hazard Area would ensure that population centers, schools and residential areas would not be at increased risk as a result of the proposed test program. A detailed discussion of the various risks associated with missile testing is described in section 3.1.9 for normal and mishap scenarios. The primary role of the Range Safety Officer is to ensure the safety of the public. This is done in accordance with Air Force Development Test Center policies and procedures ensuring that the general public will be protected to an individual and collective risk significantly less than the average public exposure. Specifically, one of the safety mechanisms is to establish an Launch Hazard Area as described in section 2.1.3.2.3 in the SEIS. The Launch Hazard Area for each test event would be calculated prior to launch on the basis of system factors (propellant type and quantity, payload weight, etc.) and environmental factors (temperature, humidity, wind direction and magnitude). If this launch-specific Launch Hazard Area exceeded the maximum permitted Launch Hazard Area defined for any specific launch site or could result in adverse impacts to non-Federal land parcels other than those predicted and coordinated with Federal, state and local agencies, the launch would be delayed or canceled. No test event would proceed that would pose a safety threat to the local community.
	P-E-0001.11	Socioeconomics	3.2.10.4	Our analysis indicates that temporary dislocation from fishing grounds for periods will displace less than 2 percent of the volume of catch or value of catch at a worst case.
	P-E-0001.12	Transportation-Keys	3.3.11.4	The target missiles proposed for Theater Missile Defense testing are Minuteman stages I and II. Over a 30 year operational period, frequent transport of Minuteman missile components to and from 1000 sites never resulted in an explosion. Estimates of the probability of an accident involving a truck carrying missile components on the Overseas Highway range from 2.63 to 6.89 per million vehicle-kilometers. Using the high value, there is a probability of 0.0012 of a truck accident per launch.
	P-E-0001.13	Utilities-Keys	3.3.12.4	The Theater Missile Defense test program would not affect existing or future utility corridors.
	P-E-0001.14	Transportation-Keys	3.3.11.4	Traffic flows over multiple segments of a highway can differ considerably on the basis of the origin and destination of vehicles entering and exiting the highway. Section 3.3.11 of the Final SEIS notes that traffic volumes on U.S. 1 are currently at or near its design capacity.
	P-E-0001.15	Utilities-Keys	3.3.12.4	The Theater Missile Defense test program would not generate appreciable additional demand for public services such as electric power and therefore would not contribute to the potential for service outages.
	P-E-0001.16	Visual Aesthetics-Keys	3.3.13.4	To better assess the visual impact of constructing a missile assembly building or erecting a 50 foot tall missile on a site, a visual simulations for each vantage point photograph used in the Draft SEIS has been prepared (sections 3.1.13.1 and 3.2.13.1). These visual simulations use computer graphics programs to ensure that the apparent visibility of the building or missile in the photograph is what would actually be seen from each respective vantage point. Specifically, a known dimension in each photograph was determined from sources at the respective sites. This known dimension was projected into the photograph via planographic projection to provide a perspective scale of the distance between two objects. In this case, the two objects were the tower or known object, and the Hera missile, which would be 50 feet tall on its launch stool. The site mapping indicated the horizontal distance between the known object and the Hera missile launch site. The resultant photographic visual simulations are published in the Final SEIS section 3.1.13.4 (pages 3- 223 and 226) for the Panhandle sites and section 3.2.13.4 (pages 3-518 and 3-521) for the Keys sites. It is apparent, reviewing these photographs, that neither the building nor the missile are visible from most accessible vantage points. The view from those closer vantage points will include the existing military buildings as well as the new MAB and missile. The new buildings will be seen in the context of the existing military facilities.

Table 5.2-2: Responses to E-Mail Comments (Continued)

Commentor and Affiliation	Comment Number	Resource Area	Reference Section & Page	RESPONSE
William Marsh, cont.	P-E-0001.17	Air quality	3.3.1.4	The National Aeronautics and Space Administration has prepared numerous environmental impact assessments and conducted long term environmental monitoring to support the decisions to conduct rocket launches from the Kennedy Space Center, Florida. These launch activities occur in a physical environment similar to that of the Florida Keys. The Space Shuttle launches cause local environmental impacts primarily through formation of a launch cloud that produces acidic deposition. This launch cloud results from the interaction of exhaust of the solid rocket boosters and deluge water. Primary constituents include aluminum oxide and hydrochloric acid. The deposition resulting from a Shuttle launch and from a Hera launch differ primarily in scale. The total exhaust from a Shuttle is 2,427,000 pounds, 460,000 of which is hydrogen chloride. The total exhaust from a Hera is 13,820 pounds, 3,078 pounds of which is hydrogen chloride. The Hera emits one half of one percent of the Shuttle exhaust. Hydrogen chloride near field deposition rates from the Shuttle range up to 125g/m ² , while those from the Hera do not exceed 1.64g/m ² . This is 1.3 percent of the deposition rate of the Shuttle. The near field for the Shuttle is considered 1.5 kilometers from the launch pad. The near field from the Hera launch would be 60 meters from the launch pad. The pH of shallow marine waters in the Florida Keys range from a low of 7.3 near Saddlebunch and Cudjoe Keys to a high of 8.2 near Plantation Key. Average alkalinity measurements range from a low of 119 mg/L calcium carbonate near Plantation Key to a high of 137 mg/L calcium carbonate near Harrison Canal (Florida Department of Environmental Protection, 1996). If it were to rain shortly after a missile launch, the hydrogen chloride present in the exhaust plume would be dissolved in the rain droplets, which would result in a temporary reduction in rainfall pH. Calculations were conservative in that 100 percent of the 1,399 kilograms of hydrogen chloride present in the exhaust plume was assumed to be dissolved in rain droplets (as opposed to approximately 20 percent under normal conditions.) Due to the high buffering capacity of the shallow marine waters, rainwater falling on nearby surface waters would result in no decrease in the pH levels.
	P-E-0001.18	Biology-Keys	3.3.3.4	Deposition of hydrogen chloride from a Hera launch, at a rate of no more than 1.64g/m ² , would decrease pH by no more than 0.1 unit. At this rate, water pH levels would return to pre-launch levels very rapidly even with low flow and mixing. As such, no appreciable impact to sea grass beds would be expected.
	P-E-0001.19	Water Quality-Keys	3.2.14.4, 3.3.14.4	The Theater Missile Defense test program would not introduce any contamination into drinking water supplies. Bottled water would be provided to support personnel to reduce demands on local drinking water supplies. See section 3.3.14.4 of the Final SEIS.
	P-E-0001.20	Water quality-Keys	3.2.14.4, 3.3.14.4	Environmental monitoring at Kennedy Space Center has shown that during the period of reduced pH, metals became more soluble and their concentrations in the water column increased dramatically. As normal pH levels returned to the area (within 24 to 72 hours), metal concentrations returned to pre-launch levels. "To date no long-term elevations of metal concentrations on the water column have been observed." The predicted near-field deposition rates from Theater Missile Defense testing will be less than 1 percent of the deposition rates for the Space Shuttle. Deposition of hydrogen chloride from a Hera launch, at a rate of no more than 1.64g/m ² , would decrease pH by no more than 0.1 unit. At this rate, water pH levels would return to pre-launch levels very rapidly with no long-term elevation.
Mary Hurlburt	P-E-0002.01	Alternatives-Keys	1.0	No decision has yet been made about which alternative may be selected. The National Environmental Policy Act requires the analysis of all reasonable alternatives to the proposed action. Section 1.0, Program Overview, explains the factors that will be considered in making the final decision after the Final SEIS is completed.
Mr. & Mrs. Burt Frank	P-E-0003.01	Alternatives-Keys	1.0	Comment noted.
Dr. & Mrs. Keith E. Palmerton,	P-E-0004.01		1.0	Comment noted.
Dennis Henize	P-E-0005.01	Safety-Keys	3.1.9.4, 3.3.9.4	Public safety is a primary concern for all range operations. The safety limits defined by the Launch Hazard Area would assure that population centers, schools and residential areas would not be at increased risk as a result of the proposed test program. A detailed discussion of the various risks associated with missile testing are described in section 3.1.9 for normal and mishap scenarios. The primary role of the Range Safety Officer is to ensure the safety of the public. This is done in accordance with Air Force Development Test Center policies and procedures ensuring that the general public will be protected to an individual and collective risk significantly less than the average public exposure. Specifically, one of the safety mechanisms is to establish a Launch Hazard Area as described in section 2.1.5 in the SEIS. The Launch Hazard Area for each test event would be calculated prior to launch on the basis of system factors (propellant type and quantity, payload weight, etc.) and environmental factors (temperature, humidity, wind direction and magnitude). If this launch-specific Launch Hazard Area exceeded the maximum permitted Launch Hazard Area defined for any specific launch site or could result in adverse impacts to non-Federal land parcels other than those predicted and coordinated with Federal, state and local agencies, the launch would be delayed or canceled. No test event would proceed that would pose a safety threat to the local community. The residences near the Santa Rosa Island and Cape San Blas locations are closer to their respective missile launch sites.

Table 5.2-2: Responses to E-Mail Comments (Continued)

Commentor and Affiliation	Comment Number	Resource Area	Reference Section & Page	RESPONSE
	P-E-0005.02	Safety	3.1.9.4, 3.3.9.4	The analysis of the risk probabilities of each missile flight test is conducted prior to acceptance of that flight test program by the range. The system failure mode analysis and attendant risk probability calculations for each failure mode are calculated. Each equipment failure or human error possibility is considered and incorporated into the risk assessment for each flight test. No test will be accepted by the Air Force Development Test Center commander until he is satisfied that the risk analysis complies with Air Force and Department of Defense safety policies.
	P-E-0005.03	Safety	3.1.9.4, 3.3.9.4	Data is not releasable (sensitive material). While specific information is not releasable to the public, the missile has been tested and flown at White Sands Missile Range. The Launch Hazard Area has been determined and the reliability of the missile will meet the safety (flight determination) standard and procedures. The Eglin range safety office has determined that the missile components of the flight test meets the safety launch procedures.
	P-E-0005.04	Safety	1.0	In accordance with Council on Environmental Quality guidelines, this SEIS includes sufficient analysis to inform the public and decision makers of potential environmental impacts resulting from the preferred action and alternatives and to assist in the decision making process. In preparing this analysis, the most recent and available data was used to characterize the existing environments of all potential sites including those in the Florida Keys.
	P-E-0005.05	Safety-Keys	2.1.3.2.3, 3.1.9.4, 3.3.9.4	The size of a Launch Hazard Area is a function of the flexibility the Range Safety Officer has. The larger the Launch Hazard Area, the more flexibility there is in terms of acceptable launch conditions and anomaly response time. The fixed variable is the commitment to conduct all test activities so that mishap debris does not exit the designated Launch Hazard Area. The Launch Hazard Area was designed to avoid requiring the evacuation of private property or occupied dwellings. The residences of Cudjoe Key have been recognized since the first site visit to the Keys. The Launch Hazard Area has not been shrunk. Each Launch Hazard Area is individually designed for the site, the missile, and the environs around the site. The Launch Hazard Area for each test event would be calculated prior to launch on the basis of system factors (propellant type and quantity, payload weight, etc.) and environmental factors (temperature, humidity, wind direction and magnitude). If this launch-specific Launch Hazard Area exceeded the maximum permitted Launch Hazard Area defined for any specific launch site or could result in adverse impacts to non-Federal land parcels other than those predicted and coordinated with Federal, state and local agencies, the launch would be delayed or canceled. No test event would proceed that would pose a safety threat to the local community.
	P-E-0005.06	Safety	3.1.9.4, 3.3.9.4	The analysis of the risk probabilities of each missile flight test is conducted prior to acceptance of that flight test program by the range. The system failure mode analysis and attendant risk probability calculations for each failure mode are calculated. Each equipment failure or human error possibility is considered and incorporated into the risk assessment for each flight test. No test will be accepted by the Air Force Development Test Center commander until he is satisfied that the risk analysis complies with Air Force and Department of Defense safety policies.
	P-E-0005.07	Draft SEIS	1.6	The process by which scoping comments were documented and tracked throughout the environment impact assessment process is described in section 1.6 of the Draft and Final SEIS. Based on this data base, all issues identified during the scoping process have been addressed in the Final SEIS.
	P-E-0005.08	Draft SEIS	1.0	In accordance with Council on Environmental Quality guidelines, this SEIS includes sufficient analysis to inform the public and decision makers of potential environmental impacts resulting from the preferred action and alternatives and to assist in the decision making process. In preparing this analysis, the most recent and available data was used to characterize the existing environments of all potential sites including those in the Florida Keys.
	P-E-0005.09	Draft SEIS	1.0	Comment noted.
	P-E-0005.10	Draft SEIS	1.0	Comment noted.
	P-E-0005.11	Safety	3.1.9	Comment noted.
	P-E-0005.12	Biology-Keys	3.3.3.4	Cumulative impacts for each project alternative and environmental resource are presented at the end of the Environmental Impacts and Mitigations section for each resource in chapter 3 of the Draft and Final SEIS. Depending on the specific resource, cumulative impacts may or may not be additive in nature. For example, the utilities used by program activities would be fully additive, deposition of launch emissions on nearby soil would be somewhat additive, and noise events separated by a one month period would not be additive. Small scale habitat destruction, individual displacement, and incidental mortality are acknowledged in the near-field launch area. See sections 3.1.3.4, 3.2.3.4, and 3.3.3.4 of the Final SEIS.
	P-E-0005.13	Alternatives-Keys	1.0	No decision has yet been made about which alternative may be selected. The National Environmental Policy Act requires the analysis of all reasonable alternatives to the proposed action. Section 1.0, Program Overview, explains the factors that will be considered in making the final decision after the Final SEIS is completed.

Table 5.2-2: Responses to E-Mail Comments (Continued)

Commentor and Affiliation	Comment Number	Resource Area	Reference Section & Page	RESPONSE
Harlowe D. Girard Jr	P-E-0006.01	Draft SEIS	1.0	In accordance with Council on Environmental Quality guidelines, this SEIS includes sufficient analysis to inform the public and decision makers of potential environmental impacts resulting from the preferred action and alternatives and to assist in the decision making process. In preparing this analysis, the most recent and available data was used to characterize the existing environments of all potential sites including those in the Florida Keys.
	P-E-0006.02	Biology-Keys	3.3.3.4	The coral reef is not within the region of influence of the Keys alternative.
	P-E-0006.03	Biology-Keys	3.3.3.4	The existing environment is described in section 3.3.3.3 of the SEIS.
	P-E-0006.04	Biology-Keys	3.3.3.4, 3.1.9.4, 3.3.9.4	Normal launch activities would not affect the reef ecosystem. In the unlikely case of a launch mishap, no debris would fall on reef tracts which are outside the Launch Hazard Area.
	P-E-0006.05	Biology-Keys	3.3.3.4	Comment noted.
	P-E-0006.06	Transportation-Keys	3.3.11.4	The evaluation of potential traffic impacts on U.S. 1 forecast an increase in traffic volume in 2005 (including Theater Missile Defense-related vehicles) of 0.3 to 1.5 percent on a peak day of activity. Since baseline forecasts of traffic for the same year show that most of the segments of U.S. 1 would be operating at or above design capacity during peak times, project traffic would exacerbate this situation. If program activities were planned for this alternative, vehicle movement would be scheduled to avoid peak hours.
	P-E-0006.07	Land Use-Keys	3.3.7.4, 3.3.10.4	The real estate values within an area are directly related to the levels of income and employment that occur within the area. Socioeconomic impact studies that have been prepared by the Air Force over the past decade have shown that housing values and military programs are generally positively related. The areas near Eglin AFB and Vandenberg AFB, which are both installations where missile testing occurs, have experienced generally stable and appreciating property values. The only negative changes in housing values that have been recorded resulted from mission reductions and base closures that have occurred. Since the proposed Theater Missile Defense test program would not have an appreciable effect on income or employment levels at any of the alternative test sites, no related changes in property or housing value would be expected.
Harlowe Girard Jr, cont.	P-E-0006.08	Biology-Keys	3.3.3.4	The conservation land uses including the refuges that you mention are a critical part of the resource management program for the Florida Keys. The alternative target launch sites on Cudjoe Key and Saddlebunch Keys are located on land owned by the Department of Defense and are designated for military use. The Launch Hazard Area for the alternative target launch sites on the Keys does overlap the Florida Keys National Marine Sanctuary (FKNMS); about 4.3 percent of the FKNMS is in the Cudjoe Key Launch Hazard Area and 1.6 percent of the FKNMS is in the Launch Hazard Area for the Saddlebunch Keys (see section 3.3.7 in the Final SEIS). New military uses in the FKNMS are permitted but would require specific consultation. This consultation would require that any proposed action be designed and implemented so that potential impacts to any habitat or species be 1) avoided to the extent possible, 2) minimized when avoidance is not possible, and 3) mitigated to compensate for potential long-term adverse effects. Consultation with the Director of the National Marine Sanctuary began early in the planning process for the Theater Missile Defense testing program and is ongoing.
	P-E-0006.09	Air Quality-Keys	3.3.1.4	Increased acidity (decreased pH) in bodies of water has various effects upon the plant life, invertebrates, and fish in that water depending upon degree and duration of the increased acidity. The shallow waters of ponds on the Keys are predicted to have a pH drop of as much as 0 to 0.1 units. This decreased pH could persist for as long as 72 hours considering the low rate of dilution and slow currents in these ponds. The back country shallow waters are predicted to have no appreciable decrease in pH. This is due to the natural buffering effect of salt sea water on acids. This pH drop is anticipated to be of short duration due to the mixing and dilution of the currents. The hydrogen chloride and hydrochloric acid in the exhaust cloud would dissipate or deposit within minutes of a launch, and meters of the launch site (the near field). The hydrochloric acid in the exhaust cloud could damage the eyes of bird exposed to the cloud. The concentration of hydrogen chloride and the density of hydrochloric acid in the near field exhaust cloud would be negligible compared to the greater effects of heat and noise that close to a launch event
	P-E-0006.10	Biology-Keys	3.3.3.4	Comment noted.
	P-E-0006.11	Biology-Keys	3.3.3.4	Comment noted.
	P-E-0006.12	Biology-Keys	3.3.3.4	Normal launch activities would not result in adverse impacts to the hardwood hammocks. There is, however a remote possibility that a launch mishap could result however result in impacts on this resource.
	P-E-0006.13	Biology-Keys	3.3.3.4, 3.3.7.4, 3.3.14.4	The 404 (b) (1) permit process would be used to evaluate and minimize any potential impacts on jurisdictional or non-jurisdictional wetlands affected by the proposed or alternative actions for Theater Missile Defense testing. This permit, issued by the U.S. Army Corps of Engineers in coordination with the State of Florida, would evaluate specific areas affected by the program once they are more precisely defined during the final planning and design process. Mishap recovery measures would be conducted in consultation with appropriate resource agencies to ensure minimal disturbance of resources such as wetlands.

Table 5.2-2: Responses to E-Mail Comments (Continued)

Commentor and Affiliation	Comment Number	Resource Area	Reference Section & Page	RESPONSE
	P-E-0006.14	Alternatives-Keys	1.0	No decision has yet been made about which alternative may be selected. The National Environmental Policy Act requires the analysis of all reasonable alternatives to the proposed action. Section 1.0, Program Overview, explains the factors that will be considered in making the final decision after the Final SEIS is completed.
Dan and Pam Frank	P-E-0007.01	Alternatives-Keys	1.0	Comment noted.
Carol E. Ludwig, Lt. Col., USAF	P-E-0008.01	Airspace Use	3.1.2, 3.2.2, 3.3.2	Comment noted.
Robert J. Moran, Director, Government Affairs, National Ocean Industries Association	P-E-0009.01	Draft SEIS		The correct e-mail address is " http://tw1.eglin.af.mil/46mtd/tmd.htm ". Note! The third character is the digit "1" (one), not the letter "l".
Heyward Fender	P-E-0010.01	Cultural	Appendix O	The Draft SEIS was submitted to Native American Tribal Officials for review and comment..
	P-E-0010.02	Alternatives-Keys	2.0	Target launch site alternatives throughout the Gulf of Mexico were considered.
Charles Kanter	P-E-0011.01	Alternatives-Keys	2.0	Comment noted.
	P-E-0011.02	Alternatives-Keys	2.0	No decision has yet been made about which alternative may be selected. The National Environmental Policy Act requires the analysis of all reasonable alternatives to the proposed action. Section 1.0, Program Overview, explains the factors that will be considered in making the final decision after the Final SEIS is completed.
	P-E-0011.03	Biology-Keys	3.3.3.4	The conservation land uses including the refuges that you mention are a critical part of the resource management program for the Florida Keys. The alternative target launch sites on Cudjoe Key and Saddlebunch Keys are located on land owned by the Department of Defense and are designated for military use. The Launch Hazard Area for these alternative sites does, however, overlap the National Marine Sanctuary and several wildlife refuges (see section 3.3.7 in the Final SEIS). New military uses in these areas are permitted but would require specific consultation with appropriate Federal and state resource agencies.
	P-E-0011.04	Socioeconomic	3.2.10.4	The socioeconomic effects of the proposal are addressed in Sections 3.1.10.4, 3.2.10.4, and 3.3.10.4 of the Draft SEIS. Economic dislocation of commercial fisheries is estimated to be less than 1 percent per year.
	P-E-0011.05	Socioeconomics	3.1.10.4, 3.2.10.4, 3.3.10.4	Comment noted.
	P-E-0011.06	Socioeconomic	2.1.3.2, 3.1.2.4, 3.2.2.4, 3.3.2.4	The proposed process for clearance of the Launch Hazard Area is described in section 2.1.3.2 of the Draft and Final SEIS. Potential impacts on airlines are addressed in sections 3.1.2.4, 3.2.2.4, and 3.3.2.4; potential impacts on oil and gas exploration is addressed in section 3.2.5.4 and 3.2.7.4; Potential Gulf shipping impacts are presented in section 3.2.10.4; and potential impact on recreational boating is addressed in section 3.2.7.4. The Theater Missile Defense test program would not generate appreciable additional demand for public services provided by local governments and resulting fiscal impacts would be minimal. Cooperative agreements with local law enforcement and safety departments would be reached to accommodate potential service requirements.
	P-E-0011.07	Transportation-Gulf	3.2.11.4	Prior public notice of test event schedules would be publicized, posted in marinas, and noted in NOTMARS. Radar surveillance prior and during the test would enable the test officer to monitor the marine traffic in the area. It is believed that with the cooperation of the Florida Marine Patrol, the Coast Guard, and the boating public, the area can be cleared for the period to assure safe testing.
	P-E-0011.08	Transportation-Keys	3.3.11.4	The evaluation of potential traffic impacts on Highway 1 in the Draft SEIS forecast an increase in traffic volume by 2005 (including Theater Missile Defense-related vehicles) of 0.3 to 1.5 percent on a peak day of activity. Since baseline forecasts of traffic for the same year show that most of the segments of U.S. 1 would be operating at or above design capacity during peak times, project traffic would exacerbate this situation. If program activities were planned for this alternative, vehicle movement would be scheduled to avoid peak hours. Should one of the sites in the Keys be selected for Theater Missile Defense testing, a site-specific emergency response plan (similar to the example in Appendix J) would be prepared and implemented. Emergency procedures for all contingencies would be established through cooperative agreements with local public safety agencies. Estimates of the probability of an accident involving a truck carrying missile components on the Overseas Highway range from 2.63 to 6.89 per million vehicle-kilometers. Using the high value, there is a probability of 0.0012 of a truck accident per launch. Transportation of the missile components would involve standard freight transports and would not require a convoy. Emergency procedures for all contingencies would be established through cooperative agreements with local public safety agencies. No specific fire fighting vehicles would accompany the shipment, although all vehicles would be equipped with standard fire suppression equipment.
	P-E-0011.09	Alternatives-Keys	2.0 3.3.11.4	Scheduling of missile transport and other Theater Missile Defense test-related traffic would be coordinated with local agencies to avoid peak traffic hours and minimize potential effects on local traffic movement. Local law enforcement personnel would be expected to maintain order.

Table 5.2-2: Responses to E-Mail Comments (Continued)

Commentor and Affiliation	Comment Number	Resource Area	Reference Section & Page	RESPONSE
	P-E-0011.10	Draft SEIS	3.1.1.4 3.2.1.4 3.3.1.4	The volume of hydrogen chloride emitted by the target missile in the volume of air it transits is negligible; not enough to contribute to acid rain. The National Aeronautics and Space Administration has prepared numerous environmental impact assessments and conducted long term environmental monitoring to support the decisions to conduct rocket launches from the Kennedy Space Center, Florida. These launch activities occur in a physical environment similar to that of the Florida Keys. The Space Shuttle launches cause local environmental impacts primarily through formation of a launch cloud that produces acidic deposition. This launch cloud results from the interaction of exhaust of the solid rocket boosters and deluge water. Primary constituents include aluminum oxide and hydrochloric acid. The deposition resulting from a Shuttle launch and from a Hera launch differ primarily in scale. The total exhaust from a Shuttle is 2,427,000 pounds, 460,000 of which is hydrogen chloride. The total exhaust from a Hera is 13,820 pounds, 3,078 pounds of which is hydrogen chloride. The Hera emits one half of one percent of the Shuttle exhaust. hydrogen chloride near field deposition rates from the Shuttle range up to 125g/m ² , while those from the Hera do not exceed 1.64g/m ² . This is 1.3 percent of the deposition rate of the Shuttle. The near field for the Shuttle is considered 1.5 kilometers from the launch pad. The near field from the Hera launch would be 60 meters from the launch pad. The pH of shallow marine waters in the Florida Keys range from a low of 7.3 near Saddlebunch and Cudjoe Keys to a high of 8.2 near Plantation Key. Average alkalinity measurements range from a low of 119 mg/L calcium carbonate near Plantation Key to a high of 137 mg/L calcium carbonate near Harrison Canal (Florida Department of Environmental Protection, 1996). If it were to rain shortly after a missile launch, the hydrogen chloride present in the exhaust plume would be dissolved in the rain droplets, which would result in a temporary reduction in rainfall pH. Calculations were conservative in that 100 percent of the 1399 kilograms of hydrogen chloride present in the exhaust plume was assumed to be dissolved in rain droplets (as opposed to approximately 20 percent under normal conditions.) Due to the high buffering capacity of the shallow marine waters, rainwater falling on nearby surface waters would result in no decrease in the pH levels.
	P-E-0011.11	Program	2.0	Comment noted.
	P-E-0011.12	Program	2.0	Comment noted.
	P-E-0011.13	Program	2.0	No decision has yet been made about which alternative may be selected. NEPA requires the analysis of all reasonable alternatives to the proposed action. Section 1.0, Program Overview, explains the factors that will be considered in making the final decision after the Final SEIS is completed. In accordance with Council on Environmental Quality guidelines, this SEIS includes sufficient analysis to inform the public and decision makers of potential environmental impacts resulting from the preferred action and alternatives and to assist in the decision making process. In preparing this analysis, the most recent and available data was used to characterize the existing environments of all potential sites including those in the Florida Keys.
	P-E-0011.14	Program	2.0	Comment noted.
Don Thiel, Cape San Blas Camping Resort	P-E-0012.01	Draft SEIS	2.0	In accordance with Council on Environmental Quality guidelines, this SEIS includes sufficient analysis to inform the public and decision makers of potential environmental impacts resulting from the preferred action and alternatives and to assist in the decision making process. In preparing this analysis, the most recent and available data was used to characterize the existing environments of all potential sites including those in the Florida Keys.
	P-E-0012.02	Socioeconomics-Cape San Blas	3.1.10.4	Up to 24 flight test events could be conducted from Cape San Blas in any one year. These number represent realistic upper limits of testing frequency for purposes of analyzing potential cumulative impacts. The actual number of test is likely to be much lower.
	P-E-0012.03	Socioeconomics-Cape San Blas	3.1.10.4	Nearly all of the activities that would be required for the Theater Missile Defense test program at Site D-3 on Cape San Blas are similar in nature and intensity to activities that are or have taken place at this site. Prior to a launch event, advance notification of planned road closures would be published and distributed to reduce road delays and inconvenience to the extent possible. Road closures could last up to 4 hours, but would normally be about 1 hour. The Theater Missile Defense test program would not generate appreciable traffic or create much additional demand for tourist accommodation and services.
	P-E-0012.04	Land Use-Keys	3.3.7.4	Notification of upcoming launches will be made through the media and provided to local businesses. County road 30E would be closed for up to 4 hours for each launch. The beaches would be closed for a similar period of time.
	P-E-0012.05	Transportation-Cape San Blas	3.1.11.4	A launch event would last from 1 to 4 hours including time delays for clearance of the LHS. Beyond this time period, the flight test would be canceled. There are areas on the Air Force property that may be closed for extended periods while missile components are on site.
	P-E-0012.06	Transportation-Cape San Blas	3.1.11.4	Public notification of planned road closures would reduce road delays and queuing during test activities. Roads would be closed for no more than 4 hours, and every effort would be made to reopen the road as soon as possible after the initial closing.
	P-E-0012.07	Socioeconomics-Cape San Blas	3.1.11.4	Theater Missile Defense launch activities would not have an appreciable effect on the tourist industries operating on Cape San Blas. If accommodations for Air Force and civilian personnel are not available locally, arrangements could be made to transport workers in vans/pools from Tyndall AFB or off site hotel and motel facilities.
	P-E-0012.08	Land Use-Cape San Blas	3.1.7.4	The Final SEIS incorporates technical amendments, editorial revisions and typographical corrections.

5.3 TRANSCRIPT COMMENT DOCUMENTS

Individuals who commented on the Draft SEIS in at one of the four public hearings are listed in table 5.3-1 along with their respective commentor identification number. This number can be used to find the transcript document and each speaker's comments and to locate the corresponding table on which responses to each comment is provided.

5.3.1 TRANSCRIPT COMMENTS

Exhibit 5.3-1 presents reproductions of the transcript comment documents that were received in response to the Draft SEIS. Comment documents are identified by commentor ID number, and each statement or question that was categorized as addressing a separate environmental issue is designated with a sequential comment number.

5.3.2 RESPONSE TO TRANSCRIPT COMMENTS

Table 5.3-2 presents the responses to substantive comments to the Draft SEIS that were received in transcript form. Responses to specific comments can be found by locating the corresponding commentor ID number and sequential comment number identifiers.

Table 5.3–1: Public Comments on the Draft SEIS (Transcript Documents)

Commentor and Affiliation	ID Number
Allen, Joe	P-T-0033
Biddle, Joel; Reef Relief	P-T-0023
Blazevic, R. L.	P-T-0014
Casella, Loraine	P-T-0038
Cofer, Elizabeth	P-T-0008
Cofer, Elizabeth	P-T-0042
Colburn, Carol	P-T-0035
Ehrenreiter, Barbara	P-T-0026
Eliot, Robert	P-T-0036
Freeman, Shirley; Monroe County Commissioner	P-T-0006
Freeman, Shirley; Monroe County Commissioner	P-T-0040
Girard, Geraldo	P-T-0041
Girard, Gerry	P-T-0007
Gouldy, Ralph; Monroe County Growth Management Division	P-T-0025
Hadden, Alexander	P-T-0013
Hadden, Alexander	P-T-0046
Halloran, George	P-T-0034
Harvey, Anne; Park Manager, St. Joseph Peninsula State Park	P-T-0002

Table 5.3–1: Public Comments on the Draft SEIS (Transcript Documents) (Continued)

Commentor and Affiliation	ID Number
Hendrick, Muriel	P-T-0030
Henize, Dennis	P-T-0010
Henize, Dennis	P-T-0043
Henize, Tina	P-T-0020
Henize, Tina	P-T-0039
Hoffman, Wayne; National Audubon Society	P-T-0045
Hoffman, Wayne; National Audubon Society	P-T-0012
Kanter, Charles	P-T-0048
Lehman, Christopher; Monroe County	P-T-0005
Leslie, John	P-T-0028
Linn, Diane	P-T-0049
Lowe, Donald S.	P-T-0009
Lunden, Blue; Unitarian Universal Fellowship	P-T-0027
Miller, Archer	P-T-0029
Musselman, David	P-T-0016
Musselman, David	P-T-0044
Nelson, Harriet	P-T-0037
Orlandi, Robin	P-T-0032
Pike, Malcolm	P-T-0024
Poole, Lizzy; Women’s International League for Peace and Freedom	P-T-0017
Putnam, Nick	P-T-0050
Rebosio, Alberto	P-T-0004
Rebosio, Gianna Todisco	P-T-0003
Robinson, Annie	P-T-0031
Rosenblatt, Sol	P-T-0011
Seese, Bill; Florida Keys National Wildlife Refuges	P-T-0015
Simms, Mark & Amy	P-T-0022
Smith, R.C.	P-T-0018
Steiglitz, Barry	P-T-0047
Tanzonieri, Albert	P-T-0051
Traczyk, Tom	P-T-0001
Weeks, Vicki	P-T-0019
Zachariah, Dale	P-T-0021

8 THEATER MISSILE DEFENSE
 9 EXTENDED TEST RANGE SUPPLEMENTAL
 10 ENVIRONMENT IMPACT STATEMENT
 * * * * *
 11 EGLIN GULF TEST RANGE PUBLIC HEARING
 12 * * * * *
 13 March 9, 1998
 14
 15
 16 ANCHOR COURT REPORTING
 17
 18
 19 229 South Baylen Street 6850 Caroline Street
 20 Pensacola, Florida 32501 Milton, Florida 32570
 (850) 432-2511 (850) 626-6207
 21 FAX (850) 432-2303 FAX (850) 626-4689
 1-800-563-6409
 22
 23 ANCHOR COURT REPORTING
 24
 25

A P P E A R A N C E S

1
 2
 3
 4 JOHN K. SOLLID, AICP
 5 EDAW Incorporated
 6 Senior Associate
 7 200 Sparkman Drive
 8 Huntsville, Alabama 35805
 9
 10 LEWIS D. MICHAELSON
 11 Jason Associates Corporation
 12 12625 High Bluff, Suite 102
 13 San Diego, California 92130
 14
 15 THOMAS J. KENNEDY, Major
 16 46 OG/OGM
 17 205 West D Avenue, Suite 241
 18 Eglin Air Force Base, Florida 32542
 19
 20
 21 COURT REPORTER:
 22 Ruth L. Yurchak
 23 ANCHOR COURT REPORTING
 24 229 South Baylen Street
 25 Pensacola, Florida 32501

Exhibit 5.3-1: Reproductions of Transcript Documents

1 HEARING

2 MR. MICHAELSON: Good evening, and welcome to

3 tonight's public hearing on the Eglin Gulf Test Range

4 Supplemental Environmental Impact Statement. My name

5 is Lewis Michaelson and I have been asked by the

6 Ballistic Missile Defense Organization to moderate

7 tonight's meeting. And before I go over tonight's

8 agenda and ground rules, I would like to take this

9 opportunity to introduce you to the government

10 representatives who are here with us tonight.

11 Representing the Air Force Development Test

12 Center at Eglin Air Force Base is Major Tom Kennedy.

13 As the Theater Missile Defense Test Manager, Major

14 Kennedy has a responsibility for preparing the

15 Supplemental Environmental Impact Statements. Also,

16 we have from the Ballistic Defense Organization

17 Lieutenant Colonel Rick Lenner, and also in the

18 audience we have Colonel Mark Shackelford Commander,

19 of the 46th Test Wing at Eglin.

20 To start the meeting, I would like to take a

21 minute to briefly outline the purpose of tonight's

22 meeting and to go over the agenda so you will know

23 what to expect as we proceed.

24 Just over a year ago, some of you may remember

25 that the Ballistic Missile Defense Organization and

1 the Air Force held scoping meetings here in Northern

2 Florida and also in the Keys on the Theater Missile

3 Defense Extended Test Range Proposal. The purpose of

4 these scoping meetings was to obtain your comments on

5 the environmental issues you believe they should

6 examine in the Supplemental and Environmental Impact

7 Statement.

8 Scoping comments were then used from the public

9 and from agencies in the preparation of the Draft

10 Supplemental and Environmental Impact Statements,

11 which is the subject of tonight's hearing.

12 Tonight's public hearing then has three

13 essential purposes. The first is to describe to you

14 the nature of the program that is being examined in

15 the Environmental Impact Statement. In this case the

16 Theater Missile Defense Extended Test Range Proposal.

17 The second is to briefly describe the

18 environmental impact statements process and the

19 findings in the Draft Supplemental Environmental

20 Impact Statement, or SEIS as it is known by its

21 initials.

22 The third and primary purpose is to listen to

23 your concerns and comments on the draft SEIS. Your

24 comments tonight will then be used in the preparation

25 of the final SEIS.

1 I would like to go over the agenda from six
2 o'clock to seven o'clock a Ballistic Missile Defense
3 Organization and Air Force representatives were
4 available to answer questions about the proposed
5 action and environmental task assessment processes.
6 Hopefully, many of you took advantage of that
7 opportunity.
8 The rest of that agenda is that, after I finish
9 my introductory remarks, we will have a presentation
10 by Major Tom Kennedy, who will provide a brief
11 description of the Theater Missile Defense Extended
12 Range Tests followed by an overview of the
13 environmental impact that are identified and assessed
14 in the SEIS.
15 The last item on the agenda, public comments,
16 however, is really the most important. Remember that
17 the draft SEIS is just that, a draft. This is your
18 opportunity to tell to the Ballistic Missile Defense
19 Organization and the Air Force how they could improve
20 their analysis of the potential environmental impact
21 before the document is finalized and before a decision
22 is made on whether or not to proceed with the proposed
23 action.
24 A few administrative points on making your
25 comments. If you have already signed up to speak,

1 that's great, but if not and you would like to speak
2 tonight, please go to the registration table and sign
3 up, using one of the cards. Everyone is welcome to
4 speak. It just makes the process go more smoothly.
5 Everyone will have four minutes to speak. The
6 Air Force also has a court reporter here tonight
7 seated to my left. She is here to make a verbatim
8 transcript of this hearing and all of your oral
9 comments and to make sure that they are recorded
10 accurately. And in part of making that transcript, an
11 audio record is being made as well.
12 You also may make your comments in writing, and
13 if you wish to do so, there are four ways.
14 First, you may hand in written comments that
15 you may have brought with you tonight.
16 Second, you should probably notice when you
17 came in tonight that there were these written comment
18 sheets if you want to take advantage of those and fill
19 those out and hand those in tonight. You are welcome
20 to save yourself the thirty-two cents.
21 The third way you can do it is either using
22 that sheet or any other way that you want to write
23 them down, and you can mail them in to the address
24 which appears on the handout that you received when
25 you came in tonight.

Exhibit 5.3-1: Reproductions of Transcript Comments (Continued)

1 The forth way that you can do it is that you
2 can E-mail your comments if you prefer and that E-mail
3 address is on the fax sheet as well.
4 Trmv@eglin.af.mill.
5 Whichever option you choose your written
6 comments will be entered into the formal record public
7 comments on the draft SEIS and it will be given the
8 same consideration as all the comments received here
9 tonight.
10 If you choose to mail in comments, please be
11 sure to send them by April 3rd, which is the closing
12 date for the comments. And keep in mind that written
13 and oral comments received will be responded to in the
14 final SEIS.
15 If you want to receive a copy of the final SEIS
16 when it becomes available, there are three ways to do
17 that. First of all, if you have already received a
18 copy of the draft SEIS, you are on the mailing list
19 and you will automatically receive a final, unless you
20 tell us otherwise.
21 If your comments on the draft SEIS either
22 orally or in writing, provide us with your address,
23 then you will also receive a copy.
24 Finally, if you haven't met either one of those
25 conditions, there is a sign-up list in the back that

1 is actually a yellow card which you can fill out and
2 indicate what you would like to receive the full SEIS
3 or the executive summary. And that way you will
4 receive either one of those documents when they become
5 available.
6 And also, if you don't want to receive a whole
7 document but just want to take a look at it, again,
8 this same fax sheet has a list of all the information
9 repositories that you can go view those documents and
10 many others associated with this SEIS process.
11 Finally, it is important for you to understand
12 that the Ballistic Missile Defense Organization and
13 Air Force are not here today to make any decisions.
14 Their role is to take the results of this meeting and
15 the others, including the comments received at this
16 hearing, and make sure that they are considered in the
17 preparation of the final SEIS. Their main purpose in
18 being here tonight is to listen to your concerns and
19 suggestions firsthand. With that we will begin
20 tonight's meeting with Major Kennedy's presentation.
21 MAJOR KENNEDY: Thank you. Mr. Michaelson.
22 Good evening, I am Major Tom Kennedy. I work for
23 Colonel Shackelford in the 46th Test Wing. We are
24 representing Major General Michael Kostelnik, the
25 Commander of the Air Force Development Test Center at

1 Eglin Air Force Base. My job is to determine if it is
2 feasible to test Theater Missile Defense Systems
3 within the Eglin Gulf Test Range.
4 The National Environmental Policy Act of 1969
5 requires Federal decision makers to consider the
6 impact on the environment along with safety, cost,
7 schedule and technical requirements.
8 One of the first steps in doing this is the
9 preparation of an environmental impact statement.
10 The purpose of this presentation is to describe
11 the Supplemental Environmental Impact Statements. For
12 simplicity, I will refer to this document as the SEIS.
13 First, I will describe that the proposed action
14 our team evaluated in the SEIS. Then I will describe
15 the findings in the SEIS.
16 The proposed action is to enhance the Eglin
17 Gulf Test Range to test theater missile defense
18 systems against target missiles with ranges up to
19 1,100 kilometers, approximately six hundred and
20 eighty-five miles.
21 There are two primary organizations involved
22 with the SEIS. The Ballistics Missile Defense
23 Organization is a department of Defense Level
24 Organization that was established by Congress. They
25 are responsible for developing and managing the

1 development and acquisition of missile defense systems
2 for all services.
3 As such, there are proponents of this action.
4 This means the Director of the Ballistics Missile
5 Defense Organization will make his decision on whether
6 or not to select any of the alternatives in the Eglin
7 Gulf Test Range.
8 The Ballistic Missile Defense Organization
9 asked the Air Force Development Test Center to lead
10 the steps required to develop test capabilities here.
11 That's why we are writing the SEIS for them.
12 This SEIS supplement is two earlier
13 environmental impact statements. In 1993 the
14 Ballistic Missile Defense Organization completed the
15 Theater Missile Defense Programmatic Environmental
16 Impact Statement. This is a broad EIS that is
17 considered the general environmental impact of
18 developing theater missile defense systems. It is the
19 baseline for location specific EIS's.
20 The Theater Missile Defense Extended Test
21 Range, EIS, was completed in 1994 considered the
22 impact of theater missile defense testing at four
23 ranges. White Sands Missile Range in New Mexico, the
24 Western Test Range off the coast of California, the
25 Eglin Gulf Test Range, and Kwajalein Missile Range in

1 the Western Pacific.

2 At that time, Whit Sands and Kwajalein were

3 selected as theater missile defense extended test

4 ranges. The Eglin Gulf Test Range was not selected

5 because of the difficulty and the cost of providing a

6 sea-launched target. The only option considered at

7 that time. This SEIS supplements the 1994 extended

8 range EIS.

9 Eglin Air Force Base, Key West Naval Air

10 Station and Pensacola Naval Air Station regularly use

11 vast amounts of airspace over the Eastern Gulf of

12 Mexico. This blue line defines the airspace that

13 Eglin Air Force Base has scheduled responsibility

14 for. While this is the area that is scheduled by

15 Naval Air Station Key West.

16 There is no other location within the

17 Continental United States that combines so much of

18 available military airspace with low population

19 density. The large size of the Eglin Gulf Test Range

20 makes it ideal for performing tests that cover long

21 distances, such as theater missile defense testing.

22 Also, the missile flights can be done over the

23 broad open waters of the Gulf, which greatly enhances

24 safety.

25 Eglin Air Force Base has existing radar,

1 optical and other sensor systems to conduct its

2 current mission. These types of instrumentation

3 systems are expensive to develop from the ground up.

4 By enhancing an existing range, like Eglin's, we can

5 save millions in taxpayer dollars.

6 To determine if an interceptor works, you have

7 to test it against a target. Some interceptors are

8 ground-based and some are sea-based. The Eglin Gulf

9 Test Range would provide flexibility to test either

10 type of system.

11 I will describe the preferred alternatives

12 first. For the Eglin Gulf Test Range to be enhanced

13 for use as a Theater Missile Defense Test and Training

14 Range, launching options for both interceptor missiles

15 and target missiles would have to be selected.

16 Although no final decisions will be made until

17 the record of decision is reached. The Director of

18 the Ballistic Missile Defense Organization indicated

19 last November that these are the alternatives they

20 would prefer to use over the other alternatives

21 considered. After that, I will describe the other

22 alternatives considered. These alternatives are shown

23 in the handout you should have received when you

24 arrived.

25 Since the interceptors are the actual things

Exhibit 5.3-1: Reproductions of Transcript Comments (Continued)

1 being tested, I will start with them. Interceptors
2 could be ground-based here on Eglin Air Force Base, at
3 Santa Rosa Island or Cape San Blas.
4 Interceptors could also be ship-based in the
5 open Gulf, within the military airspace.
6 We are also considering the potential launch
7 target missiles from ground-based locations at Santa
8 Rosa Island and Cape San Blas. The air-drop has also
9 being considered. Air-drop is a term that the
10 Ballistic Missile Defense Organization is using to
11 describe short-ranged air-launched targets. These
12 targets are restrictive to ranges of up to six hundred
13 kilometers, approximately three hundred and
14 eighty-five miles by treaties.
15 Finally, all the interceptors would take place
16 over the Gulf of Mexico. This ensures the debris can
17 be contained over the water, which is one of our
18 safety criteria.
19 This is a diagram of how the proposed air-drop
20 target would work. The missile is pulled out of the
21 back of an airplane on a sled by a parachute. After
22 is clears the airplane, the missile and sled
23 separate. There's another parachute attached to the
24 missile. After the missile rights itself, the
25 parachute is released and the missile is launched.

1 Even though the Director of the Ballistic
2 Missile Defense Organization defined his preferred
3 alternative, we are required by the National
4 Environmental Policy Act of 1969 to consider all
5 reasonable alternatives to this preferred
6 alternative. These are considerations in the
7 Supplemental and Environmental Impact Statement in the
8 category "Other Alternatives Considered."
9 These other alternatives could be selected if
10 there were a great national need to provided a
11 specific test capability. This national need could be
12 due to technical, environmental or other national
13 policy considerations. The Director of the Ballistic
14 Missile Defense Organization would make a decision on
15 whether or not to use these alternatives.
16 Again, starting with the interceptor
17 alternatives, we are considering launching interceptor
18 missiles from platforms off the coast at either Santa
19 Rosa Island or Cape San Blas. These platforms would
20 allow intercepts closer to the launching point of the
21 interceptor missile. This would still keep the
22 missile and interceptor debris offshore and provide
23 the required safety margins for the personnel and
24 equipment directly involved in the test.
25 There are treaty restrictions against launching

1 ballistic missiles from sea-based platforms that are
2 tethered to the sea floor. This prevents us from
3 considering launching target missiles from platforms.
4 Also, in the other alternatives considered
5 category are land-launched targets from the Florida
6 Keys.
7 There are two Keys under consideration, Cudjoe
8 Key and Saddlebunch Keys, only one of which would be
9 chosen if this alternative were to become necessary.
10 Our sea-based target option was the reason the
11 Eglin Gulf Coast Test Range was not selected in the
12 earlier SEIS. The Army is now developing the
13 capabilities to launch target missiles from a ship.
14 This alternative is limited to less than three hundred
15 and seventy-five miles, just like current limits on
16 the air-launched capability.
17 The Director of the Ballistic Missile Defense
18 Organization also has the option of selecting the
19 no-action alternative. In fact, the National
20 Environmental Policy Act of 1969 requires the decision
21 maker to consider the impacts should the proposed
22 actions not take place.
23 For the Eglin Gulf Test Range, the no-action
24 alternative describes the environmental impacts of the
25 proposed action to enhance the Eglin Gulf Test Range

1 for theater missile defense testing is not
2 implemented.
3 Our baseline was to analyze the maximum impacts
4 possible. In developing the baseline for evaluation
5 in the SEIS, we used the Patriot as the baseline
6 interceptor. In all cases, the analysts used the best
7 available data for the analysis.
8 The team used the Hera target missile as the
9 typical target missile. This is because it is the
10 biggest target missile considered. Although we assume
11 the highest number of launches proposed at each site,
12 the actual number of launches would be considerably
13 less. The combined potential impacts from the Hera
14 are greater than those of the proposed interceptors.
15 At Santa Rosa Island and Cape San Blas, where both
16 interceptors and targets are proposed, we used the
17 Hera as a baseline.
18 These are the fourteen resource areas the team
19 evaluated for each alternative. The potential impacts
20 are outlined in your handout.
21 Many of the potential impacts are similar at
22 each site. First, I will discuss the impacts that are
23 common to each site. Then, I will describe those that
24 are unique to each proposed location. However, before
25 I can discuss any potential impacts, I need to show

1 you the launch hazard areas that would be established
2 for each alternative location.

3 These launch hazard areas define the regions of
4 influence the team analyzed at each site.

5 The purpose of the launch hazard area is to

6 insure that nobody is inside the area that could be
7 affected should the missile self-destruct or the range
8 safety officer needs to terminate the missile flight.

9 When the range safety officer develops a launch
10 hazard area, he's uses a computer model. This model
11 predicts where the debris from an errant missile would

12 go should it be destroyed. He also considers the
13 effects of wind. Finally, the range safety officer

14 determines if there are protected areas, such as
15 private property within the launched hazard area. If

16 so, he establishes wind restrictions to prevent this
17 debris from falling on these protected areas. This is
18 why the launch hazard areas are different shapes and
19 sizes at each location.

20 The launch hazard area for a Hera target

21 missile is 6500 feet without any wind effects. Once
22 the effects of wind are considered the launch hazard
23 area is expanded to incorporate any additional safety
24 area.

25 Here at Santa Rosa Island the launch hazard

1 area would extend into Santa Rosa Sound and it
2 encompasses this portion of the island.

3 At Cape San Blas, the launch hazard area would
4 go back into St. Joseph Bay and extend over State Road
5 30-E.

6 At Cudjoe Key, it encompasses the Northwest
7 section of the Key. It is primarily over the waters

8 of the National Marine Sanctuary and the Great White
9 Heron National Wildlife Refuge. This extends out to
10 the airspace scheduled by Naval Air Station Key West.

11 The launch hazard area crosses Blimp Road.

12 The launch hazard area at Saddlebunch Keys is
13 similar to that at Cudjoe Key. It is primarily over

14 the National Marine Sanctuary and the Great White
15 Heron National Wildlife Refuge. Since the Key is

16 primarily military property north of Highway 1, the
17 launch hazard area would include that entire area.

18 Now, I will discuss the common potential

19 impact. The first resource area I will discuss is Air
20 Quality. Air Quality impacts would be similar at all
21 proposed locations.

22 The primary emissions from a missile launch are
23 shown here. The primary emissions of concern are:

24 aluminum oxide, carbon monoxide, and hydrogen
25 chloride.

1 All of these emissions are within the standard
2 established by the Environmental Protection Agency and
3 the National Ambient Air Quality Standards.
4 We just discussed air quality. We are not
5 proposing any additional airspace restrictions, so
6 there are no impacts to the air resource area.
7 The noise of a launch could startle birds and
8 other wildlife. However, experience at Cape Canaveral
9 shows that after an initial flushing, where the birds
10 fly around, they return to their nests within a few
11 minutes. There are also location specific biological
12 resources potential impacts, which I will discuss in a
13 few minutes.
14 Potential impacts to cultural resources are
15 site specific.
16 In the areas nearest to a launch facility, any
17 hydrogen chloride that settles to the ground may
18 result in an increase in surface soils acidity.
19 Increases in soil acidity would be temporary and would
20 be diluted and buffered by rainfall.
21 The amount of aluminum oxide settling on the
22 ground would not result in a substantial change in
23 soil fertility or be in concentrations toxic to the
24 growth of existing plants and microorganisms.
25 The hazardous waste that would be produced by

1 this program consists primarily of solvent soaked
2 cleaning rags. The amount generated easily fits
3 within the current capacity for Eglin Air Force Base
4 and Naval Air Station Key West.
5 For land and water use, the launch hazard area
6 would be cleared of people and private vehicles up to
7 four hours on launch day. This would restrict access
8 to the land and water areas within the launch hazard
9 area.
10 This includes the waters offshore, which would
11 also be cleared of boats for up to four hours.
12 The peak noise at the edge of the launch hazard
13 area is predicted to be 107 decibels. This is similar
14 to a 747 flying overhead at a thousand feet. However,
15 this would only be a momentary sound. The continuous
16 sound level is predicted to be 86.3 decibels for
17 forty-five seconds. This is similar to a portable
18 hair dryer held one foot away. Both of these are
19 within the Occupational Safety and Health
20 Administration exposure limit for 115 decibels for
21 fifteen minutes. So there would be no health related
22 sound exposures outside of the launch hazard area.
23 Should launches occur before 7:00 a.m. it is
24 anticipated that some people may be awoken by the
25 launch noise.

1 Safety is primarily defined by the launch
 2 hazard areas. The policy of the Air Force Development
 3 Test Center is that the general public will not have
 4 any additional risk due to test activities than they
 5 would experience in everyday life.
 6 The potential impacts to socioeconomics are
 7 similar to those for land and water use, as the launch
 8 hazard area would also have to be cleared of
 9 commercial activities. This clearance would occur up
 10 to four hours on launch days.
 11 Each Hera target missile launch could result in
 12 over \$100,000 in personnel peridium. Each interceptor
 13 missile launch could result in nearly \$150,000 in
 14 peridium expenditures.
 15 The potential impacts to transportation are
 16 location specific.
 17 The utilities currently available at each
 18 location are sufficient to handle the requirements of
 19 the proposed program. However, bottled water and
 20 portable toilets may be used to reduce any impact on
 21 these resources.
 22 Each of the proposed sites has historically
 23 been used for military purposes. The visual
 24 aesthetics of the proposed facilities would be
 25 consistent with the existing facilities.

1 Temporary small increases in water acidity and
 2 surface water acidity may occur. The amounts of time
 3 for these to dilute depends on the water movement and
 4 activities. The amount of acid created is not
 5 expected to be harmful to wildlife.
 6 I will now discuss the potential impacts for
 7 each proposed site.
 8 The facilities on Santa Rosa Island site A-15
 9 are potentially eligible for listing on the National
 10 Register of Historic Places. This is due to the
 11 Bomarc missile testing that occurred there from 1959
 12 until 1985. These are concerned Cold War-era
 13 facilities. The potential impact would be the
 14 modification of these facilities from their original
 15 intent.
 16 The Florida Department of Transportation
 17 estimates US 98 will be over capacity by 2005.
 18 These are the current average daily traffic
 19 counts. This is the current capacity of US 98. As
 20 you can see, some of the sections are already over
 21 capacity. This is estimated traffic in the year 2005.
 22 The additional amount of traffic due to the
 23 proposed testing adds very little traffic to this
 24 total. The project traffic is primarily rental
 25 vehicles used by the engineers and technicians in

Exhibit 5.3-1: Reproductions of Transcript Comments (Continued)

1 preparing the missiles for launch.

2 A line-of-sight corridor 5,500 feet long and 40

3 feet wide is needed to range safety instrumentation

4 currently planned for Hera target launches. This

5 would pass within seventy-five feet of a bald eagle's

6 nest. This violates the US Fish and Wildlife Service

7 primary protection zone of four hundred and fifty

8 meters, which is approximately 1,475 feet.

9 Cape San Blas has the highest sea turtle

10 nesting density in Northwest Florida, approximately

11 15.3 nests per mile. Since a lot of the launch

12 preparations would occur during the night prior to

13 a launch, sea turtles could be adversely affected

14 during the nesting and hatching seasons.

15 The launch facilities to support a Hera target

16 launch site would cause the permanent loss of 1.62

17 acres of wetland habitat that is used by a variety of

18 birds.

19 Hera target missile launches could cause

20 short-term noise effects of 124 decibels in the area

21 of the lighthouse and keeper's quarters. These

22 historic facilities are inside the launch hazard area.

23 This has the potential to damage the lighthouse lens

24 and the keeper's quarters.

