

Appendix A

Comments Received on the Environmental Review

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Part I – Comments Received During Scoping

On June 27, 2005, the U.S. Nuclear Regulatory Commission (NRC) published a Notice of Intent in the *Federal Register* (Volume 70, page 36967) to notify the public of the NRC staff's intent to prepare a plant-specific supplement to the *Generic Environmental Impact Statement for License Renewal of Nuclear Plants* (GEIS), NUREG-1437, Volumes 1 and 2, to review the renewal application for the Palisades operating license and to conduct scoping. The plant-specific supplement to the GEIS has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, as amended, Council on Environmental Quality (CEQ) guidance, and Part 51 of Title 10 of the *Code of Federal Regulations* (10 CFR Part 51). As outlined by NEPA, the NRC initiated the scoping process with the issuance of the *Federal Register* Notice. The NRC invited the applicant; Federal, State, and local government agencies; Native American tribal organizations; local organizations; and individuals to participate in the scoping process by providing comments at the scheduled public meetings and/or by submitting written suggestions and comments no later than August 22, 2005.

The scoping process included two public scoping meetings that were held at Lake Michigan College, South Haven, Michigan, on July 28, 2005. Approximately 65 members of the public attended the meetings. Both sessions began with NRC staff members providing a brief overview of the license renewal process and the NEPA process. After the NRC's prepared statements, the meetings were open for public comments. Nineteen attendees provided oral statements that were recorded and transcribed by a certified court reporter and written statements that were appended to the transcript. The meeting transcripts are attached to the October, 2005, Scoping Meeting Summary and supplement dated September 21, 2005. In addition to the comments received during the public meetings, eight comment letters and copies of two news articles were received by the NRC in response to the Notice of Intent.

At the conclusion of the scoping period, the NRC staff and its contractor reviewed the transcripts and all written materials to identify specific comments and issues. Each set of comments from a given commenter was given a unique identifier (Commenter ID), so that each set of comments from a commenter could be traced back to the transcript or letter by which the comments were submitted. Specific comments were numbered sequentially within each comment set. Several commenters submitted comments through multiple sources (e.g., afternoon and evening scoping meetings). All comments received and NRC staff responses are included in the Palisades Scoping Summary Report dated December 14, 2005.

Table A-1 identifies the individuals who provided comments applicable to the environmental review and the Commenter ID associated with each person's set(s) of comments. The

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Individuals are listed in the order in which they spoke at the public meeting. To maintain consistency with the Palisades Scoping Summary Report, the unique identifier used in that report for each set of comments is retained in this appendix.

Specific comments were categorized and consolidated by topic. Comments with similar specific objectives were combined to capture the common essential issues raised by the commenters. The comments fall into one of the following general groups:

- Specific comments that address environmental issues within the purview of the NRC environmental regulations related to license renewal. These comments address Category 1 or Category 2 issues or issues that were not addressed in the GEIS. They also address alternatives and related Federal actions.
- General comments (1) in support of or opposed to nuclear power or license renewal or (2) on the renewal process, the NRC's regulations, and the regulatory process. These comments may or may not be specifically related to the Palisades license renewal application.
- Questions that do not provide new information.
- Specific comments that address issues that do not fall within or are specifically excluded from the purview of NRC environmental regulations related to license renewal. These comments typically address issues such as the need for power, emergency preparedness, security, current operational safety issues, and safety issues related to operation during the renewal period.

Table A-1. Individuals Providing Comments During Scoping Comment Period

Commenter		Affiliation	Comment Source ^(a)
ID	Commenter	(If Stated)	
PS-A	Ken Richards		Afternoon Scoping Meeting
PS-B	Kevin Kamps	Nuclear Information and Resource Service	Afternoon Scoping Meeting
PS-C	Barbara Geisler		Afternoon Scoping Meeting
PS-D	Corinne Carey	Don't Waste Michigan	Afternoon Scoping Meeting
PS-E	Dale Lewis	Mayor, South Haven	Afternoon Scoping Meeting
PS-F	Tom Tanzlos	County Commissioner, First District of Van Buren County	Afternoon Scoping Meeting
PS-G	Paul Harden	Site Vice President of Palisades	Afternoon Scoping Meeting
PS-H	Nancy Whaley		Afternoon Scoping Meeting
PS-I	Leroy Wolins		Afternoon Scoping Meeting
PS-J	Chuck Jordan		Afternoon Scoping Meeting
PS-K	Michael Keegan		Evening Scoping Meeting
PS-L	Gary Karch		Evening Scoping Meeting
PS-M	Kathy Barnes		Evening Scoping Meeting
PS-N	Corinne Carey	Don't Waste Michigan	Evening Scoping Meeting
PS-O	Maynard Kaufman		Evening Scoping Meeting
PS-P	Ken Richards		Evening Scoping Meeting
PS-Q	Kevin Kamps	Nuclear Information and Resource Service	Evening Scoping Meeting
PS-R	Ross Stein	Supervisor, South Haven Charter Township	Evening Scoping Meeting
PS-S	Paul Harden	Site Vice President of Palisades	Evening Scoping Meeting
PS-T	Larry King	Greater South Haven Chamber of Commerce	Evening Scoping Meeting
PS-U	Elizabeth Anderson		Evening Scoping Meeting
PS-V	Marilyn Miller		Evening Scoping Meeting
PS-W	Wayne Rendell	Supervisor, Covert Township	Evening Scoping Meeting
PS-X	Tonya Schuitmaker		Letter (ML052420495)
PS-Y	Nancy Ann Whaley	Supervisor, Geneva Township	Letter (ML052420497)
PS-Z	Wayne Rendell	Supervisor, Covert Township	Letter (ML052420503)
PS-AA	Swami Tapasanarda		Letter (ML052420506)
PS-BB	Murielle and John Clark		Letter (ML052510389)
PS-CC	Gary Karch		Letter (ML052510391)
PS-DD	Kathryn Barnes		Letter (ML052510393)
PS-EE	Kevin Kamps	Nuclear Information and Resource Service	Letter (ML052510468)
PS-FF	Kevin Kamps	Nuclear Information and Resource Service	Letter (ML052420502)
PS-GG	Kenneth Richards		Letter (ML052420501)

(a) The afternoon and evening transcripts can be found under accession numbers ML052630432 and ML052630449, respectively.

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Comments applicable to this environmental review and the NRC staff's responses are summarized in this appendix. The parenthetical alphanumeric identifier after each comment refers to the comment set (Commenter ID) and the comment number. This information, which was extracted from the Palisades Scoping Summary Report, is provided for the convenience of those interested in the scoping comments applicable to this environmental review. The comments that are general or outside the scope of the environmental review for Palisades are not included here. More detail regarding the disposition of general or inapplicable comments can be found in the Summary Report. The Agencywide Document Access and Management System (ADAMS) accession number for the Scoping Summary Report is ML053490390.

This accession number is provided to facilitate access to the document through the Public Electronic Reading Room (ADAMS) (<http://www.nrc.gov/reading-rm.html>).

Comments in this section are grouped in the following categories:

- A.1.1 License Renewal Process
- A.1.2 Support of License Renewal at Palisades Nuclear Plant
- A.1.3 Opposition to License Renewal at Palisades Nuclear Plant
- A.1.4 Opposition to Nuclear Power
- A.1.5 Aquatic Ecology
- A.1.6 Threatened and Endangered Species
- A.1.7 Surface-Water Quality, Hydrology, and Use
- A.1.8 Human Health
- A.1.9 Socioeconomics
- A.1.10 Postulated Accidents
- A.1.11 Uranium Fuel Cycle and Waste Management
- A.1.12 Alternative Energy Sources

A.1 Comments and Responses

A.1.1 Comments Concerning License Renewal and Its Processes

Comment: I'm glad you are asking for public input. And it may be that NRC meetings are of a different sort. Maybe hearings that I have attended in the past have needed to seem almost closed. But I'm reading from someone in your system who says, I am truly embarrassed by the way the public is systematically excluded from the regulatory process. It reminds me of the old Soviet bloc countries when they conducted elections with only one name on the ballot. The nuclear industry is carrying a sign in one hand proclaiming that nuclear power is a solution to the global warming problem. Its other hand is locking the door on public participation in the regulatory process. Now today so far that doesn't seem to be true. So I'm hoping that there's

been a change within the NRC and those plants that it is in a sense responsible for, and that, not just at this meeting, but at all meetings, comments will be taken seriously as a part of a democratic planning process. (PS-C-8)

Comment: I'd like to commend the NRC for having these meetings at times that people could come whether during the day or in the evening. I think that is a change that's very good. (PS-J-1)

Comment: I really can't truly say that I feel NRC or the company representatives are truly advocates of the public. And, I understand there are some areas that do have such a commission or an individual, I think Wisconsin has something close to that, if anybody can correct me. I understand that Nevada has something in that line, where the public truly feels that, that they are truly represented. And, I just don't think that that's our feeling here. Even though you're nice guys; I don't, I'm not questioning that you're nice guys. I'm just feeling that the system needs more to be viable. (PS—18)

Comment: A process that appears designed to intentionally disenfranchise a population with which it is supposed to promote dialogue can only be looked at with skepticism and must be considered a ruse and a sham. Although the model as presented for public comment regarding the request for a 20-year license extension for the Palisades Nuclear Plant in Van Buren County, Michigan, meets guidelines as established by the NRC, it provides little opportunity and draconian deadlines for true citizen participation to exist. Such restrictions may have been dismissed by communities in which other license renewals have been requested and approved, but I submit that Southwest Michigan holds itself to higher standards and wishes to challenge the industry paradigm and demand a more reasonable and humane response to this license renewal process than the flawed one that has been foisted upon us.

Current standards only allow for easy participation from persons living within the industry-designated 10-mile radius emergency planning zone. Obviously radiation travels far greater distances than that, and even the extended 50-mile radius does not realistically encompass the distance a radiation release can travel. Meetings have been scheduled only in the South Haven area with limited publicity and at times that impede a working public's ability to attend. These dates and locations may be convenient for Palisades representatives and NRC staff but not to residents in the greater area affected by the plant's existence. For example, the next public meeting in which these and other comments submitted by today's deadline will be discussed is scheduled for the Friday before Labor Day. This insults the public, inhibits participation by interested citizens, and denigrates the integrity of the process.

Materials pertinent to the license currently available only at the South Haven library should be made available in a majority of libraries located within the 50-mile radius. The whole process needs to be expanded to include public meetings and comment opportunities in all communities

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within the entire 50-mile radius who wish to request them. If the plant owners and managers have nothing to hide and take pride in their operation, then they should have no reservations about taking their meetings on the road and extending the process to a more reasoned pace. And if the NRC believes in the integrity of their process, they should likewise be up to this challenge. It is 6 years before the current license expires. There is no need to rush through the process. In fact, a more lengthy approach that is truly inclusive of citizen participation from affected communities should be encouraged. (PS-CC-1)

Response: *The comments are in regard to license renewal and its processes in general. The Commission has established a process, by rule, for the environmental and safety reviews to be conducted to review a license renewal application. The development of the Commission's regulations governing the license renewal process was subject to public review and comment. The comments will not be evaluated further.*

Comment: On this August 22nd deadline. When does the clock start ticking on that, and I guess why such a short deadline given that today is July 27th? (PS-B-2)

Comment: And I would ask that the August 22nd deadline for comments be extended because this really is the first opportunity for people to learn about this environmental review process. So that doesn't leave much time for people to get up to speed to read these very thick documents and to submit comments. And I guess I'd just like to end by saying that there's a growing coalition of individuals and organizations in this area who fully intend on intervening against the license extension at Palisades. And we would, perhaps this isn't the exact correct forum, but we would express a request for an extension to that August 8th deadline as well, given the limited resources of these nonprofit groups and individuals. (PS-B-19)

Comment: And, the last thing that I'll bring up is, I have to choose here. I would again reemphasize the importance of extending the deadlines, because we're 5 years out right now from the year 2011 when this license expires. So, the question is, what's the rush? Why are these deadlines so rushed? And, also, it's a 20-year license extension. So, we should have more than just 60 days to comment on 20 years of impacts. But, of course, as Mr. Karch said, it's a lot longer than 20 years. The waste is going to be here forever. (PS-Q-13)

Comment: The public is not given enough notification about the meetings, and the meetings are few and poorly scheduled for times most cannot attend. The public is expected to offer comments on the EIS and scope and screening, etcetera, without adequate preparation. Although the current license is valid through 2011, at this time, 2005, an extension is being sought and the time allotted for public comment, debate, and even awareness is under pressure and time constraints. What is the rush? I would like to request an extension beyond August 22 for public comment on the scope of the Palisades-specific supplement to the generic environmental impact statement for a much later date after the public is aware of such documentation and such is offered. (PS-DD-4)

Comment: There are a multitude of environmental concerns in addition to those raised above that we will like to address but, lacking adequate time to digest and respond to voluminous NRC documents, have been unable to do so. By letter dated August 19, 2005, to Andrew L. Bates, Acting Secretary, Office of the Secretary, U.S. Nuclear Regulatory Commission, Washington, D.C., 20555-0001, a request was made for a 60-day extension. Again, we respectfully request that NRC grant an additional 60 days to the concerned citizens of Michigan, Indiana, and Illinois, and the organizations which represent them, in which to file scoping comments on NRC's Environmental Review of the Palisades nuclear power plant 20-year license extension proposal. (PS-EE-40)

Response: *The comments request an extension to the scoping comment period. The U.S. Nuclear Regulatory Commission (NRC) established the time period for comments on the scope of the environmental review for license renewal to balance the Commission's goal of ensuring openness in the regulatory processes, with its goal of ensuring that the NRC's actions are effective, efficient, realistic, and timely. The requests did not provide a sufficient basis for an extension to the established comment period. The comments will not be evaluated further.*

The regulations permit a nuclear power plant licensee to apply to the NRC to renew a license as early as 20 years before expiration of the current license. The NRC staff has determined that 20 years of operating experience is sufficient to assess aging and environmental issues at the site. A major consideration for seeking license renewal so far in advance of the expiration date of the current license is that it can take up to about 10 years to design and construct major new generating facilities, and long lead times are required by energy-planning decision makers.

Comment: I'd also like to point out that this entire licensing or license extension proceeding is premature because the Nuclear Regulatory Commission is reevaluating its pressurized thermal shock rule. And this revision is not complete. So, this proceeding should be postponed until after that proceeding is complete. And, I need clarification from the NRC as to whether the old rule applies at Palisades or the new rule is going to apply at Palisades. And, for that reason alone, this entire proceeding should be postponed. That's another reason for the deadlines to be extended. (PS-Q-5)

Response: *Nuclear plant licensees are required to comply with all applicable currently effective NRC regulations, including the Pressurized Thermal Shock (PTS) Rule. In the event that the PTS Rule is revised, Nuclear Management Company, LLC (NMC), the Palisades licensee, will be expected to comply with the new rule in accordance with the effective date and any implementation date provided for in the revised rule. The comment will not be evaluated further.*

Comment: Further, I would ask as I have at public meetings, that certain essential elements not be excluded from evaluation.

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4. The actual and complete analysis of the plant by a scientific and independent agency, and not by Palisades or its subsidiaries, and an analysis not dependent on documentation by Palisades, but based on the actual scientific evaluation of the current status of the facility, including, but not limited to, embrittlement. (PS-DD-7)

Response: *NRC is an independent agency established by the Energy Reorganization Act of 1974 to regulate civilian use of nuclear materials. The NRC's mission is to regulate the nation's civilian use of by-product, source, and special nuclear materials to ensure adequate protection of public health and safety, to promote the common defense and security, and to protect the environment. As part of this mission, the NRC is responsible for the reviewing and issuance of initial licenses and renewed licenses for nuclear power facilities.*

The Advisory Committee on Reactor Safeguards (ACRS) is an advisory committee mandated by the Atomic Energy Act of 1954, as amended, under the Federal Advisory Committee Act (FACA). The ACRS is independent of the NRC staff and reports directly to the Commission, which appoints its members. The operational practices of the ACRS are governed by the provisions of the FACA. The ACRS is composed of recognized technical experts in their fields. It is structured so that experts representing many technical perspectives can provide independent advice, which can be factored into the Commission's decision-making process. Most ACRS meetings are open to the public, and any member of the public may request an opportunity to make an oral statement during a committee meeting.

During the license renewal process, the ACRS acts as an independent third-party oversight group that reviews and makes recommendations to the Commission on the safety aspects of renewal applications. The ACRS mandate does not include National Environmental Policy Act (NEPA) reviews. The comment will not be evaluated further.

Comment: I'm looking forward to intervening. But, on the schedule that you put up with all the dates, perfunctory meetings and niceties, I didn't see a scheduling for the ASLB in there. And, what happens once we intervene? And, what happens to this process then? (PS-K-5)

Response: *The Atomic Safety and Licensing Board establishes schedules for its proceedings independently of the NRC staff's safety and environmental reviews. The schedule established by the board is dependent upon the filing of petitions and motions by interested parties.*

The schedule initially established by the NRC staff for the safety and environmental reviews presumes that a hearing will be held. This schedule will be revised as appropriate during the review based on the board's decisions on the admissibility of any contentions filed. The comment will not be evaluated further.

Comment: Relating to the EIS, is an Environmental Impact Statement required, or are you going to be looking at an environmental assessment with a FONSI [Finding of No Significant Impact], or are we going to have a full EIS? (PS-K-2)

Response: *The Commission has decided that the NRC will prepare a site-specific supplement (SEIS) to the generic environmental impact statement on license renewal (GEIS; NUREG-1437) for each license renewal application. This decision was made to ensure that the public had the highest level of participation in and confidence about the NRC's action on a license renewal application. The NRC will be issuing a supplement to the GEIS for the renewal of the operating license (OL) of Palisades Nuclear Plant. The comment will not be evaluated further.*

A.1.2 Comments in Support of License Renewal at Palisades Nuclear Plant

Comment: Our City Council passed a resolution favoring the renewal of the Palisades license agreement or renewal. Palisades has been a very good neighbor to South Haven. We kind of wish though that it was in the city so we get more taxes. Palisades has provided many good paying jobs and that's what we're looking for. And Palisades is probably the biggest single employer of our citizens of South Haven. It would be very detrimental to the economy of South Haven, you know, if Palisades were to close. (PS-E-1)

Comment: The plant was built in 1971 and began operation about that time. But I think the track record over the last 35 years has indicated that the plant has operated in an environmentally safe manner. It has been closed down from time to time for refurbishing and changes that come along. (PS-F-1)

Comment: The Mayor is right, it is a large employer to the community. A large part of our tax base. But if it wasn't for the safe operation of that plant we would not support its continued operation. (PS-F-2)

Comment: On March 22nd, we unanimously passed a resolution in support of the continuing operation of the plant and the extension of the license. (PS-F-3)

Comment: Palisades has received letters and resolutions of support from 13 different local government bodies, including the City of South Haven; the townships of Covert, South Haven, Geneva, Antwerp, Columbia, Decatur, and Pine Grove; the Greater South Haven Area Chamber of Commerce; U.S. Representative Fred Upton; and the concurrent resolution from the Michigan State House and Senate. These bodies wouldn't have supported our license renewal if they also didn't feel that we could continue to be a safe provider for another 20 years. (PS-G-3; PS-S-2)

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Comment: At our April 12th, 2005, board meeting, the Geneva Township Board unanimously voted to support the license renewal by resolution which was presented to Mark Savage at this meeting. It is my strong belief that the negative personal and economic impact that all of us will feel if the operating license for Palisades is not extended. The loss would be a great magnitude to this community. (PS-H-2)

Comment: Earlier in the year, we passed a motion at a township board meeting supporting the licensing process for Palisades Nuclear Plant. Palisades has been an excellent neighbor for the community. The people that work there are civic minded. We have people that are Boy Scout leaders, have served on township boards. Palisades has been very community oriented. They've helped the, I'm chairman of the emergency services. They've helped the fire department, the emergency services. They help community functions also, so, it's a very welcome aspect to this community. The people there provide, buy homes, have children for the schools. (PS-R-1)

Comment: As probably everybody in this room knows, for every dollar that's spent in the community, that dollar's circulated six or seven times, so it's a good economic asset to the community. (PS-R-2)

Comment: And, you can see in that involvement their commitment to safety out at the plant. I do know a number of folks that work out there, and they are very safety conscious, and they bring that home with them and into the work that they do in the community and in their social lives. So, we're very pleased to have the plant here, and encourage the relicensing and reinvestment here in the South Haven Area. (PS-T-2)

Comment: I really didn't come prepared to speak, but, I wanted to correct, Gary Karch said Covert hasn't benefitted from this power plant. That's very far from the truth. We have a wonderful fire department, we have a full time police department. We have water throughout the township. Without Consumers help with this, that wouldn't happen. Covert is very much in favor of this renewal. (PS-W-1)

Comment: Attached is a copy of House Concurrent Resolution 8 sponsored by myself supporting the relicensure of Consumer Energy's Palisades Nuclear Power Plant. This resolution was adopted unanimously by the Michigan Legislature demonstrating our position that the State of Michigan fully supports the relicensure and long-term support of this facility. (PS-X-1)

Comment: As the Representative of Covert, home of Palisades, I can assure you of their outstanding and expletory record throughout the community as an employer, neighbor, and communicator with the entire Southwest Michigan area. Consumers Energy works tirelessly to keep the public informed and give surety to individuals with questions or concerns. (PS-X-2)

Comment: At the April 12, 2005, board meeting, the Geneva Township Board unanimously voted to support the license renewal by resolution which was presented to Mark Savage at that meeting. (PS-Y-5)

Comment: It is my strong belief that the negative personal and economic impact that all of us will feel if the operating license for Palisades is not extended would be of great magnitude to this community. I am asking your full support for the 20-year renewal of the licensing of Palisades. (PS-Y-6)

Comment: Throughout the years, Consumers Energy (now managed by Nuclear Management Company) and the Palisades Nuclear Plant have been good neighbors. Covert Township is very much in support of their efforts to get their operating license renewal. (PS-W-5)

Response: *The comments are supportive of license renewal at Palisades and are general in nature. The comments will not be evaluated further.*

A.1.3 Comments in Opposition to License Renewal at Palisades Nuclear Plant

Comment: I understand that many people are employed by Palisades and it's a part of the economy here and that makes it difficult to criticize. However, if we look ahead to the seventh generation, as Native Americans say, there are some problems. (PS-C-3)

Comment: We do not need it, and we should stop making it as fast as we can. And the quickest way to do that in this area; we have a chance, we don't have to do anything. We just have to get the NRC to not renew the license of these people out here who are producing all this death potential waiting for that clunk, clunk, clunk, clunk for somebody to drill a hole and open up Pandora's Box and kill God knows how many millions of people. Because that is the ultimate result of nuclear power. Whether, how safe it is now it's like jumping off the Empire State Building. As you go by the fifty-second story, see I haven't been hurt a bit. (PS-I-8)

Comment: But this is very important, and I hope people will listen that death is coming if we stay with these nuclear power plants, and this is one chance to get rid of one of them. (PS-I-9)

Comment: We are opposed to renewing the Palisades license for two main reasons. (PS-J-3)

Comment: So we as Greens oppose the renewal of the Palisades Plant because of its age, because it's old, and because there are no solutions to what to do with the waste. (PS-J-7)

Comment: It's all public risk, private profit. And, I have a problem with that. And, this is an aging plant...This plant should have been shut down in 1981. (PS-K-12)

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Comment: I also have a problem with them, Consumers having a fire where trailers of documentation were burnt on the casks; the documentation about the cask was burnt in a fire that was suspect and is still under, I don't know if it's still under investigation, but, I don't believe arson was ever ruled out. A caveat to that was that Consumers Power did provide the local fire department, about 5, 6 years previously, with about an \$800,000 piece of fire equipment. So, if it looks like a duck, walks like a duck, smells like a duck, it's a duck. And this is a rotten eggs here. So, don't bring us 20 more years of this. (PS-K-15)

Comment: So, I would just point that out. Let's not make 20 more years, because there certainly is no place for that. There's no place for the first 40 years of waste. (PS-K-16)

Comment: So, I have a lot of concerns about this [Palisades] and I think that it needs to be shut down. (PS—16)

Comment: And, I think that another 20 years of this nuclear power plant in operation is risking a meltdown and I don't want it. And, I think anybody in this room does not want that to happen here. And, honestly, I think from studying everything, especially because it's too much of the fox in the hen house doing the reporting, it just cannot be guaranteed. (PS—19)

Comment: We need to not sell our souls for jobs or for a “solution” that creates eons of poisonous aftermath. (PS—12)

Comment: You know, I know I'm being sold a bill of goods here. I know we're got this 40-year old reactor out there that we're going to just, we're going to run it for another 20 years. I'm nervous about that. It gives me great cause for concern, and I just don't think it's a good idea. (PS-P-2)

Comment: We can turn this greenhouse effect around. We can fix these problems, but right now, we want most of our resources going to what's making the right people a lot of money. And, they're just trapped there. And, we're just getting this continual PR [expletive] that that's all going to be okay. And, I just don't want South Haven, I don't want my hometown to be the place where this really goes wrong, when the world gets taught a lesson it'll never forget, like they had to do over in Russia. Not here. (PS-P-5)

Comment: I just think that maybe it's good, we've got a new power plant right across the way. And, maybe that could just, you know, ease this one [Palisades Nuclear Plant] out and pump this one up. (PS-U-3)

Comment: Relicensing Palisades Nuclear Plant in Michigan is a bad idea. (PS-AA-1)

Comment: I support saving nuclear power. Put money into Pebble Bed Reactors. We don't need another meltdown like Chernobyl! I live nearby! If you do give it another 20 years at least send iodine tablets to everyone in a 50-mile radius! (PS-AA-2)

Comment: The United States decided to put nuclear on hold for a lot of reasons; nothing has changed with respect to those concerns, to fire up nuclear generation again. The Great Lakes are far too valuable a water resource to have it ringed by nuclear power plants and nuclear waste storage. (PS-BB-3)

Comment: We vote NO. (PS-BB-4)

Response: *The comments oppose license renewal at Palisades Nuclear Plant and are general in nature. The comments will not be evaluated further.*

Comment: I feel that to relicense a dangerous, embrittled, and aged plant on the shores of Lake Michigan is pure folly as is the storage of the spent fuel rods which many of us tried through an organization called Palisades Watch to stop a few years ago. We were unsuccessful. I feel this plant should be shut down and retired for service as I believe was originally planned. I may be confused about that but I thought in all of these plants in the beginning it was said, you know, they won't operate forever. They'll last a certain amount of time then they'll be retired because they're not going to be safe after that. So I'm confused as to why relicense, relicense, relicense, how long would this go on? I need more information. I do not feel that it is socially or fiscally prudent to relicense Palisades. I feel it is unacceptable to put local residents at such grave risk. (PS-C-10)

Comment: I say, our psychological body burden, we've had enough psychological body burden in Michigan, here, especially in southwestern Michigan. We've got [DC] Cook and it's probably a done deal that they're going to get another 20 years. But, we don't need this little Palisades with all its history of safety infractions in the hundreds that made headlines over the years. We don't need this anymore. (PS-L-4)

Comment: I believe because of the embrittlement of Palisades, and because of the history of problems with the plant, including staff/management problems and repair backlogs, and after speaking with local residents and finding that there is a cancer pocket in the beach community, and that Palisades has repeatedly asked for safety exceptions to keep operating, one can only conclude that this is a nuclear reactor that is past due and should not be relicensed. (PS-DD-1)

Comment: Since the water of the Great Lakes is being bottled and sold as drinking water, it is an invaluable resource to the citizens of the region and the world. It is not enough to repair problems as they occur, but it is imperative to put an end to the premise that such repairs will

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always be possible, and in acknowledging that with a cracked and aging nuclear facility, that is, Palisades, it is not worth the risk to keep it running. (PS-DD-8)

Response: *The NRC makes the decision to grant or deny a license renewal based on whether the applicant has demonstrated that the environmental and safety requirements in the NRC's regulations can be met during the renewal term. The NRC's ongoing reactor licensing and oversight programs focus on prevention of safety problems so that potential issues such as aging and reactor vessel embrittlement do not lead to accidents and subsequent environmental impacts. The intent of the NRC's safety review is to determine if the licensee has adequately demonstrated that the effects of aging will not adversely affect any systems, structures, or components identified in Part 54.4 of Title 10 of the Code of Federal Regulations (10 CFR 54.4). The safety review process includes site inspections to assess whether the applicant has implemented and complied with the regulations for license renewal. The review results in a publicly available Safety Evaluation Report (SER) available online at <http://www.nrc.gov/>. The comments oppose license renewal and are general in nature. The comments will not be evaluated further.*

Comment: It is time to close it. It should have been closed a long time ago. We would have had less waste lying out on the shores of Lake Michigan ready for terrorists to make possible use of. (PS-I-5)

Response: *The NRC and other Federal agencies have heightened vigilance and implemented initiatives to evaluate and respond to possible threats posed by terrorists, including the use of aircraft against commercial nuclear power plants and independent spent fuel storage installations (ISFSIs). Malevolent acts remain speculative and beyond the scope of a NEPA review. The NRC routinely assesses threats and other information provided to it by other Federal agencies and sources. The NRC also ensures that licensees meet appropriate security levels. The NRC will continue to focus on prevention of terrorist acts for all nuclear facilities and will not focus on site-specific evaluations of speculative environmental impacts. While these are legitimate matters of concern, they should continue to be addressed through the ongoing regulatory process as a current and generic regulatory issue that affects all nuclear facilities. The NRC has taken a number of actions to respond to the events of September 11, 2001, and plans to take additional measures. However, the issue of security and risk from malevolent acts at nuclear power plants is not unique to facilities that have requested a renewal to their license and, therefore, will not be addressed within the scope of this SEIS. The comment opposes license renewal at Palisades and will not be evaluated further.*

A.1.4 Comments in Opposition to Nuclear Power

Comment: Anyway I was very interested in atomic power and along came my *Scientific American* and my *Popular Mechanics* and so on. We're going to have electricity for one cent a

kilowatt hour I was told on the cover of one of those magazines. This is atomic energy. And I believed it all. I have since come to believe otherwise. (PS-I-1)

Comment: It is false pride, and it is not worth it, because, you talk about kids. What are you going to do if there is a meltdown? How are you ever going to get your kids back? You won't. You will give everything you have to get your life back and get your kids back. You might have kids that have cancer. You might have kids that are killed instantly. You could have kids that will have kids like at Chernobyl, your grandkids might be mutated. I mean, I've met the kids of Chernobyl. And, if you saw those kids, how wounded they were. They were blind, they were handicapped, it was so sad. And, there was American kids who were healthy and playing and vibrant and alive and here are these poor kids. And, the only difference is, a meltdown. (PS—18)

Comment: Now, I have the impression after 20 years of Don't Waste Michigan, that the public really doesn't know very much about nuclear issues although I think that, at least I find there are people scattered everywhere I go that are very much interested because they realize that energy is one of the major issues that is part of our world today and our future, my grandkids' time. And, that, yes, we need to do something about these energy issues. But, I still, I'm very much, I'm sorry, my e-mail address is [auntynuke]. And, so you can contact me, [auntynuke] AOL.com. (PS—3)

Comment: I think, I agree with him, that the only place for a nuclear reactor is on the sun and obviously we're not going to shoot the waste or do our nuclear stuff on the sun because getting up there is the other part of the problem. (PS—4)

Comment: One more comment about clean. Nuclear power is clean in that you cannot taste, or you cannot smell it. You can't see it, you can't write your name on it on the windshield of the car. The particulates are so very very fine that when they use it in depleted uranium ammunition, etcetera, which is involved quite directly with the whole power situation, that the very very fine particulate is very incendiary, and anytime it's, a metal piercing ammunition is, I understand is depleted uranium whether it's done by plane or some ground firing or whatever. But, it's very very fine and it burns and it invades the environment. Now, how much of that very fine particulate is also part of the picture of a nuclear power plant? How much does it invade the environment, in comparison to the heavy particulates of fossil fuels? Oh, and clean, I mentioned this morning that I understand that yes, you can taste a radioactive exposure. It gives a metallic taste on the tongue, you taste a penny. So, I'm not a scientist, obviously, but I am very concerned that we need all forms of science and the emotion that comes from human beings in order to take good care of my five grandkids. (PS—13)

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Comment: We can't really call it clean when we look at the results of the DU ammo. Depleted uranium ammunition that is being used has been used in every war the United States has been in since Bosnia including Afghanistan, including two now in the Iraq area etcetera. (PS-D-7)

Comment: I don't want to see anybody lose their jobs. But, I must admit, I was raised by people who were against nuclear power. (PS-U-1)

Response: *The comments oppose nuclear power, in general, and will not be evaluated further.*

A.1.5 Comments Concerning Aquatic Ecology Issues

As stated in 10 CFR Part 51, Table B-1, Category 1 aquatic ecology issues for plants with cooling-tower heat dissipation systems include:

Category 1

- Accumulation of contaminants in sediments or biota
- Entrainment of phytoplankton and zooplankton
- Cold shock
- Thermal plume barrier to migrating fish
- Distribution of aquatic organisms
- Premature emergence of aquatic insects
- Gas supersaturation (gas bubble disease)
- Low dissolved oxygen in the discharge
- Losses from predation, parasitism, and disease among organisms exposed to sublethal stresses
- Stimulation of nuisance organisms (e.g., shipworms)
- Entrainment of fish and shellfish in early life stages
- Impingement of fish and shellfish
- Heat shock

Comment: Consumers Energy and Nuclear Management Company admit, in Section 3.1.3.3 "Biofouling Control" on Page 3-7 of their Environmental Report that NMC uses biocides such as chlorination, bromination, and amine formulations. The IJC [International Joint Commission] also called for virtual elimination of toxic discharges into the Great Lakes, and identified radionuclides as persistent toxins that also needed to be virtually eliminated from the Great Lakes. The IJC commissioned two reports, the first on the radionuclide inventory in the Great Lakes, and the second on the bioaccumulation of radionuclides in Great Lakes biota. (PS-EE-14)

Response: *The accumulation of contaminants is a Category 1 issue that has been evaluated in the GEIS. All effluent discharges are regulated under the provisions of the Clean Water Act*

and the implementing effluent guidelines, limitations, and standards established by the U.S. Environmental Protection Agency (EPA) and the delegated State authorities. Conditions of discharge for each plant are specified in its National Pollutant Discharge Elimination System (NPDES) permit issued by the State or the EPA. [In its response to the Ninth Biennial International Joint Commission (IJC) Report, the EPA concluded that “The U.S. will continue to monitor nuclear generating stations to insure that toxic chemicals are not being used in large quantities and that radioactive forms of toxic chemicals are not being generated in sufficient amounts to cause significant impact on the Great Lakes ecosystem” (EPA 2006).] The comment does not provide new and significant information, and therefore, will not be further evaluated.

Comment: What has been the impact of zebra mussels and quagga mussels on the Palisades plant? How have these species been controlled at Palisades and how have the use of toxics such as Betz Clam-Trol impacted the water quality on which the public relies? What would be the consequences at Palisades if these toxics were not used? What has been the history and mitigation attempts regarding fish kills at Palisades? What game fish have been impacted by the operation of the Palisades reactor? What has been the bioaccumulation and bioconcentration of persistent toxics both radiological and nonradiological contamination in recreational and commercial game fish? (PS-EE-38)

Response: *Zebra mussel control is discussed in Sections 2.2.3 and 2.2.5 of the SEIS. Quagga mussels are not present at the Palisades site. Aquatic ecology impacts are Category 1 issues that were analyzed in the GEIS. The comment does not provide new and significant information in these areas; therefore, it will not be evaluated further.*

A.1.6 Comments Concerning Threatened and Endangered Species

Comment: NMC/Consumers Environmental Report identifies numerous federal and State of Michigan endangered, threatened, candidate, or species of special concern – such as eastern box turtle, lake sturgeon, lake herring, creek chubsucker, Pitcher’s thistle, prairie warbler, prairie vole, eastern massasauga rattlesnake, spotted turtle, Indiana bat, globe-fruited seedbox, scirpus-like rush, bald rush, Carey’s smartweed, and sedge that either already live at or near the Palisades reactor, or very likely could in the future. Twenty more years of reactor operations threatens these already threatened, endangered, or candidate species, including daily “routine” radiation releases and/or potential large-scale radiation releases’ harmful impact on the threatened, endangered, or candidate genetics of these species. In addition, the dunes upon which Palisades is built and operates are recognized as Critical Dune Areas under Michigan’s Natural Resources and Environmental Protection Act and are recognized by Covert Township as an Environmentally Sensitive Area, and thus should be protected against 20 more years of daily “routine” and potential large-scale accidental radioactive contamination. Likewise, the Mesic southern forest on the south end of the Palisades site is recognized as a prime

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example of this ecosystem type by the Michigan National Features Inventory and should be protected against ongoing radioactive contamination for another two decades past 2011. (PS-EE-31)

Response: *The NRC conducts an independent analysis of the impacts of license renewal on threatened and endangered species. Federally listed and State-listed threatened and endangered species that have the potential to occur in the vicinity of Palisades are discussed in Sections 2.2.5 and 2.2.6 of the SEIS. The potential impacts of renewing the Palisades OL on Federally listed threatened and endangered species are discussed in Section 4.6 of the SEIS.*

A.1.7 Comments Concerning Surface-Water Quality, Hydrology, and Use Issues

Comment: Over the years I've been watching this thing among the issues that first came up is there was a 7-mile cooling tube that went out into the lake from the plant to cool this. That's why eventually they had to build the steam, they had to build the cooling towers because there was a lot of complaint about this, what effect this cooling tube would have on the lake, on the environment, and under the snail garter thing and all of that. And as I understand it, they are using that cooling tube from time to time. So is it really correct to say that, you know, we don't have a pond, we have a fuel pool that we store the old assemblies until they started taking them out and putting them on the beach? But are they still using the cooling tube out there then? (PS-A-1)

Response: *A description of the Palisades Nuclear Plant cooling-water systems will be provided in Chapter 2 of the SEIS.*

Comment: And I'd ask you to look at the impacts of the recently built water intake for the drinking water supply of South Haven, just a few years ago, which I was shocked to see was located so very close to the Palisades reactor. So I'd ask you to look at the outflow, the discharge of radioactive particles as well as toxic chemicals from the Palisades Nuclear Plant being drawn into that water intake. What kind of impact that's having on South Haven residents and tourists who are visiting? (PS-B-12)

Comment: The National Discharge Permit, is this part of the consideration? I'm talking about the biocides, the slimicides, the – size, the heavy metals, the petrochemicals that are put out of this plant on a daily, routine basis. Are those going to be part of the EIS? (PS-K-1)

Comment: There are so many things going on in this community. There's a high cancer rate. I have got, you know, different things have happened to me. Swimming, etcetera. When I was a kid, I came here and swam. And, the water was clean, I could drink it. Now, it's full, it's scummy, it's full of algae. It's a huge change in the quality. The water's still cold. That does not explain the algae. So, there's a lot of things in the environment I think that are happening that are unexplained. (PS-M-6)

Comment: The impact of 20 additional years of pollution by toxics disclosed but not adequately controlled under requirements of the National Pollutant Discharge Elimination System (NPDES) will directly affect water quality of nearby sources, including Lake Michigan. In 2000, for example, Palisades was found to be in “continuing noncompliance” for its apparent multiple misuses of Betz Clam-Trol in Lake Michigan for the dispersion of mussels and clams affecting the reactor’s water intakes. See <http://www.epa.gov/region5/water/weca/reports/mi4qtr01.txt>. NPDES violations also contradict the spirit, intention, and explicit recommendation of the International Joint Commission (IJC). In its “Ninth Biennial Report on Great Lakes Water Quality,” the Commission’s Recommendation #16 (at p. 42) urges that “[g]overnments monitor toxic chemicals used in large quantities at nuclear power plants, identify radioactive forms of the toxic chemicals and analyze their impact on the Great Lakes ecosystem.” (PS-EE-13)

Comment: The radioactive and toxic chemical emissions from the Palisades nuclear power plant into the waters of Lake Michigan contaminate the recently installed drinking water supply intake for the City of South Haven, built just offshore from Van Buren State Park and just downstream from the Palisades reactor, due to the direction of the flow of Lake Michigan’s waters and the very close proximity of the Palisades reactor to the South Haven drinking water supply intake. U.S. National Oceanographic and Atmospheric Administration models confirm the direction of water flow in Lake Michigan toward the intake. (PS-EE-2)

Response: *The comments are related to Category 1 surface-water quality, hydrology, and use issues evaluated in the GEIS. Consumers Energy Company Palisades Nuclear Plant’s compliance with NPDES requirements and the operations of the South Haven water treatment system will be discussed in Chapter 2 of the SEIS.*

The EPA reviewed the Ninth Biennial IJC Report and concluded that “The U.S. will continue to monitor nuclear generating stations to insure that toxic chemicals are not being used in large quantities and that radioactive forms of toxic chemicals are not being generated in sufficient amounts to cause significant impact on the Great Lakes ecosystem” (EPA 2006). The comments do not provide new and significant information; therefore, they will not be evaluated further.

Comment: Global warming could also alter the water levels and water temperatures in Lake Michigan over the course of the 20-year license extension, impacting Palisades nuclear reactor operations. Similarly, large-scale water diversion from Lake Michigan or inland groundwater that feeds into the Great Lakes – proposed by southwestern states, for example, to address their drinking water and other needs in current drought conditions (perhaps also attributable to global warming) and water bottling companies – could also impact water levels in Lake Michigan over the next 20 years. (PS-EE-30)

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Response: *While climate change is a legitimate concern, the specific impacts of climate change within a particular region or watershed are still highly speculative, and are therefore beyond the scope of a NEPA review for reactor license renewal. Furthermore, any changes in watershed characteristics would likely be gradual, allowing water-use conflicts to be resolved as needed. The comment does not provide new and significant information; therefore, it will not be evaluated further.*

A.1.8 Comments Concerning Human Health Issues

As stated in 10 CFR Part 51, Table B-1, Category 1 and 2 human health issues include:

Category 1

- Microbiological organisms (occupational health)
- Noise
- Radiation exposures to public (license renewal term)
- Occupational radiation exposures (license renewal term)

Category 2

- Electromagnetic fields, acute effects (electric shock)

Comment: In other words you said air, water, and health. But, you know, what are some of the, what's some of the specific monitoring that you're doing which would include these questions of mine? (PS-C-2)

Comment: There is no independent verifiable monitoring of Palisades. The community of Covert and surrounding communities are dependent upon the operators of Palisades to provide notification of radiological releases. There is an implicit public relations and financial incentive for the operators not to be forthcoming regarding radiological events and accidents. Therefore, these communities must be equipped with independent verifiable radiological monitoring to protect themselves. (PS-EE-33)

Response: *The radiological monitoring program at Palisades will be discussed in Chapter 2 of the SEIS.*

Comment: The same thing has happened in Lake Michigan, that the fallout that occurred during the aboveground testing before 1963 turned out to be fallout like all over everywhere. There are some books, one called *Under the Cloud*, where it'll say Sparta, Michigan, and name several of the other towns in succession where the plumes had gone. In the case of Lake Michigan, there was a Michigan State professor who, a few years back but quite a while back, had mapped the hot spots in Lake Michigan because the fallout occurred in successive

sedimentary layers. And then the storm times come, that's November isn't it, and, you know, the Edward Fitzgerald time etcetera. And the waters rile up and then settle down and rile up and settle down. So there are unexpected hot spots that have been mapped in Lake Michigan. (PS-D-5)

Comment: Oh, the hot spots issue. I would like to see a map of the hot spots in Lake Michigan. Is there one somewhere near our plant here. What has our plant fed into it? When I talk hot spots, around Chernobyl the fallout settled down and the winds came along and picked it up and moved it someplace else. And the winds came along and picked it up and moved it someplace else, creating hot spots in very unexpected locations. The same thing has happened to Lake Michigan. Ever since the fallout time stopped in 1963 from the aboveground testing, which laid down layers of sediments of radioactivity, those have done the same thing in storm time, November. And, it gets it up and it settles down. It gets up and it settles down. And, I feel that a map of that needs to be part of this relicensing process. That's environmental. And, how much of it would our plant here add to it? (PS-N-12)

Response: *It is likely that there is some variation in radionuclide concentrations in lake bed sediments either due to variability in natural background radiation or due to resettlement of radionuclides resulting from weapon program fallout or effluents from Palisades. However, such concentrations, or variations thereof, are expected to fall within the range of natural background radiation found in the area. The doses resulting from radionuclides originating in the Palisades Nuclear Plant are expected to be well below any applicable regulatory limits.*

The comments relate to Category 1 human health issues that were evaluated in the GEIS. The comments provide no new and significant information; therefore, they will not be evaluated further in this SEIS.