25 State Road 30-E would have to be closed on each

1 side of the launch hazard area approximately one hour

2 prior to the launch. This is a standard practice that

3 we have used for other missile launches from Cape San

4 Blas. Emergency vehicles would be allowed access.

5 Traffic would be increased by forty percent on

6 State Road 30-E during the last couple of weeks

7 leading up to a launch. This represents a total of

8 less than 2,000 vehicles projected for the year 2005,

9 which is well within the total capacity State Road

10 30-E of 9,200 daily vehicles.

11 The proposed launch site on Saddlebunch Keys

12 would disturb up to 2.23 acres of wetlands. There

13 would be no additional wetlands disturbed at Cudjoe

14 Key.

15 There is a potential that vegetation near the

16 launch site would be singed. However, at the Hera

17 launch from Fort Wingate last November, snow twenty

18 feet from the launch site was not melted.

19 The Florida Game and Freshwater Fish Commission

20 performed a survey at Cudjoe Key last spring to try to

21 determine the silver rice rat population. The silver

22 rice rat is on the listing as an endangered species.

23 No silver rice rats were captured after one week of

24 trapping.

25 The Cudjoe Key aerostat facilities are

1 potentially eligible for listing on the National
 2 Register of Historic Places. These facilities may be
 3 eligible because they are considered Cold War-era
 4 facilities. The potential impact would be
 5 modifications of these facilities from their original
 6 intent.
 7 If the Cudjoe Key alternative were to be
 8 selected, Blimp Road would be closed at Asturis Road.
 9 This would not restrict access to or from Cudjoe
 10 Acres.
 11 The Florida Department of Transportation
 12 estimates that Highway 1 would be over capacity by
 13 2005.
 14 These are the average daily traffic counts.
 15 This is a current capacity of Highway 1, and this is
 16 the estimated traffic by 2005.
 17 The additional amount of traffic due to the
 18 proposed testing adds very little traffic to this
 19 total. The project traffic is primarily rental
 20 vehicles used by engineers and technicians preparing
 21 the missiles for launch.
 22 Some of the launches, all of the missile
 23 flights and the interceptors would occur over the Gulf
 24 of Mexico. These are some of the potential impacts
 25 for the Gulf. The existing airspace warning areas

1 would be closed to aircraft for a period of up to four
 2 hours. This would result in rerouting commercial
 3 aircraft around these warning areas, a standard
 4 procedure used today.
 5 The effects of sonic booms on marine mammals is
 6 not very well understood. There may be sonic booms
 7 penetrating the water's surface. We are investigating
 8 the impact to marine mammals with the National Marine
 9 Fisheries Service.
 10 In addition to the airspace, portions of some
 11 of the shipping lanes in the Gulf and intercoastal
 12 waterway would be cleared for short periods.
 13 The Federal agencies listed here have reviewed
 14 earlier drafts of the SEIS. They have provided
 15 comments to us to aid in our preparation of the draft
 16 SEIS. This draft was mailed to the public in
 17 February.
 18 We will continue to consult with the federal
 19 agencies as well as the state agencies listed here.
 20 Should any regulatory permits be required, these are
 21 the agencies that would issue those permits.
 22 The next steps for the SEIS are shown here.
 23 First and most important, we need your comments on the
 24 SEIS. To insure your comments are incorporated in the
 25 final SEIS, we need to receive them by April 3rd.

1 chance to comment.

2 To aid you in knowing when four minutes are up,

3 when three minutes have passed, I will put up one

4 finger like this and you will know that you have one

5 minute to go. And when your four minutes is up, I

6 will put up my hand like this indicating it's time to

7 end your comments. We greatly appreciate your

8 understanding and cooperation in observing that

9 limit.

10 Also, again, keep in mind that oral comments

11 are only one way to show your thoughts and concerns

12 regarding the SEIS, and you can also hand in or send

13 in written comments by April 3rd and they will be

14 given the same consideration as oral comments offered

15 here tonight.

16 With that, I would like to call Tom Traczyk to

17 offer his comments.

18 MR. TRACZYK: My name is Tom Traczyk. I am a

19 retired civil service employee, and I have some

20 comments and suggestions regarding your selection of

21 target missiles. Back into the 1970s and early '80s a

22 target missile developed at Eglin Air Force Base

23 called the high altitude supersonic target duty with

24 advanced development, subsequently called the fire

25 bolt, detonated A2M818 full scale development. And

1 These comments will be addressed in the final SEIS.

2 The final SEIS should be completed sometime

3 this fall. We are hoping to complete it by September.

4 The Director of the Ballistic Missile Defense

5 Organization would make a record of decision no

6 earlier than thirty days after the final SEIS is

7 completed.

8 That's all I have tonight. Thank you for your

9 interest and concerns with this important national

10 defense project.

11 MR. MICHAELSON: Thank you, Major Kennedy. We

12 are now going to take a five minute break to set up

13 the podium and collect the speaker cards. So if you

14 will just bear with us for five minutes, we will be

15 ready to go.

16 (Whereupon, a short break was taken.)

17 MR. MICHAELSON: We are ready to start calling

18 the names of those who have signed up to speak. At

19 this point I have a single individual. I do want to

20 mention that we are going to ask you to come up to the

21 podium and speak clearly into it and give us your

22 name, if you would, for the court reporter. We also

23 have a time limit for oral comments that we are using

24 at all the locations at all the places that we will be

25 holding these and to give everyone a fair and equal

Exhibit 5.3-1: Reproductions of Transcript Comments (Continued)

P-T-0001 COMMENT NUMBER

1 Eglin back in, I think, 1983. So I think it would be
2 worthwhile to pursue looking at that for an
3 alternative. Thank you.
4 MR. MICHAELSON: Is there anyone who would like
5 to offer their comment tonight? If that's it, then we
6 appreciate very much you coming tonight. As we say,
7 we have three more of these. Many of you may have
8 decided that you want to take some more time to think
9 about this, and read up on it some more. We do
10 strongly encourage you to develop any written comments
11 that you would like to make and you could send them to
12 us. With that, we will adjourn the meeting at 7:44
13 p.m.
14 (Whereupon, the hearing was concluded)
15 *****
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P-T-0001 COMMENT NUMBER

1 that missile was basically built up at Eglin, loaded
2 on an aircraft and flown down range to the long range
3 missions south of Tampa where the aircraft would turn
4 inbound and launch the missile much on the same
5 profile that you showed on your chart.
6 The missile was rocket powered and its
7 acceleration cruise conditions, which basically ranged
8 from forty thousand to a hundred thousand feet, mock
9 1.2 mock 4. And that was off the coast of Eglin. It
10 was recoverable by parachute and reusable.
11 Now, this system underwent development testing
12 of an evaluation and IOT here at Eglin and did not go
13 into production because at the time the Air Force said
14 that the requirement was soft. But I think this
15 system, from what I've seen will fulfill your
16 requirements and my recommendation to you is twofold.
17 First of all, you look into the fire bold
18 characteristics to see if, indeed, it will meet your
19 requirements.
20 And secondly, if so, look into the feasibility
21 of dusting it off and going into a limited
22 production. That system was used to test the Navy
23 AEGIS shipboard defense system and the Phoenix system
24 here at Eglin, using development target missiles, and
25 it also set the altitude and speed record here at

Exhibit 5.3-1: Reproductions of Transcript Comments (Continued)

P-T-0001
COMMENT NUMBER

1 CERTIFICATE OF REPORTER

2

3

4 STATE OF FLORIDA

5 COUNTY OF ESCAMBIA

6

7 I, RUTH YURCHAK, Court Reporter, certify that I

8 was authorized to and did stenographically report the

9 hearing, that a review of the transcript is a true and

10 complete record of my stenographic notes.

11 I further certify that I am not a relative,

12 employee, attorney, or counsel of any of the parties, nor

13 am I a relative or employee of any of the parties' attorney

14 of counsel connected with the action.

15

16 Dated this 3rd of March, 1998.

17

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25


RUTH L. YURCHAK, Court Reporter
 Notary Public- State Of Florida
 My Commission expires: April 2, 2001

1 BALLISTIC MISSILE DEFENSE ORGANIZATION
 2 EGLIN AIR FORCE BASE
 3 AIR FORCE DEVELOPMENT TEST CENTER
 4 U.S. ARMY SPACE AND STRATEGIC
 5 DEFENSE COMMAND
 6 MARCH 10, 1998
 7 IN RE: Port St. Joe, Cape Can Blas
 8 Scoping meeting held March 10, 1998 commencing at
 9 approximately 6:00 p.m. EST, at Port St. Joe High School,
 10 Port St. Joe, Florida.
 11 APPEARANCES
 12 Mr. Lewis Michaelson
 13 Ballistic Missile Defense Organization
 14 Major Tom Kennedy
 15 Theater Missile Defense Test Manager
 16 46 OG/OGM-Eglin Air Force Base
 17 U.S. Air Force
 18 Reported By: Kim Clark
 19
 20
 21
 22 Gulf Bay Reporting
 23 P.O. Box 2131
 24 Panama City, Florida 32402
 25 (904) 769-4853
 1-800-761-4853

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1 PUBLIC HEARING

2 MARCH 10, 1998

3 PORT ST. JOE, FLORIDA

4 MR. MICHAELSON: Good evening and welcome to
5 tonight's public hearing on the Eglin Gulf Test Range

6 Supplemental Environmental Impact Statement. My name is
7 Lewis Michaelson and I have been asked by the Ballistic

8 Missile Defense Organization to moderate tonight's meeting.

9 Before I go over tonight's agenda and ground rules, I would
10 like to take the opportunity to introduce you to the

11 Government representatives who are here with us tonight.

12 Representing the Air Force Developmental Test Center

13 at Eglin Air Force Base is Major Tom Kennedy. And as the

14 Theater Missile Defense Test Manager, Major Kennedy has the

15 responsibility for preparing the Supplemental Environmental

16 Impact Statement. And from the Ballistic Missile Defense

17 Organization we have Lt. Colonel Rick Lehner. I should

18 also mention that in the audience we Colonel Jim Heald who

19 is the Commander of the 46th Test Wing Operations Group at

20 Eglin.

21 To start the meeting I would like to briefly outline

22 the purpose of the meeting and to go over the agenda so

23 you'll know what to expect as we proceed.

24 Just over a year ago, I'm sure some of you will

25 remember the Ballistic Missile Defense Organization and the

1 Air Force held scoping meetings here and in the Keys. I

2 recognize a couple of faces from when we did those scoping
3 meetings.

4 The purpose of those meetings was to obtain your
5 comments on the environmental issues you believe should be

6 examined in the Supplemental Environmental Impact

7 Statement. Scoping comments from the public and agencies

8 were then used in the preparation of the draft

9 Environmental Impact Statement which is the subject of

10 tonight's hearing. Tonight's hearing, then, has three

11 essential purposes.

12 The first is to describe to you the nature of the

13 program that is being examined in the Environmental Impact

14 Statement, again, in this case, the Theater Missile Defense

15 Extended Test Range proposal.

16 The second purpose is to briefly describe the

17 Environmental Impact Statement process and the findings in

18 the draft Supplemental Environmental Impact Statement or

19 SEIS as it is known by its initials.

20 The third and primary purpose is to be here and to

21 listen to your concerns and comments on the draft SEIS.

22 Your comments tonight will then be used in the preparation

23 of the final SEIS.

24 I would like to go over the agenda now. From 6:00 to

25 7 o'clock I know many of you took advantage of the

1 opportunity to talk to the various experts that we have
2 here from the Ballistic Missile Defense Organization and
3 the Air Force and associated staff and hopefully they were
4 able to answer some of the questions you may have had about
5 the proposed action in the EIS process.
6 The agenda, then, for the rest of the meeting is that
7 after I finish my introductory remarks, we'll have
8 presentation by Major Tom Kennedy who will provide a brief
9 description of the Theater Missile Defense Extended Range
10 Test followed by an overview of the Environmental acts that
11 have been identified and assessed in the SEIS.
12 The last thing on the agenda, public comments, is
13 really the most important. Remember that the draft, SEIS,
14 is just that, a draft. So this is your opportunity to tell
15 the Ballistic Missile Defense Organization and the Air
16 Force how they could improve their analysis of potential
17 environmental impacts before the document is finalized and
18 before the decision is made on whether or not to proceed
19 with the proposed action.
20 A few administrative points on making comments. We
21 already have a couple of people who signed up, if you have
22 that's great. If not, and you'd like to speak tonight, if
23 you would please go to the registration table and please
24 fill out one of these cards. It simply makes the process
25 run more smoothly. Everyone will have four minutes to

1 speak. And by the way Air Force has a court reporter here
2 tonight to make a verbatim transcript of this hearing so
3 that all of your oral comments will be recorded accurately.
4 As a part of preparing that transcript an audio recording
5 is being made as well.
6 You may also make your comments in writing and there
7 are four ways to do that. You may hand in written comments
8 that you brought with you tonight, to me or to the
9 registration table. You can also use the written comment
10 sheets that were available at the registration table and
11 leave them here with us tonight if you want to save
12 yourself the 32 cents.
13 The other way, of course, is to mail them in, and you
14 can do that by any way that you see fit, use the written
15 comment sheets or any other way that works for you. Or you
16 may e-mail your comments to the Air Force at
17 T&V@Eglin.AF.MIL. And those addresses appear on this
18 handout that you received when you came in tonight so you
19 don't have to write them down right now.
20 Whichever option you choose in terms of writing and
21 sending in written comments, we ask that you please send
22 them in by April 3rd, which is the closing date of the
23 comment period, and remember that written comments are
24 given the same consideration as oral comments offered here
25 tonight.

1 Finally, to receive the final SEIS, if you want to
2 receive that, there are several ways that you can do that.
3 One is that if you already received the draft SEIS you are
4 already on the list and will receive the final. Second, if
5 you speak tonight and provide us with your name and address
6 or by written comment with your name and address you will
7 be added to the list.
8 Finally if you aren't on either one of those
9 conditions but would, there is a card that you can fill
10 out. Again, it's at the registration table. It's this
11 yellow card, and you can check the box either to receive
12 the full, final SEIS or to receive an Executive Summary,
13 which is a shortened version of that.
14 Also, copies of the SEIS will be placed in the
15 information repositories which are listed on the STAT sheet
16 and--in case you want to look at it but you don't want to
17 receive the entire document.
18 Finally, it's important for you to understand that the
19 Ballistic Missile Defense Organization and the Air Force
20 representatives are not here tonight to make any decisions.
21 Their role is to take the results of the public comment
22 process including the comments received at this hearing and
23 to make sure that they are considered in the preparation of
24 the final SEIS. Their main purpose in being here tonight
25 is to listen to your suggestions and concerns firsthand.

1 With that we will now hear Major Kennedy's presentation.
2 MAJOR KENNEDY: Good evening. I am Major Tom
3 Kennedy. I work for Colonel Shackelford in 46th Test Wing.
4 We are representing Major General Michael Kostelnik, the
5 commander of the Air Force Development Test Center at Eglin
6 Air Force Base. My job is to determine if it is feasible
7 to test theater missile defense systems within the Eglin
8 Gulf Test Range.
9 The National Environmental Policy Act of 1969 requires
10 Federal decision makers consider the impacts on the
11 environment along with safety, cost, schedule and technical
12 requirements. One of the first steps in doing this is the
13 preparation of an Environmental Impact Statement.
14 The purpose of this presentation is to describe the
15 Supplemental Environmental Impact Statement. For
16 simplicity, I will refer to this document as the SEIS.
17 First I will describe the proposed action our team
18 evaluated in the SEIS. Then I will describe the findings
19 in the SEIS.
20 The proposed action is to enhance the Eglin Gulf Test
21 Range to test theater missile defense systems against
22 target missiles with ranges up to 1,100 kilometers or
23 approximately 685 miles.
24 There are two primary organizations involved with the
25 SEIS. The Ballistic Missile Defense Organization is a

1 Department of Defense level organization that was
2 established by Congress. They are responsible for
3 developing and managing the development and acquisition of
4 missile defense systems for all services. As such, they
5 are the proponent for this action. This means the director
6 of the Ballistic Missile Defense Organization will make the
7 decision on whether or not to select any of the
8 alternatives in the Eglin Gulf Test Range. The Ballistic
9 Missile Defense Organization asked the Air Force
10 Development Test Center to lead the steps required to
11 develop test capabilities here. That is why we are writing
12 the SEIS for them.

13 This SEIS supplements two earlier Environmental Impact
14 Statements. In 1993 the Ballistic Missile Defense
15 Organization completed the Theater Missile Defense
16 Programmatic Environmental Impact Statement. This is a
17 broad EIS that considered the general environmental impacts
18 of developing theater missile defense systems. It is the
19 baseline for location specific EIS's.

20 The Theater Missile Defense Extended Test Range EIS,
21 completed in 1994, considered the impacts of theater
22 missile defense testing at four ranges: White Sands
23 Missile Range in New Mexico, the Western Test Range off of
24 California, the Eglin Gulf Test Range, and Kwajalein
25 Missile Range in the Western Pacific.

1 At that time, White Sands and Kwajalein were selected
2 as theater missile defense extended test ranges. The Eglin
3 Gulf Test Range was not selected because of the difficulty
4 and cost of providing a sea-launched target, the only
5 option considered at that time. This SEIS supplements the
6 1994 Extended Test Range EIS.

7 Eglin Air Force Base, Key West Naval Air Station, and
8 Pensacola Naval Air Station regularly use vast amounts of
9 airspace over the Eastern Gulf of Mexico. This blue line
10 defines the area that Eglin Air Force Base has scheduling
11 responsibilities for. While this is the area scheduled by
12 Naval Air Station Key West.

13 There is no other location within the Continental
14 United States that combines so much available military
15 airspace with low population density. The large size of
16 the Eglin Gulf Test Range makes it ideal for performing
17 tests that cover long distances, such as theater missile
18 defense testing. Also, the missile flights can be done
19 over the broad, open waters of the Gulf which greatly
20 enhances safety.

21 Eglin Air Force Base has existing radar, optical and
22 other sensor systems to conduct its current missions.
23 These types of instrumentation systems are expensive to
24 develop from the ground up. By enhancing an existing range
25 like Eglin, we can save millions in taxpayer dollars.

1 To determine if an interceptor works you have to test it
2 against a target. Some interceptors are ground based and
3 some are sea based. The Eglin Gulf Test Range would
4 provide the flexibility to test either type of system.
5 I will describe the preferred alternatives first. For
6 the Eglin Gulf Test Range to be enhanced for use as a
7 Theater Missile defense test and training range launching
8 options for both interceptor missiles and target missiles
9 would have to be selected. Although no final decisions
10 will be made until the Record of Decision is reached, the
11 director of the Ballistic Missile Defense Organization
12 indicated last November that these are the alternatives he
13 would prefer to use over the other alternatives considered.
14 After that, I will describe the other alternatives
15 considered. These alternatives are shown in the handout
16 you should have received when you arrived.
17 Since the interceptors are the actual things being
18 tested, I will start with them. Interceptors could be
19 ground-based here on Eglin Air Force Base properties on
20 Santa Rosa Island and Cape San Blas. Interceptors could
21 also be sea based out in the open waters of the Gulf.
22 I will now discuss the target methods used. Air Drop
23 is the term the Ballistic Missile Defense Organization has
24 termed for short-range air-launched targets. These
25 air-launched targets are restricted to less than 600

1 kilometers by treaty implications. The air drop target
2 will be launched over the open Gulf within the existing air
3 space. Targets could also be now launched from Santa Rosa
4 Island or Cape San Blas. All the intercepts and debris
5 would be contained within the Gulf of Mexico.
6 This is a diagram of how the proposed air-drop target
7 would work. The missile is pulled out of the back of the
8 airplane using a parachute. It is on a sled. The sled and
9 the missile separate. The missile has its own parachutes.
10 Once it rights itself the parachutes are released and the
11 missile is launched towards the landing area.
12 Even though the director of the Ballistic Missile
13 Defense Organization defined his preferred alternative, we
14 are required by the National Environmental Policy Act of
15 1969 to consider all reasonable alternatives to this
16 preferred alternative. These are considered in the
17 Supplemental Environmental Impact Statement in the
18 category, Other Alternatives Considered.
19 These other alternatives could be selected if there
20 were a great national need to provide a specific test
21 capability. This national need could be due to technical,
22 environmental, or other national policy considerations.
23 The director of the Ballistic Missile Defense Organization
24 would make the decision on whether or not to use these
25 alternatives.

1 Again, starting with the interceptor alternatives, we
2 are considering launching interceptor missiles from
3 platforms off of the coast at either Santa Rosa Island or
4 Cape San Blas. These platforms would allow intercepts
5 closer to the launching point of the interceptor missile.
6 This would still keep the missile and intercept debris
7 off-shore and provide the required safety margins for the
8 personnel and equipment directly involved in the test.
9 There are treaty restrictions against launching
10 ballistic missiles from sea-based platforms that are
11 tethered to the sea-floor. This prevents us from
12 considering launching target missiles from platforms.
13 Also in the other-alternatives-considered category are
14 land-launched targets from the Florida Keys. There are two
15 Keys under consideration, Cudjoe Key and Saddlebunch Keys,
16 only one of which would be chosen if this alternative were
17 to become necessary.
18 Although the sea-based target launch option was the
19 reason the Eglin Gulf Test Range was not selected in the
20 earlier EIS, the Army is now developing the capability to
21 launch target missiles from a ship. This alternative is
22 limited to less than 375 miles just like the current limits
23 on the air-launched capability.
24 The director of the Ballistic Missile Defense
25 Organization also has the option of selecting the No-action

1 alternative. In fact, the National Environmental Policy
2 Act of 1969 requires the decision maker to consider the
3 impacts should the proposed action not take place.
4 For the Eglin Gulf Test Range, the No-action
5 alternative describes the environmental impacts if the
6 proposed action to enhance the Eglin Gulf Test Range for
7 theater missile defense testing is not implemented.
8 Our baseline was selected to analyze the maximum
9 impacts possible. In developing the baseline for the EIS,
10 we used the PATRIOT as the baseline interceptor. In all
11 cases, the analysts used the best available data for the
12 analysis.
13 The team used the Hera target missile as the typical
14 target missile. This is because it is the biggest target
15 missile considered. Although we assumed the highest number
16 of launches proposed at each site, the actual number of
17 launches would be considerably less. The combined
18 potential impacts from the Hera are greater than those of
19 the proposed interceptors. At Santa Rosa Island and Cape
20 San Blas, where both interceptors and targets are proposed,
21 we used the Hera as a baseline.
22 These are the 14 resource areas the team evaluated for
23 each alternative. The potential impacts are outlined in
24 your handout. Many of the potential impacts are similar at
25 each site. First, I will describe the impacts that are

1 common to each site. Then I will describe those that are
2 unique at each proposed location. However, before I can
3 discuss any potential impacts, I need to show you the
4 launch hazard areas that would be established for each
5 alternative location. These launch hazard areas define the
6 regions of influence the team analyzed at each site.
7 The purpose of the launch hazard area is to ensure
8 that nobody is inside the areas that could be affected
9 should the missile self-destruct or the range safety
10 officer need to terminate the missile flight.
11 When the range safety officer develops a launch hazard
12 area, he uses a computer model. This model predicts where
13 the debris from an errant missile would go should it be
14 destroyed. He also considers the effect of wind. Finally,
15 the range safety officer determines if there are protected
16 areas, such as private property, within the launch hazard
17 area. If so, he establishes wind restrictions to prevent
18 this debris from falling on these protected areas. This is
19 why the launch hazard areas are different shapes and sizes
20 at each location.
21 The launch hazard area for a Hera target missile is
22 6500 feet without any wind. Once the effects of wind are
23 considered, the launch hazard area is expanded to
24 incorporate additional safety area. At Santa Rosa Island,
25 the launch hazard area would extend to Santa Rosa Sound and

1 encompass this portion of the island. Here at Cape San
2 Blas, the launch hazard area would go back into St. Joseph
3 Bay. It would extend over State Road 30E.
4 At Cudjoe Key, it encompasses the north west section
5 of the key. It is primarily over the waters of the
6 National Marine Sanctuary and the Great White Heron
7 National Wildlife Refuge. This extends out to the airspace
8 scheduled by Naval Air Station in Key West. The launch
9 hazard area crosses Blimp Road.
10 The launch hazard area at Saddlebunch Keys is similar
11 to that at Cudjoe Key. It is primarily over the waters of
12 the National Marine Sanctuary and the Great White Heron
13 National Wildlife Refuge. Since the key is primarily
14 military property north of Highway 1, the launch hazard
15 area would include that entire area.
16 Now I will discuss the common potential impacts. The
17 first resource area I will discuss is Air Quality. Air
18 Quality impacts would be similar at all proposed locations.
19 The primary emissions from a missile launch are shown here.
20 The primary emissions of concern are aluminum oxide, carbon
21 monoxide, and hydrogen chloride. All of these emissions
22 are within the standards established by the National
23 Ambient Air Quality Standards and the Environmental
24 Protection Agency. We just discussed Air Quality. We are
25 not proposing any additional airspace restrictions so there

1 are no impacts for this resource area.

2 Biological Resources: The noise of a launch could

3 startle birds and other wildlife. However, experience at

4 Cape Canaveral shows that after an initial flushing, where

5 the birds fly around, they return to their nests within a

6 few minutes. There are also location specific biological

7 resources potential impacts which I will discuss in a few

8 minutes. Potential impacts to Cultural resources are site

9 specific.

10 Geology and soil in areas nearest the launch

11 facility: Any hydrogen chloride that settles to the ground

12 may result in a temporary increase in surface soils

13 acidity. Increases in soil acidity would be temporary and

14 would be diluted and buffered by rainfall.

15 The amount of aluminum oxide settling on the ground

16 would not result in a substantial change in soil fertility

17 or be in concentrations toxic to the growth of existing

18 plants and microorganisms.

19 The hazardous waste that would be produced by this

20 program consists primarily of solvent soaked cleaning rags.

21 The amount generated easily fits within the current

22 capacity for Eglin Air Force Base and the Naval Air

23 Station, Key West.

24 For land and water use, the Launch Hazard Area would

25 be cleared of people and private vehicles up to four hours

1 on launch day. This would restrict access to the land and

2 water areas within the launch hazard area. This includes

3 the waters off-shore which would also be cleared of boats

4 for up to four hours.

5 The peak noise at the edge of the launch hazard area

6 is predicted to be 107 decibels. This is similar to a 747

7 flying overhead at 1000 feet. However, this would only be

8 a momentary sound. The continuous sound level is predicted

9 to be 86.3 decibels for 45 seconds. This is similar to a

10 portable hair dryer held one foot away. Both of these are

11 within the Occupational Safety and Health Administration

12 exposure limit of 115 decibels for 15 minutes. So there

13 would be no health-related sound exposures outside of the

14 launch hazard area. Should launches occur before 7:00

15 a.m., it is anticipated that some people may be awakened by

16 the launch noise.

17 Safety is primarily defined by the launch hazard

18 areas. The policy of the Air Force Development Test Center

19 is that the general public will not have any additional

20 risk due to test activities than they would experience in

21 everyday life.

22 The potential impacts to socioeconomics are similar to

23 those for land and water use as the launch hazard area

24 would also have to be cleared of commercial activities.

25 This clearance would occur up to four hours on launch day.

1 potential impact would be the modification of these
 2 facilities from their original intent.
 3 For transportation, the Florida Department of
 4 Transportation estimates US 98 will be over capacity by
 5 2005. These are the current average daily traffic counts.
 6 This is the current capacity of US 98. As you can see,
 7 some of these sections are already over capacity. This is
 8 the estimated traffic in the year 2005.
 9 The additional amount of traffic due to the proposed
 10 testing adds very little traffic to this total. The
 11 project traffic is primarily rental vehicles used by the
 12 engineers and technicians preparing the missiles for
 13 launch. This maximum traffic would only be for a couple
 14 days for each launch.
 15 At Cape San Blas, the potential impacts to biological
 16 resources are a corridor--a line-of-sight corridor, 5500
 17 feet long and 40 feet wide is needed for range safety
 18 instrumentation currently planned for Hera target launches.
 19 This would pass within 75 feet of a bald eagle's nest.
 20 This violates the US Fish and Wildlife Service primary
 21 protection zone of 450 meters, which is approximately 1475
 22 feet.
 23 Cape San Blas has the highest sea turtle nesting
 24 density in Northwest Florida - approximately 15.3 nests per
 25 mile. Since a lot of the launch preparations would occur

1 Each Hera target missile launch could result in over
 2 \$100,000 in personnel per diem. Each interceptor missile
 3 launch could result in nearly \$150,000 in per diem
 4 expenses. The potential impacts to transportation are
 5 location specific.
 6 The utilities currently available at each location are
 7 sufficient to handle the requirements of the proposed
 8 program. However, bottled water and portable toilets may
 9 be used to reduce any impact on these resources.
 10 Each of the proposed sites has historically been used
 11 for military purposes. The visual aesthetics of the
 12 proposed facilities would be consistent with the existing
 13 facilities.
 14 The Water Resources: Temporary small increases of
 15 surface water acidity may occur. The amount of time for
 16 these to dilute depends on water movement and activity.
 17 The amount of acid created is not expected to be harmful to
 18 wildlife.
 19 I will now discuss the potential impacts for each
 20 proposed site. On Santa Rosa Island these are the
 21 potential impacts to cultural resources. The facilities at
 22 site A-15 are potentially eligible for listing on the
 23 National Register of Historic Places. This is due to the
 24 BOMARC missile testing that occurred there from 1959 to
 25 1985. These are considered Cold-War era facilities. The

Exhibit 5.3-1: Reproductions of Transcript Comments (Continued)

1 during the night prior to a launch, sea turtles could be
2 adversely affected during the nesting and hatching seasons.
3 The launch facilities to support a Hera target launch site
4 would cause the permanent loss of 1.62 acres of wetland
5 habitat that is used by a variety of birds.
6 For cultural resources, Hera target missile launches
7 could cause short-term noise levels of 124 decibels in the
8 area of the lighthouse and the keeper's quarters. These
9 historic facilities are inside the launch hazard area.
10 This has the potential to damage the lighthouse lens and
11 the keeper's quarters.
12 Potential impacts to transportation: State Road 30E
13 would have to be closed on each side of the launch hazard
14 area approximately one hour prior to the launch. This is a
15 standard practice that we have used for other missile
16 launches from Cape San Blas. Emergency vehicles would be
17 allowed access.
18 Traffic would be increased by 40 percent on State Road
19 30E during the last couple of weeks leading up to a launch.
20 This represents a total of less than 2,000 vehicles
21 projected for the year 2005, which is well within the total
22 capacity of State Road 30E of 9,200 daily vehicles.
23 In the Keys, the potential impacts to biological
24 resources are the proposed launch site on Saddlebunch Keys
25 would disturb up to 2.23 acres of wetlands. There would be

1 no additional wetlands disturbed at Cudjoe Key.
2 There is the potential that vegetation near the launch
3 site would be singed. However, at the Hera launch site at
4 Fort Wingate last November snow 20 feet from the launch
5 site was not melted.
6 The Florida Game and Freshwater Fish Commission
7 performed a survey at Cudjoe Key last spring to try to
8 determine the silver rice rat population. The Silver Rice
9 Rat is on the Federal listing as an endangered species. No
10 Silver Rice Rats were captured after one week of trapping.
11 The potential impacts to cultural resources are at
12 Cudjoe Key. The Cudjoe Key aerostat facilities are
13 potentially eligible for listing on the National Register
14 of Historic Places. These facilities may be eligible
15 because they are considered Cold War-era facilities. The
16 potential impact would be the modification of these
17 facilities from their original intent.
18 Potential transportation impacts: If the Cudjoe Key
19 alternative were to be selected, Blimp Road would be closed
20 at Asturius Road. This closure would last up to four hours
21 on launch day. This would not restrict access to or from
22 Cudjoe Acres.
23 The Florida Department of Transportation estimates
24 that Highway 1 will be over capacity by 2005.
25 These are the current average daily traffic counts.

1 This is the current capacity of Highway 1 and this is the
2 estimated traffic in the year 2005.
3 The additional amount of traffic due to the proposed
4 testing adds very little traffic to this total. Again, the
5 project traffic is primarily rental vehicles used by the
6 engineers and technicians preparing the missiles for
7 launch. This maximum traffic would only be for a couple of
8 days for each launch.
9 Some of the launches, all of the missile flights, and
10 the intercepts would occur over the Gulf of Mexico. These
11 are some of the potential impacts for the Gulf. In
12 airspace, the existing airspace warning areas would be
13 closed to aircraft for a period of up to four hours. This
14 would result in rerouting commercial aircraft around these
15 warning areas, a standard practice used today.
16 For biological resources, the effects of sonic booms
17 on marine mammals is not very well understood. There may
18 be sonic booms penetrating the water surface. We are
19 investigating the impact to marine mammals with the
20 National Marine Fisheries Service.
21 Potential transportation impacts in addition to the
22 airspace some portions of some of the shipping lanes in the
23 Gulf and Intracoastal waterway would be cleared for short
24 periods.
25 The Federal agencies listed here have reviewed earlier

1 (Recess taken.)
2 MR. MICHAELSON: Okay. We are--I'm going to call
3 the names of those of you have indicated you would like to
4 make comments tonight. I will call out, at this point, the
5 one name we have is Anne Harvey. I want you to know that
6 we had one person signed up. Maybe after she speaks
7 someone else will be inspired to come up here as well. I
8 notice that Ms. Harvey has lots of yellow stickies all over
9 her EIS. We're always happy to have someone who has read
10 the document to come up and speak to us.
11 In any case, make your comments slowly and accurately
12 we'll ask that you please speak into the microphone, please
13 state your name for the Court Reporter. We also request
14 that you observe the four minute time limit. To give
15 everyone a fair and equal chance to speak, we'll be using
16 that four minute limit at all of the hearings. And just to
17 make it real easy to know when your four minutes are up,
18 I'll put one finger up like this when you're three minutes
19 into it and give you a one minute left. And when your time
20 is up, I'll put my hand up like this indicating it's time
21 to wrap up your comments. And we greatly appreciate your
22 cooperation and understanding in observing that.
23 And also, keep in mind that oral comments are only one
24 way to share your thoughts and concerns with the Air Force
25 regarding the SEIS. You can also hand in written comments

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1 tonight or hand mail them or e-mail them by April 3rd,
2 1998. And as I mentioned, written comments will be given
3 the same consideration as all comments offered here
4 tonight. With that, Ms. Harvey.
5 MS. HARVEY: My name is Anne Harvey. I'm the
6 State Park Manager at St. Joseph Peninsula State Park at
7 the north end of St. Joseph Peninsula.
8 My comments are mainly in two different areas tonight.
9 One deals with the road closure--temporary road closure of
10 C30E during the launch tests. There doesn't appear to be
11 any provision for turn arounds on either side of the launch
12 hazard area.
13 The population that visits the State Park on an annual
14 basis consists primarily of residents outside of Gulf
15 County many of them are visiting the State Park. More than
16 50 percent visit the State Park for their first visit
17 coming from the area around Atlanta, Birmingham,
18 Montgomery, and they're unfamiliar with the roads in this
19 area. I feel that it would be beneficial if the Air Force
20 included in their proposal two turn around locations, one
21 on either side of the launch hazard area, so that large
22 rigs consisting of perhaps a 30-foot--34-foot motor home
23 with a tow vehicle would be able to turn around, retrace
24 their steps perhaps to the State Park and visit again there
25 for a few hours while the roads closed. Or maybe if they

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1 were coming from Apalachicola or Port St. Joe, they could
2 perhaps turn around and visit Salinas County Park for a
3 short time period while the road was closed rather than
4 bottleneaking at the C30 road. Since it's only 18 to 20
5 feet wide, it would not provide adequate turn around for a
6 rig of that size or for the people that are bringing their
7 boats in to go scalloping during scallop season. That's
8 one primary comment.
9 The other comment is that there was some discussion in
10 the geology and soil section on the erosion rates adjacent
11 to the target launch construction facility of a rate of--
12 average rate of about 11 meters per year. I believe that
13 the technical advisor committee that is now in place that's
14 been arranged between the Department of Environmental
15 Protection and DOT could look at the Stump Hole erosion
16 rates. That if you look at the erosion rates that are
17 being provided for them by private contractor on that
18 advisor committee, that you may find that the rates are
19 slightly higher than the rates that are listed in the SEIS.
20 There are some further comments that I will be making,
21 written comments. One involves the Rish Park. It is under
22 the direction, or operation rather, of the Department of
23 Children and Family Services not the Department of Health
24 and Rehabilitative Services. That department has been
25 renamed recently. And there are some other corrections,

06

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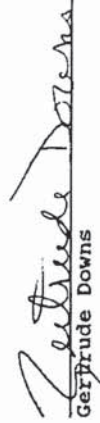
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1 more of a grammatical nature. Thank you.
2 MR. MICHAELSON: Thank you very much for taking
3 the time to review the document like that. Anyone else who
4 would like to speak tonight? If not, of course, many of
5 you may decide to take more time and take in all of this
6 and compose your thoughts in the written form. We very
7 much encourage you to do that. All the comments that we
8 receive are very helpful in the preparation of the final
9 SEIS.
10 Unless there are other closing comments we'll go ahead
11 and adjourn this evening. Due to the early hour, if there
12 are anymore questions that you want to ask of the technical
13 experts, we're going to have them go back to their stations
14 for a few minutes in case there is anything else based upon
15 the presentation you saw that maybe you'd like to have
16 clarified. With that, we will adjourn the meeting 7:45
17 p.m. Thank you very much.
18 (Meeting adjourned at 7:45, p.m. eastern standard
19 time.)

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1 STATE OF FLORIDA
2 COUNTY OF BAY
3
4 REPORTER'S CERTIFICATE
5 I, GERTRUDE DOWNS as agent for KIM CLARK, Court
6 Reporter, DO HEREBY CERTIFY that KIM CLARK was authorized
7 to, and did stenographically report the proceedings taken
8 in the aforesaid matter on March 10, 1998 and that the
9 transcript is a true and complete record of her
10 stenographic notes.
11 I FURTHER CERTIFY that she is not a relative,
12 employee, attorney, or counsel of the parties, nor is she a
13 relative or employee of any of the parties' attorney or
14 counsel connected with the action, nor is she financially
15 interested in the action.
16 DATED this 25th day of March, 1998.
17
18 
Gertrude Downs

Theater Missile Defense Extended Test Range
Supplemental Environmental Impact Statement
Eglin Gulf Test Range

Public Meeting

March 12, 1998
6:00 p.m.

Harvey Government Center, Key West, FL

FLORIDA KEYS REPORTING, INC.
91421 Overseas Highway
Tavernier, FL 33070
(305) 852-2153

1 MR. MICHAELSON: Good evening. If I could
2 have your attention, we're going to go ahead and
3 start it now. I should also mention to those of
4 you who are standing and would like to sit, there
5 are actually seats dotted throughout the seats
6 here, if you want to come up and grab those so you
7 don't have to stand during the meeting. Good
8 evening and welcome to tonight's public hearing on
9 the Eglin Gulf Test Range Supplemental
10 Environmental Impact Statement. My name is Lewis
11 Michaelson and I've been asked by the Ballistic
12 Missile Defense Organization to moderate tonight's
13 meeting.
14 Before I go over tonight's agenda and
15 ground rules, I would like to take this
16 opportunity to introduce you to the government
17 representatives who are here with us tonight.
18 Representing the Air Force Development Test Center
19 at Eglin Air Force Base is Major Tom Kennedy. As
20 the Theater Missile Defense Test Manager, Major
21 Kennedy has the responsibility for preparing the
22 supplemental and Environmental Impact Statement.
23 From the Ballistic Missile Defense Organization we
24 have Lieutenant Colonel Lehner. And also in the
25 audience I would like to introduce Colonel Jim

1 Heal, who is the commander of the 46th Test Wing
2 Operation.

3 To start the meeting I would like to take
4 a minute to briefly outline the purpose of
5 tonight's meeting and to go over the agenda so you
6 know what to expect as we proceed. As many of you
7 may remember, just over a year ago the Ballistic
8 missile Defense Organization and the Air Force
9 held scoping meetings here in the Keys and in
10 northern Florida on the Theater Missile Defense
11 Extended Test Range proposal. The purpose of
12 those scoping meetings was to obtain your comments
13 on the environmental issues you believe they
14 should examine in the supplemental and
15 environmental impact statement.

16 Those scoping comments from the public, as
17 well as from the agencies were then used in the
18 preparation of the Draft Supplemental
19 Environmental Impact Statement, which is the
20 subject of tonight's hearing.

21 Tonight's public hearing then has three
22 essential purposes. The first is to describe to
23 you the nature of the program that is being
24 examined in the Environmental Impact Statement.
25 The second is to briefly describe the

1 Environmental Impact Statement process and
2 findings in the Draft Supplemental Environmental
3 Impact Statement or SEIS as it is known by its
4 initials. The third and primary purpose is to
5 listen to your concerns and comments on the Draft
6 SEIS. Your oral comments tonight will then be
7 used in the preparation, along with any written
8 comments, in the preparation of the final SEIS.
9 I'd like to now go over the agenda. From
10 six o'clock to seven o'clock the Ballistic Missile
11 Defense Organization and Air Force representatives
12 were available to answer questions about the
13 proposed action and the environmental impact
14 assessment process. I know many of you took
15 advantage of that opportunity.
16 The agenda for the hearing then is as
17 follows: After I finish my introductory remarks
18 we will have a presentation by Major Tom Kennedy,
19 who will provide a brief description of the
20 Theater Missile Defense Extended Test Range
21 followed by an overview of the environmental
22 impacts that are identified and assessed in the
23 SEIS. The last item on the agenda, public
24 comments, is really the most important. Remember
25 that the draft SEIS is that, a draft. This is

1 your opportunity to tell the Ballistic Missile
2 Defense Organization and the Air Force how they
3 could improve their analysis of potential
4 environmental impacts before the document is
5 finalized and before a decision is made on whether
6 or not to proceed with the proposed action.
7 A few administrative points on making
8 comments tonight. If you've already signed up to
9 speak and I know many of you have, that's great.
10 If not and you would like to speak, please go to
11 the registration table and sign up on one of the
12 cards. Everyone is welcome to speak. That makes
13 the process run more smoothly, if we can call
14 people from a list. And again, everyone will have
15 four minutes to speak.
16 The Air Force tonight has a court reporter
17 here seated to my right. She is here to make a
18 verbatim transcript of this hearing, so that all
19 of your oral comments will be recorded accurately.
20 Therefore, it is important that when commentators
21 are speaking, that anyone in the audience refrain
22 from making any comments, so the court reporter
23 can hear and record the speaker's comments
24 accurately. And as a part of that preparing the
25 transcript, an audio recording of tonight's

1 hearing will be made as well. I should probably
2 also inform you, it's not at our direction, but
3 the county here as I understand also has cameras
4 and is videotaping the proceedings so that it can
5 be broadcast at a later time.
6 As far as written comments go, you may
7 wish to do that and there are actually four ways.
8 If you want to, you may have brought written
9 comments with you tonight, several people have
10 already handed those in to us. We are very happy
11 to take those. There are also written comment
12 sheets that look like this. You are welcome to
13 fill those out and hand those in tonight. They
14 will be part of the record. You may also mail
15 them in to the name and address that appears on
16 the back of this fax sheet that all of you should
17 have received when you came in. And the fourth
18 way that you can do it is that you can E mail
19 written comments TMD at Eglin dot af dot mil.
20 That address is also on the fax sheet and
21 whichever option you choose for sending in written
22 comments, please be advised that the deadline for
23 receiving them is April 3rd and that's the closing
24 date for the comment period. And keep in mind
25 also that written comments are given the same

Exhibit 5.3-1: Reproductions of Transcript Comments (Continued)

1 consideration as oral comments offered here
2 tonight.
3 Last piece of administrative business. If
4 you want to receive a copy of the final SEIS when
5 it becomes available, there are two ways to do
6 that. The first is if you receive the draft, that
7 means you're already on the list, you will
8 automatically receive a final unless you tell us
9 otherwise. Second of all, if you comment in
10 writing or orally and provide us with your name
11 and address, commentors will receive a copy of the
12 final SEIS. If you don't meet either one of those
13 conditions and would like to receive one, then
14 there is a yellow card that was at the
15 registration table. Please fill that out and
16 indicate you would like to receive a whole
17 document or the executive summary.
18 Finally, it is important for you to
19 understand that the Ballistic Missile Defense
20 Organization and Air Force representatives here
21 tonight are not here to make any decisions
22 tonight. Their role is to take the results of the
23 public comment process, including the comments
24 received at this hearing and make sure that they
25 are considered in the preparation of the final

1 SEIS. Their main purpose in being here tonight is
2 to listen to your suggestions and concerns
3 firsthand. With that, we will now begin with
4 Major Kennedy's presentation.
5 MAJOR KENNEDY: Good evening. I'm Major
6 Tom Kennedy. I work for Colonel Heal in the 46th
7 test plant. We're representing Major General
8 Michael Sehnick at Eglin Air Force Base. My job
9 is to determine if it's feasible to test missile
10 defense systems within the Eglin Gulf Test Range.
11 The National Environmental Policy Act of 1969
12 requires Federal decision makers consider the
13 impacts on the environment along with safety,
14 cost, schedule and technical requirements. One of
15 the first steps in doing this is the preparation
16 of an environmental impact statement.
17 The purpose of this presentation is to
18 describe the Supplemental Environmental Impact
19 Statement. For simplicity I'll refer to this
20 document as the SEIS. First I'll describe the
21 proposed action our team evaluated in the SEIS.
22 Then I will describe the findings in the SEIS.
23 The proposed action is to enhance the
24 Eglin Gulf Test Range to test theater missile
25 defense systems against target missiles with

Exhibit 5.3-1: Reproductions of Transcript Comments (Continued)

1 ranges up to 1100 kilometers or approximately 685
2 miles.
3 There are two primary organizations
4 involved with the SEIS. The Ballistic Missile
5 Defense Organization is a Department of Defense
6 level organization that was established by
7 Congress. They are responsible for developing and
8 managing the development and acquisition of
9 missile defense systems for all services.
10 As such, they are the proponent for this
11 action. This means the director of the Ballistic
12 Missile Defense Organization will make the
13 decision on whether or not to select any of the
14 alternatives in the Eglin Gulf Test Range. The
15 Ballistic Missile Defense Organization asked the
16 Air Force Development Test Center to lead the
17 steps required in developing test capabilities
18 here. That's why we're writing the SEIS for them.
19 This SEIS supplements two earlier
20 environmental impact statements. In 1993 the
21 Ballistic Missile Defense Organization completed
22 the Theater Missile Defense Programmatic
23 Environmental Impact Statement. This is a broad
24 EIS that considered the general environmental
25 impacts of developing theater missile defense

1 systems. It's the baseline for location specific
2 EIS's.
3 The Theater Missile Defense Extended Test
4 Range EIS, completed in 1994, considered the
5 impacts of theater missile defense testing at four
6 ranges; White Sands Missile Range in New Mexico,
7 the Western Test Range off of California, the
8 Eglin Gulf Test Range, and Kwajalein Missile Range
9 in the Western Pacific. At that time, White Sands
10 and Kwajalein were selected as theater missile
11 defense extended test ranges. The Eglin Gulf Test
12 Range was not selected because of the difficulty
13 and cost of providing a sea launched target, the
14 only option considered at that time. This SEIS
15 supplements the 1994 extended Test Range EIS.
16 Eglin Air Force Base, Key West Naval Air
17 Station, and Pensacola Naval Air Station regularly
18 use vast amounts of airspace over the Eastern Gulf
19 of Mexico. This blue line defines the air space
20 that Eglin Air Force Base has scheduling
21 responsibility for. While this is the area
22 scheduled by Naval Air Station, Key West. There
23 is no other location within the continental United
24 States which has so much available military
25 airspace with low population density. The large

1 size of the Eglin Gulf Test Range makes it ideal
2 for performing tests that cover long distances,
3 such as theater missile defense testing. Also,
4 the missile flights can be done over the broad
5 open waters of the Gulf which greatly enhances
6 safety.
7 Eglin Air Force Base has existing radar,
8 optical and other sensor systems to conduct its
9 current missions. These types of instrumentation
10 systems are expensive to develop from the ground
11 up. By enhancing an existing range like Eglin's,
12 we can save millions in taxpayer dollars.
13 To determine if an interceptor works, you
14 have to test it against a target. Some
15 interceptors are ground based and some are sea
16 based. The Eglin Gulf Test Range would provide
17 the flexibility to test either type of system.
18 I will describe the preferred alternatives
19 first. For the Eglin Gulf Test Range to be
20 enhanced for use as a theater missile defense test
21 and training range, launching options for both
22 interceptor missiles and target missiles would
23 have to be selected. Although no final decisions
24 will be made until the Record of Decision is
25 reached, the director of the Ballistic Missile

1 Defense Organization indicated last November that
2 these are the alternatives he would prefer to use
3 over the other alternatives considered. After that
4 I will describe the other alternatives considered.
5 These alternatives are shown in the handout you
6 should have received when you arrived.
7 Since the interceptors are the actual
8 things being tested, I will start with them.
9 Interceptors will be ground based here at Eglin
10 Air Force Base properties on Santa Rosa Island and
11 Cape San Blas. Interceptors will also be ship
12 based in the open Gulf within the military air
13 space.
14 I'll now discuss the methods of delivering
15 target missiles. The primary proposed method of
16 delivering target missiles is using air drop
17 system currently in development. Air drop is a
18 term that Ballistic Missile Defense Organization
19 uses for the short range air launch target.
20 Currently the only air launch targets that are
21 certified as treaty compliant have limited flights
22 of less than 600 kilometers, which is about 375
23 miles. It would be launched over the open Gulf.
24 Air launch targets provide a lot of flexibility
25 with their potential launch location and distances

Exhibit 5.3-1: Reproductions of Transcript Comments (Continued)

1 that could be used. They are also considering the
2 potential to launch target missiles from ground
3 launch locations from Santa Rosa Island and Cape
4 San Blas.
5 Finally, all of the intercepts would take
6 place over the Gulf of Mexico. This ensures that
7 debris can be contained over the water which is
8 one of our safety criteria.
9 This is a diagram of how the proposed air
10 drop target would work. The missile is pulled out
11 of the back of the airplane on a sled by a
12 parachute. After it clears the airplane the
13 missile and sled separate. There is another
14 parachute attached to the missile. After the
15 missile rights itself this parachute is released
16 and the missile is ignited and flies to its
17 prescribed landing area.
18 Even though the director of the Ballistic
19 Missile Defense Organization defines it as an
20 alternative, we are required by the National
21 Environmental Policy Act of 1969 to consider all
22 reasonable alternatives to this preferred
23 alternative. These are considered in the
24 Supplemental Environmental Impact Statement in the
25 category other alternatives considered.

1 These other alternatives could be selected
2 if there were a great national need for finding a
3 specific test capability. This national need
4 deals with technical, environmental, or other
5 national policy considerations. The director of
6 the Ballistic Missile Defense Organization will
7 make the decision on whether or not to use these
8 other alternatives.
9 Again, dealing with the interceptor
10 alternatives, we are considering launching
11 interceptor missiles from platforms off of the
12 coast of either Santa Rosa Island or Cape San
13 Blas. These platforms would allow intercepts
14 closer to the launching point of the interceptor
15 missile. This would still keep the missile and
16 intercept debris offshore and provide the required
17 safety margins for the personnel and equipment
18 directly involved in the test.
19 There are treaty restrictions against
20 launching ballistic missiles from sea based
21 platforms that are tethered to the sea floor.
22 This prevents us from considering launching target
23 missiles from a platform.
24 Also in the other alternatives to consider
25 category are land launched targets from the

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Exhibit 5.3-1: Reproductions of Transcript Comments (Continued)

1 Florida Keys. There are two Keys under
2 consideration, Cudjoe Key and Saddlebunch Keys,
3 only one location will be chosen if this
4 alternative were to become necessary.
5 Although the sea based target launch
6 option was the reason for the Eglin Gulf Test
7 Range was not selected in the earlier EIS, the
8 Army is now developing capability to launch target
9 missiles from a ship. This alternative is limited
10 to less than 375 miles just like the current
11 limits on the air launched capability.
12 The director of the Ballistic Missile
13 Defense Organization also has the option of
14 selecting the no action alternative. In fact the
15 National Environmental Policy Act of 1969 requires
16 the decision maker to consider the impacts should
17 the proposed action not take place. For the Eglin
18 Gulf Test Range, the no action alternative
19 describes the environmental impacts if the
20 proposed action to enhance the Eglin Gulf Test
21 Range for theater missile defense testing is not
22 implemented.
23 Our baseline was selected to analyze the
24 maximum impacts possible. In developing the
25 baseline for evaluation in the SEIS, we used the

1 PATRIOT as the baseline interceptor. In all
2 cases, the analysts used the best available data
3 for the analysis.
4 The team used the Hera target missile as
5 the typical target missile. This is because it's
6 the biggest target missile considered. Although
7 we assumed the highest number of launches proposed
8 at each site, the actual number of launches would
9 be considerably less. The combined potential
10 impacts from the Hera are greater than those of
11 the proposed interceptors at Santa Rosa Island and
12 Cape San Blas, where both interceptors and targets
13 are proposed, we used the Hera as a baseline.
14 These are the 14 resource areas the team
15 evaluated for each alternative. The potential
16 impacts are outlined in your handout. Many of the
17 potential impacts are similar at each site.
18 First, I will discuss the impacts that are common
19 to each site. Then I'll describe those that are
20 unique to each proposed location. However, before
21 I can discuss any potential impacts, I need to
22 show you the launch hazard areas that would be
23 established for each alternative location. These
24 launch hazard areas define the regions of
25 influence the team analyzed at each site.