Comment: I hear from the NRC that natural radiation is no more dangerous than the radiation produced out here. (PS-A-4)

Comment: There's like you said, there's not that much nuclear energy being, or radiation out there. The problem is we don't know how much is too much. And any addition is more than enough. (PS-J-2)

Comment: So I would ask you to look at the, the health impacts on African-American workers at the facility. I'd ask you to look at health impacts on Latin Americans who work in the agricultural industry in this area. (PS-B-8)

Response: *The comments relate to Category 1 human health issues that were evaluated and discussed in the GEIS. The comments provide no new and significant information; therefore, they will not be evaluated further in the SEIS.*

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Comment: I mean we've got to have a better way than putting this stuff out on the beach 150 yards from the lake. I mean that's, yes, I realize in 20 years I haven't seen where this industry has killed anybody. I've heard some things, you know, of people getting cancer, suing the place, the company quickly settling out of court with them. Well, maybe there's something there, maybe not. I really don't know. But I'm not particularly scared of being, of radiation coming my way just living 3 miles from the plant. But I am concerned about those people on the plant and what happens if one of those casks break. I'm concerned about, you say well, we don't, the NRC aren't going to monitor this thing we'll let the plant people do it. Well, that's a requirement for the plant people. When they put on the first VSC24 cask they didn't have internal monitors in those darn things. They didn't want to put on external monitors until the public outcry made them. (PS-A-7)

Comment: And I'd ask along those same lines that you look at the impacts on the Palisades Park community which I visited for the first time recently and was shocked to see how close it actually is to the Palisades reactor. Actually, the Palisades reactor was built in the Palisades Park community. So I'd ask you to look at the health impacts on that population there. (PS-B-11)

Comment: I was wondering also if you were gathering information from public agencies? Have you gathered information from the Public Health Department on the cancer rate in South Haven and Covert? (PS-M-3)

Comment: Do you have any plans to contact the Public Health Department for, you know, reports about the high incidence of cancer in this area? (PS-M-5)

Comment: The last two meetings I mentioned, you know, let's get the public health reports. This should be included. But, no. The public health was not contacted. Do we have to get an FOIA [Freedom of Information Act] to find out the statistics? As I understand it, there was a cancer study that was done and should be able to be procured. (PS-M-15)

Comment: Do you in your monitoring even the DEQ [Department of Environmental Quality] or NRC, do you look at things such as increased cancer rates in the area? Do you look at the soil and see if it's contaminated in any way? (PS-C-1)

Comment: The study that you just mentioned, I've heard studies that are just the opposite. And we have talked with people in this area that up to 8 out of 10 people are saying oh, yes, I know someone with cancer or I have cancer. So I don't know what current studies are showing but are any of these studies available on those tables back there? (PS-D-1)

Comment: So, these are such huge issues. Embrittlement, the cancer rate, I've talked to people in this community who've said different horror stories about workers that have had cancers and terrible things have happened to them. People that are cancer survivors, people

that have deaths in the family from cancer. Someone said that 8 out of 10 people in this area either have cancer or know someone with cancer in their family or know someone who has died from cancer. (PS-M-14)

Comment: And, I'd like you to meet my girlfriend..., a cancer survivor, born and raised here. Her mother, cancer survivor, born and raised here. Her sister, cancer survivor born and raised here. Her sister used to swim down by the nuclear power plant, but, in '95 they had to remove a seven and half-pound tumor from her abdomen. Now, I don't know if that has to do with nuclear power, but, you know, they are born and raised here. And, her sister-in-law, her stepfather worked at the nuclear power plant. And, one day, his lungs filled up with blood and he died at the age of 39. I don't know what that was from. (PS-U-2)

Comment: I also ask that public health data regarding cancer rates in surrounding communities of the Palisades Nuclear Plant be included in the discussion, and participation by Michigan Department of Community Health epidemiologists be present at future hearings. (PS-CC-4)

Comment: Further, I would ask as I have at public meetings, that certain essential elements not be excluded from evaluation.

1. The public health records of the surrounding counties and downwind regions of Palisades. Also, the correlation between the cancer and infant mortality rate as it parallels the plant in operational mode versus shutdown status. (PS-DD-5)

Comment: Does your environmental review, will it include the recent National Academy of Sciences' report on biological effects of ionizing radiation? The Number 7 report, including the finding that low-level radiation does indeed have an adverse health impact? Will that comment on that? (PS-B-3)

Comment: And I'd also challenge something that was brought up by the health physicist from NRC. Depending on the United Nations Scientific Committee on the Effects of Ionizing [Atomic] Radiation [UNSCEAR] is problematic because just to give you one example in their review of the Chernobyl aftermath on human health, they failed to look at the consequences of internal doses of radioactivity. All that they were looking at was external doses of radioactivity. But of course, the people there are eating radiation in their food, drinking it in their water, perhaps even breathing it in. So that's problematic. So I challenge you to look at internal doses especially in light of the Biological Effects of Ionizing Radiation report which recently came out which actually found that at lower levels of radiation the impact may be higher than previously thought, approaching a direct relationship as you mentioned, the no threshold theory was retained. So at low levels of radiation which we're talking about here in terms of routine radiation releases, there is health damage associated with that. (PS-B-18)

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Comment: The third report in the series, on radioactivity's impact on human health, was never completed. This study on radiation's impact on human health in the Great Lakes Basin should be completed prior to granting Palisades an additional 20 years of operations, especially in light of the National Academy of Sciences Biological Effect of Ionizing Radiation Panel's recent report (BEIR VII), which found that no amount of radiation is too small to not have an adverse impact on human health. Baseline health studies are necessary before NRC grants Palisades a license extension, especially considering that the National Cancer Institute's report on cancer near nuclear reactors, published in 1990, is now 15 years old. It does not account for cancers occurring over the past 15 years, and is in addition methodologically flawed. Independent baseline health studies must be performed before NRC grants Palisades a 20-year license extension. (PS-EE-15)

Comment: The BEIR VII report has recently been published. The recent BEIR scientific conclusion that there is no "safe" level of radiation – no matter how low the exposure – requires reconsideration of the "legal" operation of Palisades at all. Palisades acknowledges routine "lawful" radiation releases. The new scientific conclusion compels reconsideration of the feasibility of continuing to allow Palisades to operate at all, especially given the related issues of drinking water pollution via radiation. (PS-EE-32)

Comment: And I would challenge the NRC environmental reviewers to look at the lack of information about cancer rates in the vicinity of nuclear plants like was raised earlier. This 15-year-old study would not include the latency period for certain cancers that have perhaps happened in the last 15 years. And I would also challenge you to, to look for flaws in the methodology of that study. A mother in Morris, Illinois, named Cynthia Sauer whose daughter contracted brain cancer at age 10, age 7 I'm sorry, who is now 10 and in remission, has looked into that study very carefully and has found flaws in the methodology. And of course, Morris, Illinois, is the site of three reactors as well as a large waste storage pool. (PS-B-17)

Comment: And another question is this 1990 study that's 15 years ago and my understanding is latency periods for cancers would not necessarily be included, you know, unless you were to do a review, an update. So do you plan to do an update on that 1990 study in addition to the recent findings by the National Academy that low-level radiation does cause adverse health impacts? (PS-Q-4)

Comment: There is a current need for a baseline public health study to establish cancer and other disease rates prior to consideration of the proposal for a 20-year license extension. The NRC has relied on the National Cancer Institute (NCI) Study of 1990 to address cancer rates near nuclear power plants. However, the only data considered by the NCI was the county that the reactor is located in, not other downwind and downstream counties. Thus, that study is methodologically flawed. It is also 15 years old, and thus does not include data on occurrences of cancer over the past 15 years, rendering it outdated. In addition to studying cancer, other diseases associated with radiation exposure must also be studied. (PS-EE-26)

Response: *The comments are noted. Radiation exposure to the public during the license renewal term is a Category 1 issue that was evaluated in the GEIS. Health effects from radiation are a well-studied environmental hazard according to the General Accounting Office. More than 86,000 studies have been performed on the biological effects of radiation, and none of the scientifically valid studies shows any radiation effects at doses less than 10,000 millirem. According to the Health Physics Society (www.hps.com), “below the dose of 10,000 millirem, estimation of adverse health effects is speculative. Collective dose remains a useful index for quantifying dose in large populations and in comparing the magnitude of exposure from different radiation sources. However, for a population in which all individuals receive lifetime doses of less than 10,000 millirem above background, collective dose is a highly speculative and uncertain measure of risk and should not be quantified for the purposes of estimating population health risks.”*

The NRC evaluated the recently issued Biological Effects of Ionizing Radiation (BEIR) VII report and discussed its findings in a report to the Commission (SECY.05-0202; Accession Number ML052640532). The NRC staff found that the BEIR VII report does not support the need for fundamental revision to International Commission on Radiological Protection (ICRP) recommendations. However, it will provide additional technical basis for the ICRP to consider as it revises its draft 2005 recommendations on radiological protection. The NRC staff will continue to monitor the ICRP’s activities, review documents when they become available, and provide comments directly to the ICRP. The NRC staff also will participate in other forums, such as the Expert Group of the Nuclear Energy Agency or the National Academies Board on Nuclear and Radiation Sciences, to express the NRC’s views.

The comments provide no new and significant information; therefore, they will not be evaluated further in the SEIS.

A.1.9 Comments Concerning Socioeconomic Issues

As stated in 10 CFR Part 51, Table B-1, Category 1 and 2 socioeconomic issues include:

Category 1

- Public services: public safety, social services, and tourism and recreation
- Public services: education (license renewal term)
- Aesthetic impacts (refurbishment)
- Aesthetic impacts (license renewal term)
- Aesthetic impacts of transmission lines (license renewal term)

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Category 2

- Public services: housing impacts
- Public services: public utilities
- Public services: education (refurbishment)
- Offsite land use (refurbishment)
- Offsite land use (license renewal term)
- Public services: transportation
- Historic and archaeological resources

Comment: I appreciate the comments that preceded me and some of the benefits that the plant provides in the community through the employees, the tax base and the economy from the payroll that we pay out to our employees. But I also want to mention that all of our employees live here in the local communities surrounding the plant and the counties, the cities that surround it. And everyone of those employees also has a vested interest in ensuring that this plant continues to operate in a safe environmentally sound manner or we wouldn't stand here in front of you today to support our license renewal process. (PS-G-1)

Comment: Some of the benefits include the support for the local units of government, the tax-sharing entities, the community schools, the district libraries, hospital authorities. But, there's also other things. We support the emergency management activities in the area for the counties of Alleghan, Berrien, and Van Buren. That's also a very important function. (PS-G-2; PS-S-1)

Comment: Many Palisades personnel live in Geneva Township and are taxpayers, which benefits Geneva Township, South Haven area emergency services, Lake Michigan College, South Haven and Bangor Public Schools, Van Buren Intermediate School District, South Haven Hospital, South Haven Senior Services, and Van Buren County. Being a South Haven area emergency services authority board member I have watched as Palisades has contributed much to our fire and ambulance service in the ways of training, equipment, and support. This joint effort for the safety of our citizens and Palisades personnel is a tribute to working together to make our community what it is today. Over the years we have been privileged to reports by Palisades personnel at our township board meetings keeping us informed on happenings, new procedures, updating of the siren warning system, and just being available to answer questions that arise in our public settings.

The seminars presented by Palisades personnel to provide exposure for the local municipalities and businesses and industries to review the plant and safety procedures that are in place as well as having contact personnel for our comments and questions is indeed beneficial. (PS-H-1)

Comment: What I want to speak to, briefly, is the socioeconomic impact and to reiterate some of the things that were in our statement from the Chamber board of directors over to the NRC and the Palisades plant and Nuclear Management Corporation. The plant has a significant economic impact on the area. Six hundred plus employees, not to mention the contractors in the area. At least one-third of those folks live right here in the immediate South Haven vicinity. That's a lot of payroll dollars being spent right here in our community. A couple of folks I know that work out there said you could bump the payroll anytime you want. And, the other side of it is the contractors when you go into an outage. Lots of the small businesses that sit on the Chamber board and made the decision to support it, look at those outages and those opportunities when the plant is back reinvesting, cleaning things up, doing a lot of maintenance, that's a lot of extra folks in town spending money, doing and making things happen. There's also an element beyond the financial impact from that payroll. That's the involvement of those men and women that work out there. They are involved in the community. You'll find them serving on different public boards and commissions. Boy Scouts, Girl Scouts, 4-H, coaching basketball, baseball, softball. Just a tremendous social impact from their involvement. (PS-T-1)

Comment: I never realized until I became a board member of Geneva Township in 1987 and became acquainted with the operations and effect of Palisades Nuclear Plant on the structure and economic well-being of Geneva Township as well as the surrounding area. Palisades Plant and people continuing to support of our communities, organizations, and businesses through usage, involvement, and monetary support, enhancing the overall Community Health and welfare. (PS-Y-1)

Comment: Many Palisades personnel live in Geneva Township and are tax payers which benefits Geneva Township, South Haven Area Emergency Services, Lake Michigan College, South Haven & Bangor Public Schools, V.B. Intermediate School District, South Haven Hospital, South Haven Senior Citizens and Van Buren County. (PS-Y-2)

Comment: Being a South Haven Area Emergency Services Authority Board Member, I have watched as Palisades has contributed much to our Fire and Ambulance Service in the way of training, equipment, and support. This joint effort for the safety of our citizens and Palisades personnel is a tribute to working together to make our community what it is today. (PS-Y-3)

Comment: Funding for the Covert Township Ambulance/Fire Department and Police Department is through a voted millage for each Department. Currently, the tax revenue from Consumers Energy's Palisades Nuclear Plant is roughly 60 percent of the total taxes collected. If Covert Township were to lose this tax revenue today, they would have to shut down or drastically reduce the services that they provide to the community. (PS-Z-2)

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Comment: If Palisades Nuclear Plant does not get a license renewal and Covert Township were to lose their tax base, it would have a very negative effect on the Economic Environment of a very poor diverse community. (PS-Z-4)

Response: *The comments relate to Category 1 socioeconomic issues and are supportive of license renewal for Palisades. The comments provide no new and significant information; therefore, they will not be evaluated further.*

Comment: I understand, you know, it's about the jobs here. I mean our town here in South Haven or Covert where they've put the plant officially, I mean we need jobs. But one thing I don't fear with, if Palisades does not get its license to continue to operate is that we're going to get a loss of jobs here. (PS-A-2)

Comment: And perhaps we would then say we need to gradually move toward other sources of employment. Certainly not just one company for our area. And to look to something that can continue on into the future for many generations. (PS-C-6)

Comment: The tax revenue from the Palisades Nuclear Plant also helps fund the Townships' water system as well as the Township General Fund. The revenue loss to either of these would also mean either reduced services or a raise in taxes. (PS-Z-3)

Response: *The comments relate to Category 2 socioeconomic issues and will be considered in the preparation of the SEIS. Socioeconomic issues will be discussed in Chapters 2 and 4 of the SEIS.*

Cultural Resources

Comment: I'd also ask you to look at not only health impacts but cultural impacts and related socioeconomic impacts on the Native American tribes of this area whose land we stand on and whose land Palisades is located on if the treaties were honored. (PS-B-9)

Comment: Palisades' license extension application also has inadequately addressed the adverse impacts that 20 additional years of operations and waste generation would have on the traditional land uses, spiritual, cultural, and religious practices, and treaty rights of various Federally recognized tribes in the vicinity of the plant and beyond, as well as effects upon nonfederally recognized tribes governed by international law. Only three tribes were contacted by the NRC by August 8, 2005, and invited to participate in the license extension proceedings, which effectively excluded a number of tribes within the 50-mile zone around the reactor, as well as additional tribes beyond the 50-mile zone which have historic and traditional ties to the Palisades site and sites along the electric transmission line connected to Palisades. Despite the Michigan State Historic Preservation Office's concern pertaining to possible unreported archaeological properties present on, or with the vicinity of, the Palisades site (see Page C-2,

Cultural Resources Correspondence of the Environmental Report), NMC and Consumers persist in opposing a survey of the project area as unnecessary. But, if unreported Native American archaeological sites are present at or near the Palisades nuclear power plant (which is very possible, given the very close proximity of a large creek in Van Buren State Park just to the north of the power plant, as well as the very close proximity of Brandywine Creek just to the south of the power plant in Palisades Park, rivers and creeks being common sites for encampments and villages amongst the indigenous peoples of Michigan since time immemorial), then 20 additional years of nuclear operations, radioactive waste generation, and daily radiation emissions would have a significant and severe adverse impact on Native American cultural and religious values at those sites, values which strive to protect sacred areas from such degradation. The fact that NRC contacted only the Nottawaseppi Huron Potawatomi, the Little Traverse Bay Band of Odawa Indians, and the Match-E-Be-Nash-She-Wish Band of Potawatomi, but did not contact the Pokagon Potawatomi (just 30 miles or so from the Palisades site), the Little River Band of Odawa Indians, the Grand River Band of Ottawa Indians, the Saginaw Chippewa Tribe, and the Grand Traverse Band of Ottawa and Chippewa Indians, means that this Environmental Scoping proceeding should be suspended until all stakeholder Native American tribes and bands are contacted and alerted to the opportunity to not only comment on the Environmental Scoping, but to intervene against the Palisades 20-year license extension. Given the sovereignty of these tribes and bands, and the treaty rights that exist between them and the United States Federal government, the NRC has a government-to-government responsibility to consult with these tribes and bands on such significant federal actions as granting the Palisades reactor an additional 20 years of operations. An archaeological survey must be conducted before NRC grants a 20-year license extension to assure that Native American archaeological sites are not negatively impacted by future Palisades reactor operations. (PS-EE-18)

Response: *The comments relate to Category 2 socioeconomic issues and will be considered in the preparation of the SEIS. The NRC sent letters to 11 potentially affected American Indian Tribes, including the Pokagon Band of Potawatomi Indians (Accession Number ML051960173), on July 13, 2005, inviting them to participate in the environmental scoping process related to NMC's application for the license renewal of Palisades. The potential impact of renewing the OL of Palisades on cultural resources will be discussed in Chapter 4 of the SEIS.*

Environmental Justice

Comment: Another issue, I was surprised when environmental justice was brought up because my understanding was that the NRC a couple or 3 years ago had largely gutted its environmental justice policy under pressure from the nuclear industry. So I'm glad to hear that you're going to look at that and I would request that you look at impacts on the African-American populations specifically in Covert Township where the facility is located. (PS-B-6)

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Comment: And I'd ask that you look at impacts on the low-income community of this area as well. (PS-B-10)

Comment: As for the tax base, and the loss of tax base, that we had members of the Chambers of Commerce and Covert Township say is important, that every dollar generated is circulated seven times or what have you. Coming here, I drove through Covert. First time I drove through Covert was about 24 years ago. And, I've driven through it since particularly coming up here when, being involved in the Palisades plant before they even put out one dry cask. I was involved in some of the organizing against the dry cask. And, I don't see where Covert has, you know, benefitted anywhere. Maybe, you know, South Haven has, but, talk about environmental justice. Covert looks just as deprived as it has ever been. (PS-L-1)

Comment: Do you consider Covert as an environmental, what do you call that, what was that term you used? Yeah, the justice issue? (PS-M-4)

Comment: Covert Township is a very diverse community. The year 2000 U.S. Census report shows that Covert Township has a 35 percent Black and 15 percent Hispanic population. This report also shows that Covert Township is one of the poorest Townships in the State with a Median Household Income of only \$22,829. (PS-W-1)

Comment: Palisades nuclear generating station is the source of environmental justice violations. Located within a predominantly African-American and low-income township, Palisades provides woefully inadequate tax revenues to the host community, considering the large adverse impacts and risks the reactor inflicts. Palisades' African-American employees have traditionally been stuck in the dirtiest and most dangerous jobs at the reactor, with little to no prospects for promotion. Some of Palisades' African American employees have also experienced death threats at the workplace, including nooses hung in their lockers or in public places to symbolize lynching, an apparent attempt to silence their public statements for workplace justice. (PS-EE-17)

Comment: A potential flaw in the NMC/Consumers Environmental Report is its exclusion of census block groups with greater than 50 percent of their area outside the 50- and 20-mile radii from Palisades. Not including these groups in calculating total population, minority or low-income estimates effectively excludes significant minority and low-income populations in Grand Rapids and Battle Creek, particularly African-American and Latin American communities living in these major urban centers. (PS-EE-21)

Comment: In addition, it is odd that NMC/Consumers writes in the Environmental Report (page 2-32) that "Berrien and Van Buren Counties host moderate numbers of migrant workers," when 3,677 and 6,733 temporary farm laborers (many of them Latino) were employed in Berrien and Van Buren Counties, respectively, according to the U.S. Department of Agriculture in 2004. These numbers represent populations as large as the county seats and even the biggest towns

in these counties. It is also not clear in the Environmental Report whether those numbers include the families which very often accompany the migrant farm laborers, which would boost the Latino population even higher.

It is ironic that NMC/Consumers acknowledges on page 2-36 of the Environmental Report that “Only one block group with a low-income population is located in Van Buren County. This block group is located in the western portion of Covert Township, which is a largely rural area.” Why is it that the largely African-American population of Covert Township is still low-income after 38 years of Palisades nuclear power plant’s presence in the township? Wasn’t the presence of the reactor supposed to help its hometown to thrive economically? What are the environmental justice implications of such an ironic history?

The fact that “The amount of future property tax payments for Palisades...are dependent on future market value of the plant” seems ripe for manipulation and abuse – such as artificially lowering the market value of the plant in order to lower future property tax payments -- by the politically and economically powerful Palisades nuclear power plant on its host township, county, and region, yet another environmental justice violation. (PS-EE-22)

Comment: Such impacts as harm to lake sturgeon – sacred to some Great Lakes tribes – must also be evaluated. It is interesting and telling that NMC’s Environmental Report assigns no “importance” to lake sturgeon (in Table 2.3-1, Page 2-47), despite its State of Michigan Threatened Status, and its sacred status in the cultures and traditions of various Great Lakes Native American tribes, not to mention its importance to the natural history of Lake Michigan as an ancient indigenous species in the ecosystem. This is an indication that NMC/Consumers is not acknowledging or addressing environmental justice impacts of 20 more years of operations at Palisades on Native Americans. (PS-EE-19)

Comment: How has the operation of Palisades impacted Native American fishing rights in the Great Lakes? (PS-EE-39)

Response: *In order to perform a review of environmental justice in the vicinity of a nuclear power plant, the NRC staff examines the geographic distribution of minority and low-income populations within 80 kilometers (50 miles) of the site. The NRC staff uses the most recent census data available. The NRC staff also supplements its analysis by field inquiries to such groups as county planning departments, social service agencies, agricultural extension personnel, and private social service agencies. Once the locations of minority and low-income populations are identified, the staff evaluates whether any of the environmental impacts of the proposed action could affect these populations in a disproportionately high and adverse manner.*

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The comments relate to environmental justice issues and will be considered in the preparation of the SEIS. The NRC conducts an independent analysis of the impacts of license renewal with regard to environmental justice; potential impacts will be discussed in Chapter 4 of the SEIS.

A.1.10 Comments Concerning Postulated Accidents

Comment: Farmers downwind of Chernobyl, which melted down as we all know, are out of business because of contaminated soil. That's, that's our livelihood. We do not want to face that possible perhaps probable scenario here at home. Human error contributed to the Chernobyl meltdown and in spite of all the safeguards that you may have in place at Palisades when you factor that in what will the future bring us? (PS-C-12)

Comment: I live in Grand Rapids, 70 miles away. We are definitely downwind. One of the maps in the big books shows I believe the 50-mile radius, and as you know Chernobyl has a 19-mile interdiction area but they also find that the fallout that happens when a nuclear catastrophe does occur, settles down and then the winds pick it up and swirls it around again and the next windy day or windy season it settles it down again and it goes on and you end up with unusual, unexpected hot spots in places that people didn't expect. Where they no longer can go out and collect mushrooms and grow their own apples and so on. (PS-D-4)

Comment: Please don't say that it can't happen here. It can happen here. The chances of it happening we don't know just like we don't know how much radiation is too much because it's different for each individual. Okay. It is a possibility. I'd hate to see the year that South Haven was a town that used to be a great little tourist town. (PS-J-5)

Comment: You know, you can, every nuclear power plant that ever had an accident they said it wouldn't happen. You know, they didn't think Chernobyl would happen, they didn't think Three Mile Island would happen. There have been so many nuclear accidents and spills all along the trail of the nuclear industry from mining on up to transportation. (PS-M-11)

Comment: And, something also that Mr. Keegan mentioned was the environmental review has to look at the socioeconomic impact of a full-scale catastrophe at Palisades. Tourism was mentioned. I would also specifically request that casualties be looked at. The number of deaths, the number of injuries, the number of latent cancer fatalities. The number of genetic damaged children in future generations. (PS-Q-3)

Comment: Palisades' license extension application inadequately addresses the disproportionate adverse socioeconomic impacts of a catastrophic radiation release, such as due to reactor core embrittlement leading to core rupture, to the low-income Latin American agricultural workforce of the Palisades area. Synergistic effects of such chronic and catastrophic radiation releases combined with the toxic chemical exposures these low-income Latin-American agricultural workers already suffer on their jobs have not been evaluated.

Finally, there is an unacceptable lack of Spanish language emergency evacuation instructions and notifications to serve the Spanish-speaking Latino population within 50 miles of the Palisades reactor, especially migrant agricultural workers. (PS-EE-20)

Response: *The comments relate to Category 1 design-basis and severe accidents issues. The comments do not provide new and significant information; therefore, they will not be evaluated further. Environmental justice issues will be discussed in Chapters 2 and 4 of the SEIS. Issues pertaining to emergency planning are outside the scope of license renewal and will not be evaluated in the SEIS (see Out of Scope: Emergency Response and Preparedness).*

Comment: It has been recently confirmed by the National Academy of Sciences that there is no safe level of exposure to radiation and that even very low doses can cause cancer. I am therefore disturbed by nuclear industry corporate culture that has a ubiquitous record of dismissing legitimate concerns about radiation exposures. In the case of Three Mile Island, it has been found by a more recent independent analysis of the 1979 accident that placement and frequency of monitoring devices were highly inadequate and unable to establish accurate data from which to establish radiation release patterns. For residents of Harrisburg and the surrounding area, that meant their reported symptoms of metallic taste, erythema, nausea, vomiting, diarrhea, hair loss, and deaths of pets and farm animals were attributed to stress brought on by the accident, not radiation releases from the accident. Apparently, if no monitors were present in any given neighborhood and therefore no radiation data could be collected, then no radiation had been released. People were treated as though they had psychological problems, not legitimate symptoms of radiation exposure. Exactly how will the citizens of Michigan be treated should a similar accident occur at Palisades? I simply refuse to accept my community being treated in such an insulting and degrading manner. I therefore ask that a complete map showing existing radiation detection locations for Palisades be provided and frank discussion on this monitoring methodology be initiated. (PS-CC-3)

Response: *The comments relate to Category 1 design-basis and severe accidents issues. The comments do not provide new and significant information; therefore, they will not be evaluated further. Radiological monitoring and sampling locations are identified in the 2004 Radiological Environmental Operating Report (Accession Number ML051390307). Issues pertaining to emergency planning are outside the scope of license renewal and will not be evaluated in the SEIS (see Out of Scope: Emergency Response and Preparedness).*

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A.1.11 Comments Concerning Uranium Fuel Cycle and Waste Management

As stated in 10 CFR Part 51, Table B-1, Category 1 uranium fuel cycle and waste management issues include:

- Offsite radiological impacts (individual effects from other than the disposal of spent fuel and high-level waste)
- Offsite radiological impacts (collective effects)
- Offsite radiological impacts (spent fuel and high-level waste disposal)
- Nonradiological impacts of the uranium fuel cycle
- Low-level waste storage and disposal
- Mixed waste storage and disposal
- Onsite spent fuel
- Nonradiological waste
- Transportation

Comment: Someone has said that radioactive waste is the product of a nuclear power process. The power is a sideline of it. Of course, nuclear power originated because somebody that was working out at Hanford area realized they were wasting an awful lot of heat in the making of the original atomic bombs. And so, what can we do with the heat? Uh, we will boil water, make steam, make power. And so, you know, in a roundabout way we have ended up with nuclear plants all over the country, all over the world. But we have by far the largest number. But radioactive waste is definitely the product of it. (PS-D-6)

Comment: Second, we cannot keep producing nuclear waste without a way to protect us from the nuclear waste. I think enough has been said about that. I won't say a lot more but there is, there is no good permanent solution. My suggestion is that we send it to Washington, D.C. But I think some of our people here live in Washington, D.C. and like, like everybody else they do not want it in their backyard. Nobody wants it in their backyard. I wonder why? (PS-J-6)

Comment: Electricity is but the fleeting by-product of the Palisades nuclear reactor. The actual product is forever deadly radioactive waste. This cannot be excluded from the EIS because if there is no license extension there will not be an additional 20 years of high level nuclear waste generated by Palisades. The indoor irradiated fuel storage pool reached capacity in 1993, thus necessitating the utilization of a shoddy technology of outdoor dry cask storage pads at Palisades. (PS-EE-3)

Comment: I've got a lot of questions. One is, are you going to, in the environmental assessment, take into consideration the creation, storage, and transportation of nuclear waste? (PS-M-1)

Comment: We have a high-level nuclear waste dump 3 miles from my home that's going to be continually decontaminated. Somebody is going to have to be in there taking care of this thing for thousands of years to come. This is going to be not just my problem it's going to be my daughter's problem, her children's problem, her children's children's problem. They're all going to have to pay for that as life goes on. Because this stuff is just going to be around forever and there's no place. I've looked at Rocky Flats. I have looked at all of these different places that are producing all this nuclear material, and this country is just teeming with this stuff and we've got no place to put it. We can't find a safe place. Not Yucca Mountain, they've had earthquakes, starting to find aquifer down there, Christ, they've been testing bombs underground there for years and just shattered everything. It's not going to fly. I really wish it was. I really wish all that stuff could just disappear and we could maybe get on with producing electricity this way. (PS-A-3)

Comment: If anything, it is the half-life of the waste materials that not only are produced by the Palisades Plant, 125,000, 150,000 somebody told me today, 150 million years. The half-life for this deadly poison to reduce itself by natural processes after man has intervened to gather it together by unnatural processes. When they have that Yucca Mountain thing if they ever get it organized, which I have some doubts about, to bury all this stuff somebody is going to decide to build a bridge or a mine or something and they're going to go clunk, clunk, clunk, clunk, clunk, and they're going to bust it open having forgotten 100 or 150 or a 100,000 years. And they're going to kill a few hundred million people. That is what the net result of nuclear power is. It is poison. The worst poison, the most long-lasting poison in the history of the world. (PS-I-2)

Comment: If Yucca Mountain were to open in Nevada, there's enough waste in the United States by the year 2010 to completely fill it to its legal capacity. It won't be open by 2010, if ever. And so, I just point out the irony of Consumers license expiring in the year 2011 and if Yucca were to open, it possibly could take all the waste generated at Palisades up to that point. But, everything made after that point, after the year 2010, is excess to Yucca. And, the second repository in the United States by law would have to be located in the eastern part of the country. Perhaps Michigan? Who knows? Wisconsin? (PS-K-15)

Comment: But, the professionals in the nuclear industry are being very capricious with the fact that, you know, they're generating a lethal waste here. How much more waste will be generated in 24 more years. It is my understanding that if Yucca Mountain were to open tomorrow, which it's not going to happen because they're still having even more problems there, it already is not capable of handling all the waste that is already generated and sitting in storage across the United States. It already could not hold everything that's generated. So, and also I remember reading not too long ago in the Herald Palladium that there was an article about a new transportable dry cask that Palisades will be using from now on. And that's all well and good, but, where is that waste going to go if there is no place for it. This is the most serious environmental, blatant problem that needs to be addressed. The electricity is fleeting. It's

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created and it's gone, it's used. What's left is the waste. So, the truth of the matter here is the real product is lethal nuclear waste. Electricity is just a by-product. The waste is what is still here and will be here for hundreds of thousands of years and it is lethal and it is deadly. And then, we have to go through the process of finding how to keep it safe. This industry is holding us psychologically hostage. They're creating a waste, and then patting us on the head, and saying, oh, don't worry, we know what to do with it, it'll be safe, blah, blah, blah. (PS-L-3)

Comment: The nuclear waste issue is a huge issue that isn't being addressed. Twenty more years of nuclear waste buildup, where is it going to go? Are we going to dump it on the Indians? I mean, that is not right. It is not right to take nuclear waste and truck it across country and dump it on native lands. (PS-M-12)

Comment: The accumulation of nuclear waste along the shore of Lake Michigan is not only a potential terrorist target, as is the reactor itself, but there are also problems with the casks themselves, and the geological strata of the area, which includes the unstable sands which the cask pad sets on. Nuclear waste that is headed for dump sites built on native lands is "environmental racism," and more operation and creation of wastes should be considered as such. (PS-DD-2)

Comment: In its Environmental Impact Statement, NRC should also consider another environmental impact concerning high-level radioactive waste ignored by NMC/Consumers in its Environmental Report: the proposed shipment by barge of 125 or more rail-cask sized containers of irradiated nuclear fuel from Palisades to the Port of Muskegon as part of the Yucca Mountain, Nevada nuclear waste dump proposal. The U.S. Department of Energy describes and documents this proposal on page J-83 of its *Final Environmental Impact Statement for Yucca Mountain*, in Table J-27 ("Barge shipments and ports"). One hundred and twenty-five barge shipments may very well be an underestimate, for DOE assumes only 10-year license extensions, whereas NMC/Consumers is requesting a 20-year extension from NRC. (PS-EE-7)

Comment: What if a barge shipment goes down in the Lake, whether due to accident or attack? What about the potential for a nuclear chain reaction inside the cask involving the still fissile U-235, Pu-239, and other fissile radionuclides present in the waste? What about radioactive contamination of 20 percent of the world's surface freshwater, the drinking water supply for 35 million people downstream? (PS-EE-8)

Comment: Property rights of home owners on the shoreline and inland from Palisades have been compromised by the "de facto" permanent high-level waste site created. This amounts to implementation of eminent domain without any compensation to property owners. The constant threat of a nuclear accident or act of sabotage has violated property owners' rights. (PS-EE-9)

Comment: When I helped build these plants these fuel containments, these high-level containments, we weren't told anything, only low-level radioactive material would be brought in to those for refueling the plant. Once it goes through the reactor cycle it becomes really radioactive. It was going to be sitting in a fuel pool until there would be a national depository to ship it to. That never happened. Now we got it piling up out in these concrete casks, metal casks sitting on the beach out of the high-level containment. (PS-A-6)

Comment: We already have contaminated steam generators and such buried on the site along with contamination of the plant to deal with. Enough. (PS-A-10)

Comment: What happens with the waste? (PS-C-5)

Comment: One of the questions that hasn't come up enough, I think is, what are the plans for the rad waste? Now, old Frank Kelly said a long time back, that nobody knows what to do with a teaspoon full of the stuff. And, we still don't. Sixty years into the nuclear age and we still don't know. So, I think that has to be a very important environmental component of the issue of whether this plant is relicensed. To keep on making this stuff doesn't make sense. There's a whole bunch of questions. There's comments about the dry casks, but, I won't say too much about that except that there they sit. And, I'm wondering how they're going to get to wherever they're going to go on site. And, how they're going to get beyond that, because they're 28 tons each, I understand. And, they're, they can't be moved, transported on the highways at all, or any other commercial fashion. (PS-N-5)

Comment: Let us not forget that we are discussing the continued production for another 20 years of a lethal waste that requires extreme safety control measures. We are not talking about a tootsie roll factory here. The waste product is being stored on the shores of a body of water that constitutes one-fifth of the earth's surface freshwater and which provides potable water to millions of people. Another 20 years of accumulated waste added to the already existing lineup of outdoor dry cask storage situated on unstable sand dunes is a major concern. (PS-CC-2)

Comment: And, oh, I understand, too, that each dry cask holds the equivalent of 250 Hiroshima bombs. Am I outrageous on that statement? Anybody correct me please? The other thing is, I understand the last I knew anyway there are 16 dry casks. Are there more? What's the current quantity? (PS-N-7)

Comment: What about these 29 casks that are loaded? And, it's my understanding they weigh 132 tons each. This is a defacto high level of a nuclear waste dump on the shore of Lake Michigan. And there are no plans to get it out. And, you're going to make more, give them a 20-year extension to make more of this. I have a problem with that. (PS-K-14)

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Response: *The comments are related to Category 1 uranium fuel cycle and waste management issues. The comments do not provide new and significant information; therefore, they will not be evaluated further. Issues pertaining to Yucca Mountain and malevolent acts are outside the scope of license renewal and will not be evaluated in the SEIS (see Out of Scope: Separate Proceedings, and Out of Scope: Safeguards and Security).*

Licensees storing spent fuel in an ISFSI under a general license for storage of spent fuel (10 CFR Part 72, Subpart K), as at Palisades, are required to submit documentation registering the use of each cask at their facility in accordance with 10 CFR 72.212(b)(1)(ii). As of October 31, 2005, the NRC has received documentation registering the use of 18 VSC-24 casks and 4 NUHOMS-32PT casks at Palisades.

A.1.12 Comments Concerning Alternative Energy Sources

Comment: You know, it's using kind of an old nuclear technology. There are new technologies coming along that are clean and my hope all along, what I can clearly see that immediate nuclear decommission, cleanup and conversion of the Palisades Nuclear Power Plant and running it on natural gas like the one they do up in Midland. Or hydrogen fuel is the way it must go rather than allowing these nuclear fuel rods storage casks to be piled up onsite. (PS-A-9)

Comment: The time to convert Palisades Nuclear Power Plant is now. I mean this, rather than relicense this and keep running this poor old reactor that's been going for 40 years that was really embrittled, that they're taking old fuel rod assemblies because they're made out of stainless steel that have already been through the cycles and sitting for years in the fuel pool, stuffing them back in the reactor to sop up radiation away from the critical parts that are already embrittled on the reactor vessel, so if I'm getting a little technical here, but you know, I don't really lose sleep at night over thinking I'm living next to this dangerous reaction about to go but, you know, the thing is 40 years old. It's embrittled, folks. If we're going to keep generating power here we need, what they promised us back when we built the thing in the first place, in 40 years a new plant would come along. It didn't happen. (PS-A-11)

Comment: But what we have learned in 40 years is that there's a heck of a lot of ways to make electricity. And if we quit putting all our effort and all our rate payers' money in keeping this dead horse alive and start pursuing some of these new ones and we can do it right out there at that plant because they got a fine turbine that produces a lot of electricity. And as Ralph Nader says they're only boiling water. We just got to boil water to 700 degrees and we've got this electricity. There's a lot of different ways to do it. And I hope everybody here will start pursuing those different ways than keep going this very dangerous way, which for thousands of years to come people are going to have to answer for and pay for, just for a little electricity now. (PS-A-12)

Comment: My husband cannot be here today because he's hosting a class from the math and science center in Kalamazoo. This center serves the brightest students in that area. The class is visiting to learn about our off-the-grid house. Our personal energy needs are met with solar and wind power and we have a very comfortable life there. This can be done. And we hope that our model will become a model for this alternative to be embraced by more people in our area. The utilities themselves have said they want to include more of this. We have a friend, Art Toy, who has run for office many times in our area who put up a really big wind generator because he understood that Palisades was mandated to take that energy by law. But they have put so many barriers in the way of his doing this that it hasn't worked yet. So I would certainly ask that you reconsider putting barriers in the way of citizens who are trying to help with selling excess power to you. It, this State is not doing what some other States more intelligently are doing with this. (PS-C-9)

Comment: Nuclear energy is clean air energy. In that I mean nuclear power plants produce no controlled air pollutants such as sulfur particulates, green house gases. The use of nuclear energy in place of other sources does help to keep our air clean. To put it in equivalent terms, to replace the electricity that Palisades provides it would require approximately 12 million barrels of oil per year or three million tons of coal per year or the equivalent of about 65 million cubic feet of natural gas per year. Those are some of the fossil fuels that having Palisades in the community displaces that would otherwise be needed to meet Michigan's needs. Something that some may not be aware of is nuclear power produces approximately 25 percent of electricity in Michigan, not just the Palisades plant but other nuclear plants as well. (PS-G-4)

Comment: There are ways of making electricity.... We could use solar power. (PS-I-6)

Comment: But that's what happening to solar power. It's coming. And a lot of other good forms of power are coming. And we don't have to depend on the infinitely prolonged death that is represented by nuclear power. (PS-I-7)

Comment: Up north, Consumers Energy has been combining with Mackinaw Wind Power and they're putting up wind generators. It is possible. Wind generator is a clean energy source and it is like Maynard was saying, it's quick. It takes over quick. It doesn't, it's not like building another monster. It's just, you put it up and it starts working. Combination of wind and other systems, and we've got it made here in Michigan and we can keep our water clean. But, if you take that chance and you relicense this facility thinking well, the next issue we will deal with it, we can analyze it. (PS-M-17)

Comment: The second question has to do with the notion that there might be renewable sources of energy as alternatives and I don't know why that wasn't mentioned among the possibilities that you just reviewed. Because, in fact, wind power is a fantastic source of energy

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and it would come online a lot faster than additional nuclear power plants, which I know are present at a loss. (PS-O-2)

Comment: I just want to reiterate a word about renewable sources of energy. And, I want to do this in the context of something that all you energy folks are very well aware of which is that within 5 years or so, we will have reached a global peak in oil production. And, geologists have been telling us this for 30 years. But, it seems that they were on target and that indeed, that is going to be happening. And, that means production will decrease as demand, globally, increases, and that means prices for the fossil fuels will go up and up and up. And, at this point in time, therefore, it is so important that we do everything we can to not only conserve which we haven't started yet, but also to use more renewables. And, I'm not here to say that it may not be possible, after lengthy public participation in this issue of what the proper mix of energy sources is. It may be possible that nuclear is part of that. Especially in the post-fossil-fuel era. I want this discussion to be a public discussion. (PS-O-3)

Comment: I think we can have a really good public discussion about what the proper mix of energy sources is. And, it may be, because nuclear is clean in some ways, that that may be part of it. I'm not the one to be able to decide. But, in the mean time, there is much that can be done for renewable energy and incidentally, the argument that you only get it 35 percent of the time, doesn't really apply too much, because the grid is all over the country, and if you use that same grid for distribution, there's going to be wind blowing and sun shining someplace in the country. So, that way we'd have a reasonable source of energy to that as well as whatever other options exist, but, there'll be a lot less of it than we enjoy now. (PS-O-4)

Comment: Let's see. Oh, one of things that I think most of us haven't recognized is that when nuclear power came in, the whole electric thing, energy thing became centralized. The little dam up at Newago, and the other one at Big Rapids. All those little energy producers for their area, even though they had a few environmental problems where the silt filled in and it may have destroyed some of the environment, but, still some of those things could have been handled, but, now they're out. They're gone. So, the de-centralization is what needs to reoccur. And, it might even be that we will have solar power, solar panels on our buildings, our church roofs, in the places where it's possible. And, more and more, we're finding it is. (PS-N-10)

Comment: I wish there was another brand new nuclear power plant to take over, like we were all thinking back in the 70s. Three Mile Island happened, none of that's ever happened. (PS-P-3)

Comment: I'd like to say a little bit about alternatives. I thought it was telling when Bob spoke that renewables were mentioned last and very briefly. And, I think Maynard, and earlier in the day, Barb Geisler pointed out the reality of renewables like wind and solar. They're ready to go. They're viable. And I would add in there efficiency and conservation as alternatives to nuclear power. And, something that Mr. Keegan brought up, at a 44 percent rate of operation at

Palisades because of all the breakdowns and violations over the years, how does that compare to the wind not blowing? I mean, the last time I checked the sun comes up every day. So, that's pretty reliable source of energy, I would say. (PS-Q-10)

Comment: You know, it's just that there are new technologies coming along all the time and if we just put half the investment that we put into these old dead industries, that are dying like the nuclear industry. You know, we could have new stuff here that doesn't pollute. (PS-S-4)

Comment: Other sources of energy are available to this country and we are failing to maximize this value and their sustainability, such as wind power doing valuable service in other countries. (PS-BB-2)

Comment: The plant can be replaced by wind turbines which will not be a public liability and which will not endanger the environment and which will produce a profit and not need taxpayer subsidies to maintain. (PS-DD-10)

Comment: In Section 7.0, "Alternatives to the Proposed Action," renewable energy sources such as wind power and solar power, as well as alternatives to Palisades, such as energy efficiency and conservation, are given remarkably short shrift by NMC/Consumers. In fact, polluting electricity sources such as fossil fuels are given by NMC/Consumers as the only realistic alternatives to a 20 year license extension at Palisades. This is self-serving in that Consumers owns and operates fossil-fuel-fired facilities. In fact, in 2002 nearly three-quarters of Consumers' electricity generation came from fossil fuel facilities. Such reports as *Repowering the Midwest* by the Union of Concerned Scientists and Environmental Law and Policy Center; a recent analysis by Amory Lovins at the Rocky Mountain Institute published in the organization's summer 2005 newsletter (see www.rmi.org); cutting edge research and development conducted by the Midwest Renewable Energy Association; deployment by Mackinaw Power of modern, large capacity wind turbines on the northern tip of Michigan's lower peninsula, and plans to deploy more wind turbines on the Lake Michigan shoreline of west Michigan; long-established Lake Michigan shoreline wind power operation by the Traverse City, Michigan, municipal power company; advances in solar electricity by Solar Ovonics in Troy, Michigan (which manufactures solar electricity generating roofing shingles, which could be installed unobtrusively over huge surface areas atop families' homes); advances in solar power technology documented by Steve Strong at Solar Design Associates; and a recent report commissioned by the U.S. Public Interest Research Group (*Redirecting America's Energy: The Economic and Consumer Benefits of Clean Energy Policies*, February 2005) all clearly show that renewables, efficiency and conservation not only are ready to go, reliable, safe, clean and affordable options for electricity generation and savings, but also the source for tremendous job growth and cost savings. Whereas NMC/Consumers may have a business agenda to ignore and downplay the potential for such promising alternatives to polluting sources of electricity

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such as fossil fuels and nuclear power, the NRC should fully examine such alternatives in its environmental impact statement. (PS-EE-28)

Comment: The other night a man named J. Herman, I think that was his last name, who approached, he's a bioneer. If you get a chance to look up bioneers in the Internet or something. And he was talking about his and others' discovery that nature's major source of action, energy, has to do with a spiral type of motion that water flows in a spiral. And there is the answer to our energy problems in the not too distance future. (PS-D-11)

Comment: But I once thought that the hydrogen car was going to be the successor. Now I find out that yes, the hydrogen car leaks at the back end only water, marvelous. What we are not being told is the front end, that you need massive electricity to crack the water and make it into hydrogen so you've got fuel cells. (PS-D-8)

Comment: So there are at least six nuclear plants that are in process, some of them simply were started and not completed earlier. I think the Watts in the TVA [Tennessee Valley Authority] system is one of them. And there are others that are being worked up to provide the extensive amount of electric power needed to make a hydrogen H. So watch it when you talk hydrogen. (PS-D-9)

Comment: I would strongly suggest that you get a chance to listen to Amory Lovens. He has been talking best power energy solutions for years now. One of the last times I heard him personally was talking to the manufactures association over in Lansing. Another time was up at a renewable resources pageant up in Treavor City. (PS-D-10)

Response: *The GEIS includes an extensive discussion of alternative energy sources. Environmental impacts associated with various reasonable alternatives to renewal of the OL for Palisades will be discussed in Chapter 8 of the SEIS.*

Comment: And, I would like to point out in terms of renewables, the job potential. Tremendous job potential. A lot was said about jobs. There's a recent report that the NRC reviewers need to include in this review which is by Amory Lovens of the Rocky Mountain Institute, where he points out that renewables already are leaving nuclear power in the dust in terms of marketplace reality. And, another report by the U.S. Public Research Group shows that hundreds of thousands of jobs could be created through renewables like wind and solar and efficiency measures. And, that could, the Kyoto, the Kyoto global warming quotas could be met in the United States with nuclear power being rolled back 50 percent, we could still meet the Kyoto standards in this country. And so, nuclear power is not the solution to global warming. It would cost too much. It would take too long to build new reactors. (PS-Q-11)

Response: *The socioeconomic impacts associated with reasonable alternatives to renewal of the OL for Palisades will be discussed in Chapter 8 of the SEIS.*

Part II - Comments Received on the Draft SEIS

Pursuant to 10 CFR Part 51, the NRC staff transmitted the *Generic Environmental Impact Statement for License Renewal of Nuclear Plants, Regarding Palisades Nuclear Plant, Draft Report for Comment* (NUREG-1437, Supplement 27, referred to as the draft Supplemental Environmental Impact Statement [SEIS]) to Federal, State, and local government agencies; certain Indian tribes; and interested members of the public. As part of the process to solicit public comments on the draft SEIS, the NRC staff:

- Placed a copy of the draft SEIS into the NRC's Public Electronic Reading Room, its license renewal website, and at the South Haven Memorial Library;
- Sent copies of the draft SEIS to the applicant; members of the public who requested copies; representatives of certain Indian tribes; and certain Federal, State, and local agencies;
- Published a Notice of Availability of the draft SEIS in the *Federal Register* on February 23, 2006 (71 FR 9383);
- Issued public announcements, such as advertisements in local newspapers and postings in public places, of the availability of the draft SEIS;
- Announced and held two public meetings at Lake Michigan College in South Haven, Michigan, on April 5, 2006, to describe the results of the environmental review and answer related questions;
- Issued public service announcements and press releases announcing the issuance of the draft SEIS, the public meetings, and instructions on how to comment on the draft SEIS; and
- Established an e-mail address to receive comments on the draft SEIS through the Internet.

During the comment period, the NRC staff received a total of 16 comment letters in addition to the comments received during the public meetings.

The NRC staff has reviewed the public meeting transcripts and the 16 comment letters that are part of the docket file for the application, all of which are available in the NRC's Public Document Room. Appendix A, Part II, Section A.2, contains a summary of the comments and the NRC staff's responses. Related issues are grouped together. Appendix A, Part II, Section A.3, contains references cited in the NRC staff's responses. Appendix A, Part II,

Appendix A

Section A.4, contains excerpts of the April 5, 2006, public meeting transcripts, and Section A.5 contains the comment letters.

Each comment identified by the NRC staff was assigned a specific alphanumeric identifier (marker). That identifier is typed in the transcript at the end of the discussion of the comment or in the margin at the beginning of the discussion of the comment in a letter. The speakers at the meetings are listed in speaking order. Table A-2 gives the commenter's ID and affiliation (if stated) and the source of the comment (i.e., public meeting transcript or comment letter).

Table A-2. Comments Received on the Draft SEIS

Commenter ID	Commenter	Affiliation (If Stated)	Comment Source^(a)
A	Kevin Kamps	Nuclear Information and Resource Service	Afternoon Meeting Transcript
B	Kenneth Richards	Palisades Conversion Group	Afternoon Meeting Transcript
C	Kathryn Barnes		Afternoon Meeting Transcript
D	Ruben Dal Monte		Afternoon Meeting Transcript
E	Don Henkel		Afternoon Meeting Transcript
F	Corrine Carey	Don't Waste Michigan	Afternoon Meeting Transcript
G	Alice Hirt		Afternoon Meeting Transcript
H	Mary Ann Middaugh		Afternoon Meeting Transcript
I	John Tapper	County Board of Commissioners	Afternoon Meeting Transcript
J	Nancy Ann Whaley	Supervisor, Geneva Township	Afternoon Meeting Transcript
K	Lewis Mitchell		Afternoon Meeting Transcript
L	Michael Martin		Afternoon Meeting Transcript
M	Norm Knight		Afternoon Meeting Transcript
N	Paul Harden	Site Vice President of Palisades	Afternoon Meeting Transcript
O	Kenneth Richards	Palisades Conversion Group	Evening Meeting Transcript
P	Maynard Kauffman	Michigan Land Trustees	Evening Meeting Transcript
Q	Sandra Adams		Evening Meeting Transcript
R	Wade Adams		Evening Meeting Transcript
S	Unidentified member of the audience		Evening Meeting Transcript
T	Liz Overheiser		Evening Meeting Transcript
U	Tom Tanzos	County Commissioner, First District of Van Buren County	Evening Meeting Transcript
V	Richard Freestone	County Commissioner, First District of Van Buren County	Evening Meeting Transcript
W	Wayne Rendell	Supervisor, Covert Township	Evening Meeting Transcript
X	Dale Lewis	Mayor, South Haven	Evening Meeting Transcript
Y	Ryan McCoy		Evening Meeting Transcript
Z	Robert Hannan		Evening Meeting Transcript
AA	Gary Karch		Evening Meeting Transcript

Table A-2. (contd)

Commenter ID	Commenter	Affiliation (If Stated)	Comment Source ^(a)
BB	Barbara Geisler		Evening Meeting Transcript
CC	Kevin Kamps	Nuclear Information and Resource Service	Evening Meeting Transcript
DD	Kathryn Barnes	Don't Waste Michigan	Evening Meeting Transcript
EE	Paul Harden	Site Vice President of Palisades	Evening Meeting Transcript
FF	Diane Byrne		Letter (ML0613705090)
GG	Tanya Cabala et al.	Don't Waste Michigan; Coalition for a Nuclear Free Great Lakes; Nuclear Information and Resource Service; Tanya Cabala, Great Lakes Consulting; Citizens Action Coalition of Indiana; Canadian Coalition for Nuclear Responsibility/ Regroupement pour la surveillance du nucléaire; Citizens for Alternatives to Chemical Contamination; Citizens Resistance at Fermi Two (CRAFT); Citizens for Renewable Energy; Huron Environmental Activist League; Clean Water Action; Home for Peace and Justice; Great Lakes United; IHM Justice, Peace and Sustainability Office; Indigenous Environmental Network (IEN; International Institute of Concern for Public Health; Lone Tree Council; Kalamazoo River Protection Association; Michigan Citizens for Water Conservation; Michigan Land Trustees; Michigan Environmental Council; Michigan Interfaith Climate and Energy Campaign/Voices for Earth Justice; National Environmental Trust; Nuclear Energy Information Service (NEIS); Nuclear-Free Great Lakes Campaign; Nuclear Policy Research Institute; Nukewatch; Radiological Evaluation & Action Project, Great Lakes; Sierra Club, Mackinac (Michigan) Chapter; Van Buren County Greens	Letter (ML061570042)
HH	Marguerite Callaghan		Letter (ML0612402061)
II	Michael T. Chezik	U.S. Department of the Interior, Office of Environmental Policy and Compliance	Letter (ML061570025)
JJ	Ruben Dal Monte		Letter (ML060900043)
KK	Morgan Dill		Letter (ML0614601460)
LL	Paul French		Letter (ML0612100510)
MM	Art Hanson		Letter (ML0612100430)
NN	Natalie Hanson		Letter (ML0612100440)
OO	Paul Harden	Site Vice President of Palisades	Letter (ML0613705090)

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Table A-2. (contd)

Commenter ID	Commenter	Affiliation (If Stated)	Comment Source^(a)
PP	Kevin Kamps	Nuclear Information and Resource Service	Letter (ML0615700220)
QQ	Connie and Jim McAllister		Letter (ML061650257)
RR	Terry O'Brien		Letter (ML0615700200)
SS	George Richards		Letter (ML0611103500)
TT	Kenneth Richards (attachment to transcript)	Palisades Conversion Group	Letter (ML061110045)
UU	Kenneth A. Westlake	U.S. Environmental Protection Agency, Region 5	Letter (ML061640114)

(a) The afternoon and evening transcripts can be found under accession numbers ML061090128 and ML061080579, respectively.

The NRC staff made a determination on each comment that it was one of the following:

- A comment that was actually a question and introduces no new information.
- A comment that was either related to support or opposition of license renewal in general (or specifically, Palisades) or that makes a general statement about the licensing renewal process. It may make only a general statement regarding Category 1 and/or Category 2 issues. In addition, it provides no new information and does not pertain to 10 CFR Part 54.
- A comment about a Category 1 issue that provided new information that required evaluation during the review, or provided no new information.
- A comment about a Category 2 issue that provided information that required evaluation during the review, or provided no such information.
- A comment regarding alternatives to the proposed action.
- A comment that raised an environmental issue that was not addressed in the GEIS or the draft SEIS.
- A comment outside the scope of license renewal (not related to 10 CFR Parts 51 or 54) that includes comments regarding the need for power.
- A comment on safety issues pertaining to 10 CFR Part 54.
- A comment that was editorial in nature.

There was no significant new information provided on Category 1 issues or information that required further evaluation on Category 2 issues. Therefore, the conclusions in the GEIS and draft SEIS remained valid and bounding, and no further evaluation was performed.

Comments without a supporting technical basis or without any new information are discussed in this appendix, and not in other sections of this report. Relevant references that address the issues within the regulatory authority of the NRC are provided where appropriate. Many of these references can be obtained from the NRC Public Document Room.

Within each section of Part II of this appendix (A.2.1 through A.2.17), similar comments are grouped together for ease of reference, and a summary description of the comments is given, followed by the NRC staff's response. Where the comment or question resulted in a change in the text of the draft report, the corresponding response refers the reader to the appropriate section of this report where the change was made. Revisions to the text in the draft report are designated by vertical lines beside the text.

A.2 Comments and Responses

Comments in this section are grouped in the following categories:

- A.2.1 Comments Concerning the License Renewal Process, p. A-49
- A.2.2 Comments in Support of License Renewal at Palisades Nuclear Plant, p. A-52
- A.2.3 Comments in Support of Nuclear Power, p. A-59
- A.2.4 Comments in Opposition to License Renewal at Palisades Nuclear Plant, p. A-60
- A.2.5 Comments in Opposition to Nuclear Power, p. A-63
- A.2.6 Comments Concerning Aquatic Ecology, Terrestrial Ecology, and Threatened and Endangered Species Issues, p. A-66
- A.2.7 Comments Concerning Surface-Water Quality, Hydrology, and Use Issues, p. A-69
- A.2.8 Comments Concerning Human Health Issues, p. A-71
- A.2.9 Comments Concerning Socioeconomic Issues, p. A-77
- A.2.10 Comments Concerning Postulated Accidents, p. A-89
- A.2.11 Comments Concerning Uranium Fuel Cycle and Waste Management Issues, p. A-92
- A.2.12 Comments Concerning Alternative Energy Sources, p. A-96
- A.2.13 Comments Concerning Monitoring Issues, p. A-104
- A.2.14 Comments Concerning Decommissioning Issues, p. A-107
- A.2.15 Comments Concerning Global Warming, p. A-108
- A.2.16 Comments Concerning Editorial Issues, p. A-109
- A.2.17 Issues Outside the Scope of the Environmental Review for License Renewal: Safeguards and Security; Cask Incident; Dry Cask Storage, Waste Confidence Rule, Spent Fuel; Aging Management; Allegations Process; Cost-Benefit Analysis; Energy Policy; and Emergency Response and Preparedness, p. A-115

A.2.1 Comments Concerning the License Renewal Process

Comment: And my question has to do with the schedule that you went through. My question is what is the breakneck speed up there all about? I mean, back in July 28th, we requested an extension to the scoping period and I don't even think we got an answer on that. We sure didn't get an extension, but we didn't get an answer even. And so my question is if you really want public input on this stuff, then, and I know you're going to say, well, the Commission told us to and maybe even, well, Congress told us to beyond that but, this, this breakneck speed, this sprint is just, you know, kind of, the writing's on the wall, I would have to say. I would like to make that request. I'd like to ask for another three months on the comment period ---- for meaningful public input. (A-1)

Response: *The comment requests an extension to the draft comment period. By letter dated September 7, 2005, the NRC responded to an August 19, 2005, request for an extension. By letter dated May 22, 2006, the NRC also responded to a May 10, 2006, request. In both cases, the NRC stated that its established time period for comments on the draft SEIS for license renewal balances the Commission's goal for ensuring openness in the regulatory processes with its goal of ensuring that the NRC's actions are effective, efficient, realistic, and timely. The requests did not provide a sufficient basis for an extension to the established comment period. The comment will not be evaluated further.*

Comment: Well, just to respond to that. I mean, our efforts as local concerned citizens regarding this very dangerously deteriorated plant have involved the NRC licensing process, performed pro bono by us through completely volunteer efforts on a grass roots level. And so this thing is going on at the same time as that licensing process, which we're still engaged in because we've appealed the licensing board's ruling against us. So I think the Commission's regulations are unreasonable. (A-2)

Comment: And also, this whole summation. It's all, you're all under the premise on this whole review that there's, nothing's going to happen. That there's no accidents. But there's things that happen all the time. So this, you're, you're, you're process, I think it is defective. (C-2)

Comment: Number two because of all this and because of the nature of this dangerous industry that has to be closed, it has to be secret, it has to be top down, it has to be authoritarian. This isn't a real democratic meeting here. It couldn't possibly be, you see. This is so we think we have some input. (BB-3)

Comment: I would like to see with your rules, a rule be made if, if this nuclear power plant is relicensed that everybody that is in on the decision to relicense it be obligated with their families to live within five miles of Palisades until the plant is shut down. (DD-13)

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Comment: NRC's comment framework unnecessarily restricts public involvement. The NRC has established a framework for this application process that unfairly and arbitrarily eliminates a huge array of issues from consideration, discussion and comment by individuals, organizations, and Native American tribes that provides an effective obstacle to meaningful public participation. Because of this, some of these comments will fall "outside" of the scope of this process. Regardless, these comments are provided on issues that we believe are germane, and we vigorously object to the arbitrary and overly strict limitations on the scope of public input. (GG-1)

Comment: Given what is at stake with consideration of extending an operating license for Palisades, a nuclear power plant and waste storage facility unwisely situated within the heart of Great Lakes, it is imperative to examine the pertinent issues exhaustively as well as encourage the full and meaningful participation of the large constituency of citizens and stakeholders who will be affected by the license decision. (GG-3)

Comment: Unfortunately, the NRC's implicit mission has been more one of protecting the nuclear power industry's interests rather than the interests of the public. (GG-15)

Comment: For the reasons laid out in this document, the coalition of aforementioned environmental, social justice, and public interest organizations oppose the application by Palisades nuclear power plant to operate for an additional 20 years beyond its original 40 year license. The decision to sanction approval of the 20-year license extension appears to have been predetermined and the invitation to members of the public and citizens of this region to participate in this decision making process has been merely perfunctory. This coalition of organizations protests the severe limitations of the process and advocates for a decision-making framework that allows for an unbiased, deliberative, participatory discussion as to whether or not to allow 20 more years of operation by the Palisades nuclear power plant. With a fair and just Environmental Impact Statement – the conclusion reached in the EIS would not have been the continued operation of a potentially catastrophic accident risk and terrorist target on our beloved Lake Michigan shoreline. These risks are exacerbated by the already regrettable high-level radioactive waste storage -- or de facto high-level nuclear dump -- in the heart of the Great Lakes.

There are too many explicit threats to the region's environment and people that have been ignored in order to promote the use of an energy that is far too costly, exceedingly hazardous, increasingly risky and highly irresponsible, as the question of a solution to the waste problem is passed down as a regrettable legacy to future generations.

For these reasons we urge that the proposed 20-year license extension be denied until all environmental impact concerns raised here and by other stakeholders are addressed in an objective process that is deemed acceptable by the public as prescribed by the 1969 National Environmental Policy Act (NEPA). (GG-51)

Comment: Much of the same thing can be said of the NRC during these current rounds of scoping meetings concerning the re-licensing endeavor. Long time followers of this issue have seen it all from a very different NRC under past presidential administrations. The difference between now and say, the early 90s, cannot be denied. This is a very business friendly NRC, not public or environmentally friendly. (B-5) (TT-5)

Comment: The NRC presented their fact findings and it seemed evident that the decision to renew the Palisades license has been approved, regardless of the concerns, facts and alternatives presented by individuals attending this meeting. I question the purpose of this meeting--? To sugarcoat the problems with Palisades? And not offer the public any part in the decision making process- (QQ-1)

Response: *The comments are in regard to license renewal and its processes in general and disagree with the Commission's regulations and the NRC staff's analysis approach. The Commission has established a process, by rule, for the environmental and safety reviews to be conducted to review a license renewal application. The development of the Commission's regulations governing the license renewal process was subject to public review and comment.*

The comments provide no new and significant information and will not be evaluated further. There was no revision to the text of the SEIS.

Comment: Out of 92 issues identified that need to be addressed in an environmental impact analysis of re-licensing, the NRC has determined that 69 are already "adequately" addressed in the generic impact statement. Only 23 issues were found to require additional assessment for at least some plants at the time of the license renewal review. In other words, members of the public and those who live around Palisades are not allowed to address the 69 issues in comments to the NRC about re-licensing, only the short list of 23 identified by the NRC. At that time, over a decade ago, NRC made no meaningful or adequate public outreach in the vicinity of Palisades to alert the public and potentially interested stakeholders to the significance of the rulemaking and the opportunity to provide meaningful input into the decision. (GG-24)

Response: *Section 1.7.6 of the GEIS states: "All comments on the applicability of the analyses of impacts codified in the rule and the analysis contained in the draft supplemental EIS will be addressed by NRC in the final supplemental EIS in accordance with 40 CFR § 1503.2, regardless of whether the comment is directed to impacts in Category 1 or 2." Therefore, comments are considered for all the 92 identified issues. However, for the 69 Category 1 issues, the NRC staff must determine whether comments provide new and significant information bearing on the previous analysis in the GEIS. If so, these comments will be considered and appropriately factored into the Commission's analysis in the SEIS. If not, then the generic conclusion established by the GEIS is adopted.*

A.2.2 Comments in Support of License Renewal at Palisades Nuclear Plant

Comment: During our hearings and other deliberations, it was clear that Michigan needs nuclear energy and Michigan needs the Palisades plant as it generates enough power for 500,000 of Michigan's residents. Because Michigan is a peninsula, we're limited in the amount of energy, we can't come across where the lakes are, limited in the amount of energy we can import from contiguous areas. Our committee looked at the environmental and safety record of this plant and the record of how the Nuclear Management Company dealt with any problems that arose. The record is excellent on both counts. And we, as elected officials, were kept apprised of all activities at the plant. I've had an opportunity to review the NRC's draft environmental report and want to commend you on a very thorough job you have done. Your conclusion that Palisades has not added anything harmful to the environment, has protected the endangered Pitcher's Thistle, monitors fish, water and crops monthly in the surrounding areas, and has kept reports and permits current with Michigan Department of Environmental Quality matches our findings. Palisades employs about 600 individuals with a payroll of about \$60 million. We very much need the jobs that Palisades provides to this area. These employees are not only responsible while at work, they are also a very real asset to this area of the State. They are involved in their churches, schools, families and communities. Palisades is also a good corporate neighbor. They pay a great deal of taxes to area governments, and are very supportive of the community and work together to make this area of the State a good place to live and raise a family. This is evident from the numerous letters and resolutions of support of re-licensing of this plant from area governmental bodies. I add my voice of support for re-licensure of this environmentally friendly electric generating plant. (H-1)

Comment: Report of the Administrative Affairs Committee. I'm a Board of Commissioners. I hope everybody can hear me. Okay, thanks. Whereas, Palisades has been in operation since 1971, safely providing electricity to Consumer Energy customers for those 34 years, and; Whereas, based on Palisades' continued improved performance, particularly over the past four years since Nuclear Management Company has been operating Palisades, Consumers Energy has increased confidence in the plant's safety, reliability and predictability, and; Whereas, to that end, Consumers Energy announced last summer that it would seek a license renewing for Palisades. Nuclear Management Company will apply for a 20-year license renewal on behalf of the Consumers Energy next month with the U.S. Nuclear Regulatory Commission. When approved, Palisades' license will be renewed through the year 2031, and; Whereas, this means continued employment to the residents of Van Buren County who operate and maintain the plant, continued tax revenue from the plant that are, revenues that are shared by various governments, hospitals, schools, county government, government throughout the region. And this really is continued support for the emergency management activities and continued employment paychecks that bolster your local economy. Now therefore it be resolved that the Van Buren County Board of Commissioners support Consumers Energy in their application process. This was approved March 22nd, '05 and signed by all seven commissioners. And

really our livelihood since this plant has been here, has certainly helped. Helped schools particularly, and not just the Covert region. (I-1)

Comment: I'm Nancy Ann Whaley from Geneva Township. And I, like Mr. Tapper, live on the same land that I was born and raised on. I never realized until I became a board member of Geneva Township in 1987 and became acquainted with the operations and effects at Palisades Nuclear Plant on the structure and economic well being of Geneva Township, as well as the surrounding area. Palisades plant and people continuing support of our communities, organizations and businesses through usage, involvement and monetary support enhancing the overall community health and welfare. (J-1)

Comment: Many Palisades personnel live in Geneva Township and are tax payers which benefits Geneva Township, South Haven Area Emergency Services, Lake Michigan College, South Haven and Bangor Public Schools, Van Buren County Intermediate School District, South Haven Hospital, South Haven Senior Services and Van Buren County. (J-2)

Comment: Being a South Haven Area Emergency Services Authority Board Member, I have watched as Palisades has contributed much to our fire and ambulance service in the way of training, equipment and support. This joint effort for the safety of our citizens and Palisades' personnel is a tribute to working together to make our community what it is today. (J-3)

Comment: Over the years, we have been privileged to reports by Palisades' personnel at our Township board meetings, keeping us informed on happenings, new procedures, updating of siren warning system and just being available to answer questions that arise in our public settings. The seminars presented by Palisades' personnel to provide exposure for the local municipalities, businesses and industry to review the plant and safety procedures that are in place, as well as having contact personnel for our comments and questions is indeed beneficial. Mark Savage, Palisades' employee as well as property owner in Geneva Township, is always available to review any concerns that arise. (J-4)

Comment: At the April 12th 2005 board meeting, the Geneva Township Board unanimously voted to support the license renewal by resolution which was presented to Mark Savage at that meeting. It is my strong belief that the negative personal and economic impact that all of us will feel if the operating license for Palisades is not extended will be a loss of great magnitude to this community. I'm asking your full support for the 20 year renewal of the licensing for Palisades. (J-5)

Comment: The resolution that was passed at the Geneva Township Board on April 12th, 2005 reads: Whereas, Palisades Nuclear Plant has been in operation since December of 1971 safety providing, safely providing electricity to Consumers Energy customers for those 34 years, and based on Palisades continued improved performance, particularly over the past four years since

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Nuclear Management Company has been operating Palisades, Consumers Energy has increased confidence in the plant's safety, reliability and predictability, and to that end, CMS Energy announced last September that they would seek a license renewal for Palisades. Nuclear Management Company will apply for the 20 year license renewal on behalf of Consumers Energy next month with the U.S. Nuclear Regulatory Commission. When approved, Palisades license will be renewed through the year 2031, and this means that the residents of Geneva Township and surrounding areas are receiving continued employment for those who operate and maintain the plant, continued tax revenues from the plant that are shared by the various governments, hospitals and schools throughout the region, continued support for energy management activities, and continued employee paychecks that bolster local economies, and to date, the NRC has approved 30 license renewals for generating stations and is reviewing applications for 10 others, and there are 103 operating nuclear plants in the United States that generate approximately 20 percent of the nations' electricity. Therefore, be it resolved that the Geneva Township Board of Trustees supports Palisades' efforts in the application for a 20 year renewal of the operating license and their efforts to continue the enhancement of economic conditions in our area. This resolution was presented and supported by all Geneva Township board members. (J-6)

Comment: Heard a lot of ifs today. If this, if that, if the other thing, and having been in the newspaper business, I'm a little more inclined to rely on some facts. Not if this happens or if that happens. I've never been in the plant. I've heard people talk about the condition of it. I've never been out there, so I do not know anything about the condition of that plant, whether it's good, bad, brittle or whatever. I'll leave that up to the people that know, the people that are experts. I think the NRC has a whole staff of experts and I'd rather trust them than somebody that's not on the site making inspections and so forth. (K-2)

Comment: In my opinion, Palisades is safe and I want to see that license renewed. (K-5)

Comment: But I've been a proponent, and I'd like to thank Mr. Mark Savage for the wonderful job that he's done over there at Palisades. And in the winter time, I also winter out in Arizona. At that point I'm about 20 miles from the Palo Verde Nuclear Power Plant, which is the largest one in the country. It supplies most of the electricity for Phoenix. I have some pictures which I forwarded to Mark Savage, and have some of them here, which involves replacement of the steam generators. These came up, these were too large to come through the Panama Canal, so they shipped them around South America and up through Mexico, and from there they were transported by fazoli trains up to the Palo Verde Nuclear Power Plant. And I still think nuclear power is the way to go. I think today, approximately 70 percent of the power that's distributed in France is by nuclear power. Why we can't go ahead and listen to these people even if we can't speak French. But, I would like to thank everybody here. I enjoyed your program very much. And I'm a proponent of nuclear power, still. (M-1)

Comment: First, I'd like to focus my comments on the purpose of the meeting, the Draft Supplemental Environmental Impact Statement. And I'd like to commend the NRC on the scope and depth of the report. It's very comprehensive and a lot went into it. A lot of views have gone into it. Nuclear Management Company will also have comments on it. Our preliminary review showed, has come up with no issues of significance, but as we complete the review we will also submit our comments. (N-1)

Comment: Before I address a few of the facts, I'd like to talk about regarding environmental impact to operating the plant, I'd first like to state that not everyone in the public is ever going to agree on whether nuclear power is a good or bad thing. Not everyone in the public is ever going to agree whether the method that this country has chosen to store fuel is a good or bad thing. The diversity of the people, the diversity of the views, and our freedom to express them, that's part of what makes this country great. So I think it's okay that there are differing views out there. But I would like to address a few facts regarding the environmental impact of operating Palisades Nuclear Plant. Environmental responsibility is built in to the design, the operation, the management and the regulation of nuclear power plants. There are multiple redundancies. There are multiple levels of safety. There's defense in depth, and there's a regulatory agency that's very, very intrusive into how we do business to insure that environmental responsibility. The employees at the plant, they're also residents. We raise our children, my baby in the back of the room, here in South Haven and we have a vested interest in also insuring that the plant is environmentally responsible. We continuously monitor radiation levels at the plant. We continuously monitor the release paths from the plant. That's not all we do. We go on to verify it. We sample soil. We sample fruits. We sample fish. We sample water from surrounding areas as an additional validation that we are maintaining the environment safe. And there are multiple regulatory agencies, not just the Nuclear Regulatory Commission. There's Environmental Protection Agency, and there's the Michigan Department of Environmental Quality all of which enforce strict regulations and review what we do at the Palisades Nuclear Plant to insure that we are safe to the environment. Consumers Energy and Nuclear Management Company are convinced that Palisades can be operated safely with minimal impact or adverse impact to the environment. That's why we're investing millions of dollars in the plant in upgrading the plant and the equipment today as we proceed forward with our license renewal process. (N-2)

Comment: We're satisfied the continued operation of this plant is an environmentally responsible decision, and I'm also quite gratified that the Draft Supplemental Environmental Impact Statement has come to that conclusion. And we look forward to a long and prosperous operation and a very safe and environmentally sound manner at the Palisades Nuclear Plant. (N-3)

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Comment: On March 22nd we did pass in 2005, we passed the unanimous resolution in support of the license renewal of the nuclear power plant and I will submit that as a certified copy to you. (U-1)

Comment: One of the things even though you might see it was an economic decision for the County, for the Township and the area, yes, these are all true benefits of having the plant in our area. (U-2)

Comment: But if there was any concern that it was harming the environment or the residents of this county or this area we would not have taken such action. So I would like to present this to you and on behalf of the Board of Commissioners that we unanimously support the license renewal application. (U-3)

Comment: I don't have anything additional to add to what Mr. Tanzos said. I'm also a county commissioner and support the renewal license. (V-1)

Comment: Covert Township has supported Palisades Plant since its inception in 1965. The plant's very location is a direct result of the township's encouragement to construct and operate a nuclear plant in this area. (W-1)

Comment: Consumers Energy, it's predecessor, Consumers Power and the plant's current operator Nuclear Management Company have been good stewards of the environment. At no time since the plant's beginning operation in December of 1971 to the present has posed any threat or danger to the residents of Covert or the surrounding area. (W-2)

Comment: The Covert Township board has officially gone on record to support Palisades license renewal activities through a resolution of support enacted on March 8th, 2005. (W-3)

Comment: As the host township for Palisades nuclear plant Covert Township and seven other taxing entities received over \$6 million annually in taxes from the plant. Over the years this tax money for the township has funded paving roads throughout the township, building water mains throughout the township, lighting intersections and increased fire and police protection for our citizens. Covert public schools receive the lion share of that tax money and provides first class school facilities and services. (W-4)

Comment: Covert Township is very much in favor of Palisades Nuclear Plant's license renewal. It has been, there has been a partnership between Covert Township and Palisades since the beginning. We look forward to that partnership continuing for another 20 years and longer. (W-5)

Comment: Palisades is a great vehicle for industrial growth and growth in South Haven. At the present time during normal operations Palisades employees 600 people from their operations.

And if you can imagine in your town, and I presume that most of you are from outside South Haven since I don't recognize too many of you, if you have something that, a plant that employed 600 people and that were to close down there would be great economic impact on the area. So the nuclear plant right now, Palisades, is in a refueling outage where 900 more people come in to South Haven to work on the outage to repair things, to improve things. You can imagine what that does to the hotels, motels in South Haven. It's a great economic boost to South Haven. If you were to close Palisades down and I haven't heard a good reason tonight for doing it, it would make South Haven a ghost town almost because there just wouldn't be the jobs that are there now. (X-1)

Comment: And I have, as I say I haven't heard a word that says anything about a good reason to close Palisades down. So and we as a city council, oh by the way, I was mayor of South Haven for four years and while I was mayor we passed a resolution also endorsing the continuation of Palisades. (X-2)

Comment: My name is Paul Harden. I'm the site vice president of Palisades Plant. And I'll focus my comments on the purpose of the meeting and that's the draft supplemental environmental impact statement. And I'd like to start off by commending the Nuclear Regulatory Commission on the scope and depth of that report. It's very comprehensive and Nuclear Management Company agrees with the conclusions although we may have some comments that are minor that we'll submit as well by the date none of which will affect the conclusions of the report. (EE-1)

Comment: I'd like to spend a few minutes addressing the environmental impact of operating, continuing to operate the Palisades Nuclear Plant. But before I do that I'd like to recognize not all of us are ever going to agree whether nuclear power plants should exist. Not all of us are ever going to agree the public policy that this country has taken on how to deal with spent nuclear fuel. That's okay. That doesn't bother me. The fact that we have diverse people, diverse views and we have the freedom to speak our opinions is part of what makes this country great. (EE-2)

Comment: What I would like to do is share a few facts. Some of the facts are the environmental responsibility is built into the design of nuclear power plants. There are multiple redundancies so that no single failures of whether it's human failure or equipment failures can cause incidents that would be adverse to the environment. There's environmental responsibility built into the way the plants are operated, the way they're managed and the regulatory oversight. The nuclear industry is one of the more heavily regulated and industries that has additional oversight that there are out there. And the inspectors do a very good job of challenging everything we do. Another fact is that in addition to continuously monitoring radiation levels on the site and monitoring all the release pathways from the site we go beyond that to verify that we're not having an adverse effect to the environment or the people that

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surround the plant. We regularly sample soil. We sample fish. We sample fruits. We sample cows milks to verify that there are no low or trace levels of radioactive material that could have come from the plant. And we do that on a regular basis. Another fact is that the employees that work at the Palisades Nuclear Plant over 600 employees they're also residents of the local areas. They raise their children here too and they have a deep respect and desire to keep the environment safe as well. They're just as concerned about their children as everyone else. (EE-3)

Comment: Given that Consumers Energy and Nuclear Management Company are confident that we can operate Palisades Nuclear Plant and extend the license renewal period safely and with no adverse impact to the environment. That is why we are spending hundreds of millions of dollar each year as we proceed forward through the license renewal process upgrading the plant, changing the equipment. (EE-4)

Comment: I heard some of the concerns in here with aging of equipment. In a nuclear power plant we are required to have what we call aging management programs. We do regularly change out components. Components that aren't changed out get inspected or tested to verify that they are in good condition to continue to operate. And if they start to degrade or the testing shows that there is degradation we change out those components to keep them going. (EE-5)

Comment: I'm not up here to change the mind of anyone who is against nuclear power. But I do want to get those facts out. We agree that, with the conclusions of the draft report that there are no significant or adverse impacts of operating the Palisades Nuclear Plant in the continued license renewal period. And if anyone would like to be educated on the facts or learn more about the plant I would be happy to discuss that with you. If you don't trust talking to someone who works for the plant I'd encourage you to talk to the Nuclear Regulatory Commission because nuclear power can be a safe and viable entity. Everything we do in life has risks. It's a matter of agreement whether those risks are worth endeavoring whether it's a chemical plant, a coal plant or a nuclear plant. But for the purpose of this meeting the draft environmental impact statement we agree with its conclusions and we look forward to operating the plant in a continued operating period. (EE-6)

Comment: I am in favor of continued use of the facility because:

1. It is a valuable, viable alternate energy source which, with proper use, conserves and protects the environment.
2. Manpower required for its continued use provide an economic boost in the winter months for the City of South Haven and its environs. While tourist dollars grow the local economy in summer, many local businesses benefit during the long winter months when Palisades maintenance plant workers come to the area to perform the bulk of plant maintenance during this time. (HH-1)

Comment: As a resident of Bangor (southwestern) Michigan, well writing the area of the Palisades Nuclear Generating Plant, I am writing in support of renewing the license for this plant for another 20 years. (LL-1)

Comment: The plant has been a good neighbor. They routinely test their public warning system and I have never heard of any negative complaints about the operation or safety of this plant. (LL-2)

Comment: I ask that you totally disregard the environmentalist, and other protesters, many of whom do not live in our community. Huxley, is his "brave New world, talked about "General Candle". The environmentalist have done great harm to our country and most American citizens by trying to stem the tide of change for the better. People have lost their jobs to protect to birds or fish. Millions pay exorbitant sums for gasoline, diesel, heating oil and natural Gas, because thanks to the activist, we are held hostage to foreign oil suppliers, because they have blocked drilling, refineries, pipe lines, etc. for years. Most of these protesters are misguided, liberals, with substantial assets and care very little for the public, but only for their own agenda. "General Candle sounds real good to some of them!" No source of energy is 100% safe. But Nuclear power generation has been good for our country, providing jobs and inexpensive power, which God knows we surely need more of. With your oversight, nuclear plants are not perfect, but they have an enviable safety record and the scare mongers and whiners should be ignored. (LL-3)

Comment: This is our plant in our community and we do not want to pay higher prices just to please these environmentalists, especially when most of them do not even live here. I urge you to grant the Palisade nuclear generating Plant the 20 year license that is requested. (LL-4)

Response: *The comments are supportive of license renewal at Palisades and are general in nature. The comments do not provide new and significant information and will not be evaluated further.*

A.2.3 Comments in Support of Nuclear Power

Comment: I knew about the plant when we bought the place. I wasn't concerned a bit about the plant being there, and I'm still not concerned about it. I believe that nuclear power is one of the best answers we've got to getting power in this country. With all of these other things that have been named, they either don't work fully or they're more expensive and they're harder on the environment. I personally am in favor of the nuclear power. And by the way, I'm also one that says thank god for the atomic bomb, because I was in the 77th infantry division and I saw the coast of Japan that we were supposed to hit. And the reason, one of the reasons I'm here today is because they dropped that bomb. And I'm not the least bit ashamed to say so. (K-1)

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Comment: I agree that the US and the world certainly will need to continue to utilize Nuclear Power to reduce emissions and the reliance on foreign oil, and I am all for SAFE, NEW NUCLEAR PLANTS/TECHNOLOGY. (FF-1)

Comment: I'm writing to express my opinion on the use nuclear power plants the United States. I believe we are putting our head in the sand like an ostrich by not using our nuclear power for electricity for the benefit of our citizens of this country. We burn coal like our 18th century ancestors, we burn natural gas that is running out that will be needed for home heating, when we have nuclear energy that is clean, cheap and an unending supply. (SS-1)

Comment: Why do our leaders listen to activist like Kevin Kamps (who most likely got his information from the movie China Syndrome). What I am saying is every new territory our country has ventured into we have learned by doing not letting naysayers run our experts. I understand the country of Israel generates most if not all of their electricity with nuclear power. Our technology not used at home. Look at the advancement in our nuclear submarines since they were put into service. We cannot advance in this field if we don't enter into it. I believe all our electricity one day will be by nuclear power because we must, the problems of spent fuel rods will be figured out by scientists not by activist. (SS-2)

Comment: What I'm saying is build all the new nuclear power plants the electricity companies need to build as that will benefit everyone. As for the Palisades Plant, let the experts make the decisions not the nuts on the street. (SS-3)

Response: *The comments support nuclear power, in general, and will not be evaluated further.*

A.2.4 Comments in Opposition to License Renewal at Palisades Nuclear Plant

Comment: But another thing is, this coalition of ours, which is 25 group strong including Michigan Environmental Council, the biggest coalition of environmental groups in the State, 75 of them, 200,000 Michigan residents. The coalition's still growing, and we plan on fighting this at every turn and that's the factor that's going to stop this from happening. (A-13)

Comment: And I am convinced that because it's of the geology, the problematic problems, the history, the track record at Palisades, the possibility of terrorism, the probability of increased nuclear waste problems, that it's only a matter of time something's going to happen there. And I don't think the risk is worth it. Even though right now were in that, were in a crossroads. And you can take this day and live in this day forever. You could live here. But if after a disaster, you couldn't. (C-7)

Comment: And there's so much to lose. It's not just your lives, your children's lives and the possibility of grandchildren, great grandchildren, but it's a life in this area. It's the soil. It's our relationship with Canada. Do you think Canada would every forgive us for the fall out? Do you

think that we could ever restore the Great Lakes, our water table, if something happened there? And the, and the, the mounds of nuclear waste got into the Great Lakes that's stored there? I don't think you can get it back people. Not with radiation, and not with the huge contamination that an accident would cause. (C-8)