1 The purpose of the launch hazard area is
2 to ensure that nobody is inside the area that
3 could be affected should the missile self-destruct
4 or the range safety officer need to terminate the
5 missile flight.
6 When the range safety officer develops a
7 launch hazard area he uses a computer model. This
8 model predicts where the debris from an errant
9 missile would go should it be destroyed. He also
10 considers the effects of wind. Finally, the range
11 safety officer determines if there are protected
12 areas, such as private property, within the launch
13 hazard area. If so, he establishes wind
14 restrictions to prevent this debris from falling
15 on these protected areas. This is why the launch
16 hazard areas are different shapes and sizes at
17 each location.
18 Launch hazard area for the Hera target
19 missile is 6,500 feet without any wind effects.
20 Once the effects of wind are considered, the
21 launch hazard area is expanded to incorporate any
22 additional safety area. Here at Santa Rosa Island
23 the launch hazard area will extend from the Santa
24 Rosa Sound and encompass this portion of the
25 island. At Cape San Blas, the hazard area would

1 go back to St. Joseph Bay. It extends over State
2 Road 30E.
3 At Cudjoe Key it encompasses the northwest
4 section of the Key. It's primarily over the
5 waters of the National Marine Sanctuary and the
6 Great White Heron National Wildlife Refuge. This
7 extends out to the airspace scheduled by Naval Air
8 Station, Key West. The launch hazard area crosses
9 Blimp Road.
10 This is the launch hazard area at
11 Saddlebunch Keys, similar to that at Cudjoe Key.
12 It is primarily over the waters of the National
13 Marine Sanctuary and the Great White Heron
14 National Wildlife Refuge. Since the Key is
15 primarily military property north of Highway One,
16 the launch hazard area would include that entire
17 area.
18 Now I'll discuss the common potential
19 impact. The first resource area I will discuss is
20 air quality. Air quality impacts would be similar
21 at all proposed locations. The primary emissions
22 from a missile launch are shown here. The primary
23 emissions of concern are: aluminum oxide, carbon
24 monoxide, and hydrogen chloride. All these
25 emissions are within the standards established by

Exhibit 5.3-1: Reproductions of Transcript Comments (Continued)

1 the National Ambient Air Quality Standards and the
 2 Environmental Protection Agency.
 3 We just discussed air quality. We're not
 4 proposing any additional airspace restrictions so
 5 there are no impacts for this area.
 6 Biological resources. The noise of a
 7 launch could startle birds and other wildlife.
 8 However, experience at Cape Canaveral shows that
 9 after an initial flushing, where the birds fly
 10 around, they return to their nests within a few
 11 minutes. There are also location specific
 12 biological resources potential impacts which I
 13 will discuss in a few minutes. Potential impacts
 14 to cultural resources are site specific.
 15 In areas nearest the launch facility, any
 16 hydrogen chloride that settles to the ground may
 17 result in an increase in surface soil acidity.
 18 Increased in soil acidity would be temporary and
 19 will be diluted and buffered by rainfall.
 20 The amount of aluminum oxide settling on
 21 the ground would not result in a substantial
 22 change in soil fertility or be in concentrations
 23 toxic to the growth of existing plants and
 24 microorganisms.
 25 The hazardous waste that would be produced

1 by this program consists primarily of solvent
 2 soaked cleaning rags. The amount generated easily
 3 fits within the current capacity for Eglin Air
 4 Force Base and Naval Air Station in Key West.
 5 For land and water use, the launch hazard
 6 area would be cleared of people and private
 7 vehicles for up to four hours on launch day. This
 8 would restrict access to the land and water areas
 9 within the launch hazard area. This includes the
 10 waters offshore which would also be cleared of
 11 boats for up to four hours.
 12 The peak noise at the edge of a launch
 13 hazard area is expected to be 98 decibels. This
 14 is similar to a jack hammer. However, this would
 15 only be a momentary sound. The continuous sound
 16 level is predicted to be 80 decibels for 45
 17 seconds. This is similar to a portable hair dryer
 18 held one foot away. Both of these are from the
 19 Occupational Safety and Health Administration
 20 exposure limit of 115 decibels for 15 minutes. So
 21 there would be no health related sound exposures
 22 outside of the launch hazard area. Should
 23 launches occur before 7 a.m., it is anticipated
 24 some people may be awakened by the launch noise.
 25 Safety is primarily defined by the launch

Exhibit 5.3-1: Reproductions of Transcript Comments (Continued)

1 hazard areas. The policy of the Air Force
2 Development Test Center is that the general public
3 will not have any additional risk due to test
4 activities than they would experience in everyday
5 life.
6 The potential impacts to socio-economics
7 are similar to those for land and water use as the
8 launch hazard area would also have to be cleared
9 of commercial activities. This clearance would
10 occur up to four hours on launch day.
11 Each Hera target missile could result in
12 over \$100,000 in personnel per diem. Each
13 interceptor missile launch could result in nearly
14 \$150,000 in per diem expenses. Potential impacts
15 to transportation are location specific.
16 The utilities currently available at each
17 location are sufficient to handle the requirements
18 of the proposed program. However, bottled water
19 and portable toilets may be used to reduce any
20 impact on these resources.
21 Each of the proposed sites has
22 historically been used for military purposes. The
23 visual aesthetics of the proposed facilities will
24 be consistent with the existing facilities.
25 Temporary small increases of surface water

1 acidity may occur. The amount of time for these
2 to dilute depends on water movement and activity.
3 The amount of acid created is not expected to be
4 harmful to wildlife.
5 I'll now discuss the potential impacts for
6 each proposed site. On Santa Rosa Island, these
7 are the potential impacts to cultural resources.
8 The facilities at site A-15 are potentially
9 eligible for listing on the National Register of
10 Historic Places. This is due to the BOMARC
11 missile testing that occurred there from 1959 to
12 1985. These are considered cold war era
13 facilities. Potential impact would be the
14 modification of these facilities from their
15 original intent.
16 For transportation, the Florida Department
17 of Transportation estimates US 98 will be over
18 capacity by the year 2005.
19 These are the current average daily
20 traffic counts. This is the current capacity of
21 US 98. As you can see, some of the sections are
22 already over capacity. This is the estimated
23 traffic in the year 2005.
24 Additional amounts of traffic due to
25 proposed testing adds very little traffic to this

Exhibit 5.3-1: Reproductions of Transcript Comments (Continued)

1 total. The project traffic is primarily rental
 2 vehicles used by the engineers and technicians
 3 preparing the missiles for launch. This maximum
 4 traffic would only be for a couple of days before
 5 each launch.
 6 At Cape San Blas, the potential impacts to
 7 biological resources are a line of sight corridor
 8 5500 feet long and 40 feet wide is needed for
 9 range safety instrumentation currently planned for
 10 Hera target launches. It will pass within 75 feet
 11 of a bald eagle nest. This violates the US Fish
 12 and Wildlife Service primary protection zone of
 13 450 meters, which is approximately 1475 feet.
 14 Cape San Blas has the highest sea turtle
 15 nesting density in Northwest Florida,
 16 approximately 15.3 nests per mile. Since a lot of
 17 the launch preparations would occur during the
 18 night prior to a launch, sea turtles could be
 19 adversely affected during the nesting and hatching
 20 seasons.
 21 The launch facilities to support a Hera
 22 target launch site would cause the permanent loss
 23 of 1.62 acres of wetland habitat that is used by a
 24 variety of birds.
 25 For cultural resources, Hera target

1 missile launches could cause short term noise
 2 levels of 124 decibels in the area of the
 3 lighthouse and keeper's quarters. These historic
 4 facilities are inside the launch hazard area.
 5 This has potential to damage the lighthouse lens
 6 and the keeper's quarters.
 7 Potential impacts to transportation are,
 8 State Road 30E would have to be closed on each
 9 side of the launch hazard area approximately one
 10 hour prior to the launch. This is a standard
 11 practice that we have used for other missile
 12 launches from Cape San Blas. Emergency vehicles
 13 will be allowed access.
 14 Traffic would be increased by 40 percent
 15 on State Road 30E during the last couple of weeks
 16 leading up to a launch. This represents a total
 17 of less than 2,000 total vehicles projected for
 18 the year 2005, which is well within the total
 19 capacity of State Road 30E of 9,200 daily
 20 vehicles.
 21 In the Keys, the potential impacts to
 22 biological resources are, the proposed launch site
 23 on Saddlebunch Keys would disturb up to 2.23 acres
 24 of wetlands. There would be no additional
 25 wetlands disturbed at Cudjoe Key. There is the

1 potential that vegetation near the launch site
 2 would be singed. However, at the Hera launch from
 3 Fort Wingate last November, snow 20 feet from the
 4 launch site was not melted.
 5 The Florida Game and Freshwater Fish
 6 Commission performed a survey at Cudjoe Key last
 7 spring to try to determine the silver rice rat
 8 population. The silver rice rat is on the Federal
 9 listing as an endangered species. No silver rice
 10 rats were captured after one week of trapping.
 11 The potential impacts to cultural
 12 resources on Cudjoe Key, the Cudjoe Key aerostat
 13 facilities are potentially eligible for listing on
 14 the National Register of Historic Places. These
 15 facilities may be eligible because they are
 16 considered cold war era facilities. The potential
 17 impact would be the modification of these
 18 facilities from their original intent.
 19 Potential transportation impacts are, if
 20 the Cudjoe Key alternative were to be selected,
 21 Blimp Road would be closed at Asturius Road. This
 22 would be closed up to four hours on launch day.
 23 It would not restrict access to or from Cudjoe
 24 Acres.
 25 The Florida Department of Transportation

1 estimates that Highway One will be over capacity
 2 by the year 2005. These are current average daily
 3 traffic counts. This is a current capacity of
 4 Highway One. This is the estimated traffic in the
 5 year 2005.
 6 The additional amount of traffic due to
 7 proposed testing adds very little traffic to this
 8 total. The project traffic is primarily rental
 9 vehicles used by the engineers and technicians
 10 preparing the missiles for launch. This maximum
 11 traffic would only be for a couple days for each
 12 launch.
 13 Some of the launches, all of the missile
 14 flights, and the intercepts would occur over the
 15 Gulf of Mexico. These are some of the potential
 16 impacts for the Gulf. In airspace, the existing
 17 airspace warning areas would be closed to aircraft
 18 for a period of up to four hours. This would
 19 result in rerouting commercial aircraft around
 20 these warning areas, a standard procedure used
 21 today.
 22 The biological resources, the effect of
 23 many sonic booms on marine mammals is not very
 24 well understood. There may be sonic booms
 25 penetrating the water surface. We are

Exhibit 5.3-1: Reproductions of Transcript Comments (Continued)

1 investigating the impact to marine mammals with
2 the National Marine Fisheries Service.
3 Potential transportation impacts, in
4 addition to the airspace, some portions of the
5 shipping lanes in the Gulf and Intracoastal
6 waterway would be cleared for short periods.
7 The Federal agencies listed here have
8 reviewed earlier drafts of the SEIS. They have
9 provided comments to us to aid in our preparation
10 of the Draft SEIS. This draft was mailed to the
11 public in February. We will continue to consult
12 with the Federal agencies, as well as state
13 agencies listed here. Should any regulatory
14 permits be required, these are the agencies that
15 would issue those permits.
16 The next steps for the SEIS are shown
17 here. First and most important, we need your
18 comments on the SEIS. To ensure your comments are
19 incorporated in the final SEIS, we need to receive
20 them by April 3rd. These comments will be
21 addressed in the final SEIS. The final SEIS
22 should be completed sometime this fall. We are
23 hoping to complete it by September. The director
24 of the Ballistic Missile Defense Organization will
25 make a record of decision no earlier than 30 days

1 after the final SEIS is completed.
2 That's all I have tonight. Thank you for
3 your interest and concern. It's an important
4 National Defense program.
5 MR. MICHAELSON: Thank you Major Kennedy.
6 We're going to take about a three minute break to
7 get the podium ready to go, so if you will stay
8 seated for three minutes, we will be right back
9 with you.
10 (Brief interruption.)
11 MR. MICHAELSON: We're going to get
12 started now. I ask you to take your seats,
13 please. We are ready to start calling the names
14 of those of you who have indicated you would like
15 to make comments tonight. I have a list of people
16 who signed up to speak. Currently there is a list
17 of 36 individuals. What I'm going to do is I will
18 call the first four or five or six names at a time
19 in order, that way you will have some idea of
20 where you're going to come up and how soon you're
21 going to come up. The reason I do that in is
22 order to make the commenting move as expeditiously
23 as possible. If you would be ready to come up
24 when your name is called, I would appreciate it.
25 And then that way you can keep moving through all

Exhibit 5.3-1: Reproductions of Transcript Comments (Continued)

1 of your comments. I'll be calling you in the
2 order in which you have signed up to speak. So if
3 you're the first one's here, you should expect to
4 be up first.
5 Because we want to record your comments
6 fully and accurately, we ask that you please speak
7 clearly in the microphone up here. Also, if you
8 would please state your name for the court
9 reporter. If you will notice the lovely podium we
10 have here in the form of a corrugated box.
11 Apparently some individuals have some comments
12 they would like to be able to set them down, so
13 that's why that's there.
14 Finally, we kindly request that you
15 observe the four minute time limit for all
16 comments. We have used this four minute limit at
17 all of these hearings to give everyone a fair and
18 equal chance to offer their comments. To aid you
19 in knowing when your four minutes are up, I have a
20 simple method for indicating times to you. That's
21 why it's useful to look at me or glance at me
22 every so often. That is that after three minutes
23 are up, I will put up my index finger like this,
24 indicating that you have one minute left and
25 enabling you to find a comfortable place to end

1 your comments. When all four minutes are up, I'll
2 put up my closed hand such as this, indicating
3 it's time for you to finish whatever sentence
4 you're on and make way for the next speaker. We
5 greatly appreciate your cooperation of observing
6 this four minute time limit.
7 Also keep in mind that oral comments are
8 only one way to share your thoughts with the
9 government on this, with the Air Force and
10 Ballistic Missile Defense Organization. You can
11 also hand in written comments, mail them in or E
12 mail them in by April 3rd. And again, those
13 comments will be given the same consideration as
14 oral comments offered here tonight. With that,
15 the names that I have, first in order, are
16 Giovanna Todisco and I apologize in advance for
17 mispronouncing any of the names, Alberto Rebasio,
18 Christopher Lehman, Commissioner Shirley Freeman
19 and Gerry Girard. And there is a series of
20 speakers beginning with Shirley Freeman. I
21 believe there are eight of them in a row who are
22 going to be making use of some audio visual aids
23 up on these screens. So when they get to that
24 portion, if you want to be looking up there, they
25 will be talking to those audio visual aids is my

Exhibit 5.3-1: Reproductions of Transcript Comments (Continued)

P-T-0003
COMMENT
NUMBER

1 understanding. With that, Giovanna Todisco, will
2 you please come up to the microphone. And again,
3 if you can be ready to come up when your name is
4 called we can expedite this for you. If you will
5 turn that microphone down, I think you can get it
6 pretty close to you. There you go. That's good.
7 GIOVANNA TODISCO: There are too many
8 questions. I'm sorry but I'm Italian and I hope
9 that you can understand my English. I don't think
10 that the area has enough evidence that there is a
11 low number of inhabitants because there are so
12 many tourists coming, so many. So it's important
13 also to count all these people that come and go,
14 come and go everyday. Then I think that even if
15 it's in the north Gulf of Mexico, the location, I
16 mean all the missile launch will affect a big
17 area. All the Gulf of Mexico and the water will
18 be polluted because the water is not very deep.
19 And I come from Italy and I know our sea there is
20 a very close best is affected from pollution. In
21 Italy we lost all our coral. In Naples we had
22 every kind of coral, black coral that was
23 beautiful and now is nothing. Then the rain that
24 was said, the rain that can wash out all of the
25 acid and aluminum and all the stuff that deposit

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P-T-0003
COMMENT
NUMBER

1 on the ground, that the rain will be added too
2 because of also the air could be polluted. So
3 these will effect everything. The rain that goes
4 on the soil that contains some toxic materials.
5 And also what about the edges. The edges in the
6 water that these are so shallow and the fish that
7 eat the edge. So all the ecosystem will be
8 affected. Then the water is not fit for some
9 people can be a lot for some others. So I mean
10 for somebody can be very sensitive to this toxic
11 material.
12 For example, my husband had a bone marrow
13 transplant for leukemia seven years ago in Seattle
14 and now he is completely recovered thanks to this
15 place. Because after the transplant we are
16 spending in this country six, seven, eight months
17 a year and he is fine because nothing can pollute
18 the cancer. But if this happens, we have to
19 leave, even if we invested a lot of money in this
20 country because we are going to build a third
21 house just in order to have the visa to stay in
22 this country seven, eight months.
23 This is my personal question, but what
24 about the little kids that have the same immune
25 system that my husband has now. The little kids

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Exhibit 5.3-1: Reproductions of Transcript Comments (Continued)

P-T-0003
COMMENT
NUMBER

1 will be affected more than others with the immune
 2 system. That's it.
 3 MR. MICHAELSON: You have one more minute.
 4 GIOVANNA TODISCO: One more. And what
 5 about the mammals, the dolphins and we have the
 6 big mammals that we have here are dolphin. Their
 7 ears are very sensitive. This noise can effect
 8 them. In fact, we find already on Sugarloaf, we
 9 found mammals there that are on the beach and
 10 where we try to help them and to recover and to
 11 put in the ocean again. So I think that this will
 12 effect the mammals that way. Thank you.
 13 (Hand clapping.)
 14 MR. MICHAELSON: Thank you everyone for
 15 holding your applause and your expressions of
 16 appreciation for any comments until the end. That
 17 makes it much easier for the court reporter to
 18 capture the comments. Alberto Rebasio. Excuse
 19 me, Mr. Rebasio, I need you to come up to the
 20 microphone here, that's how we capture this. If
 21 you would state your name, please. Go ahead and
 22 put the microphone near you. State your name,
 23 please.
 24 ALBERTO REBASIO: Good evening. I think
 25 the same as my wife. I don't speak really well

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P-T-0004
COMMENT
NUMBER
01

P-T-0005
COMMENT
NUMBER

1 English. I have the same idea that my wife.
 2 Thank you.
 3 (Hand clapping.)
 4 MR. MICHAELSON: Thank you very much.
 5 That was Alberto Rebasio. We're now ready for
 6 Christopher Lehman.
 7 CHRISTOPHER LEHMAN: Good evening. My
 8 name is Christopher Lehman. I'm here representing
 9 Monroe County. Pleased to be here. The Board of
 10 County Commissioners has been very active on this
 11 issue since it first rose in 1995 and the county
 12 has worked very closely with the congressional
 13 delegation and also with Colonel Lehner and others
 14 in the Pentagon over the last two years.
 15 The committee's position or the County
 16 Commission's position has been very clear from the
 17 beginning expressed opposition to the land
 18 launching of missiles from the Keys derived
 19 generally from deep concern from two basic issues.
 20 The first, public safety, first and foremost.
 21 Launching missiles close to population centers,
 22 houses, schools and so on was a matter of great
 23 concern to the county and one which they expressed
 24 to the Department of Defense and to the Air Force
 25 at various junctures. And secondly, the potential

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Exhibit 5.3-1: Reproductions of Transcript Comments (Continued)

P-T-0005 COMMENT NUMBER
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1 for environmental damage or environmental
2 degradation. These were the two issues of
3 greatest concern.
4 Mayor Freeman in February of 1996, at the
5 behest of the Board of County Commissioners wrote
6 a letter to the Secretary of Defense expressing
7 opposition but primarily urging the secretary to
8 consider options other than land launch from the
9 Keys and specifically referred to sea base
10 launching and air base launching and that was in
11 February of 1996. And needless to say, about six
12 or seven or eight months later the Department of
13 Defense indicated that they were, in fact, going
14 to consider air launch and in fact, do some
15 testing to see if that was possible and I was
16 pleased to see the diagram with the missile coming
17 out of the back of the C-130 aircraft.
18 Bottom line is in November 1997, General
19 Lyles wrote a letter to Congressman Deutch and to
20 the county announcing that he had decided that the
21 primary or the preferred alternative was for air
22 launch. The county was pleased that the
23 recommendation they made a year and a half
24 previously had been taken seriously and had, in
25 fact, become the preferred option.

P-T-0005 COMMENT NUMBER
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1 In that letter General Lyles also
2 mentioned that the Keys option was unlikely and
3 that was in his letter. And therefore, the Board
4 of County Commissioners is pleased that it is no
5 longer the preferred option. But the
6 Environmental Impact Statement requires that
7 launching from the Keys still be considered as an
8 option and because of that, because it is still an
9 option, the county has asked me to comment.
10 The draft EIS as it has been reviewed is
11 significantly flawed and primarily for two
12 reasons. It's really not accurate or adequate on
13 environmental issues in terms of the study of some
14 of the potential impacts in terms of eagles and
15 other flora and fauna. And secondly, in terms of
16 the public safety. The Board of County
17 Commissioners just doesn't buy the fact that
18 launching a missile as close to approximately a
19 mile and a half from houses and schools is just
20 safe. It's just not safe and I don't buy it and
21 the county doesn't really buy it.
22 I personally talked to Navy and Army
23 missiles testing experts who have said that
24 testing that close to population is just not a
25 good idea. And that in their testing it's

Exhibit 5.3-1: Reproductions of Transcript Comments (Continued)

P-T-0005
COMMENT
NUMBER

13

1 generally at a greater distance from populated
2 areas where missiles are tested.
3 In conclusion let me just simply say that
4 I urge, on behalf of the county, that you go back
5 to the drawing board on the public safety issues,
6 number one, and on the environmental issues,
7 number two, do an honest assessment of these
8 issues and I'm confident that if you do, the final
9 Environmental Impact Statement will say that to
10 testing here in the Keys is a bad idea, was a bad
11 idea and always will be a bad idea. Thank you.
12 (Hand clapping.)
13 MR. MICHAELSON: The order in which the
14 next set of speakers has been given to me,
15 Commissioner Shirley Freeman, Gerry Girard, and
16 again, sometimes I can read these, Elizabeth
17 Cofer, Donald Lowe, Dennis Henize, Sol Rosenblatt,
18 Wayne Hoffman and Alexander Hadden. And again, if
19 you would please state your name at the beginning,
20 we would appreciate it.
21 COMMISSIONER FREEMAN: Good evening, I'm
22 Shirley Freeman, Monroe County Commissioner and
23 welcome to the beautiful new commission chambers
24 here at the Harvey Government Center at Historic
25 Truman School.

P-T-0006
COMMENT
NUMBER

01

1 MR. MICHAELSON: Thank you for having us.
2 They are very nice.
3 COMMISSIONER FREEMAN: Two years ago, as
4 Chris Lehman reported to you, I, as mayor, on
5 behalf of the County Commission, wrote to the
6 Secretary of Defense asking him that the land
7 launch option be rejected and to consider the air
8 launch targets. Today the air launch is the
9 preferred option and we are relieved and grateful.
10 However, we have to finish off the SEIS and to
11 assist me in analyzing this document, I've been
12 fortunate enough to call on a team of scientists
13 and others here in the Florida Keys who are
14 residents, who have volunteered their time and
15 expertise to examine this draft SEIS with a fine
16 tooth comb. Their findings of this document are
17 it has many fine attributes, however, it's
18 woefully lacking in evidence which leads to some
19 very strange conclusions.
20 It falls short in consideration of the
21 possible toxic damage from chemical discharge and
22 physical fallout that would affect the health and
23 safety of our citizens, our sensitive environment
24 which included a national marine sanctuary, and
25 our unique tropical atmosphere.

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Exhibit 5.3-1: Reproductions of Transcript Comments (Continued)

P-T-0006
COMMENT
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1 Citation for performance during hurricane Andrew.
 2 Dennis will speak on the launch hazard area.
 3 Sol Rosenblatt is a chemist with degrees
 4 in both chemistry and chemical engineering. He
 5 has worked on the rocket development programs and
 6 advanced aircraft power systems for organizations
 7 such as Pratt & Whitney and NASA. He will speak
 8 on the nature and distribution of toxic emissions.
 9 Wayne Hoffman has a master's degree in
 10 zoology and Ph.D in biology from the University of
 11 South Florida and is a research scientist for the
 12 National Audubon Society. Specializes in the
 13 ecology of the Everglades and the Florida Keys.
 14 Alexander Hadden is a retired attorney and
 15 Yale graduate and he is part of the task force
 16 because of his concern for the fragile Keys
 17 environment and its long term survival.
 18 Richard Moody will not talk but he
 19 prepared the graphics and he also prepared
 20 graphics for Congress and many other areas. And
 21 Gordon West was the coordinator for the state.
 22 And they will now make their presentations.
 23 (Hand clapping.)
 24 MR. MICHAELSON: I probably don't need to
 25 call you because you probably rehearsed this, but

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1 I will now introduce the team and I want
 2 you guys to stand up and face the back and wave
 3 when I call your names so we know who you are and
 4 I'll give your credentials. First is Gerry
 5 Girard. Mr. Girard is a retired airline captain
 6 of 37 years service. He is a member of the board
 7 of telecommunications company, and is an avid
 8 outdoorsman.
 9 Elizabeth Cofer is a Duke University
 10 graduate with a BA in zoology and a MA degree in
 11 education and has enjoyed a 20 year career as a
 12 chemistry teacher. She will speak on traffic and
 13 transportation. I forgot to say Gerry Girard will
 14 give general comments.
 15 Donald Lowe will speak on noise and visual
 16 aesthetics. Mr. Lowe has a MA degree in physics.
 17 He was a research manager for Bendix Aerospace
 18 Systems Division. He directed programs related to
 19 ballistic missile launch and re-entry measurements
 20 and served as US Naval Ordnance Representative to
 21 the United Kingdom.
 22 Dennis Henize is a meteorologist and
 23 served in the US Air Force as a weather observer
 24 and spent 20 years as a National Weather Service
 25 meteorologist. He was awarded the NOAA Unit

Exhibit 5.3-1: Reproductions of Transcript Comments (Continued)

P-T-0007 COMMENT NUMBER
01
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1 Gerry Girard, you're first.

2 GERRY GIRARD: The draft of the secondary

3 Environmental Impact Statement is a misleading

4 study of a unique environment. It's not

5 applicable for the Florida Keys. Monroe County is

6 a chain of nearly 900 islands below the Florida

7 mainland. South of the Overseas Highway chain is

8 the only easily accessible, shallow water, living

9 coral reef in the United States.

10 Wrapped around these islands like 250

11 square miles of low water and wild mangrove

12 islands providing a life sustaining nursery for

13 marine and bird life.

14 North is Florida Bay, already under

15 intense scrutiny by state and federal pollution

16 control experts for over a decade.

17 The ecological environment here is so

18 fragile, that the state of Florida has declared

19 Monroe County an Area of Critical State Concern.

20 Our water quality, our population density, our

21 traffic density, land use, marine resources, and

22 even our rate of growth is severely regulated.

23 This is the only county in America

24 primarily made up of islands, strung together by

25 41 bridges, for 120 miles, with one road. Imagine

P-T-0007 COMMENT NUMBER
06
07
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1 where you live with all the vehicular traffic

2 necessary for your daily existence confined to one

3 road. Now add all your water supply and

4 electrical power to that same, mostly two lane

5 road and you have the reality of our daily lives.

6 Recognizing this unique environment, the

7 federal government, as far back as 1908 began

8 designating refuges in Monroe County. Today, the

9 Great White Heron National Wildlife Refuge, the

10 Key West National Wildlife Refuge, the Crocodile

11 Lake National Wildlife Refuge, and the National

12 Key Deer Refuge exist here. The Key deer and the

13 American crocodile exist only in the Keys.

14 Superimposed over all of this is the

15 federally mandated Florida Keys National Marine

16 Sanctuary. Established in 1990, it covers 2,800

17 square miles from Biscayne National Park to the

18 Dry Tortugas and expressively forbids the type of

19 activity contemplated in this draft.

20 This is the only county in the continental

21 United States in a subtropical zone with

22 consistent high humidity. The Keys lie in the

23 northern trades and enjoy the highest, daily

24 averaged, sustained winds in the continental

25 United States.

Exhibit 5.3-1: Reproductions of Transcript Comments (Continued)

P-T-0007 COMMENT NUMBER
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1 There are a host of endangered marine life
 2 attempting to make a comeback, existing in our
 3 near shore waters and around the coral reef. On
 4 the land surrounding the proposed site, the
 5 endangered silver rice rats habitat extends from
 6 Cudjoe to the Saddlebunch Keys and nowhere else.
 7 The endangered Florida marsh bunnies habitat
 8 extends from Big Torch to Saddlebunch and is the
 9 rarest mammal in the Keys.
 10 The last remaining stands of tropical
 11 hardwood hammocks are on Cudjoe Key and Sugarloaf
 12 Key. Pine rockland is unique in the world, a
 13 globally endangered ecosystem lying alongside the
 14 launch hazard area boundary on Sugarloaf Key.
 15 Wetlands surround both proposed sites so
 16 that any mishap will spill directly into the
 17 marine environment affecting fish, invertebrates,
 18 and defoliating the native flora.
 19 In recent letters to Congressman Deutsch,
 20 General Lyles, director of BMDO, state that the
 21 land launch alternative from the Florida Keys is
 22 unlikely to be approved in this final decision.
 23 Admiral West, deputy director of BMDO listed
 24 launches from this area as other alternatives
 25 being analyzed.

P-T-0007 COMMENT NUMBER
P-T-0008
01
02

1 We believe that the launching of missiles
 2 in the Florida Keys should not be an alternative
 3 and suggest you amend the draft to state exactly
 4 that.
 5 (Hand clapping.)
 6 MR. MICHAELSON: Elizabeth Cofer.
 7 ELIZABETH COFER: I and my friends are
 8 pleased that the land missile launch from the
 9 Florida Keys is no longer a preferred option.
 10 However, a draft Supplemental Environmental Impact
 11 Statement, which I will refer to as EIS from here
 12 on, has been prepared and public hearings are
 13 being held. It appears to us and others that the
 14 door has been left open a bit at the present time
 15 and possibly more open as to the future.
 16 I think the Keys will become much less
 17 desirable as a launch site in the future as our
 18 traffic and environmental problems are getting
 19 worse rather than better. We are already
 20 designated by the state of Florida as an area of
 21 critical concern. We are in a marine sanctuary
 22 and a Great White Heron Wildlife Refuge. The
 23 current EIS falls short of answering questions we
 24 have regarding these sensitive areas, as well as
 25 other concerns.

Exhibit 5.3-1: Reproductions of Transcript Comments (Continued)

P-T-0008 COMMENT NUMBER
03
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1 Very little information was given and
2 little attention paid, or so it appears, to the
3 transportation of the missile from Florida City to
4 the proposed launch site. US 1 is referred to as
5 the principal artery into the Keys, when it is the
6 only artery. The word artery might well be
7 replaced by path as sometimes traffic is so heavy
8 that it is stopped or moves at a crawl. We fear
9 that vital travel would be delayed by the missile
10 convoy, traffic such as fire fighting equipment;
11 emergency medical vehicles; police response and
12 necessary medical travel. Our services available
13 to deal with these emergencies and others are very
14 limited. There are two hospitals along this
15 approximately 90 mile route and all the fire
16 departments are volunteer in nature and we think
17 this is a vital concern. The EIS states that
18 emergency vehicles will be let through. The
19 question then becomes how and where? The road has
20 25 miles of four lane roads and 95 miles of two
21 lane roads. There are about 39 bridges as well
22 which will slow the passing and maybe prevent the
23 passing of emergency vehicles. Has consideration
24 been given to the special problems that might
25 occur during the hurricane season? Will the Keys

P-T-0008 COMMENT NUMBER
07
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1 be able to be evacuated without delay? Is there
2 danger of a fire or explosion while the missile is
3 in transit in the event of a collision with
4 another vehicle? If yes, could this damage a
5 bridge? Our bridges are our life line, among
6 other things carrying our only fresh water to us.
7 All our utilities are vulnerable in this scenario,
8 as well as our food supply. The EIS has a
9 description of a fire fighting plan, but it
10 appears to be one for Eglin Air Force Base.
11 Another concern is absence of a current
12 traffic survey or study. Extrapolations are made
13 from older studies that may well be extrapolations
14 themselves. For example, the EIS predicts that
15 the traffic will be up 18 percent on Cudjoe in
16 2005, down 9 percent on Summerland, and down 11
17 percent on Big Pine. Essentially the same traffic
18 is on this entire stretch. And if the traffic
19 ever goes down on Big Pine, it will be amazing as
20 well as a miracle. Our traffic is very heavy now
21 and getting worse every year. Over half our
22 population excluding Key West centers on US 1 and
23 it is our only way out.
24 One last sentence. It seemed obvious to
25 me that the EIS is seriously flawed, inadequate

Exhibit 5.3-1: Reproductions of Transcript Comments (Continued)

P-T-0009
COMMENT
NUMBER

1 system, is derived basically -- it's derived from
 2 land use classification and noises associated with
 3 land use. The areas that are residential which
 4 are very yellow in here, the noise level
 5 throughout the whole year is about equivalent to
 6 what you would experience in conversation. Now
 7 then when we add the Hera launches it surprisingly
 8 doesn't change the noise level in the residential
 9 areas. Why? Because you average about a 60
 10 second impulse over an entire year. This reduces
 11 the level a factor of over 500,000. Now, this
 12 methodology is clearly not satisfactory because I
 13 can have a dynamite blast go off and blow my ear
 14 drums out. Since it only lasted a second, you
 15 average it over a year, it won't even phase the
 16 residential noise. Actually, noise measurements
 17 of a Hera launch are more helpful toward
 18 understanding launch noise.
 19 And the next slide you will see that we
 20 have the rookeries identified in color there and
 21 the radius in the db and basically a five mile
 22 radius which includes Summerland and most of
 23 Sugarloaf. The noise level is reported and this
 24 is right out of your document as being 95,3db.
 25 This is equivalent to the sound of a full speed

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06

P-T-0009
COMMENT
NUMBER

1 and incomplete. Thank you.
 2 (Hand clapping.)
 3 MR. MICHAELSON: Donald Lowe.
 4 DONALD LOWE: Thank you. I'm Donald Lowe
 5 and I will speak tonight only on two issues,
 6 aesthetics and noise. For the sake of brevity,
 7 I'll be discussing the Cudjoe site, but it's
 8 equally valid for the Saddlebunch site.
 9 Most of the views around the proposed
 10 launch sites are judged in the study to have
 11 minimal scenic attractiveness. What can I say
 12 except that beauty is in the eyes of the beholder.
 13 I for one love these low lying mangrove islands
 14 set in pristine sparkling water. That is why most
 15 of us live down here at the end of the earth. The
 16 report further concludes that the 40 foot tall, 90
 17 foot long assembly building will only slightly
 18 alter the scenic integrity of the area. Such a
 19 building will be very dominant here in the Keys
 20 where buildings are restricted by code to a height
 21 of 35 feet.
 22 As to human reaction to noise, the study
 23 averages the day night background noise level over
 24 a year period. The color figure and I'm afraid
 25 you won't see it in color with this television

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Exhibit 5.3-1: Reproductions of Transcript Comments (Continued)

P-T-0009 COMMENT NUMBER
06(cont)
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1 freight train at 30 feet. Who could sleep through
2 that and once awakened would not listen intensely
3 to determine whether or not one should dive for
4 cover.
5 No studies were cited as to the possible
6 psychological scarring of the residents by this
7 type of disturbance. Regarding wildlife, however,
8 it is noted that at least one rookery will
9 experience 121 db of noise, which is the threshold
10 of pain in humans. The study reports that birds
11 will leave their nests but will return. The study
12 concludes that there will be no long term effects.
13 Where is the scientific evidence?
14 I beg you to take the necessary steps to
15 correct what I perceive to be misleading
16 conclusions in the draft SEIS. The launch noise
17 will disturb both humans and wildlife, and the
18 exact degree will not be known without an
19 extensive scientific investigation. The scenic
20 quality and character of the site will
21 dramatically change with the launch operations.
22 The impacting costs on residents, tourism, and
23 overall quality of life have not been
24 quantitatively analyzed to determine the true cost
25 of launching missiles from the Keys. The decision

P-T-0010 COMMENT NUMBER
01

1 to launch ballistic missiles near populated areas
2 in a sanctuary is far too important to be based on
3 trust me judgments. It should be based on hard,
4 quantitative, scientific evidence which this study
5 sorely lacks.
6 (Hand clapping.)
7 MR. MICHAELSON: Mr. Lowe, I just have a
8 question, are you planning on providing a copy of
9 these visual aids to put into the record?
10 DONALD LOWE: I have copies.
11 MR. MICHAELSON: Appreciate it very much.
12 Dennis Henize.
13 DENNIS HENIZE: Dennis Henize. I'm going
14 to speak to the launch hazard area. For neighbors
15 within a few miles of the proposed launch sites,
16 safety is the most crucial issue. The original
17 theater missile defense EIS cites a nominal launch
18 hazard area of 4.5 miles for the Hera missile.
19 When the Keys were first looked at as a launch
20 site, the Hera LHA shrunk to 9,000 feet, the
21 distance to US 1. That's when BMDO thought that
22 nobody lived north of US 1 on Cudjoe Key. When
23 that area was pointed out, the LHA further shrunk
24 to 6,500 feet, less than 1.25 mile and a quarter.
25 I think I see a pattern emerge.

Exhibit 5.3-1: Reproductions of Transcript Comments (Continued)

P-T-0010
COMMENT
NUMBER

02

1 The red shaded area on the bottom of the
2 LHA is the area carved out of the LHA because my
3 wife and I and 22 other families were found to be
4 living there.
5 Shrinking the LHA is rationalized by a
6 promise to blow up an errant missile sooner if it
7 head toward us than if it goes off course in some
8 other direction. There are many problems with
9 that, and it is no comfort. For one thing, it
10 only means a higher probability that a missile
11 will have to be destroyed after launch, and for
12 every such failed launch, there would have to be
13 another one. Building a higher probability of
14 failure into an inherently dangerous activity,
15 simply because the site is too close to human
16 population, shows astoundingly poor planning.
17 The 6500 foot launch hazard area is far
18 from being prudent and conservative, and it does
19 not consider any of several worst case mishaps.
20 It takes into account the debris dispersal for an
21 exploding Hera on or directly above the launch
22 pad, but not any of several plausible failure
23 modes in which the missile moves some distance in
24 the wrong direction and then explodes.
25 A type of mishap representing just one

03

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05(cont)

1 such failure is presented in a report published
2 last week by David Wright, a physicist with MIT
3 and the Union of Concerned Scientists. It was
4 recorded in Reuter's News Service yesterday.
5 Doctor Wright's report analyzes the 6500 foot
6 launch hazard area proposed for Cudjoe Key. The
7 same study would also apply to the Saddlebunch
8 site. It describes a failure mode in which debris
9 from a flight terminated due to a particular
10 directional control failure a few seconds after
11 launch could cause debris to land outside of the
12 LHA more than two miles from the launch site.
13 Quoting the reports conclusion, "This
14 analysis concludes that an LHA of 1.5 miles is not
15 justified on technical grounds. There appear to
16 be possible malfunctions of the Hera missile that
17 could result in debris outside of the 1.5 mile LHA
18 even if the flight is terminated very early.
19 While the probability of such a malfunction is not
20 known, similar events have occurred in the recent
21 past. These results therefore mean that the
22 official launch hazard area determined by the BMDO
23 for the proposed Cudjoe Key site is too small."
24 The launch hazard area is inadequate in
25 other respects as well. Patterns of falling

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Exhibit 5.3-1: Reproductions of Transcript Comments (Continued)

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06(cont)

1 debris from an accident should not be the only
2 criteria. Noise and shock waves from potential
3 explosions, as well as chemical clouds from
4 potential accidents must be considered.
5 Your EIS acknowledges that explosions
6 could result in compression waves of two pounds
7 per square foot overpressure, strong enough to
8 cause minor structure damage as far away as 1.9
9 miles. There are at least 23 homes that close.
10 The launch hazard area is not big enough.
11 With respect to the chemical cloud from a
12 combustion accident, both of the dispersion models
13 used in the EIS's air quality sections show that
14 the highest concentrations of hydrogen chloride
15 are outside the launch hazard area. Hydrogen
16 chloride from an accident burning up the missile
17 is a launch hazard, why is it not considered in
18 determining the area. The launch hazard area is
19 not big enough. There simply is not enough
20 wide-open space anywhere in the Keys for a launch
21 hazard area that takes into account the very
22 launch hazards that are acknowledged in your EIS.
23 Thank you.
24 (Hand clapping.)
25 MR. MICHAELSON: Sol Rosenblatt.

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1 SOL ROSENBLATT: Thanks for giving me the
2 opportunity to present some solid rocket emission
3 observations made during my three and a half years
4 as a solid rocket development chemist for the
5 Polaris Missile Program.
6 MR. MICHAELSON: State your name, please.
7 SOL ROSENBLATT: Sol Rosenblatt. For Hera
8 1.5 tons of HCl gas emitted per launch. This gas
9 combines in a humid or excess water environment
10 with three tons of water, which brings down the
11 HCl in the form of four and a half tons of HCl
12 acid rain. A few drops of this acid will reduce
13 the PH of a gallon of water to below seven
14 instantaneously. Which author of this
15 environmental impact statement considers himself
16 or herself versed well enough in the chemical
17 balance of our back waters, that he or she is
18 willing to gamble that introducing four and a half
19 tons of HCl acid into this shallow environment,
20 for each launch, will not cause a deleterious
21 chain reaction? This fragile environment where we
22 are still are trying to learn the reason for our
23 reefs mysterious dying off at the rate of between
24 four and ten percent per year.
25 The claim is made that only 20 percent of

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Exhibit 5.3-1: Reproductions of Transcript Comments (Continued)

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1 the HCl in the presence of water combines to form
2 hydrochloric acids. What happens to the 80
3 percent balance? Could it be that only 20 percent
4 was detected because there was an assumption that
5 the water produced by the combustion was the
6 limiting water available for combining with the
7 HCl. That at the temperature of the exhaust, only
8 a certain amount of water was available. That the
9 low desert humidity at Fort Wingate, New Mexico
10 limited the water available, and altered readings.
11 The fact is that in the presence of excess water
12 or high humidity at standard temperatures and
13 pressures, all the HCl gas combines with water.
14 The claim that HCl and/or hydrochloric
15 acid clouds easily mix with the air and disperse.
16 Warm updrafts are produced by the exothermic
17 reaction of gaseous HCl and moist air, plus the
18 updraft caused by the combustion of the
19 propellant. Both will cause the exhaust trail to
20 rise and form an HCl containing cloud in a humid
21 environment of slow moving air. In addition,
22 there will be an updraft due to the heat of
23 condensation, as HCl acid vapor condenses into
24 larger droplets giving up its heat of
25 vaporization, adding to the updraft, until the

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07(cont)
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1 hydrochloric acid droplets sufficiently cool to
2 coalesce to a weight where they fall as
3 hydrochloric acid rain. This cloud, also
4 containing very fine aluminum oxide particles
5 sticks around, like a smoke cloud does after a
6 fireworks display, and moves as a unit, without
7 easily dispersing.
8 Since most of the rocket fuel is burned at
9 the beginning of a launch, and the rockets
10 acceleration is slowest at the beginning, we can
11 expect most of the HCl content of the propellants
12 exhaust gases to fall closer to the launch site,
13 rather than average along its path of trajectory.
14 Unburned propellant. The toxicological
15 effect of unburned solid rocket propellant must be
16 addressed, if the rocket chamber accidentally or
17 is purposefully destroyed, allowing unburned
18 propellant and engine fragments to enter into our
19 surrounding shallow waters. A documented event
20 describing such an occurrence was the failure of
21 Oriana 5 launched by the European satellite
22 consortium in French Guyana. The slow moving
23 saltwater lagoon surrounding these islands is not
24 too unlike our shallow saltwater surrounding
25 islands. It was reported by observers in the

Exhibit 5.3-1: Reproductions of Transcript Comments (Continued)

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01

1 launch area, that the launch hazard area was
2 toxicologically damaged, as indicated by a change
3 in the water color, absence of fish, and loss of
4 plant life.
5 Solid rocket propellant is more than 80
6 percent ammonium perchlorate, a very powerful
7 oxidizer, bound in a contiguous coating of a
8 polymeric binder. This is not a continuous
9 encapsulating coating as the report implies, but a
10 contiguous coating, which means lots of gaps
11 surrounding the oxidizer.
12 MR. MICHAELSON: Sol, if you looked, I had
13 my one minute finger indicator up for about a
14 minute. Sol, your time is up now.
15 (Hand clapping.)
16 MR. MICHAELSON: Mr. Rosenblatt, any
17 remarks you had that you weren't able to finish,
18 please hand those in and they will be entered into
19 the record. Thank you. Wayne Hoffman.
20 WAYNE HOFFMAN: Thank you. Thank you.
21 I'm Wayne Hoffman, research scientist with the
22 National Audubon Society, based in Tavernier.
23 I've been a resident of the Florida Keys for over
24 11 years, and have undertaken a variety of studies
25 of Keys animals and plants. I understand that

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1 launches from the Keys are not currently the
2 preferred alternative. I'm happy about this, but
3 still, I find the documentation of the risk of
4 this alternative, preferred or not, to our
5 environment to be woefully inadequate. I believe
6 it is important that the final EIS either rule out
7 this alternative completely, or else provide
8 accurate and comprehensive information on its
9 effects on our environment.
10 I will confine my remarks today to the
11 potential effects of proposed missile launches on
12 the natural biota of the Keys. My general message
13 is the draft EIS consistently underestimates the
14 damage to the wildlife and plants of the Keys
15 likely to result from this proposed project. And
16 I have a series of specifics. First, on page
17 3-260 tables 3.2.3-1, 3.2.3-2 are so inadequate
18 that their inclusion in the document is puzzling.
19 In the text they are referred to, and I quote
20 "Other fish present in the Gulf of Mexico are
21 listed in the tables as listed." These tables
22 list ten species and nine species of fish species,
23 respectively. In fact, the northern Gulf of
24 Mexico has over 400 resident fish species, and we
25 have numerous additional one's here in the Keys

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1 that don't occur in the northern Gulf of Mexico.
2 So I don't really understand the point in putting
3 tables of listing ten and nine species in there.
4 Number two. On pages 372 and 373, the
5 description of the vegetation of the Cudjoe region
6 of influence is inadequate. In particular, the
7 statements about the pinelands fail to recognize
8 that these tropical pinelands are significant
9 threatened habitats, very different from the
10 pinelands that dominate much of the temperate
11 southeast. About the only thing these pinelands
12 have in common with the pinelands on Eglin Air
13 Force Base is the presence of a pine dominated
14 canopy. I find it puzzling that palms are not
15 mentioned as understory components, and the nature
16 of the herbaceous understory is not even hinted
17 at.
18 Three. Several of the sites proposed for
19 facilities are described as "already disturbed"
20 with no further description of their vegetation.
21 This dismissal ignores the fact that several of
22 the endangered plants of the Keys are inhabitants
23 of open sites, including fire maintained habitats,
24 salt barren habitats, and disturbed sites.
25 Four. Over the last two years the state

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1 of Florida has added numerous Keys species to its
2 endangered and threatened plant species list. It
3 appears these new listing were not considered in
4 developing the table which is 3.3.3-1 on page
5 3-375.
6 Five. The birds listed in the text on
7 pages 3-373 and 3-375 are grossly inadequate in
8 describing the importance of the region of
9 influence to migratory birds and wildlife. This
10 is for Cudjoe. Numerous additional species use
11 the area. In fact, the small keys just north of
12 the Aerostat base, within about one kilometer of
13 ground zero, host an important nesting
14 concentration of Reddish Egrets, as well as Great
15 White Herons and several other waterbird species.
16 Whitecrowned pigeon also nests commonly in the
17 region of influence including areas quite close to
18 the proposed launch sites.
19 MR. MICHAELSON: You have 20 seconds.
20 WAYNE HOFFMAN: I will then skip to a
21 final comment that in addition to these problems
22 that I'm -- or inadequacies I will send to you, a
23 different sort of subject is that the described
24 effects on biota deal almost exclusively with
25 normal launch activity. We also need an analysis

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Exhibit 5.3-1: Reproductions of Transcript Comments (Continued)

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1 of the effects of any and all possible accidents.
2 (Hand clapping.)
3 MR. MICHAELSON: Alexander Hadden.
4 ALEXANDER HADDEN: My name is Alexander
5 Hadden. I'm a retired attorney. My comments this
6 evening are intended as a summary of the views
7 presented by this task force. The focus of the
8 task force has been to assess how well the draft
9 SEIS portrays the impact on the Keys of launching
10 target missiles here. We find the document as it
11 stands to be incomplete, superficial and in some
12 respects distorted.
13 Our first concern is human health and
14 safety. Nowhere in this SEIS is there any focus
15 on the possibility of serious accident. It
16 neither quantifies or mentions the possibility
17 that human error, or a combination of such factors
18 might result in a destructive distribution of
19 debris or toxic emissions beyond the launch hazard
20 area.
21 Of particular concern is the extremely
22 short distance from the launch site to the edge of
23 the LHA on its populated side. The fashion in
24 which the LHA has been magically shrunk when it
25 was discovered that it included settled areas

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1 seems to us to highlight the document's lack of
2 objectivity. Also, more detail is needed on the
3 timing of the trigger mechanism in the event of an
4 accidental firing in the direction of a populated
5 area.
6 The SEIS likewise fails to explain why the
7 launch site here should be so much closer to
8 populated areas than it is at other sites. There
9 is no other US missile test site that is nearly so
10 close. The launch sites in northern Florida, for
11 example, will be from platforms 5 to 13 miles
12 offshore of Eglin Air Force Base. Are there
13 special circumstances that might justify a
14 departure in the Keys from the safety precautions
15 proposed there? If so, the SEIS fails to mention
16 them.
17 The second concern is the environment.
18 The analysis understates the potential impact of
19 introducing large quantities and of hydrochloric
20 acid into this region of high humidity and shallow
21 sea water, and it fails to focus at all on the
22 consequences of such imposition on the fragile
23 alkaline environment of the Keys.
24 The third concern is transportation. The
25 Overseas Highway is the sole conduit for

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1 harder and deeper into these real risks and find
2 ways to treat them that would be both more
3 detailed and a lot more convincing. Thank you.

4 (Hand clapping.)

5 MAJOR KENNEDY: I'd like to make a

6 clarification, please. I would like to remind

7 people that the offshore platforms that are

8 proposed are also in the other alternatives

9 considered category very similar to the Keys

10 launch sites. They are not proposed to be the

11 preferred alternative that the Director of

12 Ballistic Missile Defense Organization is looking

13 at. The preferred alternative, as far as the

14 northern target launch sites go, are land based

15 target launch sites and on Cudjoe Key -- not on

16 Cudjoe Key, on Santa Rosa Island and Cape San Bias

17 and the launch site at Santa Rosa Island is

18 actually 7,000 feet from the nearest home.

19 MR. MICHAELSON: Next speaker is R. L.

20 Blazevic.

21 R. L. BLAZEVIC: The missile testing has

22 caused me to consider the safety of my family, the

23 residents, their children, and damage to our

24 environment. Even with the aircraft launching

25 there has been much exaggerated propaganda about

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1 automobile traffic, drinking water, electric
2 power, hospital, medical services, food and every
3 other vital service required by our entire
4 population. The impact of the missile proposal on
5 this lifeline corridor is not addressed at all in
6 the draft SEIS. What would be the effect of this
7 heavy new traffic burden on normal and essential
8 traffic patterns? And God forbid there should be
9 an accident that takes out a bridge, for example,
10 but should there not be some contingency planning
11 that would take such possibilities into account?

12 In conclusion, there is a very real
13 possibility of the failure of a missile launch.

14 We can conceive of no other rural location in the
15 United States where the consequences of such an
16 accident could be more devastating. Such a
17 failure could result in the dispersal of flammable
18 and toxic materials and chunks of missile hardware

19 into areas where people live, or involve the
20 accidental explosion of a missile being
21 transported on US 1. It is not enough to say that
22 the chances of such events happening in the Keys
23 are minimal. Disasters of this sort have happened
24 and they could happen here.

25 We hope that the final SEIS will look much

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Exhibit 5.3-1: Reproductions of Transcript Comments (Continued)

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1 possible danger in the necessary testing. I have
2 lived in the Keys for 40 years and have three
3 daughter's and four grandson's who live here. The
4 county and city leaders are responsible for
5 dealing with facts rather than emotional comments
6 of those who twist and exaggerate the risks
7 involved.
8 The two volumes of the 800 page
9 environmental study indicates extreme attention to
10 detail and extraordinary effort to consider every
11 possible factor to insure safety. It contains
12 many important facts about the Florida Keys. Many
13 residents are not considering the extreme danger
14 that we are exposed to everyday that's much more
15 hazardous than an occasional missile launch. The
16 constant exposure to injury and death on Highway
17 One from speeders, illegal passing, careless
18 driver's and the huge explosive gasoline trucks
19 which continues 24 hours a day, seven days a week.
20 This is not 100 times, 1,000 times, but 10,000
21 times more dangerous than periodic launches.
22 More than 50 passenger aircraft that are
23 fuel laden, potential bombs over crowded
24 classrooms occur each day as aircraft pass low
25 over the high school. Ninety percent of aircraft

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1 accidents occur on take-offs and landings. The
2 high school was built at the end of the runway 25
3 years after the airport was built. With the
4 extreme everyday danger, why hasn't the public
5 insisted that a deteriorating high school be moved
6 to a safer area. This is far more dangerous than
7 the Sugarloaf school location. The long term
8 exposure of the toxic dump that the Poinciana
9 School and Kennedy Drive Sports Complex are built
10 on has been ignored.
11 Constant vigilance makes it imperative
12 that we continually test all new weapons as they
13 are developed to protect the men and women who
14 have no control of where they are sent to protect
15 our interest.
16 I was in high school in World War II and
17 was drafted into naval aviation. The continual
18 testing insured my survival in the Korean and Viet
19 Nam wars. Having survived an aircraft explosion
20 from an aircraft fire, small arms sniping, being
21 strafed and bombed gives me a much better
22 perspective than those that have never been there.
23 Our greatest and continual national danger
24 and tragedy is that we have lost more young people
25 to drugs than to wars. The exaggerated

Exhibit 5.3-1: Reproductions of Transcript Comments (Continued)

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1 environmental damage is nothing compared to what
2 residents and tourists have done everyday to the
3 Keys. The reef is much destroyed. Sears and
4 Overseas Market were saltwater ponds with fish and
5 mangrove shorelines, which are now toxic parking
6 lots. Big Pine Key had four buildings on the
7 highway, less than 50 residents, no stores. Where
8 were all the objections while all the
9 environmental destruction was going on with the
10 bulldozing of entire areas and the thousands of
11 contaminated cesspits were being installed. The
12 residents avoid the responsibility waiting for
13 federal grants to replace the cesspits because
14 they want a newer car and boat. Residents fail to
15 protest the two yacht club septic tanks at
16 Garrison Bight. The cesspits on Hilton Haven and
17 the sewage injection well at the Garrison Bight
18 entrance. The city dumps ten million gallons of
19 sewage everyday into the channel and the tide
20 brings it back twice a day for us to swim in. The
21 sewage plant on Stock Island dumps their sewage
22 into the freshwater ponds on the city golf course.
23 I live on a canal in Key West that is
24 sewage polluted and is used for stormwater runoff,
25 despite the enforceable clean water act of 1995.

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18
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1 Mention has been made of noise impacts,
2 but I have 65 decibels from aircraft through the
3 front and back windows 18 hours a day and seven
4 days a week, but they are not going to close the
5 airport.
6 MR. MICHAELSON: Mr. Blazevic, your time
7 is up.
8 R. L. BLAZEVIC: One last sentence. I
9 well understand the unjustified fears of those who
10 oppose the missile testing. I do not resent the
11 newcomer's or tourists who have helped to
12 deteriorate the quality of life in the Keys.
13 Essential testing has to be in someone's immediate
14 area and to accept this responsibility is a mature
15 response to a national need.
16 MR. MICHAELSON: As I requested people, if
17 you wouldn't mind turning in your written comments
18 for anything you weren't able to get on record.
19 Thank you very much.
20 (Hand clapping.)
21 MR. MICHAELSON: Next speaker -- we
22 generally try to take a break about every 90
23 minutes for the court reporter. She says she is
24 doing fine, so let's try and get some more. The
25 next names I have up here are Bill Seese, David

Exhibit 5.3-1: Reproductions of Transcript Comments (Continued)

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1 Musselman, Lizzy Poole, R. C. Smith and Vicki
2 Weeks. Bill Seese.
3 BILL SEESE: I'm Bill Seese. I'm a Refuge
4 Operations Specialist with the Florida Keys
5 National Wildlife Refuges and I'm here to
6 introduce into the record written comments from
7 the U.S. Fish and Wildlife Service, including the
8 Florida Key Refuge Office, the South Florida Field
9 Office in Vero Beach and the Panama City Field
10 Office.
11 Tonight I only want to touch on a few of
12 the more pertinent points from this record
13 concerning the Florida Keys proposed alternative.
14 However, it is the final recommendation the
15 Florida Keys be eliminated from consideration as
16 an alternative launch site for target missiles in
17 the Eglin Gulf Test Range.
18 With respect to the draft proposal, there
19 are a number of deficiencies regarding the
20 potential effects to federal trust resources, land
21 management responsibilities and human health and
22 the environment.
23 Some of these include: Number one, a
24 thorough evaluation of the effects of prelaunch
25 and launch activities on populations of the silver

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1 rice rat, lower Keys marsh rabbit, transient Key
2 deer, bald eagles, eastern indigo snake, and all
3 of which exists within the launch hazard area on
4 both Cudjoe and Sugarloaf.
5 Number two, a thorough evaluation of the
6 effects of prelaunch and launch activities on
7 shore bird and wading bird rookeries the LHA will
8 have when nesting birds take flight in response to
9 prelaunch activities they leave their nest exposed
10 to predators and the elements. Flushing birds
11 unnecessarily also expands valuable energy that
12 may otherwise be used for hunting, foraging or
13 maintenance.
14 Number three, the proposed actions are
15 inconsistent with the Congressional delegation of
16 the wilderness areas for about 2200 acres in Great
17 White Heron National Wildlife Refuge and about
18 1900 acres in the National Key Deer Refuge,
19 respectively. By definition to the Wilderness Act
20 of 1964, wilderness areas are federal lands
21 retaining its peripheral character and influence
22 which is protected and managed so as to preserve
23 its natural conditions such that if one generally
24 appears to have been affected by the force of
25 nature with the imprint of man's work

Exhibit 5.3-1: Reproductions of Transcript Comments (Continued)

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1 I will submit our draft in writing.
 2 (Hand clapping.)
 3 MR. MICHAELSON: David Musseiman.
 4 DAVID MUSSELMAN: My name is David
 5 Musseiman. I'll try to continue with Sol
 6 Rosenblatt's environmental discussion since he ran
 7 out of time. I think we almost all run out of
 8 time. We can't possibly comment on a book that
 9 big in four minutes, and I'm just going to briefly
 10 summarize what Sol was trying to say. He was
 11 going to tell you about the chemical ammodium
 12 prochlorate in the waters is like a time released
 13 capsule of poison. It is a toxin and the binder
 14 that holds it does not completely cover it and so
 15 even your own studies show it does leach out. To
 16 counter that danger you've cited a quotation from
 17 the Department of Sanitation in Russia and Sol
 18 says the Russians maintain and tolerate the most
 19 toxic chemical and nuclear dumps in the world. I
 20 don't think they should be trusted.
 21 The next point was the Air Force only
 22 considered mechanical energy of impacts of the
 23 fragments and accompanying shock waves of a
 24 destroyed rocket on the fish and mammals in the
 25 vicinity and not the toxic impact of these

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1 substantially unnoticeable.
 2 Two, has outstanding opportunity for
 3 solitude or primitive or unconfined type of
 4 recreation.
 5 Number four, there needs to be a fair
 6 evaluation of the proposed action with respect to
 7 visual pollution of the wilderness areas, the
 8 impact on wilderness solitude and recreational
 9 economic impact of highly desired wilderness
 10 experience.
 11 In conclusion, after reviewing the draft
 12 documents, we remain concerned with potential
 13 adverse effects of the proposed action. As a
 14 cooperating federal agency and a need for process,
 15 we have attempted to identify gaps in the
 16 information provided, as well as note any
 17 inaccuracies. As such, the preliminary draft is
 18 incomplete in its current form. At the same time,
 19 we do not believe that the adverse effects of
 20 launching target missiles from Florida Keys such
 21 as noise impacts to nesting baby fauna can be the
 22 reduced.
 23 Finally, it is the recommendation of the
 24 Fish and Wildlife Service to completely remove
 25 from consideration the Florida Keys alternative.

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Exhibit 5.3-1: Reproductions of Transcript Comments (Continued)

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1 chemicals which would be a continuation of what he
2 just said there. And sorry, I'm really having to
3 skim over what Sol had. He also mentioned that
4 you've never measured the flow in our back water
5 lagoons, cul de sacs and shallow grass banks and
6 I'm going to get into that in my own statement
7 which I'll start now.
8 But so that I don't run out of time, I'm
9 going to start at the back and basically what I
10 did was I went through the document probably too
11 many times. But in your own words you had
12 summaries and these are quotes taken out of the
13 document. Says normal target launch operations
14 may result in the release of airborne exhaust
15 products which may adversely effect the health of
16 persons in the immediate vicinity of a launch
17 site. Also, during target launch operations there
18 is a potential for a launch mishap which results
19 in explosion or a whole body impact or debris
20 impact. Launch operations present non
21 occupational safety and health issues. Another
22 quote, potential safety impacts for all
23 environmental resources were evaluated for both
24 normal inceptor and target test flights for a
25 various of mishaps where normal test flight

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1 activity would also be impacted would be
2 negligible with no visual, ecological or human
3 health risk. The increased risk to the general
4 public due to mishaps would be negligible.
5 Another quote, it's possible that some of
6 the natural resources required for and this is
7 kind of important, this is real important, it's
8 possible some of the natural resources required
9 for the operation of the program may be restored
10 to their preprogrammed condition. The program
11 would not generate -- excuse me, would not
12 generally involve the use of resources to such an
13 extent they would become fully consumed or
14 destroyed. As a result of potential irreversible
15 and irretrievable commitments of resources would
16 be very limited. And I'm going to emphasize this
17 point, would occur only for certain biological and
18 cultural resources.
19 Let's see if I can just hit a couple other
20 things. Hydrogen chloride will dissolve in water
21 to form hydrochloric acid. It is a strong acid.
22 It is not uncommon for neighborhoods or even
23 entire towns to require evacuation during a spill.
24 The concentration levels below the threshold for
25 smelling hydrochloric acid can cause sneezing,

Exhibit 5.3-1: Reproductions of Transcript Comments (Continued)

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1 laryngitis. Hydrochloric acid is toxic to plants
2 causing internal damage, as well as leaf damage.
3 And I'll just close with the tests that
4 were done that talked about the -- Sol mentioned
5 the 80 percent of hydrogen chloride that
6 supposedly wasn't converted to hydrochloric acid.
7 And basically, the reason or the tests that were
8 done, all the empirical data that was gathered was
9 done in a desert, in two different deserts; one in
10 Utah and I can't remember where the other one is.
11 Thank you very much.
12 (Hand clapping.)
13 MR. MICHAELSON: Lizzy Poole, please.
14 LIZZY POOLE: My name is Lizzy Poole. I
15 live on Cudjoe Key. I represent the Womens
16 International League for Peace and Freedom. Our
17 organization has had both men and women members
18 for many years. We're one of the oldest peace
19 organizations in the world. I spent quite a bit
20 of time, at least two weeks or more looking for
21 something intelligent to say about this foolish
22 idea and I didn't find anything really intelligent
23 to say about this foolish idea that hasn't already
24 been said to you before this EIS statement was
25 prepared, but was left out of it.

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1 I resent the intrusion into all our lives.
2 I resent the time and money we have all had to
3 waste to fight this. I resent the money our
4 government has wasted on this foolish idea. I
5 read something in the paper a couple weeks ago
6 that made me feel very unpeaceful as a peace
7 person. I resented that we were all put at risk a
8 couple weeks ago when a Cruz missile was launched
9 from a ship off Miami, which traveled down one
10 side of the Keys and up the other to see if it
11 would work. It came 20 miles southwest of Key
12 West.
13 (Hand clapping.)
14 MR. MICHAELSON: R. C. Smith, followed by
15 Vicki Weeks, Tina Henize and Dale Zachariah.
16 R. C. SMITH: My name is Bob Smith. I
17 live here in Key West. I was employed by the R.C.
18 Service Company in 1955 through '57. I worked in
19 range safety at Cape Canaveral when it was Cape
20 Canaveral and I've experienced a number of missile
21 flaws. And I will tell you that it ain't fun and
22 it ain't funny. I was told at one time when an
23 atlas missile blew up when they thought it was
24 over Orlando, that we weren't supposed to say
25 anything about it. The veracity of these people

Exhibit 5.3-1: Reproductions of Transcript Comments (Continued)

P-T-0018 COMMENT NUMBER	
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P-T-0019	

1 is to be seriously questioned, seriously.
 2 This idea is inherently wrong.
 3 MR. MICHAELSON: Excuse me. If you would
 4 hold your comments, I want the court reporter to
 5 be able to hear what you are saying.
 6 R. C. SMITH: This is inherently wrong.
 7 Who in the world ever put somebody up in front of
 8 us to decide that they were going to launch
 9 missiles out of our Keys. I don't understand it.
 10 Where did they get the right? Who gave it to
 11 them? How did this come about? I don't know. I
 12 will tell you one thing that you're not taking
 13 into account in this environmental impact study
 14 and that is the fact that we are going to put a
 15 big hurt on you guys if you try to do this.
 16 That's one thing you're not considering. If you
 17 think the 60's were bad, wait and just see what
 18 happens here. That's all I got to say.
 19 (Hand clapping.)
 20 MR. MICHAELSON: Vicki Weeks.
 21 VICKI WEEKS: When I registered I had been
 22 asked by two organizations to read something into
 23 the record for them, as well as I registered for
 24 myself. I timed it and it was about five and a
 25 half minutes.

P-T-0019 COMMENT NUMBER	
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1 MR. MICHAELSON: We have to be consistent,
 2 you have four minutes as an individual.
 3 VICKI WEEKS: Then I will begin with mine.
 4 MR. MICHAELSON: Again, if they are
 5 written comments, they will be entered into the
 6 record.
 7 VICKI WEEKS: I sort of wanted to address
 8 the letter that was written by Lieutenant General
 9 Lester Lyles to Peter Deutch on November 24th,
 10 1998. And in it, General Lyles wrote, "The Keys
 11 target launch sites are a technically viable
 12 alternative and will still be under consideration
 13 in the Supplemental EIS. However, Keys target
 14 launch sites are no longer part of the proposed
 15 action. The Keys and sea launch target launch
 16 alternatives are unlikely to be approved in my
 17 final decision, emphasis, unless operational and
 18 testing requirements change." He also wrote,
 19 "only in an emergency threatening our national
 20 security would I consider changing the proposed
 21 action", referencing his decision to establish a
 22 new proposed action stating that the launching
 23 targets from the southern Gulf would be from
 24 aircraft.
 25 It is not that I doubt Lieutenant General

Exhibit 5.3-1: Reproductions of Transcript Comments (Continued)

P-T-0019
COMMENT
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1 Lyles sincerity, but it is precisely this type of
2 statement which I have heard expressed in a number
3 of forums, from a number of personnel involved in
4 this process that I find unsettling. Perhaps we
5 can call it the Watergate syndrome, or maybe the
6 Ollie North Iran Contra syndrome, or maybe just a
7 little healthy skepticism that has derived from
8 any one of a number of other questionable
9 government actions that occurred under the aegis
10 of national security concerns.
11 As we evolve away from a cold war
12 mentality and economy, perhaps it's time we begin
13 working on a definition of national security that
14 lends more weight to the stability and economic
15 impact generated by long term sustainable resource
16 utilization than to the theatrics of the latest,
17 formerly in favor, currently out of favor, arms
18 industry customer.
19 According to the data compiled by the
20 Natural Heritage Data Base for the Nature
21 Conservancy, there are 13 animals listed as of
22 state special state concern, 11 animals and 1
23 plant on the state threatened species list, 7
24 animals and 27 plants on the state endangered
25 species list, as well as 11 animals and one plant

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P-T-0019
COMMENT
NUMBER

1 on the federal threatened or endangered list, all
2 within a five mile radius of the proposed missile
3 site. In an area whose economy is directly based
4 on natural resource based tourism, the loss of
5 even one of these species would be unfortunate in
6 deed.
7 Even if there is never an accident or
8 misfiring, the toxic by-products released into the
9 air and waters surrounding the proposed sites,
10 have absolutely no potential upside with regard to
11 the health of our fragile environment. They may
12 cumulatively act to push one or more species over
13 the brink of extinction. Neither our environment
14 nor our economy can afford a further loss of
15 diversity and a resulting ecological imbalance.
16 I would ask that you move to permanently
17 remove the Florida Keys from any future proposed
18 action regarding the establishment of missile test
19 sites. That was my comment.
20 The other comment is from the National
21 Marine Sanctuary Advisory Council on which I sit
22 as the representative of the dive industry. And
23 their resolution was passed March 12th, 1998, and
24 they have sent a formal request asking the
25 sanctuary managers to request that the United

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Exhibit 5.3-1: Reproductions of Transcript Comments (Continued)

P-T-0019
COMMENT
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1 States Department of Defense to abandon all
2 proposed or contemplated plans for future
3 launching of test missiles from land sites in the
4 Florida Keys or waters within the boundaries of
5 the Florida Keys National Marine Sanctuary.
6 This action must take place prior to the
7 April 3rd, 1998, when the comment period for the
8 impact statement closes.
9 The final comment was from PADI Worldwide,
10 which is the largest agency certifying divers in
11 the world. On behalf of the Florida based
12 recreational diving community of dive centers and
13 instructor members of the Professional Association
14 of Dive Instructors, I wish to express our
15 official opposition to the proposed Hera class
16 ballistic missile launch sites on Saddlebunch and
17 Cudjoe Keys, which are on the edge of the Great
18 White Heron National Wildlife Refuge and pose a
19 negative environmental impact to the area. We
20 request the project be re-examined in this context
21 and find an alternate solution.
22 (Hand clapping.)
23 MR. MICHAELSON: That was Vicki Weeks that
24 spoke. At some point you have to resist some of
25 the temptation to speak so fast because the court

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P-T-0020
COMMENT
NUMBER

1 reporter's fingers don't go that fast. Tina
2 Henize is next.
3 TINA HENIZE: My name is Tina Henize and I
4 live on Cudjoe Acres subdivision just outside the
5 magic shrinking launch hazard area. The magic
6 shrinking launch hazard area that is pretty
7 significant. It would be very easy and quite a
8 bit of fun if we weren't already tired of the
9 subject of missiles to take pot shots at this
10 draft EIS. We could point out its brilliant
11 finding such as on page 3-424, which says the
12 mainland portion of Monroe County includes the
13 Everglades National Park, Big Cypress National
14 Preserve, and the City of Miami. We could make a
15 lengthy list of other sloppy typos and other
16 sloppy rubber stamp errors and geographical slips.
17 But the scariest part of this draft EIS is the
18 conclusions that it draws. That all the
19 environmental impact statements from air quality,
20 to noise, to human safety, to visual aesthetics,
21 to emission effects on wetlands, to harassing and
22 killing wildlife, to denying citizens access to
23 public lands and water, that all these impacts are
24 negligible. These conclusions are based on very
25 faulty and pathetically incomplete study.

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1 There are numerous references to effects
2 being temporary and of short duration, as if that
3 makes them okay. Gun fire is of short duration
4 too, but we go out of our way to prevent it.
5 Accidental explosions and other mishaps are of
6 short duration. No matter how small, the
7 probability of a catastrophic accident, basic
8 precautions such as very conservative distances
9 between the people and missile launches, basic
10 cautions need to consider improbable accidents.
11 Catastrophic failures of missiles do happen from
12 time to time and chopping off pieces of the LHA
13 because there are families living there does not
14 make the improbable impossible.
15 Biological concerns across the board are
16 dismissed here as negligible. Without adequate
17 study of the Keys ecosystems, endangered species
18 are endangered for a reason. They are rare. They
19 are already stressed for various reasons, and as
20 an endangered species, they are sensitive to small
21 environmental changes.
22 The draft EIS does not show that any
23 detailed study was done of any Keys ecosystem.
24 With the help of cooperating agencies and other
25 sources the EIS authors list species of plants and

P-T-0020 COMMENT NUMBER
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1 animals known to be in the vicinity and then
2 essentially say, we're going to kill some of the
3 plants and animals and we don't really know how
4 many, but it doesn't matter because it's
5 infrequent and of short duration.
6 One last point the EIS states about
7 ambient noise on Cudjoe being affected by aircraft
8 from NAS and Key West Airport. It fails to
9 recognize that north Cudjoe rarely has aircraft
10 because of the restricted air space of the
11 Aerostat station.
12 We certainly appreciate the consideration
13 General Lyles gave to the issue of launching
14 missiles from the Keys and we are grateful to his
15 decision to set aside the Keys option as
16 preferred. However, the draft EIS reports to have
17 satisfactorily answered all environmental and
18 safety concerns, which it definitely does not.
19 The draft EIS, with respect to many issues of
20 safety and environment is obviously inadequate.
21 It contains erroneous and incomplete information
22 and barely scratches the surface on issues related
23 to ecosystems in the Keys.
24 We strongly recommend the portions of
25 theater missile defense draft EIS which applies to

Exhibit 5.3-1: Reproductions of Transcript Comments (Continued)

P-T-0020 COMMENT NUMBER
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P-T-0021
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1 land launches from the Florida Keys be deleted
2 entirely. The problem of potential launch sites
3 in the Keys being too close to human population
4 can never be overcome and nothing could mitigate
5 environmental damage from routine missile
6 launches, much less potential severe damage from
7 mishaps.
8 (Hand clapping.)
9 MR. MICHAELSON: Dale Zachariah.
10 DALE ZACHARIAH: Hello. Dale Zachariah.
11 I read your impact study. There seems to have
12 been some misrepresentations. I read 12 launches
13 a year, one a month, but the study says at least
14 24 a year, two a month. Chapter 261, your map of
15 south Florida showing environmental concerns. The
16 Keys show none. No sea turtle nests, no salt
17 water marshes, no sea grass beds, no eagle nests,
18 no mangroves, no aquatic preserves, and a black
19 string bean for coral reef from Big Pine to Key
20 West and no more. I don't believe that's
21 accurate. Also the land missile seems to get
22 equal billing as your target of choice for the
23 land missile with its liquid propellant and
24 diametrical (phonetic) hydrazine and inhibited
25 nitric acid. The study briefly said what would

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1 happen to the neighborhood if lightning hit this
2 missile but dismissed it as some typical jargon.
3 Also in this study you say that the
4 potential for beneficial impacts that may occur as
5 a result of a reduction of fishing activity and
6 harvest associated with fishing area closures
7 during missile testing. Basically, you're doing
8 us a favor.
9 I always ask, why the missiles. The
10 problem with the Scud missile attacks in the Gulf
11 War is we didn't know where they were coming from,
12 we didn't know where they were going, and we
13 didn't know when. These missiles launches do not
14 answer those questions. Hitting Scud missiles is
15 not the problem. President Bush said we hit 40,
16 43 Scuds with a 93 percent kill ratio, but this
17 arms industry encourages a magnified view of the
18 threat in order to justify its record climbing
19 defense. It receives the support of the military
20 bureaucracy in relationship of mutual support
21 between government and industry with serious
22 distortions and shared deception of our need for
23 these missiles.
24 (Hand clapping.)
25 MAJOR KENNEDY: I'd like to make one

Exhibit 5.3-1: Reproductions of Transcript Comments (Continued)

1 MARK SIMMS: My name is Mark Simms. I'm
 2 here as a concerned citizen. My wife Amy Simms is
 3 also here because she is concerned as well. I am
 4 here as a democrat, small D, Shirley, small D and
 5 I regard myself as a patriot. My wife and I are
 6 year round Monroe County residents. We are
 7 homeowners in this community and I'm particularly
 8 proud to say that I served on active duty in the
 9 United States Air Force as a captain from 1988
 10 till 1996. I had the pleasure of serving as a
 11 judge advocate. Among my duty assignments at
 12 Patrick Air Force Base, which served as a support
 13 facility for the Kennedy Space Center, I had
 14 exposure to missile issues there.
 15 I would also say that when I was serving
 16 at Travis Air Force Base, California, I was sent
 17 by the Air Force to a course on how to write EIS
 18 and other documents in order to comply with the
 19 NEBA (phonetic) and I hope that my comments are
 20 taken in the spirit in which I intend them.
 21 I intend to speak plainly this evening. I
 22 love my country, I enjoyed my experience in the
 23 Air Force, but I will say, with all due respect,
 24 that launching missiles from these Keys is a bad
 25 and stupid idea. You don't need a million dollar

1 clarification. The Lance missile is not proposed
 2 for launch from the Keys.
 3 MR. MICHAELSON: It is right up at nine
 4 o'clock and we have to take an occasional break
 5 for the court reporter. We are approximately
 6 halfway through the list of speakers, so we're
 7 going to take a ten minute break and we will
 8 return and take the rest of your comments.
 9 (Recess.)
 10 MR. MICHAELSON: Please take your seats.
 11 We will try and get the second section started
 12 here. Our speaker is ready, we're ready. If you
 13 want to continue your conversations, if you would
 14 please take them out of this room. Thank you very
 15 much. Actually, it was coming through, it's just
 16 a lot of background noise. We're ready. I'm
 17 going to again read a list of speakers, the next
 18 four or five, so you can be ready to come up and
 19 know where you are in the order. First person up
 20 is Mark Simms. He will be followed by Joel
 21 Biddle, then Shelley Francis, then Malcolm Pike,
 22 Ralph Gouidy and that will be the first five.
 23 Mr. Simms, again, if you would just remember to
 24 state your name at the beginning, I would
 25 appreciate it.

Exhibit 5.3-1: Reproductions of Transcript Comments (Continued)

P-T-0022
COMMENT
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1 study, an EIS analysis or scientific testimony to
2 know that this is a bad and stupid idea. Look at
3 two simple facts. This is one of the most
4 environmentally sensitive areas in the United
5 States. Number two, there is a public school not
6 more than five miles from the launch area. My
7 home is within five miles from the launch area and
8 I say, as a individual and as a citizen of this
9 country, that it is disingenuous and untruthful to
10 state in an EIS that launching missiles does not
11 pose a safety threat to the members of this
12 community. That is either a lie or a terrible
13 misperception. I don't think that anyone could
14 make that statement in good faith.
15 Anyone who watched the Challenger explode,
16 anyone who remembers Gus Grissom's Apollo capsule
17 burning him up on the launch pad knows that it is
18 a certainty that if X number of missiles are
19 launched from this launch site, something is going
20 to go wrong. A missile will explode upon launch,
21 will go off course, and it is merely a matter of
22 how long before that happens. And for our
23 government to come in and tell the residents of
24 this community that this poses no safety threat to
25 us is, frankly, offensive and insulting.

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1 I would remind the people here that we are
2 the government in this great democracy. I have no
3 and I would not impune these fine gentlemen who
4 are here this evening, but I would also wish to
5 remind the people assembled here this evening that
6 DOD and the Ballistic Missile Organization are not
7 democratic institutions. If you wish your voice
8 to be heard, do not only leave here this evening,
9 write your Congressman, write our senators, write
10 Secretary Cohen, write President Clinton and tell
11 them that you will not accept the launch of
12 missiles from the Florida Keys. Thank you.
13 (Hand clapping.)
14 MR. MICHAELSON: Joel Biddle.
15 JOEL BIDDLE: Hi, I'm Joel Biddle. I'm
16 the educational coordinator for Reef Relief and I
17 represent Reef Relief and the board of directors
18 and I think the vast majority of the Florida Keys
19 citizenry. The recent proposal of the federal
20 military to test missiles in the Florida Keys is a
21 bad idea for a number of very good reasons. We
22 encourage the citizens of the Keys to strongly
23 voice their opposition to such folly and likewise,
24 encourage the proponents of this idea to abandon
25 it for a more appropriate site elsewhere.

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Exhibit 5.3-1: Reproductions of Transcript Comments (Continued)

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1 The first is a lack of infrastructure and
2 despite what has been said here by the military,
3 we submit that it will be difficult, if not
4 impossible, for the Florida Keys to accommodate
5 the use of US 1 for traffic generated by six to
6 seven large tractor trailers 12 times a year, the
7 need for housing for over 100 personnel, and the
8 ancillary infrastructure needs that will be
9 generated by the construction activities proposed
10 for this project.
11 Two, are the environmental impacts. The
12 coral reef ecosystem and its resident endangered
13 species should be adversely effected by the fuel
14 dispersal, the booster stage debris and the loss
15 of wetland habitat, by the fill and construction
16 you propose at the launch sites. The proposed
17 mitigation is a concept that has failed when
18 applied to coral reef ecosystems. We do not
19 believe you can fill wetlands and mitigate
20 elsewhere to make up for that loss in this already
21 highly stressed area.
22 We find it absolutely ludicrous that as
23 one arm of our government strives to establish a
24 protected area under the National Marine Sanctuary
25 designation, the military seeks to use it as a

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1 dumping ground for debris and a test site that
2 could be dangerous to both man and beast.
3 Three, the quality of life. The noise and
4 the closing, not only of US 1 but also the airport
5 and the local boating activity 12 times a year for
6 a period of up to 20 years and the very real
7 danger to residents in the area is an unnecessary
8 imposition on both the residents and visitors to
9 the Florida Keys who constitute our main economic
10 activity. More appropriate sites exist elsewhere
11 in the world. This community has already
12 sacrificed Peary Court, the Naval Air Station and
13 the Coast Guard Base to the federal military.
14 We at Reef Relief strongly recommend that
15 you explore more appropriate sites elsewhere. We
16 communicated this in clear, uncertain terms last
17 year when meeting with you. We also did that the
18 year before. We fought offshore oil for eight
19 years before President Bush signed a ten year ban.
20 We will fight this as well. Please recognize our
21 concerns and save us all a lot of time by
22 listening to us. Thank you.
23 (Hand clapping.)
24 MAJOR KENNEDY: I have to make one
25 clarification. There is no proposal to close US 1

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Exhibit 5.3-1: Reproductions of Transcript Comments (Continued)

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COMMENT
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1 or the airport.

2 MR. MICHAELSON: Shelley Francis is next.

3 She appears to not be here. Malcolm Pike.

4 MALCOLM PIKE: Good evening ladies and

5 gentlemen. I will make it very brief.

6 MR. MICHAELSON: Would you state your

7 name, please.

8 MALCOLM PIKE: This is Malcolm Pike

9 speaking and I think most of the words I'm going

10 to express have been superseded by the previous

11 speakers. But being an engineer myself and

12 studying weaponry when I was younger, having had

13 them drop on us during the war from Germany, I

14 know what can be involved. And I think that

15 scientists would agree with me, the impact of the

16 explosion, you know, on the targets being hit, the

17 gases -- on the subject of the gases, they

18 certainly will drift over the lower Keys when the

19 wind is blowing from that direction. And

20 personally, I think it's a ridiculous idea and

21 they should look for somewhere else. Thank you.

22 (Hand clapping.)

23 MR. MICHAELSON: Ralph Gouldy is next,

24 followed by Barbara Ehrenreiter, Blue Lunden, John

25 Leslie and Archer Miller.

P-T-0024

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P-T-0025
COMMENT
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1 RALPH GOULDY: Good evening. My name is

2 Ralph Gouldy. I'm the Monroe County Senior

3 Environmental Planner. I'm here representing the

4 Growth Management Division of Monroe County. I

5 might say at the outset that while it is quite

6 disturbing to think that Miami may be part of

7 Monroe County, I'll restrict my comments to the

8 Growth Management Division's concern regarding the

9 SEIS in regard to the Monroe County year 2010

10 comprehensive plan.

11 Table ES1 of that plan, which is also part

12 of tonight's handout states that the launch plan

13 is compatible with Monroe County Comp Plan for

14 both Cudjoe Key and Saddlebunch Key. The basis

15 for this statement must be the realization that

16 the federal government has the authority to exempt

17 itself from local jurisdictional regulations, as

18 far as specific policies of the comp plan which

19 are in conflict with this SEIS. Policies 102.1.1,

20 204.2.1, 207.1.4 all require 100 percent open

21 space for wetlands, which would preclude any type

22 of development in these areas.

23 Policy 204.2.2 states that no fill or

24 structures are permitted in submerged lands or

25 mangroves. Also, policy 102.9.2 prohibits

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Exhibit 5.3-1: Reproductions of Transcript Comments (Continued)

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1 activities which would be in conflict with the
2 intent of properties designated conservation lands
3 on the future land use maps. This policy reads in
4 part that Monroe County, in cooperation with
5 appropriate state and federal agencies, shall
6 initiate conservation land protection area
7 planning efforts for each of the conservation
8 lands in Monroe County.
9 The purpose of these planning efforts will
10 be to identify current and future land use
11 activities which are causing or have the potential
12 for causing adverse impacts on sensitive natural
13 features and natural resources within state and
14 federal conservation lands.
15 Policy 103.2.14 prohibits the destruction
16 of endangered species habitats. The silver rice
17 rat and marsh rabbit habitats are part of and
18 contiguous to the launch sites.
19 With regard to disturbance due to human
20 activity of endangered species, it's stated that
21 the window of disturbance will be 30 days prior to
22 the launch and up to five days after the launch,
23 with the acknowledgment that there are as many as
24 12 launches per year. Therefore, one must
25 conclude the disturbance could potentially be

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1 continuous for ten years.
2 As far as the Monroe County Land
3 Development Regulations are concerned, several
4 regulations if a permit were applied for, would
5 preclude issuance, including section 95-286 which
6 requires a 50 foot setback from wetlands. Section
7 95-343 which requires 100 percent open space for
8 wetlands. And section 953.5 which allows only
9 docks, walkways and utility pilings on submerged
10 lands and mangroves.
11 In summary, I think we can only conclude
12 that the authors of the report failed to read
13 Monroe County's Comprehensive Plan or realize that
14 there was no chance of achieving realistic
15 compliance with a clear intent of our regulations.
16 Thank you.
17 (Hand clapping.)
18 MR. MICHAELSON: Barbara Ehrenreiter.
19 BARBARA EHRENREITER: My name is Barbara
20 Ehrenreiter. I'm a writer and I live three miles
21 away from the proposed launch site in Cudjoe Key.
22 About a year ago precisely to today I interviewed
23 Lieutenant Colonel Richard Lehner, which is you,
24 sir, on the phone in preparation for writing an
25 essay for Time magazine about this issue. And

Exhibit 5.3-1: Reproductions of Transcript Comments (Continued)

P-T-0026
COMMENT
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1 when I asked him the rare philosophical question,
2 what are the missiles for; what do we need these
3 for; will they be used to defend the United
4 States. His answer was and I'm sorry, I can only
5 paraphrase. I don't have the exact quotes with
6 me. Was no, these were not defenses. They were
7 not to be used to defend the perimeter of the
8 United States, but these were for use in theaters.
9 That is, in the course of interventions in other
10 countries.
11 When I asked further questions and
12 suggested that that wasn't the most persuasive
13 argument I had ever heard, he allowed that we
14 could always sell the missiles to other countries.
15 So what that suggests to me is that we are risking
16 our safety and our environment for what is
17 essentially product testing, which will eventually
18 rebound to the profits of Lockheed and other
19 companies.
20 But I just want to end by saying, let's
21 talk about defense then. The argument that the
22 Air Force has used at various times and certainly
23 used in a letter in response to my article in Time
24 was that the priority of the defense of our nation
25 came above all. So let me just say to you, sir,

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COMMENT
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1 you say you are here to defend your country, I
2 think you need to understand, so are we. We are
3 here to defend the beauty, the wildlife, the
4 tranquility, the precious ecosystem of our region,
5 including, I would add, the Gulf of Mexico itself.
6 And I think it's particularly tragic that we have
7 to defend this precious region of our country
8 against the plans of our own military.
9 (Hand clapping.)
10 MR. MICHAELSON: Blue Lunden.
11 BLUE LUNDEN: My name is Blue Lunden. I'm
12 a member of the Unitarian Universal Fellowship of
13 Key West. I would like to read a resolution that
14 was passed unanimously by our fellowship this
15 year. Whereas the Department of Defense is
16 planning to establish a missile testing range in
17 the Florida Keys; and whereas this testing range
18 is located within the Great White Heron National
19 Wildlife Refuge, and these waters are contiguous
20 with the Florida Keys National Marine Sanctuary;
21 whereas this site is within one mile of
22 residential property and within four miles of an
23 elementary school; and whereas the Unitarian
24 Universal Scholarship of Key West covenants to
25 affirm and promote the goal of the world community

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P-T-0027

Exhibit 5.3-1: Reproductions of Transcript Comments (Continued)

P-T-0027
COMMENT
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1 with peace, liberty, and justice for all and
2 respect for the inter dependent web of all
3 existence of which we are a part. Therefore, be
4 it resolved that the Unitarian Universal
5 Fellowship of Key West stand united in opposition
6 to the establishment of a testing range.
7 On a personal note, I live on upper
8 Sugarloaf, very near the school and I was
9 horrified at the thought that there could be an
10 accident with 800 children in the school. I
11 couldn't believe that a plan like this could be
12 hatched if there were anyone aware of a school so
13 close. I would just say, that you say you will
14 protect us and yet I feel that we have never been
15 so endangered. This is a bad idea. Please don't
16 do it.
17 (Hand clapping.)
18 MR. MICHAELSON: John Leslie is next.
19 JOHN LESLIE: John Leslie, Sugarloaf Key.
20 For the record, I would like to read into the
21 record the Air Force's safety record from 1996 to
22 1998, a sample of evidence. April the 3rd, 1996,
23 an Air Force plane crashes outside of Debrov in
24 Croatia, killing Commerce Secretary Ron Brown and
25 34 others. Families of victims are suing the Air

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P-T-0028

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1 Force for gross negligence in regard to civilian
2 lives. The Air Force's own investigation blamed
3 the pilots, a poorly equipped plane and Air Force
4 commander's violations of landing regulations.
5 Among other problems, the plane carried an
6 inaccurate chart, which showed the mountain the
7 plane crashed into with an altitude approximately
8 2,000 meters less than its actual height, and
9 navigation equipment that was over 60 years out of
10 date.
11 June 25, 1996, a terrorist truck bomb
12 kills 19 and wounds 500 airmen at the Cobar Towers
13 military apartment complex in Dahrhan, Saudi
14 Arabia. The Pentagon has blamed Air Force
15 Brigadier General Tirrell Sharway (phonetic) for
16 recklessly exposing his troops to danger by
17 ignoring repeated Pentagon instructions to beef up
18 security at the complex, develop evacuation plans,
19 widen the security perimeter around the building,
20 or place plastic film over windows to prevent
21 glass from shattering. Sharway was denied the
22 motion over the "vehement objections of Air Force
23 brass." Thus ending his military career.
24 November 22, 1996, an Air Force C-130
25 cargo plane crashes into the Pacific off the coast

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1 of California, killing ten Air Force reservists.
2 In January 1998 the Air Force admits its
3 investigation into the crash was "flawed" and
4 decides to investigate further.
5 February the 5th, 1997, an Air Force F-16
6 fighter jet locks onto and chases a commercial
7 plane carrying 80 passengers. The Air Force plane
8 came within 400 feet of the commercial plane at
9 one point, setting off an anti collision system in
10 the commercial plane and throwing three passengers
11 to the floor. This was one of four incidents in
12 early 1997, in which F-16's came close enough to
13 commercial jets to pose a "real threat of midair
14 collision."
15 April 2nd, 1997, on a training flight, Air
16 Force Captain Craig Button wonders off course and
17 plows his A-10 attack jet into Gold Dust Peak in
18 Colorado. The plane contained live bombs.
19 October 22nd, 1997, the wing tip of an Air
20 Force F-16 fighter plane slices into an Air Force
21 T-38 cockpit, killing two. This is only a small
22 sample of Air Force involved crashes in the last
23 few years and all of the above incidents occurred
24 in peacetime. Thank you.
25 (Hand clapping.)

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1 MR. MICHAELSON: Next speaker is Archer
2 Miller, followed by Mari Hanley, Muriel Hendrick,
3 Crysten Brigham and Annie Robinson.
4 ARCHER MILLER: I'm Archer Miller. I live
5 right across the street from the Saddlebunch site
6 and that water in there is so shallow, you only
7 get about one or two inches of tide change per
8 tide change. At the most, three or four inches a
9 day. There is no way that water can flush out
10 fast enough that all that acid wouldn't kill
11 everything in there. The wind, most of the time
12 comes right across the highway from where your
13 launch site is going to be over into the
14 neighborhood where I live in or in the Sugarloaf
15 neighborhood. That's going to be another flaw.
16 And I think you did say something about there
17 would have to be a four hour time period when
18 everything would be closed. We're so close to the
19 highway, I'm sure the highway would have to be
20 shut down for four hours also. I bet a lot of
21 people would love that. Alright. Thank you.
22 (Hand clapping.)
23 MR. MICHAELSON: Mari Hanley, Muriel
24 Hendrick.
25 MURIEL HENDRICK: Good evening. My name

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1 is Muriel Hendrick and I live here in Key West. I
2 can't add a great deal to what has already been
3 said other than there is obviously only one safe
4 way to deal with missile launching and that is not
5 to have any of it, land, sea or air, not in the
6 Keys, not anywhere. It isn't just that I don't
7 want it in my neighborhood, I don't want any
8 missiles launched in anybody's neighborhood. I
9 see no reason for missile testing. Thank you.
10 Goodnight.
11 (Hand clapping.)
12 MR. MICHAELSON: Crysten Brigham, not
13 here. Annie Robinson. Are you Annie Robinson?
14 ANNIE ROBINSON: That's me.
15 MR. MICHAELSON: Annie Robinson will be
16 followed by Robin Orlandi, Joe Allen and George
17 Halloran.
18 ANNIE ROBINSON: My name is Annie Robinson
19 and I live on Cudjoe Key with my husband of six
20 months. We both work in the restaurant business
21 here in Key West. This is prime dining time for
22 Key West. I'm also here to represent many of my
23 friends who work in the restaurant business that
24 couldn't be here themselves. I have taken the
25 night off to be here, since my conscience wouldn't

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1 let me do otherwise. You see, I made my husband
2 promise me, when we were married, that if ever
3 some mad person or group of people ever decided to
4 destroy our home as we know it and love it, that
5 we would leave. No, I don't know who needs to
6 hear my words tonight, although I heard that it
7 really doesn't matter what we feel, that this is
8 just a formality, like that ridiculous
9 environmental impact statement. Please do not
10 insult our intelligence. Maybe we can end this
11 lunacy and I think tonight would be a perfect time
12 with a full moon.
13 Please listen well to my heart and soul
14 and realize that these missiles are a bad thing
15 for the people of the Florida Keys and a bad thing
16 for the people of America. The Keys back country
17 is the world class fishing, diving and
18 recreational area, visited by presidents,
19 celebrities and Americans from all walks of life.
20 We the people of the Florida Keys chose to live
21 here for this pristine beauty and our livelihood
22 depends upon it. You might look at me say, she's
23 just a waitress, what does she know about any of
24 this. I was also a marine biology major at the
25 University of Hawaii. Remember what you did to

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1 that island, I don't think you want to discuss.
2 It would be redundant for me to tell you the true
3 environmental impact because you already know how
4 catastrophic it would be. So I'm going to talk to
5 you from the standpoint of a passionate newlywed
6 waitress with great hopes and dreams for the
7 future. I'll begin with the most important thing
8 in life, which is love, and the most important
9 love is family.
10 My husband and I have decided to start a
11 family of our own and raise it in our home on
12 Cudjoe Key where they can learn all about the
13 breathtaking beautiful back country. They will
14 learn about this magical land from their father,
15 who knows it like the wizard knows Oz. He has
16 been fishing these waters for 25 years, both
17 personally, as a back country fishing guide. We
18 call the back country our sanity. It's where we
19 live, love and laugh. Not only is it our passion,
20 it's also to be our new career. A very
21 frightening step for both of us. You see, we just
22 invested a lot of money in a brand new flats
23 fishing boat. Not at the time it wasn't a lot
24 when we thought we could live the American dream,
25 it was still obtainable, and we could have our own

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1 business, our own happy and healthy lives in a
2 clean environment to raise our children.
3 I'm begging you not to make this an
4 American nightmare. Loud noise and poisonous
5 fallout in one of the cleanest and quietest places
6 left on earth. I'm begging you not to make this
7 an American nightmare of a missile launch site
8 near where our children will play and go to
9 school. Please don't shatter this dream and the
10 dream of so many people like me who call this our
11 home.
12 Please use your heads and don't turn the
13 phrase, military intelligence, into a joke. This
14 is a huge mistake. And don't mistake my emotional
15 tone and my short size for weakness because I'll
16 be the first one to lie down on Blimp Road or
17 anywhere else near my home to protect us from this
18 unwelcome intruder. Somehow I don't think I'll be
19 the only one. Thank you.
20 (Hand clapping.)
21 MR. MICHAELSON: Some of the people that
22 are going to speak now may not have been here at
23 the very beginning when I gave my instructions.
24 When I put up one finger, that means you have one
25 minute left and then I'll put up a hand like this

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1 indicating that your time is up. Okay. Robin
2 Orlandi.
3 ROBIN ORLANDI: Yes, I'm Robin Orlandi and
4 I represent the Board of Directors for Reef
5 Relief. Reading this into the record. The SEIS
6 is entirely inadequate to address the specialized
7 environmental concerns of the Florida Keys. It
8 fails to establish background ecological
9 parameters based on local studies or to
10 realistically represent the overall impacts of TMD
11 testing in the Keys.
12 It concludes that missile launches will be
13 isolated events with temporary impacts, at the
14 same time stating that each launch requires a 30
15 day preparation period followed by two to five day
16 cleanup. With as many as 24 launches proposed
17 annually, it doesn't take a rocket scientist to
18 figure out that this amounts to a continuous
19 occupation and disturbance of launch support
20 sites.
21 The majority of SEIS's conclusions are
22 based on data from previous studies done outside
23 of the Florida Keys. Air quality findings derived
24 from OBOD model was conducted in the Utah desert.
25 This methodology has no EPA approval in the first

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1 place and it's difficult to think of an
2 environment more unlike the Keys in terms of
3 moisture, which is a determining factor in
4 calculating how much hydrochloric acid will rain
5 out from launch exhaust. How accurately this
6 scenario models launches that will be 100 percent
7 surrounded by marine waters and conducted in a
8 humid environment isn't examined.
9 The document describes the launching as a
10 discreet air emissions event. Yet each generates
11 13,800 pounds of total exhaust including 221
12 pounds of hydrochloric acid. Multiplied by 12
13 monthly launches, at least 2,650 pounds of
14 corrosive acid would be entering our fragile
15 environment each year. This is characterized as a
16 temporary, short term increase in water acidity.
17 It is also noted that acidification of water
18 generally results in lower oxygen levels. Yet, no
19 data is provided to evaluate the oxygen
20 requirements of sea grass beds, mangrove
21 nurseries, or other potential aquatic receptors.
22 This is a glaring oversight in light of the
23 eutrophication problems that have been experienced
24 in Florida Bay and nearshore waters and the
25 tremendous efforts and expenditures that are being

Exhibit 5.3-1: Reproductions of Transcript Comments (Continued)

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1 ecosystem deserves the highest level of
2 protection, we ask you to once and for all remove
3 the Keys from any potential or alternative missile
4 launch sites lists. The SEIS doesn't begin to
5 adequately research or address the complex needs
6 of our ecosystem. Missile testing produces no
7 benefits and many deficits for the ecological,
8 economical and cultural resources of the Keys.
9 This is a sanctuary, not a test range and
10 we ask you that you respect the reality of that
11 fact and the fact that many people have worked for
12 years to preserve and protect these islands and
13 their surrounding waters. We will never give up
14 the fight against missile testing in the Keys.
15 Thank you.
16 (Hand clapping.)
17 MR. MICHAELSON: And again, from any of
18 you who may not have been here at the beginning,
19 we strongly encourage anyone who has prepared
20 written comments to please hand in a copy to us.
21 Joe Allen.
22 JOE ALLEN: Yes, I'm Joe Allen. I'm here
23 to represent all the people of Monroe County and
24 especially the kids who can't be here to speak for
25 themselves. I'm a candidate for state senate,

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made to understand and correct these problems.
Furthermore, the SEIS states that because
the Keys major coral reef tracts are located on
the Atlantic side, they fall outside of the region
of influence affected by launches. This does not
take the well documented tidal flushing of bay
waters out across the reef tract into account.
Any degradation of bay water quality has the
potential to impact sensitive reef ecosystems.
The general conclusion of the SEIS
regarding acidification and other environmental
impacts can be summed up as dilution is the
solution to pollution. In a fragile ecosystem
such as the Keys that is already coping with the
impacts of coastal development and agricultural
runoff, any dilution potential has been exhausted.
Impacts from missile testing such as the reduction
in dissolved oxygen will only serve to accelerate
the cascade of coastal eutrophication and other
risks to this ecosystem. This is not an
acceptable alternative.
Speaking on behalf of Reef Relief and
thousands of our local and national members who
deeply value the unique and irreplaceable natural
resources of the Keys, and who believe that this

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Exhibit 5.3-1: Reproductions of Transcript Comments (Continued)

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1 district 40, which is all of Monroe County and a
2 portion of Dade County. I was a recent candidate
3 for Key West City Commission and a member of the
4 board of directors of Big Brothers and Sisters.
5 My concern has always been and will be the health,
6 welfare and safety of the people.
7 There is only one road. You've heard this
8 many times tonight. I will not go over all my
9 points, but there is only one road. Evacuation
10 now is almost impossible. In the case of an
11 accident it will become totally impossible as
12 everyone tries to run for their lives at the very
13 same time. It will put thousands of us in harms
14 way and it will still be unacceptable.
15 I will make this the cornerstone of my
16 campaign and whether or not I am elected as state
17 senator, I will always oppose it. Thank you.
18 (Hand clapping.)
19 MR. MICHAELSON: George Halloran, Sesse
20 Brown. Can't read this. Looks like Pike, Malcolm
21 and Carol Colburn.
22 GEORGE HALLORAN: I'm George Halloran from
23 Key West and I'm opposed to missile testing in the
24 Keys and many of the people here have left
25 already, but I would like to ask those that are

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1 still here, anyone in this room is in favor of the
2 missile testing here; show of hands?
3 UNIDENTIFIED SPEAKER: I'm not against it.
4 GEORGE HALLORAN: Let the record show that
5 out of the 120 or 30 people that were here, two
6 people, one has said he is in favor of it and one
7 has said he is not opposed. I didn't see any
8 hands go up on this side of the microphone either.
9 I assume you folks -- any opinions? Even the
10 military apparently here is not sure that they are
11 interested. I know no one else other than these
12 two people in the room here in Key West or the
13 Florida Keys over the last year that I've spoken
14 to that is in favor of this. Everyone who has
15 spoken at all the hearings have been opposed, with
16 one or two exceptions. The percentage of people
17 who want this to happen here is minuscule and I
18 think that should have some bearing in your EIS.
19 The people themselves are a part of the
20 environment and your pretty much dismissal of the
21 negative comments in the EIS is to me, quite
22 surprising. The thousands of signatures you
23 received and petitions don't seem to have affected
24 the EIS and that is a very important part of it.
25 The environment, that is the humanity of

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1 it, has been pretty much pushed aside. I read
2 through the EIS and a number of items in there, I
3 thought were handled inadequately and I'll just
4 give one example which Robin has already
5 mentioned.
6 You talked about the temporary acidic
7 increase in the water, but the purpose of an
8 environmental study is to tell us what goes beyond
9 that. The acid will rise. What will the
10 increased acid do? There is no mention of the
11 effect it will have on the flora and the fauna,
12 the benthic community, the birds. There should be
13 one further step taken, but many of the items in
14 this study, a disaster could easily occur. There
15 is no body count. There is no suggestion of what
16 actually could occur, how many people could die,
17 what would happen if the missile veered off to a
18 heavily populated area like the school. There is
19 no real examination of the final effect on the
20 environment. Again, the people.
21 I would like to put in a word for the
22 environment elsewhere also. We listed in the EIS
23 the various endangered and threatened species.
24 Those same species are existing in Santa Rosa
25 Island and Cape San Blas. The nesting times of

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1 all of those species overlaps so that the entire
2 year is taken up. The little black boxes all
3 across the various species encompass the entire
4 year in all three locations. And while we
5 certainly don't want this in the Keys, I
6 personally and I'm sure many others would not like
7 to see this pushed off even to the islands of the
8 north.
9 Finally, I would like to ask someone, I
10 don't think you can probably give me an answer
11 tonight, what this study costs. The expertise
12 that was in this room tonight puts the people who
13 did this study to shame. And if this study cost
14 any more than 50 bucks, I think our taxpayer's
15 dollars have been wasted. Thank you.
16 (Hand clapping.)
17 MR. MICHAELSON: Sesse Brown. No
18 response. Carol Colburn.
19 CAROL COLBURN: My name is Carol Colburn.
20 I'm a resident and property owner in Key West.
21 This is the third time I've come before you folks
22 to voice my concern. It's incredulous to me that
23 this is still continuing, that my tax dollars paid
24 for this document, which is either the most
25 incompetent document ever written or the most

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1 deceptful one, I don't know which. But either
2 way, the military should be embarrassed.
3 Shirley Freeman and her group that came in
4 here tonight should be hired by you folks to do
5 this environmental impact study. They at least
6 understand what is going on down here. If General
7 Lyle wants to cut his losses now, it would be
8 very, very wise and smart of him to take the Keys
9 off the list completely before this gets any more
10 embarrassing because I as a tax paying citizen
11 find this document a waste of my taxpayer's
12 dollars and everybody's elses time that we have to
13 come up here, spend our time, your time, to fight
14 something, as somebody said, I protested the war
15 back in the 60's, I didn't think I would be
16 protesting a war in my back yard when I retired.
17 So please, take the Keys off the list, go find
18 somewhere else to do it and hopefully, it won't
19 impact anybody else's back yard either. Thank
20 you.
21 (Hands clapping.)
22 MR. MICHAELSON: I'm a bit confused by
23 this one entry here. Perhaps it is the same
24 address as Malcolm Pike, but perhaps it's another
25 resident at that address. Perhaps it's

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1 Mrs. Malcolm Pike, I'm not sure. Or maybe just
2 filled out the card twice. There is no one else
3 here. That exhausts the list of speakers who
4 signed up to speak this evening. We greatly
5 appreciate your time and effort in coming down to
6 be at this meeting. Is there anyone who hasn't
7 already spoken -- I'm sorry, sir, you already had
8 your chance.
9 UNIDENTIFIED SPEAKER: I just wanted to
10 ask one other question.
11 MR. MICHAELSON: You already had you
12 chance to speak.
13 UNIDENTIFIED SPEAKER: Yeah, but I was
14 very short. I didn't take two or three minutes.
15 MR. MICHAELSON: Well, I need to first
16 find out if there is anybody else who wanted to
17 speak. Is there anybody else that didn't sign up
18 that would like to take this opportunity? Sir, if
19 you would approach and state your name for the
20 record, please.
21 ROBERT ELIOT: My name is Robert Eliot.
22 I'm retired Navy admiral. I was in the dental
23 corp. I was a little shocked this evening to hear
24 all the negative comments that were made about the
25 Air Force. Having served 33 years in the Navy, I

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Exhibit 5.3-1: Reproductions of Transcript Comments (Continued)

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1 know that we all have served this country, do the
2 very best we can. We are sworn to do that and I'm
3 disappointed to hear some of the personal comments
4 that were made to these officers.
5 Now, whether or not we should have missile
6 testing in the Keys, I'm not against it if it's
7 something that we need. We do know that a lot of
8 the missiles are used in the Gulf war and they
9 were used to the disadvantage of our country and
10 had we had a system that could have eliminated
11 them, we would have protected some of our men who
12 were over there. We don't know when there is
13 going to be another war or whether there is going
14 to be just an incident. What I feel that anything
15 we can do in our country to protect our service
16 people, we should.
17 You know, Roger Kipling wrote a poem and
18 I paraphrase it and it's Johnny this and Johnny
19 that and Johnny blast your soul, but they calls
20 him Mr. Atkins when the drums begin to roll. It's
21 alright that we can malign our service people when
22 things are at peace, but when war comes, they are
23 put in front of all the lines. I know that there
24 is a lot of emotion related to this issue and
25 there are you people that come out here tonight, I

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1 guess I'm one of two that are ambivalent about the
2 whole issue. But if things come to a point where
3 we need to have something to protect our own
4 people, I am willing to sacrifice that.
5 Now I realize I don't live out on Cudjoe
6 Key and I realize too that it's not a popular
7 statement to make, saying you're not opposed to
8 it, so I presume that's why there are not more
9 people here who feel as I do, because it's an
10 unpopular position. But my own feeling is, if
11 it's necessary to protect our country and protect
12 particularly the boys who fight for our country
13 and the women, well I'm not against it.
14 MR. MICHAELSON: I wrote down your name
15 here. If you would fill out the rest of it for
16 us, I would appreciate it. Anyone else who has
17 not spoken this evening that would like to take
18 the opportunity? If you would come up to the
19 microphone. State your name for us and fill out a
20 card afterwards, I would appreciate it.
21 HARRIET NELSON: My name is Harriet Marks
22 Nelson. I'm a resident of Key West and I think
23 everybody who are sharing their views, I want to
24 share mine. I stand here as a 64 year old woman,
25 a daughter of a 92 year old father, a mother of 3

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1 kids, and a grandmother of 11. And I have served
2 the United States Navy, Department of Defense as a
3 teacher, as a nurse overseas. I have seen World
4 War II. I have seen the Korean War, the
5 Vietnamese War, the Gulf War. I live here in the
6 Keys and I only pray that my 11 grand kids get to
7 partake of some of our environment before it is
8 totally destroyed.
9 Do I want to malign the service people who
10 protect our country? No, sir, not at all. The
11 methods, perhaps, we have become so technically
12 involved that we lose sight of what the sun is
13 like when it rises in the morning and sets at
14 night, what our waters -- I have learned to fish
15 when I was four years old. The difference in the
16 quality of the water and the environment from then
17 in the 60 years is tremendous. It's tremendous
18 because of missiles, of bombs, of atomic energy,
19 of nuclear energy that proliferates.
20 When we grew we didn't see the sickness in
21 kids that we see today. How many people have
22 asthma and suffer from cancer. I'm retired as a
23 research nurse on the Albert Einstein College of
24 Medicine in New York and I'm overwhelmed at the
25 impact of technology on the health of our people.

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1 And there has to be another way and there has to
2 be another place to test the missiles that you
3 feel necessary to protect our lives.
4 Please don't destroy yet another
5 beautiful, free land that we live in down here. I
6 thank you.
7 (Hand clapping.)
8 MR. MICHAELSON: Anyone else who hasn't
9 spoken tonight? If there is a question you want
10 to put to one of these gentlemen, I think we're
11 going to adjourn first and if there is no one new
12 to speak, the gentlemen will stand around, if you
13 have a particular question. We're going to go
14 ahead and adjourn at 9:59.
15 Excuse me, we have to do this, out of
16 fairness to everyone, we haven't given anyone else
17 a second chance at any of these hearings. We're
18 going to go ahead and adjourn this meeting at 9:59
19 p.m. Thank you.
20 (Whereupon meeting adjourned at 9:59 p.m.)
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1 CERTIFICATE
2 State of Florida,)
3) SS:
4 County of Monroe.)
5
6
7 I, Jill Middlemiss, do hereby certify that
8 the foregoing pages 1 to and including 120, is a true
9 and correct transcription of my stenographic notes of
10 the Theater Missile Defense Extended Test Range, Public
11 Hearing, taken on March 12, 1998, commencing at or
12 about 6:00 p.m., in Key West, County of Monroe, State
13 of Florida.
14 IN WITNESS WHEREOF, I have hereunto
15 affixed my hand this 23rd day of March, 1998.
16
17
18 
Jill Middlemiss

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4 THEATER MISSILE DEFENSE EXTENDED TEST RANGE

5 SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT

6 EGLIN GULF TEST RANGE

7

8

9

10 PUBLIC_MEETING

11 _____

12

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14

15 March 13, 1998

16 6:00 p.m.

17 Marathon Government Center, Marathon, FL

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23 FLORIDA KEYS REPORTING, INC.

24 91421 Overseas Highway

25 Tavernier, FL 33070

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1 MR. MICHAELSON: Good evening and

2 welcome to tonight's public hearing on the

3 Eglin Gulf Test Range Supplemental and

4 Environmental Impact Statement. My name is

5 Lewis Michaelson. I have been asked by the

6 Ballistic Missile Defense Organization and the

7 Air Force to moderate tonight's meeting.

8 Before I go over tonight's agenda and ground

9 rules, I would like to take this opportunity

10 to introduce you to the Government

11 representatives who are here with us tonight.

12 Representing the Air Force Development Test

13 Center at Eglin Air Force Base is Major Tom

14 Kennedy. Major Kennedy, as a Theater Missile

15 Defense Test Manager, has a responsibility for

16 preparing the Supplemental Environmental

17 Impact Statement. Seated to his right is

18 Lieutenant Colonel Rick Leonard, who is from

19 the Ballistic Missile Defense Organization.