Comment: Consequently, so I will leave this point for the time being and I continue that in this situation my recommendation is that, I request that no approval of operating license renewal be given unless all existing spent fuel is removed from the site and sent to a national central depository. (D-4)

Comment: I recommend that any approval of operating license renewal of existing nuclear plants be in moratorium until the year 2015. (D-7)

Comment: I appreciate the opportunity to speak. Maynard Kauffman speaking on behalf on Michigan Land Trustees. I live on a farm about ten miles straight east of here. And my comments are about alternatives. And what I want to do first is say I am opposed to the 20-year extension of the Palisades operating license. I think it's a needless risk. And I'll try to explain why. (P-2)

Comment: So in that respect we do not have to take the chance even though it might be in your estimation small on re licensing this plant. This plant if relicensed could be in operation for 60 years. I do not believe it was engineered to last 60 years and I don't believe you can change all the components in that plant to make it really be safe for 60 years or even 50 years. (R-5)

Comment: I'm a citizen of South Haven. I'm not affiliated with anyone. I'm here mainly to be educated about it. I, I'm blessed to live close to the beach and I'm on the beach every day and I see that plant every day and I'm, frankly I'm worried so I want to know what's going on. What I've heard from our former mayor and, and some of the commissioners has all been economic based. It's all about economy and jobs. And this touches me deeply because I'm a recently unemployed worker who was selling tropical plants and I lost my job from environmental impact from hurricanes. So I'm unemployed and I still stand opposed to it. I want to know what I'm seeing here more is public relations and not a lot of truth. (Y-1)

Comment: But what I want to see happen is that economy take a backseat to ecology. If this is not ultimately safe for our citizens, if our citizens are breathing radioactive fumes, if there's a potential for a major accident that wipes us all out there's no need for an economy. I'd like to see economy take a backseat to ecology. I'd like better answers on, on the questions that are asked, a lot less lip service. I have a young child I want to see grow up in South Haven. I want him to grow up healthy. It's a beautiful community. We'll find ways to replace the economy. (Y-3)

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Comment: I understand the need for economy and jobs. Let's get that behind us and let's look at the ecology. I think that's most important. (Y-5)

Comment: And just keeping this little plant open 20 more years and maybe it won't blow maybe it will but it's not looking at what we're going to need in the future. That will be very different so let's, let's think about a new way. (BB-6)

Comment: There's a lot of problems there and, these aren't being addressed. The, at one of the meetings earlier and I've been to all of these meetings now, this is before there were a lot of people here. Thank God there's more people getting involved but maybe this is the last meeting. They were talking about the experimental use of sealant. And that wasn't addressed. There was other things that the NRC themselves wanted to address. And when I came to the meeting supposedly for that, those issues they switched locations and so they kept this, the public in the dark on that one. So where's, and I, I don't know the answers to those questions or if they were ever answered to the NRC's specifications. But I know there's real issues at Palisades. (DD-9)

Comment: Well, what does a meltdown mean here. Okay, well, if you live in Covert, you know, you don't have a chance to say goodbye to anyone. If you live anywhere close to Palisades you, you'll, you'll, you're gone. If you live downwind which could be in any direction but usually the wind comes from the Great Lakes. It comes from, from the west going east. (DD-11)

Comment: There is much at stake with the prospect of 20 additional years of nuclear power and radioactive waste generation and the associated risks and serious consequences associated with the Palisades plant, which is already unfortunately sited right in the heart of an exceedingly environmentally valuable and sensitive dune and shoreland on Lake Michigan. Part of the Great Lakes basin, Lake Michigan is an essential facet of a system that is invaluable from a planetary perspective, not only for its contribution to the water supply on the globe – approximately 20% of the world's fresh surface water – but also for its rich and abundant fish and wildlife and the ecosystem services it provides to people, as well as supporting a primary economic engine for the nation. (GG-2)

Comment: I oppose the license renewal because Palisades is an aging facility with a history of noncompliance, reactor pressure vessel embrittlement, radiation release, and other problems that have and will continue to affect the surrounding population beyond Covert Township, Michigan. Many of those affected in the surrounding area are of low socioeconomic status, as well as minorities, raising the issue of environmental justice. (KK-1)

Comment: I oppose the renewal of the Palisades Nuclear Power Plant license for an additional twenty years. The plant is a danger to not only our precious natural resources in Michigan, but to countless people who are affected by its daily operation, and many more who would be affected should a disaster occur. (KK-10)

Comment: NRC writes (on page Roman numeral xvi of its draft EIS) that "...there are factors, in addition to license renewal, that will ultimately determine whether an existing nuclear power plant continues to operate beyond the period of the current [operating license]." We would agree with that. A catastrophic accident would do that in a hurry. Last October, had the 107 ton fully loaded high-level radioactive waste container dropped onto the waste storage pool floor, Palisades' operations almost certainly would have ended for good. (MM-11) (NN-11)

Comment: My wife and I grew up vacationing at Palisades Park. We recently purchased an old cottage and renovated it so our four children, 8 and under, will grow up with the same wonderful experiences at the lake. We understand nuclear power can be a viable option for clean and efficient power, but we *strongly* oppose the renewal of the Palisades Nuclear Power Plant license. (RR-1)

Comment: There are far too many identified safety, security, environmental and health issues to overcome specific to the Palisades facility to warrant a license renewal. The age-related degradation, embrittlement of the reactor vessel, radioactive generation and storage issues, as well as the sensitive socio-economic impact of the community are just a few. (RR-2)

Comment: We implore you to deny the license renewal for Palisades Nuclear Power Plant, listen to the voices of the people, and take a stand for future generations. This is an opportunity to do what is right and set a course for safe, healthy, efficient and renewable energy, rather than holding on to strings of a proven aged, unsafe and volatile facility. Please do the right thing and deny this application, for our kids and the future generations." (RR-4)

Comment: Seek alternative solutions for a safe and clean future. (QQ-4)

Response: *The comments oppose license renewal at Palisades Nuclear Plant and are general in nature. The comments do not provide new and significant information and will not be evaluated further.*

A.2.5 General Comments in Opposition to Nuclear Power

Comment: I want to say no matter where you stand on the nuclear issue, if you think Palisades is great and you like nuclear energy, or if you're opposed to it, we're all in the same boat, all of us that live here in this area. And that is that. What happens there is going to affect us. It's not only going to affect us, but it's going to affect our children's children's children. You might be the last person in your lineage if that thing blows because you'll never have any, any offspring with normal DNA, if at all, you survive it, if at all, that you can reproduce. (C-5)

Comment: What happened in Chernobyl was disastrous. Kevin Kamps, who is one of my good friends, brought children from Chernobyl over here. I worked on the U.S., U.S.S.R.

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Reconciliation Project to stop the nuclearization and the cold war, and we, we were successful. And when I see these children from Chernobyl whose beautiful souls with their sunken eyes, and they're severely handicapped, and I see American kids who are bright and bouncing around and having fun, Corinne and I ran the Children's Peace Camp and we had American children and Chernobyl kids. The, the contrast between the children was so immense, yet they're all innocent beautiful little children. The only difference is Chernobyl blew and Palisades hasn't yet. (C-6)

Comment: It's just hard for me to imagine that, that we're all here in this room even talking about this. I think the humanity of, of this nuclear thing is, is not good. And if, and everyone in here is a human being and therefore we should all be able to define the meaning of humanity. And to take a risk like this in my mind I, I don't care how safe it is, you know, it's, it's still a risk and you people you're here defending yourselves from a risk, a potential risk. So therefore you're admitting that there could be a meltdown. So I, I just find this whole thing just, us being here talking about this is totally insane. (Z-1)

Comment: We shouldn't even, man should have never split the atom to begin with. It was a bad thing. It's very bad. (Z-2)

Comment: And I also concur with Mr. is it Hannan, who said these, how can we even be in this year of, of, of 2006 still being, trying to justify the manufacture of a waste that is absolutely lethal for hundreds and thousands of years. What are we going to do with it. Who, nobody wants it. This is the substance of which we are having international, you know, traumas over right now with North Korea and a few years ago it was, you know, India, Pakistan and every, every nation on earth wants nuclear and we're giving it to other nations. It's absolutely preposterous. (AA-6)

Comment: The process by which we are generating electricity is the same process that was used to make the atomic bomb that was dropped on, on Hiroshima and Nagasaki. So this is a technology of death make no mistake about it. We are made of better stuff than this. We are intelligent enough to create electricity in a manner that does not produce a waste. And to have the waste off of discussion for the environmental impact statement is absolutely scandalous. (AA-7)

Comment: In the early 80s I, I became concerned about nuclear issues in, in a broad way. And I remember a film from that era which was called The Dark Circle documentary. And it, they interviewed lots of people in the nuclear industry both the weapons industry and the power industry. And what I remember from that is how intertwined they all are. That it, that you can't really separate atoms for peace, atoms for industry from, from the weapons industry. And Gary Kartch said, you know, it's, it's about death. Do we choose death or do we choose life. It really is about that ultimately. (BB-1)

Comment: And in going to various meetings and conferences through the last 25 years I want to focus on just one thing which is I've heard a lot of whistle blowers speak. And their lives have been ruined. Now some of you may have seen the film about Karen Silkwood and maybe you thought that was over dramatized or not true or whatever. But I sat down with a women in her 70s at at least three of these events who told me what happened to her. She went, and this is I'm, I'm moving to the inside here. She was an innocent young girl. She went to work for the industry and she noticed that some figures weren't quite right. And so she thought she better tell her boss and she did and that was the beginning. Basically she was told you can either do the figures the way we want them or you can leave. And she realized either way she was a marked woman. And yes she did have to go underground. She, the, the act that protected people that came out I believe after Silkwood she, she, she literally had to go underground. This is, this a gramma tell me this. She, she was, she felt, she feels deliberately exposed. She was dying of bone cancer. Now this is just one woman speaking. I don't think she was lying but I can't prove this. But she's only one of several that I've talked to who had their lives ruined in one way or another. Ann Harris at Lockspar [Watts Bar], part of TVA, Curtis Overall eight years ordeal, same place. Finally won on appeals. Wrongful termination. I, he was in tears, divorced, everything else. Ann Harris was run off the road. Interestingly enough it was Curtis Overall whose, who pointed out the flaws Lockspar [Watts Bar] which led to Cook very near us, D.C. Cook being shut down for three years because they had the same kind of system. And I remember hearing a guy in St. Joe talk about working at Cook and becoming a whistle blower and his life was ruined too. That's very near us. People are threatened. They are called on the phone. They are run off the road. So knowing this I wonder if this isn't just a charade. How many of you within the industry would have the guts if you, if you decided it was, there were things that weren't quite right to say so in public. You'd, you'd pay a heavy price number one. (BB-2)

Comment: So I guess I want to end by saying I don't think you can have nuclear weapons and nuclear power, the Dark Circle and also have democracy. And I think that's what we're up against in this country right now if you want to look at, excuse me, the big picture. (BB-4)

Comment: The NRC and power companies thus advocate for a dangerous source of electricity, nuclear power, calling it "clean" and "green" by appearing to discourage another harmful electricity source, one, however, that they plan to continue utilizing to the fullest extent possible... Further, nuclear power is not "carbon free," as it relies heavily on the use of fossil fuels in the mining, milling, processing, transportation, management, and storage of its fuel and waste products. (GG-17)

Response: *The comments oppose nuclear power, in general, and will not be evaluated further.*

A.2.6 Concerning Aquatic Ecology, Terrestrial Ecology, and Threatened and Endangered Species Issues

Comment: I've seen frogs with ten arms. I've seen a lot of things from broken DNA. (DD-4)

Comment: What it means that there is a huge area of contamination. It could go into Canada. It could affect all of us in Michigan and Canadians. And as in the case of Chernobyl that year Meyer -- had the most insane bizarre food. I am sure in Michigan because of all our precipitation we had fallout. I had turnips, they got this big with a little narrow and then they bulged out again and they were rotten inside. I had cabbage that was huge and rotten inside. That's not normal. It's never happened since. (DD-12)

Comment: A license extension at Palisades increases the fragile status of numerous already threatened, endangered, or candidate species, from daily "routine" radiation releases and/or potential large-scale radiation releases. Species exposed to cumulative exposures from the radioactive discharges of a nuclear power plant may over time develop subtle genetic alterations that are not observable in the short term, but that could have large, subtle impacts within a population, not immediately apparent. This has significant implications for the threatened and endangered species of southwest Michigan. (GG-14)

Comment: NMC/Consumers' Environmental Report identifies numerous Federal and State of Michigan endangered, threatened, candidate or species of special concern – such as the eastern box turtle, lake sturgeon, lake herring, creek chub sucker, Pitcher's thistle, prairie warbler, prairie vole, eastern massasauga rattlesnake, spotted turtle, Indiana bat, globe-fruited seedbox, scirpus-like rush, bald rush, Carey's smartweed, and sedges that either already live at or near the Palisades reactor or along its transmission lines, or very likely could in the future.

Approving a license extension of 20 more years of reactor operations at Palisades increases the fragile status of these already threatened, endangered, or candidate species, from daily "routine" radiation releases and/or potential large-scale radiation releases. At minimum, NMC/Consumers must be required to establish a baseline for the status of the endangered species listed above and conduct appropriate monitoring to ensure that Palisades is not further endangering their health and viability. (GG-50)

Comment: NMC/Consumers must be required to establish a baseline for the status of the endangered species and conduct appropriate monitoring to ensure that Palisades is not further endangering their health and viability. Approving a license extension of 20 more years of reactor operations at Palisades increases the fragile status of these already threatened, endangered, or candidate species, from daily "routine" radiation releases and/or potential large-scale radiation releases. (GG-65)

Response: *The International Commission on Radiological Protection (ICRP) states that if man is adequately protected, then other living things are also likely to be sufficiently protected (ICRP 1977, 1991). The International Atomic Energy Agency (IAEA 1992) and the National Council on Radiation Protection and Measurements (NCRP 1991) reported that a chronic dose rate of no greater than 10 mGy/day (1 rad/day) to the maximally exposed individual (MEI) in a population of aquatic organisms would ensure protection for the population.*

IAEA (1992) also concluded that chronic dose rates of 1 mGy/day (0.1 rad/day) or less do not appear to cause observable changes in terrestrial animal populations. Table 5-9, in the IAEA document, compares the estimated whole body dose to the biota to the IAEA chronic dose rate values for aquatic organisms and terrestrial animals. The cumulative effects of the current operating unit would result in dose rates significantly less than the NCRP and IAEA studies. The comment provides no new and significant information and will not be evaluated further.

Comment: The license renewal does not involve any major construction or physical alteration of the project area. The Generic EIS and Draft Supplement 27 adequately address the concerns of the Department regarding fish and wildlife resources, as well as species protected by the Endangered Species Act. We concur with the preliminary conclusions of the U.S. Nuclear Regulatory Commission staff with respect to the impacts of continued operations on these resources and species. We have no comment on the adequacy of other resource discussions presented in the documents. (II-1)

Response: *The comment relates to aquatic ecology, terrestrial ecology, and threatened and endangered species issues covered in the SEIS. The comment provides no new and significant information and will not be evaluated further.*

Comment: Section 4.1, *Cooling-System*, Page 4-9. We are concerned about entrainment of fish and shellfish in early life stages. Under a U.S. EPA rule, codified in 40 CFR.125 (U.S. EPA Rule), Palisades Nuclear Plant is required to reduce its entrainment of fish and shellfish in early life stages. Under the U.S. EPA Rule, Palisades Nuclear Plant is required to choose one of five compliance alternatives to reduce entrainment and the compliance alternative must meet a regulatory performance standard. We understand that Palisades will comply with the U.S. EPA rule through conditions in a NPDES permit issued by the Michigan Department of Environmental Quality. However, we believe that the project proponents should have a proposed compliance alternative and regulatory performance standard for Palisades, because the project proponents must assess the feasibility of complying with the rule. Listing information would provide a comprehensive public disclosure of plans to reduce entrainment. Therefore, we request the project proponents to determine and disclose the proposed compliance alternative and performance standard that would most likely be proposed in the NPDES permit application for Palisades in the final SEIS. (UU-17)

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Response: *The final rule issued by the EPA on February 16, 2004, commonly referred to as the 316(b) Phase II regulations, establishes requirements to minimize adverse impacts on fish and shellfish from cooling-water intake structures at large power plants. Facilities have several compliance alternatives that meet the performance standards defined in the final rule. The alternatives include demonstrating that the existing cooling-water intake configuration provides adequate protection, selecting additional fish protection technologies (such as screens with fish return systems), and using restoration measures. Additional information regarding the rule can be found at <http://www.epa.gov/waterscience/316b/>.*

Compliance with this rule is accomplished under implementation of the NPDES program. For Palisades, this program is administered by the State of Michigan Department of Environmental Quality (MDEQ). However, because Palisades employs a closed-cycle cooling system, as described in Section 2.1.3, and since 40 CFR 125.94(a)(1)(i) states that, "you may demonstrate to the Director that you have reduced, or will reduce, your flow commensurate with a closed-cycle recirculating system. In this case, you are deemed to have met the applicable performance standards and will not be required to demonstrate further that your facility meets the impingement mortality and entrainment performance standards specified in paragraph (b) of this section," the NRC staff anticipates that Palisades would meet the performance standard of concern. Nevertheless, this final determination will be made by the MDEQ in its review of Palisades NPDES permit application. The NRC staff has determined that the impacts related to entrainment would be SMALL and no additional mitigation is warranted. However, if the MDEQ requires additional mitigation under the new regulations, the impact would be even further reduced. The comment provides no new and significant information and will not be evaluated further.

Comment: Section 4.6, *Threatened and Endangered Species*, pages 4-32 to 4-35. We are concerned because the draft SEIS does not evaluate impacts on State-listed threatened and endangered species. The draft SEIS includes an evaluation of Federal and State-listed threatened and endangered species in the study area. However, the draft SEIS only evaluates impacts to Federal-listed threatened and endangered species. We believe that the final SEIS should include a more comprehensive evaluation of threatened and endangered species, by including an evaluation of impacts to State-listed species. (UU-18)

Response: *The Endangered Species Act [10 CFR 51.53(c)(3)(ii)(E)] requires the NRC to perform an assessment of impacts of a proposed action (license renewal) on Federally-listed threatened and endangered species in its SEIS. There is no Federal statutory requirement to specifically consider State-listed species in our analysis. However, the NRC staff does evaluate the impacts on all biota and their habitats from operation of the plant cooling system (Section 4.1) and continued operation of the transmission lines (Section 4.2). Potential impacts on aquatic and terrestrial species, regardless of their status as Federally-listed or State-listed species, were considered in this assessment; the conclusion reached in this assessment was that the impacts from continued operation of the cooling system and transmission system on all*

biota and their habitats would be SMALL. Therefore, no additional actions were taken to further categorize or distinguish between Federally-listed and State-listed species. The comment provides no new and significant information and will not be evaluated further.

A.2.7 Comments Concerning Surface-Water Quality, Hydrology, and Use Issues

Comment: I'm concerned about Palisades because through the years, you know, growing up here in Michigan the last time I was in Lake Michigan was as a baby, when I was a baby my mother has a photo of me in the water. When I was growing up I went swimming quite a lot in Lake Michigan. I can remember drinking the water, swimming, enjoying it. I can remember how many people were on the beach. It was just glorious. And I can remember drinking the water and it was clean, sometimes it tasted a little fishy but, you know, it wasn't a bad taste, you could drink it. You can't drink it now. Since the, the building of the nuclear reactors the water quality has deteriorated. Last time I went swimming last year my daughter and my granddaughter, I have a little almost three-year-old granddaughter now, precious. They went swimming, and they both got stinging rashes. And I got a rash myself although I was only in the water for a couple of minutes. And we cannot drink the water; it's got a bad, foul taste and I don't know if this is because of the chlorine, bromine, and amine released or if it's from other things. (DD-1).

Response: *Sections 2.2.2 and 2.2.3 discuss water use and water quality, respectively. Section 4.1 also discusses the impacts on surface-water quality, hydrology, and use resulting from the operation of the cooling system at Palisades as a Category 1 issue. Discharges of chlorine, bromine, and amine are regulated by the EPA and implemented through the NPDES program. The NRC staff has not identified any new and significant information during its environmental review process, which includes an evaluation of the Palisades NPDES permit and discussion with the MDEQ compliance office. Therefore, the NRC staff concludes that there would be no impacts of discharge of chlorine or other biocides during the renewal term beyond those discussed in the GEIS. The comment provides no new significant information and will not be evaluated further.*

Comment: There are questions regarding the status of the NPDES permit of Palisades to utilize and eventually discharge a compound, Betz Clam-Trol, to Lake Michigan to control mussel and clam mussel colonization in discharge and intake pipes. Reports posted by the Michigan Department of Environmental Quality (MDEQ) in 2000 and through 2004 indicated "continued non-compliance." Subsequent updating of the reports now appears to indicate that the plant is and was in compliance with its permit. To further confuse the matter, MDEQ has stated that the original reports were erroneous. We ask that a full explanation be provided for this situation and how it will be considered in the re-licensing decision. The impact of 20 additional years of pollution improperly controlled under requirements of the National Pollutant Discharge Elimination System will adversely affect the water quality of nearby sources, including Lake Michigan.

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In its "Ninth Biennial Report on Great Lakes Water Quality," the International Joint Commission urged that "[g]overnments monitor toxic chemicals used in large quantities at nuclear power plants, identify radioactive forms of the toxic chemicals and analyze their impact on the Great Lakes ecosystem." The draft EIS must address how the NRC or the U.S. Environmental Protection Agency has met this obligation. (GG-42)

Comment: The EIS should be revised to include how the NRC meets its obligations as described in the International Joint Commission's (IJC) "Ninth Biennial Report on Great Lakes Water Quality." In it, the IJC urged that "[g]overnments monitor toxic chemicals used in large quantities at nuclear power plants, identify radioactive forms of the toxic chemicals and analyze their impact on the Great Lakes ecosystem." (GG-63)

Comment: Further, other toxic chemical discharges to Lake Michigan, such as Betz Clam-Trol, discharged via a National Pollutant Discharge Elimination System (NPDES) permit, require stricter controls and enforcement of violations, as part of any license extension application. (GG-8)

Comment: The impact of 20 additional years of pollution by non-radiological toxic chemicals will directly affect water quality of nearby sources, including Lake Michigan. In 2000, for example, Palisades was found to be in 'continuing noncompliance' for its apparent multiple misuses of Betz Clam-Trol in Lake Michigan for the dispersion of mussels and clams affecting the reactor's water intakes (EPA 2004). (KK-9)

Comment: License renewal should not be granted to the Palisades Nuclear Power Plant, because (4) there is continued noncompliance of non-radiological persistent toxic chemicals to area water sources. (KK-5)

Response: *The NRC staff addressed the issue of the use of molluscicide Betz Clam-Trol and "continuing non-compliance" noted by the MDEQ in Section 2.2.3 of the SEIS, stating that in 2005 the MDEQ documented that the recurring noncompliance notices on the online database are erroneous, and that the facility is in compliance.*

In its response to the Ninth Biennial IJC Report, the EPA concluded that "The U.S. will continue to monitor nuclear generating stations to insure that toxic chemicals are not being used in large quantities and that radioactive forms of toxic chemicals are not being generated in sufficient amounts to cause significant impact on the Great Lakes ecosystem" (EPA 2006). The accumulation of contaminants is a Category 1 issue that has been evaluated in the GEIS. All effluent discharges are regulated under the provisions of the Clean Water Act and the implementing effluent guidelines, limitations, and standards established by the EPA and the States. Conditions of discharge for each plant are specified in its NPDES permit issued by the State or the EPA. The comment provides no new and significant information and will not be evaluated further.

A.2.8 Comments Concerning Human Health Issues

Comment: Yesterday I received my copy of the Generic Environmental Impact Statement for License Renewal of Nuclear Plants Supplement 27 regarding the Palisades Nuclear Power Plant. Reading through both the manual and its cover letters, I see, despite the potential radioactive hazards, the NRC insists the environmental impacts of the Palisades Nuclear Power Plant and the radioactive materials about its reservation is always regarded as small throughout this report. (B-6) (TT-6) (O-1)

Comment: I, responding I think to David Miller or whoever said that the consequences of the daily releases into the environment of radioactive nuclides is small, I don't know what small means. I know cells are small. And I know that the newest report by the National Academy of Sciences has said that there is no safe threshold for radiation. Not one bit of it. So how do you determine, this is new information. You didn't have that information when you licensed this plant 40 years ago. So this should be considered in your re-licensing process. It's new information. Are you talking about a small person, or a small cell, you know? I'm a small person and I don't want one of my small cells injured. So I think that information needs to be considered in this license application. So please look at that information. (G-1)

Comment: My second question is to the health scientist. Is there any level of radiation where you cannot achieve an increase in incidents of cancer. It is my understanding that there is a linear relationship and there is no threshold between the incidents of cancer and your exposure to radiation, the lifetime. (R-2)

Comment: The Palisades plant harms the environment and the health of its workers and surrounding residents from its discharges of radioactive and toxic substances to Lake Michigan, the air, and land. Routine radioactive discharges by nuclear power plants are incorrectly deemed legal and judged to be "safe" by the NRC and the nuclear power industry, contrary to a recent National Academy of Sciences report that confirms that there is no safe level of exposure to radiation. (GG-7)

Comment: Nuclear reactors, including Palisades, are not 'clean.' They emit harmful radioactivity into the environment on a daily basis and generate long-lasting radioactive wastes. (GG-18)

Comment: The NRC also made a determination "that, although no standard exists that can be used to reach a conclusion as to the significance of the magnitude of the collective radiological effects attributable to any plant, these impacts are acceptable in that these impacts would not be sufficiently large to require the NEPA conclusion, for any plant, that the option of extended operation under 10 CFR Part 54 should be eliminated." This determination made by the NRC

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is in direct conflict with a 2005 National Academy of Science report, which concluded that no dose of radiation, no matter how small, can be declared “safe.” (GG-25)

Comment: The NRC has placed this issue outside the scope of the EIS for extending the license for Palisades. We strongly disagree.

There are routine everyday discharges from nuclear power plants, deemed to be both explicitly “permissible” or “allowable,” and implicitly “safe” or “insignificant” by the NRC and the nuclear power industry. Prior to the advent of nuclear power, radioactive fission products, produced in nuclear reactors, were present in only exceedingly rare, trace amounts in isolated locations on earth. Over 300 different radioactive chemicals are currently created by nuclear chain reactions – and it takes hundreds of thousands to many millions of years for these new chemicals to return to a stable state. (GG-27)

Comment: While concerns about the consequences of human exposure to ionizing radiation are not new, the 2005 National Academy of Science’s seventh Biological Effects of Ionizing Radiation (BEIR VII) report on “Health Risks from Exposure to Low Levels of Ionizing Radiation” has confirmed that there is no safe – level of exposure to radiation—that even very low doses can cause cancer and other maladies and that risks from low dose radiation are likely greater than previously thought. The implications of NAS’s recent findings require a thorough analysis by NRC in its EIS of the human health impacts of the radioactive substances released by Palisades. (GG-29)

Comment: One time I sat on the beach and I had the sand in my fingers etcetera and there was a lot of gas coming out of Palisades that day and I was near the plant. I got real sick afterwards. It reminded me of when I was out at the nuclear test site the feelings I had afterwards being very tired and nauseous and just really dead tired. I’m a cancer survivor. I know what it’s like to go through that dark cloud. I’ve seen children from Chernobyl. (DD-2)

Comment: I live on land where there’s pesticide use. I’m been a victim of that which is an essentially a cause of cancer not radiation but radiation does cause cancer too. (DD-3)

Comment: Well, I wondered if I, I presume that you couldn’t calculate an increase number of cancers that would develop because of the increased exposure to radiation in the locality of this plant. And second the study you cited that was commissioned by the National Cancer Institute was a bonafide epidemiology study that, that really looked for a hot spot. (S-1)

Response: *The comments are noted. Radiation exposure to the public during the license renewal term is a Category 1 issue that was evaluated in the GEIS.*

Radiation is only one of many agents with the potential for causing cancer, and cancer caused by radiation cannot be distinguished from cancer attributable to any other cause, such as

chemical carcinogens. The chances of getting cancer from a low dose of radiation is not known precisely because the few effects that may occur cannot be distinguished from normally occurring cancers. The normal chance of dying from cancer is about one in five.

The actual amount of radiation any member of the public receives from activities at nuclear power facilities is so small that scientists have been unable to make empirically based estimates of radiation risk with any precision. There are many difficulties involved in designing research studies that can accurately measure the projected small increases in cancer cases that might be caused by low exposures to radiation when compared to the rate of cancer resulting from all other causes. In the absence of a clear answer, the U.S. Nuclear Regulatory Commission conservatively assumes that any amount of radiation may pose some risk for causing cancer or having some hereditary effect and that the risk is higher for higher radiation exposures. This is called a linear, no-threshold dose-response model and is used to describe the relationship between radiation dose and the occurrence of cancer.

This model suggests that any increase in dose above background levels, no matter how small, results in an incremental increase in risk above existing levels of risk. Although the U.S. Nuclear Regulatory Commission has accepted this hypothesis as a “conservative” (i.e., cautious) model for determining radiation standards, the U.S. Nuclear Regulatory Commission, like other authoritative bodies, recognizes that this model will probably over-estimate radiation risk. The associations between radiation exposure and the development of cancer are mostly based on studies of populations exposed to relatively high levels of ionizing radiation (for instance, the Japanese atomic bomb survivors and the recipients of selected diagnostic or therapeutic medical procedures).

Although radiation can cause cancers at high doses and high dose rates, currently there are no data to establish unequivocally the occurrence of cancer following exposures to doses below about 10 rem. The average annual dose to a member of the public from a nuclear power facility is in the range of less than 1/1000th rem (1 millirem) per year. At Palisades, the dose to a member of the public is much less than 1 mrem per year. This is compared to the 10 rem (10,000 millirem) discussed previously. At doses above 10 rem, a relationship between radiation and cancer can be observed. Although there is a statistical chance that radiation levels that small (i.e., less than 10 rem) could result in a cancer, it has not been possible to calculate with any certainty the probability of cancer induction from a dose this small. Because many agents cause cancer, it is often not possible to say conclusively whether the cancer was radiation-induced cancer.

A number of studies have been performed to examine the health effects around nuclear power facilities.

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- *In 1990, at the request of Congress, the National Cancer Institute conducted a study (NCI 1990) of cancer mortality rates around 52 nuclear power plants and 10 other nuclear facilities including Palisades. The study covered the period from 1950 to 1984 and evaluated the change in mortality rates before and during facility operations. The study concluded there was no evidence that nuclear facilities may be linked causally with excess deaths from leukemia or from other cancers in populations living nearby.*
- *Investigators from the University of Pittsburgh found no link between radiation released during the 1979 accident at the Three-Mile Island nuclear station and cancer deaths among nearby residents. Their study followed more than 32,000 people who lived within 8 km (5 mi) of the facility at the time of the accident.*
- *In January 2001, the Connecticut Academy of Sciences and Engineering issued a report on a study around the Haddam Neck nuclear power plant in Connecticut and concluded that exposures to radionuclides were so low as to be negligible and found no meaningful associations to the cancers studied.*
- *In 2001, the American Cancer Society concluded that, although reports about cancer clusters in some communities have raised public concern, studies show that clusters do not occur more often near nuclear plants than they do by chance elsewhere in the population. Likewise, there is no evidence linking the isotope strontium-90 with increases in breast cancer, prostate cancer, or childhood cancer rates.*
- *In 2001, the Florida Bureau of Environmental Epidemiology reviewed claims that there are striking increases in cancer rates in southeastern Florida counties caused by increased radiation exposures from nuclear power plants. However, using the same data to reconstruct the calculations on which the claims were based, Florida officials did not identify unusually high rates of cancers in these counties compared with the rest of the state of Florida and the nation.*
- *In 2000, the Illinois Public Health Department compared childhood cancer statistics for counties with nuclear power plants to similar counties without nuclear plants and found no statistically significant difference.*

In summary, there are no studies to date that are accepted by the nation's leading scientific authorities that indicate a causative relationship between radiation dose from nuclear power facilities and cancer in the general public. The amount of radioactive material released from nuclear power facilities is well measured, well monitored, and known to be very small.

In spring 2006, the National Research Council of the National Academies published, "Health Risks from Exposure to Low Levels of Ionizing Radiation, BEIR VII Phase 2." A prepublication version of the report was made public in June 2005. The major conclusion of the report is that current scientific evidence is consistent with the hypothesis that there is a linear, no threshold dose response relationship between exposure to ionizing radiation and the development of cancer in humans. This conclusion is consistent with the system of radiological protection that the NRC uses to develop its regulations. Therefore, the NRC's regulations continue to be adequately protective of public health and safety and the environment. None of the findings in the BEIR VII report warrant changes to the NRC regulations. The BEIR VII report does not conclude that there is no safe level of exposure to radiation; it does not address "safe versus not safe." It does continue to support the conclusion that there is some amount of cancer risk associated with any amount of radiation exposure and that the risk increases with exposure and exposure rate. It does conclude that the risk of cancer induction at the dose levels in the NRC's and EPA's radiation standards is very small. Similar conclusions have been made in all of the associated BEIR reports since 1972 (BEIR I, III, and V); the BEIR VII report does not constitute new and significant information.

The comments provide no new and significant information and will not be evaluated further.

Comment: Historically, the NRC has relied on a 1990 National Cancer Institute (NCI) study to address cancer rates near nuclear power plants. However, this study is now outdated, not accounting for latency periods which could have developed into cancers since 1990. And it was essentially methodologically flawed from the start, as the only data considered by the NCI was from the county that each reactor is located in, and not other downwind and downstream populations potentially affected by radioactive releases of the plants. Further, there are a host of other diseases associated with radiation exposure that have not been assessed, such as thyroid disease, infertility, genetic damage and birth defects, heart disease, and immune system suppression, which require monitoring and attention. A baseline assessment, as well as regular monitoring, of cancer and other disease rates is warranted prior to consideration of Palisades' proposal for a 20-year license extension. (GG-31)

Comment: Effects on the health of populations surrounding Palisades and subject to downstream or downwind discharges must be studied and quantified. The implications of the National Academy of Science's recent findings require a thorough analysis by the NRC in its EIS of the human health impacts of the radioactive substances released by Palisades. NMC/Consumers are obligated to provide the communities in the vicinity of the Palisades plant, with a monitoring program to provide them with independent information regarding radioactive discharges and releases. There is also a need to establish a baseline assessment of cancer and other disease rates, as well as a program of regular monitoring, prior to consideration of the proposal for a 20-year license extension. This should also include an evaluation of the potential

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for the synergistic effects of chronic or catastrophic radiation releases combined with the toxic pesticides to which migrant field workers in the region have been exposed. (GG-54)

Response: *The comments propose monitoring the health of people living near Palisades. The evaluation of health effects from exposure to radiation, both natural and man-made, is an ongoing activity involving public, private, and international institutions. International and national organizations such as the ICRP and NCRP provide consensus standards developed from recent and ongoing research.*

The NRC's regulatory limits for effluent releases and subsequent dose to the public are based on the radiation protection recommendations of these organizations. The NRC provides oversight of all licensed commercial nuclear reactors to ensure that regulatory limits for radiological effluent releases and the resulting dose to the public from these releases are within the established limits. The regulations related to radiological effluents and dose to the public can be found in 40 CFR Part 190, 10 CFR Part 20, and 10 CFR Part 50, Appendix I.

Gaseous and liquid effluent releases are monitored at Palisades to demonstrate that they are within regulatory limits. As stated in Section 2.2.7, the dose to the hypothetical MEI is less than 1 mrem. Health effects due to radiation exposure at this level are highly unlikely and would be indistinguishable from effects due to background radiation. The average dose from all sources of radiation, including the natural background, is approximately 360 mrem per year. Therefore, neither the NRC nor the licensees directly monitor the health of the people in the communities around nuclear power plants. As discussed in the response above, a number of studies have been performed to examine the health effects around nuclear power plants, including the NCI report (NCI 1990). The studies have concluded that there was no evidence to indicate that an excess occurrence of cancer resulted from living near nuclear power plants. The comments provide no new and significant information and will not be evaluated further.

Comment: License renewal should not be granted to the Palisades Nuclear Power Plant, because (3) radiative effects are only considered within a 50-mile radius. (KK-4)

Comment: The 50-mile radius considered in the impact assessment also fails to account for the movement of radiation with the wind. The radiation may expand and become less concentrated as it moves away from the epicenter (NRC 2006), but recent studies have shown that there is no safe level of ionizing radiation (NAS 2005). The effects beyond the radius cannot be ignored or discounted as negligible without serious ethical repercussions with this knowledge of toxicity of any level of radiation. (KK-8)

Response: *The comments question NRC staff's use of a 50-mi radius for impact assessment of radiation exposure. As discussed in the responses above, the highest dose to members of the public from the Palisades plant would be much less than 1 mrem per year. The plant-related dose to a member of the public more than a very short distance (e.g., 1 mi) from the*

plant would be even smaller. The background dose to a person living in the United States from all sources of radiation – cosmic, the earth, radon, building materials, medical procedures, and nuclear power plants – is approximately 360 mrem per year. Therefore, the NRC staff concludes that the use of a 50-mi radius for assessment of impact from radiation exposure is conservative and adequate. The comments provide no new and significant information and will not be evaluated further.

Comment: Section 8.2.1, Coal-Fired Generation, page 8-17, under bullet point Human Health. Any dose estimate that would have the potential to fall in the risk range of 10^{-6} to 10^{-4} or greater needs to be specifically evaluated for potential regulatory requirements or risk impacts to the public health. This should be estimated conservatively using the data that is currently available or that can be logically extrapolated from currently available information. (UU-12)

Response: *While it is possible to estimate the dose from a coal-fired power plant, many assumptions would be required, including location and makeup of the affected population. For the basis of comparing alternatives, the NRC staff does not perform a complete assessment of impacts of the alternatives, but rather a qualitative, and if feasible, a quantitative comparison. Because the location of an alternative to Palisades and the surrounding population is purely speculative, an estimated dose would have little real meaning. The impacts on air quality and human health resulting from the operation of a coal-fired plant are discussed in general in the GEIS (NUREG-1437). The GEIS acknowledges that public health risks from emphysema and cancer would likely result from coal-fired power plant emissions of regulated pollutants and radionuclides. The comments provide no new and significant information and will not be evaluated further.*

A.2.9 Comments Concerning Socioeconomic Issues

Comment: Financial benefits to Covert Township, host to Palisades nuclear power plant, are not evident and not expected with a license extension. The township consistently rates substantially below comparable county, State and national economic indicators in median household and per capita incomes and the draft EIS notes no improvements are expected by the license extension. (GG-12)

Response: *Per 10 CFR 51.53(c)(2), an applicant's environmental report is not required to "include discussion of the economic costs and economic benefits of the proposed action or of alternatives to the proposed action" Section 4.4 of this SEIS discusses the socioeconomic impacts of plant operations as they relate to public services, aesthetics, housing, offsite landuse, cultural resources, and environmental justice. Financial benefits to the community are beyond the scope of the environmental review for license renewal.*

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The comment does not provide new and significant information and will not be evaluated further.

Environmental Justice

Comment: License renewal should not be granted to the Palisades Nuclear Power Plant, because (2) the risk of radiation to minority populations is underestimated using census-block grouping. (KK-3)

Comment: Covert Township is one with high levels of minority populations and has many people who are of a low socioeconomic status. In the impact statement, these populations were taken into consideration, but large urban centers such as Battle Creek, Muskegon and Grand Rapids -where significant African American and Latin American communities live -were not considered. Because less than fifty percent of these cities were within the 50-mile radius, they were eliminated, and therefore significant risks to the minority populations were not fully documented." (KK-7)

Response: *The SEIS identifies the distribution of low-income populations within a 50-mi area of the plant at the block group level in order to assess whether license renewal may impact environmental justice. Low-income and minority populations, defined if block groups were found to have more than 50 percent of individuals below poverty level determined in the 2000 Census, or if the number of individuals below the poverty level was more than 20 percentage points higher than the State average, were found in block groups in western Van Buren County, immediately to the west of Covert Township.*

To capture environmental impacts that could potentially impact the population as a whole, a 50-mi area around the plant is used, which is assumed to be the greatest geographic extent of any potential airborne releases from the plant during normal operations or during accidents. The SEIS identifies the geographic distribution of low-income and minority populations within this 50-mi area at the block group level in order to provide a detailed characterization of low-income and minority groups potentially adversely impacted by the plant. Because the cities mentioned in the comment are beyond the 50-mi limit of the impact zone, they are not included in the analysis. Analyses of census data at the census block group level provides information for geographic areas of approximately 1000 people each, on average, and as such provides sufficient geographic detail to assess the impact of Palisades on low-income and minority populations.

The comments do not provide any new and significant information and will not be evaluated further in the SEIS.

Comment: Palisades has been considered a major contributor to Van Buren County's property and municipal tax revenues, but the economic benefit to Covert Township has been

ambiguous. In fiscal year 2004, a total of \$3.6 million in property taxes went to Covert Township and schools, with an additional \$1.6 million to Van Buren County and schools. As host to the Palisades plant and benefactor of its tax revenue, it is reasonable to assume that Covert Township should at minimum be at economic parity with surrounding geographic household and per capita incomes. Despite the financial benefit such payments suggest, however, Covert Township consistently rates substantially below comparable county, State and national economic indicators in median household and per capita incomes. The EIS overlap of Geographic Distribution of Minority Populations (figure 4-1 on p. 4-29 of the NRC draft EIS) and Low-Income Populations (figure 4.2 on p. 4-30) shows a large area of Covert Township (and St. Joseph/Benton Harbor) to be both "high minority and low-income. Poverty persists in the Covert Township, a high minority and low-income community, despite the presence of the Palisades nuclear power plant for nearly four decades.

Consumers Energy is described as the largest employer in Van Buren County, with 484 employees (draft EIS, Table 2-8). The draft EIS states that unemployment in the county "was moderately high at 7.2% in December 2004," but determines no "incremental change" in employment and personal income resulting from a Palisades license renewal --new employment opportunities are not projected to occur.

Palisades' Permanent Employee Residence Information by County and City (Table 2-3) lists employee residence totals as: South Haven (156), Bangor (14), Grand Junction (13), Paw Paw (12), Hartford (8), and Others (30). Unfortunately, residents of Covert Township that might be employed at Palisades are not specified in this information, raising the question as to whether or not Covert Township residents benefit at all from employment at the plant.

A review of household income further shows a lack of positive benefit to Covert Township from Palisades. Per capita incomes in 2000 were \$21,587 for the United States, \$22,168 for Michigan, \$17,878 for Van Buren County and \$12,156 for Covert Township (U.S. Census Bureau, 2000 Census, in 1999 dollars). These figures reveal incomes for Covert Township that range from 45% and 33% consistently lower than the State of Michigan and Van Buren County respectively.

Covert Township reported 14.3% of families with incomes less than \$10,000, three times the rate of Van Buren County. There are over three times as many families below poverty level in Covert Township as in Van Buren County. Covert bears the burden of 34% of related children under 18 years of age in poverty compared to Van Buren's 11%; related children under 5 years of age in poverty, 38% compared to Van Buren's 17%; Covert families with female householders, no husband present, 48% compared to Van Buren's 25%; related children under 18 years of age for Covert at 57% compared to Van Buren's 30%, and Covert related children under 5 years of age living below poverty level at 80% versus Van Buren's at 48%. Covert reports 32% of individuals in poverty while Van Buren reports 11% of individuals living in

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poverty. As unfortunate as Van Buren County poverty levels may be, Covert Township's poverty is consistently two and three times worse. None of this data was provided whatsoever in the scope of the EIS socio-economic factors.