20 Also in the audience we have Colonel Jim

21 Heald, commander of the 46th Test Wing

22 Operations Group at Eglin.

23 To start the meeting, I would like to

24 take a minute to briefly outline the purpose

25 of tonight's hearing and to go over the

1 agenda, so that you will know what to expect
2 as we proceed. Just over a year ago the
3 Ballistic Missile Defense Organization and the
4 Air Force held scoping meetings here in the
5 Keys and in northern Florida, on the Theater
6 Missile Defense Extended Test Range Proposal.
7 The purpose of those scoping meetings was to
8 obtain your comments on the environmental
9 issues that you believe they should examine in
10 the Supplemental Environmental Impact
11 Statement. Scoping comments from the public
12 as well as agencies were then used in the
13 preparation of the draft Supplemental
14 Environmental Impact Statement which is the
15 subject of this public hearing tonight.
16 Tonight's public hearing then has
17 three essential purposes. The first is to
18 describe to you the nature of the program that
19 is being examined in the Environmental Impact
20 Statement. The second is to briefly describe
21 the EIS process and the findings in the draft
22 Supplemental Environmental Impact Statement or
23 SEIS, as it is known by its initials. The
24 third and primary purpose is to listen to your
25 concerns and comments on the draft SEIS. Your

1 oral comments will then be used in the
2 preparation of the final SEIS.
3 I would like to go over the agenda
4 now. From 6:00 to 7:00 the Ballistic Missile
5 Defense Organization Air Force representatives
6 were available to answer your questions on the
7 proposed action in the Environmental Impact
8 Statement. Hopefully, I know many of you did
9 take advantage of that opportunity. The
10 remainder of the hearing is as follows: After
11 I finish my introductory remarks, we will have
12 a presentation by Major Tom Kennedy, who will
13 provide a brief description of the Theater
14 Missile Defense Extended Range Test followed
15 by an overview of the environmental impacts
16 that are identified and assessed in the SEIS.
17 The last item on the agenda, public
18 comments, is really the most important.
19 Remember that the draft SEIS is just that, a
20 draft. This is your opportunity to tell the
21 Ballistic Missile Defense Organization and the
22 Air Force how they can improve their analysis
23 of potential environmental impacts before the
24 document is finalized and before a decision on
25 whether or not to proceed with the proposed

Exhibit 5.3-1: Reproductions of Transcript Comments (Continued)

1 action is made. There are a few points I will
2 make on comments tonight. If you have already
3 signed up to speak, and there are quite a
4 number, that is great. If not and you would
5 like to, if you would please go to the
6 registration table, pick up one of these white
7 cards and fill it out. It just makes the
8 process easier for us to call someone as a
9 speaker.
10 Everyone will have four minutes to
11 speak. The Air Force also has a court
12 reporter here tonight seated to my left. She
13 is here to make a verbatim transcript of this
14 hearing, so that your oral comments will be
15 recorded accurately. And it is important that
16 when commenters are speaking, to please
17 refrain from any comments from the audience,
18 so the court reporter can hear and record that
19 speaker's comments. As a part of preparing
20 the transcript, an audio recording of
21 tonight's hearing is being made as well.
22 You may also make your comments in
23 writing. And there are four ways to do that.
24 You may hand in written comments that you
25 brought with you tonight to me or the person

1 at the registration table. There are also
2 written comment sheets, which you can take
3 advantage of, fill those out and turn those in
4 tonight. And they will also be entered into
5 the record as written comments. You may also
6 mail in your written comments to the name and
7 address which appear on the back of this fact
8 sheet. And finally you will also find this
9 e-mail address on there, TMD@EGLIN.AF.MIL. So
10 you can also e-mail your comments in if that
11 is more convenient for you. Which ever option
12 you choose for sending in written comments, it
13 will be entered into the formal record of
14 public comments on the draft SEIS. And they
15 will be given the same consideration as oral
16 comments received tonight. If you choose to
17 mail them in, please be sure to send them by
18 April 3, 1998, which is the closing date for
19 the comment period.
20 To receive the final SEIS, there are
21 three ways to do that. First of all, if you
22 received the draft in the mail, you are
23 already on the list. And you will
24 automatically receive the final SEIS. If you
25 comment tonight and provide your name and

Exhibit 5.3-1: Reproductions of Transcript Comments (Continued)

1 address or provide a written comment and your
2 name and address, we add commenters to the
3 list to receive the final document as well.
4 If you don't meet either one of those
5 conditions, then if you will pick up one of
6 these yellow cards at the registration table
7 and fill it out, you will be added to the list
8 to receive the final document. Also if you
9 prefer, there is an executive summary that is
10 prepared, so if you don't want to read or have
11 the very large volume of documents that are
12 associated, you can get the executive summary
13 and check that box as well. In addition,
14 there are copies of the draft and some copies
15 of the final SEIS in the information
16 repository, and those are listed on the back
17 of this as well.
18 Finally, it is important for you to
19 understand that the Ballistic Missile Defense
20 Organization and the Air Force representatives
21 who are here today are not here to make any
22 decisions tonight. Their role is to take the
23 results of the public comment process,
24 including the comments received at this
25 hearing, and to make sure that they are

1 considered in the preparation of the final
2 SEIS. Their main purpose in being here
3 tonight is to listen to your suggestions and
4 concerns first hand. We will now begin
5 tonight's meeting with Major Kennedy's
6 presentation.
7 MAJOR KENNEDY: Thank you, Lewis.
8 Good evening, I am Major Tom Kennedy. I work
9 for Colonel Heald in the 46th Test Wing. We
10 are representing Major General Michael
11 Kostelnik, Commander of the Air Force
12 Development Test Center at Eglin Air Force
13 Base. My job is to determine if it is
14 feasible to test Theater Missile Defense
15 Systems within the Eglin Gulf Test Range. The
16 National Environmental Policy Act of 1969
17 requires Federal decision makers consider the
18 impact on the environment along with the
19 safety, cost, schedule, and technical
20 requirements. One of the first steps in doing
21 this is the preparation of an Environmental
22 Impact Statement. The purpose of this
23 statement is to describe the supplemental --
24 excuse me. The purpose of this presentation
25 is to describe the Supplemental Environmental

Exhibit 5.3-1: Reproductions of Transcript Comments (Continued)

1 Impact Statement. For simplicity, I will
 2 refer to this document as the SEIS.
 3 First, I will describe the proposed
 4 action our team evaluated in the SEIS. Then I
 5 will describe the findings in the SEIS. The
 6 proposed action is to enhance the Eglin Gulf
 7 Test Range to test Theater Missile Defense
 8 Systems against target missiles with ranges up
 9 to 1100 kilometers or approximately 685 miles.
 10 There are two primary organizations
 11 involved with the SEIS. The Ballistic Missile
 12 Defense Organization is a Department of
 13 Defense level organization that is established
 14 by congress. They are responsible for
 15 developing and managing the development and
 16 acquisition of missile defense systems for all
 17 services. As such, they are the proponent for
 18 this action. This means the director of the
 19 Ballistic Missile Defense Organization will
 20 make the decision on whether or not to select
 21 any of the alternatives in the Eglin Gulf Test
 22 Range. The Ballistic Missile Defense
 23 Organization asked the Air Force Development
 24 Test Center to lead the steps required to
 25 develop test capabilities here. That is why

1 we are writing the SEIS for them. This SEIS
 2 supplements two earlier Environmental Impact
 3 Statements.
 4 In 1993, the Ballistic Missile
 5 Defense Organization completed Theater Missile
 6 Defense Programmatic Environmental Impact
 7 Statements. This is a broad EIS that
 8 considered the general environmental impacts
 9 of dropping Theater Missile Defense Systems.
 10 It is a baseline for location specific EIS's.
 11 The Theater Missile Defense Extended Test
 12 Range EIS completed in 1994 considered the
 13 impacts of Theater Missile Defense testing at
 14 four ranges, White Sands Missile Range in New
 15 Mexico, the Western Test Range off California,
 16 the Eglin Gulf Test Range and Kwajalein
 17 Missile Range in the Western Pacific. At that
 18 time, White Sands and Kwajalein were selected
 19 as Theater Missile Defense Extended Test
 20 Ranges. The Eglin Gulf Test Range was not
 21 selected because of the difficulty and cost of
 22 providing a sea launched target, the only
 23 option considered at that time. This SEIS
 24 supplements the 1994 Extended Test Range EIS.
 25 Eglin Air Force Base, Key West Naval

Exhibit 5.3-1: Reproductions of Transcript Comments (Continued)

1 Air Station, and Pensacola Naval Air Station
2 regularly use vast amounts of airspace over
3 the eastern Gulf of Mexico. This blue line
4 defines the area -- the airspace that Eglin
5 Air Force Base has scheduling responsibility
6 for, while this is the area scheduled by Naval
7 Air Station, Key West. There is no other
8 location within the continental United States
9 that combines so much available military
10 airspace with low population density. The
11 large size of the Eglin Gulf Test Range makes
12 it ideal for performing tests that cover long
13 distances, such as Theater Missile Defense
14 Testing. Also the missile flights can be done
15 over the broad open water of the gulf which
16 greatly enhances safety.
17 Eglin Air Force Base has existing
18 radar, optical, and other sensor systems to
19 conduct its current missions. These types of
20 instrumentation systems are expensive to
21 develop from the ground up. By enhancing an
22 existing range like Eglin, we can save the tax
23 payers millions of dollars.
24 To determine if an interceptor works,
25 you have to test it against a target. Some

1 interceptors are ground based and some are sea
2 based. The Eglin Gulf Test Range will provide
3 the flexibility to test either type of system.
4 I will describe the preferred
5 alternatives first. For the Eglin Gulf Test
6 Range to be enhanced for use as a Theater
7 Missile Defense Test and Training Range,
8 launching options for both interceptor
9 missiles and target missiles would have to be
10 selected. Although no final decisions will be
11 made until the Record of Decisions is reached,
12 the director of the Ballistic Missile Defense
13 Organization indicated last November that
14 these are the alternatives he would prefer to
15 use over the other alternatives considered.
16 After I describe that, I will describe the
17 other alternatives consider.
18 These alternatives are shown in the
19 hand out you should have received when you
20 arrived. Since the interceptors are the
21 actual things being tested, I will start with
22 them. Interceptors could be ground-based here
23 on Eglin Air Force Base properties on Santa
24 Rosa Island and Cape San Blas. Interceptors
25 can also be ship-based in the open gulf within

1 the military airspace.

2 I will now discuss the method of

3 delivering target missiles. The primary

4 proposed method of delivering target missiles

5 is the air-drop system currently in

6 development. Air-drop is a term that the

7 Ballistic Defense Missile Organization uses

8 for short range air launch targets.

9 Certainly, the only air launch targets that

10 are certified as final are limited to flights

11 less than 600 kilometers, which is about 375

12 miles. They would be launched over the open

13 Gulf. Air launch targets provide a lot of

14 flexibility because of the potential location

15 and the distances that could be used. We are

16 also considering the potential to launch

17 target missiles from ground-based locations on

18 Santa Rosa Island and Cape San Blas.

19 Finally, all intercepts would take

20 place over the Gulf of Mexico. This ensures

21 the debris can be contained over the water,

22 which is one of our safety criteria. This is

23 a diagram of how the proposed air-drop target

24 would work. The missile is pulled out of the

25 back of an airplane on a sled by a parachute.

1 After it clears the airplane, the missile and

2 the sled separate. There is another parachute

3 attached to the missile. After the missile

4 rights itself, the parachute is released, the

5 missile is ignited and flies to its prescribed

6 landing

7 area.

8 Even though the director of the

9 Ballistic Missile Defense Organization defined

10 his preferred alternative, we are required by

11 the National Environmental Policy Act of 1969,

12 to consider all reasonable alternatives to

13 this preferred alternative. These are

14 considered in the Supplemental Environmental

15 Impact Statement in the category, other

16 alternatives considered. These other

17 alternatives could be selected if there were a

18 great national need to provide a specific test

19 capability. This national need could be due

20 to technical, environmental, or other national

21 policy considerations. The director of the

22 Ballistic Missile Defense Organization would

23 make the decision on whether or not to use

24 these alternatives.

25 Again, starting with the interceptor

1 alternative, we are considering launching
2 interceptor missiles off a platform off Santa
3 Rosa Island near Cape San Blas. These
4 platforms would allow intercepts closer to the
5 launching point of the interceptor missile.
6 This would still keep the missile and the
7 intercept debris off-shore and provide the
8 required safety margins for personnel and
9 equipment directly involved in the test.
10 There are treaty restrictions against
11 launching ballistic missiles from sea-based
12 platforms that are tethered to the sea floor.
13 This prevents us from considering launching
14 target missiles from platforms. Also in the
15 other alternatives considered category are
16 land-launched targets from the Florida Keys.
17 There are two Keys under consideration, Cudjoe
18 Key and Saddlebunch Key, only one of which
19 would be chosen if this alternative were to
20 become necessary.
21 Although, the sea-based target launch
22 option was the reason the Eglin Gulf Test
23 Range was not selected in the earlier EIS, the
24 Army is now developing the capability to
25 launch target missiles from a ship. This

1 alternative is limited to less than 375 miles,
2 just like the air-launch capability. The
3 director of the Ballistic Missile Defense
4 Organization also has the option of selecting
5 a No-action alternative. In fact, the
6 National Environmental Policy Act of 1969
7 requires the decision maker to consider the
8 impacts if the proposed action should not take
9 place. For the Eglin Gulf Test Range, the
10 No-action alternative describes the
11 environmental impacts if the proposed action
12 to enhance the Eglin Gulf Test Range for
13 Theater Missile Defense Testing is not
14 implemented.
15 Our baseline was selected to analyze
16 the maximum impacts possible. In developing
17 the baseline for the SEIS, we used the PATRIOT
18 as a baseline interceptor. In all cases, the
19 analysts used the best available data for the
20 analysis. The team used the Hera target
21 missile as a typical target missile. This is
22 because the Hera is the biggest target missile
23 considered. Although we assumed the highest
24 number of launches proposed at each site, the
25 actual number of launches will be considerably

1 less. The combined potential impacts from the
2 Hera are greater than those of the proposed
3 interceptors. At Santa Rosa Island and Cape
4 San Blas where both interceptors and targets
5 are proposed, we used the Hera as a baseline.
6 These are the 14 resource areas the
7 team evaluated for each alternative.
8 Potential impacts are outlined in your
9 handout. Many of the potential impacts are
10 similar at each site. First, I will discuss
11 the impacts that are common to each site.
12 Then I will describe those that are unique to
13 each proposed location.
14 However, before I can discuss any
15 potential impacts, I need to show you the
16 launch hazard area that would be established
17 for each alternative location. These launch
18 hazard areas define the regions of influence
19 the team analyzed at each site. The purpose
20 of the launch area is to ensure that nobody is
21 inside the area that could be affected should
22 the missile self-destruct or the range safety
23 officer need to terminate the missile flight.
24 When the range safety officer develops a
25 launch hazard area, he uses a computer model.

1 This model predicts where the debris from an
2 errant missile would go should it be
3 destroyed. He also considers the effects of
4 wind.
5 Finally, the range safety officer
6 determines if there are protected areas such
7 as private property within the launch hazard
8 area. If so, he establishes wind restrictions
9 to prevent this debris from falling on those
10 protected areas. This is why the launch
11 hazard areas are different shapes and sizes at
12 each location. The launch hazard area for
13 Hera target missiles is 6500 feet without any
14 wind effects. Once the effects of wind are
15 considered, the launch hazard area expands to
16 incorporate any additional safety area. Here
17 at Santa Rosa Island the launch hazard area
18 would extend to Santa Rosa Sound and encompass
19 this portion of the island. At Cape San Blas,
20 the launch hazard area would go back into St.
21 Joseph Bay. It extends over State Road 30E.
22 At Cudjoe Key, it encompasses the
23 north west section of the Key. It is
24 primarily over the waters of the National
25 Marine Sanctuary and the Great White Heron

Exhibit 5.3-1: Reproductions of Transcript Comments (Continued)

1 National Wildlife Refuge. This extends out to
2 the airspace scheduled by Naval Air Station,
3 Key West. The launch hazard area crosses
4 Blimp Road. The launch hazard area of
5 Saddlebunch Key is similar to that of Cudjoe
6 Key. It is primarily over the waters of the
7 National Marine Sanctuary and the Great White
8 Heron National Wildlife Refuge. Since the Key
9 is primarily military property north of
10 Highway 1, the launch hazard area would
11 include that entire area.
12 Now, I will discuss the common
13 potential impacts. The first resource area I
14 will discuss is air quality. Air Quality
15 impacts would be similar at all proposed
16 locations. The primary emissions from the
17 missile launch are shown here. The primary
18 emissions of concern are aluminum oxide,
19 carbon monoxide, and hydrogen chloride. All
20 of these emissions are within the standards
21 established by the National Ambient Air
22 Quality Standards and the Environmental
23 Protection Agency.
24 We have just discussed air quality.
25 For airspace use, we are not proposing

1 additional airspace restrictions, so there are
2 no impacts for this resource area. Biological
3 Resources, the noise of a launch could startle
4 birds and other wildlife. However, experience
5 at Cape Canaveral shows that after an initial
6 flushing, where the birds fly around, they
7 return to their nest within a few minutes.
8 There are also location specific biological
9 resource potential impacts which I will
10 discuss in a few minutes.
11 Potential impacts of cultural
12 resources are site specific. Geology and
13 soils, in the area nearest the launch
14 facility, any hydrogen chloride that settles
15 to the ground may result in an increase in
16 surface soil acidity. Increases in soil
17 acidity would be temporary and would be
18 diluted and buffered by rainfall. The amount
19 of aluminum oxide settling on the ground would
20 not result in a substantial change in soil
21 fertility or be in concentrations toxic to the
22 growth of existing plants and microorganisms.
23 The hazardous waste that would be produced by
24 this program consists primarily of solvent
25 soaked cleaning rags. The amount generated

1 easily fits within the current capability of
2 Eglin Air Force Base and the Naval Air
3 Station, Key West.
4 For land and water use, the launch
5 hazard area would be cleared of people and
6 private vehicles up to four hours on launch
7 day. This would restrict access to the land
8 and water areas within the launch hazard area.
9 This includes the waters off-shore which would
10 also be cleared of boats for up to four hours.
11 The peak noise at the edge of the
12 launch hazard area is predicted to be 98 dBA.
13 This is similar to a jackhammer. This would
14 only be a momentary sound. The continuous
15 sound level is to be 80 dBA for forty-five
16 seconds. This is similar to a portable hair
17 dryer at one foot away. Both of these are
18 within the Occupational Safety and Health
19 Administration exposure limits of 115 dBA for
20 15 minutes. So there would be no health
21 related sound exposure outside the launch
22 hazard area. Should launches occur before
23 7:00 a.m., it is anticipated that some people
24 may be awakened by launch noise. Safety is
25 primarily defined by the launch hazard area.

1 The policy of the Air Force
2 Development Test Center is that the general
3 public will not have any additional risk due
4 to test activities than they would experience
5 in everyday life. The potential impacts of
6 socio-economics are similar to those for land
7 and water use, as the launch hazard area would
8 also have to be cleared of commercial
9 activities. This clearance would occur up to
10 four hours on launch day. Each Hera target
11 missile launch could result in over
12 \$100,000.00 in personnel per diem. Each
13 interceptor missile launch could result in
14 nearly \$150,000.00 in per diem expenditures.
15 The potential impacts of
16 transportation are location specific. The
17 utilities currently available at each location
18 are sufficient to handle the requirements of
19 the proposed program. However, bottled water
20 and portable toilets may be used to reduce any
21 impacts on these resources. Visual
22 aesthetics, each of the proposed sites has
23 historically been used for military purposes.
24 The visual aesthetics of the proposed
25 facilities would be consistent with the

1 existing facilities.

2 Water resources, temporary small

3 increases of surface water acidity may occur.

4 The amount of time for these to dilute depends

5 on water movement and activity. The amount of

6 acid created is not expected to be harmful to

7 wildlife. I will now discuss potential

8 impacts for each proposed site.

9 On Santa Rosa Island, these are the

10 potential impacts to cultural resources. The

11 facilities at Santa Rosa Island site A-15 are

12 potentially eligible for listing on the

13 National Register of Historic Places. This is

14 due to the BOMARC missile testing that

15 occurred there from 1959 to 1985. These are

16 considered cold war era facilities. The

17 potential impacts would be the modification of

18 these facilities from their original intent.

19 For transportation, the Florida

20 Department of Transportation estimates U.S. 98

21 will be over capacity by the year 2005. These

22 are current, average, daily, traffic counts.

23 This is the current capacity of the U.S. 98.

24 As you can see, some of the sections are

25 already over capacity. This is the estimated

1 traffic in the year 2005. The additional

2 amount of traffic due to the proposed testing

3 adds very little traffic to this total. The

4 project traffic is primarily rental vehicles

5 used by the engineers and technicians

6 preparing the missiles for launch. This

7 maximum traffic would only be for a couple of

8 days for each launch.

9 At Cape San Blas the potential

10 impacts to biological resources are a

11 line-of-sight corridor 5500 feet long and 40

12 feet wide which is needed for the range safety

13 instrumentation currently planned for Hera

14 target launches. This would pass within 75

15 feet of a Bald Eagle's nest. This violates

16 the U.S. Fish and Wildlife Service Primary

17 Protection Zone of 450 meters, which is

18 approximately 1475 feet.

19 Cape San Blas has the highest sea

20 turtle nesting density in northwest Florida,

21 approximately 15.3 nests per mile. Since a

22 lot of launch preparations would occur during

23 the night prior to the launch, sea turtles

24 would be adversely affected during nesting and

25 hatching seasons. The launch facilities to

1 support a Hera target launch site would cause
 2 a permanent loss of 1.62 acres of wetland
 3 habitat that is used by a variety of birds.
 4 For cultural resources, Hera target
 5 missile launches could cause short-term noise
 6 levels of 124 dBA in the area of the
 7 Lighthouse and Keeper's Quarters. These
 8 historic facilities are inside the launch
 9 hazard area. This has a potential to damage
 10 the Lighthouse lens and the Keeper's Quarters.
 11 Potential impacts to transportation are that
 12 State Road 30E would have to be closed on each
 13 side of the launch hazard area approximately
 14 one hour prior to the missile launch. This is
 15 a standard practice that we have used for
 16 other missile launches from Cape San Blas.
 17 Emergency vehicles would be allowed access.
 18 Traffic would be increased by 40 percent on
 19 State Road 30E during the last couple of weeks
 20 leading up to a launch. This represents a
 21 total of less than 2000 vehicles projected for
 22 the year 2005. This is well within the total
 23 capacity of State Road 30E of 9200 daily
 24 vehicles.
 25 In the Keys, the potential impact to

1 biological resources are that the proposed
 2 launch site on Saddlebunch Key would disturb
 3 up to 2.23 acres of wetland. There would be
 4 no additional wetlands disturbed at Cudjoe
 5 Key. There is a potential that vegetation
 6 near the launch site would be singed.
 7 However, at the Hera launch from Fort Wingate
 8 last November, snow 20 feet from the launch
 9 site was not melted. The Florida Game and
 10 Fresh Water Fish Commission performed a survey
 11 at Cudjoe Key last spring to try to determine
 12 the Silver Rice Rat population. The Silver
 13 Rice Rat is on the Federal listing as an
 14 endangered species. No Silver Rice Rats were
 15 captured after one week of trapping.
 16 The potential impacts to cultural
 17 resources, are at Cudjoe Key, the Cudjoe Key
 18 aerostat facilities are potentially eligible
 19 for listing on the National Register of
 20 Historic Places. These facilities may be
 21 eligible because they are considered cold war
 22 era facilities. The potential impact would be
 23 the modification of these facilities from
 24 their original intent.
 25 Potential transportation impacts, if

1 the Cudjoe Key alternative were to be
2 selected, Blimp Road would be closed at
3 Astorius Road. This closure would last up to
4 four hours on launch day. This would not
5 restrict access to or from Cudjoe Acres. The
6 Florida Department of Transportation estimates
7 that Highway 1 will be over capacity by the
8 year 2005. These are the current, average,
9 daily, traffic counts. This is the current
10 capacity of Highway 1. This is the estimated
11 traffic in the year 2005. The additional
12 amount of traffic due to proposed testing adds
13 very little traffic to this total. This
14 project traffic is primarily rental vehicles
15 used by the engineers and technicians
16 preparing the missile for launch. This
17 maximum traffic would only be for a couple of
18 days before each launch.
19 Some of the launches, all of the
20 missile flights, and the intercepts would
21 occur over the Gulf of Mexico. These are some
22 of the potential impacts for the Gulf. In
23 airspace, the existing airspace warning areas
24 would be closed to aircraft for a period of up
25 to four hours. This would result in rerouting

1 commercial aircraft around these warning
2 areas, a standard procedure used today.
3 For biological resources, the effects
4 of sonic booms on marine mammals is not very
5 well understood. There may be sonic booms
6 penetrating the water surface. We are
7 investigating the impact to marine mammals
8 with the National Marine Fisheries Service.
9 Potential transportation impacts, in
10 addition to the airspace, portions of some of
11 the shipping lanes in the Gulf and intracoastal
12 waterway would be cleared for short periods.
13 The Federal agencies listed here have
14 reviewed earlier drafts of the SEIS. They
15 have provided comments to us to aid in our
16 preparation of the draft SEIS. This draft was
17 mailed to the public in February. We will
18 continue to consult with the Federal agencies
19 as well as the state agencies listed here.
20 Should any regulatory permits be required,
21 these are the agencies that will issue those
22 permits.
23 The next steps for the SEIS are shown
24 here. First, and most important, we need your
25 comments on the SEIS. To ensure your comments

1 are incorporated in the final SEIS, we need to
2 receive them by 3, April. These comments will
3 be addressed in the final SEIS. The final
4 SEIS should be completed sometime this fall.
5 We are hoping to complete it by September.
6 The director of the Ballistic Missile Defense
7 Organization would make a Record of Decision
8 no earlier than thirty days after the final
9 SEIS is completed.
10 That is all I have tonight. Thank
11 you for your interest and concern with this
12 important National Defense Project.
13 MR. MICHAELSON: Thank you, Major
14 Kennedy. We are now going to take a five
15 minute break to set up the podium and collect
16 any other speaker sign up cards. If you would
17 like to speak and have not already done so,
18 again, if you will go to the registration
19 table and fill one of those out, uh, if you
20 will just stay put for five minutes, we will
21 be right back with you. Thank you.
22 (Whereupon, there was a brief recess.)
23 MR. MICHAELSON: Okay. We are ready
24 to start calling names of those of you who
25 have planned to speak tonight. I have a list

1 of people that have signed up so far. And I
2 will be calling you in the order in which you
3 signed up. I will start out by calling the
4 first several names, so you can get ready to
5 come up here to the front to use the podium.
6 Because we want to record your comments fully
7 and accurately, we ask that you speak clearly
8 into the microphone and also that you would
9 please start your comments by stating your
10 name for the court reporter.
11 Finally, we would kindly request that
12 you observe the four minute time limit. We
13 have used the four minute time limit at all of
14 the hearings to give everyone a fair and equal
15 chance to participate. To aid you in knowing
16 when your four minutes are up, I have a simple
17 method for indicating time. After three
18 minutes I will put up my index finger, like
19 this, indicating that you have one minute
20 left. This should help you find a comfortable
21 place to wrap up your comments. At the end of
22 four minutes, I will put up a closed hand,
23 like this, indicating it's time for you to
24 finish your comments. We greatly appreciate
25 your cooperation in observing this limit.

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1 Also keep in mind again that oral
2 comments are only one way to share your
3 thoughts and concerns with the Air Force
4 regarding the SEIS. You can also hand in
5 written comments or send them in by April 3,
6 1998. And as I mentioned earlier, written
7 comments are given the same consideration as
8 oral comments offered here tonight. With
9 that, the first people I have on my list are
10 Loraine Casella, Tina Henize, and then a
11 series of presentations starting with Shirley
12 Freeman. And they know who they are and in
13 what order they are coming up. Loraine, you
14 will be first.
15 LORAIN CASELLA: Good evening, I
16 have spoken to several of you before. My name
17 is Loraine Casella. And I live on Duck Key.
18 I am far enough away from Cudjoe Key and
19 Saddlebunch, uh, residing on Duck Key, but my
20 concern is that here in Monroe County, we have
21 a myriad of rules that we have to follow. One
22 of which is that we are not even allowed to
23 cut a Mangrove tree down. And here you are
24 going to come and try to convince me how safe
25 it's going to be. I don't think we can afford

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1 to take any more chances than we already have
2 in our environmentally sensitive home, homes.
3 We have moved down to the Keys for a peaceful
4 environment and a safe place in which to live.
5 The gentleman who spoke went from
6 hair dryers to sonic booms. And that doesn't
7 sound very good. Please, consider where we
8 are living. We like our fish in one piece.
9 We don't want them filleted by the Air Force.
10 We want to be left to be in a quite peaceful
11 safe environment. Remember Murphy's Law. We
12 know you are trying to do everything very
13 safely. Do it out over the water, far away
14 from here please. Thank you.
15 MR. MICHAELSON: Okay. Tina Henize.
16 TINA HENIZE: Some of you have heard
17 most of this before. My name is Tina Henize.
18 I live in Cudjoe Acres just outside of the
19 testing launch hazard area. It would be very
20 easy and quite a bit of fun, if we weren't
21 already tired of the subject of missiles, to
22 take lighthearted pot shots at the draft SEIS.
23 We could point out it's real findings such as
24 on page 3-424, which says the mainland portion
25 of Monroe County includes the Everglades

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1 National Park, the Big Cypress National
2 Preserve, and the City of Miami. We could
3 make a lengthy list of typos, sloppy rubber
4 stamp errors and cut and paste errors, and
5 even geography slip ups. But the scariest
6 part of this draft SEIS is the conclusions
7 that it draws. That all environmental impacts
8 from air quality to noise to human safety to
9 visual aesthetics to toxic conditions effects
10 on fresh and salt water wetlands to harassing
11 and killing wildlife to denying citizens
12 access to public land and water that all these
13 impacts are negligible. These conclusions are
14 based on very faulty and pitifully incomplete
15 studies.
16 There are numerous references to
17 affects being temporary and of short duration,
18 as if that makes them okay. Gun fire is of
19 short duration too, but we go out of our way
20 to prevent it. Accidental explosions and
21 other missile mishaps are of short duration as
22 well. But no matter how small the probability
23 of catastrophic accident, the SEIS should
24 consider distances between people and missile
25 launches and needs to consider improbable

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1 accidents. Catastrophic failures of missiles
2 do happen from time to time. And chopping off
3 pieces of the LHA because there are hundreds
4 of families living there, does not make the
5 improbable impossible.
6 Biological concerns across the board
7 are dismissed in this document as negligible
8 without adequate studies of the ecosystems.
9 Endangered species are endangered for a
10 reason. They are rare. They are already
11 stressed for various reasons. And as
12 endangered species, they are sensitive to
13 small environmental changes. The draft SEIS
14 does not show that a detailed study in C2 or
15 otherwise was done on any Keys ecosystem.
16 With the help of cooperating agencies and
17 other sources, the SEIS authors list species,
18 plants, and animals known to be in the
19 vicinity. Then essentially say, and we are
20 going to kill some of these plants and
21 animals. We don't really know how many. But
22 it doesn't matter, because it's infrequent and
23 of short duration. Such careless disregard of
24 our sanctuary and of the health and safety of
25 our citizens is unacceptable.

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1 One last point, regarding the subject
2 of toxic emissions, especially long term
3 cumulative effects, not only is there -- there
4 is mention of ten years of repeated discharges
5 on Florida's salt water system, but there is
6 never a hint of awareness that there are a
7 number of families near the LHA dependent for
8 their primary water source. We certainly
9 appreciate the consideration General Lyles
10 gave to the issue of launching missiles from
11 the Keys, and we are grateful to his decision
12 to set aside the Keys option as preferred.
13 However, the draft SEIS purports to have
14 satisfactorily answered all environmental and
15 safety concerns which it definitely does not.
16 The draft SEIS with respect to many issues of
17 safety and environment is obviously
18 inadequate. It contains erroneous and
19 incomplete information. It barely scratches
20 the surface on issues pertaining to the
21 ecosystems of the Keys. We strongly recommend
22 that the portions of the Theater Missile
23 Defense Draft SEIS as it is applied to land
24 launches from the Florida Keys be deleted
25 entirely. The problem of potential launch

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1 sites being used and being too close to human
2 population can never be overcome. And nothing
3 can mitigate environmental damage from routine
4 missile launches much less potential damage of
5 missile mishaps. Thank you.
6 MR. MICHAELSON: I would like to note
7 that I was watching the stenographer's
8 fingers, and that was about as fast as she can
9 go. There is a tendency I have noticed that
10 if someone is reading comments to kind of get
11 going fast. So if you could keep it at that
12 or slightly less, I think we can keep up with
13 you. The next set of speakers will be
14 introduced by Shirley Freeman, Monroe County
15 Commissioner.
16 SHIRLEY FREEMAN: Hello, my name is
17 Shirley Freeman. I am a Monroe County
18 Commissioner and welcome to our commission
19 chambers here in the Marathon Government
20 Center. Two years ago as Mayor of Monroe
21 County on behalf of the County Commission, I
22 wrote to the Secretary of Defense asking that
23 the land launch option be rejected and that
24 the air launch target be considered. Today
25 air launch is the preferred alternative. And

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1 we are grateful and relieved. However, we
2 still have to finish off this SEIS. To assist
3 me in analyzing this document, I have been
4 fortunate enough to be able to call on a team
5 of scientists and others, all Florida Keys
6 residents, who have volunteered their time and
7 expertise to examine the draft SEIS with a
8 fine toothed comb. Their findings of this
9 document are that it does have many fine
10 attributes. But it is woefully lacking in
11 evidence which leads to some of the bizarre
12 conclusions concerning the ecological treasure
13 we call the Florida Keys. It falls short, for
14 example, in providing any raw data or a
15 description of experiments which led to the
16 bizarre conclusions. There is no reported
17 experiment to determine the impact of chemical
18 discharge in this tropical environment.
19 Conclusions were apparently reached from
20 observations of testing in the dry dessert air
21 off White Sand or the very deep water in the
22 Mississippi. We have wet air and shallow
23 water.
24 Now, I would like to introduce the
25 people who are going to speak after me in

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1 their area of expertise. As I call your name,
2 would you please stand up, so everyone will
3 know who you are? First, is Gerry Girard, a
4 retired airline captain. He is a board member
5 of the telecommunications company and is an
6 avid sportsman. He will give general
7 introductory comments. Then there is
8 Elizabeth Cofer, a graduate of Duke University
9 with a B.A. in Zoology and a Master's in
10 Education. And she is a twenty year career
11 chemistry teacher. She will speak on traffic
12 and transportation.
13 Then we will have Dennis Henize, a
14 meteorologist and former U.S. Air Force
15 weather auxiliary. He spent twenty years as a
16 National Weather Service meteorologist and was
17 awarded the NOAA citation for performance
18 during Hurricane Andrew. He will speak on the
19 launch hazard area. Sol Rosenblatt has
20 degrees in both chemistry and chemical
21 engineering, has worked on rocket development
22 programs and advanced aircraft power systems
23 for organizations such as Pratt and Whitney
24 and NASA. His findings on the nature and
25 distribution of toxic emissions will be

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1 recorded by David Musselman, the president of
2 the Cudjoe Garden's Property Association and a
3 retired pilot.
4 Wayne Hoffman has a Master's Degree
5 in Zoology and a Ph.D. in Biology. He is a
6 research scientist for the National Audubon
7 Society and specializes in the ecology of the
8 Everglades and the Florida Keys and their
9 unique tropical habitats. He will he speak on
10 biological effects. The conclusion will be
11 given by Alexander Hadden, who is a retired
12 attorney and Yale graduate, who is interested
13 in the long-term survival of the fragile Keys.
14 We have graphics which were made by
15 Mr. Moody, who has also done graphic
16 presentations for congress. And the team was
17 coordinated by Gordon West, a senior
18 consultant in environmental health and safety
19 systems. And now the members of the team will
20 make their presentation.
21 MR. MICHAELSON: Gerry Girard.
22 GERRY GIRARD: My name is Gerald
23 Girard. I just want to preface one thing
24 before I get started here. This group that I
25 represented is not now and has never been

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1 Anti-Air force. I know there were some kind
2 of touchy things said last night, but most of
3 the men and women I have studied with are
4 veterans. My father is buried at Arlington.
5 Both he and I wore the uniform you have on
6 now, proudly.
7 Now, the draft of the Supplemental
8 Environmental Impact Statement is a misleading
9 study of a unique environment. It is not
10 applicable to the Florida Keys. Monroe County
11 has the only easily accessible shallow water
12 living coral reef in the United States. There
13 are thousands of acres of shallow water
14 Mangrove islands providing life sustaining
15 nursery for marine and bird life surrounding
16 the proposed site. The area from the
17 Everglades from Florida Bay to the Coral Reef
18 is already under intense scrutiny by Federal
19 and state pollution control experts. And it
20 will only suffer more damage from highly toxic
21 chemicals during normal launches.
22 The ecological environment here is so
23 fragile that the State of Florida has declared
24 Monroe County an area of critical state
25 concern. The water quality, population

Exhibit 5.3-1: Reproductions of Transcript Comments (Continued)

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1 density, traffic density, land use, marine
2 resources, even the rate of growth is strictly
3 regulated here. The proposed land and water
4 use is not compatible with the Monroe County
5 comprehensive land use plan. This is the only
6 County in America primarily made up of islands
7 strung together by 41 bridges for 120 miles
8 with one road. That one road carries all the
9 traffic necessary for our daily living, food,
10 supplies, emergency and medical
11 transportation, school buses and all of our
12 water and electricity.

13 Recognizing this unique environment
14 the Federal Government as far back as 1908
15 began designating specific wildlife areas in
16 Monroe County. Today there are four large
17 refuges and two contain the only Key Deer and
18 American Crocodile in the United States.
19 Superimposed over all of this is the Federally
20 Mandated Florida Key National Marine
21 Sanctuary. Established in 1990, it covers
22 2,800 square miles. And it expressly forbids
23 the type of activity contemplated in your
24 draft. This is the only county in the
25 Continental United States in the subtropical

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1 zone with consistently high humidity. Missile
2 exhaust would spew out hydrogen chloride that
3 would quickly combine with water in the
4 atmosphere to make about 10,000 pounds of
5 concentrated hydrochloric acid.

6 Wind effects have not been properly
7 considered in the chemical cloud disbursement
8 scenario. On land surrounding the proposed
9 site, the endangered Silver Rice Rat's habitat
10 extends from Cudjoe to the Saddlebunches and
11 nowhere else. The endangered Florida Marsh
12 Rat's habitat extends from Big Torch to the
13 Saddlebunches and is the rarest mammal in the
14 Keys. The last remaining stand of tropical
15 hardwood hammocks are on Cudjoe and Sugarloaf
16 Key. Pine Rockland is unique in the world, a
17 globally endangered ecosystem lying alongside
18 the boundary of launch hazard area on
19 Sugarloaf Key. Wetlands surround both
20 proposed sites, so that any mishap will spill
21 directly into the marine environment affecting
22 fish, invertebrates, bird life, and
23 defoliating native flora. The Ballistic
24 Missile Defense Organization continues to
25 regard this area as a viable alternative. We

Exhibit 5.3-1: Reproductions of Transcript Comments (Continued)

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1 believe that launching missiles from the
2 Florida Keys should not be an alternative and
3 suggest you amend the draft to state exactly
4 that.
5 ELIZABETH COFER: I am Elizabeth
6 Cofer. And I thank you for this opportunity
7 to speak. I and my friends and neighbors are
8 pleased that the land missile launch from the
9 Florida Keys is not now the preferred option.
10 However, an Environmental Impact Statement has
11 been prepared, public hearings are being held,
12 and the final decision has not been made. It
13 appears to us that the door has been left open
14 at the present time and possibly more open as
15 to future launches. Our traffic and
16 environmental problems are getting worse
17 rather than better.
18 Little information is given and
19 little attention is paid, or so it appears, to
20 the transportation of the missile from Florida
21 City to the proposed launch site. U.S. 1 is
22 referred to as the principal artery into the
23 Keys when, in fact, it is the only artery into
24 the Keys. The word artery implies free flow.
25 U.S. 1 does not flow freely now. Sometimes

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1 not at all. We fear that vital traffic would
2 be delayed by the missile convoy - traffic
3 such as fire fighting equipment, emergency
4 medical vehicles, police response, and
5 necessary medical travel. Our services
6 available to deal with the emergencies are
7 limited. There are only two hospitals along
8 this route and all the fire departments are
9 volunteer in nature. The EIS states that
10 emergency vehicles will be let through. The
11 question then becomes how and where? The road
12 has 25 miles of four lane and 95 miles of two
13 lane roads. There are 39 bridges on the
14 portion just to Cudjoe Key, which allow little
15 or no room for passing emergency vehicles.
16 Has consideration been given to the special
17 problems that might occur during hurricane
18 season? Would the Keys be able to be
19 evacuated without delay? Is there a danger of
20 a fire or an explosion while the missile is in
21 transit in the event of a collision with
22 another vehicle? If, yes, could this damage a
23 bridge? Our bridges are our life line, among
24 other things, carrying our only fresh water to
25 us. All our utilities are vulnerable to this

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Exhibit 5.3-1: Reproductions of Transcript Comments (Continued)

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1 scenario, as well as our food supply.

2 The EIS has a description of a fire

3 fighting plan, but it appears to be one of

4 Eglin Air force Base's plans. Another concern

5 is the absence of a current traffic study in

6 the EIS. Extrapolations are made from older

7 studies that may well have been extrapolations

8 themselves. For example, it predicts that

9 traffic in the year 2005 will be up 18 percent

10 on Cudjoe Key, down 9 percent on Summerland

11 and down 11 percent on Big Pine Key.

12 Impossible. The same traffic uses this entire

13 stretch. And if the traffic ever goes down on

14 Big Pine, it will be amazing as well as a

15 miracle. Our traffic is heavy now and getting

16 worse year by year. Over half our population

17 excluding U.S. 1 -- uh, excluding Key West

18 centers on U.S. 1. Other questions not

19 answered are: How fast will the convoy be

20 traveling? What time of day or night will

21 this travel take place? Has thought been

22 given on how to handle civil disobedience

23 should it occur? It seems obvious to me that

24 the EIS is seriously flawed, inadequate and

25 incomplete. And in closing, I would like

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1 everybody to go home and read the editorial in

2 the Miami Herald today.

3 MR. MICHAELSON: Dennis Henize.

4 DENNIS HENIZE: My name is Dennis

5 Henize. At last night's hearing in Key West,

6 I said that the 6500 foot long hazard area for

7 Hera launches in the Keys is not large enough.

8 I cited a recent study prepared by a senior

9 staff scientist at the Union of Concerned

10 Scientists and Securities Studies Program,

11 MIT, which concluded that in some plausible

12 mishaps debris could travel two or more miles

13 from the launch site, well outside the LHA.

14 The red shaded area at the bottom of the

15 Cudjoe LHA is the area which was carved out of

16 the LHA because my wife and I and 22 other

17 families live there.

18 And I stated that the LHA should take

19 into account, but does not, at least two other

20 launch hazards that are identified in the EIS,

21 compression waves from potential explosions

22 and chemical clouds from potential combustion

23 accidents. The draft SEIS acknowledges that

24 launch pad explosions could cause over

25 pressures of two pounds per square foot at a

Exhibit 5.3-1: Reproductions of Transcript Comments (Continued)

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1 distance of 1.9 miles, enough to cause minor
2 structural damage according to the EIS. At
3 least 23 homes are closer than that.
4 With respect to chemical clouds
5 resulting from potential combustion accidents,
6 the draft SEIS acknowledges that the highest
7 concentrations of hydrogen chloride would fall
8 outside the launch hazard area. In fact,
9 results of the EPA approved model used to
10 estimate the HCL concentration showed levels
11 in excess of the short-term public emergency
12 guidance levels at distances of two and three
13 miles from the launch site. Then a more
14 refined model was used, one that is not yet
15 approved by EPA or the State of Florida. And
16 wouldn't you know it, it shows the HCL level
17 somewhat below the guidance level. But very
18 significantly even the more refined model
19 still shows that the highest concentrations
20 fall outside the LHA. Given that fact and
21 that there is not agreement on the exact
22 amount, it's obvious that the LHA is
23 insufficient to encompass this hazard. The
24 LHA should be sufficiently large enough to
25 encompass the full extent of all the launch

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1 hazards which are identified in the SEIS which
2 it definitely does not. 6500 feet is not
3 sufficient, much less conservative.
4 The draft LHA cites plenty of
5 technical information about noise but obscures
6 the issue by using methodology that looks at
7 the impacts of missile launch noise averaged
8 over long periods. The SEIS also considers
9 what are called sensitive noise receptors,
10 i.e., the Sugarloaf School and a day care
11 center on Cudjoe, three or more miles away and
12 ignores that hundreds of homes are closer than
13 that, some as near as a mile and a half. And
14 using very bizarre methods, it concludes that
15 the percentage of Cudjoe residents who would
16 be highly annoyed by noise from missile
17 launches are already highly annoyed by
18 everyday sound. That is total nonsense. The
19 SEIS also says that ambient noise on Cudjoe
20 Key is from aircraft while, in fact, very few
21 aircraft fly over Cudjoe, especially northern
22 Cudjoe because of restricted airspace
23 surrounding the aerostat.
24 On the subject of visual aesthetics,
25 what can be said about something so subjective

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Exhibit 5.3-1: Reproductions of Transcript Comments (Continued)

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1 except to say that the SEIS rates the view of
2 the back country from the Blimp Road boat ramp
3 as minimal as it is now. This artist's
4 rendition does not show the aerostat because
5 it is usually flying. Rating this view as
6 minimal underscores just how little
7 appreciation for the Keys the preparers of
8 this document have. The draft SEIS then
9 concludes that this view from the Cudjoe Boat
10 Ramp, having sprouted a missile facility, will
11 retain moderate visual integrity. I don't
12 think so.
13 This is not an impact statement at
14 all. It under estimates impacts on human
15 safety, and it doesn't even attempt to
16 seriously examine long-term effects on the
17 ecosystem. The final SEIS should eliminate
18 the Keys as even an alternative as the draft
19 SEIS does not support its findings of
20 negligible impacts.
21 MR. MICHAELSON: David Musselman.
22 DAVID MUSSELMAN: Folks, I feel like
23 I should be facing this way. They have
24 already heard what we have to say last night.
25 And four minutes is really not enough to say

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1 it. If any of you would like to stay after
2 school tonight, I have a handout. And I will
3 explain Sol Rosenblatt's remarks. I also have
4 some remarks of my own. I am David Musselman.
5 I am president of the Cudjoe Garden's
6 Association. I will start with Sol's remarks.
7 He said, thank you for giving me the
8 opportunity to present some solid rocket
9 emissions observations during my three and a
10 half years as a solid rocket development
11 chemist with the Polaris Missile Program.
12 With the Hera, one and half tons of
13 hydrochloric acid -- excuse me, hydrogen
14 chloride gas emitted per launch combined in a
15 humid or an excess water environment, with
16 three tons of water which brings down the HCL
17 in the form of four and one half tons of
18 hydrochloric acid rain. A few drops of this
19 acid will reduce the PH of a gallon of water
20 to below seven, which is neutral by the way,
21 instantaneously.
22 MR. MICHAELSON: Mr. Musselman, I am
23 sorry. You are not speaking into the
24 microphone. The court reporter is having a
25 hard time hearing you.

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Exhibit 5.3-1: Reproductions of Transcript Comments (Continued)

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1 MR. MUSSELMAN: I am just going to
2 summarize this for you folks. It's easier for
3 me, and it's difficult for me to read his
4 writing. I speak differently than he writes.
5 Basically, he is saying here that the four and
6 a half tons of hydrochloric acid is way too
7 much. And that our reef is mysteriously dying
8 at a rate of between four and ten percent per
9 year, and nobody knows why. He does not think
10 that this is a hot idea. There is a claim
11 that only 20 percent, this is a claim in the
12 SEIS, only 20 percent of the HCL that comes
13 out of the rockets would combine to form
14 hydrochloric. And he wants to know what
15 happens to the balance? I agree. And he
16 basically doesn't believe that that is true.
17 He says, and I found later even within your
18 document, that hydrogen chloride readily
19 gathers water from the environment. As was
20 stated before by other speakers and you will
21 probably hear again, the testing that was done
22 in this regard was done in two dessert areas,
23 the western dessert test range in Utah and the
24 one somewhere in New Mexico, Fort Wingate,
25 excuse me.

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1 He also mentions, Sol does, that
2 since the rocket accelerates more slowly at
3 the beginning most of the by products of the
4 rocket would be close to the Earth. He then
5 gets into the fact that the water is shallow.
6 And the French had an accident in Guyana
7 launching their Oriana 5, which flashed down
8 into a lagoon, an area much like the waters
9 that we have. And basically it killed off
10 everything that lived. It changed the color
11 of the water and everything. The problem is
12 the fuel is ammonium perchlorate. And it's
13 toxic to plants and animals.
14 The only thing that the study -- that
15 the SEIS uses to say that that isn't so is a
16 study done by the Russians. And Sol says,
17 essentially it's the Russians who have the
18 most toxic chemical nuclear dump in the world,
19 and they shouldn't be the ones that set that
20 criteria. I will get into the rest of it
21 later on. And rather than give you my speech
22 that I made last night, I will give you the
23 last paragraph that is contained in the SEIS.
24 This program would not generally involve the
25 use of resources to such extent that they

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Exhibit 5.3-1: Reproductions of Transcript Comments (Continued)

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1 would become fully consumed or destroyed. As
2 a result, potential irreversible or
3 irretrievable commitment of resources would be
4 very limited and would occur only for certain
5 biological and cultural resources. My comment
6 to that is: Which ones are you talking about
7 that we would never have again?
8 MR. MICHAELSON: Wayne Hoffman.
9 WAYNE HOFFMAN: Thank you. I am
10 Wayne Hoffman. I spoke to you last night.
11 And I got about half of what I had prepared on
12 the record. And I will put the rest on
13 tonight. The basic point I was making is that
14 I find the documentation of risk in this
15 alternative to our flora and fauna to be
16 woefully inadequate. It's important that the
17 final EIS either rule out this alternative
18 completely or else provide accurate and
19 comprehensive information on the effects on
20 our environment.
21 My point six, table 3.3-2 on page
22 3-376, purports to list the wildlife with
23 Federal or State status that occur or
24 potentially occur near the Florida Keys site.
25 This table is very incomplete. It appears

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1 that the writers may not be aware of a revised
2 edition of a series on rare and endangered
3 biota of Florida that have appeared over the
4 last several years. In addition to the
5 species in this table, Magnificent
6 Frigatebird, Great White Heron, Great Egret,
7 Yellow-Crown Night-Heron, Wilson Plover, Royal
8 Tern, Sandwich Tern, and Black Skimmer are
9 potentially at enough risk to be included. In
10 addition, at least 20 species of terrestrial
11 invertebrates listed as threatened or species
12 of special concern appear to live in the
13 region of influence. These include three
14 species of tree snails, a crab, a spider, a
15 whip scorpion, two crickets, a beetle, and
16 eleven species of butterflies all listed as
17 threatened or endangered or species of special
18 concern by the State of Florida. In addition
19 numerous coral species are listed as
20 endangered or threatened. I don't know which
21 of the corals occur in the region of
22 influence, but their status certainly needs to
23 be addressed in the EIS.
24 On page 3-386, it's stated, "if the
25 activities take place during the months of

Exhibit 5.3-1: Reproductions of Transcript Comments (Continued)

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1 February through October..." it goes on to say
2 that this will have some disturbance effects
3 on a series of bird -- a category of bird
4 species. In fact, disturbance can occur any
5 month of the year in our tropical climate. We
6 have birds here all year long. We have some
7 nesting every month of the year. Similarly on
8 page 3-390, is a statement about the month of
9 risk to nesting Eagles. Our Bald Eagles nest
10 in the winter into early spring, not spring
11 summer. In fact, currently our Bald Eagle
12 nests are fledging their young as we speak.
13 The eggs were laid in December.
14 Page 3-389 it is stated the
15 construction activities are unlikely to affect
16 sea turtles. Lighting after dark can
17 disorient hatching sea turtles, and some
18 nesting does occur within range of these
19 sites. Any new lighting of all of the sites
20 where construction is going on needs to be
21 described and the potential effects on turtles
22 assessed. Number nine, page 3-390, the
23 nearest rookeries for wading birds is stated
24 to be 5.5 to 7 kilometers away. This is
25 incorrect. Some wading bird nesting has been

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1 documented at about one kilometer from the
2 aerostat facility on Cudjoe.
3 And number ten, the draft EIS
4 completely ignored potential direct effects of
5 hydrochloric acid disposition on wildlife. I
6 do not think we should assume that a mist of
7 highly acidic hydrochloric acid rain would be
8 harmless to the eyes of a Bald Eagle or a
9 Reddish Egret. That is a subject that is just
10 completely ignored in the EIS.
11 And the final comment I want to make
12 is that most of the comments about potential
13 effects on the biota are related to normal
14 operation, normal launches. The EIS needs to
15 address and needs to address in detail the
16 effects on the biota of all of the plausible
17 accidents that could occur from explosion of a
18 missile on the pad to destruction at low
19 altitude above the pad, to destruction a short
20 distance down the range. The effects of those
21 on our biota are a subject that is really
22 necessary to be covered under NAPA. Thank
23 you.
24 MR. MICHAELSON: Alexander Hadden is
25 next. He will be followed by Barry Steiglitz,

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Exhibit 5.3-1: Reproductions of Transcript Comments (Continued)

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1 Charles Kanter, Diane Linn, and Nick Putnam.
2 ALEXANDER HADDEN: My name is
3 Alexander Hadden. I am a retired attorney.
4 My comments this evening are intended as a
5 summary of the views presented by the task
6 force organized by Commissioner Shirley
7 Freeman. The focus of the task force has been
8 to assess how well the draft SEIS portrays the
9 impact on the Keys of launching target
10 missiles here.
11 We find the document as it stands to
12 be incomplete and superficial and in some
13 respects distorted. Our first concern is
14 human health and safety. Nowhere in the SEIS
15 is there any focus on the possibility of
16 serious accidents. It neither quantifies nor
17 even mentions the possibilities of human
18 error, equipment or system failure, sudden
19 wind or meteorological change or a combination
20 of such factors which might result in the
21 destructive distribution of debris or toxic
22 emission beyond the launch hazard area. And
23 of particular concern is the extremely short
24 distance from the launch sites to the edge of
25 the LHA on populated sides. The fashion in

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1 which the LHA was magically shrunk when it was
2 discovered that it did include settled areas,
3 seems to us to highlight the documents lack of
4 objectivity. Also more detail is needed on
5 the timing of the trigger mechanism or the FTS
6 in the event of an accidental firing in the
7 direction of a populated area.
8 Secondly, we are concerned about the
9 environment. The analysis understates the
10 potential impact of introducing large
11 quantities of hydrogen chloride and thus
12 hydrochloric acid into a region of high
13 humidity and shallow sea water. And it fails
14 to focus at all on the consequences of such
15 imposition on the fragile alkaline environment
16 and on the many -- on the effect on many of
17 the birds, animals, and native organisms that
18 are dependent on a continuation of that
19 alkalinity and of their own tranquil
20 condition. We are also concerned with the
21 concerns raised by the Marine Sanctuary and
22 the Wildlife Service. We urge that these
23 issues be addressed by the final SEIS.
24 Finally, we are concerned about
25 transportation. The Overseas Highway is the

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Exhibit 5.3-1: Reproductions of Transcript Comments (Continued)

P-T-0046 COMMENT NUMBER
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1 sole conduit for automobile traffic, drinking
2 water, electric power, hospital and medical
3 services, food and every other vital service
4 required by our entire population. The impact
5 of the missile proposal on this life line
6 corridor is not addressed at all in the draft
7 SEIS. What would be the effect of this
8 heavier traffic burden on normal essential
9 traffic patterns. And God forbid that there
10 should be an accident that takes out a bridge,
11 for example. Should there not be some rather
12 specific -- some specific rather than generic
13 contingency planning that would take such
14 possibilities into account.
15 In conclusion, there is a real
16 possibility of the failure of a missile
17 launch. We can conceive of no other rural
18 location in the U.S. where the consequences of
19 such an accident would be more devastating.
20 Such a failure could result in the dispersal
21 of flammable and toxic materials and chunks of
22 missile hardware in areas where people live or
23 involve accidental explosions of a missile
24 being transported on U.S. 1. It is not enough
25 to say the chances of events happening like

P-T-0046 COMMENT NUMBER
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P-T-0047 01