Comments by local and county government and Chambers of Commerce officials at public hearings have extolled the benefits of new fire trucks and infrastructure improvements, and the EIS notes that Palisades' property tax revenues are "used to fund local and county emergency management programs, public safety, local public schools, local government operations, local road maintenance, and the local library system," (page 2-58, of the draft EIS). Still, Covert Township experiences chronic poverty.

NRC staff ultimately determined that the socio-economic impacts resulting from Palisades' license renewal would be "small", implying that the impacts "would not produce an incremental change in any of the impact measures used. Unfortunately, the draft EIS's methodology neglected a comprehensive analysis of socio-economic conditions in Covert Township and Van Buren County, leaving out those conditions that did not support a positive benefit from the nuclear power plant.

NMC/Consumers discounts potential impacts to Latin American migrant workers in southwest Michigan from an extension of Palisades' license. NMC/Consumers' Environmental Report (page 2-32) notes (inaccurately) that "Berrien and Van Buren Counties host moderate numbers of migrant workers." According to the U.S. Department of Agriculture, however, in 2004, 3,677 and 6,733 temporary farm laborers (many of them Latino) were employed in Berrien and Van Buren Counties, respectively. These numbers, in addition to family members of the workers, represent populations as large as the county seats and even the biggest towns in these counties. Rather than characterizing the number of migrant workers, many of whom are Latino and of low income, as "moderate," a more accurate characterization relative to the populations of the host counties would be "large," and therefore worthy of significant consideration not only in NMC's Environmental Report, but also in NRC's draft EIS.

The Latin American agricultural workforce of the Palisades area is also at disproportionate risk from both routine radioactive discharges, as well as catastrophic radiation releases, given this workforce's complete reliance on agricultural sector employment. A large-scale radiation release from Palisades could seriously damage the region's agricultural base. Even a "minor" accident at Palisades involving radiation release could significantly harm area agriculture, due to the stigma attached to radioactive contamination. In either scenario, the Latino migrant labor workforce would suffer disproportionate harm. There also has been no evaluation of the potential for the synergistic effects of chronic or catastrophic radiation releases combined with the toxic pesticides to which field workers have been exposed. In addition, there are no Spanish language emergency evacuation instructions and notifications prepared to serve the Spanish speaking Latino population within 50 miles of the Palisades reactor. (GG-23)

Comment: A comprehensive analysis of socio-economic conditions in Covert Township and Van Buren County must be conducted to encompass income disparities. NRC must account for the lack of positive benefit by Covert Township residents as a result of the presence of Palisades' nuclear power plant and potential license extension. NRC must also direct NMC/Consumers to address the potential for disproportionate harm to the Latino migrant labor workforce from harm to the agricultural base from a radiation release. (GG-60)

Comment: It is baffling NRC concludes that "offsite impacts from Palisades on minority and low-income populations would be SMALL (sic), and no special mitigation actions are warranted." (EIS, p. 4-31) Just three pages earlier, NRC admits that "[c]ensus block groups with a minority population . . . are located in Covert," Palisades' hometown. Figure 4-2 on p. 4-30 also identifies Covert's predominantly African American population as low-income." Why Covert's African American community is still low-income after 38 years of substantial profit-making at Palisades is quite troubling. In addition, Covert's community suffers the worst radiation doses from routine operations at Palisades, and would suffer the worst health impacts from accidental radiation releases. NRC even ignores the fact that Palisades' tax contributions to its neighboring community in Covert are dwindling over time - shown in Nuclear Management Company's 2005 Environmental Report -- so residents suffer worsening risks as the reactor deteriorates with age, while also receiving decreasing benefits such as tax income. (see <http://www.astrongerkinship.com/> for a recent book about the African American history of Covert). (MM-8) (NN-8)

Comment: NRC's treatment - or lack thereof - of Palisades' impact on the surrounding Latin American agricultural workforce is remarkably inconsistent and disconcerting. Regarding environmental interveners' contention that this community would suffer disproportionately from routine and accidental radiation releases from the reactor, NRC staff agreed that the company's license extension application does not sufficiently address the "adverse socio-economic impacts of a catastrophic radiation release...as they would be found among the low-income Latin American agricultural workforce of the Palisades area..." and that such a contention would not necessarily be out of scope. Likewise, NRC's licensing board stated that interveners' allegation of disproportionate impacts upon Latin American agricultural workers from an embrittlement/PTS core rupture might be pertinent and admissible in the proceeding to decide whether or not to grant Palisades 20 more years. Yet, the licensing board dismissed the contention, stating 'no facts that would tend to show impacts falling disproportionately on this community have even been alleged.' (see pgs. 57-60 of the licensing board's March 7, 2006 ruling dismissing this and all other intervenor environmental contentions; also see the contention itself, at Aug. 8, 2005 on the "Palisades Watch" website). (MM-9) (NN-9)

Comment: Isn't it obvious that a catastrophic radiation release at Palisades would ruin nearby agriculture for years, decades, centuries, perhaps even forevermore? Who would eat cherries, blueberries, grapes, peaches, apples, or other agricultural products from west Michigan after a

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large radiation release from Palisades? (see EIS, p. 2-54 and 55; Table 2-6 shows that nearly half of Van Buren County's land base is devoted to agriculture!) Wiping out of agriculture would very likely impact the low-income, minority community of Latin American agricultural laborers more than any other segment of the surrounding population. Yet, despite the NRC staff's and licensing board's statements to the contrary, NRC now dismisses any notion of disproportionate impacts upon - or even the existence of - a Latin American agricultural workforce near Palisades, in the space of two sentences. NRC now treats these real people as invisible (EIS, p. 2-57), which represents an environmental justice violation by NRC itself. (MM-10) (NN-10)

Response: *Environmental justice is addressed in Section 4.4.6 of the SEIS, where the NRC staff concludes that offsite impacts from Palisades on minority and low-income populations are SMALL, and no special mitigation action is warranted.*

Regarding radiological impacts during normal plant operation, the NRC concludes in Section 4.3 that the radiation exposure to the general public is SMALL based on GEIS findings. The NRC has similar conclusions in Section 5.1 for the impact of postulated plant accidents at Palisades. Given that these impacts are SMALL on the general population, there is no evidence to suggest that any minority or low-income population could be disproportionately affected by such impacts in a severe or adverse way.

The comments provide no new and significant information and will not be evaluated further.

Historic and Archaeological Resources

Comment: And I'd like to raise a point. In the back of the room, there's a summary of the findings of this EIS and one of them referred to, it's a contradiction with NRC's own report. It said historic and archaeological impacts would be small, but right in the beginning of this report it says that they may be small, but could be moderate for historic and archaeological resources. And when you read the details in here, NRC actually verifies exactly what we raised last July 28th at this very podium and again during the licensing proceeding, but we got thrown out of that, that Native American sites very well could exist, very likely do exist, NRC is now saying that, at Palisades, but no site survey is going to be required. They can do 20 more years worth of routine radiation releases. If forced to build new dry cask pads that comply with safety regulations, that could be built right on top of a Native American archaeological site, burial grounds, village sites. It's not exactly far fetched when NRC admits that there are 15 such sites within a mile of Palisades or its transmission lines, including one 0.3 miles away, which I believe is the Brandywine in Palisades Park, exactly what we pointed out here. So my question is, how in the world did we get booted out of the NRC licensing proceeding on that one? (A-11)

Comment: NRC reports that 15 Native American archaeological sites have been identified by surveys within 1 mile of the Palisades site and its transmission lines, including a prehistoric village site. Another of the prehistoric sites is of "unknown type," just 0.3 miles south of the

Palisades site, and a third is just outside Palisades' eastern boundary. (EIS, pgs. 2-62 to 63) This validates the environmental contention, arbitrarily dismissed by the NRC licensing board on March 7, that 20 more years of routine radiation emissions, potential accidental radiation emissions, and plant expansions such as additional waste storage pads could do irreversible harm to as-yet unidentified Native American burial sites, village sites, etc. at Palisades. Why did the licensing board dismiss this contention when NRC admits in this EIS that it is an issue? (see <http://www.nirs.org/reactorwatch/licensing/palisades.htm> at Aug. 8 and 30, 2005 for these Native American impact contentions). NRC admits in its draft EIS that "[i]ntact archaeological sites could be present within the remaining undeveloped areas as well as in soils below the depth of ground disturbance in most areas of the [Palisades] site." It admits "no archaeological field surveys have been conducted either at the Palisades site or for original transmission line construction or maintenance...[and] without accurate knowledge of the cultural resources present at the Palisades site, it must be assumed that power plant construction has the potential to adversely impact significant resources that may exist on the plant site." Palisades' own cultural resource assessment 25 years ago recommended that "an intensive survey be undertaken of the undisturbed portions of the site." Despite all this, no extensive surveying was ever conducted. In its draft EIS, NRC simply brushes off the potentially disproportionate impacts upon Native American cultural resources and spiritual values that could occur with 20 additional years of operations at Palisades. The intensive site survey must be performed, in close and meaningful consultation with affected Native American tribes, before NRC even considers granting Palisades a license extension. NRC granting an extension without requiring such a survey would itself represent an environmental justice violation, not to mention a potential violation of the American Indian Religious Freedom Act. (MM-7) (NN-7)

Comment: Page Number 4-40, Line Number 19. Suggest adding new sentence at end stating that NMC and Consumers have procedures in place to require evaluation for archaeological resources if land-disturbing activities are planned in previously undisturbed areas. (OO-38)

Comment: Page Number 4-42, Line Number 23-24. Suggest noting that NMC and Consumers have procedures in place to require evaluation for archaeological resources if land-disturbing activities are planned in previously undisturbed areas. (OO-40)

Comment: In an email dated May 18, 2006, Kevin Kamps submitted comments on behalf of Nuclear Information & Resource Service, et al. regarding Native American resources at the site of the Palisades Nuclear Plant. His comments are summarized below, and the full text can be accessed on ADAMS at ML0615700220:

"It is legally and morally incumbent upon the companies and Federal and State agencies involved that a comprehensive site survey of the Palisades property be required and performed, and that it be carried out in close consultation and cooperation with affected tribes on a legally sufficient, government to government basis. If Native American burial sites or other significant

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sites are discovered during the comprehensive site survey, then appropriate actions must be taken to protect these sites against 20 more years of radiological and physical disruption and damage; All this, before a license extension can legally be granted for Palisades.

It cannot be overly reinforced and re-emphasized that there should be meaningful consultations not only between the impacted tribes and the Palisades nuclear plant owner and operator, but also government to government consultations between tribes and relevant and involved Federal government regulators and agents, including NRC. A letter or a phone call does not constitute legally sufficient government to government consultation.” (PP-1)

Response: *The NRC staff carefully reviewed the records and found that the Atomic Energy Commission (AEC) met the compliance standard for historic preservation consideration when the AEC made its decision to issue the initial operating license for Palisades.*

The original regulations, implementing Section 106 of the National Historic Preservation Act (NHPA) (36 CFR Part 800), were promulgated in 1979, 7 years after the AEC granted the original license for operation of Palisades. The Advisory Council on Historic Preservation (ACHP) had no prescribed regulatory process for Federal agencies to demonstrate compliance with NHPA Section 106 responsibilities until 1979.

As required by Section 106, in 1972 the AEC provided information on the proposed action for Palisades, including information on historic and archaeological resources and determinations, to the ACHP and the U.S. Department of the Interior (DOI) with a request for comment. In a letter dated March 9, 1972, the ACHP stated that the final environmental statement should contain evidence of contact with the Michigan State Historic Preservation Officer (SHPO) and a copy of his comments concerning the effect of the undertaking on historical and archaeological resources. On May 19, 1972, the SHPO office responded to the AEC that Palisades will not adversely affect known historical or archaeological resources of the State of Michigan. On April 7, 1972, the DOI stated that the existing plant should not directly affect any existing or proposed unit of the National Park System, nor any site eligible for registration as a national historic, natural, or environmental education landmark. The DOI went on to state that the final environmental statement should contain evidence of contact with the Michigan SHPO.

NMC submitted an application for renewal on March 31, 2005, pursuant to 10 CFR Part 54. The NRC has established that, as part of the staff review of any nuclear power plant license renewal action, a site-specific SEIS to the GEIS, NUREG-1437, will be prepared under the provisions of 10 CFR Part 51, the NRC rules that implement NEPA. In accordance with 36 CFR 800.8(c), the SEIS includes an analysis of potential impacts on historic and archaeological resources. The NRC has determined that the area of potential effect (APE) for a license renewal action is the area at the power plant site and its immediate environs that may be impacted by post-license renewal land-disturbing operations or projected refurbishment activities associated with the proposed action. The APE may extend beyond the immediate environs in those instances

where post-license renewal land-disturbing operations or projected refurbishment activities, specifically related to license renewal, may potentially have an effect on known or proposed historic sites. This determination is made irrespective of ownership or control of the lands of interest.

As stated in the ER, NMC does not plan to undertake major refurbishment activities for Palisades license renewal. Additionally, there are no plans to significantly alter current operations or engage in any substantive land-disturbing activities on the site or the associated transmission line corridors as part of the license renewal process.

As stated in this SEIS, the NRC staff reviewed the applicant's environmental review procedures for Palisades during the site audit. NMC has stated that these procedures are in place to ensure that any archaeological resources that may be present receive consideration and protection. The procedures require that an archaeological survey be undertaken for any construction and modification activities that involve all ground-disturbing activities in the owner-controlled area of NMC-operated nuclear facilities and to those activities, including, but not limited to, the construction or expansion of buildings, facilities, stations, parking lots, roads, or overhead or underground utility lines. In the event that items of potential historic significance are discovered during surveys, NMC and Consumers Energy would consult with the SHPO prior to proceeding.

Additionally, the NRC staff reviewed the applicant's excavation and trenching control procedures, which require that any planned excavation activities that occur at a depth greater than 6 in. within previously undisturbed land be reviewed by the NMC Environmental Coordinator. The Environmental Coordinator's responsibilities (as defined in NMC's Archaeological, Cultural and Historic Resources procedures) include reviewing excavation and trenching plans to determine if any known archaeological resources are located within the proposed ground disturbance area, assessing the potential importance of any archaeological resources discovered during construction, and coordinating with the SHPO when potentially culturally important resource discoveries are made. The procedures also include a list of the types of archaeological materials that could be encountered during construction. During the site audit, the NRC staff expressed concerns about the NMC procedures not requiring a qualified archaeologist to survey the proposed ground disturbance area for archaeological resources prior to construction. In addition, the NRC staff noted that the procedure did not specify the training, experience, or credential requirements for the site's Environmental Coordinator to recognize archaeological materials or assess the potential significance of historic or archaeological resources. Subsequent to the NRC staff's comments, the applicant revised and implemented its procedures in January 2006 (NMC 2006) to reflect these concerns.

The preliminary draft of the SEIS contained language that reflected the procedures prior to their revision by the applicant. Upon receipt of the applicant's revised procedures, the draft SEIS

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was revised by the NRC staff to reflect updated information. In several portions of the draft (e.g., the Abstract and Sections 4.8.3 and 4.9), the original text was inadvertently retained. The SEIS has been revised to reflect this oversight.

Comment: NRC staff, in the draft supplement to the Generic Environmental Impact Statement (GEIS), recommended that the Commission determine that the impacts of continued operation of Palisades were not significant enough to make its extended operation unreasonable. The document states further that: “This recommendation is based on (1) the analysis and findings in the GEIS; (2) the Environmental Report submitted by NMC; (3) consultation with Federal, State, and local agencies; (4) the NRC staff’s own independent review; and (5) the NRC staff’s consideration of public comments received during the scoping process.” Astoundingly, it is obvious that Native American tribes were **not** included in the consultation process for the development of the draft EIS for Palisades.

The role of affected Federally recognized, as well as non-Federally recognized Native American tribes can best be described as unfairly and severely restricted throughout all aspects of the development of the EIS. Even though the re-licensing application from NMC was submitted to the NRC in March of 2005, it was not until four months later that eleven tribes in Michigan and Oklahoma were invited to participate (via one letter) in the license extension proceedings. A single letter to a Federally recognized tribe is not legally sufficient government-to-government consultation. However, other tribes that might be expected to have a substantial interest in proceedings involving Palisades relating to treaty rights and other related issues were left completely out of any part of the process, such as the Bay Mills Indian Community, the Keweenaw Bay Indian Community, the Sault Saint Marie Tribe of Chippewa Indians, all in Michigan’s Upper Peninsula, tribes in Wisconsin, the Sauk and Fox Tribes and others in Oklahoma, and the Kickapoo Tribe of Texas (which absorbed the Mascouten Tribe), all with ancestral ties to the Lake Michigan shoreline. In particular, there are concerns for the continued disregarding of sacred burial grounds and other artifacts of tribal groups that may be present on the site and possibly along electric transmission lines extending from the plant, as well as concerns from the tribes in safeguarding such species as the sturgeon that may be negatively impacted by continued operations at Palisades.

Native American tribes are known to have traveled regularly throughout the dunes in West Michigan, hunting in them and using dune plants for food and medicinal purposes. Because of that, it is likely that villages or encampments, as well as burial sites, may well have been located on or in the vicinity of Palisades, especially given the presence of creeks just north and just south of the plant site and the heavily forested, large dunes of the property. This likelihood is confirmed in the draft EIS, on page 2-61 to page 2-62, where the NRC reports “Native American groups that inhabited the area during the historic period were predominantly the Potawatomi, Mascouten, Miami, and Ottawa. During the early historic period, their villages were situated on the edge of forested land, adjacent to prairies and convenient to streams or the lakeside; temporary winter camps were established in sheltered areas. By the beginning of the

nineteenth century, the Potawatomi had established 11 known villages in southern Michigan. Most were near the shorelines of Lake Michigan and Lake Erie, generally along the streams that flow into their waters.” Thus, Palisades has a significant potential for such Native American sites to be located on its property.

Nuclear Management Company (NMC), however, gives scant attention to the interests of Native American tribes in its over 500 page Environmental Report, prepared as part of the re-licensing application process. Section 2.10, “Historic and Archaeological Resources,” of the report consists of four paragraphs, taking up less than two-thirds of one page (Page 2-46). In fact, the potential for Native American sites on the Palisades property is not explicitly mentioned at all. In its Environmental Report, NMC referenced a number of documents prepared as part of the original license application for Palisades that noted the absence of known archeological or historical resources on the site or in the vicinity to discount the potential for Native American artifacts to be impacted by the license extension application.

The only specific documentation NMC provides in the Environmental Report to support its claim that there are no Native American artifacts, is a letter dated April 7, 1972 from the U.S. Department of the Interior (DOI) to the U.S. Atomic Energy Commission (the predecessor to today’s NRC), in terms of nuclear power plant regulation). In that letter, reproduced from Pages C-5 to C-9 of NMC’s Environmental Report, DOI states “It does not appear that the existing plant should directly affect any existing or proposed unit of the National Park System, nor any site eligible for registration as a national historic, natural or environmental education landmark; however, the final statement should contain evidence of consultation with the State Historic Preservation Officer concerning the effects of the power station on places on or being considered for nomination to the National Register of Historic Places.” However, the DOI statement does not seem to indicate that there was attention placed on locating Native American burial sites, former village sites, etc. located on the power plant site or along the transmission line corridors.

Even though the Michigan State Historic Preservation Office (MSHPO) noted the possibility of unreported artifacts (see Page C-2, Cultural Resources Correspondence of NMC’s Environment Report), there has been no survey done by Consumers Power to confirm or dispute this claim and no actions taken by MSHPO officials to resolve the question, demonstrating a distinct lack of significance attached to protecting the interests of Native American tribes. In fact, NRC staff acknowledged in the draft EIS that no adequate surveys have ever been conducted at Palisades. Further, although the draft EIS document determined that the license extension for Palisades might pose a “moderate” impact on the interests of Native American tribes regarding archaeological or historical cultural resources, this initial determination was verbally deemed “a mistake” by NRC staff at the April 5, 2005 draft EIS public comment meeting in South Haven, Michigan. We ask for an explanation as to the reason for this “mistake” and justification for a significant downgrading of the impact level ascribed to Native American interests in such

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cultural resources as burial sites from “moderate” in the draft EIS to “small” at the public meeting.

Forty years ago, Native American tribes were seemingly ignored in decisions regarding the original placement and construction of the Palisades nuclear power plant, even though it was an intense and disruptive use on lands at one time occupied by a number of tribes along Lake Michigan, which is revered by all Native Americans of the region. It can only be concluded from this most recent lack of attention in the re-licensing process, that these tribes have once again been accorded neither legally sufficient notification nor appropriate involvement, which is especially negligent in respect to the Federally recognized tribes, which are sovereign entities and are legally entitled to have a government-to-government relationship with the United States.

All Native American tribes and bands that could be expected to have an interest in the application by Palisades to operate an additional 20 years deserve both notification of this process, as well as the opportunity to share government-to-government decision making regarding the application, as allowed for under NEPA and other Federal laws. A comprehensive site wide survey should be performed on the entire Palisades property - as recommended by Palisades’ own cultural resource assessment subcontractor as described in the draft EIS - carried out in close consultation with all affected tribes. If Native sites, such as burials, are found, then appropriate actions should be taken to protect them from damage, again, in close and meaningful consultation with affected tribes in order to ensure that NEPA, treaties, and the terms of other relevant Federal laws, such as the Native American Graves Protection and Repatriation Act and the National Historic Preservation Act, are met. (GG-22)

Comment: Native American interests must be addressed. All Native American tribes and bands that could be expected to have an interest in the application by Palisades to operate an additional 20 years deserve both notification of this process, as well as the opportunity to share government-to-government decision making regarding the application, as allowed for under NEPA and other Federal laws. A comprehensive site wide survey should be performed on the entire Palisades property—as recommended by Palisades’ own cultural resource assessment subcontractor as described in the draft EIS - carried out in close consultation with all affected tribes. (GG-53)

Response: *For all Federal undertakings, Section 106 of the NHPA requires consultation between the lead Federal agency and the affected State Historic Preservation Office or Offices and all affected Native American tribes. Native American tribal governments are to be consulted on a government-to-government basis. The NRC has initiated this consultation by inviting the 11 Federally recognized tribes to participate in the license renewal process (see Appendix E). The NRC welcomes input from concerned Native American government leaders, elders, and citizens who wish to participate in the license renewal process. Government-to-government consultation is an ongoing process that is not limited to the issuance of this NEPA*

document. Additionally, the NRC staff forwarded the draft SEIS to the 11 tribes for comments. To date, no response has been received from the Native American tribes.

Comment: Page Number 2-61, Line Number 2. Suggest clarifying that there are no “known” historic and archaeological resources at the Palisades site. (OO-25)

Response: *The text has not been changed in the SEIS. This is an introductory sentence describing the topic that is to be covered in this section. The requested information follows in the main text.*

Comment: Page Number 4-40, Line Number 14. Suggest clarifying that Section 106 of the NHPA directs Federal agencies, and not the applicant, to contact Tribal Governments to take into account the effects of their undertakings on historic properties. (OO-37)

Response: *Issuance, or in this case, renewal, of the Federal license is the trigger for Section 106 of the NHPA. The NRC is the lead Federal agency that initiates government-to-government consultation. While the applicant is not responsible for contacting tribal governments, it is subject to compliance with the Section 106 process as a licensee of the NRC. The requested change has not been made in the SEIS because it implies the applicant has no obligation under Section 106 of the NHPA. Because the operation of Palisades requires a Federal license, the NRC, and by extension, the licensee, are bound to comply with Section 106.*

A.2.10 Comments Concerning Postulated Accidents

Comment: In terms of reactor accidents, again I will point to NRC’s own numbers. They haven’t updated these since 1982, so of course the number of people has grown in this region, the economy has grown in this region, so these damages from a severe accident at Palisades would be much worse now than what’s given. But NRC calculated that a severe accident and catastrophic radiation release, and this was a 1982 report, a radiation release from Palisades would kill 11,000 people downwind, injure 7,000 people, and do over \$50 billion in damages. That’s 1982 figures, so if you adjust for inflation, it’s over \$100 billion now. And of course, if there’s a major radiation release from Palisades, that’s it for Michigan’s tourism, that’s it for its agriculture, and that’s the reason that our volunteer pro bono citizen’s effort to try to stop this 20 year extension has been so determined and will continue to be so at every turn, because we care a lot about the future of this State. (A-10)

Comment: And the last thing I’ll say is NRC said that, you know, this license renewal may be granted but there are other factors out there that may end up, you know, deciding whether or not this place will operate for 20 more years. I’d like to say, yeah, there really is. One would be a severe accident at Palisades that would kind of take care of it right away for all of us. (A-12)

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Comment: My concern is a catastrophic event. And as this plant becomes older and older as we already heard the Big Rock plant up in Charlevoix has been closed and it hasn't been generating electricity for some time. And as Mr. Kauffman said generating power by nuclear plants is not the cheapest way to generate energy. Now I came from Kalamazoo because we're right downwind of what could happen if radiation was released from the Palisades Plant. It would be devastating to Southern Michigan perhaps Northern Indiana. It could, if you look at the Chernobyl case and I would guess that all those government authorities there in the Ukraine were just 100 percent behind Chernobyl until they had their accident. (R-3)

Comment: How horrific if we in Michigan had a "Chernobyl" incident contaminating Lake Michigan and the surrounding area. What a disaster that would be. (FF-3)

Response: *Section 5.1.2 of the SEIS addresses severe accidents, and Section 5.2 addresses mitigation alternatives. The comments do not provide new and significant information and will not be evaluated further.*

Comment: The draft EIS prepared by the NRC unaccountably discounts the effects of global warming. There is considerable evidence that more extreme winds, as well as more frequent and intense tornadoes — all of which global warming could cause — could make operation of Palisades more and more risky over time. (GG-11)

Comment: Environmental impacts during severe emergencies at the Nuclear Plant (uncontrolled releases of radioactive elements) were not considered for comparison purposes with other non-nuclear alternative sources of energy. Even though probabilistic, these impacts should be evaluated and mentioned in the report's final summary conclusions. (JJ-4)

Comment: Recognizing that the loss of power at the Palisades Substation could result in severe Plant accidents (core damage), we wonder if all feasible mitigation measures were considered in this regard i.e. adding a second circuit to the 345kV line connecting Covert Plant to the Substation. (JJ-5)

Comment: Given the potential dire consequences of a major accident and radiation release at Palisades, how can NRC screen out "Severe Accident Mitigation Alternatives" because "the required extensive changes... would involve implementation costs known to exceed any possible benefit"? (EIS, p. 5-5) In 1982, in its CRAC-2 (Calculation of Reactor Accident Consequences) report, NRC calculated that a severe accident and catastrophic radiation release from Palisades would kill 11,000 people, injure 7,000, and do over \$50 billion in damages. The population in the surrounding region has only grown since then (EIS, Table 2-7, p. 2-56), so casualty figures would be higher today. And adjusted for inflation, that property damage figure would top \$100 billion, only \$10 billion of which would be paid back by the nuclear power industry and its insurance companies (under the Price-Anderson Act, renewed in 2005, U.S. taxpayers would have to pay the rest, or else damages wouldn't be compensated for

at all). A major radiation release at Palisades would ruin Michigan's tourism and agriculture forever. How can NRC's EIS" cost/benefit" analysis ignore its earlier CRAC-2 report? (MM-5) (NN-5)

Response: *In determining whether a severe accident mitigation alternative (SAMA) should be implemented, the licensee performed a cost-benefit analysis using a methodology consistent with the NRC Regulatory Analysis Technical Evaluation Handbook (NUREG/BR-0184). This analysis identifies and estimates the relevant values and impacts of a proposed change and provides a structured approach for balancing benefits and costs in determining whether implementation is justified. The Probabilistic Risk Assessment (PRA) is used within this analysis to evaluate the reduction in probabilities (core damage frequency) and consequences (population dose) that would be associated with implementation of each alternative. Use of the PRA in this manner is an essential and widely accepted part of the cost-benefit methodology, as described in Section 5.6 of NUREG/BR-0184.*

The study alluded to by the commenter (NUREG/CR-2239) was performed in 1982 using the CRAC-7 computer code to estimate offsite consequences, generic "siting source terms" to reflect the spectrum of accidents that could occur at boiling-water reactors or pressurized-water reactors, and "representative" probabilities to reflect the likelihood of each of these source terms. Rather than ignore the earlier report, the offsite consequence analyses performed in support of the SAMA analysis represents a reassessment of offsite consequences based on a later generation offsite consequence code (i.e., Melcor Accident Consequence Code System 2 (MACCS 2), and plant-specific (versus generic) source terms and source term probabilities. Thus, the plant- and site-specific consequence analyses performed for license renewal are considered an improvement over the earlier study. The comments provide no new and significant information and will not be evaluated further.

Comment: Section 5.2.2, *Estimate of Risk*, page 5-6. It is stated that "The baseline core damage frequency (CDF) for the purpose of the SAMA [Severe Accident Mitigation Alternatives] evaluation is approximately 4.05×10^{-5} per year. This CDF is based on the risk assessment for internally-initiated events. NMC did not include the contribution to risk from external events within the Palisades risk estimates; however it did account for the potential risk reduction benefits associated with external events by increasing the estimated benefits for internal events by a factor of two."

The estimates for risks from both types of events should be evaluated and presented, along with a rationale for not basing risk decisions on the external events or including them in the considerations as necessary to get an accurate portrayal of the risk of the licensing renewal. (UU-7)

Response: Risk estimates for both internal and external events are presented and discussed in Section G.2 of Appendix G of the SEIS. The risk from external events at Palisades is lower than the risk estimates from internal events (e.g., 3.31×10^5 per year for fire and 8.88×10^6 for seismic events, compared with 4.05×10^5 per year for internal events). Nevertheless, potential SAMAs to further reduce external event risk were explored as part of the SAMA evaluation (see Sections G.2.2 and G.3.2). As described in Section G.6.2, the risk associated with external events was specifically accounted for in the risk calculations that were used to support the decision regarding potentially cost-beneficial SAMAs at Palisades. The comment provides no new and significant information and will not be evaluated further.

A.2.11 Comments Concerning Uranium Fuel Cycle and Waste Management Issues

Comment: My first concern, and more important I think, is in relation to the spent fuel. Everybody know that right now the spent fuel is stored outside, next to the power plant. So this keeps accumulating and there is a possibility of, theoretically send it to a central, national central depository. But it was impossible in 40 years to obtain or to realize this central depository. And the reason for that is not political. It's not because people are not doing their work. It's just because they, they waste half their -- long, long time, I mean. You have to keep it under control, under storage for at least 10,000 years. So nobody can guarantee that even the more stable place can guarantee that. So this is, if we continue doing that we are going to keep this material in that place forever. That's what we have to understand. I mean, this is a fact. What, what, why we are scared? Because we are increasing the possibilities of an uncontrolled releases of radioactive material. The plant has a bigger accident and can have uncontrolled releases, but this other thing we're allowing here can also prove to have accidents by sabotage, by error, human error, by many things that, one important thing in life is imagination. So with a little bit of imagination, we, we can figure out that this is not way to go. It is not the way to go. (D-3)

Comment: Okay. And my second concern is related a little with the first. The analogy that is used at Palisade has been following -- first. Through the use of a large amount of spent fuel waste, which is highly radioactive and this toxicity for a long time, 10,000 years. Second, the waste contains plutonium which if enriched could be used in the manufacture of atomic bombs. Third, it is a low efficient use of the fuel, uranium. If continuing with this old technology, the amount of the available uranium in nature could be exhausted in a short time. The Nuclear Power Industry is in the process of producing a new generation of reactors. General Electric Company, Western Electric Company, Westinghouse Electric Company are doing that using full fuel recycling. These reactors that could be approved by 2015 will not have the above mentioned drawbacks of the old reactor technology. The spent fuel, the spent fuel in this reactors would be reduced in amount and would require shorter time in storage, 400 years. Therefore a Central depository could be readily found. It would use the energy content in the fuel much more efficiently. The uranium available in nature could last for many centuries. The plutonium in the waste is not usable for the manufacture of weapons. (D-6)

Comment: NRC must provide a detailed explanation to the public as to the ultimate disposition of the wastes stored currently on the Palisades plant site, as well as the 290 additional tons expected as part of 20 additional years of operation.

The proposed national repository for high-level wastes from nuclear power plants, Yucca Mountain, Nevada, is not expected to open until at least 2020, and is likely to be delayed beyond that date. Further, by law, the repository can only store 70,000 metric tons, which will not include the additional wastes generated at Palisades during a license extension. (GG-55)

Comment: Section 6.1, *The Uranium Fuel Cycle*, page 6-3. Under the bullet point for Off-site radiological impacts (individual effects from other than disposal of spent fuel and high level waste disposal), no consideration appears to be given to the potential long-term storage of the spent fuel and high-level waste materials on site until such time-as a permanent facility is finally licensed and begins to accept. these materials for disposal. A reference to other sections that this evaluation may have been included in should be provided here as well as in other sections, or if this evaluation has not been adequately conducted, the issue needs to be considered and an appropriate evaluation conducted. (UU-8)

Comment: Section 6.1, *The Uranium Fuel Cycle*, page 6-8, under the bullet point for On-Site Spent Fuel. A more thorough evaluation for the volume of spent fuel expected to be generated during the additional licensed time needs to be provided, along with more-specific information as to site specific circumstances that may impair or improve the risk values for potential exposures to this spent fuel storage. (UU-9)

Response: *Onsite storage of spent nuclear fuel is a Category 1 issue. The safety and environmental effects of long-term storage of spent fuel onsite have been evaluated by the NRC, and, as set forth in the Waste Confidence Rule at 10 CFR 51.23 (available at <http://www.nrc.gov/reading-rm/doc-collections/cfr/part051/part051-0023.html>), the NRC generically determined that "if necessary, spent fuel generated in any reactor can be stored safely and without significant environmental impacts for at least 30 years beyond the licensed life for operation (which may include the term of a revised or renewed license) of that reactor at its spent fuel storage basin or at either onsite or offsite independent spent fuel storage installations. Further, the Commission believes there is reasonable assurance that at least one mined geologic repository will be available within the first quarter of the twenty-first century and sufficient repository capacity will be available within 30 years beyond the licensed life for operation of any reactor to dispose of the commercial high-level waste and spent fuel originating in any such reactor and generated up to that time." Section 6.1 provides the information available regarding the status of the application for a high-level waste repository. The comments do not provide new and significant information and will not be evaluated further.*

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Comment: Palisades license extension will increase the amount of high-level waste on the Lake Michigan shoreline and the number of dangerous barge shipments of high-level radioactive waste on Lake Michigan. Palisades will generate approximately 290 more tons of high-level radioactive wastes in 20 additional years with no national repository likely to be established to receive the wastes. The U.S. Department of Energy's plan for transporting high-level radioactive wastes generated by the plant's operation, involves barging up to 125 or more giant rail-sized containers of the wastes from Palisades to the Port of Muskegon, up along the Lake Michigan shoreline. The slightest leakage of even a small amount of this waste could not only threaten Lake Michigan as a source of drinking water for ten million people, but also cause a host of other irrevocable impacts on the lake's fish, wildlife, people, and economy. (HH-5)

Response: *Transportation of spent fuel was evaluated in the GEIS and was determined to be a Category 1 issue. The comment provides no new and significant information and will not be evaluated further.*

Comment: The Barnwell, South Carolina "low" level radioactive waste dump, which has accepted shipments from Palisades for decades, will close its doors to wastes from Michigan in 2008. Neither NMC in its Environmental Report, nor NRC in its draft EIS, have explained how Palisades will deal with the "low" level radioactive wastes when Barnwell closes, such as establishing storage installations for "low" level radioactive wastes on the plant site. What NRC and the nuclear industry term "low" level radioactive wastes contain many of the same radio-nuclides as high-level radioactive waste, only less concentrated. Some "low" level radioactive waste can even deliver a lethal dose of radiation at close enough range in as little as 20 minutes. "low" level radioactive waste management at Palisades is a significant health, safety, and environmental issue that requires is largely unaddressed by NMC and NRC in the license extension application and requires specific consideration. (HH-39)

Response: *Low-level waste storage and disposal were evaluated in the GEIS and were determined to be Category 1 issues. The impact was determined to be SMALL. The Commission is confident that all nuclear waste generated will be handled, stored, and disposed of in a manner that assures public health and safety. The comment provides no new and significant information and will not be evaluated further.*

Comment: According to Dr. Arjun Makhijani, Director of the Institute for Energy and Environmental Research, uranium mining and milling inflicts some of the worst human health impacts of the entire uranium fuel chain. This is due to the careless handling of the radioactive materials involved, and dumping of waste materials upon the surface of the land, where they can be dispersed in air and water. Because of this, the Navajo Indian Tribe in the Southwestern United States-the largest Indian Tribe in the country-has officially banned the mining, milling, or processing of uranium upon its reservation territory.

NRC's draft EIS does not address such negative environmental impacts of the nuclear fuel chain. A full cost accounting of the uranium fuel chain's negative impacts on health and the environment is required to properly evaluate Palisades' twenty-year license extension request. (HH-47)

Response: *The comment is related to the uranium fuel cycle and waste management issues. Uranium fuel cycle and waste management issues were evaluated in the GEIS and were determined to be Category 1 issues. The Commission is confident that all nuclear waste generated will be handled, stored, and disposed of in a manner that assures public health and safety. The NRC has specific regulations for releases of radioactive materials from the uranium fuel cycle to the environment. The comments provide no new and significant information and will not be evaluated further.*

Comment: Section 2.1.4.1, *Liquid Waste Processing Systems and Effluent Controls*, Page 2-12. The draft SEIS does not provide quantitative details about the planned modification of the liquid radioactive waste processing system. The draft-SEIS states that NMC is planning to replace the current system, which is based on evaporation, to a system using resins for ion exchange. The draft SEIS does not provide quantitative details about the estimated change in collection efficiency between the two systems. This information should be provided in the final SEIS. (UU-16)

Response: *The information provided in the draft SEIS in Section 2.1.4.1 regarding planned modification of the liquid radioactive waste processing system has been updated to reflect that NMC completed its modification in December 2005. The NRC staff evaluated the modification in Section 2.1.4.1 qualitatively rather than providing quantitative details, because the requirements of 10 CFR Part 20 and Part 50, Appendix I for effluent controls are based on radioactive releases and resulting doses rather than collection efficiencies of the plant's system, e.g., if a batch of liquid waste did not meet release requirements, it could be recycled through the resin bed and sampled again until it met such requirements. In addition, changes or modifications to facilities and equipment at operating nuclear plants are regulated under the requirements contained in 10 CFR Part 50 for operating reactors; any such modifications at Palisades would have been done in accordance with those requirements. However, the NRC staff also notes that similar systems have been employed at other nuclear reactors, such as Nine Mile Point and D.C. Cook, and have shown releases well within regulatory limits. On this basis, the NRC staff expects that the equipment modification would not change the applicant's ability to process liquid radioactive waste much, and that releases would continue to remain within regulatory limits.*

The comment does not provide any new and significant information and will not be evaluated further.

A.2.12 Comments Concerning Alternative Energy Sources

Comment: My question is, in this regard, is that we are reading this report or your final result is administered by you and it's only, is going to say, well, that Palisades can continue. I mean, the fact that Palisades can continue operation is not unreasonable. And I understand that you are stressing that result. But on the side, you are taking position on alternative solutions that I read and I don't think is enough education in your point. Because the fact is that wind is flying. We are having wind all over the world and in here too. So I guess you missed the point in this. And I don't understand why you, you are so concerned on our selecting alternatives if we know about the alternatives. And really, you are not doing a good job and the guys are going to really make the decisions, went through the final decision. (D-1)

Comment: But when I turn to the alternative energy sources, which should be pursued at the Palisades Plant site, their impacts are often referred to as large. Which all considering, they would be, taking into account the enormity of the electrical power the plant puts on the grid, for alternatives to equal out in their current forms at this site. A rather particular assumption bracketing both the plant and the NRC's positions well, yet ignoring the simple fact that if all the resources used to continue operation of this plant were put into renewables and other forms of electrical generation throughout the State, it would turn the argument on its head. (B-7) (O-2) (TT-7)

Comment: And sooner or later human beings probably are going to make some errors. And with a gas-fired plant, right across the road you can -- facilities, as the Palisades Nuclear Power Plant that I kind of wondered, why in the world don't we go to a plant already on line there, already ready to deliver, as opposed to the aging Palisades Nuclear Power Plant. (E-2)

Comment: Secondly, I heard that solar and acreage. And it's my understanding that solar is very commonly mounted on rooftops and walls in cities, which also reduces transmission loss, etc., that comes from centralized nuclear plants scattered around and have this great transmission loss over their process of getting the electricity to where it is needed. (F-2)

Comment: Now, we do want to say that one of the important points, and the word I haven't heard, is sustainable. We have not talked sustainable power and energy. And in the 21st century and beyond, we need sustainable power, not the fossil fuel which nuclear is also. There's a limit to uranium involved, so it's about time that we began to think for our great great grandchildren. And we have, anybody else? This little guy's going to help us here. This is an adaptation of the Raging Grannies presentations that they have given all across the country in various ways. (F-3)

Comment: And this, heard a lot about alternate forms of generating electricity. And I've read quite a bit about it and nothing I have read has convinced me there is a better way. I'm local,

sometimes a lot of these people from far away come in and tell us how we're supposed to do things. I don't particularly appreciate that either. (K-4)

Comment: My hope is that by the time the current license expires in 2011 that nuclear power should be replaced by wind power and by a lot more conservation and more efficient use of electrical energy. That is possible. I'll come back to that. (P-3)

Comment: Also it's [wind power] cheaper. Currently as according to my latest figures and I've been doing a lot of reading on this, wind energy is sold for four cents a kilowatt power or less sometimes when it's under long term contract to where as I understand the cost of nuclear energy is about three times higher than that. So we the taxpayers, the ratepayers are paying so somebody else can make money. And it's not necessary. Let me explain. (P-4)

Comment: In any case wind power is really growing worldwide. It's growing at the rate of 30 percent per year. Most of this is happening in Europe and in Europe Germany is in the lead with I believe at this point 14,600 megawatts of electricity from wind. They seem to know how to do it. So I suggest to the people at the NRC or to the, to the management company that they should go to Germany and ask and say we don't know how to make wind power work here maybe you could tell us how to do it. (P-7)

Comment: And incidently wind generators and their, their towers can be reused and recycled over and over again so that they have that advantage as well. And they provide the jobs that you're so concerned about in this community. (P-10)

Comment: Finally I have to say that according to the GEIS again Consumers Energy has decided they didn't want to deal with what they call DSM and for you who haven't read the book DSM mean demand supply management. In other words giving advise to the consumer to use less energy to get complex for, you know, all of the things that could save energy. Oodles of it. They chose not to do that. Why? Well, it might be very costly or this or that. Now come on. This would be a way of trying to sort of curtail the need for licensing this plant in a risky way for another 20 years. Any relevance has said that we could do with 50 percent less electricity if we used it intelligently and if we conserved. (P-12)

Comment: So I, I believe that we would be far better to spend our money on safer distributing energy sources like wind power particularly in Michigan. My wife and I just came back from California. Even a State like Wyoming has tremendous numbers of wind generating plants now. Wyoming has tremendous amounts of coal. They have tremendous amounts of oil yet they are going to wind generation. And you look out across this nation the idea that you, you cannot have distributed types of energy production is insane in my view point. So let's invest in alternative energy sources. (R-4)

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Comment: So if this money were diverted to the renewables and the technology to wind and solar you would and perhaps let's pretend that the, the information in the environmental impact statement is correct for a minute but as submitted by the, in the EIS, that, that wind turbines need X amount of acreage and all this and they can only produce X amount of megawatts etcetera. If you take even a minuet amount of the money that is given to the nuclear industry just as a given and divert that to renewables and, and improve the technology of the renewables this would absolutely not be an issue. (AA-5)

Comment: So let's look for alternatives. We need a whole new way of living. We can get along with a lot less of this, look at this. Lights on all night. You go to the cities they're, and frankly we're going to, we're running out of oil, we're running out of natural gas, we're running out of a lot of stuff. We're going to have to think about doing things a different way guys. (BB-5)

Comment: I think that the premiss is upside down where they consider the, another 20 years of, of Palisades operating as, environmentally a small issue and they consider alternatives as a great impact. I think it's opposite actually. (DD-7)

Comment: The analysis of alternatives to extending the license for Palisades was flawed and biased. Renewable energy sources such as wind power and solar power, as well as alternatives such as energy efficiency and conservation, are not given credible consideration in the EIS. NMC/Consumers and the NRC reveal a bias in favor of fossil fuel and nuclear power by presenting only those two sources favorably and by downplaying the potential for energy efficiency, energy conservation, and renewable sources of electricity. (GG-10)

Comment: The drive for re-licensing of the nation's nuclear power plants started as early as 1982, with research on aging of nuclear reactors, and began in earnest in 1991 when the NRC published safety requirements for renewal. Currently, re-licensing plans are moving more rapidly as proponents attempt to take advantage of the nation's current energy crisis. Extended and new nuclear power generation is now being promoted as a "clean" alternative to the use of fossil fuels, which are now universally acknowledged as contributing to global warming. Many utilities that own nuclear power plants, however, including Consumers Energy, also own coal-burning plants. Consumers Power, in particular, generates a sizable share of its electricity from the burning of fossil fuels. (GG-16)

Comment: In the draft EIS, Section 7.0, "Alternatives to the Proposed Action," renewable energy sources such as wind power and solar power, as well as alternatives such as energy efficiency and conservation, are not given credible consideration. Polluting electricity sources such as fossil fuels are cited by NMC/Consumers as the only realistic alternatives to approval of a 20-year license extension at Palisades. This is not surprising, as nearly three-quarters of Consumers' electricity generation (in 2002) comes from fossil fuel facilities. But the choice is not just between nuclear power and coal as sources for electricity generation. NMC/Consumers reveal a bias in favor of fossil fuel and nuclear power use by presenting only those two sources

favorably in their Environmental Report, and by downplaying the potential for energy efficiency, energy conservation, and renewable sources of electricity. NRC echoes this as well in its draft EIS. (GG-43)

Comment: Renewables, efficiency and conservation are not only available, reliable, safe, clean and affordable options for electricity generation and savings, but also a source for tremendous job growth and cost savings. Using simple energy efficient techniques, Michigan citizens and businesses could easily reduce the State's energy demand by 1%, the energy used by 40,000 homes. In the State of Michigan there is currently 19,250 megawatts of generating capacity. Palisades generates 798 megawatts, or 4% of the power generation in the State of Michigan. Wind power potential in Michigan, according to the DOE, is 16,000 megawatts, or twenty fold the mega-wattage of Palisades, and could be a viable replacement for the energy that Palisades provides. In fact, wind power is the fastest growing new source of electricity in the United States, relative to all other sources. (GG-44)

Comment: There are also many examples of new efforts underway in Michigan to move forward with renewable energy, with the deployment by Mackinaw Power of modern, large capacity wind turbines on the northern tip of Michigan's lower peninsula, plans to deploy more wind turbines on the Lake Michigan shoreline of west Michigan, and advances in solar electricity by United Solar Ovonic in Troy, Michigan (which manufactures solar electricity generating roofing shingles). President Bush visited the headquarters of United Solar Ovonic earlier this year to promote promising renewable energy technologies.

It is especially significant that on April 6, 2006, Michigan Governor Jennifer Granholm signed Executive Directive No. 2006 - 2, which charges the Michigan Public Service Commission to prepare an "Energy Plan for the State of Michigan" by December 31, 2006. The directive calls for the development of a renewable portfolio standard that "establishes targets for the share of this State's energy consumption derived from renewable energy sources" and initiates the "appropriate use and application of energy efficiency, alternative energy technology, and renewable energy technologies.... consistent with the goal of assuring reliable, safe, clean and affordable energy." This puts the State of Michigan in a favorable position to promptly substitute clean energy sources for those with adverse impacts, such as nuclear power, as it moves into the forefront of renewable energy technology. (GG-46)

Comment: NRC must revise its analysis of energy alternatives. Full and objective consideration must be afforded the options of renewable energy and efficiency. NRC must also provide a thorough cost accounting of the uranium fuel chain's negative impacts on health and the environment. (GG-62)

Comment: I agree with Don Williams, retired Hope College chemistry professor that, "not only should Palisades' life be extended, but another reactor...added", and to paraphrase, NRC needs

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to plan for decommissioning the current reactor, replacing it with a more advanced, safer, more economical Generation III plant. (HH-3)

Comment: The considered Environmental Impacts were not weighed as required to perform an overall impact evaluation. In other words, not all environmental impacts have the same effect.

Renewable (sustainable) energy sources should be given extra points when compared with energy sources of lower availability. Wind and Solar sources are renewable energy sources. The Standard Nuclear Plant, using Light Water Cooled Reactor, is a source of limited availability. New types of Nuclear Reactors, using advanced fuel cycle or a fast neutron reactor would be of longer availability.

Nuclear Power alternatives using advanced fuel cycles would decrease the amount of long term hazard of nuclear waste. Is this point being considered in the comparison of Nuclear Plants? Is the impact on Proliferation of radioactive materials in the World being considered to evaluate the Nuclear Plants? The standard Nuclear Plant using 5% enriched Uranium has technology and materials that could be used for the manufacture of the plutonium bomb.

Between the alternatives to be considered to obtain an "equivalent" electric generation we believe that the following should be maintained as technically feasible:

- Hydro-Pump storage (not considered in the GEIS)
- Demand side Load Management (considered but disregarded)
I.e. the introduction of smart electric meters
- Wind Power (considered in GEIS Page 8-45, but disregarded)
- Solar Power (considered in GEIS Page 8-45, but disregarded)
- Co-generation (not considered in GEIS)

Are the CO₂ atmospheric emissions for the different energy sources being considered in the evaluation of alternatives? (JJ-7)

Comment: Of course, there are many other adverse environmental impacts 20 more years of operations at Palisades would cause. But in addition to all the negatives about Palisades, there are positive alternatives: energy efficiency, wind power, solar power, and biomass could be offered as alternatives to 20 more years of nuclear power and radioactive waste generation. But NRC shrugs off such notions in its draft EIS. (MM-12) (NN-12)

Comment: There are a number of energy efficient alternatives that are more viable for the area. Overlooking the interests of the people and clearly identified health concerns in the interest of plant self-preservation are actions from a bygone era. (RR-3)

Response: *NRC's requirements to consider the environmental impacts of various alternatives are based on NEPA. The purpose of NEPA is to ensure that relevant agencies examine and*

disclose the potential environmental impacts of their actions before taking the action. NEPA is a procedural statute that does not dictate a decision based on relative environmental impacts. Furthermore, the NRC has no authority or regulatory control over the ultimate selection of future energy alternatives. Likewise, the NRC cannot ensure that environmentally superior energy alternatives are used in the future. The NRC makes its decision whether or not to renew the license based on safety and environmental considerations. The final decision on whether or not to continue operating the nuclear plant will be made by the utility, State, and Federal (non-NRC) decision makers. This final decision will be based on economics, energy reliability goals, and other objectives over which the other entities may have jurisdiction. Moreover, given the absence of the NRC's authority in the general area of energy planning, the NRC's identification of a superior alternative does not guarantee that such an alternative will be used.

Comment: I was wondering on this assessment of wind and solar, granted Michigan doesn't have sunshine every day like the Western states. Solar really isn't feasible here as an alternate. But what about the wind? You're saying it's, it's a large concern because it takes a lot of land. How much of power for Palisades is sold out of State? What percent of the power is sold out of State? Well, this, this, this all comes together because if you're taking this and you're saying 143,000 acres, but if Palisades, like D.C. Cook, sells most of its energy out of State, that's really not a proportionate summation. One other thing, please. This is, this is important. What are you basing on, what size wind generators are you basing this summation on? The small little ones, or the ones that they're using now, the big ones that Consumers Energy's investing in to replace the nuclear? Palisades is up for sale. They want it off their hands. They were investing in green energy and it's working. So I wonder about this. (C-1)

Comment: But I would like to know, technically, all right, how you came to this summary and the size of the wind generators you took into account in this summary, et cetera, et cetera, et cetera. The whole detail. (C-3)

Comment: I asked how much is sold out of State, and what size wind, what size wind generators? What, what is the size in your analysis, what size, what size wind generators are you saying would take that much acreage? And how much of Palisades power is sold out of State? (C-4)

Comment: Several things. Number one, I'm concerned that the kinds of answers we're hearing, I, I feel are very questionable. For instance, wind power in itself, you don't measure that by acreage because farmers are finding a very successful business for them to put the wind farms along their lot lines. And so it's a very definite advantage environmentally in that respect, and I didn't hear that kind of that thing in your report. (F-1)

Comment: And I have a question for Dr. Miller and ask if you really want to stand by those figures that you cited on wind energy 125,000 acres for I presume the kind of megawatts the

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plant currently produces. If you, if you, if you do the calculations here I know there's been machines that put out four megawatts each and there could be, you know, maybe you'd need about 200 of them or so to do that and that would be about 500 acres per machine. And that makes it look as if wind is really impossible but it's not. And I think there's a fallacy in there. (P-1)

Comment: Palisades sits on 432 acre site of which 80 acres is developed or I presumed used. That leaves 200 to 300 acres of land which could be available for wind turbines. If you figure four acres per turbine and they're really large, this would be a four megawatt turbine and they exist, you would need or you would have room for about 50 large wind turbines. They could be erected on the site, more land could be rented for farmers down the line along the transmission line too. But even these 200 megawatts that would be produced here by wind is not negligible. That's one fourth as much roughly as the current nuclear plant provides. (P-5)

Comment: Now on page of the GEIS on page 845 I understand that wind power had been considered and rejected for a number of reasons. One of which is that it said could be intermittent and there's sense in which you could say that but I, I have a wind generator next to my house, nearby, and I say that wind power isn't seasonal. Because in this season it hasn't quit running for weeks and weeks. So it's not just intermittent but it might be seasonal. So certain other seasons might require a different mix of energy to keep the customers going. So that's one of the problems I have here. It isn't simply intermittent. It's seasonal. (P-6)

Comment: I want to suggest that there are three paragraphs on page 8-45 of this GEIS dealing with wind power and together the three paragraphs includes so many distortions, falsehoods or simple stupidity that I think if this is a kind of an indication of what's in this book it's bad news because this is not going to fly. (P-8)

Comment: The way this is put down here is to sort of make wind a non starter. And it's not true because as I just said it is growing worldwide and it could here too if people were to take a different kind of attitude. (P-9)

Comment: There, I already mentioned in my comment earlier that it does not require 500 acres for a single wind generator and if the large ones, you know, the, the way the GEIS puts it you really have a system here where they say you need 500 acres or well actually they say 150,000 acres in order to provide 1000 megawatts. I've been on wind farms and many of you have seen them. They're not one per 500 acres. This is either a big mistake by somebody that should have known better or it's a blatant distortion. As I suspect the latter because they don't want to deal with wind power they'd rather deal with nuclear because that's the business that they're in both for the commercial and governmental agency. So I, I worry about this. (P-11)

Comment: So my point is that I think the, the put down of wind energy in this book is so blatant that I suspect I have to say I'm afraid I lose, I think that the nuclear regulatory commission loses

credibility by people who know something about this. And that's a serious thing because I don't want to live in a society where governmental agencies lose credibility because they're supposed to be responsible. (P-13)

Comment: NRC staff's assertion in the draft EIS that such wind power expansion would have a large negative impact due to the large surface area of land it would require is incorrect, and ignores the fact that small-scale family farmers could benefit from the placement of wind turbines on their fields. These farmers could either benefit from the lease payments from wind power companies for use of their land's "windshed," or could work towards owning their own wind turbines on their own land, and thus receive the full income from wind powered electricity generation. Wind turbines would not preclude the farmers' continued use of fields for agricultural crop or livestock production. Wind power could serve as a valuable source of income for farming families, complementing their agricultural livelihood, while also providing safe, clean, reliable, and inexpensive electricity for the region. (GG-45)

Response: *The SEIS has been revised to incorporate the latest information on wind power technology. The National Renewable Energy Laboratory estimates that the footprint of a 1.5-MW wind turbine (the largest land-based turbine currently available) is between 0.25 and 0.5 acres. The spacing between turbines would be at an interval of 5 to 10 turbine rotor diameters (a rotor diameter for a 1.5-MW wind turbine is assumed to be approximately 200 ft). It is estimated that 524 1.5-MW turbines would be needed, in areas with a wind class of Class 3 or higher, to produce 786 MW(e). The total acreage for a wind farm of 524 turbines in optimal wind conditions would be in excess of 2000 acres. Approximately 262 acres of those would be dedicated to the footprint. The remaining acreage could be available for other uses (e.g., farming, grazing).*

The comments also speak to the attractiveness of wind or solar energy versus nuclear power. The SEIS's discussion on alternatives is only intended to disclose the potential environmental impacts of each feasible alternative. The final decision on whether or not to continue operating the nuclear plant will be made by the utility, State, and Federal (non-NRC) decision makers. This final decision will be based on economics, energy reliability goals, and other objectives over which the other entities may have jurisdiction. Moreover, given the absence of the NRC's authority in the general area of energy planning, the NRC's identification of a superior alternative does not guarantee that such an alternative will be used.

Comment: I have two questions involving the last point on the board there. That includes, well, yes I guess, all of, and when you consider those solar and wind power would that be like a centralized like field of windmills and–sun panels. I'm worried about like the environmental effects. Is that moderate or large considering that it would be all in one place? (T-1)

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Response: *The factor that elevates the impacts of renewable energy alternatives to MODERATE and LARGE is that you are evaluating the impacts at a baseload capacity. Many of the renewable energy alternatives are very effective at small capacity levels (i.e., under 100 MW(e)). When those alternatives are expanded to meet baseload needs, the potential for environmental impacts becomes very large because of the scale of the project and the need for that baseload capacity to reach the same users of energy from the current Palisades plant. These impacts are evaluated based on centralized or proximate arrays of windmills or sun panels.*

Comment: Section 8.2.3, *Nuclear Power Generation*, page 8-34. The changes in power production would provide a difference in potential risk to the public and needs to be specified, rather than merely referenced, to provide a clearer understanding of the risk determination in this section of the document. (UU-13)

Response: *As stated in Section 8.2.3, the impacts shown in Table S-3 (of 10 CFR 51.51) are for a 1000-MW(e) reactor and would need to be adjusted to reflect the replacement of 786 MW(e) generated by Palisades. For the basis of comparing alternatives, the NRC staff assumes that a hypothetical plant would produce the same amount of power currently generated by Palisades; the risk associated with this hypothetical plant is not expected to exceed that of the current plant at Palisades. Therefore, the comment provides no new and significant information and will not be evaluated further.*

A.2.13 Comments Concerning Monitoring Issues

Comment: Although radiation monitoring occurs at reactor sites, it only provides information on levels of discharges emitted or released. It does not provide specific information about where the radioactive materials end up, or if they contribute to radiation levels in plants, fish, and wildlife as well as body burdens of local and downwind or downstream residents. The Nuclear Regulatory Commission relies upon self-reporting and computer modeling from reactor operators to track radioactive releases and their projected dispersion. A significant portion of the environmental monitoring data is extrapolated – or virtual, not real. (GG-28)

Comment: NMC/Consumers should be required to provide the communities in the vicinity of the Palisades plant, with a monitoring program to supply independent information regarding radioactive discharges and releases. These communities are currently dependent upon the operators of Palisades to provide notification of radiological releases. Establishment of an independent program would give evidence of NMC/Consumers' interest in and commitment to ensuring the health of its surrounding communities. (GG-30)

Response: *The NRC requires licensees to report plant discharges and results of environmental monitoring around their plants to ensure that potential impacts are detected and*

reviewed. Licensees must also participate in an interlaboratory comparison program that provides an independent check of the accuracy and precision of environmental measurements. In annual reports, licensees identify the amount of liquid and airborne radioactive effluents discharged from plants and the associated doses. Licensees also must report environmental radioactivity levels around their plants annually. These reports, available to the public, provide the results of the sampling of ingestion sources such as milk, fish, invertebrates, and broad leaf vegetation. Radiological environmental monitoring program reports have not shown any significant elevation in radiological contamination of foodstuffs from surrounding farms. The applicant's effluent and environmental radiological monitoring programs are regularly inspected by health physics experts from the NRC's Region III office. In addition, the Michigan Department of Environmental Quality conducts an environmental radiological monitoring program in the areas around Palisades. The comments provide no new information and will not be evaluated further.

Comment: Section 2.2.7, *Radiological Impacts*, pages 2-49, 2-50. The references to the environmental standards need to be more complete citations, including title of the rule or regulation along with the basic standard for comparison provided consistently. All of the environmental standards that could be used for comparison should be used, including 40 CFR 61 Radionuclide National Emission Standards for Hazardous Air Pollutants values. This will reduce the time needed to look up these citations and verify values that are cited in the text. (UU-2)

Response: *As stated in Section 2.2.7, "the limits for all radiological releases are specified in the Offsite Dose Calculation Model (ODCM) (NMC 2004a), and these limits are designed to meet Federal standards and requirements. The primary radiological standards applicable to Palisades are contained in 10 CFR Part 20, 40 CFR Part 190, and 10 CFR Part 50, Appendix I." Additional text has been added to reference Section 3.8.1.1 "Regulatory Requirements" of the GEIS, which provides a summary and specific numerical dose limits associated with these standards and requirements. Complete citations for these standards are provided in the reference section of Chapter 2.*

Regarding the comment to include 40 CFR Part 61, the EPA rescinded Subpart I as it applies to power reactors on September 5, 1995 (60 FR 46206), based on the reasoning that "the regulatory program established by the NRC pursuant to the Atomic Energy Act provides an ample margin of safety to protect the public health." No change was made to the SEIS as a result of this comment.

Comment: Section 2.2.7, *Radiological Impacts*, page 2-49. We are concerned about the level of information provided in the draft supplemental environmental impact statement (SEIS) on direct and cumulative radiological impacts. According to the draft SEIS, Nuclear Management Company, LLC (NMC), the applicant for the operating license, has conducted a radiological

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environmental monitoring program (REMP) around the Palisades site since 1971. Through this program, NMC has monitored and documented radiological impacts to workers, the public, and the environment. The draft SEIS states: The REMP includes monitoring of the waterborne environment (ground water, surface water, and sediments), ingestion pathways (milk, fish and vegetation), direct radiation (gamma dose at thermoluminescent dosimeter [TLD] locations), and atmospheric environment (airborne radioiodine, particulates, gross beta, and gamma).

[Page 2-49]

The draft SEIS cites two annual reports which summarize information from the REMP, but the draft SEIS does not contain this summary information itself. Summarized quantitative information about radiation and exposure pathways in the environment is relevant in determining radiological impacts from the continued operation of Palisades. We are unable to make such a determination from the draft-SEIS as it is written. In addition, the draft SEIS lacks a comprehensive assessment of cumulative radiological impacts, since it does not include quantitative information about the D.C. Cook Nuclear Plant, located about 28 miles south-southwest of Palisades on Lake Michigan's shores. Therefore, we suggest that the final SEIS include (1) current annual summary information from the REMP and (2) a quantitative cumulative impact assessment of radiological impacts which accounts for impacts from the D.C. Cook Nuclear Plant. (UU-3)

Response: *Radiological impacts of normal operations were considered and evaluated in the GEIS, and the generic conclusion was reached that these impacts were SMALL. Therefore, this is a Category 1 issue. In the supplements to the GEIS, such as this supplement for Palisades, the NRC staff determines if any new and significant information is available that would change that generic conclusion. No such new and significant information was identified. The text, as it is written in Section 2.2.7 summarizes the results of the radiological environmental monitoring program (REMP), as documented in the annual reports. More detailed information about the REMP and its findings can be found in the annual Radiological Environmental Operating Reports referenced in Section 2.2.7. These reports are available to the public through the NRC electronic reading room at <http://www.nrc.gov/reading-rm/adams.html>. In preparing the SEIS, the NRC staff summarizes and incorporates by reference such reports unless a unique call for specific data is required.*

Section 4.8.3 of the SEIS has been revised to include clarifications about how the cumulative impacts analyses do consider the impacts from the D.C. Cook Nuclear Power Plant. The doses due to releases from D.C. Cook on receptors near the Palisades have not been quantified but they would be essentially zero considering the distance between the two plants; that is, the MEI dose given in Section 2.2.7 would not change. Therefore, the MEI dose given in Section 2.2.7 would be bounding for any offsite individual in the vicinity of Palisades. As discussed in Section 2.2.7, the MEI dose is a small fraction of the applicable regulatory limit of 25 mrem per year in 40 CFR Part 190. The comment provides no new and significant information and will not be evaluated further.

Comment: Section 2.2.7, *Radiological Impacts*, pages 2-49, 2-50. Providing the estimated total effective dose equivalents (TEDEs) for comparisons helps in providing the public with additional assurances that doses are monitored and do meet the As Low As Reasonably Achievable (ALARA) principals of the U.S. Nuclear Regulatory Commission (NRC). (UU-4)

Response: *The estimated total effective dose equivalents (TEDEs) are provided in Section 2.2.7 of the SEIS and are compared to the EPA's 10 CFR Part 190 dose limit of 25 mrem per year as follows: "Over this 5-year period, the maximum annual TEDE for the MEI was estimated to be 7.53×10^{-3} mrem with an annual average TEDE of 3.73×10^{-3} mrem. These doses represent approximately 0.03 percent and 0.015 percent of the 25-mrem limit, respectively." The explanation of how these doses compare to the 25 mrem limit (0.03 and 0.015 percent, respectively) helps in providing additional assurance that doses are monitored and do meet the ALARA principles, i.e., the relevant data was provided to show an appreciation for the magnitude of difference between the TEDEs and corresponding limit.*

Comment: Section 4.8.3, *Cumulative Radiological Impacts*, page 4-38; 4-39. Information or procedures used to generate values to support the assertions in this section need to be provided in a clearer manner to reduce the possibility of misunderstandings and the reasoning on procedures to reach these conclusions. (UU-6)

Response: *For additional clarity, the discussion of Cumulative Radiological Impact in Section 4.8.3 of the SEIS has been revised in response to this comment.*

A.2.14 Comments Concerning Decommissioning Issues

Comment: Section 7.1, Decommissioning, 7-2, under bullet point Radiation Doses. As the GEIS is based on a forty-year licensing period, an extension of this period would have an impact that needs to be quantified and reported. This information should have been included specifically in the draft SEIS as part of the risk that would be associated with the license extension. The specific methodology needs to be provided and explained. (UU-10)

Response: *Environmental impacts from the activities associated with the decommissioning of any reactor before or at the end of an initial or renewed license are evaluated in the GEIS (NUREG-1437) and in NUREG-0586, Generic Environmental Impact Statement for Decommissioning Nuclear Facilities, Supplement 1, Regarding the Decommissioning of Nuclear Power Reactors, published in 2002. The findings from these two documents are used to support the findings in the SEIS by the use of tiering. Tiering is a process by which agencies eliminate repetitive discussions and focus on actual issues ripe for discussion. The effect of license renewal on the impacts of decommissioning are stated in Chapter 7 of this SEIS. The radiation doses to the public during the period of extended operation are expected to be well below applicable regulatory limits, and the occupational dose during the time the plant*

undergoes decommissioning would be expected to increase only slightly. The comment provides no new and significant information and will not be evaluated further.

A.2.15 Comments Concerning Global Warming

Comment: A majority of scientists throughout the world now believe that increased emissions of carbon dioxide since the Industrial Revolution are enhancing the greenhouse effect of the atmosphere that surrounds the earth, and causing a warming that will cause dangerous effects to the earth's climate and inhabitants - global warming. The NRC confirms it as well, in its analysis of impacts of alternatives that might be more appropriate options than extending the license for Palisades, as it concludes that the impacts of substituting coal plants for Palisades would be a "large" impact, due to their contribution to global warming.

A one-degree Celsius warming of the earth's surface may seem insignificant, but it is not. The temperature of the earth's surface greatly affects our climate in many ways. In particular, a warmer planetary climate means more rain, flooding, and snow in various regions, earlier spring arrivals, hurricanes, heat waves, drought and fires in some places, frigid cold in others.

The effects are already seen in Michigan, where water in the Great Lakes is warming. According to Dr. Natalia Andronova, research scientist at the Department of Atmospheric, Oceanic, and Space Sciences at the University of Michigan in a May 7, 2006 interview with the Ann Arbor News, "Measurements of the near-surface temperature over the northern part of Lake Michigan and southern part of Lake Huron showed that for both lakes the period from 2000 to 2005 was warmer by at least two degrees Celsius than the period from 1981 to 1985." An increase of Lake Michigan water temperatures may eventually affect Palisades' operation, since the condenser within the plant requires cooler water to operate efficiently. During a heat wave in the late 1990s, reactors on the U.S. side of Lake Ontario shut down because the water temperature was too high to efficiently cool the reactor and generate steam for electricity production. During the extreme heat wave in France in recent years, nuclear reactors released so much superheated water to rivers that fish kills occurred; operators had to hose down the exterior of reactors as an emergency measure to provide additional cooling at the same time.

In the recent interview, Dr. Andronova also noted conditions particular relevant to re-licensing of Palisades. She commented that "it is becoming windier over the Great Lakes. The extreme winds increased from the one period to the next by more than 3 meters per second." More extreme winds, as well more frequent and intense tornadoes – all of which global warming could cause – could make operation of Palisades more and more risky over time. For example, documents received by the Nuclear Information and Information Resource from NRC during a Freedom of Information Act request regarding the October 2005 "near-drop" of a storage cask into the irradiated nuclear fuel pool at Palisades revealed that on extremely windy days, Palisades is prohibited from lifting loaded dry casks from the pool, as the high winds make crane operations too dangerous.

The potential danger presented by tornadoes to reactors was clearly shown in 1998, when a tornado struck the Davis-Besse nuclear plant in Ohio, knocking out the off-site electricity supply; the emergency back up diesel generators also malfunctioned. If not for extreme efforts by staff, the plant could have lost coolant, leading to a meltdown. An increase in severe weather due to global climate destabilization in the region could well increase risks at Palisades. Far from being a solution to global warming, nuclear power could become unacceptably dangerous and unreliable due to global warming.

The draft EIS prepared by the NRC unaccountably discounts the effects of global warming, noting that its effects cannot be predicted. We assert that there is sufficient information currently available that should be investigated and considered regarding the impacts of changes in weather that may occur in a 20-year extension to Palisades' license. This must also include an analysis of the increased potential for an electrical station loss of power that could lead to loss of cooling in the reactor core and waste storage pool, with the potential for core meltdown and waste pool fires, with consequent catastrophic large-scale radiation releases to the environment. The warming of the cooling water supply from Lake Michigan must also be considered in regards to the efficiency and safety of Palisades continued operation till 2031. (GG-49)

Comment: NRC must assess and consider as part of the EIS, the information currently available regarding the impacts of global warming to the region. This must also include an analysis of the increased potential for an electrical station loss of power that could lead to loss of cooling in the reactor core and waste storage pool, with the potential for core meltdown and waste pool fires, with consequent catastrophic large-scale radiation releases to the environment. The warming of the cooling water supply from Lake Michigan must also be considered in regards to the efficiency and safety of Palisades continued operation till 2031. (GG-64)

Response: *While climate change is a legitimate concern, the specific impacts of climate change within a particular region are still highly speculative, and are, therefore, beyond the scope of a NEPA review for reactor license renewal. The comments do not provide new and significant information and will not be evaluated further.*

A.2.16 Comments Concerning Editorial Issues

Comment: Page Number 2-4, Line Number 22. Suggest that text specifically state the Covert Generating Station is owned and operated independently of Palisades. (OO-1)

Comment: Page Number 2-5, Line Number 1. Replace "40-ac" with "400-ac" (See ER p 2-1). (OO-2)

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Comment: Page Number 2-12, Line Number 4-12. The new Radwaste system became operational in December 2005. Change “NMC is planning to modify...” to “NMC has modified...” Remove 2 sentences describing old radwaste system. Change “The system NMC plans to install relies...” to “The system relies...” (OO-3)

Comment: Page Number 2-12, Line Number 14. Change “The equipment NMC plans to install...” to “The equipment NMC has installed...” (OO-4)

Comment: Page Number 2-14, Line Number 39-40. Change to “Sanitary waste is sent to three onsite septic systems.” (See DSEIS Figure 2-3). (OO-5)

Comment: Page Number 2-19, Line Number 1-2. Change “plant area” to “protected area.” (OO-6)

Comment: Page Number 2-19, Line Number 18. Change “OLs” to “OL” (OO-7)

Comment: Page Number 2-22, Line Number 25. The NPDES Permit (corrected copy of 11/8/04 submitted to NRC in letter dated 12/8/04) requires outfall observations five times per week. Suggest changing last word from “day” to “week.” (OO-8)

Comment: Page Number 2-23, Line Number 5. Suggest adding third sentence to the paragraph which states, “Clam-Trol treatments are no longer required to be recorded in Palisades’ DMRs, but monitoring during Clam-Trol treatments is performed in accordance with the NPDES permit.” (OO-9)

Comment: Page Number 2-23, Line Number 8-9. Revise sentence to state, “Temperature data collection at monitoring point 001A is conducted in accordance with the NPDES permit.” As written, sentence implies, incorrectly, that monitoring was not conducted prior to 2005. (OO-10)

Comment: Page Number 2-24, Line Number 7. Correct name of facility is the “Benton Harbor-St. Joseph Wastewater Plant.” (OO-12)

Comment: Page Number 2-25, Line Number 27. Wind class differs from wind class given on DSEIS p. 8-45 line 21. (OO-13)

Comment: Page Number 2-26, Line Number 16. Change “2350” to A2500.” The rated capacity of the diesel generators is 2500kw per FSAR Section 8.4. (OO-14)

Comment: Page Number 2-49, Line Number 35. Change “NMC performed an assessment...” to “NMC performs an annual assessment...” (OO-15)

Comment: Page Number 2-51, Table 2-3. Suggest adding footnote "Figures may not add due to rounding" (OO-16)

Comment: Page Number 2-52, Line Number 34-35. Fire protection services are provided by the Covert Township Fire Department and the South Haven Fire Department. (OO-17)

Comment: Page Number 2-54, Line Number 19. Change "Table 2.6" to Table 2-6" (OO-18)

Comment: Page Number 2-55, Line Number 23-25. Stated building heights are not correct. Suggest either deleting heights or replacing with the following approximate values: turbine building-94 ft; containment building-192 ft; auxiliary building-108 ft; cooling tower pump house-35 ft; two cooling towers-65 ft; and feedwater purity building-58 ft. These are approximate heights above grade as the buildings would be seen from the west. (OO-19)

Comment: Page Number 2-57, Line Number 23. Value "27,488" appears to be an error. "27,488" does not represent 39% of Van Buren County's 16,977 employed in 2002, as stated. (OO-20)

Comment: Page Number 2-57, Line Number 36-38. Appears that "Van Buren County" should be one of the two counties referenced (instead of both sets of figures being attributed to Berrien County). (OO-21)

Comment: Page Number 2-58, Line Number 25-27. Taxes are also paid to Lake Michigan College and the Michigan State Education Tax (See ER, p. 2-40) (OO-22)

Comment: Page Number 2-58, Line Number 34. According to Table 2-9, taxes paid to Covert Township averaged 58 percent of tax revenues. The word "spent" should be deleted from this sentence. (See DEIS Table 2-9, p. 2-60). (OO-23)

Comment: Page Number 2-58, Line Number 35. According to Table 2-9, taxes paid to Covert School District averaged 32 percent of total property taxes. (See DEIS Table 2-9, p. 2-60). (OO-24)

Comment: Page Number 2-63, Line Number 10. Approximately 80 acres of the site are developed or maintained (See DEIS p. 2-4 line 29). (OO-26)

Comment: Page Number 2-63, Line Number 12-13. Replace existing sentence with, "Most of these facilities are located along the main and north access roads." (OO-27)

Comment: Page Number 2-63, Line Number 19. Suggest changing "former" to "pre-operational." (OO-28)

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Comment: Page Number 2-68, Line Number 13. Change “Straminea” to “Pitcheri” (OO-29).

Comment: Page Number 4-24, Line Number 11. No “Table 2-10” exists; should be changed to “Table 2-9.” (See DSEIS p. 2-60) (OO-30)

Comment: Page Number 4-24, Line Number 13. Taxes paid to Covert Township averaged 58 percent of tax revenues spent in the county (See DSEIS Table 2-9, p. 2-60.) (OO-31)

Comment: Page Number 4-24, Line Number 14. The Covert School District received an average of \$2.7 million annually from Consumers over the 3-year period (See DSEIS Table 2-9, p. 2-60) (OO-32)

Comment: Page Number 4-24, Line Number 21. VBCO & VBCISD received 3-5 percent of revenues from Consumers (See DEIS Table 2-9, p. 2-60) (OO-33)

Comment: Page Number 4-26, Line Number 11 &15. Suggest rewording “The applicant has stated that these procedures are in place...” and replacing with “These procedures are in place...” (OO-34)

Comment: Page Number 4-27, Line Number 8. Change to “(1) no major...” (OO-35)

Comment: Page Number 4-37, Line Number 23. Line should read, “...Palisades’ NPDES permit...” (OO-36)

Comment: Page Number 4-41, Line Number 1. According to cited study, groundwater flow velocity is from the east-southeast to west-northwest at approximately 23ft/yr. This would indicate a westward flow. (OO-39)

Comment: Page Number 5-5, Line Number 34. Change “its” to “it.” (OO-41)

Comment: Page Number 5-8, Line Number 11. % Contribution column does not add to 100%. Suggest adding footnote, “Figures may not add due to rounding.” (OO-43)

Comment: Page Number 5-6, Line Number 10. “CP 1996” is not in ER reference list-remove reference here; “CP 1995” and “CP 1996” are not in DSEIS Chapter 5 reference list. (OO-42)

Comment: Page Number 5-9, Line Number 32. “NRC 2004” is not in the Chapter 5 reference list. No reference is cited for NUREG/BR-0058. NMC 2005a is not in Chapter 5 reference list. (OO-44)

Comment: Page Number 5-9, Line Number 29. Reference should be NRC 1997b, and reference should be added to Chapter 5 reference list. (OO-45)

Comment: Page Number 5-10, Line Number 1. "NRC 2004" is not in the Chapter 5 reference list. No reference is cited for NUREG/BR-0058. (OO-46)

Comment: Page Number 5-10, Line Number 27. NMC 2005a is not in the Chapter 5 reference list. (OO-47)

Comment: Page Number 5-10, Line Number 36. NMC 2005b, NMC 2005c are not in the Chapter 5 reference list. (OO-48)

Comment: Page Number 8-4, Line Number 6. There are no threatened or endangered aquatic species known at Palisades; suggest removing "including threatened and endangered species." (See DSEIS page 2-32) (OO-49)

Comment: Page Number 8-4, Line Number 29. Palisades has three onsite sanitary drain fields (see DSEIS Figure 2-3). (OO-50)

Comment: Page Number 8-5, Line Number 28. "Covert County" should be either "Covert Township" or "Van Buren County." (OO-51)

Comment: Page Number 8-7, Line Number 17-31. Annual Energy Outlook 2006 is now available. Suggest updating paragraph to reflect latest information from DOE. (OO-52)

Comment: Page Number 8-34, Line Number 4-6. Suggest noting that the AP1000 design is now certified also. See NRC website for references. (OO-53)

Comment: Page Number 8-45, Line Number 21. Wind class differs from wind class given on DSEIS p. 2-25, line 27. (OO-54)

Comment: Page Number 8-53 & 8-54, Heading. Table numbers should be Table 8-8. (OO-55)

Comment: Page Number 9-1, Line number 7. "NMC" should be replaced with "the plant owner" (OO-56)

Comment: Page Number E-3, Line Number 8. The South Carolina Radioactive Waste License for Delivery was reissued for 2006. Authorization information is as follows: Number 0006-21-06; Issue Date: 01/09/2006; Expiration Date: 12/31/2006. (OO-57)

Comment: Page Number E-3, Line Number 10. The Tennessee Radioactive Waste License for Delivery was reissued for 2006. Authorization information is as follows: Number T-MI003-L06; Issue Date: 01/01/2006; Expiration Date: 12/31/2006. (OO-58)

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Comment: Page Number G-2, Line Number 39. Change “is 1.0×10^{-7} ” to “is about 1.0×10^{-7} ”. Also change “NMC 2005a” to “NMC 2005b”. (OO-59)

Comment: Page Number G-4, Line Number 28. Column does not add to 100%. Suggest adding footnote, “Figures may not add due to rounding.” (OO-60)

Comment: Section 2.1.4.2, *Gaseous Waste Processing Systems and Effluent Controls*, Page 2-12, second paragraph. Citations of dose values should include the dose value, in addition to the citation, to make the values clearer. (UU-1)

Response: *The comments are noted, and wording in the identified sections of the SEIS have been changed to reflect this information, where appropriate.*

Comment: Section 8.2.3.1, Closed-Cycle Cooling System, page 8-39, under bullet point Waste. Waste impacts need to be specified, rather than merely referenced, to provide a clearer understanding of the risk determination made in this section of the document. (UU-14)

Comment: Section 8.2.3.1, Closed-Cycle Cooling System, page 8-40, under bullet point Human Health. Human-health impacts need to be specified, rather than merely referenced, to provide a clearer understanding of the risk determination in this section of the document. (UU-15)

Response: *As a supplement, this SEIS relies on tiering from the GEIS (NUREG-1437) and does not need to repeat all analysis and conclusions presented in the GEIS. The SEIS relies to a great degree on impact analyses presented in the GEIS by the use of a process called tiering. Tiering was promulgated by the Council on Environmental Quality in 1978 in 40 CFR Part 1502.20. Appropriate sections of the GEIS are referenced, when necessary. Human health impacts are presented in 10 CFR Part 51, Appendix B, Table B-1. For ease of review, this table can be found at <http://www.nrc.gov/reading-rm/doc-collections/cfr/part051/part051-appb.html>. More detailed information on this topic can be found in Volumes 1 and 2 of the GEIS, which are available at <http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1437/v1> and <http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1437/v2>, respectively. The comments do not provide any new and significant information; therefore, no changes were made to the SEIS text.*

Comment: Page Number 2-23, Line Number 13. Suggest defining “several” by stating the number of spills cited within the last five years. (OO-11)

Comment: Section 4.2.2, *Electromagnetic Fields-Chronic Effects*, page 4-17. We commend NRC for providing the reference to the National Institute of Environmental Health Sciences results and recommendations on chronic exposures to electromagnetic fields. This will provide the public with valuable information on these types of exposures (UU-5)

Response: *The comments are editorial in nature, and no changes were made to the SEIS as a result of these comments.*

Comment: Section 8.1, No Action Alternative, page 8-5, under the bullet point Human Health. The value representing the cited percent value should be specifically provided in addition to the citation. This will reduce unnecessary additional research by readers, except for value verifications, and potential misunderstandings or confusion as to the actual value(s) being specified. (UU-11)

Response: *The assessment of Human Health impacts in Section 8.1 was qualitative and incorporated summaries of conclusions reached in Chapter 4. Therefore, no specific values were cited. The comment will not result in modification of the SEIS text.*

**A.2.17 Issues Outside the Scope of the Environmental Review for License Renewal:
Safeguards and Security; Cask Incident; Dry Cask Storage, Waste Confidence Rule, Spent Fuel; Aging Management; Allegations Process; Cost-Benefit Analysis; Energy Policy; and Emergency Preparedness and Response**

Safeguards and Security

Comment: What I wondered is, the basis like sabotaging where taking account can be – in this way too. And if you have done that, because this, my contention is [it] is a new issue. They're not the same like previous plan. (D-2)

Comment: I'm curious as to where Homeland Security and terrorism falls in this environmental impact. (Q-1)

Comment: The SEIS (Supplemental Environmental Impact Statement) report should acknowledge that there has been changes in our government strategy since the original issuance of Palisades OL, particularly regarding sabotage and/or terrorism. Therefore additional analysis are required for OL Renewal. We believe that additional Severe Accident Mitigation Alternatives (SAMAs) regarding this issue should be considered for Palisades Operation License Renewal. (JJ-2)

Response: *Section 5.1.2 discusses the impacts of severe accidents including sabotage. The GEIS findings state that compliance with the NRC regulatory requirements under 10 CFR Part*

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73 provide reasonable assurance that the risk from sabotage is SMALL. Even if such events were to occur, the Commission would expect that resultant core damage and radiological releases would be no worse than those expected from internally initiated events. Based on the above, the commission concludes that the risk from sabotage and beyond design basis earthquakes at existing nuclear power plants is small and additionally, that the risks from other external events, are adequately addressed by a generic consideration of internally initiated severe accidents.

Comment: One time I was sitting on the deck of my cottage, which is right on the shores of Lake Michigan, a stone's throw from the, from the plant and of course, this was after 9/11 and a no-fly zone was instituted. And all of a sudden a Japanese zero comes zooming down the lake shore there about 50 feet over the water. It of course flew right over the plant on its way up to an old plane show someplace up north along Michigan. And I thought to myself well, how easy it would be for somebody, a plane to come on, and you know, I was really surprised that the accident report didn't include sabotage and other things along that line. So that's, that's kind of a problem. I'm a boater, and I boat past the plant many times from South Haven down to Palisades Park where the cottage is. And now it's not a no fly zone, but a no boat zone. The parameters of the property are 3/4's of a mile. And I looked at my boat and I said, boy, those casks are so easy. They're right, right over there. So I think that somehow or another we need to entrust the issues of, of license renewal for just 20 years because we're really looking, according to what I read, 10,000 years down the pike. (E-1)

Comment: My last thing, in yesterday's New York Times, I don't know if you all saw it, but maybe some of you from the NRC might get red ears when you read this article, because it is, after consulting with the industry, the Nuclear Regulatory Commission weakened security regulations it had proposed for reactors, government auditors said in a report to be released Tuesday. This is a GAO report. The audits said the process, quote, created the appearance that the changes were made based on what the industry considered reasonable and feasible, feasible to defend against rather than assessment of the terrorist threat itself. The report, by the Government Accounting Office, stopped short of saying that the Commission had made changes, quote, based solely on industry views. This cozy relationship between the NRC and the industry is what really bothers all of us. (G-4)

Comment: There is strong evidence that suggest security measures at Palisades are not adequate. Recent reports, including one in March of 2006 by the Government Accountability Office, call into question the ability and motivation of the NRC and nuclear power industry to take the necessary steps to ensure that the nation's nuclear power plants have instituted the most stringent security measures to protect against terrorist attacks. (GG-4)

Comment: The NRC has placed this issue outside the scope of the EIS for extending the license for Palisades. We strongly disagree and assert that the decision to allow Palisades to

operate an additional 20 years in a much higher risk condition mandates extensive involvement by the public.