1 that in the Keys are minimal. Disasters of
2 this sort have occurred, and they could happen
3 here. We hope that the final SEIS will look
4 much harder and deeper into these real risks
5 and find ways to treat them that would be both
6 more detailed and much more convincing. We
7 also hope that it will eliminate any further
8 consideration whatsoever of the Keys as even a
9 low probability launch site. Thank you.
10 MR. MICHAELSON: Barry Steiglitz.
11 BARRY STEIGLITZ: Good evening, I am
12 Barry Steiglitz. I am the project leader for
13 the Florida Keys National Wildlife Refuge.
14 And I am here to introduce into the public
15 record written comments from the U.S. Fish and
16 Wildlife Service regarding -- whatever we are
17 here tonight. The Florida Keys Refuge is
18 the --
19 MR. MICHAELSON: Can you speak into
20 the microphone?
21 BARRY STEIGLITZ: Sure. Tonight I
22 want to start with a few of the more pertinent
23 points for this record concerning the Florida
24 Keys proposal alternative. I would like to
25 point out that this is a preliminary position

Exhibit 5.3-1: Reproductions of Transcript Comments (Continued)

P-T-0047 COMMENT NUMBER
02

1 of the Service based on preliminary
2 information. With respect to the draft
3 proposal, there are a number of deficiencies
4 regarding potential effects to Federal Trust
5 Resources, plan management responsibility, and
6 human health and safety. Some of these
7 include a thorough evaluation of the effects
8 of prelaunch and launch activity on the
9 populations of the Silver Rice Rat, the lower
10 Keys Marsh Rabbit, Key Deer, Bald Eagle and
11 Eastern Indigo Snake, all of which exist
12 within the launch hazard area in both Cudjoe
13 and Sugarloaf Keys.
14 There needs to be a thorough
15 evaluation of the effects of prelaunch and
16 launch activities on shore bird and wading
17 bird rookeries within the launch hazard area.
18 As nesting birds take flight in response to
19 prelaunch and launch activities, they leave
20 the nest exposed to both predators and the
21 elements. Flushing birds makes it necessary
22 to expend energy that may be otherwise used
23 for foraging, nesting, and or mating. The
24 proposed action is inconsistent with the
25 congressional designation of the wilderness

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1 area, the 2,270 acres and 1,900 acres within
2 the Great White Heron National Key Deer
3 Refuge. By definition of the wilderness act
4 of 1964, wilderness areas are -- and I am
5 paraphrasing -- Federal land retaining their
6 primeval character and influence, which are
7 protected and managed to preserve natural
8 conditions such that it generally appears to
9 be affected by the forces of nature, with the
10 imprint of man's work substantially
11 unnoticeable and has outstanding opportunities
12 for solitude or primitive and unconfined type
13 of recreation. Furthermore, wilderness areas
14 shall be administered in such a manner as will
15 leave them unimpaired for future use and
16 enjoyment as wilderness.
17 There needs to be a thorough
18 evaluation of the proposed action with respect
19 to visual pollution of wilderness areas, the
20 impact on wilderness solitude, and
21 recreational and economic impact to the highly
22 desired wilderness experience and its impact
23 to wildlife and human use. The U.S. Forrest
24 Service as a visual resource management system
25 as we saw is not a very appropriate tool to

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P-T-0047 COMMENT NUMBER
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P-T-0047 COMMENT NUMBER
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Exhibit 5.3-1: Reproductions of Transcript Comments (Continued)

P-T-0047
COMMENT
NUMBER

1 rate the scenic attractiveness of the Florida
2 Keys back country and Mangrove habitat.
3 Information on nesting, foraging, wading, and
4 colonizing bird is incomplete. The flats of
5 Mangrove Island are used extensively by birds.
6 Rookery data is incomplete for instance. Just
7 north of Cudjoe Key is the fifth most
8 important nesting site for Great White Herons.
9 The primary species for which the Great White
10 Heron National Wildlife Refuge was scheduled
11 in 1938.
12 I conclude, after reviewing the draft
13 comments, we remain concerned with the
14 potential adverse effects of the proposed
15 action. As a cooperating Federal agency in
16 the draft SEIS process, we have attempted to
17 identify gaps in the information provided as
18 well as no hidden inaccuracies. As such, the
19 preliminary draft is incomplete in its current
20 form. At the same time, we do not believe
21 that the adverse impacts of launching target
22 missiles from the Keys, such as noise impacts
23 to nesting birds, can be reduced. It is the
24 recommendation of the Fish and Wildlife
25 Service to completely remove from

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P-T-0048
COMMENT
NUMBER

1 consideration the Florida Keys alternative.
2 Thank you.
3 MR. MICHAELSON: Charles Kanter.
4 CHARLES KANTER: Good evening, my
5 name is Charles Kanter, K-A-N-T-E-R, for the
6 record. I am a Korean War veteran. I am
7 proud of my Air Force. I am proud to see you
8 all here. I want to see you have the best Air
9 Force that money can buy. I am not afraid to
10 give you my tax money to make the best Air
11 Force that money can buy. But I am very much
12 afraid that you are not doing it. I am afraid
13 you are taking my tax money and wasting it. I
14 think that this is the most bizarre scheme
15 that I have ever seen. I think that if you
16 folks were working in private industry, you
17 would get fired for a scheme of this nature.
18 You realize all of these other people
19 before me were talking about the impacts on us
20 mammals and birds and things like that. And I
21 noticed that nobody was really too interested.
22 I would like to talk to you about the impact
23 on people, people like myself, on people that
24 go out there and make their living out there
25 on the Gulf of Mexico. They make their living

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Exhibit 5.3-1: Reproductions of Transcript Comments (Continued)

P-T-0048
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1 out here in the Florida Bay. There are people
2 out there in canoes. There are people out
3 there on jet skis. There are people out there
4 on sailboats. There are people out there
5 fishing. There are people out there running
6 crab traps and crab lines.
7 I have heard some absolutely
8 ludicrous idea that you are going to send fast
9 boats out there and clear the area or get them
10 on VHF radio. I mean these things are
11 ridiculous. I would like to ask you, all of
12 you up front, how many of you have ever been
13 out on a boat? How many of you have ever been
14 on a sailboat? How many of you know what the
15 options are when somebody is sailing? Do you
16 understand that Marathon and Key West are
17 cross roads for the sailing and the cruising
18 world, that hundreds and hundreds of boats
19 transpire our area every year on their way
20 through the Caribbean, on their way to New
21 Orleans or up the west coast of Florida, or
22 Tampa, St. Petersburg? There are dozens --
23 hundreds of sailboats out there all the time.
24 There is not a possibility in the world of
25 anybody clearing them out there. You can send

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P-T-0048
COMMENT
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1 out all the fast speed boats you want and tell
2 them to move. But they can't move. A
3 sailboat maybe goes six knots. That is it.
4 How do you expect them to get out of the way?
5 So what are you going to do, postpone the
6 launch?
7 Now, when you postpone the launch,
8 because there are people in the way there,
9 what happens back here on our fabulous Florida
10 Keys? We have four million people back here
11 that you are inconveniencing. They are not
12 all here at one time, thank God. But
13 nevertheless, that is what we are dealing with
14 here. You just simply -- what you are
15 proposing is preposterous. And what I am
16 proposing right now here tonight is that we
17 form a citizen's, all the folks here, that we
18 form a citizen's committee to find out whose
19 idea this is and propose that he be fired.
20 There is no reason for our taxpayer money to
21 go to such a silly scheme.
22 As a matter of fact, when watching
23 your presentation tonight, Major Kennedy, it
24 brought down to me that it's not just here in
25 the Keys. You guys should not be in the Gulf

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Exhibit 5.3-1: Reproductions of Transcript Comments (Continued)

P-T-0048 COMMENT NUMBER
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P-T-0049 01

1 of Mexico all together. There is just simply
2 too much traffic, too many people, times have
3 changed. This is not 1941 at the beginning of
4 the Second World War when there was an
5 emergency and the west coast of Florida was
6 nothing but alligators. And there was nobody
7 here in the Keys. We now have some major
8 cities on the west coast of Florida. The Keys
9 have 80,000 permanent residents, and as I said
10 before, some four million visitors a year that
11 you are going to inconvenience and endanger
12 and create economic hardship for people that
13 are out there trying to make a living. That
14 is not the purpose of our Air Force. Our Air
15 Force is to seek out and destroy the enemy
16 which means to mess up his neighborhood not
17 ours. Thank you.
18 MR. MICHAELSON: Diane Linn.
19 DIANE LINN: Hello, I am Diane Linn,
20 and I live on Cudjoe Key. I will try to speak
21 very slowly. But I am most distraught over
22 this situation. I came with no written
23 speech, as I was afraid I would be too nervous
24 to speak. But after listening to all the
25 lies, I feel I must as I went back through my

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1 notes. Because there are so many who are
2 unable to speak for themselves. I think it
3 would improve your analysis to realize that as
4 a very concerned homeowner on Cudjoe Key, I
5 know without a doubt that my home, loved ones,
6 and myself are in harms way. If I were your
7 mother or anyone else's mother on your staff,
8 would you want me to live in this area? I or
9 she am an endangered species. You can not
10 replace a mother.
11 Furthermore, my property will become
12 valueless. As after only one is fired, would
13 any of you care to buy it? It will be
14 worthless and cheap. In reference to the
15 air-drop method, I think I understood you to
16 say it's still only in development. That
17 seems very asinine to me. You don't even have
18 it developed? How can you say we will be
19 safe? It sounds like building a home without
20 house plans.
21 In reference to the four hours to
22 evacuate, why should I have to evacuate if
23 this is considered not to be dangerous? And
24 how will I go on crowded highways? As in past
25 reference on my own, the government already

Exhibit 5.3-1: Reproductions of Transcript Comments (Continued)

P-T-0049 COMMENT NUMBER
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P-T-0050
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1 made big mistakes about the Snail Darter in
2 the TVA area. What mistakes will you regret
3 later? I know you mentioned about sea
4 turtles, birds, snails, and marine animals.
5 Such as Mr. Kanter said, I agree, but what
6 about people? How about the schools or the
7 nearby day care center that is in the target
8 range area that has over 800 human lives in
9 there. I thank you for listening with your
10 ears. But now how about please listening with
11 your hearts for your mother and I are
12 concerned.

13 MAJOR KENNEDY: I would like to make
14 a clarification. Nobody in this proposal is
15 expected to evacuate their homes or their
16 property anywhere else in the Keys.

17 MR. MICHAELSON: Nick Putnam is next.
18 NICK PUTNAM: My name is Nick Putnam
19 a resident of No Name Key. As a person with
20 60 years of experience operating boats, I
21 would like to express my agreement with Mr.
22 Kanter. I am here tonight as the president of
23 the Key Deer Protection Alliance, an
24 organization dedicated to our most famous
25 endangered species. We are critically

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1 concerned with the local environment, our
2 environment is extremely fragile. It is
3 already over stressed. We are desperately
4 trying to find ways to reduce that stress.
5 And any increment in stress on that is simply
6 non productive. I certainly agree with
7 Mayor -- I should say, Mayor Freeman and her
8 team and their excellent analysis of the SEIS.

9 Finally, I would like to make a
10 comment as an individual, which does not
11 necessarily reflect the views of the Key Deer
12 Protection Alliance. There is a larger issue
13 that goes beyond what we are discussing here
14 tonight. But I don't think we can ignore it.
15 And, that is, given our limited resources in a
16 post cold war era, is further development of
17 missiles really the most effective public
18 policy? I wish we would have more debate on
19 that issue. I am speaking now as an
20 individual. Thank you for the opportunity to
21 speak.

22 MR. MICHAELSON: That exhausted the
23 list of speakers that have been handed to me
24 so far. I think what we will do is take a
25 five minute break and see if there is any

Exhibit 5.3-1: Reproductions of Transcript Comments (Continued)

P-T-0051
COMMENT
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1 other speaker cards that we have. And we will
2 reconvene if so. Again, you have five minutes
3 to fill out a speaker registration card and
4 turn those in to me. We will now recess at
5 8:34. Thank you.
6 (Whereupon, there was a brief recess.)
7 MR. MICHAELSON: I have another
8 speaker registration card. So if I could ask
9 you to please take your seats again, we are
10 going to read the name. Okay. We are going
11 back on the record at 8:39. We have one more
12 individual who gave me a card and would like
13 to speak tonight. His name is Albert
14 Tanzonieri. Would you come up and please
15 state your name? Were you here when I gave
16 the instructions about how I indicate the
17 times and everything?
18 ALBERT TANZONIERI: Yes, sir.
19 MR. MICHAELSON: Okay. Great.
20 ALBERT TANZONIERI: Thank you.
21 Albert Tanzonieri, T-A-N-Z-O-N-I-E-R-I. I am
22 just now familiarizing myself with a lot of
23 this entire situation. I wasn't exactly sure
24 whether I wanted to speak. But there are a
25 few things that I thought of in watching your

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1 presentation, and I would like to reiterate
2 some of the ones that were already given. I
3 consider myself a patriot. I realize the
4 necessity for preparedness and the realities
5 of what it takes to be prepared and the
6 sacrifices we all have to make. I no longer
7 feel as people did in the past the distrust of
8 the military. But the legacy of the past is
9 vigilance. We can forgive atrocities and the
10 chaos of war, but we must guard against the
11 zeal of preparedness so that what we do while
12 doing so has been given proper thought. One
13 can't help but wonder if the type of testing
14 and the location itself isn't a bit of a
15 coincidence, given some of our unfriendly
16 neighbors to the south in the Caribbean and
17 Central America.
18 One wonders what this would prove or
19 appear to those who were watching these tests.
20 Perhaps it is to show that our missiles are
21 hard to shoot down and perhaps that the Hera
22 missile is somehow similar to those in, for
23 example, Cuba. And that it would be to show
24 how easily they are taken down. But in any
25 case, there is the danger of legitimizing the

Exhibit 5.3-1: Reproductions of Transcript Comments (Continued)

P-T-0051
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1 Keys as a military target.
2 Now, you mentioned that these bases
3 have been there for a long time, and they
4 already probably are targets. But to give any
5 foreign power the idea that the Keys are more
6 legitimate targets or that each island is a
7 potential for a site or that the
8 transportation network as a whole is a target
9 is unacceptable. As a contractor, I am aware
10 of the penalties for cutting down the
11 Mangrove, disturbing the Mangrove, cutting
12 down non exotics, the handling of solvents and
13 such. All the boaters around here know the
14 trouble you get into for running aground or
15 having oily bilge. There can be no minimum
16 safe impact to the environment that is already
17 stressed. So once again we ask nature to bend
18 a little bit more for us.
19 Nor do I feel that the west coast of
20 Florida, the waters along the west coast, are
21 appropriate for the debris for this exercise.
22 Indeed the west coast and the panhandle share
23 a certain percentage of potential for danger.
24 I noticed that your hazard area map, although
25 it reached greatly into the Gulf, was assuming

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COMMENT
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09(cont)

1 that the missile would decide to have a mishap
2 in that direction. I believe that a more
3 accurate representation of that map would be
4 circular. Because if this missile has a
5 potential for danger, it is going to do it in
6 whatever direction it might be. And I think a
7 circular pattern on that map would post a lot
8 more concern.
9 During times of war, populations
10 learned to expect loss. Those who were in the
11 military noted it as part of the job. But in
12 peace times, even one person injured should be
13 unacceptable. If any victims of a tragedy ask
14 how and why that a piece of their lives has
15 been shattered, let it not be said that there
16 were missiles launched on the Florida Keys.
17 Thank you.
18 MR. MICHAELSON: That concludes the
19 speakers we have for tonight. Thank you very
20 much for coming. We will adjourn at 8:45.
21 (Whereupon, these proceedings were concluded.)
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Exhibit 5.3-1: Reproductions of Transcript Comments (Continued)

1 CERTIFICATE
2 _____
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5 STATE OF FLORIDA

6 COUNTY OF MONROE
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10 I, Nella Robin Bull, Notary Public at Large,

11 certify that I was authorized to and did

12 stenographically report the foregoing proceedings and

13 that the transcript is a true and complete record of my

14 stenographic notes.
15
16

17 Dated this 26th day of March, 1998.
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22 Nella Robin Bull,
23 A.S.
24
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Table 5.3-2: Responses to Transcript Comments

Commentor and Affiliation	Comment Number	Resource Area	Reference Section / Page	RESPONSE
Traczyk, Tom	P-T-0001.01	Draft SEIS		Comment noted.
Harvey, Anne Park Manager, St. Joseph Peninsula State Park	P-T-0002.01	Transportation-Cape San Blas	3.1.11.4.2	If Cape San Blas is selected for Theater Missile Defense testing, appropriate mitigations including road design modifications could be implemented to accommodate turn arounds during road closure.
	P-T-0002.02	Transportation-Cape San Blas	3.1.11.4.2	Comment noted.
	P-T-0002.03	Transportation-Cape San Blas	3.1.11.4.2	If Cape San Blas is selected for Theater Missile Defense testing, appropriate mitigations including road design modifications could be implemented to accommodate turn arounds during road closure.
	P-T-0002.04	Transportation-Cape San Blas	3.1.11.4.2	Public notification of planned road closures would reduce road delays during test activities.
	P-T-0002.05	Transportation-Cape San Blas	3.1.11.4.2	If Cape San Blas is selected for Theater Missile Defense testing, appropriate mitigations including road design modifications could be implemented to accommodate turn arounds during road closure.
	P-T-0002.06	Geology and Soils	3.1.5..3	This information has been included in section 3.1.5 of the Final SEIS.
	P-T-0002.06	Geology and Soils	3.1.5..3	This information has been included in section 3.1.5 of the Final SEIS.
	P-T-0002.07	Land Use-Cape San Blas	3.1.7.3	This information has been included in section 3.1.7.3 of the Final SEIS.
Rebosio, Gianna Todisco	P-T-0003.01	Socioeconomics	3.3.10.4	The most recent and reliable data concerning tourism in the Keys was compiled by a consortium that comprised National Oceanic and Atmospheric Administration, the Monroe County Tourist Development Council, the Nature Conservancy, the U.S. Forest Service, the Bicentennial Volunteers and the University of Georgia. The study, titled Linking the Economy and Environment of Florida Keys/Florida Bay, estimated that there were 2.54 million tourist visits made to the Keys between June 1995 and May 1996 (Visitor Profiles: Florida Keys/Key West, November 1996, Leeworthy and Wiley, National Oceanic and Atmospheric Administration).
	P-T-0003.02	Water Quality-Gulf	3.2.14.4 3.3.14.4	Increased acidity (decreased pH) in bodies of water has various effects upon the plant life, invertebrates, and fish in that water depending upon degree and duration of the increased acidity. The shallow waters of ponds on the Keys are predicted to have a pH drop of as much as 0 to 0.1 units. This decreased pH could persist for as long as 72 hours considering the low rate of dilution and slow currents in these ponds. The back country shallow waters are predicted to have a pH drop of 0 units. This is due to the natural buffering effect of salt sea water on acids. This pH drop is anticipated to be of short duration due to the mixing and dilution of the currents. The hydrogen chloride and hydrochloric acid in the exhaust cloud would dissipate or deposit within minutes of a launch, and meters of the launch site (the near field). The hydrochloric acid in the exhaust cloud could damage the eyes of bird exposed to the cloud. The concentration of hydrogen chloride and the density of hydrochloric acid in the near field exhaust cloud would be negligible compared to the greater effects of heat and noise that close to a launch event.
	P-T-0003.03	launch emissions	3.2.14.4 3.3.14.4	Environmental monitoring at Kennedy Space Center has shown that during the period of reduced pH, metals became more soluble and their concentrations in the water column increased dramatically. As normal pH levels returned to the area (within 24 to 72 hours), metal concentrations returned to pre-launch levels. "To date no long-term elevations of metal concentrations on the water column have been observed." The predicted near-field deposition rates from Theater Missile Defense testing will be less than 1 percent of the deposition rates for the Space Shuttle. Deposition of hydrogen chloride from a Hera launch, at a rate of no more than 1.64g/m ² , would decrease pH by no more than 0.1 unit. At this rate, water pH levels would return to pre-launch levels very rapidly with no long-term elevation.

Table 5.3-2: Responses to Transcript Comments (Continued)

Commentor and Affiliation	Comment Number	Resource Area	Reference Section / Page	RESPONSE
	P-T-0003.04	Launch emissions	3.2.14.4 3.3.14.4	The National Aeronautics and Space Administration has prepared numerous environmental impact assessments and conducted long term environmental monitoring to support the decisions to conduct rocket launches from the Kennedy Space Center, FL. These launch activities occur in a physical environment similar to that of the Florida Keys. The Space Shuttle launches cause local environmental impacts primarily through formation of a launch cloud that produces acidic deposition. This launch cloud results from the interaction of exhaust of the solid rocket boosters and deluge water. Primary constituents include aluminum oxide and hydrochloric acid. The deposition resulting from a Shuttle launch and from a Hera launch differ primarily in scale. The total exhaust from a Shuttle is 2,427,000 pounds, 460,000 of which is hydrogen chloride. The total exhaust from a Hera is 13,820 pounds, 3,078 pounds of which is hydrogen chloride. The Hera emits one half of one percent of the Shuttle exhaust. Hydrogen chloride near field deposition rates from the Shuttle range up to 125g/m ² , while those from the Hera do not exceed 1.64g/m ³ . This is 1.3 percent of the deposition rate of the Shuttle. The near field for the Shuttle is considered 1.5 kilometers from the launch pad. The near field from the Hera launch would be 60 meters from the launch pad. The pH of shallow marine waters in the Florida Keys range from a low of 7.3 near Saddlebunch and Cudjoe Keys to a high of 8.2 near Plantation Key. Average alkalinity measurements range from a low of 119 mg/L calcium carbonate near Plantation Key to a high of 137 mg/L calcium carbonate near Harrison Canal (Florida Department of Environmental Protection, 1996). If it were to rain shortly after a missile launch, the hydrogen chloride present in the exhaust plume would be dissolved in the rain droplets, which would result in a temporary reduction in rainfall pH. Calculations were conservative in that 100 percent of the 1,399 kilograms of hydrogen chloride present in the exhaust plume was assumed to be dissolved in rain droplets (as opposed to approximately 20 percent under normal conditions). Due to the high buffering capacity of the shallow marine waters, rainwater falling on nearby surface waters would result in no decrease in the pH levels.
	P-T-0003.05	Water Quality - Keys	3.3.14.4	The Theater Missile Defense test program would not introduce any contamination into drinking water supplies. The residual levels of test by-products in surface waters would not affect water quality sufficiently to cause skin or other reaction from contact or exposure. It is possible, however, that some individuals could experience a reaction.
	P-T-0003.06	Socioeconomics	3.3.10.4	Comment noted.
	P-T-0003.07	Safety	3.1.9.4	Comment noted.
	P-T-0003.08	Biology-Keys	3.3.8.4 3.3.14.4	Potential impacts of Theater Missile Defense testing on noise and water quality were evaluated in the Draft SEIS and have been clarified in the Final SEIS (sections
Rebosio, Alberto	P-T-0004.01	General		Comment noted.
Lehman, Christopher Monroe County	P-T-0005.01	TMD SEIS		Comment noted.
	P-T-0005.02	Alternatives-Keys	3.3.7.4	Comment noted.
	P-T-0005.03	Safety	3.1.9.4	Public safety is a primary concern for all range operations. The safety limits defined by the Launch Hazard Area would ensure that population centers, schools and residential areas would not be at increased risk as a result of the proposed test program. A detailed discussion of the various risks associated with missile testing are described in section 3.1.9 for normal and mishap scenarios. The primary role of the range safety officer is to ensure the safety of the public. This is done in accordance with Air Force Development Test Center policies and procedures ensuring that the general public will be protected to an individual and collective risk significantly less than the average public exposure. Specifically, one of the safety mechanisms is to establish a Launch Hazard Area as described in section 2.1.5 in the SEIS.
	P-T-0005.04	launch effects		Comment noted.
	P-T-0005.05	Alternatives-Keys		Comment noted.
	P-T-0005.06	DOPAA		Comment noted.
	P-T-0005.07	Alternatives-Keys	1.0	No decision has yet been made about which alternative may be selected. National Environmental Protection Agency requires the analysis of all reasonable alternatives to the proposed action. Section 1.0, Program Overview, explains the factors that will be considered in making the final decision after the Final SEIS is completed.
	P-T-0005.08	Draft SEIS		Comment noted.
	P-T-0005.09	Draft SEIS		In accordance with Council on Environmental Quality guidelines, this SEIS includes sufficient analysis to inform the public and decision makers of potential environmental impacts resulting from the preferred action and alternatives and to assist in the decision making process. In preparing this analysis, the most recent and available data was used to characterize the existing environments of all potential sites including those in the Florida Keys.

Table 5.3-2: Responses to Transcript Comments (Continued)

Commentor and Affiliation	Comment Number	Resource Area	Reference Section / Page	RESPONSE
	P-T-0005.10	Biology-Keys	3.3.3.4	See previous response.
	P-T-0005.11	Safety	3.1.9.4	Public safety is a primary concern for all range operations. The safety limits defined by the Launch Hazard Area would ensure that population centers, schools and residential areas would not be at increased risk as a result of the proposed test program. A detailed discussion of the various risks associated with missile testing are described in section 3.1.9 for normal and mishap scenarios. The primary role of the range safety officer is to ensure the safety of the public. This is done in accordance with Air Force Development Test Center policies and procedures ensuring that the general public will be protected to an individual and collective risk significantly less than the average public exposure. Specifically, one of the safety mechanisms is to establish a Launch Hazard Area as described in section 2.1.5 in the SEIS.
	P-T-0005.12	Safety	3.1.9.4	The Launch Hazard Area is drawn to protect community resources. The size of a Launch Hazard Area is a function of the flexibility the Range Safety Officer has. The larger the Launch Hazard Area, the more flexibility there is in terms of acceptable launch conditions and anomaly response time. The fixed variable is the commitment to conduct all test activities so that mishap debris does not exit the designated Launch Hazard Area.
	P-T-0005.13	Safety	3.1.9.4	See responses above.
Freeman, Shirley County Commissioner, Monroe County	P-T-0006.01	Alternatives		The National Environmental Policy Act requires the analysis of all reasonable alternatives to the proposed action. The Program Overview in section 1 explains the factors that will be considered in making the final decision following the completion of the Final SEIS. In accordance with Council on Environmental Quality guidelines, this SEIS includes sufficient analysis to inform the public and decision makers of potential environmental impacts resulting from the preferred action and alternatives and, to assist in the decision making process.
	P-T-0006.02	Alternatives	1.0	No decision has yet been made about which alternative may be selected. National Environmental Protection Agency requires the analysis of all reasonable alternatives to the proposed action. Section 1.0, Program Overview, explains the factors that will be considered in making the final decision after the Final SEIS is completed.
	P-T-0006.03	Draft SEIS		In accordance with Council on Environmental Quality guidelines, this SEIS includes sufficient analysis to inform the public and decision makers of potential environmental impacts resulting from the preferred action and alternatives and to assist in the decision making process. In preparing this analysis, the most recent and available data was used to characterize the existing environments of all potential sites including those in the Florida Keys.
	P-T-0006.04	launch emissions	3.3.1.4	The National Aeronautics and Space Administration has prepared numerous environmental impact assessments and conducted long term environmental monitoring to support the decisions to conduct rocket launches from the Kennedy Space Center, FL. These launch activities occur in a physical environment similar to that of the Florida Keys. The Space Shuttle launches cause local environmental impacts primarily through formation of a launch cloud that produces acidic deposition. This launch cloud results from the interaction of exhaust of the solid rocket boosters and deluge water. Primary constituents include aluminum oxide and hydrochloric acid. The deposition resulting from a Shuttle launch and from a Hera launch differ primarily in scale. The total exhaust from a Shuttle is 2,427,000 pounds, 460,000 of which is hydrogen chloride. The total exhaust from a Hera is 13,820 pounds, 3,078 pounds of which is hydrogen chloride. The Hera emits one half of one percent of the Shuttle exhaust. Hydrogen chloride near field deposition rates from the Shuttle range up to 125g/m ² , while those from the Hera do not exceed 1.64g/m ² . This is 1.3 percent of the deposition rate of the Shuttle. The near field for the Shuttle is considered 1.5 kilometers from the launch pad. The near field from the Hera launch would be 60 meters from the launch pad. The pH of shallow marine waters in the Florida Keys range from a low of 7.3 near Saddlebunch and Cudjoe Keys to a high of 8.2 near Plantation Key. Average alkalinity measurements range from a low of 119 mg/L calcium carbonate near Plantation Key to a high of 137 mg/L calcium carbonate near Harrison Canal (Florida Department of Environmental Protection, 1996). If it were to rain shortly after a missile launch, the hydrogen chloride present in the exhaust plume would be dissolved in the rain droplets, which would result in a temporary reduction in rainfall pH. Calculations were conservative in that 100 percent of the 1,399 kilograms of hydrogen chloride present in the exhaust plume was assumed to be dissolved in rain droplets (as opposed to approximately 20 percent under normal conditions). Due to the high buffering capacity of the shallow marine waters, rainwater falling on nearby surface waters would result in no decrease in the pH levels.
	P-T-0006.05	Draft SEIS		Comment noted.
Girard, Gerry	P-T-0007.01	Environment-Keys		Comment noted.
	P-T-0007.02	Biology-Keys	3.3.3.4	Comment noted.
	P-T-0007.03	Water Quality-Gulf	3.3.14.4	Comment noted.
	P-T-0007.04	Environment-Keys		In accordance with Council on Environmental Quality guidelines, this SEIS includes sufficient analysis to inform the public and decision makers of potential environmental impacts resulting from the preferred action and alternatives and to assist in the decision making process. In preparing this analysis, the most recent and available data was used to characterize the existing environments of all potential sites including those in the Florida Keys.

Table 5.3-2: Responses to Transcript Comments (Continued)

Commentor and Affiliation	Comment Number	Resource Area	Reference Section / Page	RESPONSE
	P-T-0007.05	Transportation-Keys	3.3.11.4	Scheduling of missile transport and other Theater Missile Defense test-related traffic would be coordinated with local agencies to avoid peak traffic hours and minimize potential effects on local traffic movement.
	P-T-0007.06	Utilities-Keys	3.3.12.4	Comment noted. The Theater Missile Defense test program would not affect existing or future utility corridors.
	P-T-0007.07	Land Use-Keys	3.3.7.4	The conservation land uses including the refuges that you mention are a critical part of the resource management program for the Florida Keys. The alternative target launch sites on Cudjoe Key and Saddlebunch Keys are located on land owned by the Department of Defense and is designated for military use. The Launch Hazard Area for these alternative sites does, however, overlap several wildlife refuges (see section 3.3.7 in the Final SEIS). New military uses in these areas are permitted but would require specific consultation and permission from respective Federal and state resource agencies. This consultation would require that any proposed action be designed and implemented so that potential impacts to any habitat or species be 1) avoided to the extent possible, 2) minimized when avoidance is not possible, and 3) mitigated to compensate for potential long-term adverse effects.
	P-T-0007.08	Land Use-Keys	3.3.7.4	The alternative target launch sites on Cudjoe Key and Saddlebunch Keys are located on land owned by the Department of Defense and are designated for military use. The Launch Hazard Area for these alternative sites does, however, overlap the National Marine Sanctuary and several wildlife refuges (see section 3.3.7 in the Final SEIS). New military uses in these areas are permitted but would require specific consultation with appropriate Federal and state resource agencies. See sections 3.1.3.4 and 3.3.3.3 in the Final SEIS for proposed mitigations. Should an alternative be selected, the specific mitigations will be documented in the Record of Decision. This mitigation plan, which would avoid or minimize potential adverse impacts on protected areas, would be developed and implemented prior to initiating site preparation and test activities.
	P-T-0007.09	Air Quality-Keys	3.3.1.4	Comment noted.
	P-T-0007.10	Biology-Keys	3.3.3.3	The presence of the Silver Rice Rat at alternative sites in the Keys is discussed in section 3.3.3.3 of the Final SEIS.
	P-T-0007.11	Biology-Keys	3.3.3.3	The habitat of the Lower Keys Marsh Rabbit is discussed in section 3.3.3.3 of the Draft and Final SEIS.
	P-T-0007.12	Biology-Keys	3.3.3.3	The environmental setting of the Florida Keys, including hardwood hammocks and pine rocklands, is described in section 3.3.3.3 of the Final SEIS.
	P-T-0007.13	Biology-Keys	3.3.3.4	The 404 (b) (1) permit process would be used to evaluate and minimize any potential impacts on jurisdictional or non-jurisdictional wetlands affected by the proposed or alternative actions for Theater Missile Defense testing. This permit, issued by the U.S. Army Corps of Engineers in coordination with the State of Florida, would evaluate specific areas affected by the program once they are more precisely defined during the final planning and design process.
	P-T-0007.14	Alternatives-Keys	1.0	No decision has yet been made about which alternative may be selected. National Environmental Protection Agency requires the analysis of all reasonable alternatives to the proposed action. Section 1.0, Program Overview, explains the factors that will be considered in making the final decision after the Final SEIS is completed.
Cofer, Elizabeth	P-T-0008.01	Alternatives	1.0	No decision has yet been made about which alternative may be selected. National Environmental Protection Agency requires the analysis of all reasonable alternatives to the proposed action. Section 1.0, Program Overview, explains the factors that will be considered in making the final decision after the Final SEIS is completed.
	P-T-0008.02	Florida Keys	1.0	See response above.
	P-T-0008.03	Transportation-Keys	3.3.11.4	The importance of Highway 1 to the Florida Keys has been recognized. An early alternative site was eliminated because it would have required closing Highway 1. The evaluation of potential traffic impacts on Highway 1 in the Draft SEIS forecast an increase in traffic volume by 2005 (including Theater Missile Defense-related vehicles) of 0.3 to 1.5 percent on a peak day of activity. Since baseline forecasts of traffic for the same year show that most of the segments of U.S. 1 would be operating at or above design capacity during peak times, project traffic would exacerbate this situation.
	P-T-0008.04	Transportation-Keys	3.3.11.4	Missile components would normally be shipped by standard freight transport vehicles and would not involve a convoy. Special safety and security precautions would be employed where necessary to assure that movement of emergency vehicles is not hindered.
	P-T-0008.05	Transportation-Keys	3.3.11.4	Scheduling of missile transport and other Theater Missile Defense test-related traffic would be coordinated with local agencies to avoid peak traffic hours and minimize potential effects on local traffic movement. Emergency vehicles would not be affected by Theater Missile Defense test activities, since they will not close the highway.
	P-T-0008.06	Safety-Keys	3.3.11.4	The ability to control the movement of missile components is important to the overall safety of the proposed Theater Missile Defense testing system. A specific evacuation plan for the missile and other test-related components and non-critical personnel would be implemented at the first notice of potential hurricane activity, before official hurricane watch and warning announcements. This would ensure that Theater Missile Defense-related evacuation movements would precede standard public evacuation plans and would not interfere with the planned process.
	P-T-0008.07	Transportation	3.3.11.4	Estimates of the probability of an accident involving a truck carrying missile components on the Overseas Highway range from 2.63 to 6.89 per million vehicle-kilometers. Using the high value, there is a probability of 0.0012 of a truck accident per launch.

Table 5.3-2: Responses to Transcript Comments (Continued)

Commentor and Affiliation	Comment Number	Resource Area	Reference Section / Page	RESPONSE
	P-T-0008.08	Transportation-Keys	3.3.11.4	Transportation of the missile components would involve standard freight transports and would not require a convoy. Emergency procedures for all contingencies would be established through cooperative agreements with local public safety agencies. No specific fire fighting vehicles would accompany the shipment, although all vehicles would be equipped with standard fire suppression equipment.
	P-T-0008.09	Transportation-Keys	3.3.11.4	The most recent and available data was used to characterize the existing traffic volumes and capacities in the Florida Keys. The traffic data and projections that were used for the analysis are the current estimates used by the Florida Department of Transportation.
	P-T-0008.10	Transportation-Keys	3.3.11.4	Traffic flows over multiple segments of a highway can differ considerably on the basis of the origin and destination of vehicles entering and exiting the highway. Section 3.1.1 of the Draft and Final SEIS notes that traffic volumes on U.S. 1 are currently at or near its design capacity.
	P-T-0008.11	Transportation-Keys	3.3.11.4	Comment noted.
	P-T-0008.12	Draft SEIS		In accordance with Council on Environmental Quality guidelines, this SEIS includes sufficient analysis to inform the public and decision makers of potential environmental impacts resulting from the preferred action and alternatives and to assist in the decision making process. In preparing this analysis, the most recent and available data was used to characterize the existing environments of all potential sites including those in the Florida Keys.
Lowe, Donald S.	P-T-0009.01	Alternatives	2.0	Comment noted.
	P-T-0009.02	Visual Aesthetics-Keys	3.1.13.4 3.3.13.4	The facilities and operations that would be required for Theater Missile Defense activities in the Keys would not be greatly different from the existing facilities and operations on these sites. The perceived degree of change is subjective. To assist in the comparison of vistas, visual simulations have been provided in sections 3.1.13.4 and 3.3.13.4 of the Final SEIS to illustrate potential visual impacts of Theater Missile Defense facilities.
	P-T-0009.03	Visual Aesthetics-Keys	3.1.13.4 3.3.13.4	The building height restriction is a county zoning restriction, not applicable to Federal facilities.
	P-T-0009.04	Noise-general	3.1.8.1 3.3.8.1 3.1.9.4	The SEIS provides both single event levels and weighted averages to provide as much information on noise occurrences and effects as possible. See section 3.1.9.4 of the Final SEIS for additional discussion of potential noise impacts.
	P-T-0009.05	Noise-general	3.1.8.1 3.3.8.1	See response above..
	P-T-0009.06	Noise-general	3.3.3.4	Potential impacts on shorebird and wading bird rookeries are presented in section 3.3.3.4 of the Final SEIS.
	P-T-0009.07	Program	3.3.8.1	An evaluation of psychological effects are outside the scope of this analysis.
	P-T-0009.08	Noise	3.1.3.4 3.3.3.4	Studies of launch effects at Cape Canaveral have shown that birds disturbed by launch noise normally return to their nest soon after the launch event.
	P-T-0009.09	Noise-general	3.3.3.4 3.3.8.4	The various noise models and measures that were used to evaluate potential noise impacts of Theater Missile Defense testing provide a reasonable characterization of noise effects on humans. Potential effects on wildlife were evaluated based on species-specific information from recent studies.
	P-T-0009.10	Visual Aesthetics-Keys	3.1.13.4 3.3.13.4	To better assess the visual impact of constructing a missile assembly building or erecting a 50 foot tall missile on a site, a visual simulations for each vantage point photograph used in the Draft SEIS has been prepared (sections 3.1.13.1 and 3.2.13.1.) These visual simulations use computer graphics programs to ensure that the apparent visibility of the building or missile in the photograph is what would actually be seen from each respective vantage point. Specifically, a known dimension in each photograph was determined from sources at the respective sites. This known dimension was projected into the photograph via planographic projection to provide a perspective scale of the distance between two objects. In this case, the two objects were the tower or known object, and the Hera missile, which would be 50 feet tall on its launch stool. The site mapping indicated the horizontal distance between the known object and the Hera missile launch site. The resultant photographic visual simulations are published in the Final SEIS section 3.1.13.4 (pages 3-223 and 226) for the Panhandle sites and section 3.2.13.4 (pages 3-518 and 3-521) for the Keys sites. It is apparent, reviewing these photographs, that neither the building nor the missile are visible from most accessible vantage points. The view from those closer vantage points will include the existing military buildings as well as the new Missile Assembly Building and missile. The new buildings will be seen in the context of the existing military facilities.
	P-T-0009.11	Socioeconomic	3.1.10.4	An evaluation of quality of life is outside the scope of this document.
	P-T-0009.12	Draft SEIS		In accordance with Council on Environmental Quality guidelines, this SEIS includes sufficient analysis to inform the public and decision makers of potential environmental impacts resulting from the preferred action and alternatives and to assist in the decision making process. In preparing this analysis, the most recent and available data was used to characterize the existing environments of all potential sites including those in the Florida Keys.

Table 5.3-2: Responses to Transcript Comments (Continued)

Commentor and Affiliation	Comment Number	Resource Area	Reference Section / Page	RESPONSE
Henize, Dennis	P-T-0010.01	Safety-Keys	3.1.9.4	Appendix G of the Draft SEIS described the method of establishing a Launch Hazard Area. Each Launch Hazard Area is different, depending on the available land launch trajectory type of missiles and distance to populated areas or structures. Less operational constraints, such as permissible wind conditions at the time of launch and the reaction time of the range safety officer are required when more land is available for a Launch Hazard Area. Conversely, more operational constraints are required when less land is available. The geographic extent of the Launch Hazard Area and the operational constraints associated with it are established for each site to ensure that the launch can be safely conducted. This is done in accordance with Air Force Development Test Center policies and procedures ensuring that the general public will be protected to an individual and collective risk significantly less than the average public exposure. An Launch Hazard Area of 4.5 miles was never proposed for the Hera launch sites at Santa Rosa, Cape San Blas or Cudjoe or Saddlebunch Keys. The 4.5 mile figure was originally associated with the Fort Wingate launch site. However, even at Fort Wingate, the eventual Launch Hazard Area was significantly less than 4.5 miles Northeast of the launch site due to the existence of a school or residence.
	P-T-0010.02	Safety-Keys	3.1.9.4	The Launch Hazard Area is drawn to protect community resources. The size of a Launch Hazard Area is a function of the flexibility the Range Safety Officer has. The larger the Launch Hazard Area, the more flexibility there is in terms of acceptable launch conditions and anomaly response time. The fixed variable is the commitment to conduct all test activities so that mishap debris does not exit the designated Launch Hazard Area.
	P-T-0010.03	Safety	3.1.9.4	An inquiry is held following any launch mishap to fully document and understand all system anomalies. No launch will be scheduled until all issues raised during the inquiry are resolved.
	P-T-0010.04	Safety-Keys	3.1.9.4	Public safety is a primary concern for all range operations. The safety limits defined by the Launch Hazard Area would assure that population centers, schools and residential areas would not be at increased risk as a result of the proposed test program. A detailed discussion of the various risks associated with missile testing are described in section 3.1.9 for normal and mishap scenarios. The primary role of the range safety officer is to ensure the safety of the public. This is done in accordance with Air Force Development Test Center policies and procedures ensuring that the general public will be protected to an individual and collective risk significantly less than the average public exposure. Specifically, one of the safety mechanisms is to establish a Launch Hazard Area as described in section 2.1.5 in the SEIS.
	P-T-0010.05	Safety-Keys	3.1.9.4	We acknowledge but do not agree with Dr. David Wright's conclusions.
	P-T-0010.06	Noise/Air Quality	3.1.9.4	The Launch Hazard Area is defined as an area within which all missile debris would be confined. The areas affected by various levels of launch emissions and noise are determined through separate and independent analyses. Each of these analyses is used to determine the overall safety of the program.
	P-T-0010.07	Noise-Keys	3.1.9.4 3.3.8.4	The 2.0 pounds per square foot explosion is due to a complete Hera stage 2 impacting the ground or the water. In the case of a mishap, the Range Safety Officer may prescribe destroying the second stage prior to impact to prevent this explosion.
	P-T-0010.08	Air Quality-Keys	3.3.1.4	The TSCREEN PUFF model predicts concentrations at various distances from the launch point. For a normal launch, there were no exceedances. For a launch mishap scenario, TSCREEN PUFF indicated potential exceedance beyond the Launch Hazard Area. In that case, per Environmental Protection Agency guidance, the more refined model, Open-Burn Open-Detonation Dispersion Model, indicated that there would not be exceedance beyond the Launch Hazard Area.
Rosenblatt, Sol	P-T-0011.01	Launch emissions	3.1.1.4 3.3.1.4	The total exhaust from a Hera launch is 13,820 pounds, 3,078 pounds of which is hydrogen chloride, with 221 pounds of hydrochloric acid deposited in the vicinity of the launch pad. The Hera emits one half of one percent of the Shuttle exhaust. Hydrogen chloride near field deposition rates from the Shuttle range up to 125g/m ² , while those from the Hera do not exceed 1.64g/m ² .

Table 5.3-2: Responses to Transcript Comments (Continued)

Commentor and Affiliation	Comment Number	Resource Area	Reference Section / Page	RESPONSE
	P-T-001.02	Launch emissions	3.1.1.4 3.3.1.4	The volume of hydrogen chloride emitted by the target missile in the volume of air it transits is negligible; not enough to contribute to acid rain. The National Aeronautics and Space Administration has prepared numerous environmental impact assessments and conducted long term environmental monitoring to support the decisions to conduct rocket launches from the Kennedy Space Center, FL. These launch activities occur in a physical environment similar to that of the Florida Keys. The Space Shuttle launches cause local environmental impacts primarily through formation of a launch cloud that produces acidic deposition. This launch cloud results from the interaction of exhaust of the solid rocket boosters and deluge water. Primary constituents include aluminum oxide and hydrochloric acid. The deposition resulting from a Shuttle launch and from a Hera launch differ primarily in scale. The total exhaust from a Shuttle is 2,427,000 pounds, 460,000 of which is hydrogen chloride. The total exhaust from a Hera is 13,820 pounds, 3,078 pounds of which is hydrogen chloride. The Hera emits one half of one percent of the Shuttle exhaust. Hydrogen chloride near field deposition rates from the Shuttle range up to 125g/m ² , while those from the Hera do not exceed 1.64g/m ² . This is 1.3 percent of the deposition rate of the Shuttle. The near field for the Shuttle is considered 1.5 kilometers from the launch pad. The near field from the Hera launch would be 60 meters from the launch pad. The pH of shallow marine waters in the Florida Keys range from a low of 7.3 near Saddlebunch and Cudjoe Keys to a high of 8.2 near Plantation Key. Average alkalinity measurements range from a low of 119 mg/L calcium carbonate near Plantation Key to a high of 137 mg/L calcium carbonate near Harrison Canal (Florida Department of Environmental Protection, 1996). If it were to rain shortly after a missile launch, the hydrogen chloride present in the exhaust plume would be dissolved in the rain droplets, which would result in a temporary reduction in rainfall pH. Calculations were conservative in that 100 percent of the 1399 kilograms of hydrogen chloride present in the exhaust plume was assumed to be dissolved in rain droplets (as opposed to approximately 20 percent under normal conditions.) Due to the high buffering capacity of the shallow marine waters, rainwater falling on nearby surface waters would result in no decrease in the pH levels.
	P-T-001.03	Biology-Keys	3.1.3.4 3.3.3.4	Comment noted.
	P-T-001.04	Launch emissions	3.1.1.4 3.3.1.4	Hydrogen chloride is one of the primary exhaust products from solid rocket motor combustion. At ambient temperatures and pressure, hydrogen chloride is very soluble in water. It readily dissolves in water to form hydrochloric acid. This reaction is exothermic, that is it generates heat. However, under the conditions which are present in the rocket's exhaust plume, less than 20 percent of the hydrogen chloride reacts with water to form hydrochloric acid in sufficient size to fall to earth. The remainder of the hydrogen chloride (in excess of 80 percent) will either not combine with water, or will combine with water and form microdroplets which are too small to fall out of the cloud. Therefore the maximum amount of acid which can rain out of any portion of the exhaust cloud is less than 20 percent of that portion. This maximum amount occurs under conditions of excess water, such as occurs during Space Shuttle launches. The proposed action does not include use of water during launches. As such, the proportion of hydrogen chloride in the exhaust which would form hydrochloric acid would be expected to be less than the proportion of the Space Shuttle's SRBM's that undergo a similar reaction.
	P-T-001.05	Launch emissions	3.1.1.4 3.3.1.4	There are no "readings" in the predictions of hydrogen chloride deposition. These predictions are the product of predictive mathematical modeling.
	P-T-001.06	Launch emissions	3.1.1.4 3.3.1.4	Hydrogen chloride is one of the primary exhaust products from solid rocket motor combustion. At ambient temperatures and pressure, hydrogen chloride is very soluble in water. It readily dissolves in water to form hydrochloric acid. This reaction is exothermic, that is it generates heat. However, under the conditions which are present in the rocket's exhaust plume, less than 20 percent of the hydrogen chloride reacts with water to form hydrochloric acid in sufficient size to fall to earth. The remainder of the hydrogen chloride (in excess of 80 percent) will either not combine with water, or will combine with water and form microdroplets which are too small to fall out of the cloud. Therefore the maximum amount of acid which can rain out of any portion of the exhaust cloud is less than 20 percent of that portion. This maximum amount occurs under conditions of excess water, such as occurs during Space Shuttle launches. The proposed action does not include use of water during launches. As such, the proportion of hydrogen chloride in the exhaust which would form hydrochloric acid would be expected to be less than the proportion of the Space Shuttle's SRBM's that undergo a similar reaction.

Table 5.3-2: Responses to Transcript Comments (Continued)

Commentor and Affiliation	Comment Number	Resource Area	Reference Section / Page	RESPONSE
	P-T-001.1.07	Launch emissions	3.1.1.4 3.3.1.3.	If it were to rain shortly after a missile launch the hydrogen chloride present in the exhaust plume would be dissolved in the rain droplets, which would result in a temporary reduction in rainfall pH. Depending on the buffering capacity of the receiving water, rainfall may result in an increase in surface water acidity. Surface water acidity ranging from approximately pH 4.0 to 6.0 is generally believed to result in stress to marine life and possibly death (National Aeronautics and Space Administration, 1990). The degree and duration of any increased acidity in surface waters would depend on several variables, including surface water volume and alkalinity, as well as the amount and pH level of rainfall. The pH of shallow marine waters near Santa Rosa Island is approximately 8.0. Marine waters in the vicinity of Santa Rosa Island range from a low of 7.2 in eastern Pensacola Bay to a high of 8.2 in central Pensacola Bay. Average alkalinity measurements range from a low of 93 mg/L calcium carbonate in the central Pensacola Bay to a high of 97 mg/L calcium carbonate near the mouth of Pensacola Bay (Florida Department of Environmental Protection, 1994). Project-related changes in pH of shallow marine waters near Santa Rosa Island were estimated for the purposes of impact analysis. Calculations were conservative in that 100 percent of the hydrogen chloride present in the exhaust plume was assumed to be dissolved in rain droplets (as opposed to approximately 20 percent under normal conditions). Existing surface water pH and alkalinity levels were assumed to be 7.2 and 93 mg/L calcium carbonate, respectively. Under these circumstances, rainwater falling on nearby surface waters would result in a slight decrease in pH from 7.2 to approximately 7.1 within the upper six inches of the water surface and would quickly dissipate with additional rainfall and mixing of the surface waters.
	P-T-001.1.08	Launch emissions	3.3.1.4	Models use mathematical formulas to calculate the probable result of a series of factors that may affect emissions dispersion. These include such things as: wind speed, humidity, release height of the emissions, atmospheric stability, and mixing layer altitude, among others. For the purposes of this analysis we varied each model parameter to produce the most conservative (worst) result for each step in the model. The result was the highest possible predicted concentration and the greatest distance that could result from the launch of a Hera missile at any location. The results did not reflect the climate of Utah, the Keys, or any other specific location, but the worst possible combination of climatic conditions. Though the results are greater emission concentrations than would be realistically.
	P-T-001.1.09	Launch mishap	3.1.9.4	During normal launch events, there would be no unburned solid rocket propellant. If a mishap were to occur, any unburned propellant that was considered toxic to habitats or wildlife would be recovered and disposed according to Department of Defense regulations. See section 1.1.9 (Safety), of the Final SEIS for a further discussion of potential toxicological effects.
	P-T-001.1.10	Launch mishap	3.1.9.4	If a launch mishap did occur, it is possible that unburned propellant and debris could enter coastal waters. Although this material would not be considered measurably toxic to the environment, consultation with resource agencies would determine if removal and clean-up of debris would be necessary or beneficial.
	P-T-001.1.11	Launch mishap--Keys	3.1.9.4	Ammonium perchlorate would only be introduced into the Gulf of Mexico in the unlikely event of a launch mishap. The slow process of hydration would continue until the material was completely saturated. These quantities of ammonium perchlorate distributed over a wide area of the Gulf would not be considered toxic to the environment.
Hoffman, Wayne National Audubon Society	P-T-001.2.01	Draft SEIS	1.0	No decision has yet been made about which alternative may be selected. National Environmental Protection Agency requires the analysis of all reasonable alternatives to the proposed action. Section 1.0, Program Overview, explains the factors that will be considered in making the final decision after the Final SEIS is completed. In accordance with Council on Environmental Quality guidelines, this SEIS includes sufficient analysis to inform the public and decision makers of potential environmental impacts resulting from the preferred action and alternatives and to assist in the decision making process. In preparing this analysis, the most recent and available data was used to characterize the existing environments of all potential sites including those in the Florida Keys.
	P-T-001.2.02	Biology-Keys	3.3.3.3	The most recent and available data was used to characterize the existing environments of potential sites in the Florida Keys. Primary field investigations were to verify and supplement existing data. At each juncture of the logic chain between proposal and impact assessment, where assumptions have been used, the most conservative, professionally feasible values was used to assess the location, intensity, or duration of the impact. If anything, the analysis consistently over estimates potential impacts of the proposed action.
	P-T-001.2.03	Biology-Keys	3.3.3.3	The listed species presented in the SEIS were obtained from the Florida Game and Fresh Water Fish Department and the U.S. Fish and Wildlife Service and are specific to the Region of Influence for each alternative site.
	P-T-001.2.04	Biology-Keys	3.3.3.3	This information has been included in section 3.3.3.3 of the Final SEIS.
	P-T-001.2.05	Biology-Keys	3.3.3.4	Potential impacts to endangered plants at alternative sites in the Florida Keys sites are discussed in section 3.3.3.4 of the Final SEIS.
	P-T-001.2.06	Biology-Keys	3.3.3.3	The listed species presented in the SEIS were obtained from the Florida Game and Fresh Water Fish Department and the U.S. Fish and Wildlife Service and are specific to the Region of Influence for each alternative site.
	P-T-001.2.07	Biology-Keys	3.3.3.3	See previous response
	P-T-001.2.08	Launch mishap	3.3.3.4	Potential impacts to biological resources result from a launch mishap are addressed in section 3.1.9 of the Final SEIS. The variables of a launch mishap preclude a specific determination of biotic impacts. Small scale habitat destruction, individual displacement, and incidental mortality are acknowledged in the near-field launch area.