Maintaining the security of the Palisades plant is a high priority concern since the events of September 11, 2001. That threat is real and imminent, as nuclear power plants were considered to be potential targets by the terrorists who carried out 9/11, according to the report of the 9/11 June 30, 2006 Commission. The Commission report notes that several of the terrorists had given indications that a nuclear power plant near New York City was a considered target for an airplane attack, due to the large population that would be affected by a release of radioactivity. That did not happen, reportedly, because the terrorists appeared to have concluded that it would have been difficult to control the effects of a release of radioactivity. But, the fact that it was considered means that each and every nuclear power plant in the U.S., including Palisades, should be regarded as a potential target for terrorism and security measures must be the most stringent available to address this threat. In fact, reactors such as Palisades are likely more at risk of terrorist attack than certain other reactors, as it is situated on the shoreline of Lake Michigan, the source of drinking water for the region.

Both the NRC and nuclear power companies assert that the events of 9/11 stimulated additional security at plants. However, numerous reports following 9/11 suggest otherwise, including a 2002 report by the Project on Government Oversight (POGO) referencing the plight of overworked and fatigued security guards at the plants during the year following 9/11, and numerous high-profile media accounts of risky gaps in security.

An October 3, 2002 Kalamazoo Gazette article, "Palisades incident leads to reassessment," describes a security response lapse due to Palisades' failure to follow proper procedures, leading to a communications breakdown. When three cars approached Palisades on the eve of the first anniversary of the 9/11/01 attacks, Palisades mistakenly phoned the local police rather than the county 911 system, leading to a 45 minute delay before State police arrived on the scene. By that time, the suspicious cars were long gone.

An October 20, 2002 New York Times article, "Guards at Nuclear Plants Say They Feel Swamped by a Deluge of Overtime," described an emotional breakdown by an armed security guard at Palisades with "unescorted access" to vital areas of the plant after she had been forced to work 72 hour work weeks for months on end. If guards complained about their fatigue, they faced the loss of their job, or forced psychiatric evaluations. Apparently, as reported by POGO, some nuclear utilities chose to nearly double current guards' duty time in order to avoid the added costs of training and providing benefits for newly hired guards.

In March of 2006, an independent nonpartisan investigatory Federal agency, the Government Accountability Office (GAO), issued a report that demonstrates that there is much yet to be done to protect the nation from terrorist threats to nuclear power plants. The report, Efforts Made to

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Upgrade Security, but the Nuclear Regulatory Commission's Design Basis Threat Process Should be Improved (GAO/BO-06-388), assessed the NRC's current efforts and found evidence that suggested the nuclear industry attempted to avoid strengthening security to avoid costs. It also noted slow progress in conducting mock attacks or force-on-force exercises to test safety at plants, as well as egregious examples of security lapses in the small number of mock attacks that NRC has carried out to date.

NRC'S process for determining risk to nuclear power plants was flawed and undercut by the nuclear power industry

The recent GAO report was done to review the process that the NRC used to revise the Design Basis Threat (DBT) that was in place for nuclear power plants prior to 9/11. The DBT is a description of the threats that might be anticipated from terrorist activities and is used to recommend appropriate security efforts at plants. The GAO also looked at what nuclear plants were doing to meet the threats, and the results of mock attacks, called "force-on-force" inspections, to test security efforts, carried out by NRC staff.

Trained "threat assessment" staff within the NRC used intelligence information that provided information on the capabilities of terrorists and recommended that the DBT be changed to accommodate a larger suite of threats. After sending out the revised DBT for review by nuclear power plant industry officials and groups, however, the NRC changed their recommendations for revising the DBT to reflect nuclear industry concerns about what was "reasonable and feasible" to defend against.

Judgment calls were made on most likely threats

Much of the threat assessment analysis involved a review of a limited amount of information (not much was available specific to nuclear power plants) as well as personal judgment by NRC staff to predict what might be used in a terrorist attack against nuclear power plants. For example, the staff considered whether to increase the number of potential attackers in the DBT, based on knowing the number of attackers in other incidents. Staff did not, however, recommend increasing the number of attackers in the DBT because they assumed that a large number of attackers would be more likely to be caught before they could carry out an attack – a judgment call. NRC staff concluded that an attack similar to 9/11 would not focus on a single nuclear power plant and that since an attack from the air was not an option used often by terrorists, did not recommend that scenario to be included in the DBT. Staff did assess the possibilities of an attack from water, but concluded that a bomb transported by water would necessarily be of smaller size, because it would need to be carried on a boat. (This assessment would not apply to a facility on Lake Michigan, as boats of quite large size could approach Palisades; in addition, it is plausible that speedboats could have the ability to launch an attack on Palisades before plant security defenses could react.

Undue influence by the nuclear industry changed NRC recommendations.

The GAO report, in its review of the revisions to the DBT, noted that because the nuclear industry had the opportunity to review the draft DBT, the changes that were made to the draft appeared to reflect concerns by the nuclear industry over the high cost of some increased security measures, suggesting undue influence by the industry. For example, industry representatives protested the inclusion of certain weapons in the DBT, saying that one would render the ballistic shielding of the plants obsolete and that another would be too costly. The industry argued as well that protecting against the use of certain weapons by terrorists was the responsibility of the U.S. Federal government, namely, the Department of Defense.

The industry also opposed the inclusion of a threat of an attack from inside the plant, from an “active violent insider,” saying there were no cost effective ways of avoiding this scenario. NRC staff made changes to the draft DBT that appeared to be influenced by the industry comments. When the draft DBT was presented to NRC commissioners, even more changes were made based on industry objections, for example, allowing plants to use a “human reliability program” to reduce the potential for an insider situation. The commissioners also removed some weapons from the list recommended by staff that plants would have to defend against that would have added to the cost of increasing security, as well as voting to decrease the maximum amount of weight of equipment, weapons, and explosives an attacker might carry, downgrading the level of security required at plants. The GAO report concluded that some of the changes suggested by commissioners and included as part of the DBT, were made due to judgment, rather than specific criteria.

Few mock attacks carried out to date

The GAO report noted that as of November 2005, the NRC had only conducted mock attacks, or force-on-force demonstrations at 20 of the 65 nuclear plant locations (with 103 reactors) in the U.S. The GAO reviewed documents from inspections and force-on-force demonstrations as well as observing a number of force-on-force demonstrations. Its review of 18 baseline inspection reports and demonstrations noted problems, including an intrusion detection failure at one site:

- Notice of demonstration dates were given 8 to 12 weeks in advance, and daytime and nighttime exercises were generally convened at the same times at each event, leading to a lack of unpredictability in the exercises.
- There were instances where advance information about attack scenarios had inadvertently been provided to plant personnel.
- The quality of feedback from NRC personnel to plants after an inspection varied. For example, not all potential problems were discussed by NRC with plant officials after each demonstration.

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- Alarms failed to activate; some did not function properly.
- Gaps in patrols were observed.
- Not all personnel entering protected areas within the plant were searched (for example, a security officer did not examine objects that set off the metal detector).
- Some security officers were inadequately trained for a terrorist attack (lack of physical stress preparedness, training inappropriate to threat).
- Security officers in one location were noted as inattentive at their posts.
- A vehicle barrier system was improperly and ineffectively placed at one plant location.

Accountability to the public on security is non-existent

The need to keep classified certain sensitive information about measures taken at potential targets of terrorism is understandable, but those who live in the vicinity of Palisades, as well as those throughout the region who might be affected by a terrorist attack directed at Palisades, must be assured in no uncertain terms by the NRC, Palisades, and elected leaders that every measure has been instituted that will provide safety and peace of mind to the public. It is disturbing to note that keeping back information on the plants has even broader implications. In March 2004, for example, the NRC decided not to publicize results of problems related to security at plants, as well as enforcement information relating to actions taken by the NRC against the reactor licensees for violations of safety regulations. This appears to be taking advantage of the heightened attention and concern for security at nuclear power plants to limit information about unsafe operations that should be readily available to members of the public.

If a force on force demonstration has not been conducted at Palisades, it should be conducted as soon as possible. Classified results of the demonstration should then be directly communicated to the region's U.S. Congressional representatives and senators, as well as the Governor and Attorney General of the State of Michigan, for their thorough review and approval and reporting back to the public. To truly secure the Palisades nuclear power plant and dry cask storage, the following security safeguards, if not instituted already, would need to be in place.

- Sufficient cameras and patrols;
- Delay measures, such as fences outside buildings and entrances that would delay potential attackers;
- Bullet resistant structures in the protected areas of the plant site;
- Adequate and specific training for security officers;
- Several levels of intrusion detection systems (Needed especially by Palisades to protect against intrusion from potential attackers that may enter from Van Buren State Park, adjacent to the plant site);
- Vehicle barrier systems to prevent vehicles with bombs from entering the site;
- Anti-aircraft capability, and;

- Shore patrol equipped with stationary weaponry capable of preventing an offshore assault.

While some of these safeguards may appear excessive, they are necessary to secure the facility. Unfortunately, some of these measures have significant civil liberties ramifications for the communities surround Palisades, therefore we request that the NRC address how this will be handled in a 20-year license extension in the draft EIS.

Palisades must also ensure that its irradiated nuclear fuel storage pools are safeguarded from terrorist activities. A study released in April 2005 by the National Academy of Sciences shows that the cooling pools at nuclear reactors, which store 10 to 30 times more radioactive material than that contained in the reactor core, are at risk from attacks by terrorists. According to the study, the cooling ponds could be severely damaged by crashing aircraft, high-powered weapons or explosives, releasing large quantities of radioactive material into the environment. (GG-19)

Comment: Security issues at Palisades must be addressed immediately. If a mock attack or force on force demonstration has not been conducted at Palisades, it should be conducted as soon as possible. Classified results of the demonstration should then be directly communicated to the region's U.S. Congressional representatives and senators, as well as the Governor and Attorney General of the State of Michigan, for their thorough review and approval and reporting back to the public. The following security safeguards, if not instituted already, must be put in place immediately:

- Sufficient cameras and patrols;
- Delay measures, such as fences outside buildings and entrances that would delay potential attackers;
- Bullet resistant structures in the protected areas of the plant site;
- Adequate and specific training for security officers;
- Several levels of intrusion detection systems (Needed especially by Palisades to protect against intrusion from potential attackers that may enter from Van Buren State Park, adjacent to the plant site.);
- Vehicle barrier systems to prevent vehicles with bombs from entering the site;
- Anti-aircraft capability, and;
- Shore patrol equipped with stationary weaponry capable of preventing an offshore assault.

NRC and Palisades must also ensure that the plants irradiated nuclear fuel storage pools are safeguarded from terrorist activities as well as address civil liberties ramifications of increased security to the host and surrounding communities of Palisades. (GG-52)

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Comment: Security measures and supervision requirements for the on-site storage of the spent fuel. It is clear that the amount of on-site storage, dry stored, spent fuel will increase during the renewal term as long as there is no final off-site storage facility provided by the Federal Government. Therefore there would be additional security measures and supervision requirements to take care of the status of the on-site dry storage of spent fuel for an indeterminate period of time. Security measures would be: locate the dry storage facility at a place, guarded, hidden and less vulnerable to terrorist activity. I.e. The fact that the South Haven Municipal Airport is within 6 mile distance from Palisades, could imply the need to move the location of that Airport. Supervision requirements are related to continuous monitoring and accounting of the spent fuel during offsite storage. This activity could be an important part of the Palisades renewal term. All these impacts should be considered for OL extension alternative. (JJ-1)

Response: *Security issues such as safeguards planning are not tied to a license renewal action but are considered to be issues that need to be dealt with constantly as a part of the current (and renewed) operating license. Security issues are periodically reviewed and updated at every operating plant. These reviews continue throughout the period of an operating license, whether original or renewed. If issues related to security are discovered at a nuclear plant, they are addressed immediately, and any necessary changes reviewed and incorporated under the operating license.*

Since 9/11, the NRC and other Federal agencies have heightened vigilance and implemented initiatives to evaluate and respond to possible threats posed by terrorists, including the use of aircraft against commercial nuclear power facilities and independent spent fuel storage installations. The NRC routinely assesses threats and other information provided by other Federal agencies and sources. The NRC also ensures that licensees meet appropriate security-level requirements. While security issues are legitimate matters of concern, they will continue to be addressed through the ongoing regulatory process as a current and generic regulatory issue that affects all nuclear facilities and many of the activities conducted at nuclear facilities. The issue of security and risk from malevolent acts at nuclear power facilities is not unique to facilities that have requested a renewal to their licenses. The comments are outside the scope of the license renewal review as set forth in 10 CFR Part 51 and Part 54; therefore, they will not be evaluated further.

Cask Incident

Comment: How many of you here heard about the near drop of the fully loaded dry cask at Palisades last October? I have a question for folks at NRC. When we were having the hearing in early November in this, down the block here, how come that wasn't brought to our attention? I mean, our, if we have any credibility left in the NRC and in the company, if we had any trust left in the company and in this government agency that's supposed to protect our health and

well being and our environment and our safety, it's gone. It's absolutely gone. And NRC's response in the press is, it was not a reportable incident. (A-3)

Comment: The potential consequences, according to NRC's own documents of that incident, if the cask had dropped into the pool and damaged the pool and drained away the water, there could have been a radioactive inferno in the waste. And thousands to tens of thousands of people could have died downwind. Those are NRC's own numbers. I'm not making this stuff up. So it just is a real betrayal of the public to have on our part, to have taken part in good faith and at that very moment be kept in the dark about something as significant as that. So the outrage we'll try to control to an extent, but it's, it's deep burning at this point in the local community. (A-4)

Comment: This is the NRC inspectors writing. Therefore, the on scene inspectors concluded that working outside the bounds of the approved work package and manipulating the brake release on the crane represented an increase in the risk of a load drop, the load being the fully loaded cask on the crane. This increase in risk is directly associated with the reactor safety cornerstone objective of the spent fuel cooling system as a radiological barrier. What does that mean? The pool water could have drained away. What happens then? The waste catches on fire. What happens then? (A-14)

Comment: Talk about this crane hanging up. I've been around machinery enough to know that there's things like that do happen, and that things can be secured and there's no danger from them. (K-3)

Comment: And what I thought I would really focus on because it really caused quite a stir earlier today and I think it deserves as much attention from the public as it can get because the public deserves to know about it was the incident last October involving the cask that was stuck on a crane above the pool at Palisades. And I just wanted to read some passages from NRC documents from Palisades documents that reveal the serious nature of that incident. So I'll start with something I read earlier. The NRC inspectors concluded that working outside the bounds of a work package on a crane with a suspended load that if dropped would damage the spent fuel pool warranted a safety significance determination. Had the load dropped the spent fuel pool could have sustained severe damage. The inspectors concluded working outside the bounds of the approved work package and manipulating the break release represented an increase in the risk of a load drop. This increase in risk is directly associated with the reactor safety cornerstone objective of the spent fuel, spent fuel cooling system as a radiological barrier. And what that last sentence means is if the cask which weighed 107 tons had fallen into the pool it would have cracked the floor of the pool, drained away the water which cools the waste in the pool. And in a matter of time, some hours, the waste would catch on fire and it would be a large scale radiation release perhaps worse than Chernobyl. So what were the potentially catastrophic consequences had the cask dropped. And again this is from an NRC

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report entitled Technical Study of Spent Fuel Pool Accident Risk published in February of 2001. The analysis exclusively considered drops severe enough to catastrophically damage the spent fuel pool so that pool cooling water inventory would be lost rapidly and it would be impossible to refill the pool using onsite or offsite resources. There is no possibility of mitigating the damage only preventing it in the first place. The staff assumes the catastrophic heavy load drop creating a large cooling water leakage path in the pool would lead directly to a zirconium fire. Zirconium is the metal cladding around the fuel rods. It's, it's a combustible material, highly combustible. The time from a load drop until a fire varies depending on fuel age, burn up and configuration. The dose rates in the pool area before any zirconium fire are tens of thousands of rem per hour making any recovery actions very difficult. Tens of thousands of rems per hour would deliver a lethal dose of radiation to someone close to that in a matter of minutes. And that's what happened to the firefighters at Chernobyl. They received deadly doses of radiation in a very short period of time. They died two weeks later because their red blood cells stopped reproducing. I'm reading directly from the NRC again. Based on discussions with NRC staff structural engineers it is assumed that only spent fuel casks are heavy enough to catastrophically damage the pool if dropped. In fact NRC has reported, "the possibility of a zirconium fire leading to a large fission product release cannot be ruled out even many years after final shutdown of a reactor." Palisades is an operating reactor so the waste in the pool is thermally hot, it's radioactively hot. All the more likely to lead to worst case end results. So this is a quote from a study done by Robert Alvarez and others in 2003 and it was about pool fires. This is the quote: "Spent fuel recently discharged from a reactor could heat up relatively rapidly to temperatures at which the zirconium fuel cladding could catch fire and the fuel's volatile fission products including 30 year half life, cesium 137 would be released. The fire could well spread to older spent fuel. The long term land contamination consequences of such an event could be significantly worse than those from Chernobyl." Another quote from that same report, "The damage that can be done by a large release of fission products was demonstrated by the April 1996 Chernobyl accident. More than 100,000 residents from 187 settlements were permanently evacuated because of contamination by cesium 137. Strict radiation dose control measures were imposed. The total area of this radiation control zone is huge equal to half the area of the State of New Jersey. During the following decade the population of this area declined by almost half because of migration to areas of lower contamination". From the Alvarez study. (CC-1)

Comment: And so we found out about this cask incident by a fluke because a number of us attended an unrelated NRC technical meeting where a piece of it was mentioned. But we understood what it could mean and so we followed up. And we did a Freedom of Information Act request which NRC informed us would take two to four weeks to get back to us. Well, it took two months to reach us. And in the meantime we found out all that we could and we found the tables in that earlier report I read from about spent fuel waste fires and the casualty figures downwind were quite remarkable. The NRC's own numbers again 20,000 to 44,000 cancer deaths over time downwind out to a distance of 500 miles away from a pool fire. That was at 2001 NRC study. So we finally got the FOIA, this was after the Detroit Free Press exposed the

incident in that front page article. We only received a partial FOIA response at this point. And the, the document that I read from earlier was the quarterly inspection report from the NRC. That was the first public document of that incident. But the details that came out in the FOIA were quite interesting. The precursors that led to the incident. Here's, here's a quote from an internal Palisades mia copa done by the inspection crew that inappropriately handled the crane. Well, I'd like to encourage everybody to go over to that table in the back corner and get their own copy of this thing and read it because it's worth it. (CC-2)

Comment: So this is, this is the company's workers who made the mistake that could have overridden the emergency brake. That's the whole point. They shouldn't have handled the crane because they didn't understand the crane. We failed to consider the severity of the consequences if our troubleshooting caused the load to slip or fall into the spent fuel pool. This is why we set up an event response organization to, to allow an open forum with full consideration of how these activities will affect the plant and the health and safety of the public. This is the company saying this. The NRC earlier said that the risk of a load drop was increased because of this inappropriate handling. So I'll just, please do pick up a copy. The precursors of the event that led to this thing, the false setting of the emergency brake were due to the fact that Palisades lacks knowledge of the crane. They have to bring in the crane company to help them operate the crane. The crane company representative who came last August to set the emergency brake had to get to vacation. He was in a hurry. So instead of setting the emergency brake correctly with three checks on the emergency brake he did one check. And he set it wrong that time. He thought he set it at 175 foot pounds. He actually set it at 140. So that was one precursor. He had to go home on vacation. And the other one was that Palisades doesn't know how to handle the crane. The people that did know how to handle it have left the company. And one of the amazing admissions by the company is that there may be other aspects of operations where we also lack full knowledge not just this crane. (CC-3)

Comment: And I think this, this incidents of the crane that was just mentioned that's another incident I believe that was not reported to the NRC. And I believe that Palisades asked for an exemption that they don't want to report things any more. (DD-6)

Comment: the Palisades -- crane break down on October 11th. 55 hour shutdown with a 110 casks containing spent fuel assemblies partially suspended broke in the air fell partly submerged over the fuel pool. The fuel pool went well beyond its original design capacity with fuel assemblies going back to the 70s. I gather from the Tribune article all the brakes froze because plant personnel did not set the emergency brake properly just before leaving for his vacation. How big a rem stream would this situation be giving off. How many rems the article certainly didn't say. Did the whole fuel pool area must have had, must have had to been decontaminated. How much did it receive. All that spent fuel at risk should that cask have dropped down onto decades where for spent fuel assemblies it would have caused a fire making for an accident much worse than Chernobyl. The article also pointed out this incident

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was considered of low significance by the NRC within its quarterly report. Quite a change from the NRC in the early 90s when dry storage cask storage was initiated at Palisades hearing the operators 30 violations for everything from cracked pipes to mishandled drop fuel assembly rods into its reactor vessel. Did they ever find the two pounds of missing fuel. To Palisades Conversation Group this incident further demonstrates the aged long time ineffectiveness of both the equipment and the personnel at the Palisades Plant right along with the current NRC not handing out violations for such – This must have been some long term radiation being released for over two days within the flow through area. Were procedures fumbled, could not get their crane to budge for days because one brake froze and all the brakes shut down for 55 hours. What were the plant personnel doing scratching their heads. A further explanation of partly suspended a 110 pound metal inner cask leaves me with cause for concern as it did others, was not made clear in the article. Just insistent that everything was okay. Just what is the shielding of a bare metal cask, that neutron thermal shielding that they're in the cask at the time. (O-8) (TT-13)

Comment: In October 2005, crane handling errors led to a 107 ton NUHOMS transfer cask fully loaded with high-level radioactive waste dangling for 55 hours above the storage pool. Reports confirmed that the risk of a heavy load drop had been increased due to improper emergency brake manipulation during the incident. NRC reported that, had the load dropped, severe damage to the pool could have resulted. A separate NRC report, "Technical Study of Spent Fuel Pool Accident Risk at Decommissioning Nuclear Power Plants," (NUREG-1738, Feb. 2001) revealed that a heavy load drop can cause the cooling water to drain away. The densely-packed waste in the pool could then overheat, spontaneously combust, and ignite a waste fire causing catastrophic radiation release. NRC concluded that up to tens of thousands of people could die from cancer over time, downwind of such an accident.. Despite similar crane problems years earlier at its Big Rock Point nuclear power plant in northern Michigan, failure to communicate "lessons learned" within the nuclear utility contributed to repeating the same dangerous errors at Palisades. (GG-35)

Comment: How can NRC approve a license extension for Palisades when Consumers Energy and Nuclear Management Company nearly dropped a 107 ton nuclear waste container into the storage pool in October 2005? Such a drop could have punched a hole in the pool floor, draining away the cooling water, leading to a waste fire and radioactive inferno. Tens of thousands of people could have died from radiation-induced cancer downwind. The company cannot safely handle its radioactive wastes with its present workforce, a situation that can only get worse as experienced personnel leave the plant or are laid off as plant owner Consumers Energy tries to sell Palisades, and as plant operator Nuclear Management Company has already been told it will not be retained in the future. Instead of protecting the public health and safety and environment against such hazards as the near-drop of such a heavy load into the vulnerable waste pool, NRC helped the company keep the public in the dark about the incident for months! (MM-3) (NN-3)

Response: *The NRC resident inspectors at Palisades identified a finding of very low safety significance and an associated noncited violation when plant personnel performed activities outside the scope of the work package used to inspect the spent fuel pool crane on October 11, 2005. While raising a dry fuel storage (DFS) cask from the spent fuel pool following loading of the cask, the emergency brake on the crane engaged. The engaged emergency brake stopped movement of the load, resulting in suspension of the load partially out of the pool. During troubleshooting activities, the workers exceeded the bounds of the approved work package by manipulating the brake release. This finding represented a violation of the license by performing work contrary to requirements specified by NUREG-0612. Corrective actions include reinforcing site standards for procedural adherence as well as successfully lowering the DFS cask. The licensee entered the item in the Corrective Action program. The safety significance of the finding was dominated by the extremely low probability of the brakes failing. The actions by the worker did not result in any load motion. Both crane brakes remained fully set, either of which could have supported the full load of the cask. While such action by the licensee represented an increase in the risk of load drop from a human performance perspective, the NRC estimates that with both brakes engaged, such action would not have significantly increased the likelihood of a load drop because of the reliability and independence of the brake mechanisms. Nevertheless, the NRC noted the procedure violation, and remains observant of the licensee's activities in repairing, maintaining, and other general crane operations. The licensee complied with requirements for reporting the event to the NRC. The NRC documented the event in the next inspection report, which was issued in January 2006. At the time of the event, public interest was not anticipated. The event was not discussed at the November hearing because it is outside the scope of license renewal.*

The comments are outside the scope of the license renewal review as set forth in 10 CFR Part 51 and Part 54; therefore, they will not be evaluated further.

Dry Cask Storage, Waste Confidence Rule, Spent Fuel

Comment: What I'd like to address in regards to this proceeding today is radioactive waste, speak of the devil, and reactor accidents. The NRC says in its Nuclear Waste Confidence decision that a repository for commercial irradiated fuel will open by 2025. And it's appropriate to bring this up because the Bush Administration yesterday introduced a bill to get rid of any remaining impediments to opening Yucca Mountain. That means public health protections and safety regulations, that kind of thing. Just get rid of those. But the problem is that Yucca's in complete disarray. The last date DOE gave for its opening is 2012. They won't give dates anymore. They won't give cost estimates any more. It used to be \$60 billion, but they won't give that kind of prediction. So the State of Nevada's challenging this NRC Waste Confidence decision in Federal court. So how NRC can dismiss this issue at Palisades is just really beyond me, especially given the irony that Palisades license is up in 2011, and that's the very year that Yucca will be full. Will have reached its legal limit long before it opens because there will be

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that much commercial waste in the country, 63,000 tons of it. Quite a bit of that at Palisades, its fair share. (A-5)

Comment: So from 2011 to 2031 all waste made at Palisades would be excess to Yucca's capacity. So it would continue to sit at Palisades with nowhere to go, unless a second repository's opened, this time in the east. So would that be in Michigan or Wisconsin perhaps? (A-6)

Comment: So it needs to be pointed out that Palisades' current dry cask storage pads are in violation of NRC regulations. We raised this during the NRC licensing proceeding on this extension and were rejected. But our expert witness on this matter is none other than Dr. Ross Landsman from NRC region three, whose job it was to inspect those pads and the casks on them. And he warned NRC since 1993 that the cask close to the lake, the pad close to the lake is in violation of safety regulations, specifically earthquake regulations. If there's an earthquake, the -- could open up, the lake could pour in, and one of those casks or more than one, could end up in the lake under water. And what could that mean? If water infiltrates the cask there's enough fissile material inside to sustain a nuclear chain reaction. So we could have a nuclear reaction in Lake Michigan. (A-7)

Comment: In another scenario, the sand could open up in an earthquake and casks could be buried under the sand. Overheating could occur. The cask could be damaged. Radioactivity could escape. And it would be a matter of time before it hit the lake. NRC now says in another Orwellian twist that Dr. Landsman's allegations against the newer pad built in 2004, also that it violates earthquake regulations are under review. Those allegations are under review. They have been for years. The incredible thing is that while under review, the storage pad is used for storing waste. More and more waste as time goes on. The cask dangle that happened last October, was a part of that campaign to move dry casks to that newer pad, seven of them. (A-8)

Comment: So we've got two pads at Palisades, both in violation of NRC's safety regulations, and just yesterday we filed an emergency petition to the NRC to enforce its own regulations and stop storing waste on those pads. So the question is, where is Palisades going to store 20 more years worth of waste? (A-9)

Comment: A cut rate move Consumer's Energy Company took when their fuel pool was filled to maximum capacity. Well passed its original design capacity threatening a shut down of the plant. Breaking another promise made when the plant was first built, that no highly contaminated radioactive materials would be on the plant site outside of its high level containment structure. For purposes other than refueling and eventual removal of spent fuel assemblies to a national repository. (B-2) (TT-2)

Comment: What my real concern here is the fact that the GEIS report does not take into consideration of dry cask storage or other highly radioactive contaminated things such as the former steam generators on site. Many would argue the Palisades reservation is already a defacto high level nuclear waste dump. Which to their, our Palisades Conversion Group and my viewing of this issue, a large impact on this fragile lake shore environment. (B-8) (O-3) (TT-8)

Comment: And yes, dry cask storage casks piling up on site. I'm sure we'll all hear about Yucca Mountain or the Goshutes, Skull Valley Indian Reservation taking all of this off our hands for the umpteenth time in the last 20 years. There are now over 20 to 30 dry casks on site. Will anyone here give us an exact number? Or are you going to just dodge the question again, insisting it's a Federal issue, none of this re-licensing businesses concern. This is a local community concern for we will have to live with and care take all of this waste for generations to come. In '93 we were told these experimental cut waste storage casks would be gone in 1998, time and time again by Mark Savage the plant's spokesperson. Now we're told by the NRC, they're licensed to store – Well you know, you literally could go on for years because this thing has and it keeps piling up a good record for anybody that really takes a look at it. (B-11) (O-6) (TT-11)

Comment: Mark Savage if he was still here can well attest that I've been a gadfly at Palisades for 20 years now. And, thank you, I don't plan to be for another 20. It astounds me that this proceeding can go on like a runaway train in light of the fact that the industry has been allowed to run for 50 years with no high level waste facility, guaranteed or otherwise. Different things about Yucca Mountain are interesting in that they have gone on and approved almost everything that the opponents have suggested, seismic, water leaking into the -- underneath it, and other things. And then most recently, we hear that the original loading of it, if it were carried out would cause overheating and make --, if they were to use it, to have that capacity. And if it had opened 10 years ago when it was supposed to, that capacity wouldn't have taken care of what waste we had at that point anyway. So now it's, maybe a quarter of what we have, if they were to use it. And if they don't use it and the Indian Reservation is brought up as an alternative, it's, it will be interesting to see how the EIS has arranged for that. Maybe there's an -- under it like the Mississippi River for all we know. That sure would be a mess. (L-1)

Comment: On April 4th the Squaw Valley Reservation will be approved for above ground storage but with Yucca Mountain's inability to take this slated cask off the Goshute's hands, there will not be move in either nuclear waste storage site for all the waste piling up at Palisades now much less that all the additional waste produced during the 20 year relicensing period. All for a little electricity now. Decades perhaps centuries of radioactive waste for the local citizenry to look at. (O-7) (TT-12)

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Comment: Have you factored into your considerations the impact of an earthquake. And the reason I ask that is that, well, we don't have earthquakes here really. The largest earthquake in the continental United States occurred in the Midwest in the early 19th century. That could happen again. Have you taken that into consideration—in your computations. And that's in regards to both the reactor as well as those waste storage containers that are sitting there on the shore of Lake Michigan. (S-2)

Comment: I would like a quick question as to what sort of seismic event did you assume in this calculation. In other words on a Richter scale. And second why wouldn't you include the waste or the spent rod storage in this calculation because I don't think we can count on, on Yucca Mountain coming online because as I understand it there have been some conflicting information that's been presented on the Yucca Mountain situation and that might not be approved for many years. Well, I guess I don't understand how you can say it's 15,000 years for this part of the Midwest because new information suggests that it's a rebound of the land – (S-3)

Comment: There was a gentleman asked a really profound question why the dry cask things weren't affiliated or weren't in with the seismic analogy. And to me that seems more important than the deteriorating radioactive, see and I don't even know the terminology, so forgive me. (Y-2)

Comment: The waste generated, dry casking it there and not having a home for it worries me. 20 years from now what's that going to be like or where are we going to be with, how much more waste will they produce in those 20 years. And right now from what I've read and again I'm naive so I'm here to be educated but we don't have a home or a place to put this waste that's one of the most toxic substances on the plant from what I understand. It's sitting 150 yards from our precious resource the lake. Why that doesn't trouble more people I don't know. (Y-4)

Comment: I think that Palisades was burgeoning nuclear waste which is a problem, unstable geological strata, the singing sands, the shifting sands, freezing and thawing conditions on the casks. Cask number four which is surrounded by other casks has bad welds, could crack. (DD-8)

Comment: Palisades' high-level radioactive waste storage facility is defective and risky, situated on the Lake Michigan shoreline. There are numerous incidents dating from the installation of the waste storage facility to the present that demonstrate the risks associated with the dry cask storage containers, as well as their problematic placement on a high risk erosion stretch of the shoreline, on pads not adequately designed to be stable during events such as earthquakes. (GG-6)

Comment: Lake Michigan dunes constitute a series of dynamic environmental settings, from bare beach shorelines, to “growing dunes” or lightly vegetated foredunes, fragile interdunal wetlands and ponds, and finally to mature, forested “oldest” dune hills. Vegetation -- grasses, bushes, and trees -- is an essential key to the stability of the dunes. When dune vegetation is disturbed by footpaths or other activities, high winds and storms can widen a small stretch of bare sand into an increasingly wide swath or “blowout.” Blowouts, areas of blowing and unstable sands, in dunes in the vicinity of Palisades’ dry cask storage system could threaten the integrity of the dry cask storage waste system, by clogging vents in the casks, and causing the wastes to overheat, which could lead to an explosion. Left unattended, large blowouts in the dunes surrounding the casks could possibly decrease the stability of the pads on which the casks are situated. This issue must be addressed in the EIS. Palisades must, at minimum, be required to monitor the dunes for potential blowouts and ensure that the dunes are consistently vegetated and stable. (GG-20)

Comment: Michigan has had a lengthy history of earthquake activity, dating back to the first several historically recorded quakes, in 1811 and 1812, originating from the New Madrid fault, centered in New Madrid, Missouri. These quakes registered at 8.0 or higher on the Richter scale. Additional quakes were felt in a variety of locations throughout Michigan in the later 1800s. The largest earthquake experienced in Michigan was in 1947. With a magnitude of 4.6, it was felt throughout southern Michigan, affecting an area of 50,000 square miles. A quake originating in south central Illinois in 1968 extended approximately 580,000 square miles and was felt throughout southern Michigan. The last earthquake in Michigan registered 3.5 and was centered in Lansing in 1994.

The New Madrid zone has produced the country’s largest earthquake and is considered the country’s most seismically active region east of the Rocky Mountains. The United States Geological Survey (USGS) has given the New Madrid fault a 25 to 40% probability of having an earthquake of 6.0 or greater in the next 50 years ([USGS Fact Sheet FS-131-02](#)). Movement has already been noted and described in a June 2005 *Nature* article describing the results of a University of Memphis study that detected a half-inch shift in the fault from 2000 to 2005.

The potential for earthquake activity to damage Palisades’ outdoor dry cask storage pads, upon which the casks have been placed, warrants rigorous consideration, which unfortunately, is not in evidence in the draft EIS. Concerns regarding the impacts of an earthquake that might cause disruptive movement to the waste storage facilities at Palisades surfaced as early as 1994, from within the NRC. Dr. Ross Landsman, Nuclear Safety Engineer and Palisades Dry Cask Storage Inspector, questioned the adequacy of requirements associated with earthquake activity for Palisades’ dry cask storage facility in a letter to the chairman of the NRC. In his letter, Dr. Landsman voiced his concerns, “Actually, it’s the consequences that might occur from an earthquake that I’m concerned about. The casks can either fall into Lake Michigan or be buried in the loose sand because of liquefaction [soil taking on liquid characteristics]. This event might

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be in the public's mind in view of what just happened in Southern California. It is apparent to me that NMSS [NRC's Office of Nuclear Material Safety and Safeguards] doesn't realize the catastrophic consequences of their continued reliance on their current ideology."

In a September 15, 2005 affidavit, Dr. Landsman further describes his concerns regarding the ability of the storage pads to withstand movement due to earthquakes, asserting that both the older pad nearer Lake Michigan and the newer one further inland, are in violation of NRC earthquake regulations, 10 CFR ' 72.212(b)(2)(i)(B), which require that: "Cask storage pads and areas have been designed to adequately support the static and dynamic loads of the stored casks, considering potential amplification of earthquakes through soil-structure interaction, and soil liquefaction potential or other soil instability due to vibratory ground motion. . . ."

Dr. Landsman noted that Palisades' analysts and engineers apparently failed to acknowledge the differences in elevation between the plant and pad sites in their design of the storage facility. This led to mistakes in the calculations made to determine the potential movement of the pads due to an earthquake. Dr. Landsman noted the violation after inspecting the new storage pad in 2004 and warned that it was not safe, but his concerns were not addressed and casks have nonetheless been allowed by NRC to be placed on the pad right up to the present.

The implications of damage to the casks from an earthquake are significant. Wastes in casks covered in or buried by sand, could overheat, causing severe damage to the irradiated nuclear fuel assemblies and making future storage, handling, transport, and management more dangerous. Overheated radioactive wastes could damage the dry storage casks, leading to leakage of radioactivity into the environment. Emergency responders could be at risk from any damage to the radiation shielding measures on the casks.

The dangers of nuclear waste cask submersion underwater are two fold. First, radioactivity could leak from the cask into the water. Leakage of even a fraction of a cask's contents into Lake Michigan could endanger the source of drinking water for ten million people. Second, enough fissile uranium-235 and plutonium is present in the high-level radioactive waste inside the casks, that water, with its neutron moderating properties, could actually cause a nuclear chain reaction to take place within the cask. This would complicate emergency responses, as potentially fatal radiation doses could be emitted from within the cask.

There is undoubtedly an elevated probability of a strong earthquake originating from the New Madrid fault in the next 50 years, and the potential for it to extend to southwest Michigan. Because of that, it is imperative that the question of the safety of the concrete pads and the 29 storage casks of high-level wastes be resolved to the satisfaction of citizens of the region. (GG-21)

Comment: The NRC also concludes that any impacts from high-level waste and irradiated fuel disposal from a license extension (even acknowledging the uncertainties about the proposed Yucca Mountain repository) would not be sufficiently large to require the NEPA conclusion, for

any plant, that the option of extended operation under 10 CFR Part 54 should be eliminated. (GG-26)

Comment: The NRC has placed the issue of waste generation and storage outside the scope of the EIS for extending the license for Palisades. We strongly disagree.

The Palisades nuclear power plant has generated, on average, 14.5 tons [U.S. Dept. of Energy's Feb. 2002 Final EIS for Yucca Mountain. Appendix A. Tables A-7 and A-8] per year of high-level radioactive waste. The Nuclear Waste Policy Act was amended in 1982 to allow the NRC to approve interim storage of high-level radioactive waste in dry cask storage facilities in a "generic licensing" without studies specific to each plant site or Environmental Impact Statements. In 1993, several tons of wastes that were accumulating in the Palisade plant's overfull irradiated fuel pools were moved into massive concrete and steel storage casks on concrete pads on the plant site. (GG-32)

Comment: Inexplicably, the extremely dangerous radioactive wastes from Palisades, that will remain dangerous for tens to hundreds of thousands of years, were deliberately placed within a high-risk erosion zone, which is highly unstable, dynamic and risky. Currently, around 20 of a total of 29 casks, weighing 132 tons each, are situated approximately 150 yards from Lake Michigan, sitting atop loose sand dozens of feet thick. Thus, the casks, and the concrete pad upon which they sit, are not anchored to bedrock. This stretch of Lake Michigan's southwest shoreline is known to have the ability to recede in an exceptionally short time frame. The high-risk erosion zone requires 30-year construction setbacks that range from 55 ft. to 140 ft. and 60-year setbacks that range from 115 ft. to 260 ft. (GG-33)

Comment: One of the waste storage cask systems at Palisades, the "VSC-24," (Ventilated storage cask containing 24 pressurized water reactor irradiated nuclear fuel assemblies) utilizes passive ventilation to keep the waste at the appropriate temperature. The vents on this type of cask need regular cleaning so they will not clog from blowing dune sand, debris, or snow. This cask is also not considered transportable, like some casks, and as such, wastes contained within them will need to be unloaded and transferred into shipping containers, when or if transport occurs. But even though Consumers Energy and the NRC testified in Federal court that the casks could be safely unloaded, there have been numerous problems. When weld defects were detected in the fourth VSC-24 cask to be loaded in 1994, for example, it was found that there were critical questions about how to handle the procedure. This defective cask has yet to be unloaded, twelve years later.

To further complicate the unloading problems of Palisades' casks, the configuration of the dry casks currently stored on the older pad nearer Lake Michigan is such that those casks furthest back cannot be moved or unloaded until all other casks in front of them have been moved out of

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the way first. Thus, casks that cannot be unloaded on the shore side of the pads will effectively halt unloading of the casks behind them.

There have been other accidents and incidents with the VSC-24 system. While a VSC-24 cask was being welded shut at the Wisconsin Point Beach nuclear power plant in 1996, a spark from the welding caused a hydrogen gas explosion that tilted the lid of the cask (3 tons of metal) several inches ajar; this incident occurred on the edge of the waste storage pool, threatening to damage the pool and unleash a potentially catastrophic radiological accident. Additional weld defects have been detected in other casks at Palisades and at other plant sites.

On February 6, 1997, Mary P. Sinclair Ph.D. co-chair of Don't Waste Michigan, wrote to Dr. Shirley Jackson, Chair U.S. Nuclear Regulatory Commission and reviewed this history in great detail with documentation and references for each point made. In her letter to Dr. Jackson, Dr. Sinclair wrote the following:

" . . . Attorney General Frank Kelley petitioned for an injunction in May 1993, against the loading of these casks in the Western Michigan Federal Court at Grand Rapids. (Case No. 4:93 CV 67). Consumers Power Co.'s response to the Court was that the company would unload the casks and place the nuclear waste back in the spent fuel pool if the Court should rule against them and, therefore, an injunction to prevent loading was unnecessary. A supporting position for the utility's action was filed by Charles Haughney of the NRC, in which he assured Judge Robert Holmes Bell that Consumers was able to do this by simply reversing the process of loading, if the Court so ordered. This demonstrates that, not only did Consumers Power Co. mislead the Judge, perhaps out of ignorance, about Consumers' ability to unload these casks, but more importantly, Charles Haughney of the NRC pledged the Agency's credibility in support of this position. His statement is signed, "Pursuant to 28 U.S.C. sec. 1746, I declare under penalty of perjury that the foregoing is true and correct." (Executed and signed on May 5, 1993). Judge Bell, of course, could hardly grant an injunction under those circumstances. This is one of many instances in which the judgment of the staff was flagrantly in error, and helped to compound the problems that have later developed. [pp. 3-4, Requests that Commission review 2.206 petition filed on 950919 & amended on 960930 by Lake Michigan Federation & Don't Waste Michigan, Sinclair MP. Accession Number: 9704090248, Docket Number: 05000255,07200007, Microform Address: 92410:204-92410:211] A hard copy of this letter is being provided by Don't Waste Michigan to be entered in its entirety into the record as part of comments being submitted on this draft EIS. There are additional comments in the letter, which also pertain to this EIS process.

The Wisconsin explosion led to a three year hiatus in the loading of VSC-24 casks nationwide, in order to improve safety procedures. Palisades was the first plant in the country to begin loading VSC-24s again, in June, 1999. However, mistakes were made yet again. A welding crew accidentally ignited flammable hydrogen gas being vented off a loaded VSC-24. But it failed to notify the next welding crew coming on shift to replace them. The new crew also

ignited the leaking hydrogen gas, representing a breakdown of safety protocols, risking a repeat of the Wisconsin explosion.