Table 5.3-2: Responses to Transcript Comments (Continued)

Commentor and Affiliation	Comment Number	Resource Area	Reference Section / Page	RESPONSE
Hadden, Alexander	P-T-0013.01	Draft SEIS		In accordance with Council on Environmental Quality guidelines, this SEIS includes sufficient analysis to inform the public of potential environmental impacts resulting from the preferred action and alternatives and to assist in the decision making process. In preparing this analysis, the most recent and available data was used to characterize the existing environments of all potential sites. The analysis of the risk probabilities of each missile flight test is conducted prior to acceptance of that flight test program by the range. Each equipment failure or human error possibility is considered and incorporated into the risk assessment for each flight test. No test will be accepted by the Air Force Development Test Center commander until he is satisfied that the risk analysis complies with Air Force and Department of Defense safety policies.
	P-T-0013.02	Safety	3.1.9.4	The analysis of the risk probabilities of each missile flight test is conducted prior to acceptance of that flight test program by the range. Each equipment failure or human error possibility is considered and incorporated into the risk assessment for each flight test. No test will be accepted by the Air Force Development Test Center commander until he is satisfied that the risk analysis complies with Air Force and Department of Defense safety policies.
	P-T-0013.03	Safety-Keys	3.1.9.4	The Launch Hazard Area was designed to avoid requiring the evacuation of private property or occupied dwellings. The residences of Cudjoe Key have been recognized since the first site visit to the Keys. The Launch Hazard Area has not been shrunk. Each Launch Hazard Area is individually designed for the site, the missile, and the environs around the site. As stated previously, the more constrained a Launch Hazard Area, the more restrained the Range Safety Officer.
	P-T-0013.04	Safety-Keys	3.1.9.4	The Launch Hazard Area is drawn to protect community resources. The size of a Launch Hazard Area is a function of the flexibility the Range Safety Officer has. The larger the Launch Hazard Area, the more flexibility there is in terms of acceptable launch conditions and anomaly response time. The fixed variable is the commitment to conduct all test activities so that mishap debris does not exit the designated Launch Hazard Area.
	P-T-0013.05	Safety	3.1.9.4	The Flight Termination System is a linear shaped charge. The Flight Termination System is initiated by a radio command from the Range Safety Officer using doubly redundant systems. Stage 2 of the Hera missile is shipped with the Flight Termination System attached to the motor casing. The Flight Termination System is not shipped with initiators attached. Without initiators, the Flight Termination System would not detonate.
	P-T-0013.06	Land use-Keys	3.1.9.4	Current test areas on Cape San Blas are similar distances to inhabited areas and test launches have been performed safely with no effects on residents.
	P-T-0013.07	Alternatives		Platform launch is an alternative being considered in the SEIS.
	P-T-0013.08	Safety		This proposal is not a departure from safety precautions.
	P-T-0013.09	Water Quality-Keys	3.3.14.4	The total exhaust from a Hera launch is 13,820 pounds, 3,078 pounds of which is hydrogen chloride, with 221 pounds of hydrochloric acid deposited in the vicinity of the launch pad. The Hera emits one half of one percent of the Shuttle exhaust. Hydrogen chloride near field deposition rates from the Shuttle range up to 125g/m ² , while those from the Hera do not exceed 1.64g/m ² .
	P-T-0013.10	Transportation-Keys	3.3.11.4	The evaluation of potential traffic impacts on U.S. 1 forecast an increase in traffic volume in 2005 (including Theater Missile Defense-related vehicles) of 0.3 to 1.5 percent on a peak day of activity. Since baseline forecasts of traffic for the same year show that most of the segments of U.S. 1 would be operating at or above design capacity during peak times, project traffic would exacerbate this situation. If program activities were planned for this alternative, vehicle movement would be scheduled to avoid peak hours.
	P-T-0013.11	Transportation-Keys	3.3.11.4	The evaluation of potential traffic impacts on U.S. 1 forecast an increase in traffic volume in 2005 (including Theater Missile Defense-related vehicles) of 0.3 to 1.5 percent on a peak day of activity. Since baseline forecasts of traffic for the same year show that most of the segments of U.S. 1 would be operating at or above design capacity during peak times, project traffic would exacerbate this situation. If program activities were planned for this alternative, vehicle movement would be scheduled to avoid peak hours.
	P-T-0013.12	Transportation-Keys	3.3.11.4	The target missiles proposed for Theater Missile Defense testing are Minuteman stages I and II. Over a 30 year operational period, frequent transport of Minuteman missile components to and from 1,000 sites never resulted in an explosion. Estimates of the probability of an accident involving a truck carrying missile components on the Overseas Highway range from 2.63 to 6.89 per million vehicle-kilometers. Using the high value, there is a probability of 0.0012 of a truck accident per launch.
	P-T-0013.13	Safety	3.1.9.4	Should one of the sites in the Keys be selected for Theater Missile Defense testing, a specific emergency response plan (similar to the example in Appendix J) would be prepared and implemented.
	P-T-0013.14	Launch mishap	3.1.9.4	The potential environmental impacts of a launch mishap are addressed in section 3.1.9 of the Draft and Final SEIS. Public safety is a primary concern for all range operations. The safety limits defined by the Launch Hazard Area would assure that population centers, schools, and residential areas would not be at increased risk as a result of the proposed test program. A detailed discussion of the various risks associated with missile testing are described in section 3.1.9 for normal and mishap scenarios. The primary role of the range safety officer is to ensure the safety of the public. This is done in accordance with Air Force Development Test Center policies and procedures ensuring that the general public will be protected to an individual and collective risk significantly less than the average public exposure. Specifically, one of the safety mechanisms is to establish a Launch Hazard Area as described in section 2.1.5 in the SEIS.

Table 5.3-2: Responses to Transcript Comments (Continued)

Commentor and Affiliation	Comment Number	Resource Area	Reference Section / Page	RESPONSE
	P-T-0013.15	Transportation-Keys	3.3.11.4	Estimates of the probability of an accident involving a truck carrying missile components on the Overseas Highway range from 2.63 to 6.89 per million vehicle-kilometers. Using the high value, there is a probability of 0.0012 of a truck accident per launch.
	P-T-0013.16	Transportation	3.3.11.4	The target missiles proposed for Theater Missile Defense testing are Minuteman stages I and II. Over a 30-year operational period, frequent transport of Minuteman missile components to and from 1,000 sites never resulted in an explosion.
	P-T-0013.17	Safety	3.3.11.4	The analysis of the risk probabilities of each missile flight test is conducted prior to acceptance of that flight test program by the range. The system failure mode analysis and attendant risk probability calculations for each failure mode are calculated. Each equipment failure or human error possibility is considered and incorporated into the risk assessment for each flight test. No test will be accepted by the Air Force Development Test Center commander until he is satisfied that the risk analysis complies with Air Force and Department of Defense safety policies.
Blazevic, R. L.	P-T-0014.01	General		Comment noted.
	P-T-0014.02	Draft SEIS		Comment noted.
	P-T-0014.03	Transportation-Keys	3.3.11.4	The evaluation of potential traffic impacts on U.S. 1 forecast an increase in traffic volume in 2005 (including Theater Missile Defense-related vehicles) of 0.3 to 1.5 percent on a peak day of activity. Since baseline forecasts of traffic for the same year show that most of the segments of U.S. 1 would be operating at or above design capacity during peak times, project traffic would exacerbate this situation. If program activities were planned for this alternative, vehicle movement would be scheduled to avoid peak hours.
	P-T-0014.04	Airspace-Keys	3.3.2.3	Section 3.3.2.3 describes the airspace use affected environment in the Florida Keys. The high school is outside the Region of Influence and beyond the scope of this analysis.
	P-T-0014.05	Land use-Keys	3.3.7.4	This issue is beyond the scope of this analysis.
	P-T-0014.06	Hazardous wastes	3.3.6.4	The toxic dump that you mention is not part of the proposed action or alternatives for this program.
	P-T-0014.07	Draft SEIS		Comment noted.
	P-T-0014.08	Draft SEIS		Comment noted.
	P-T-0014.09	General		Comment noted.
	P-T-0014.10	Draft SEIS		Comment noted.
	P-T-0014.11	Biology-Keys	3.3.3.4	Comment noted.
	P-T-0014.12	Land Use-Keys	3.3.7.4	Comment noted.
	P-T-0014.13	Draft SEIS		Comment noted.
	P-T-0014.14	Draft SEIS		Comment noted.
	P-T-0014.15	Water Quality-Keys	3.3.14.4	Comment noted.
	P-T-0014.16	Water Quality-Keys	3.3.6.4 3.3.14.4	The Theater Missile Defense program would not discharge any pollutants into the Gulf of Mexico.
	P-T-0014.17	Water Quality-Keys	3.3.14.4	Comment noted.
	P-T-0014.18	Noise-general	3.1.8.1 3.3.8.1	The noise analysis methodology considers ambient noise levels in the analysis of impact. A given, short duration noise event will be less perceptible in a high-noise area than a low-noise area.
	P-T-0014.19	Draft SEIS		Comment noted.
	P-T-0014.20	Draft SEIS		Comment noted.
Seese, Bill Florida Keys National Wildlife Refuges	P-T-0015.01	Alternatives-Keys	1.0	No decision has yet been made about which alternative may be selected. National Environmental Protection Agency requires the analysis of all reasonable alternatives to the proposed action. Section 1.0, Program Overview, explains the factors that will be considered in making the final decision after the Final SEIS is completed.
	P-T-0015.02	Environmental Impacts		In accordance with Council on Environmental Quality guidelines, this SEIS includes sufficient analysis to inform the public and decision makers of potential environmental impacts resulting from the preferred action and alternatives and to assist in the decision making process. In preparing this analysis, the most recent and available data was used to characterize the existing environments of all potential sites including those in the Florida Keys. As you are aware, the Florida Keys sites are no longer under consideration as part of the preferred alternative. If future requirements indicate a need to further address potential use of either Cudjoe or Saddlebunch Keys, additional Federal and state agency consultation will be accomplished for those specific areas.

Table 5.3-2: Responses to Transcript Comments (Continued)

Commentor and Affiliation	Comment Number	Resource Area	Reference Section / Page	RESPONSE
	P-T-0015.03	Launch activities-Keys	3.3.3.4	Potential impacts to listed species at alternative sites in the Florida Keys are discussed in section 3.3.3.4 of the Final SEIS. In accordance with Council on Environmental Quality guidelines, this SEIS includes sufficient analysis to inform the public and decision makers of potential environmental impacts resulting from the preferred action and alternatives and to assist in the decision making process. In preparing this analysis, the most recent and available data was used to characterize the existing environments of all potential sites including those in the Florida Keys.
	P-T-0015.04	Launch activities-Keys	3.3.3.4	Potential impacts on shorebird and wading bird rookeries are presented in section 3.3.3.4 of the Final SEIS.
	P-T-0015.05	Land Use-Keys	3.3.7.4	Military activities associated with Theater Missile Defense site preparation and test preparation on military land would have minimal effect on the wilderness area. The missile launch would be intrusive, but of short duration, no more than once a month.
	P-T-0015.06	Land Use-Keys	3.3.7.4	Military activities associated with Theater Missile Defense site preparation and test preparation on military land would have minimal effect on the wilderness area. The missile launch would be intrusive, but of short duration, no more than once a month.
	P-T-0015.07	Visual Aesthetics-Keys	3.3.13.4	Military activities associated with Theater Missile Defense site preparation and test preparation on military land would have minimal effect on the wilderness area. The missile launch would be intrusive, but of short duration, no more than once a month.
	P-T-0015.08	Environmental Impacts		In accordance with Council on Environmental Quality guidelines, this SEIS includes sufficient analysis to inform the public and decision makers of potential environmental impacts resulting from the preferred action and alternatives and to assist in the decision making process. In preparing this analysis, the most recent and available data was used to characterize the existing environments of all potential sites including those in the Florida Keys.
	P-T-0015.09	Noise	3.3.3.4	Studies of launch effects at Cape Canaveral have shown that birds disturbed by launch noise normally return to their nest soon after the launch event.
	P-T-0015.10	Alternatives-Keys	1.0	No decision has yet been made about which alternative may be selected. National Environmental Protection Agency requires the analysis of all reasonable alternatives to the proposed action. Section 1.0, Program Overview, explains the factors that will be considered in making the final decision after the Final SEIS is completed.
Musselman, David	P-T-0016.01	Launch mishap--Keys	3.2.14.4 3.3.14.4	Ammonium perchlorate would only be introduced into the Gulf of Mexico in the unlikely event of a launch mishap. The slow process of hydration would continue until the material was completely saturated. These quantities of ammonium perchlorate distributed over a wide area of the Gulf would not be considered toxic to the environment.
	P-T-0016.02	Hazardous wastes	3.1.6.4 3.3.6.4	There is little literature extant because ammonium perchlorate is not disposed of in the marine environment in the United States. The Soviet literature was a source, not necessarily an endorsement.
	P-T-0016.03	Water Quality-Gulf	3.3.14.4	Aluminum oxide and hydrogen chloride are bound in the solid rocket motor binder matrix, polybutadiene rubber. This material has the consistency of rubber, and will not spill on site. Aluminum oxide and hydrogen chloride are combustion products and will be deposited on the ground and water in low rates after a launch. This is addressed in the air quality section, the geology and soils section and the water section of the Draft SEIS. Environmental monitoring at Kennedy Space Center has shown that during the period of reduced pH, metals became more soluble and their concentrations in the water column increased dramatically. As normal pH levels returned to the area (within 24 to 72 hours), metal concentrations returned to pre-launch levels. "To date no long-term elevations of metal concentrations on the water column have been observed." The predicted near-field deposition rates from Theater Missile Defense testing will be less than 1 percent of the deposition rates for the Space Shuttle. Deposition of hydrogen chloride from a Hera launch, at a rate of no more than 1.64g/m ² , would decrease pH by no more than 0.1 unit. At this rate, water pH levels would return to pre-launch levels very rapidly with no long-term elevation.

Table 5.3-2: Responses to Transcript Comments (Continued)

Commentor and Affiliation	Comment Number	Resource Area	Reference Section / Page	RESPONSE
	P-T-0016.04	Water Quality-Keys	3.3.14.4	On-site flow measurement has not been performed as part of this analysis. The National Aeronautics and Space Administration has prepared numerous environmental impact assessments and conducted long term environmental monitoring to support the decisions to conduct rocket launches from the Kennedy Space Center, FL. These launch activities occur in a physical environment similar to that of the Florida Keys. The Space Shuttle launches cause local environmental impacts primarily through formation of a launch cloud that produces acidic deposition. This launch cloud results from the interaction of exhaust of the solid rocket boosters and deluge water. Primary constituents include aluminum oxide and hydrochloric acid. The deposition resulting from a Shuttle launch and from a Hera launch differ primarily in scale. The total exhaust from a Shuttle is 2,427,000 pounds, 460,000 of which is hydrogen chloride. The total exhaust from a Hera is 13,820 pounds, 3,078 pounds of which is hydrogen chloride. The Hera emits one half of one percent of the Shuttle exhaust. Hydrogen chloride near field deposition rates from the Shuttle range up to 12.5g/m ² , while those from the Hera do not exceed 1.64g/m ² . This is 1.3 percent of the deposition rate of the Shuttle. The near field for the Shuttle is considered 1.5 kilometers from the launch pad. The near field from the Hera launch would be 60 meters from the launch pad. The pH of shallow marine waters in the Florida Keys range from a low of 7.3 near Saddlebunch and Cudjoe Keys to a high of 8.2 near Plantation Key. Average alkalinity measurements range from a low of 119 mg/L calcium carbonate near Plantation Key to a high of 137 mg/L calcium carbonate near Harrison Canal (Florida Department of Environmental Protection, 1996). If it were to rain shortly after a missile launch, the hydrogen chloride present in the exhaust plume would be dissolved in the rain droplets, which would result in a temporary reduction in rainfall pH. Calculations were conservative in that 100 percent of the 1399 kilograms of hydrogen chloride present in the exhaust plume was assumed to be dissolved in rain droplets (as opposed to approximately 20 percent under normal conditions.) Due to the high buffering capacity of the shallow marine waters, rainwater falling on nearby surface waters would result in no decrease in the pH levels.
	P-T-0014.05	Launch emissions	3.1.14.4 3.2.14.4	The total exhaust from a Hera launch is 13,820 pounds, 3,078 pounds of which is hydrogen chloride, with 221 pounds of hydrochloric acid deposited in the vicinity of the launch pad. The Hera near field deposition rates do not exceed 1.64g/m ² . Deposition of 1.64g/m ² on brackish or sea water will not decrease the pH level.
	P-T-0016.06	Launch mishap	3.1.9.4	A detailed discussion of the various risks associated with missile testing are described in section 3.1.9 for normal and mishap scenarios. The primary role of the range safety officer is to ensure the safety of the public. This is done in accordance with Air Force Development Test Center policies and procedures ensuring that the general public will be protected to an individual and collective risk significantly less than the average public exposure. Specifically, one of the safety mechanisms is to establish a Launch Hazard Area as described in section 2.1.5 in the SEIS.
	P-T-0016.07	Safety	3.1.9.4	Public safety is a primary concern for all range operations. The safety limits defined by the Launch Hazard Area would assure that population centers, schools and residential areas would not be at increased risk as a result of the proposed test program. A detailed discussion of the various risks associated with missile testing are described in section 3.1.9.4 for normal and mishap scenarios. The primary role of the range safety officer is to ensure the safety of the public. This is done in accordance with Air Force Development Test Center policies and procedures ensuring that the general public will be protected to an individual and collective risk significantly less than the average public exposure. Specifically, one of the safety mechanisms is to establish a Launch Hazard Area as described in section 2.1.5 in the SEIS.
	P-T-0016.08	Natural Resources	3.3.3.4	Should an alternative be selected, the specific mitigations to avoid or minimize potential environmental impacts will be identified in the Record of Decision. A mitigation plan, prepared in consultation with Federal and state resource agencies, will be developed and implemented prior to initial site preparation and test activities. Additional mitigations for wetlands have been included in section 3.3.3.4 of the Final SEIS.
	P-T-0016.09	Irreversible	3.1.4 3.2.4 3.3.4	Cumulative impacts for each project alternative and environmental resource are presented at the end of the Environmental Impacts and Mitigations section for each resource in chapter 3 of the Draft and Final SEIS. Depending on the specific resource, cumulative impacts may or may not be additive in nature. For example, the utilities used by program activities would be fully additive, deposition of launch emissions on nearby soil would be somewhat additive, and noise events separated by a one month period would not be additive. Small scale habitat destruction, individual displacement, and incidental mortality are acknowledged in the near-field launch area. See sections 3.1.3.4, 3.2.3.4, and 3.3.3.4 of the Final SEIS.

Table 5.3-2: Responses to Transcript Comments (Continued)

Commentor and Affiliation	Comment Number	Resource Area	Reference Section / Page	RESPONSE
	P-T-0016.10	launch emissions	3.1.1.4 3.3.1.4	The National Aeronautics and Space Administration has prepared numerous environmental impact assessments and conducted long term environmental monitoring to support the decisions to conduct rocket launches from the Kennedy Space Center, FL. These launch activities occur in a physical environment similar to that of the Florida Keys. The Space Shuttle launches cause local environmental impacts primarily through formation of a launch cloud that produces acidic deposition. This launch cloud results from the interaction of exhaust of the solid rocket boosters and deluge water. Primary constituents include aluminum oxide and hydrochloric acid. The deposition resulting from a Shuttle launch and from a Hera launch differ primarily in scale. The total exhaust from a Shuttle is 2,427,000 pounds, 460,000 of which is hydrogen chloride. The total exhaust from a Hera is 13,820 pounds, 3,078 pounds of which is hydrogen chloride. The Hera emits one half of one percent of the Shuttle exhaust. Hydrogen chloride near field deposition rates from the Shuttle range up to 125g/m ² , while those from the Hera do not exceed 1.64g/m ² . This is 1.3 percent of the deposition rate of the Shuttle. The near field for the Shuttle is considered 1.5 kilometers from the launch pad. The near field from the Hera launch would be 60 meters from the launch pad. The pH of shallow marine waters in the Florida Keys range from a low of 7.3 near Saddlebunch and Cudjoe Keys to a high of 8.2 near Plantation Key. Average alkalinity measurements range from a low of 119 mg/L calcium carbonate near Plantation Key to a high of 137 mg/L calcium carbonate near Harrison Canal (Florida Department of Environmental Protection, 1996). If it were to rain shortly after a missile launch, the hydrogen chloride present in the exhaust plume would be dissolved in the rain droplets, which would result in a temporary reduction in rainfall pH. Calculations were conservative in that 100 percent of the 1399 kilograms of hydrogen chloride present in the exhaust plume was assumed to be dissolved in rain droplets (as opposed to a maximum of 20 percent under normal conditions.) Due to the high buffering capacity of the shallow marine waters, rainwater falling on nearby surface waters would result in no decrease in the pH levels. Deposition of hydrogen chloride at a rate of no more than 1.64g/m ² over the area of this water body would not decrease the pH more than 0.1 unit.
	P-T-006.11	launch emissions	3.1.1.4 3.3.1.4	See previous response.
	P-T-0016.12	Launch emissions	3.1.1.4 3.3.1.4	Hydrogen chloride is one of the primary exhaust products from solid rocket motor combustion. At ambient temperatures and pressure, hydrogen chloride is very soluble in water. It readily dissolves in water to form hydrochloric acid. This reaction is exothermic; that is, it generates heat. However, under the conditions which are present in the rocket's exhaust plume, less than 20 percent of the hydrogen chloride reacts with water to form hydrochloric acid in sufficient size to fall to earth. The remainder of the hydrogen chloride (in excess of 80 percent) will either not combine with water, or will combine with water and form microdroplets that are too small to fall out of the cloud. Therefore, the maximum amount of acid which can rain out of any portion of the exhaust cloud is less than 20 percent of that portion.
Pool, Lizzy Women's International League for Peace and Freedom	P-T-0017.01	Draft SEIS		Comment noted.
	P-T-0017.02	Draft SEIS		In accordance with Council on Environmental Quality guidelines, this SEIS includes sufficient analysis to inform the public and decision makers of potential environmental impacts resulting from the preferred action and alternatives and to assist in the decision making process. In preparing this analysis, the most recent and available data was used to characterize the existing environments of all potential sites including those in the Florida Keys.
	P-T-0017.03	Draft SEIS		Comment noted.
	P-T-0017.04	Safety-Keys		Cruise missiles are not a part of the Theater Missile Defense test program.
Smith, R.C.	P-T-0018.01	Safety	3.1.9.4	Comment noted.
	P-T-0018.02	Safety		Comment noted.
	P-T-0018.03	Alternatives	1.0	No decision has yet been made about which alternative may be selected. National Environmental Protection Agency requires the analysis of all reasonable alternatives to the proposed action. Section 1.0, Program Overview, explains the factors that will be considered in making the final decision after the Final SEIS is completed.
Weeks, Vicki	P-T-0019.01	DOPAA	1.0	No decision has yet been made about which alternative may be selected. National Environmental Protection Agency requires the analysis of all reasonable alternatives to the proposed action. Section 1.0, Program Overview, explains the factors that will be considered in making the final decision after the Final SEIS is completed.
	P-T-0019.02	DOPAA	1.0	See previous response.
	P-T-0019.03	DOPAA	1.0	See previous response.
	P-T-0019.04	Program		Comment noted.
	P-T-0019.05	Program		Comment noted.

Table 5.3-2: Responses to Transcript Comments (Continued)

Commentor and Affiliation	Comment Number	Resource Area	Reference Section / Page	RESPONSE
	P-T-0019.06	Biology-Keys	3.3.3.3	The listed species presented in the SEIS were obtained from the Florida Game and Fresh Water Fish Department and the U.S. Fish and Wildlife Service and are specific to the Region of Influence for each alternative site.
	P-T-0019.07	Biology-Keys	3.3.3.4	Based on an evaluation of Theater Missile Defense test activities on biological resources at each site for the proposed and alternative actions, the existence of extant plant and wildlife species would not be jeopardized.
	P-T-0019.08	Launch emissions	3.3.1.4	Potential impacts of launch emissions on the environment are addressed in several sections of the Draft and Final SEIS. Potential biological impacts are presented in sections 3.1.3.4, 3.1.2.4, and 3.3.3.4.
	P-T-0019.09	Biology-Keys	3.3.3.4	Based on an evaluation of Theater Missile Defense test activities on biological resources at each site for the proposed and alternative actions, the existence of extant plant and wildlife species would not be jeopardized.
	P-T-0019.10	Biology-Keys	3.3.3.4	Comment noted.
	P-T-0019.11	Alternatives-Keys	1.0	No decision has yet been made about which alternative may be selected. National Environmental Protection Agency requires the analysis of all reasonable alternatives to the proposed action. Section 1.0, Program Overview, explains the factors that will be considered in making the final decision after the Final SEIS is completed.
	P-T-0019.12	Alternatives-Keys	1.0	See previous response.
	P-T-0019.13	DOPAA		In accordance with Council on Environmental Quality guidelines, this SEIS includes sufficient analysis to inform the public and decision makers of potential environmental impacts resulting from the preferred action and alternatives and to assist in the decision making process. In preparing this analysis, the most recent and available data was used to characterize the existing environments of all potential sites including those in the Florida Keys.
Henize, Tina	P-T-0020.01	Safety-Keys	3.1.9.4	The size of a Launch Hazard Area is a function of the flexibility the Range Safety Officer has. The larger the Launch Hazard Area, the more flexibility there is in terms of acceptable launch conditions and anomaly response time. The fixed variable is the commitment to conduct all test activities so that mishap debris does not exit the designated Launch Hazard Area. The Launch Hazard Area was designed to avoid requiring the evacuation of private property or occupied dwellings. The residences of Cudjoe Key have been recognized since the first site visit to the Keys. The Launch Hazard Area has not been shrunk. Each Launch Hazard Area is individually designed for the site, the missile, and the environs around the site. As stated previously, the more constrained a Launch Hazard Area, the more restrained the Range Safety Officer. The larger the Launch Hazard Area, the longer he or she has to react; but react they will for the Launch Hazard Area being used. The Launch Hazard Area for each test event would be calculated prior to launch on the basis of system factors (propellant type and quantity, payload weight, etc.) and environmental factors (temperature, humidity, wind direction and magnitude). If this launch-specific Launch Hazard Area exceeded the maximum permitted Launch Hazard Area defined for any specific launch site or could result in adverse impacts to non-Federal land parcels other than those predicted and coordinated with Federal, state and local agencies, the launch would be delayed or canceled. No test event would proceed that would pose a safety threat to the local community.
	P-T-0020.02	Land Use-Keys	3.3.7.3	The Final SEIS incorporates technical amendments, editorial revisions and typographical corrections.
	P-T-0020.03	Draft SEIS	3.3.7.3	See previous response.
	P-T-0020.04	Draft SEIS		In accordance with Council on Environmental Quality guidelines, this SEIS includes sufficient analysis to inform the public and decision makers of potential environmental impacts resulting from the preferred action and alternatives and to assist in the decision making process. In preparing this analysis, the most recent and available data was used to characterize the existing environments of all potential sites including those in the Florida Keys.
	P-T-0020.05	Safety	3.1.9.4	The Safety sections (3.1.9.4 and 3.3.9.4) of the SEIS provide a discussion of the human and ecological risks of the proposed test program under normal and mishap conditions. Potential impacts of a catastrophic failure under a full range of mishap scenarios is presented for each environmental resource.
	P-T-0020.06	Safety	2.1.3.2.3	The Launch Hazard Area was designed to avoid requiring the evacuation of private property or occupied dwellings. The residences of Cudjoe Key have been recognized since the first site visit to the Keys. Each Launch Hazard Area is individually designed for the site, the missile, and the environs around the site. As stated previously, the more constrained a Launch Hazard Area, the more restrained the Range Safety Officer. Should the Keys be selected, an emergency response plan would be developed in cooperation with local emergency response authorities for the Florida Keys prior to any launches.
	P-T-0020.07	Biology-Keys	3.3.3.4	Small scale habitat destruction, individual displacement, and incidental mortality are acknowledged in the near-field launch area. See sections 3.1.3.4, 3.2.3.4, and 3.3.3.4 of the Final SEIS.
	P-T-0020.08	Draft SEIS	3.3.3.4	In accordance with Council on Environmental Quality guidelines, this SEIS includes sufficient analysis to inform the public and decision makers of potential environmental impacts resulting from the preferred action and alternatives and to assist in the decision making process. In preparing this analysis, the most recent and available data was used to characterize the existing environments of all potential sites including those in the Florida Keys.
	P-T-0020.09	Biology-Keys	3.3.3.4	The listed species presented in the SEIS were obtained from the Florida Game and Fresh Water Fish Department and the U.S. Fish and Wildlife Service and are specific to the Region of Influence for each alternative site.
	P-T-0020.10	Airspace	3.3.2.3	Restricted area R.2916 is located above Cudjoe Key and extends from the surface to 14,000 ft. See section 3.3.2 Final SEIS.

Table 5.3-2: Responses to Transcript Comments (Continued)

Commentor and Affiliation	Comment Number	Resource Area	Reference Section / Page	RESPONSE
	P-T-0020.11	DOPAA	1.0	No decision has yet been made about which alternative may be selected. National Environmental Protection Agency requires the analysis of all reasonable alternatives to the proposed action. Section 1.0, Program Overview, explains the factors that will be considered in making the final decision after the Final SEIS is completed.
	P-T-0020.12	Draft SEIS		In accordance with Council on Environmental Quality guidelines, this SEIS includes sufficient analysis to inform the public and decision makers of potential environmental impacts resulting from the preferred action and alternatives and to assist in the decision making process. In preparing this analysis, the most recent and available data was used to characterize the existing environments of all potential sites including those in the Florida Keys. See response above.
	P-T-0020.13	Draft SEIS		
	P-T-0020.14	Alternatives-Keys	1.0	No decision has yet been made about which alternative may be selected. National Environmental Protection Agency requires the analysis of all reasonable alternatives to the proposed action. Section 1.0, Program Overview, explains the factors that will be considered in making the final decision after the Final SEIS is completed.
	P-T-0020.15	Safety	2.1.3.2.3 3.1.9.4.	Public safety is a primary concern for all range operations. The safety limits defined by the Launch Hazard Area would assure that population centers, schools and residential areas would not be at increased risk as a result of the proposed test program. A detailed discussion of the various risks associated with missile testing are described in section 3.1.9.4 for normal and mishap scenarios. The primary role of the range safety officer is to ensure the safety of the public. This is done in accordance with Air Force Development Test Center policies and procedures ensuring that the general public will be protected to an individual and collective risk significantly less than the average public exposure. Specifically, one of the safety mechanisms is to establish a Launch Hazard Area as described in section 2.1.3.2.3 in the SEIS. The Launch Hazard Area for each test event would be calculated prior to launch on the basis of system factors (propellant type and quantity, payload weight, etc.) and environmental factors (temperature, humidity, wind direction and magnitude). If this launch-specific Launch Hazard Area exceeded the maximum permitted Launch Hazard Area defined for any specific launch site or could result in adverse impacts to non-Federal land parcels other than those predicted and coordinated with Federal, state and local agencies, the launch would be delayed or canceled. No test event would proceed that would pose a safety threat to the local community.
Zachariah, Dale	P-T-0021.01	DOPAA	1.4	For alternative target launch sites in the Florida Keys, a maximum of twelve launches per year could be scheduled.
	P-T-0021.02	Biology-Keys	3.2.3.3	This map, figure 3.2.3-1 displays a general view of some of the sensitive species and habitats in the Gulf to assist in the understanding of potential impacts of launch and intercept testing relative to identified Launch Hazard Areas. Maps showing the specific location of sensitive species and habitats in the Keys are found in section 3.3.3.3 of the Final SEIS.
	P-T-0021.03	DOPAA	1.0	No decision has yet been made about which alternative may be selected. National Environmental Protection Agency requires the analysis of all reasonable alternatives to the proposed action. Section 1.0, Program Overview, explains the factors that will be considered in making the final decision after the Final SEIS is completed.
	P-T-0019.04	Safety	3.1.9.4	Section 3.1.9.4 of the Draft SEIS addresses this scenario. Safety distances established by the Explosive Safety Quantity-Distance ensure that the public would be protected if there is lightning strike.
	P-T-0021.05	Socioeconomics	2.1.1.2.2	Platform piers frequently provide a beneficial habitat for fish.
	P-T-0021.06	Program	1.0	Section 1 of the Final SEIS provides the overall Purpose and Need for the Theater Missile Defense test program.
	P-T-0021.07	Program		Comment noted.
	P-T-0021.08	Program		Comment noted.
Simms, Mark & Amy	P-T-0022.01	General-Keys		Comment noted.
	P-T-0022.02	Alternatives-Keys		Comment noted.
	P-T-0022.03	Alternatives-Keys		Comment noted.
	P-T-0022.04	Environment-Keys	1.0	In accordance with Council on Environmental Quality guidelines, this SEIS includes sufficient analysis to inform the public and decision makers of potential environmental impacts resulting from the preferred action and alternatives and to assist in the decision making process. In preparing this analysis, the most recent and available data was used to characterize the existing environments of all potential sites including those in the Florida Keys.

Table 5.3-2: Responses to Transcript Comments (Continued)

Commentor and Affiliation	Comment Number	Resource Area	Reference Section / Page	RESPONSE
	P-T-0022.05	Safety	3.1.9.4	The analysis of the risk probabilities of each missile flight test is conducted prior to acceptance of that flight test program by the range. Each equipment failure or human error possibility is considered and incorporated into the risk assessment for each flight test. No test will be accepted by the Air Force Development Test Center commander until he is satisfied that the risk analysis complies with Air Force and Department of Defense safety policies. The Launch Hazard Area for each test event would be calculated prior to launch on the basis of system factors (propellant type and quantity, payload weight, etc.) and environmental factors (temperature, humidity, wind direction and magnitude). If this launch-specific Launch Hazard Area exceeded the maximum permitted Launch Hazard Area defined for any specific launch site or could result in adverse impacts to non-Federal land parcels other than those predicted and coordinated with Federal, state and local agencies, the launch would be delayed or canceled. No test event would proceed that would pose a safety threat to the local community.
	P-T-0022.06	Launch mishap	3.1.9.4	See previous response.
	P-T-0022.07	General		Comment noted.
Biddle, Joel Reef Relief	P-T-0023.01	Alternatives-Keys	1.0	No decision has yet been made about which alternative may be selected. National Environmental Protection Agency requires the analysis of all reasonable alternatives to the proposed action. Section 1.0, Program Overview, explains the factors that will be considered in making the final decision after the Final SEIS is completed.
	P-T-0023.02	Transportation-Keys	3.3.11.4 3.3.10.4 3.3.12.4	An evaluation of the potential impacts of the Theater Missile Defense test program alternatives on highway traffic, housing and utilities is presented in the Draft and Final SEIS (sections 3.3.11, 3.3.10, and 3.3.12 respectively). Although impacts were identified, the program requirements for these resources could be accommodated by the capacity of existing resource systems (highway capacity, permanent and temporary housing stock, utility systems) without affecting their performance or system integrity.
	P-T-0023.03	Biology-Keys	3.3.3.4	Normal launch activities would not affect the reef ecosystem. In the unlikely case of a launch mishap, no debris would fall on reef tracts which are outside the Launch Hazard Area. The 404 (b) (1) permit process would be used to evaluate and minimize any potential impacts on jurisdictional or non-jurisdictional wetlands affected by the proposed or alternative actions for Theater Missile Defense testing. This permit, issued by the U.S. Army Corps of Engineers in coordination with the State of Florida, would evaluate specific areas affected by the program once they are more precisely defined during the final planning and design process. Should an alternative be selected, the specific mitigations to avoid or minimize potential environmental impacts will be identified in the Record of Decision. A mitigation plan, prepared in consultation with Federal and state resource agencies, will be developed and implemented prior to initial site preparation and test activities. Additional mitigations for wetlands have been included in section 3.3.3.4 of the Final SEIS.
	P-T-0023.04	Land use-Keys		Comment noted.
	P-T-0023.05	Draft SEIS	3.3.10.4	The potential impacts of noise, airspace and water clearance, public safety and economic activities are all issues that have been evaluated and presented in the Draft and Final SEIS. An evaluation of quality of life is beyond the scope of this analysis.
	P-T-0023.06	DOPAA	1.0	No decision has yet been made about which alternative may be selected. National Environmental Protection Agency requires the analysis of all reasonable alternatives to the proposed action. Section 1.0, Program Overview, explains the factors that will be considered in making the final decision after the Final SEIS is completed.
Pike, Malcolm	P-T-0024.01	Intercept debris		Intercepts are proposed to occur over the waters of the Gulf of Mexico. No intercepts are proposed to occur over land or in the vicinity of the Florida Keys. The debris, and any gas possibly resulting from a successful intercept, would fall into predetermined areas of the Gulf of Mexico.
	P-T-0024.02	Alternatives-Keys		Comment noted.
Gouldy, Ralph Monroe County Growth Management Division	P-T-0025.01	Land Use-Keys	3.3.7.4	The planning and siting process for the proposed Theater Missile Defense test program in the Eglin Gulf Test Range considered many factors in identifying alternative sites including mission requirements, environmental conservation, human and ecological health and land use compatibility. The alternative target launch sites on Cudjoe Key and Saddlebunch Keys are located on land owned by the Department of Defense and are designated for military use. New military uses in these areas are permitted. Should either of these sites be selected, consultation with Federal and state resource agencies would establish specific mitigations to avoid or minimize the disturbance of protected areas. State and local regulatory requirements, many of which are derivative of Federal statutes, are recognized in the planning process. Military projects on military land comply with applicable Federal regulations.
	P-T-0025.02	Land Use-Keys	3.3.7.4	The alternative actions proposed in the Florida Key have not been planned and would not be further considered without close consultation and coordination with state and local resource agencies.
	P-T-0025.03	Land Use-Keys	3.3.7.4	State and local regulatory requirements, many of which are derivative of Federal statutes, are recognized in the planning process. Military projects on military land comply with Federal regulation.
	P-T-0025.04	Land Use-Keys	3.3.7.4	See previous response.
	P-T-0025.05	Land Use-Keys	3.3.7.4	See previous response.

Table 5.3-2: Responses to Transcript Comments (Continued)

Commentor and Affiliation	Comment Number	Resource Area	Reference Section / Page	RESPONSE
	P-T-0025.06	Land Use-Keys	3.3.7.4	See previous response.
	P-T-0025.07	Land Use-Keys	3.3.7.4	See previous response.
	P-T-0025.08	Biology-Keys	3.3.3.4	The alternative target launch sites on Cudjoe Key and Saddlebunch Keys are located on land owned by the Department of Defense and are designated for military use. The Launch Hazard Area for these alternative sites does, however, overlap the National Marine Sanctuary and several wildlife refuges (see section 3.3.7 in the Final SEIS). New military uses in these areas are permitted but would require specific consultation with Federal and state resource agencies.
	P-T-0025.09	Launch activity		In accordance with Council on Environmental Quality guidelines, this SEIS includes sufficient analysis to inform the public and decision makers of potential environmental impacts resulting from the preferred action and alternatives and to assist in the decision making process. In preparing this analysis, the most recent and available data was used to characterize the existing environments of all potential sites including those in the Florida Keys.
	P-T-0025.10	Launch activity		Should one of the sites in the Florida Keys be selected for Theater Missile Defense testing, no more than 12 launch events would occur in any year. There is no plan to establish a permanent presence should the Florida Keys be selected. Cumulative impacts for each project alternative and environmental resource are presented at the end of the Environmental Impacts and Mitigations section for each resource in chapter 3 of the Draft and Final SEIS. Depending on the specific resource, cumulative impacts may or may not be additive in nature. For example, the utilities used by program activities would be fully additive, deposition of launch emissions on nearby soil would be somewhat additive, and noise events separated by a one month period would not be additive.
	P-T-0025.11	Land Use-Keys	3.3.7.4	State and local regulatory requirements, many of which are derivative of Federal statutes, are recognized in the planning process. Military projects on military land comply with Federal regulation.
	P-T-0025.12	Land Use-Keys	3.3.7.4	The 404 (b) (1) permit process would be used to evaluate and minimize any potential impacts on jurisdictional or non-jurisdictional wetlands affected by the proposed or alternative actions for Theater Missile Defense testing. This permit, issued by the U.S. Army Corps of Engineers in coordination with the State of Florida, would evaluate specific areas affected by the program once they are more precisely defined during the final planning and design process.
	P-T-0025.13	Land Use-Keys	3.3.7.4	State and local regulatory requirements, many of which are derivative of Federal statutes, are recognized in the planning process. Military projects on military land comply with Federal regulation.
	P-T-0025.14	Land Use-Keys	v	See response above.
Ehrenreiter, Barbara	P-T-0026.01	Draft SEIS		Comment noted.
	P-T-0026.02	Program	1.0	The Purpose and Need section of the Final SEIS presents the overall justification for the Theater Missile Defense program.
	P-T-0026.03	Program		Comment noted.
	P-T-0026.04	Program		Comment noted.
Lunden, Blue Unitarian Universal Fellowship	P-T-0027.01	Draft SEIS		Comment noted.
	P-T-0027.02	Safety	2.1.3.2.3. 3.1.9.4	If the Florida Keys alternative is selected, Sugarloaf Key is proposed as an instrumentation site. Public safety is a primary concern for all range operations. The safety limits defined by the Launch Hazard Area would assure that population centers, schools and residential areas would not be at increased risk as a result of the proposed test program. A detailed discussion of the various risks associated with missile testing are described in section 3.1.9 for normal and mishap scenarios. The primary role of the range safety officer is to ensure the safety of the public. This is done in accordance with Air Force Development Test Center policies and procedures ensuring that the general public will be protected to an individual and collective risk significantly less than the average public exposure. Specifically, one of the safety mechanisms is to establish a Launch Hazard Area as described in section 2.1.3.2.3 in the SEIS. The Launch Hazard Area for each test event would be calculated prior to launch on the basis of system factors (propellant type and quantity, payload weight, etc.) and environmental factors (temperature, humidity, wind direction and magnitude). If this launch-specific Launch Hazard Area exceeded the maximum permitted Launch Hazard Area defined for any specific launch site or could result in adverse impacts to non-Federal land parcels other than those predicted and coordinated with Federal, state and local agencies, the launch would be delayed or canceled. No test event would proceed that would pose a safety threat to the local community.
Leslic, John	P-T-0028.01	Safety	3.1.9.4	Public safety is a primary concern for all range operations. The safety limits defined by the Launch Hazard Area would assure that population centers, schools and residential areas would not be at increased risk as a result of the proposed test program. A detailed discussion of the various risks associated with missile testing are described in section 3.1.9 for normal and mishap scenarios. The primary role of the range safety officer is to ensure the safety of the public. This is done in accordance with Air Force Development Test Center policies and procedures ensuring that the general public will be protected to an individual and collective risk significantly less than the average public exposure.

Table 5.3-2: Responses to Transcript Comments (Continued)

Commentor and Affiliation	Comment Number	Resource Area	Reference Section / Page	RESPONSE
Miller, Archer	P-T-0029.01	Water Quality-Keys	3.2.14.4 3.3.14.4	The pH of shallow marine waters in the Florida Keys range from a low of 7.3 near Saddlebunch and Cudjoe Keys to a high of 8.2 near Plantation Key. Average alkalinity measurements range from a low of 119 mg/L calcium carbonate near Plantation Key to a high of 137 mg/L calcium carbonate near Harrison Canal (Florida Department of Environmental Protection, 1996). If it were to rain shortly after a missile launch, the hydrogen chloride present in the exhaust plume would be dissolved in the rain droplets, which would result in a temporary reduction in rainfall pH. Calculations were conservative in that 100 percent of the 1399 kilograms of hydrogen chloride present in the exhaust plume was assumed to be dissolved in rain droplets (as opposed to approximately 20 percent under normal conditions.) Due to the high buffering capacity of the shallow marine waters, rainwater falling on nearby surface waters would result in no appreciable decrease in the pH levels. There would be no appreciable decrease in pH levels hence no stress on the marine life in the vicinity.
	P-T-0029.02	Launch emissions	3.3.1.3 3.1.14.1 3.1.9.4	The prevailing winds have historically averaged 2 meters per second (7 feet per second) in a southeasterly direction in the summer and 4 meters per second (12 feet per second) in a northeasterly direction in the winter in the Florida Keys. These conditions were used in the calculations of exhaust depositions. The TSCREEN PUFF model predicts concentrations at various distances from the launch point. For a normal launch, there were no exceedances. For a launch mishap scenario, TSCREEN PUFF indicated potential exceedance beyond the Launch Hazard Area. In that case, per Environmental Protection Agency guidance, the more refined model, Open-Burn Open-Detonation Dispersion Model, indicated that there would not be exceedance beyond the Launch Hazard Area.
	P-T-0029.03	Transportation-Keys	3.3.11.4	The Launch Hazard Area does not require closing of Highway 1. If the Cudjoe Key alternative were to be selected, Blimp Road north of Asturias would be closed no longer than four hours per launch event.
Hendrick, Muriel	P-T-0030.01	Alternatives-Keys	1.0	Comment noted.
Robinson, Annie	P-T-0031.01	Draft SEIS		Comment noted.
Orlandi, Robin Reef Relief	P-T-0032.01	Draft SEIS		In accordance with Council on Environmental Quality guidelines, this SEIS includes sufficient analysis to inform the public of potential environmental impacts resulting from the preferred action and alternatives and to assist in the decision making process. In preparing this analysis, the most recent and available data was used to characterize the existing environments of all potential sites including those in the Florida Keys. Primary field investigations were to verify and supplement existing data.
	P-T-0032.02	Launch activity		Should one of the sites in the Florida Keys be selected for Theater Missile Defense testing, no more than 12 launch events would occur in any year. There is no plan to establish a permanent presence should the Florida Keys be selected. Cumulative impacts for each project alternative and environmental resource are presented at the end of the Environmental Impacts and Mitigations section for each resource in chapter 3 of the Draft and Final SEIS. Depending on the specific resource, cumulative impacts may or may not be additive in nature. For example, the utilities used by program activities would be fully additive, deposition of launch emissions on nearby soil would be somewhat additive, and noise events separated by a one month period would not be additive.
	P-T-0032.03	Air quality	3.3.1.4	The most recent and available data was used to characterize the existing environments of potential sites in the Florida Keys. Primary field investigations were to verify and supplement existing data. The Open-Burn Open-Detonation Dispersion Model is a model that calculates predicted depositions using worst case climatological parameters such as wind speed, humidity and temperature. The results of the model represent the greatest concentrations of emissions that could occur under any conditions.
	P-T-0032.04	Air quality	3.3.1.4	Models use mathematical formulas to calculate the probable result of a series of factors that may affect emissions dispersion. These include such things as: wind speed, humidity, release height of the emissions, atmospheric stability, and mixing layer altitude, among others. For the purposes of this analysis we varied each model parameter to produce the most conservative (worst) result for each step in the model. The result was the highest possible predicted concentration and the greatest distance that could result from the launch of a Hera missile at any location. The results did not reflect the climate of New Mexico, the Keys, or any other specific location, but the worst possible combination of climatic conditions. The calculated results yield greater emission concentrations than would be realistically be expected.
	P-T-0032.05	Air Quality	3.3.1.4	For the purpose of air quality analysis, a missile launch is considered a single emission source and event. The period between launches is long enough to fully disperse emissions within the region with no cumulative effects.
	P-T-0032.06	Launch emissions	3.3.1.4	Environmental monitoring at Kennedy Space Center has shown that during the period of reduced pH, metals became more soluble and their concentrations in the water column increased dramatically. As normal pH levels returned to the area (within 24 to 72 hours), metal concentrations returned to pre-launch levels. "To date no long-term elevations of metal concentrations on the water column have been observed." The predicted near-field deposition rates from Theater Missile Defense testing will be less than 1 percent of the deposition rates for the Space Shuttle. Deposition of hydrogen chloride from a Hera launch, at a rate of no more than 1.64g/m ² , would decrease pH by no more than 0.1 unit. At this rate, water pH levels would return to pre-launch levels very rapidly with no long-term elevation.

Table 5.3-2: Responses to Transcript Comments (Continued)

Commentor and Affiliation	Comment Number	Resource Area	Reference Section / Page	RESPONSE
	P-T-0032.07	Water Quality-Keys launch emissions	3.3.14.4	Environmental monitoring at Kennedy Space Center has shown that following Shuttle launches the pH levels in nearby water bodies returned to normal within 24 to 72 hours. The predicted near-field deposition rates from Theater Missile Defense testing will be less than 1 percent of the deposition rates for the Space Shuttle. Deposition of hydrogen chloride from a Hera launch, at a rate of no more than 1.64g/m ² , would decrease pH by no more than 0.1 unit. At this rate, water pH levels would return to pre-launch levels very rapidly with no long-term elevation.
	P-T-0032.08	Water Quality-Keys launch emissions	3.3.14.4	Oxygen capacity of waters surrounding the Keys would not be measurably affected by Theater Missile Defense test launch activities.
	P-T-0032.09	Water Quality-Keys	3.3.14.4	The National Aeronautics and Space Administration has prepared numerous environmental impact assessments and conducted long term environmental monitoring to support the decisions to conduct rocket launches from the Kennedy Space Center, FL. These launch activities occur in a physical environment similar to that of the Florida Keys. The Space Shuttle launches cause local environmental impacts primarily through formation of a launch cloud that produces acidic deposition. This launch cloud results from the interaction of exhaust of the solid rocket boosters and deluge water. Primary constituents include aluminum oxide and hydrochloric acid. The deposition resulting from a Shuttle launch and from a Hera launch differ primarily in scale. The total exhaust from a Shuttle is 2,427,000 pounds, 460,000 of which is hydrogen chloride. The total exhaust from a Hera is 13,820 pounds, 3,078 pounds of which is hydrogen chloride. This is one half of one percent of the Shuttle exhaust. Hydrogen chloride near field deposition rates from the Shuttle range up to 125g/m ² , while those from the Hera do not exceed 1.64g/m ² . This is 1.3 percent of the deposition rate of the Shuttle. The near field for the Shuttle is considered 1.5 kilometers from the launch pad. The near field from the Hera launch would be 60 meters from the launch pad. The Hera hydrogen chloride deposition rates and areas are so much smaller than those of the Shuttle that there is a qualitative difference between the environmental impacts of the two. The predicted far-field deposition rates are low enough to warrant the conclusion that dilution is the solution.
	P-T-0032.10	Biology-Keys	3.3.14.4	Normal launch activities would not affect the reef ecosystem. In the unlikely case of a launch mishap, no debris would fall on reef tracts which are outside the Launch Hazard Area.
	P-T-0032.11	Water Quality keys	3.3.14.4	The National Aeronautics and Space Administration has prepared numerous environmental impact assessments and conducted long term environmental monitoring to support the decisions to conduct rocket launches from the Kennedy Space Center, FL. These launch activities occur in a physical environment similar to that of the Florida Keys. The Space Shuttle launches cause local environmental impacts primarily through formation of a launch cloud that produces acidic deposition. This launch cloud results from the interaction of exhaust of the solid rocket boosters and deluge water. Primary constituents include aluminum oxide and hydrochloric acid. The deposition resulting from a Shuttle launch and from a Hera launch differ primarily in scale. The total exhaust from a Shuttle is 2,427,000 pounds, 460,000 of which is hydrogen chloride. The total exhaust from a Hera is 13,820 pounds, 3,078 pounds of which is hydrogen chloride. This is one half of one percent of the Shuttle exhaust. Hydrogen chloride near field deposition rates from the Shuttle range up to 125g/m ² , while those from the Hera do not exceed 1.64g/m ² . This is 1.3 percent of the deposition rate of the Shuttle. The near field for the Shuttle is considered 1.5 kilometers from the launch pad. The near field from the Hera launch would be 60 meters from the launch pad. The Hera hydrogen chloride deposition rates and areas are so much smaller than those of the Shuttle that there is a qualitative difference between the environmental impacts of the two. The predicted far-field deposition rates are low enough to warrant the conclusion that dilution is the solution.
	P-T-0032.12	Water Quality-Keys	3.3.14.4	Environmental monitoring at Kennedy Space Center has shown that during the period of reduced pH, metals became more soluble and their concentrations in the water column increased dramatically. As normal pH levels returned to the area (within 24 to 72 hours), metal concentrations returned to pre-launch levels. "To date no long-term elevations of metal concentrations on the water column have been observed." The predicted near-field deposition rates from Theater Missile Defense testing will be less than 1 percent of the deposition rates for the Space Shuttle. This small quantity of deposition for a brief period of time would not contribute to eutrophication.
	P-T-0032.13	Alternatives		No decision has yet been made about which alternative may be selected. National Environmental Protection Agency requires the analysis of all reasonable alternatives to the proposed action. Section 1.0, Program Overview, explains the factors that will be considered in making the final decision after the Final SEIS is completed. In accordance with Council on Environmental Quality guidelines, this SEIS includes sufficient analysis to inform the public and decision makers of potential environmental impacts resulting from the preferred action and alternatives and to assist in the decision making process. In preparing this analysis, the most recent and available data was used to characterize the existing environments of all potential sites including those in the Florida Keys. Missile testing in the Eglin Gulf Test Range is being considered because of the potential benefits of such testing to the development of the Theater Missile Defense programs, not necessarily for the benefit of the Keys. There may, however, be some coincidental economic benefit to segments of the Keys economy
Allen, Joe	P-T-0033.01	Draft SEIS		Comment noted.

Table 5.3-2: Responses to Transcript Comments (Continued)

		RESPONSE	
Commentor and Affiliation	Comment Number	Resource Area	Reference Section / Page
	P-T-0033.02	Transportation-Keys	3.1.11.4 3.3.11.4
	P-T-0033.03	Alternatives-Keys	
Halloran, George	P-T-0034.01	Alternatives-Keys	
	P-T-0034.02	Draft SEIS	
	P-T-0034.03	Water Quality-Keys	3.3.14.4
	P-T-0034.04	Biology-Keys	3.3.3.4
	P-T-0034.05	Launch mishap	3.1.9.4
	P-T-0034.06	Biology-General	3.1.3.3
	P-T-0034.07	Biology-General	
	P-T-0034.08	General	
Colburn, Carol	P-T-0035.01	Alternatives-Keys	
	P-T-0035.02	Alternatives-Keys	1.0
Eliot, Robert	P-T-0036.01	Draft SEIS	
Nelson, Harriet	P-T-0037.01	Draft SEIS	
	P-T-0037.02	Draft SEIS	
Casella, Lorraine	P-T-0038.01	Land Use-Keys	3.3.7.3
	P-T-0038.02	Safety	2.1.3.2.3 3.1.9.4

The ability to control the movement of missile components is important to the overall safety of the proposed Theater Missile Defense testing system. A specific evacuation plan for the missile and other test-related components and non-critical personnel would be implemented at the first notice of potential hurricane activity. This would assure that Theater Missile Defense-related evacuation movements would precede standard public evacuation plans and would not interfere with the planned process.

Comment noted.

Comment noted.

One of the purposes of the National Environmental Protection Agency process is to provide the public with an opportunity to identify potential issues and concerns that could result from a proposed project, and to review and comment on the subsequent evaluation of those issues. All comments and communications from the public are considered throughout the evaluation period.

The pH of shallow marine waters in the Florida Keys range from a low of 7.3 near Saddlebunch and Cudjoe Keys to a high of 8.2 near Plantation Key. Average alkalinity measurements range from a low of 119 mg/L calcium carbonate near Plantation Key to a high of 137 mg/L calcium carbonate near Harrison Canal (Florida Department of Environmental Protection, 1996). If it were to rain shortly after a missile launch, the hydrogen chloride present in the exhaust plume would be dissolved in the rain droplets, which would result in a temporary reduction in rainfall pH. Calculations were conservative in that 100 percent of the 1399 kilograms of hydrogen chloride present in the exhaust plume was assumed to be dissolved in rain droplets (as opposed to approximately 20 percent under normal conditions.) Due to the high buffering capacity of the shallow marine waters, rainwater falling on nearby surface waters would result in no decrease in the pH levels.

There would be no decrease in pH levels hence no stress on the marine life in the vicinity.

Potential impacts to biological resources as a result of a launch mishap are addressed in section 3.1.9 of the Final SEIS.

The object of the Air Force safety program is to minimize exposure to risk by service personnel and members of the public. The evacuation of a Launch Hazard Area insures that no non-mission essential personnel would be exposed to missile mishap debris. Active flight termination would ensure that no debris would land outside the Launch Hazard Area. Therefore, no people would be killed or injured due to missile testing.

This information has been included in section 3.1.3.3 of the Final SEIS.

Comment noted.

Comment noted.

Comment noted.

No decision has yet been made about which alternative may be selected. National Environmental Protection Agency requires the analysis of all reasonable alternatives to the proposed action. Section 1.0, Program Overview, explains the factors that will be considered in making the final decision after the Final SEIS is completed.

Comment noted.

Comment noted.

No decision has yet been made about which alternative may be selected. National Environmental Protection Agency requires the analysis of all reasonable alternatives to the proposed action. Section 1.0, Program Overview, explains the factors that will be considered in making the final decision after the Final SEIS is completed.

State and local regulatory requirements, many of which are derivative of Federal statutes, are recognized in the planning process. Military projects on military land comply with Federal regulation.

Public safety is a primary concern for all range operations. The safety limits defined by the Launch Hazard Area would ensure that population centers, schools, and residential areas would not be at increased risk as a result of the proposed test program. A detailed discussion of the various risks associated with missile testing are described in section 3.1.9 for normal and mishap scenarios. The primary role of the range safety officer is to ensure the safety of the public. This is done in accordance with Air Force Development Test Center policies and procedures ensuring that the general public will be protected to an individual and collective risk significantly less than the average public exposure. Specifically, one of the safety mechanisms is to establish a Launch Hazard Area as described in section 2.1.3.2.3 in the SEIS. The Launch Hazard Area for each test event would be calculated prior to launch on the basis of system factors (propellant type and quantity, payload weight, etc.) and environmental factors (temperature, humidity, wind direction and magnitude). If this launch-specific Launch Hazard Area exceeded the maximum permitted Launch Hazard Area defined for any specific launch site or could result in adverse impacts to non-Federal land parcels other than those predicted and coordinated with Federal, state and local agencies, the launch would be delayed or canceled. No test event would proceed that would pose a safety threat to the local community.

Table 5.3-2: Responses to Transcript Comments (Continued)

Commentor and Affiliation	Comment Number	Resource Area	Reference Section / Page	RESPONSE
	P-T-0038.03	Noise	3.3.8.4	The SEIS provides both single event levels and weighted averages to provide as much information on noise occurrences and effects as possible. See section 3.1.9.4 of the Final SEIS for additional discussion of potential noise impacts
Henize, Tina	P-T-0039.01	Land Use-Keys	3.3.7.4	Comment Noted. The Final SEIS incorporates technical amendments, editorial revisions and typographical corrections.
	P-T-0039.02	Draft SEIS		In accordance with Council on Environmental Quality guidelines, this SEIS includes sufficient analysis to inform the public and decision makers of potential environmental impacts resulting from the preferred action and alternatives and to assist in the decision making process. In preparing this analysis, the most recent and available data was used to characterize the existing environments of all potential sites including those in the Florida Keys.
	P-T-0039.03	Launch mishap	3.1.9.4	Public safety is a primary concern for all range operations. The safety limits defined by the Launch Hazard Area would assure that population centers, schools and residential areas would not be at increased risk as a result of the proposed test program. A detailed discussion of the various risks associated with missile testing are described in section 3.1.9 for normal and mishap scenarios. The primary role of the range safety officer is to ensure the safety of the public. This is done in accordance with Air Force Development Test Center policies and procedures ensuring that the general public will be protected to an individual and collective risk significantly less than the average public exposure. Specifically, one of the safety mechanisms is to establish a Launch Hazard Area as described in section 2.1.3.2.3 in the SEIS. The Launch Hazard Area for each test event would be calculated prior to launch on the basis of system factors (propellant type and quantity, payload weight, etc.) and environmental factors (temperature, humidity, wind direction and magnitude). If this launch-specific Launch Hazard Area exceeded the maximum permitted Launch Hazard Area defined for any specific launch site or could result in adverse impacts to non-Federal land parcels other than those predicted and coordinated with Federal, state and local agencies, the launch would be delayed or canceled. No test event would proceed that would pose a safety threat to the local community.
	P-T-0039.04	Safety-Keys	3.1.9.4	The Launch Hazard Area is drawn to protect community resources. The size of a Launch Hazard Area is a function of the flexibility the Range Safety Officer has. The larger the Launch Hazard Area, the more flexibility there is in terms of acceptable launch conditions and anomaly response time. The fixed variable is the commitment to conduct all test activities so that mishap debris does not exit the designated Launch Hazard Area.
	P-T-0039.05	Biology-Keys	3.3.3.4	In accordance with Council on Environmental Quality guidelines, this SEIS includes sufficient analysis to inform the public of potential environmental impacts resulting from the preferred action and alternatives and to assist in the decision making process. In preparing this analysis, the most recent and available data was used to characterize the existing environments of all potential sites including those in the Florida Keys.
	P-T-0039.06	Biology-Keys	3.1.3.4 3.2.3.4 3.3.3.4	In accordance with Council on Environmental Quality guidelines, this SEIS includes sufficient analysis to inform the public and decision makers of potential environmental impacts resulting from the preferred action and alternatives and to assist in the decision making process. In preparing this analysis, the most recent and available data was used to characterize the existing environments of all potential sites including those in the Florida Keys. Small scale habitat destruction, individual displacement, and incidental mortality are acknowledged in the near-field launch area. See sections 3.1.3.4, 3.2.3.4, and 3.3.3.4 of the Final SEIS. Far-field deposition is sufficiently dispersed and variable to launch that successive launches seldom affect the same areas. No changes in plant community or structure due to cumulative effects of far-field deposition have been seen.
	P-T-0039.07	Water Quality-Keys	3.2.14.4 3.3.14.4	Environmental monitoring at Kennedy Space Center has shown that during the period of reduced pH, metals became more soluble and their concentrations in the water column increased dramatically. As normal pH levels returned to the area (within 24 to 72 hours), metal concentrations returned to pre-launch levels. "To date no long-term elevations of metal concentrations on the water column have been observed." The predicted near-field deposition rates from Theater Missile Defense testing will be less than 1 percent of the deposition rates for the Space Shuttle. Deposition of hydrogen chloride from a Hera launch, at a rate of no more than 1.64g/m ² , would decrease pH by no more than 0.1 unit. At this rate, water pH levels would return to pre-launch levels very rapidly. Cumulative impacts resulting from launch tests are addressed in sections 3.1.3, 3.2.3, 3.3.3 of the Final SEIS. It is acknowledged that some small but permanent changes in plant diversity and vegetation cover could result from the test program.
	P-T-0039.08	DOPAA	1.0	No decision has yet been made about which alternative may be selected. The National Environmental Policy Act requires the analysis of all reasonable alternatives to the proposed action. Section 1.0, Program Overview, explains the factors that will be considered in making the final decision after the Final SEIS is completed.
	P-T-0039.09	Draft SEIS		In accordance with Council on Environmental Quality guidelines, this SEIS includes sufficient analysis to inform the public and decision makers of potential environmental impacts resulting from the preferred action and alternatives and to assist in the decision making process. In preparing this analysis, the most recent and available data was used to characterize the existing environments of all potential sites including those in the Florida Keys.
Freeman, Shirley Commissioner of Monroe County	P-T-0040.01	Alternatives		In accordance with Council on Environmental Quality guidelines, this SEIS includes sufficient analysis to inform the public and decision makers of potential environmental impacts resulting from the preferred action and alternatives and to assist in the decision making process. In preparing this analysis, the most recent and available data was used to characterize the existing environments of all potential sites including those in the Florida Keys.
Girard, Geraldo	P-T-0041.01	Draft SEIS		In accordance with Council on Environmental Quality guidelines, this SEIS includes sufficient analysis to inform the public and decision makers of potential environmental impacts resulting from the preferred action and alternatives and to assist in the decision making process. In preparing this analysis, the most recent and available data was used to characterize the existing environments of all potential sites including those in the Florida Keys.
	P-T-0041.02	Biology-Keys	3.3.3.3	The environmental setting of the Florida Keys is described in section 3.3.3.3 of the Final SEIS.

Table 5.3-2: Responses to Transcript Comments (Continued)

Commentor and Affiliation	Comment Number	Resource Area	Reference Section / Page	RESPONSE
	P-T-0041.03	Water Quality-Keys	3.1.14.3	We recognize the area's designation as an "area of critical state concern" and have designed the proposal to avoid or minimize potential environmental impacts.
	P-T-0041.04	Land Use-Keys	3.3.14.3 3.3.7.4	State and local regulatory requirements, many of which are derivative of Federal statutes, are recognized in the planning process. Military projects on military land comply with Federal regulation. The planning and siting process for the proposed Theater Missile Defense test program in the Eglin Gulf Test Range considered many factors in identifying alternative sites including mission requirements, environmental conservation, human and ecological health and land use compatibility. The alternative target launch sites on Cudjoe Key and Saddlebunch Keys are located on land owned by the Department of Defense and are designated for military use. New military uses in these areas are permitted. Should either of these sites be selected, consultation with Federal and state resource agencies would establish specific mitigations to avoid or minimize the disturbance of protected areas.
	P-T-0041.05	Transportation-Keys	3.3.11.4	The importance of Highway 1 to the Florida Keys has been recognized. An early alternative site was eliminated because it would have required closing Highway 1.
	P-T-0041.06	Utilities-Keys	3.3.12.4	Comment noted. The Theater Missile Defense test program would not affect existing or future utility corridors.
	P-T-0041.07	Land Use-Keys	3.3.7.4	The Launch Hazard Area for the alternative target launch sites on the Keys does overlap the Florida Keys National Marine Sanctuary, about 4.3 percent of the Florida Keys National Marine Sanctuary is in the Cudjoe Key Launch Hazard Area and 1.6 percent of the Florida Keys National Marine Sanctuary is in the Launch Hazard Area for the Saddlebunch Keys (see section 3.3.7 in the Final SEIS). New military uses in the Florida Keys National Marine Sanctuary are permitted but would require specific consultation. Should either of these sites be selected, consultation with Federal and state resource agencies would establish specific mitigations to avoid or minimize the disturbance of protected areas. Consultation with the Director of the National Marine Sanctuary began early in the planning process for the Theater Missile Defense
	P-T-0041.08	Land Use-Keys	3.3.7.4	The alternative target launch sites on Cudjoe Key and Saddlebunch Keys are located on land owned by the Department of Defense and are designated for military use. The Launch Hazard Area for these alternative sites does, however, overlap the National Marine Sanctuary and several wildlife refuges (see section 3.3.7 in the Final SEIS). New military uses in these areas are permitted but would require specific consultation with appropriate Federal and state resource agencies. See sections 3.1.3.4 and 3.3.3.3 in the Final SEIS for proposed mitigations. Should an alternative be selected, the specific mitigations will be documented in the Record of Decision. This mitigation plan, which would avoid or minimize potential adverse impacts on protected areas, would be developed and implemented prior to initiating site preparation and test activities.
	P-T-0041.09	Air Quality-Keys	3.3.1.3	The climate of the Keys is addressed in section 3.3.1.3 of the Final SEIS.
	P-T-0041.10	launch emissions	3.3.1.3	The prevailing winds have historically averaged 0.8 meters per second (3 feet per second) in a southerly direction in the summer and 0.7 meters per second (2 feet per second) in a northerly direction in the winter in the vicinity of Santa Rosa Island; 0.7 meters per second (2 feet per second) in a southerly direction in the summer and 0.8 meters per second (3 feet per second) in a southeasterly direction in the winter in the vicinity of Cape San Blas; and 2 meters per second (7 feet per second) in a southeasterly direction in the summer and 4 meters per second (12 feet per second) in a northeasterly direction in the winter in the Florida Keys. These conditions were used in the calculations of exhaust depositions.
	P-T-0041.11	Biology-Keys	3.3.3.3	The presence of the Silver Rice Rat at alternative sites in the Keys is discussed in section 3.3.3.3 of the Final SEIS.
	P-T-0041.12	Biology-Keys	3.3.3.3	The habitat of the Lower Keys Marsh Rabbit is discussed in section 3.3.3.3 of the Draft and Final SEIS.
	P-T-0041.13	Biology-Keys	3.3.3.3	The environmental setting of the Florida Keys, including hardwood hammocks and pine rocklands, is described in section 3.3.3.3 of the Final SEIS.
	P-T-0041.14	Biology-Keys	3.3.3.4	The 404 (b) (1) permit process would be used to evaluate and minimize any potential impacts on jurisdictional or non-jurisdictional wetlands affected by the proposed or alternative actions for Theater Missile Defense testing. This permit, issued by the U.S. Army Corps of Engineers in coordination with the State of Florida, would evaluate specific areas affected by the program once they are more precisely defined during the final planning and design process. Should an alternative be selected, the specific mitigations to avoid or minimize potential environmental impacts will be identified in the Record of Decision. A mitigation plan, prepared in consultation with Federal and state resource agencies, will be developed and implemented prior to initial site preparation and test activities. Additional mitigations for wetlands have been included in section 3.3.3.4 of the Final SEIS.
	P-T-0041.15	Alternatives-Keys	1.0	No decision has yet been made about which alternative may be selected. National Environmental Protection Agency requires the analysis of all reasonable alternatives to the proposed action. Section 1.0, Program Overview, explains the factors that will be considered in making the final decision after the Final SEIS is completed.
Cofer, Elizabeth	P-T-0042.01	Transportation-Keys	3.3.11.4	The evaluation of potential traffic impacts on Highway 1 in the Draft SEIS forecast an increase in traffic volume by 2005 (including Theater Missile Defense-related vehicles) of 0.3 to 1.5 percent on a peak day of activity. Since baseline forecasts of traffic for the same year show that most of the segments of U.S. 1 would be operating at or above design capacity during peak times, project traffic would exacerbate this situation. If program activities were planned for this alternative, vehicle movement would be scheduled to avoid peak hours.

Table 5.3-2: Responses to Transcript Comments (Continued)

Commentor and Affiliation	Comment Number	Resource Area	Reference Section / Page	RESPONSE
	P-T-0042.02	Transportation-Keys	3.3.11.4	Scheduling of missile transport and other Theater Missile Defense test-related traffic would be coordinated with local agencies to avoid peak traffic hours and minimize potential effects on local traffic movement. Emergency vehicles would not be affected by Theater Missile Defense test activities, since they will not close the highway.
	P-T-0042.03	Safety-Keys	3.3.11.4	The ability to control the movement of missile components is important to the overall safety of the proposed Theater Missile Defense testing system. A specific evacuation plan for the missile and other test-related components and non-critical personnel would be implemented at the first notice of potential hurricane activity, before official hurricane watch and warning announcements. This would ensure that Theater Missile Defense-related evacuation movements would precede standard public evacuation plans and would not interfere with the planned process.
	P-T-0042.04	Transportation-Keys	3.3.11.4	The target missiles proposed for Theater Missile Defense testing are Minuteman stages I and II. Over a 30-year operational period, frequent transport of Minuteman missile components to and from 1,000 sites never resulted in an explosion. Estimates of the probability of an accident involving a truck carrying missile components on the Overseas Highway range from 2.63 to 6.89 per million vehicle-kilometers. Using the high value, there is a probability of 0.0012 of a truck accident per launch.
	P-T-0042.05	Transportation-Keys	3.3.11.4	Should one of the sites in the Keys be selected for Theater Missile Defense testing, a site-specific emergency response plan (similar to the example in appendix J) would be prepared and implemented.
	P-T-0042.06	Transportation-Keys	3.3.11.4	In accordance with Council on Environmental Quality guidelines, this SEIS includes sufficient analysis to inform the public of potential environmental impacts resulting from the preferred action and alternatives and to assist in the decision making process. In preparing this analysis, the most recent and available data was used to characterize the existing environments of all potential sites including those in the Florida Keys.
	P-T-0042.07	Transportation-Keys	3.3.11.4	The evaluation of potential traffic impacts on Highway 1 in the Draft SEIS forecast an increase in traffic volume by 2005 (including Theater Missile Defense-related vehicles) of 0.3 to 1.5 percent on a peak day of activity. Since baseline forecasts of traffic for the same year show that most of the segments of U.S. 1 would be operating at or above design capacity during peak times, project traffic would exacerbate this situation. Traffic forecasts for segments of U.S. 1 have been adjusted in the Final SEIS.
	P-T-0042.08	Transportation-Keys	3.3.11.4	The missile components would be shipped in standard freight transports (tractor-trailers) and would not require a convoy. Scheduling of missile transport and other Theater Missile Defense test-related traffic would be coordinated with local agencies to avoid peak traffic hours and minimize potential effects on local traffic movement. Local law enforcement personnel would be expected to maintain order for this program no less than any other activity.
	P-T-0042.09	Draft SEIS		In accordance with Council on Environmental Quality guidelines, this SEIS includes sufficient analysis to inform the public and decision makers of potential environmental impacts resulting from the preferred action and alternatives and to assist in the decision making process. In preparing this analysis, the most recent and available data was used to characterize the existing environments of all potential sites including those in the Florida Keys.
Henize, Dennis	P-T-0043.01	Safety-Keys	3.1.9.4	The Launch Hazard Area was designed to avoid requiring the evacuation of private property or occupied dwellings. The residences of Cudjoe Key have been recognized since the first site visit to the Keys. The Launch Hazard Area has not been shrunk. Each Launch Hazard Area is individually designed for the site, the missile, and the environs around the site. As stated previously, the more constrained a Launch Hazard Area, the more restrained the Range Safety Officer.
	P-T-0043.02	Noise/Air quality		The Launch Hazard Area is defined as an area within which all missile debris would be confined. The areas affected by various levels of launch emissions and noise are determined through separate and independent analyses. Each of these analyses is used to determine the overall safety of the program.
	P-T-0043.03	Noise	3.3.8.4	The 2.0 psf explosion is due to a complete Hera stage 2 impacting the ground or the water. In the case of a mishap, the Range Safety Officer may prescribe destroying the second stage prior to impact to prevent this explosion.
	P-T-0043.04	Air quality-Keys	3.3.8.4 3.1.9.4	As sections 3.1.1.4.1 and 3.1.9.4 of the Draft SEIS explain, the TSCREEN PUFF model predicts concentrations at various distances from the launch point. For a normal launch, there were no exceedances. For a launch mishap scenario, TSCREEN PUFF indicated potential exceedance beyond the Launch Hazard Area. In that case, per Environmental Protection Agency guidance, the more refined model, Open-Burn Open-Detonation Dispersion Model, indicated that there would not be exceedance beyond the Launch Hazard Area.
	P-T-0043.05	Noise-general	3.3.8.1 3.1.9.4	The SEIS provides both single event levels and weighted averages to provide as much information on noise occurrences and effects as possible. See section 3.1.9.4 of the Final SEIS for additional discussion of potential noise impacts. Noise contours included in the Draft and Final SEIS present potential noise impacts to a distance of 5.6 miles.
	P-T-0043.06	Noise-Keys	3.3.8.3	Restricted area R-2916 is located above Cudjoe Key and extends from the surface to 14,000 ft. See section 3.3.2 of the Final SEIS.
	P-T-0043.07	Visual Aesthetics-Keys	3.3.13.4	The Aerostat flies to transmit TV Marti in the early mornings, and then is lowered in the late morning. The balloon is down and visibly present as often as not. The perceived degree of change is subjective. To assist in the comparison of vistas, visual simulations have been provided in sections 3.1.1.3.4 and 3.3.13.4 of the Final SEIS to illustrate potential visual impacts of Theater Missile Defense facilities.

Table 5.3-2: Responses to Transcript Comments (Continued)

Commentor and Affiliation	Comment Number	Resource Area	Reference Section / Page	RESPONSE
	P-T-0043.08	Alternatives-Keys	1.0	No decision has yet been made about which alternative may be selected. National Environmental Protection Agency requires the analysis of all reasonable alternatives to the proposed action. Section 1.0, Program Overview, explains the factors that will be considered in making the final decision after the Final SEIS is completed. In accordance with Council on Environmental Quality guidelines, this SEIS includes sufficient analysis to inform the public and decision makers of potential environmental impacts resulting from the preferred action and alternatives and to assist in the decision making process. In preparing this analysis, the most recent and available data was used to characterize the existing environments of all potential sites including those in the Florida Keys.
Musselman, David	P-T-0044.01	Water Quality-Keys	3.3.1.4 3.3.14.4	The total exhaust from a Hera launch is 13,820 pounds, 3,078 pounds of which is hydrogen chloride, with 221 pounds of hydrochloric acid deposited in the vicinity of the launch pad. The Hera emits one half of one percent of the Shuttle exhaust. Hydrogen chloride near field deposition rates from the Shuttle range up to 125g/m ² , while those from the Hera do not exceed 1.64g/m ² .
	P-T-0044.02	Water Quality-Keys	3.3.14.4	Deposition of hydrogen chloride at a rate of no more than 1.64g/m ² over the area of this water body would not decrease the pH more than 0.1 unit. The pH of shallow marine waters in the Florida Keys range from a low of 7.3 near Saddlebunch and Cudjoe Keys to a high of 8.2 near Plantation Key. Average alkalinity measurements range from a low of 119 mg/L calcium carbonate near Plantation Key to a high of 137 mg/L calcium carbonate near Harrison Canal (Florida Department of Environmental Protection, 1996). If it were to rain shortly after a missile launch, the hydrogen chloride present in the exhaust plume would be dissolved in the rain droplets, which would result in a temporary reduction in rainfall pH. Calculations were conservative in that 100 percent of the 1,399 kilograms of hydrogen chloride present in the exhaust plume was assumed to be dissolved in rain droplets (as opposed to approximately 20 percent under normal conditions.) Due to the high buffering capacity of the shallow marine waters, rainwater falling on nearby surface waters would result in no decrease in the pH levels. There would be no decrease in pH levels hence no stress on the marine life in the vicinity.
	P-T-0044.03	Launch emissions	3.3.1.4	Hydrogen chloride is one of the primary exhaust products from solid rocket motor combustion. At ambient temperatures and pressure, hydrogen chloride is very soluble in water. It readily dissolves in water to form hydrochloric acid. This reaction is exothermic, that is it generates heat. However, under the conditions which are present in the rocket's exhaust plume, less than 20 percent of the hydrogen chloride reacts with water to form hydrochloric acid in sufficient size to fall to earth. The remainder of the hydrogen chloride (in excess of 80 percent) will either not combine with water, or will combine with water and form microdroplets which are too small not to fall out of the cloud. Therefore the maximum amount of acid which can rain out of any portion of the exhaust cloud is less than 20 percent of that portion. This maximum amount occurs under conditions of excess water, such as occurs during Space Shuttle launches. The proposed action does not include use of water during launches. As such, the proportion of hydrogen chloride in the exhaust which would form hydrochloric acid would be expected to be less than the proportion of the Space Shuttle's SRBM's that undergo a similar reaction.
	P-T-0044.04	Launch emissions	3.1.1.1	The models used for the evaluation of air quality impacts use mathematical models to calculate the probable result of a series of factors that may affect emission dispersion. These include wind speed, humidity, release height of the emissions, atmospheric stability and mixing layer altitudes. For the purpose of this analysis we varied each model parameter to produce the most conservative (worst) result for each step in the model. The result was the highest possible predicted concentration and the greatest distance that could result from the launch of a Hera missile at any location. The results did not reflect the climate of Utah or the Keys, but the worst possible combination of climatic conditions. The results are greater emission concentrations than would be realistically anticipated and serve as a conservative representation of plume mechanics.
	P-T-0044.05	Launch emissions		The solid propellant in the first stage of the missile burns at a constant rate from initial launch through burn out. Since the missile is accelerating from the launch pad during its first few seconds of flight, a slightly greater level of emissions occur near the earth's surface.
	P-T-0044.06	Water Quality-Keys	3.3.13.4	The pH of shallow marine waters in the Florida Keys range from a low of 7.3 near Saddlebunch and Cudjoe Keys to a high of 8.2 near Plantation Key. Average alkalinity measurements range from a low of 119 mg/L calcium carbonate near Plantation Key to a high of 137 mg/L calcium carbonate near Harrison Canal (Florida Department of Environmental Protection, 1996). If it were to rain shortly after a missile launch, the hydrogen chloride present in the exhaust plume would be dissolved in the rain droplets, which would result in a temporary reduction in rainfall pH. Calculations were conservative in that 100 percent of the 1,399 kilograms of hydrogen chloride present in the exhaust plume was assumed to be dissolved in rain droplets (as opposed to approximately 20 percent under normal conditions.) Due to the high buffering capacity of the shallow marine waters, rainwater falling on nearby surface waters would result in no decrease in the pH levels. There would be no decrease in pH levels hence no stress on the marine life in the vicinity.
	P-T-0044.07	Launch mishaps	3.2.13.4 3.1.9.4	Ammonium perchlorate would only be introduced into the Gulf of Mexico in the unlikely event of a launch mishap. The slow process of hydration would continue until the material was completely saturated. These quantities of ammonium perchlorate distributed over a wide area of the Gulf would not be considered toxic to the environment.
	P-T-0044.08	Hazardous wastes	3.2.13.4	Comment noted. There is little literature extant because ammonium perchlorate is not disposed of in the marine environment in the United States. The Soviet literature was a source, not necessarily an endorsement.
	P-T-0044.09	Irreversible	3.5	Section 3.5 of the Draft and Final SEIS addresses potential irreversible and irretrievable commitment of resources. Small scale habitat destruction, individual displacement, and incidental mortality are acknowledged in the near-field launch area. See sections 3.1.3.4, 3.2.3.4, and 3.3.3.4 of the Final SEIS.

Table 5.3-2: Responses to Transcript Comments (Continued)

Commentor and Affiliation	Comment Number	Resource Area	Reference Section / Page	RESPONSE
Hoffman, Wayne	P-T-0045.01	Biology-general	3.1.3.3 3.2.3.3 3.3.3.3	In accordance with Council on Environmental Quality guidelines, this SEIS includes sufficient analysis to inform the public and decision makers of potential environmental impacts resulting from the preferred action and alternatives and to assist in the decision making process. In preparing this analysis, the most recent and available data was used to characterize the existing environments of all potential sites including those in the Florida Keys. Potential impacts to biological resources as a result of a launch mishap are addressed in section 3.1.9 of the Draft and Final SEIS. Section 3.5 of the Draft and Final SEIS addresses potential irreversible and irretrievable commitment of resources, Small scale habitat destruction, individual displacement, and incidental mortality are acknowledged in the near-field launch area. See sections 3.1.3.4, 3.2.3.4, and 3.3.4 of the Final SEIS.
	P-T-0045.02	Alternatives-Keys	1.0	No decision has yet been made about which alternative may be selected. National Environmental Protection Agency requires the analysis of all reasonable alternatives to the proposed action. Section 1.0, Program Overview, explains the factors that will be considered in making the final decision after the Final SEIS is completed.
	P-T-0045.03	Biology-Keys	3.3.3.3	The listed species presented in the SEIS were obtained from the Florida Game and Fresh Water Fish Department and the U.S. Fish and Wildlife Service and are specific to the Region of Influence for each alternative site.
	P-T-0045.04	Biology-Keys	3.3.3.3	This information has been included in section 3.3.3.3 of the Draft and Final SEIS.
	P-T-0045.05	Biology-Keys	3.3.3.4	Low pressure sodium lighting away from the beach would be used to minimize potential impacts.
	P-T-0045.06	Biology-Keys	3.3.3.4	Wildlife that remained in the immediate launch area (near-field) during a test could be affected by launch emissions. Previous test programs have shown that most wildlife leave the launch area prior to a launch event due to human presence and activity, hence the potential for harm is extremely small. If a launch mishap did occur, it is possible that unburned propellant and debris could enter coastal waters. Although this material would not be considered measurably toxic to the environment, consultation with resource agencies would determine if removal and clean-up of debris would be necessary or beneficial.
	P-T-0045.07			In accordance with Council on Environmental Quality guidelines, this SEIS includes sufficient analysis to inform the public and decision makers of potential environmental impacts resulting from the preferred action and alternatives and to assist in the decision making process. In preparing this analysis, the most recent and available data was used to characterize the existing environments of all potential sites including those in the Florida Keys.
Hadden, Alexander	P-T-0046.01	Draft SEIS		In accordance with Council on Environmental Quality guidelines, this SEIS includes sufficient analysis to inform the public and decision makers of potential environmental impacts resulting from the preferred action and alternatives and to assist in the decision making process. In preparing this analysis, the most recent and available data was used to characterize the existing environments of all potential sites including those in the Florida Keys.
	P-T-0046.02	Safety	3.1.9.4	In accordance with Council on Environmental Quality guidelines, this SEIS includes sufficient analysis to inform the public of potential environmental impacts resulting from the preferred action and alternatives and to assist in the decision making process. In preparing this analysis, the most recent and available data was used to characterize the existing environments of all potential sites. The analysis of the risk probabilities of each missile flight test is conducted prior to acceptance of that flight test program by the range. The system failure mode analysis and attendant risk probability calculations for each failure mode are calculated. Each equipment failure or human error possibility is considered and incorporated into the risk assessment for each flight test. No test will be accepted by the Air Force Development Test Center commander until he is satisfied that the risk analysis complies with Air Force and Department of Defense safety policies.
	P-T-0046.03	Safety-Keys	3.1.9.4	Appendix G of the Draft SEIS described the method of establishing a Launch Hazard Area. Each Launch Hazard Area is different, depending on the available land, launch trajectory, type of missiles, and distance to populated areas or structures. Fewer operational constraints, such as permissible wind conditions at the time of launch and the reaction time of the Range Safety Officer are required when more land is available for a Launch Hazard Area. Conversely, more operational constraints are required when less land is available. The geographic extent of the Launch Hazard Area and the operational constraints associated with it are established for each site to ensure the launch can safely be conducted. An Launch Hazard Area of 4.5 miles was never proposed for the Hera launch sites at Santa Rosa, Cape San Blas or Cudjoe or Saddlebunch Keys. The 4.5 mile figure was originally associated with the Fort Wingate launch site. However, even at Fort Wingate, the eventual Launch Hazard Area was significantly less than 4.5 miles northeast of the launch site due to the existence of a school or residence.
	P-T-0046.04	Safety-Keys	3.1.9.4	The Launch Hazard Area was designed to avoid requiring the evacuation of private property or occupied dwellings. The residences of Cudjoe Key have been recognized since the first site visit to the Keys. The Launch Hazard Area has not been shrunk. Each Launch Hazard Area is individually designed for the site, the missile, and the environs around the site. As stated previously, the more constrained a Launch Hazard Area, the more restrained the Range Safety Officer.
	P-T-0046.05	Safety	3.1.9.4	If the Flight Termination System did function, it would split the casing of the Stage 2 motor casing. This split may initiate a fire in the mass of the Stage 2 propellant. There would not be a detonation since the propellant is not configured in a pressure vessel; both ends of the motor are open in shipping. Stage 2 of the Hera missile is shipped with the Flight Termination System attached to the motor casing. The Flight Termination System is classified as Department of Defense Class 1.1 explosive. The Flight Termination System is not shipped with initiators attached. Without initiators, the Flight Termination System would not detonate.

Table 5.3-2: Responses to Transcript Comments (Continued)

Commentor and Affiliation	Comment Number	Resource Area	Reference Section / Page	RESPONSE
	P-T-0046.06	Water-Keys	3.3.14.4	The pH of shallow marine waters in the Florida Keys range from a low of 7.3 near Saddlebunch and Cudjoe Keys to a high of 8.2 near Plantation Key. Average alkalinity measurements range from a low of 119 mg/L calcium carbonate near Plantation Key to a high of 137 mg/L calcium carbonate near Harrison Canal (Florida Department of Environmental Protection, 1996). If it were to rain shortly after a missile launch, the hydrogen chloride present in the exhaust plume would be dissolved in the rain droplets, which would result in a temporary reduction in rainfall pH. Calculations were conservative in that 100 percent of the 1399 kilograms of hydrogen chloride present in the exhaust plume was assumed to be dissolved in rain droplets (as opposed to approximately 20 percent under normal conditions.) Due to the high buffering capacity of the shallow marine waters, rainwater falling on nearby surface waters would result in no decrease in the pH levels. There would be no decrease in pH levels hence no stress on the marine life in the vicinity.
	P-T-0046.07	Biology-Keys	3.3.3.4	Section 3.3.3.4 addresses potential impacts of hydrogen chloride and other launch emission components on biological resources in the Florida Keys.
	P-T-0046.08	Land use-Keys	3.3.7.4	The Launch Hazard Area for the alternative target launch sites on the Keys does overlap the Florida Keys National Marine Sanctuary; about 4.3 percent of the Florida Keys National Marine Sanctuary is in the Cudjoe Key Launch Hazard Area and 1.6 percent of the Florida Keys National Marine Sanctuary is in the Launch Hazard Area for the Saddlebunch Keys (see section 3.3.7 in the Final SEIS). New military uses in the Florida Keys National Marine Sanctuary are permitted but would require specific consultation. Should either of these sites be selected, consultation with Federal and state resource agencies would establish specific mitigations to avoid or minimize the disturbance of protected areas. Consultation with the Director of the National Marine Sanctuary began early in the planning process for the Theater Missile Defense
	P-T-0046.09	Transportation-Keys	3.3.11.4	The evaluation of potential traffic impacts on U.S. 1 forecast an increase in traffic volume in 2005 (including Theater Missile Defense-related vehicles) of 0.3 to 1.5 percent on a peak day of activity. Since baseline forecasts of traffic for the same year show that most of the segments of U.S. 1 would be operating at or above design capacity during peak times, project traffic would exacerbate this situation. If program activities were planned for this alternative, vehicle movement would be scheduled to avoid peak hours.
	P-T-0046.10	Transportation-Keys	3.3.11.4.	Estimates of the probability of an accident involving a truck carrying missile components on the Overseas Highway range from 2.63 to 6.89 per million vehicle-kilometers. Using the high value, there is a probability of 0.0012 of a truck accident per launch.
	P-T-0046.11	Transportation-Keys	3.3.11.4	Should one of the sites in the Keys be selected for Theater Missile Defense testing, a site-specific emergency response plan (similar to the example in appendix J) would be prepared and implemented.
	P-T-0046.12	Launch mishap	3.1.9.4	The Launch Hazard Area was designed to avoid requiring the evacuation of private property or occupied dwellings. The residences of Cudjoe Key have been recognized since the first site visit to the Keys. Each Launch Hazard Area is individually designed for the site, the missile, and the environs around the site. As stated previously, the more constrained a Launch Hazard Area, the more restrained the Range Safety Officer. Refer to section 3.1.9.2 in the SEIS. Should the Keys be selected a response plan would be developed for the Florida Keys prior to any launches.
	P-T-0046.13	Transportation-Keys	3.3.11.4	The target missiles proposed for Theater Missile Defense testing are Minuteman stages I and II. Over a 30 year operational period, frequent transport of Minuteman missile components to and from 1000 sites never resulted in an explosion. Estimates of the probability of an accident involving a truck carrying missile components on the Overseas Highway range from 2.63 to 6.89 per million vehicle-kilometers. Using the high value, there is a probability of 0.0012 of a truck accident per launch.
	P-T-0046.14	Safety	3.1.9.4	See response to comment 46.14 above.
	P-T-0046.15	Safety	3.1.9.4	The analysis of the risk probabilities of each missile flight test is conducted prior to acceptance of that flight test program by the range. The system failure mode analysis and attendant risk probability calculations for each failure mode are calculated. Each equipment failure or human error possibility is considered and incorporated into the risk assessment for each flight test. No test will be accepted by the Air Force Development Test Center commander until he is satisfied that the risk analysis complies with Air Force and Department of Defense safety policies. Comment noted.
	P-T-0046.16	Alternatives-Keys	1.0	No decision has yet been made about which alternative may be selected. National Environmental Protection Agency requires the analysis of all reasonable alternatives to the proposed action. Section 1.0, Program Overview, explains the factors that will be considered in making the final decision after the Final SEIS is completed.
Steigitz, Barry Florida Keys National Marine Sanctuary	P-T-0047.01	Draft SEIS		Comment noted.
	P-T-0047.02	Draft SEIS		In accordance with Council on Environmental Quality guidelines, this SEIS includes sufficient analysis to inform the public and decision makers of potential environmental impacts resulting from the preferred action and alternatives and to assist in the decision making process. In preparing this analysis, the most recent and available data was used to characterize the existing environments of all potential sites including those in the Florida Keys.
	P-T-0047.03	Biology-Keys	3.3.3.4	Potential impacts of pre-launch and launch activities are addressed in section 3.3.3.4 of the Final SEIS.
	P-T-0047.04	Biology-Keys	3.3.3.4	Studies of launch effects at Cape Canaveral have shown that birds disturbed by launch noise normally return to their nest soon after the launch event.

Table 5.3-2: Responses to Transcript Comments (Continued)

Commentor and Affiliation	Comment Number	Resource Area	Reference Section / Page	RESPONSE
	P-T-0047.05	Biology-Keys		Comment noted.
	P-T-0047.06	Land Use-Keys	3.3.7.4	The alternative target launch sites on Cudjoe Key and Saddlebunch Keys are located on land owned by the Department of Defense and are designated for military use. The Launch Hazard Area for these alternative sites does, however, overlap the National Marine Sanctuary and several wildlife refuges (see section 3.3.7 in the Final SEIS). New military uses in these areas are permitted but would require specific consultation with appropriate Federal and state resource agencies. See sections 3.1.3.4 and 3.3.3 in the Final SEIS for proposed mitigations. Should an alternative be selected, the specific mitigations will be documented in the Record of Decision. This mitigation plan, which would avoid or minimize potential adverse impacts on protected areas, would be developed and implemented prior to initiating site preparation and test activities.
	P-T-0047.07	Land Use-Keys	3.3.7.4	Comment noted.
	P-T-0047.08	Biology-Keys	3.3.3.4	Military activities associated with Theater Missile Defense site preparation and test preparation on military land would have minimal effect on the wilderness area. The missile launch would be intrusive, but of short duration, no more than once a month.
	P-T-0047.09	Visual Aesthetics-Keys	3.3.13.4	To better assess the visual impact of constructing a missile assembly building or erecting a 50 foot tall missile on a site, a visual simulations for each vantage point photograph used in the Draft SEIS has been prepared (sections 3.1.13.1 and 3.2.13.1.) These visual simulations use computer graphics programs to ensure that the apparent visibility of the building or missile in the photograph is what would actually be seen from each respective vantage point. Specifically, a known dimension in each photograph was determined from sources at the respective sites. This known dimension was projected into the photograph via planographic projection to provide a perspective scale of the distance between two objects. In this case, the two objects were the tower or known object, and the Hera missile, which would be 50 feet tall on its launch stool. The site mapping indicated the horizontal distance between the known object and the Hera missile launch site. The resultant photographic visual simulations are published in the Final SEIS section 3.1.13.4 (pages 3-223 and 226) for the Panhandle sites and section 3.2.13.4 (pages 3-518 and 3-521) for the Keys sites. It is apparent, reviewing these photographs, that neither the building nor the missile are visible from most accessible vantage points. The view from those closer vantage points will include the existing military buildings as well as the new Missile Assembly Building and missile. The new buildings will be seen in the context of the existing military facilities.
	P-T-0047.10	Biology-Keys	3.3.3.4	In accordance with Council on Environmental Quality guidelines, this SEIS includes sufficient analysis to inform the public of potential environmental impacts resulting from the preferred action and alternatives and to assist in the decision making process. In preparing this analysis, the most recent and available data was used to characterize the existing environments of all potential sites including those in the Florida Keys. The listed species presented in the SEIS were obtained from the Florida Game and Fresh Water Fish Department and the U.S. Fish and Wildlife Service and are specific to the Region of Influence for each alternative site.
	P-T-0047.11	Biology-Keys	3.3.3.4	Should a Keys alternative be selected, the specific mitigations will be documented in the Record of Decision. This mitigation plan, which would avoid or minimize potential adverse impacts on protected areas, would be developed and implemented prior to initiating site preparation and test activities.
	P-T-0047.12	Draft SEIS		In accordance with Council on Environmental Quality guidelines, this SEIS includes sufficient analysis to inform the public and decision makers of potential environmental impacts resulting from the preferred action and alternatives and to assist in the decision making process. In preparing this analysis, the most recent and available data was used to characterize the existing environments of all potential sites including those in the Florida Keys.
Kantor, Charles	P-T-0048.01	Draft SEIS		Comment noted.
	P-T-0048.02	Socioeconomics	3.3.10.4	Theater Missile Defense launch activities would not have an appreciable effect on the income and employment of industries operating in the Gulf of Mexico.
	P-T-0048.03	Launch Hazard Area clearance	3.2.10.4	The Theater Missile Defense test program will rely on the Florida Marine Patrol and the Coast Guard to ensure that the water portions of the Launch Hazard Area are clear. These agencies understand the marine operating procedures and constraints of the Florida Keys National Marine Sanctuary. Agreements will be reached with other Federal and state agencies to determine the appropriate policy most effective and ways to clear the Launch Hazard Area.
	P-T-0048.04	Launch Hazard Area clearance	2.1.3.2.3	Prior public notice of test event schedules would be publicized, and noted in NOTMARS. Radar surveillance prior and during the test would enable the test officer to monitor the marine traffic in the area. It is believed that with the cooperation of the Florida Marine Patrol, the Coast Guard, and the boating public, the area can be cleared for the period to assure safe testing.
	P-T-0048.05	Launch delay	2.1.3.2.3	A launch event would last from 1 to 4 hours including time delays for clearance of the LHS. Beyond this time period, the flight test would be canceled.
	P-T-0048.06	Draft SEIS		Comment noted.
	P-T-0048.07	Program		Comment noted.
	P-T-0048.08	Socioeconomics-Keys	3.3.10.4	The Visitor Participation Survey, which is described as the most comprehensive ever conducted in the region, further emphasizes the relatively minor role that the Lower Keys plays in the Keys tourist economy. The top three activities in which visitors participated were sightseeing and attractions (55 percent participation rate), beach activities (34 percent), and visiting museums and historical sites (33 percent). The top rated activity in the Lower Keys was viewing wildlife/nature study in which 5.8 percent of all visitors to the Keys participated.
	P-T-0048.09	General	3.3.10.4	Comment noted.

Table 5.3-2: Responses to Transcript Comments (Continued)

Commentor and Affiliation	Comment Number	Resource Area	Reference Section / Page	RESPONSE
Linn, Diane	P-T-0049.01	Safety	2.1.3.2.3	No area, activity, or resident outside the Launch Hazard Area will be exposed to risks from Theater Missile Defense test activities greater than those encountered in normal daily life. The primary role of the range safety officer is to ensure the safety of the public. This is done in accordance with Air Force Development Test Center policies and procedures ensuring that the general public will be protected to an individual and collective risk significantly less than the average public exposure.
	P-T-0049.02	Socioeconomics	3.3.10.4	The real estate values within an area are directly related to the levels of income and employment that occur within the area. Socioeconomic impact studies that have been prepared by the Air Force over the past decade have shown that housing values and military programs are generally positively related. The areas near Eglin AFB and Vandenberg AFB, which are both installations where missile testing occurs, have experienced generally stable and appreciating property values. The only negative changes in housing values that have been recorded resulted from mission reductions and base closures that have occurred. Since the proposed Theater Missile Defense test program would not have an appreciable effect on income or employment levels at any of the alternative test sites, no related changes in property or housing value would be expected.
	P-T-0049.03	Safety	3.1.9.4	A separate environmental assessment has been prepared for the Air Drop program. Air drop would occur far offshore that no populated areas is endangered by it.
	P-T-0049.04	Safety	3.1.9.4	Launch Hazard Area evacuation is for unoccupied lands. Residents will not be affected by the clearance of hazard areas. No residents will be evacuated because no exist in the Launch Hazard Area.
	P-T-0049.05	Draft SEIS		In accordance with Council on Environmental Quality guidelines, this SEIS includes sufficient analysis to inform the public and decision makers of potential environmental impacts resulting from the preferred action and alternatives and to assist in the decision making process. In preparing this analysis, the most recent and available data was used to characterize the existing environments of all potential sites including those in the Florida Keys.
	P-T-0049.06	Draft SEIS		Public safety is a primary concern for all range operations. The safety limits defined by the Launch Hazard Area would assure that population centers, schools and residential areas would not be at increased risk as a result of the proposed test program. A detailed discussion of the various risks associated with missile testing are described in section 3.1.9 for normal and mishap scenarios. The primary role of the range safety officer is to ensure the safety of the public. This is done in accordance with Air Force Development Test Center policies and procedures ensuring that the general public will be protected to an individual and collective risk significantly less than the average public exposure. Specifically, one of the safety mechanisms is to establish a Launch Hazard Area as described in section 2.1.5 in the SEIS. The Launch Hazard Area for each test event would be calculated prior to launch on the basis of system factors (propellant type and quantity, payload weight, etc.) and environmental factors (temperature, humidity, wind direction and magnitude). If this launch-specific Launch Hazard Area exceeded the maximum permitted Launch Hazard Area defined for any specific launch site or could result in adverse impacts to non-Federal land parcels other than those predicted and coordinated with Federal, state and local agencies, the launch would be delayed or canceled. No test event would proceed that would pose a safety threat to the local community. Potential impacts to human health and safety is addressed in section 3.1.9 of the Draft and Final SEIS.
Putnam, Nick Key Deer Protection Alliance	P-T-0050.01	Biology-Keys	3.3.3.4	Potential impacts to biological resources are addressed in section 3.3.3.4 of the Final SEIS.
	P-T-0050.02	Alternatives-Keys	1.0	No decision has yet been made about which alternative may be selected. National Environmental Protection Agency requires the analysis of all reasonable alternatives to the proposed action. Section 1.0, Program Overview, explains the factors that will be considered in making the final decision after the Final SEIS is completed.
Tanzonieri, Albert	P-T-0051.01	Draft SEIS		Comment noted.
	P-T-0051.02	Draft SEIS		Geopolitical considerations were not factors in the selection of alternative test sites.
	P-T-0051.03	Draft SEIS		Comment noted.
	P-T-0051.04	Program		The Florida Keys have included some level of military activities for over 50 years.
	P-T-0051.05	Program		Comment noted.
	P-T-0051.06	Land use-Keys	3.3.7.4	State and local regulatory requirements, many of which are derivative of Federal statutes, are recognized in the planning process. Military projects on military land comply with Federal regulation.
	P-T-0051.07	Draft SEIS		Comment noted.
	P-T-0051.08	Water Quality-Gulf	3.2.14.4	Comment noted.
	P-T-0051.09	Safety	2.1.3.2.3	The non-circular shape of the Launch Hazard Area means that the Range Safety Officer has to react more quickly if an errant missile moves in the direction of the closer boundary.
	P-T-0051.10	Safety	3.1.9.4	Comment noted.

Table 5.3-2: Responses to Transcript Comments (Continued)

Commentor and Affiliation	Comment Number	Resource Area	Reference Section / Page	RESPONSE
	P-T-0051.11	Safety	1.0	No decision has yet been made about which alternative may be selected. National Environmental Protection Agency requires the analysis of all reasonable alternatives to the proposed action. Section 1.0, Program Overview, explains the factors that will be considered in making the final decision after the Final SEIS is completed.

6.0 References

6.0 REFERENCES

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7.0 List of Preparers

7.0 LIST OF PREPARERS

Government Preparers

Debby Atencio, Endangered Species Biologist

Natural Resources Branch (AFDTC/EMSN), Eglin Air Force Base

B.S., 1975, Wildlife Biology, University of California, Davis

Years of Experience: 9

Robin Bjorklund, Project Manager

Environmental Restoration (AFDTC/EMR), Eglin Air Force Base

B.S., 1984, Geology, University of South Alabama

Years of Experience: 14

Jesse Borthwick, Senior Environmental Scientist

Range Environmental Planning Office (AFDTC/EMX), Eglin Air Force Base

M.S., 1982, Acoustics, Pennsylvania State University

M.E.C.P., 1977, Environmental Pollution Control, Pennsylvania State University

B.S., 1972, Marine Biology, University of West Florida

Years of Experience: 27

Nga Linda Ninh Busch, Program Manager

46th Operations Group, Munitions Test Division (46 OG/OGM), Eglin Air Force Base

B.S., 1984, Chemical Engineering, Georgia Institute of Technology

Years of Experience: 14

Dennis R. Gallien, Environmental Engineer

U.S. Army Space and Missile Defense Command

B.S., 1979, Industrial Chemistry, University of North Alabama

Years of Experience: 19

Alvin G. Jordan, ASLA, Environmental Planner

Environmental Management Directorate (AFDTC/EM), Eglin Air Force Base

B.L.A., 1974, Architecture Urban and Regional Planning, University of Florida

B.S.E., 1966, Biology/Chemistry, University of Florida

Years of Experience: 24

Thomas J. Kennedy, Major, USAF, Director of Test, TMD

46th Operations Group, Munitions Test Division (46 OG/OGM), Eglin Air Force Base

M.S., 1984, Systems Management, University of Southern California

B.S., 1982, Mechanical Engineering, U.S. Naval Academy

Years of Experience: 14

Walter O. Monteith, Jr., Range Safety Engineer

Air Force Development Test Center Safety Office (AFDTC/SEUO),

Eglin Air Force Base

M.E., 1990, Systems Engineering, University of Florida

B.A.E., 1971, Aerospace Engineering, Auburn University

Years of Experience: 23

Jefferson K. Oliver, Deputy Director of Test, TMD
46th Operations Group, Weapons Test Flight (46 OG/OGMT), Eglin Air Force Base
M.E., 1995, Industrial and Systems Engineering, University of Florida
B.S., 1983, Petroleum Engineering, Mississippi State University
Years of Experience: 10

Judy Ramsey, Chief
Waste Management Branch (AFDTC/EMCW), Eglin Air Force Base
Certified Environmental Professional, Physical Science Equivalent
Registered Environmental Manager, in progress
Years of Experience: 16

Dan Robeen, Environmental Engineer
Environmental Engineering (AFDTC/EMCE), Eglin Air Force Base
M.S., 1996, Urban and Regional Planning, Florida State University
B.S., 1990, Civil Engineering, Florida State University
Years of Experience: 8

Maria Rodriguez, Environmental Engineer, Air Quality Program Manager
Environmental Engineering (AFDTC/EMCE), Eglin Air Force Base
M.S., 1993, Aeronautical Sciences, Embry-Riddle Aeronautical University, Florida
Years of Experience: 4

Mark Sanchez, Base Community Planner
Community Planning Element (96 CEG/CECPM), Eglin Air Force Base
B.S., 1974, Political Science, University of Arizona
M.P.A., 1980, Urban Environmental Planning, Arizona State
Years of Experience: 19

Donald R. Setterberg, Airspace Manager
Airspace Management Branch (OSS/OSCM), Eglin Air Force Base
Masters in Counseling, 1979, Troy State University
M.B.A., 1976, University of West Florida
B.A., 1974, Accounting, University of West Florida
Years of Experience: 17

Ken Sims, Program Management
U.S. Army Space and Missile Defense Command
M.S., 1979, Wildlife and Fisheries Management, Auburn University
B.S., 1974, Zoology, Auburn University
Years of Experience: 25

Janet G. Tucker, Environmental Public Involvement Specialist
Environmental Management Directorate (AFDTC/EM), Eglin Air Force Base
M.Ed., 1983, Counseling and Personnel Development, University of Maryland
B.A., 1976, English Literature, University of Arizona
Years of Experience: 9

Greg Walls, Targets Engineer

U.S. Army Space and Missile Defense Command
Targets Test and Evaluation Directorate
B.S., 1986, Math, Troy State University, Alabama
B.S., 1986, Physics, Troy State University, Alabama
Years of Experience: 10

Dr. Newell O. Wright, Historic Preservation Officer, Chief, Preservation Branch

Historic Preservation (AFDTC/EMSH), Eglin Air Force Base
Ph.D., 1976, Anthropology, Tulane University, Louisiana
Years of Experience: 29

Contractor Preparers

Rusty Anchors, Environmental Planner

EDAW, Inc.
B.A., 1993, Anthropology, University of New Mexico
Years of Experience: 5

Mark Bennett, Environmental Scientist

EDAW, Inc.
Ph.D., 1990, Chemical Engineering, Massachusetts Institute of Technology
B.S.E., 1982, Bioengineering, University of Pennsylvania
Years of Experience: 7

David Carlisle, Environmental Engineer

SciComm
M.S., 1994, Environmental Engineering, University of Maryland
B.S., 1984, Physics and Mathematics, Wofford College
Years of Experience: 12

Mike Carstensen, Environmental Specialist

EDAW, Inc.
B.S. Chemical Engineering, in progress, University of Alabama in Huntsville
Years of Experience: 1

Sydney Coatsworth, Senior Project Manager

EDAW, Inc.
M.A., 1990, Geography, University of California, Los Angeles
B.A., 1985, Earth Science, California State University, Northridge
Years of Experience: 10

Gary Cornell, Planner

EDAW, Inc.
M.C.R.P., 1978, Harvard University
B. Architecture, 1973, Georgia Institute of Technology
Years of Experience: 20

Amy Fenton, Technical Editor

EDAW, Inc.

B.S., 1988, Biology, University of Alabama in Huntsville

Years of Experience: 9

Seon C. Farris, Environmental Engineer

Teledyne Brown Engineering

M.S.E., in progress, Environmental Engineering, University of Alabama in Huntsville

B.S., 1993, Chemical Engineering, Auburn University

Years of Experience: 4

Quent Gillard, Independent Contractor, Airspace Use

Ph.D., 1975, Geography, University of Chicago

M.S., 1972, Geography, Southern Illinois University

B.A., 1969, Geography, University of Nottingham, United Kingdom

Years of Experience: 25

John Hendry, Socioeconomist

EDAW, Inc.

M.B.A., 1987, Cranfield School of Management, England

B.A., 1977, Economics, University of Sussex, England

Years of Experience: 19

Fred S. Hickman, Senior Environmental Scientist

EDAW, Inc.

A.B.D., Economics, Rutgers The State University, New Brunswick, N.J.

M.A., 1974, Economics, Rutgers The State University, New Brunswick, N.J.

B.A., 1966, Economics, Drew University, Madison, N.J.

Years of Experience: 30

Cynthia Holloway, Biologist

EDAW, Inc.

B.S., 1981, Wildlife Management, Tennessee Technological University

Years of Experience: 16

Penny Hudson, Environmental Scientist

EDAW, Inc.

M.S., Environmental Management, in progress, Samford University, Alabama

B.S., 1996, Biology, University of Evansville, Indiana

B.A., 1996, Chemistry, University of Evansville, Indiana

Years of Experience: 1

Jeral Jones, Graphic Artist

EDAW, Inc.

B.S.B.A., 1995, Management Information Systems, University of Alabama,
Huntsville

Years of Experience: 1

Rachel Jordan, Environmental Scientist, Security Officer
EDAW, Inc.
B.S., 1972, Biology, Christopher Newport College
Years of Experience: 10

Kurt A. Legleiter, Environmental Analyst
EDAW, Inc.
B.S., 1994, Environmental Health Science, California State University, Fresno
B.S., 1994, Urban and Environmental Planning, California State University, Fresno
Years of Experience: 3

Tina R. Lemmond, Environmental Specialist
EDAW, Inc.
B.S., 1995, Civil/Environmental Engineering, University of Alabama, Huntsville
Years of Experience: 2

Paul M. Leonard, Biologist
EDAW, Inc.
M.S., 1983, Fisheries Science/Statistics, Virginia Polytechnic Institute and State University
B.S., 1978, Aquatic Science, Allegheny College, Pennsylvania
Years of Experience: 15

Ginger Liemohn, Environmental Scientist
EDAW, Inc.
M.S., Environmental Management, in progress, Samford University, Alabama
B.A., 1993, Biology, Franklin College, Indiana
Years of Experience: 4

Lewis Michaelson, Public Relations Specialist
Jason Associates
M.S., 1985, Conflict Management, George Mason University, Virginia
B.S., 1976, Sociology, University of California, San Diego
Years of Experience: 11

Wesley S. Norris, Environmental Planner
EDAW, Inc.
B.A., 1976, Geology, Northern Arizona University
Years of Experience: 18

John Pelka, Environmental Planner
EDAW, Inc.
M.C.P., 1986, Environmental Planning, University of California, Berkeley
B.A., 1976, Urban Planning, Rutgers University
Years of Experience: 18

Kenneth J. Plotkin, Senior Scientist
Wyle Laboratories
PhD., 1971, Aerospace Engineering, Cornell University, New York
M.E., 1966, Aerospace Engineering, Cornell University, New York
B.S., 1965, Aerospace Engineering, Polytechnic Institute of Brooklyn, New York
Years of Experience: 29

Jason Randolph, Graphic Artist
EDAW, Inc.
B.S., 1997, Behavioral Science, Athens State College
Years of Experience: 1

William Sims, Geographic Information Services Specialist
EDAW, Inc.
B.S., 1993, Geography, University of North Alabama
Years of Experience: 3

John K. Sollid, AICP, Program Manager
EDAW, Inc.
B. Architecture, 1968, Tulane University, Louisiana
Years of Experience: 26

Kathy Stephens, Geographical Information Services Specialist
EDAW, Inc.
B.B.A., 1990, Management Information Systems, Mississippi State University
Years of Experience: 4

Ron Timblin, Planner
EDAW, Inc.
M. City Planning, in progress, Georgia Institute of Technology
B.A., 1985, Geography, Ohio State University
Years of Experience: 1

Ron Tressler, Biologist
EDAW, Inc.
M.S., 1987, Wildlife Resources, University of Idaho
B.S., 1984, Wildlife Science, Pennsylvania State University
Years of Experience: 12

James L. Unmack, P.E., C.I.H., C.S.P., Senior Engineer
Westates EHS Services, Inc.
M.S.E.E., 1966, Bioengineering, Santa Clara University
B.S., 1964, Electrical Engineering, University of California
Years of Experience: 31

Ellen Vogler, Planner
EDAW, Inc.
M.C.P., 1982, City Planning, Georgia Institute of Technology
B.A., 1976, Political Science, University of Delaware
Years of Experience: 14

Kira Zender, Planner

EDAW, Inc.

M. Urban Planning, 1994, Michigan State University

B.A., 1991, Urban Studies, New College, Sarasota, Florida

Years of Experience: 3

James E. Zielinski, Environmental Planner

EDAW, Inc.

B.S., 1984, Biology, University of Alabama in Birmingham

Years of Experience: 10

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