During the June, 1999 dry cask loading campaign, Palisades also loaded irradiated fuel that had not yet thermally cooled and radioactively decayed in the underwater storage pool for the required minimum of five years. This represented a violation of the technical specifications for the casks, and thus NRC safety regulations. Also in June 1999, a fire at Palisades in an office trailer storing paper records on the dry cask storage installation destroyed records on the most recent, and earlier, accidents. (GG-34)

Comment: In 1982, with the passage of the Nuclear Waste Policy Act, the U.S. Department of Energy (DOE) was given the responsibility for finding a permanent site to build and operate a repository for all of the wastes accumulating at the reactors across the country. Original plans were for the repository to begin accepting irradiated nuclear fuel in 1998, but it has been pushed back until 2020, according to the most-recent predictions made by Energy Secretary Samuel Bodman. In 2002, Congress voted to allow DOE to apply for a license from NRC to construct and operate a repository at Yucca Mountain in Nevada. The opening of the repository is uncertain: the State of Nevada has actively opposed the plan, and raised legitimate questions about the suitability of the site; DOE does not have full funding for construction and operations, and recently, a Federal appeals court found that the impact of the project must be evaluated for longer than the 10,000 years currently considered. Even if the Yucca site were to open in 2020, DOE has projected in its 2002 Final EIS for Yucca that it would take 24 to 38 years to transport wastes to Yucca from reactors across the U.S., including Palisades. Thus, even if Yucca opened in 2020, it would take until 2044 or even until 2058 for the wastes generated before 2010 at Palisades to be moved to Yucca Mountain, Nevada. Because of this, existing wastes from Palisades are likely to remain on the Lake Michigan shoreline indefinitely. (GG-36)

Comment: Yucca Mountain is limited by law to store 70,000 metric tons of nuclear waste. Only 90%, or 63,000 metric tons, of that can come from commercial nuclear reactors. 63,000 metric tons is approximately the amount of nuclear waste that will be stored on-site at reactors around the country by 2010. A 2004 analysis by the Environmental Working Group found that the 26 reactors at nuclear power plants re-licensed between 2000 and 2004 will produce an additional 9,000 metric tons of high-level nuclear waste over the 20-year period of their license extensions. Eighteen more reactors at nine power plants with license extensions pending would add another 6,600 metric tons of waste, for a total of 15,600 additional metric tons. Wastes produced at Palisades for 20 additional years-- 290 additional tons of irradiated nuclear fuel --will likely be stored indefinitely in the same manner as the other Palisades wastes that have been produced to date, resulting in a massive assemblage of concrete and steel silos extending along the high risk erosion zone on Lake Michigan, as well as a packed storage pool within the Palisades plant. (GG-37)

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Comment: The DOE has estimated that transporting the waste from the plants to Yucca Mountain would require more than 53,000 truck shipments to Yucca over 24 years or about 2,200 per year. If rail is the primary means of transporting the waste, and DOE has stated that it prefers rail, the proposed action would require more than 10,700 cross-country shipments over 24 years, or about 450 per year (Halstead 2002). Re-licensing to date has added about 5,700 more truck shipments, or 1,050 rail shipments to that total.

The Department of Energy declared in April 2004 that rail shipment to Nevada is the preferred mode of transportation for high-level nuclear waste. Barge shipments are being considered under this option because 17 nuclear power plants, including Palisades, have no rail access, yet could connect to rail lines via barges.

For Palisades, DOE has proposed barging up to 125 giant rail-sized containers of high-level radioactive waste from Palisades to the Port of Muskegon, up the Lake Michigan shoreline. DOE's estimate of 125 shipments may very well be an underestimate, in that DOE assumed Palisades would only get a 10-year license extension, while NRC's practice to date has been to approve every request for a 20-year license extension. Thus, an additional 10 years worth of waste generation would mean that many more barge shipments between Palisades and Muskegon.

The barging of 125 or more shipments of high-level radioactive waste is very risky. Any submersion of the casks in water, could stimulate the fissile uranium-235 and plutonium, both present in the high-level waste, to cause a nuclear chain reaction. The slightest leakage of even a small amount of this waste could not only threaten Lake Michigan as a source of drinking water for ten million people, but also cause a host of other irrevocable impacts on the lake's fish, wildlife, people, and economy. (HH-38)

Comment: Barging of high-level radioactive wastes in Lake Michigan must be removed as a transportation option. The barging of 125 or more shipments of high-level radioactive waste on Lake Michigan is simply too risky. Any submersion of the casks containing the wastes in water, could stimulate the fissile uranium-235 and plutonium, both present in the high-level waste, to cause a nuclear chain reaction. The slightest leakage of even a small amount of this waste could not only threaten Lake Michigan as a source of drinking water for ten million people, but also cause a host of other irrevocable impacts on the lake's fish, wildlife, people, and economy. (GG-57)

Comment: The safety of the concrete pads and the storage casks of high-level wastes must be resolved to the satisfaction of citizens of the region. The potential for earthquake activity to damage Palisades' outdoor dry cask storage pads, upon which the casks have been placed, warrants rigorous consideration, which unfortunately, is not in evidence in the EIS. Further, blowouts, areas of blowing and unstable sands, in dunes in the vicinity of Palisades' dry cask storage system could threaten the integrity of the dry cask storage waste system, by clogging

vents in the casks, and causing the wastes to overheat, which could lead to an explosion. Palisades must be required to monitor the dunes for potential blowouts and ensure that the dunes are consistently vegetated and stable. (GG-61)

Comment: The spent fuel during the renewal term, while in on-site storage, would have discharges of radioactive elements and neutrons that by collision with the surrounding natural molecules could generate additional radioactive elements. These discharges should be added to the atmospheric emissions and ground discharges of the Plant to verify overall compliance with the EPA and NRC regulations. (JJ-3)

Comment: License renewal should not be granted to the Palisades Nuclear Power Plant, because (1) both of the dry cask storage pads at Palisades are in violation of Nuclear Regulatory Commission's earthquake regulations. (KK-2)

Comment: Potential amplification of earthquakes through soil-structure interaction, and soil liquefaction potential or other soil instability due to vibratory ground motion are of great concern, especially considering the geological nature of sand increasing the likelihood of sand avalanches (Landsman 2005). The violation of the Nuclear Regulatory Commission's own standards in storage of radioactive material must be followed. (KK-6)

Comment: The NRC says in its "Nuclear Waste Confidence Decision" that a repository, or permanent dump, for commercial irradiated nuclear fuel will open by 2025. But the only site under consideration for such a dump - Yucca Mountain, Nevada - is in remarkable disarray. Due to the site's scientifically unsuitable geology, as well as legal, political, and popular resistance and skyrocketing costs, the dump's opening has been delayed from 1998 to 2010, then 2012. Now the U.S. Dept. of Energy won't even hazard a guess as to when the dump will open, if ever, and at what cost. In addition, the State of Nevada, adamantly opposed to becoming the country's atomic sacrifice area, has filed Federal lawsuits against the proposal at every turn. One of them challenges NRC's "Waste Confidence Decision" directly. NRC is supposed to be the objective judge of whether or not Yucca Mountain should be opened, but if NRC sticks to its arbitrary 2025 deadline, its bias in favor of approving the dump at Yucca Mountain, despite its defects and dangers, is obvious. Even if Yucca does open someday, it could only accommodate commercial wastes generated before 2011, due to its capacity limit under the Nuclear Waste Policy Act for only 63,000 tons of commercial irradiated fuel. That much will have been generated in the U.S. by the end of 2010. Thus, any waste generated at Palisades during its license extension from 2011 to 2031 could not legally go to Yucca Mountain, even if the ever-more-doubtful dump opens. How can the NRC approve 20 more years of waste generation and storage on the Lake Michigan shoreline when there is nowhere for those wastes to go? How can NRC declare such an essential issue to environmental and public health and safety to be "out of scope" during this environmental impact proceeding? The

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ongoing generation of nuclear waste at Palisades must be stopped as soon as possible.
(MM-1) (NN-1)

Comment: Palisades' dry cask storage installations - outdoor "parking lots" for gigantic 150 ton concrete and steel silos filled with high-level radioactive waste - are in violation of NRC's own earthquake safety regulations. Dr. Ross Landsman, now retired NRC dry cask storage inspector for the Midwest region, has warned for well over a decade that the 13 year old concrete cask pad just 150 yards from Lake Michigan could fail during an earthquake, resulting in casks being buried under sand or being dumped into Lake Michigan. Burial could result in the irradiated fuel overheating, damaging the containers, and releasing radioactivity. Underwater submersion could result in a nuclear chain reaction in the fissile materials still present in the waste. Even the two year old pad further inland is in violation of NRC earthquake regulations. Despite claiming these alleged violations are "under review," NRC has allowed Palisades to continue loading casks onto these unsafe pads. How can NRC allow Palisades to generate 20 more years' worth of waste, when even its current storage facilities violate NRC safety regulations? (see <http://www.nirs.org/reactorwatch/licensing/palisades.htm> at Sept. 15, 2005 and at Feb. 17, 1994 for more information) (MM-2) (NN-2)

Comment: I am also concerned about the safe disposal of the spent fuel rods. Over the next 25 years, more rods will be used and where will they be stored? Is there a safe place to store this nuclear waste or will they be stock piled here along our precious resource Lake Michigan?
(QQ-3)

Response: *Onsite storage of spent nuclear fuel is a Category 1 issue. The safety and environmental effects of long-term storage of spent fuel onsite has been evaluated by the NRC, and, as set forth in the Waste Confidence Rule, the NRC generically determined that such storage can be accomplished without significant environmental impact. In the Waste Confidence Rule, the Commission determined that spent fuel can be stored onsite for at least 30 years beyond the licensed operating life, which may include the term of a renewed license. The NRC has a certification process for casks, regulated by 10 CFR Part 72. Such wastes are under continual licensing control. Siting of a waste repository is a separate regulatory action involving DOE. A geologic repository is not expected to be ready before 2010 (GEIS). In the interim, onsite spent fuel storage in pools and in dry cask storage facilities continues in accordance with NRC regulations. Consequently, the comments do not provide new and significant information and will not result in modification of the SEIS text.*

Aging Management

Comment: I have seen construction of and then finished [nuclear] plants during tours. The plants then new and impressive, then again many years later aging, much obsolete, often highly contaminated equipment, malfunctioning devices such as the reactor containment hatch door inoperable for some time while I was de-conning when Consumers Energy operated the plant.

Things get old, dilapidated with time especially when they are neglected. I'm sorry, my glasses, I have to back off to read here. Things get old, dilapidated with time, especially when they are neglected, worn out, under the influence of radiation, outdated or used up such as the Palisades plant's fuel pool, now double racked. Steam generators replaced highly contaminated previous units within their own mortuary on the plant site. Along with approximately 30 V.S.C. 24 and 34 dry storage casks in use for above ground spent fuel assembly storage, also on site. (B-1) (TT-1)

Comment: After 38 years of operation, Palisades Nuclear Power Plant and its reservation is showing its age and effects of embrittlement. Its pressure reactor vessel being protected with old, many cycled fuel assemblies, a case in point. Years now, no vessel replacement or further shielding in sight. Or 2007 says the NRC, 2011 say others. 2014 say Palisades' lawyers. This should have been replaced ten years ago. As P.R. spokesman Mark Savage told the local press back in 1993 when the problem surfaced during an interview with the South Haven Daily Tribune. Once they finally got to admit, there was a metal condition called embrittlement affecting the reactor. (B-3) (TT-3)

Comment: More to the point potential in fact should things not go as designed or planned or promised which over the last 38 years time and time again have been broken. With an additional 20 years worth of above ground dry storage cask along with other contaminated equipment which is sure to be replaced should this plant be pushed so far past its original design capacity which it already has by years now. Counter to the GEIS's insistence that no changes to the plant need to take place in the additional 20 years. (B-9) (O-4) (TT-9)

Comment: Isn't the reactor head soon to be replaced? In July perhaps? The pressure reactor vessel long in question operated in such a patchwork method since embrittlement was discovered more than ten years ago. How long before it's replaced? Annealed as once promised in court or a neutron thermal shield installed? Or the reactor replaced? (B-10) (O-5) (TT-10)

Comment: And it was only built for a certain amount of time. The engineers that designed that place built it, they thought it would last that long, and the licensing is, is beyond that point. I believe that so far these band-aids have, people have been very lucky that we haven't had accidents with stuck valves, leaking coolant, all accidents that have happened at Palisades over and over again, they've always been able to fix it in time. (C-9)

Comment: My second concern is regarding the equipment refurbishing, refurbishing of our equipment. I have low opinions. A plant with 40 years is ready for a good refurbishing. You can tell that, you have done a wonderful job, but I don't believe it. And your report, the NRC is saying that they considered, I don't know, I don't think, this is requested by the licensee, but the

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NRC I don't know really, what he's, he's going to do, but it doesn't look like he's going to request. (D-5)

Comment: Now the other thing is the issue of embrittlement, and the question was have you considered an accident based on the fact that Palisades is quite embrittled. When Palisades was licensed 40 years ago, the issue of embrittlement I don't think was considered because you didn't really know that that's what was happening or would happen. So in my understanding, this is, if there is an accident, the result, as a result of embrittlement, it would be a beyond design accident, if that's the correct terminology. So that's an accident that you're not considering, but that's new information since this plant was re-licensed 40 years ago. So I think you need to look at what would happen if there is an accident as a result of embrittlement, since you didn't know that when you licensed this plant 40 years ago. (G-2)

Comment: It's my recollection that Big Rock went, went into service about 1959 or 60 about 11 years before Palisades. And it's my recollection that Big Rock has not been running really as a power plant for some number of years here now. And it's got a lot of trouble. So that means that if you go ahead and, and renew this you'll be, this reactor will be far exceeding the line time of the Big Rock Plant in terms of production. (R-1)

Comment: The biggest issue I've heard about and this is not disputed, this is fact. Is that it is embrittled. In a layman's terms I'll try to explain to you what embrittlement is. When a nuclear reactor has, of the, the design at Palisades is, had so many reactions through the years it gets like little finger holes in it, lots of little holes from all this stress and these reactions. Cooling, heating, cooling heating and the near misses they've had. And after you get this, these holes in the, in the design structure it becomes embrittled which means that if there was a stuck valve, broken coolant pipes, lots of things could happen to cause a meltdown, okay, and then it starts heating up. And they cool, they had to cool it real fast. So they flood it with water. If the plant is embrittled as Palisades is it's like taking a really hot glass coffee pot and immersing it in cold water. Bang. That's what accurate embrittlement is and that's what I've hear would, would be the most probable thing that would happen to cause a meltdown. (DD-10)

Comment: I feel it is in the best interests of the public for safety issues, to close Palisades down and certainly NOT RENEW THE LICENSE with that aging reactor and all the surrounding safety issues as a result. (FF-2)

Comment: Aging and extended operation increase the risk of accidents at Palisades. The longer Palisades operates, the more embrittled its reactor pressure vessel becomes, increasing the risk for Pressurized Thermal Shock, a condition caused by any number of system malfunctions which can result in a severe, sudden overcooling of the reactor pressure vessel. This can lead to a loss-of-coolant accident, meltdown, and catastrophic release of radiation to the entire Great Lakes basin. (GG-9)

Comment: A top concern directly related to the re-licensing of Palisades for 20 additional years, is the aging of the plant, in particular *embrittlement*, or the gradual weakening of the reactor pressure vessel (RPV) from decades of bombardment by neutrons emitted by the nuclear chain reaction in the core. It is generally acknowledged that the reactor pressure vessel at Palisades is one of the most embrittled in the nation. The longer Palisades operates, the more embrittled its RPV becomes, increasing the risk for Pressurized Thermal Shock (PTS), a condition caused by any number of system malfunctions which can result in a severe, sudden overcooling of the reactor pressure vessel. This, combined with the intense pressurization in a pressurized water reactor, can stress the RPV such that its walls could crack or rupture, leading to a loss-of-coolant accident, meltdown, and catastrophic release of radiation to the entire Great Lakes basin.

Age-related failure of Palisades' systems could initiate the sequence of events that leads to PTS. Examples of aging systems at Palisades are evident in this short list of recent incidents:

1. Alert Declared Due to Loss of Shutdown Cooling (Event # 39699 March 25, 2003)
2. Failure of the Control Rod Drive Mechanism (see PNO-III-04-010 August 11, 2004)
3. Reactor Manually Tripped Due to Fire in 2B Condensate Pump (Event# 41002 August 31, 2004)
4. Relief Requests for Reactor Vessel Head Penetration problems (NMC Request 10/4/04)
5. Reactor Vessel Head Nozzle Cracking - Through Wall Cracks (Degraded Condition 10/17/2004)
6. Manual Reactor Trip/Main Condenser Vacuum (Event # 41319)
7. Emergency Declared on Primary Coolant System Integrity (Event # 41681)
8. Control Rod Stuck in Reactor Core (Event #42569 May 11, 2006)

The embrittlement at Palisades, the unresolved risks of PTS, and the ever-increasing likelihood of the failure of the RPV as Palisades ages warrant special environmental considerations. This type of accident is considered one that goes beyond the design of the reactor. NRC has not, however, included the issue in the EIS nor incorporated it in "Beyond Maximum Credible Accident" scenarios for Palisades as a potential accident. Further, NMC in its Environmental Report, has declined to undertake major refurbishment for Palisades' license renewal, despite Consumers Energy's earlier pledge to "anneal" (super-heat) the reactor pressure vessel. This super-heating theoretically can bring back ductility or flexibility to the metal, thus reducing potential for PTS. Annealing has never been performed in the U.S., however, and thus raises concerns itself as an experimental procedure.

Please include for the record the Adobe PDF document entitled "Palisades Nuclear Plant Yearly Capacity Factors" & "Palisades Plant - Record of Transients or Operational Cycles" for Occurrence #1 dated 1/11/1972 through Occurrence # 126 dated 1/9/2005. This is a record

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which has major implications for embrittlement and the Reactor Pressure Vessel at Palisades. A hard copy will be sent. Please enter it into the record.

Age-related deterioration also increases the likelihood of unintentional leaks, as plant systems, structures and components wear out and fail. Palisades' age-related degradation means increasing amounts of radioactivity will be "routinely" released over time. Plans for addressing embrittlement and other aging issues at Palisades are not provided in NMC's Environmental Report or in the EIS. Any discussion of 20 additional years of operation at Palisades necessitates a specific plan for addressing embrittlement and aging issues.

The most recent NRC report on a potential accident at Palisades, done in 1982, (Calculation of Reactor Accident Consequences or CRAC- 2), predicted that a meltdown and large-scale radiation release from the Palisades reactor would cause 1,000 fatalities and 7,000 injuries in just the first year, 10,000 cancer deaths over time, \$52.6 billion in property damage (based on 1980 census, expressed in 1980 dollars, thus significantly underestimating current and future impacts due to population growth and inflation; adjusting for inflation, property damage could exceed \$100 billion expressed in year 2005 dollars). The above CRAC - 2 report did not take into account a "Beyond Maximum Credible Accident" scenario. We request the EIS provide assessment of the consequences of a "Beyond Maximum Credible Accident" as Palisades' embrittlement status increases the likelihood of such an accident. (GG-40)

Comment: NRC must require Palisades to develop and implement a specific plan for addressing embrittlement and aging issues. Plans for addressing embrittlement at Palisades are not provided in by NMC or in the EIS. Any discussion of 20 additional years of operation at Palisades necessitates such a plan to address the aging of plant structures and components. We request the EIS provide assessment of the consequences of a "Beyond Maximum Credible Accident" as Palisades' embrittlement status increases the likelihood of such an accident. (GG-58)

Comment: The fact that in the Application for renewal the Licensee states that no refurbishing will be performed prior to extended term operation is of our outmost concern. We believe that after 40 years of operations, a thorough refurbishing should be mandatory to insure a safe Plant operation during the extended term. (JJ-6)

Comment: Due to deterioration and degradation, old reactors are more likely to experience accidents than younger reactors. At 39 years, Palisades is one of the oldest operating reactors in the U.S., and has been considered a "nuclear lemon" since it began operations in the first place. The risk of a severe accident at this "geriatric" reactor is reason enough to close it down in 2011 at the end of its current license. (MM-4) (NN-4)

Comment: By NRC's own reckoning, Palisades has one of the most embrittled reactor pressure vessels in the U.S. Consumers Energy and Nuclear Management Company admitted

in November, 2005 that in 2014, Palisades will surpass NRC embrittlement criteria. In fact, Palisades has surpassed NRC's limits on embrittlement a number of times - the earliest in 1981, just ten years into operations - only to see NRC weaken its standards, allowing Palisades to continue operating. Embrittlement makes the risks of "pressurized thermal shock" (PTS) too great to keep operating this reactor. During an emergency, PTS could fracture Palisades' reactor pressure vessel like a hot glass under cold water. Since such a fracture is a 'beyond design basis' accident, there is no countermeasure to prevent a melt down. Operating Palisades till 2031 risks a Chernobyl on the Lake Michigan shoreline, a risk that only grows worse with time. (see environmental interveners' contentions and supporting documents at <http://Avwww.nirs.org/reactorwatch/licensingpalisades.htm> at 1993, 2004, Aug. 8 and Sept. 16, 2005.) (MM-6) (NN-6)

Comment: The NRC officials avoided detailed answers to questions regarding the safety of the aging reactor. When questioned about renewing the license for an additional 20 years beyond 2011, (exceeding the original lifespan of Palisades of 40 years), the NRC officials once again avoided the issue of safety.

Given the poor track record of safety at Palisades along with present conditions of the reactor—how can we expect Palisades to be a source of safe and efficient power for the next 25 years? (QQ-2)

Response: *The principal safety concerns associated with license renewal are related to the aging of structures, systems, and components important to the continued safe operation of the facility. When the plants were designed, certain assumptions were made about the length of time each plant would be operated. During the safety review for license renewal, the NRC must determine whether aging effects will be adequately managed so the original design assumptions will continue to be valid throughout the period of extended operation, or verify that any aging effects will be adequately managed. For all aspects of operation, there are existing regulatory requirements governing a plant that offer reasonable assurance of adequate protection if its license were renewed. The comments are noted. The NRC's environmental review is confined to environmental matters relevant to the extended period of operation requested by the applicant. Safety matters related to aging are outside the scope of this review. An NRC safety review for the license renewal period is conducted separately. The comments provide no new and significant information and will not be evaluated further.*

Allegations Process

Comment: One of the biggest complaints from plant critics is the operators have been less than forthcoming when problems surface. Make excuses, rosy predictions they know will never come to pass. Or lie to anyone listening when the information might or will be perceived as contentious, placing public trust in jeopardy. (B-4) (TT-4)

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Comment: Finally, I am in agreement with the Kalamazoo Gazette article, April 2, that “it would be smart of the NRC to provide prompt reporting of even allegedly minor incidents.” (HH-2)

Comment: I know someone that worked inside of Palisades. He said he wouldn't work in the Michigan anymore. He works in another State. I won't mention his name. I won't mention what State he works at, although the NRC and other people have tried to find out. He told me that Palisades is the most likely to blow of all the nuclear reactors in the United States. He said it's a well known fact in the nuclear industry. And I said well why, you know, like at DC Cook I know that for ten years they operated with a cooling system that wouldn't function in the case of a melt down. I said are they trying to cover something up at Palisades? He says no, it's just the way they run things. He says they don't report things. He says there's so much that goes on that people don't know about. He says the NRC doesn't know about it, and I don't know what he was talking about. I tried to get more information out of him. He wouldn't talk, but that bothers me. And I think that a lot people are in the dark and I'm one of them. And I come here. I take time out of my life, and like Kevin and other people, we're doing this without any monetary reward. We're using our own gas money which is expensive and everything else, and I hope somehow that something I'm saying makes a difference, you know. That something is going, that somehow that something I say or write or do is going to forestall a big disaster. And I don't know if it, if it means anything at all. I don't know if everything I say is futile, if anybody's listening, if anybody cares. But I know that if it blew, then your little plant that's full of holes, if it blew, that people would understand what I'm talking about because you can't get it back. An acceptable risk, as far as you're dealing with something this big, if you can shut it down, go to natural gas, Consumers Energy is already --, then do it. Why not. (C-10)

Comment: I know a man who worked at Palisades and he's still in the nuclear industry he's got a real high job in the nuclear industry. And he told me that it's well known quote un quote, is what he said it's well know within the nuclear industry that Palisades is the most likely to blow of all the nuclear power plants in the United States at this time. And I asked him well why is that. I said is it, are they covering something up like they did at DC Cook which for ten years they covered up the fact that they had a non functioning coolant system. Or if they had a meltdown they could not have, they could not have stopped the meltdown. And only by the grace of God we have not had a meltdown yet. Well, they covered that up and as people have mentioned the whistle blower got in trouble for that. And now he said no he says Palisades they don't cover things up he says they just don't report it. (DD-5)

Response: *Allegations or safety concerns reported to the NRC are handled under the allegations program as described in NUREG/BR-0240, Rev. 3, “Reporting Safety Concerns to the NRC.” The comments are outside the scope of the license renewal environmental review and will not be evaluated further.*

Cost-Benefit Analysis

Comment: A 20-year extension for Palisades will be costly. Ratepayers and (by default) taxpayers are to pay for maintenance of the waste generated by the utilities. The fifty year old Price-Anderson Act requires taxpayers to pay for any major accident or terrorist incident at nuclear power plants over a cap of merely \$11 billion paid for by the nuclear utilities and their insurance companies for accidents or terrorist incidents at the plant, a liability that could run into many hundreds of billions of dollars. This liability protection is a unique subsidy provided to the nuclear power industry, at taxpayer expense. (GG-13)

Response: *The Commission determined that an applicant for license renewal need not provide an analysis of the economic costs or economic benefits of the proposed or alternative actions. The comment is outside the scope of the license renewal environmental review as set forth in 10 CFR Part 51 and Part 54 and will not be evaluated further.*

Energy Policy

Comment: And forgive me for not having the information with me, the facts and figures at the moment, but the information I have been reading indicates that nuclear industry has received more government subsidies during its lifetime than any other industry. It's well over 50 percent of all of the tax incentives, breaks, guaranteed loans, supplementing catastrophic insurance for the industry etcetera. (AA-1)

Comment: The amount of money that the taxpayers are paying out of their tax, taxes to the industry on top of these high electric rates that they're having to pay monthly rates is absolutely extraordinary. If people knew that and if that was, if that was analyzed down to a level and given to them so they could see it they would be absolutely appalled. (AA-2)

Comment: And the renewable, the percentage of, of money going to renewal is something like 11 percent of all the money and the nuclear industry gets well, well over 50 percent as I say. (AA-3)

Comment: Now in the, and the media has, you know, made some, had been reporting a large subsidy and tax incentives to the oil industry and everybody is appalled over that. The nuclear industry has them by a mile. (AA-4)

Comment: Decommissioning, or the closing and dismantling of nuclear power plants, ranges from \$280-\$612 million for each plant, ultimately paid for by utility customers. DOE's latest cost prediction for the Yucca site for high-level radioactive waste generated up to the year 2010 is \$58 billion. Energy Secretary Bodman has recently admitted, however, that DOE has no total price tag predictions for the project and the State of Nevada predicts the cost will top

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\$100 billion. Ratepayers who receive electricity from nuclear reactors pay a Nuclear Waste Fee on their electricity bills. Several billion dollars of the Fund have already been spent at Yucca; about \$20 billion remains in the Fund, far short of DOE's now underestimate of \$58 billion for Yucca. The shortfall will have to be paid, yet again, by US taxpayers, many of whom have already paid as ratepayers. (GG-48)

Response: *The NRC makes its decision whether or not to renew the license based on safety and environmental considerations. The final decision on whether or not to continue operating the nuclear plant will be made by the utility, State, and Federal (non-NRC) decision makers. This final decision may be based on economics, energy reliability goals, and other objectives over which the other entities may have jurisdiction. The comments are outside the scope of the license renewal review and will not be evaluated further.*

Emergency Response and Preparedness

Comment: Emergency responders in the 50-mile zone around the Palisades nuclear reactor are likely to be inadequately trained and inadequately equipped to respond to a major radioactivity release during an accident or attack at the Palisades plant. Covert Township does not have the staffing, equipment, training or preparedness for a major radiological emergency, the risk of which increases with 20 additional years of operation at Palisades, as the plant ages.

Other communities within the 50-mile zone are mostly rural, and maintain only volunteer fire departments, which have even less equipment and training than Covert Township. Radiation monitors and radiation-protective gear are unheard of, or in limited supply. Isolation wards for radioactively contaminated victims – the patients themselves posing a hazard to emergency medical technicians, doctors, and nurses -- are limited as well at hospitals within 50 miles of Palisades

NMC/Consumers are obligated to demonstrate how the communities that surround its facility are equipped for such a risk referenced in NRC's 1982 report, of a catastrophic radiation release, as well as ensuring that the plant's current Radiological Emergency Response Plan projects 20 years forward and incorporates population trends and development, highway construction projects, transitory populations of migrant workers, and provisions for bi-lingual notifications and dissemination of information. (GG-41)

Comment: NMC/Consumers must demonstrate how the communities that surround its facility are equipped for a catastrophic radiation release. The plant's current Radiological Emergency Response Plan is inadequate and must be revised to project 20 years forward and incorporate population trends and development, highway construction projects, transitory populations of migrant workers, and provisions for bi-lingual notifications and dissemination of information. This requires Spanish language emergency evacuation instructions and notifications prepared to serve the Spanish speaking Latino population. (GG-59)

Response: *The Commission considered the need for a review of emergency planning issues in the context of license renewal during its rulemaking proceedings on 10 CFR Part 54, which included public notice and comment. As discussed in the Statement of Consideration for rulemaking (56 FR 64966), the programs for emergency preparedness at nuclear power facilities apply to all nuclear power facility licensees and require the specified levels of protection from each licensee regardless of plant design, construction, or license date. Requirements related to emergency planning are in the regulations at 10 CFR 50.47 and Appendix E to 10 CFR Part 50. These requirements apply to all operating licenses and will continue to apply to facilities with renewed licenses. Through its standards and required exercises, the Commission reviews existing emergency preparedness plans throughout the life of any facility, keeping up with changing demographics and other site-related factors. Therefore, the Commission has determined that there is no need for a special review of emergency planning issues in the context of an environmental review for license renewal.*

The comments are outside the scope of the license renewal review; therefore, they will not be evaluated further.

A.3 References

International Atomic Energy Agency (IAEA). 1992. *Effects of Ionizing Radiation on Plants and Animals at Levels Implied by Current Radiation Protection Standards*. Technical Report Series No. 332. Vienna, Austria.

International Commission on Radiological Protection (ICRP). 1977. *Recommendations of the International Commission on Radiological Protection*. ICRP Publication 26, Pergamon Press, New York.

International Commission on Radiological Protection (ICRP). 1991. *1990 Recommendations of the International Commission on Radiological Protection*. ICRP Publication 60, Pergamon Press, New York.

National Cancer Institute (NCI). 1990. *Cancer Populations Living Near Nuclear Facilities*, NIH Publication No. 98-814. July.

National Council on Radiation Protection and Measurements (NCRP). 1991. *Effects of Ionizing Radiation on Aquatic Organisms*. NCRP Report No. 109, Bethesda, Maryland.

Nuclear Management Company, LLC (NMC). 2006. Personal communication with attachments from J. Holthaus, Environmental, Nuclear Management Company, LLC, Covert, Michigan, to B. Pham, U.S. Nuclear Regulatory Commission, Rockville, Maryland. Subject: "Palisades Cultural Resources Procedures." Attachment 1: "Archaeological, Cultural and Historic Resources," FP-RP-ENV-01; Attachment 2: "Palisades Cultural Resources," LM-330. (January 24, 2006).

U.S. Environmental Protection Agency. 2006. "U.S. Response to Recommendation in the IJO's 9th Biennial Report on Great Lake Water Quality." Available URL: <http://www.epa.gov/glmpo/glwqa/ijc9th/index.html>.

A.4 Public Meeting Transcript Excerpts

Excerpts of Transcripts of the Afternoon Public Meeting on April 5, 2006, in South Haven, Michigan

[Introduction by Mr. Cameron]

[Presentation by Ms. Franovich]

[Presentation by Mr. Bo Pham]

MR. CAMERON: Yes. Let's see if we have questions on the process before we get into the substantive findings of the EIS. And we just need to make sure that we save time to get your questions on that, but any questions on the license renewal process at this point? Yes, let me get you with this microphone here.

MS. CAREY: Well, as a mother of four boys and a teacher of fourth graders, I usually talk pretty loud, but I wanted to ask you, the hour before the meeting, in other words, the pre-meeting availability of all these nice people to answer questions. Is that new in the process or has that gone on from the beginning?

MR. CAMERON: Okay, good question. Bo? The informal open house that we do, traditionally do before the --

MR. PHAM: That has --

MR. CAMERON: -- the meeting.

MR. PHAM: Yes. Both the scoping meeting and our draft meetings we have traditionally have held one hour before and after, before the formal presentations itself as an open house.

MS. CAREY: I think my question about it is that in order to get the issue, I may have a question and issue that I really want answered, but I want other people to hear it too because I need everybody's input. And if it's done on this private discussion before and after the meeting, it means that the other people that are hear don't get a chance to hear my very important question.

MR. CAMERON: And that's, I think, Rani would tell you, would urge you to, to also ask the question here so that everybody else can hear it. It's not, the open house is meant to give people an opportunity to informally talk to the NRC's staff, and it's not meant to foreclose any questions or comments from coming up in this session. Right, Rani?

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MS. CAREY: Thank you.

MR. CAMERON: Okay. Yes, sir? And we have a question back there, but, and please introduce yourself too.

MS. CAREY: Oh, I was Corinne, oh, go ahead.

MR. CAMERON: Go ahead, sir.

MR. LOWE: Yes, this is Corinne Carey.

MR. CAMERON: Thank you.

MR. LOWE: And I'm Chester Lowe. Both from Grand Rapids, Michigan. I wanted to know what the, or whether or not there are any local residents from South Haven here that had any input or any kind of part for the environmental review process, and what happens here in the community. In other words, are there any representatives of South Haven area, or even this area of Michigan? In the, as part of a team for part of the process of this? Also, about the socioeconomic factor. I wanted to know more about that.

MR. CAMERON: Okay. We'll, we'll hold off on the socioeconomic and go back to that after you hear Dave Miller's presentation on that. And in terms of local residents and local government being, being part of the process, I think Bo and/or Rani are going to tell you about the fact that we did have local residents who spoke at the scoping meeting and I think that Bo, and you elaborate on this, in terms of how we work with local government here in terms of the process, okay?

MR. PHAM: Yes. During the scoping process, when we had the meeting here in July 28th last year, we basically, we asked everybody that if they were interested and they registered at the meeting, and we had the address and contact information, we have been keeping everyone on our expanded mailing list. If there any correspondence that we have been sending out regarding the license renewal issues, everyone should have been getting, so and when we published the Draft Impact Statement, we also mailed a copy to everyone on that.

Now as far as the people are showing up here today, I couldn't tell you who specifically is from the community, but that, the process carries on from here on to and that if you register, and that's one point I, I kind of wanted to follow-up onto. If you're here and you haven't registered I ask that you please do so, so that we can have your information so that we continue to keep you informed of the whole process here.

MR. CAMERON: Good, good point. And we're going to go here, and then we'll go over to you. And if apropos of Corinne's question about the informal open house, we'll be here after the

meeting too if anybody wants to get more information on a point or a question to talk to the NRC staff after the formal part of the meeting is over. And, Kevin?

MR. KAMPS: My name is Kevin Kamps. I work for Nuclear Information and Resource Service, but I'm from Kalamazoo. And my question, Bo, has to do with the schedule that you went through. My question is what is the breakneck speed up there all about? I mean, back in July 28th, we requested an extension to the scoping period and I don't even think we got an answer on that. We sure didn't get an extension, but we didn't get an answer even. And so my question is if you really want public input on this stuff, then, and I know you're going to say, well, the Commission told us to and maybe even, well, Congress told us to beyond that but, this, this breakneck speed, this sprint is just, you know, kind of, the writing's on the wall, I would have to say.

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MR. CAMERON: And Bo, in terms of a couple of points as, you know, the basis for the, for the schedule, perhaps something that you might not know is what did we do with Kevin's request, which I remember, I think, from the last scoping meeting. Not that it matters that I remember, but what we did with that. Kevin, I don't know if implied in your question you're formally, or at least at this meeting, requesting that the comment period be held open. If you are, we'll want to get that on the record.

MR. KAMPS: I would like to make that request. I'd like to ask for another three months on the comment period --

MR. PHAM: Okay --

MR. KAMPS: -- for meaningful public input.

MR. PHAM: Let me --

MR. CAMERON: Okay.

MR. PHAM: Let me have Bob take on the first part of the question and whether we responded to your request. I remember hearing about that, but Bob was the, the Environmental PM at the time. And now, Bob?

MR. SCHAAF: Right. Kevin, we did respond to that request and I can get you the accession number for the letter. I thought it had been addressed, actually, to you. It may have been misdirected in responding, but we did, we did address that, that request. And I'll make a note to get that accession number for you.

MR. CAMERON: Okay. Great. That's Bob Schaaf. Thank you, Bob, and --

Appendix A

MR. SCHAAF: I, I, as, as far as the schedule and, and the timing and the amount of time for comments, you know, the gist of our response both for, for the scoping period and I guess it would be a similar answer to your question regarding comments on the draft, is that the Commission has, has a number of, of goals that, that we work towards, one of which is openness to the public and involving the public in our process. We also have goals regarding, you know, efficient operation, conduct of, of the public's business.

And the Commission has determined that these time frames are reasonable time frames for balancing those, those goals that, particularly in the case of, actually in the case of the comment on the draft period. Our regulations stipulate a 45 day comment period and include opportunities for the public to request 15 day extensions. And by default, when we started the license renewal process, we, we went ahead and added on essentially two 15 day extensions to the, the, the regulatory requirement for a 45 day comment period. So there has already been some allowance for additional time, nearly double the, the required time frame for that response, for folks to provide responses.

MR. CAMERON: Okay. And we're going to go on to one last question before, and see if we can revisit these issues, but we'll go to you. Then I just want to give Kevin a follow-up.

A-2 MR. KAMPS: Well, just to respond to that. I mean, our efforts as local concerned citizens regarding this very dangerously deteriorated plant have involved the NRC licensing process, performed pro bono by us through completely volunteer efforts on a grass roots level. And so this thing is going on at the same time as that licensing process, which we're still engaged in because we've appealed the licensing board's ruling against us. So I think the Commission's regulations are unreasonable.

MR. CAMERON: Okay. And that is on record, Kevin, as is your request. And let's go right here and then we'll go on. Yes, ma'am?

MS. ELZERMAN: My name is Mary Ann Elzerman, and I am a Physicist for the Department of Environmental Quality. And I want to assure all of you that we have had two people, two physicists, in this process of the environmental and the technical review ever since it started. And the state is very aware of what's going on and we do comment on all of the publications that come from the NRC.

MR. CAMERON: Great. Thank you State of Michigan, Department of Environmental Quality. Thank you very much. Let's, do you have a quick process question sir, before we go on? And also please introduce yourself.

MR. PICCIUCA: My name is Sebastian Picciuca, and I live in, within 50 miles of the plant. Did, you said 45 days, it's only 43 at the bottom, one of the upper ones was only 30, like 3, 25. What was the 45 days?

MR. PHAM: It was, it's 45 days from the publishing of our Draft Environmental Impact Statement and the recognition of it by the EPA, and as published in the Federal Registered Notice. So that's the 45 days, and actually they, May 18th --

MR. PICOIUCA: So when's the 45 days?

MR. PHAM: It, it should have been from February 24th, which is the date that the EPA issued the Federal Registered Notice. So 45 days from February 24th, but actually when I'd put up the schedule, May 18th built in a little cushion just in case. We could even make the 45 days. So you actually have more than 45 days.

MR. CAMERON: Okay. Thank you. Ken, let's go to you.

MR. RICHARD: I'm Ken Richard.

MR. CAMERON: Well, Ken, what I wanted to do is, is get Dave on with his substantive findings and then we'll go to you first after he's done with that for your question. Because I think it may relate more to that, I don't know. And we do have the socioeconomic in the parking lot, so to speak too. So we didn't forget that, Chester. It is Chester, right?

MR. LOWE: Right.

MR. CAMERON: All right. Dave? Dave Miller.

[Presentation by Mr. Dave Miller]

MR. CAMERON: Let's go for questions. Okay, Bo, do you want to clarify something?

MR. PHAM: Yes. I want to just take a quick moment just to pause here and make sure that Chester was satisfied with our addressing of the socioeconomic. We looked at factors like housing, the infrastructure and land use for the area, and we did not find anything that was, that negatively impacted the environment.

MR. CAMERON: And let me just see if Chester has a follow-up on that. Chester, do you have more things that you want to ask about the socioeconomic analysis.

MR. LOWE: Not about the socioeconomic. Mainly about the sociological impact.

MR. CAMERON: Okay. Let me go to Ken, and then we'll go to this young, Nancy? Kathy. All right. All right. So are you guys ready to answer questions? Okay. Okay, Ken, please introduce yourself to us.

Appendix A

MR. RICHARD: I'm Ken Richards. I live three miles from the plant and I've been following this issue probably since the plant's inception. And the first question I have is about the process here. We've, I've been talking with a lot of local people. There's a lot of folks who really think this license is already done. It's already been issued. I was wondering if you would clear that up. I'm reading in the manual and I come across, or it sounds like it's trying to justify the license that is already done. And other places I see, it's not going to be, the decision won't be made until 2007. There's still another meeting in Washington, D.C. in December. When does this license get issued?

MR. CAMERON: Okay. And what I'd like you to do Bo, is to not only talk about what remains to be done on the Environmental Impact Statement, but please tell people going back go Rani's initial presentation all the different parts that need to come together before there is a decision and what time frame. I think starting off, the bottom line is is there has been no decision yet. And Bo with that, can you explain --

MR. PHAM: Yeah.

MR. CAMERON: -- to the audience what this is all about?

MR. PHAM: Yeah. Definitely I want to reiterate that there has been no --

AUDIENCE MEMBER: Louder.

MR. PHAM: Okay. It was off. Can you hear me now? Okay. Yeah, I definitely want to reiterate that no decision has been made and there's no finality on this decision. What we're here today, what we're here to do today is to take your comments regarding the environmental review process. And if you look at this screen up there, the process of license renewal breaks down into two paths basically. One is the safety review, and Juan Ayala is the Project Manager for that path. And I am here for the environmental review process. And we're not complete with that, you know, so basically towards, at the end there what you're going to have is a complete review from both paths and that, those two, you know, when the Commission comes to a decision based on those two paths, is the finality of the review and that's when the Commission will decide whether a license is renewed.

MR. CAMERON: Okay.

MR. PHAM: Does that answer your question?

MR. CAMERON: Let's just, Rani, do you want to, hold on a minute Ken. Just let me see if Rani wants to add anything to that for your benefit.

MS. FRANOVICH: The final Safety Evaluation Report, which is the culmination of the Staff's safety review, here, that is expected to be issued in October of this year. Once we issue the Safety Evaluation Report, it will go to the ACRS for their independent review. And once they've completed their review, they'll have some recommendations for the Commission directly. The NRC decision on whether to issue a new license here, is when Juan? What's the ETA for the new licenses? 22 months from the time that we get the license in hand. So 22 months from March, I guess it will be January of '07. January of '07 is when we are supposed to --

MR. RICHARD: Is that the old original, one of the, and one of the decommission --

MR. CAMERON: Ken, we need to get you on the record, so I'm going to give you a follow-up, and then I'm going to go to Kathryn. And then we'll go over to you. And that estimated time for the decision, is the decision on whether to renew the license?

MS. FRANOVICH: Correct.

MR. CAMERON: Okay. Do you have one follow-up?

MR. RICHARD: No, I've got quite a few. I was going to wait for the two hour session.

MR. CAMERON: Okay. All right. Let me go to Kathryn.

MS. BARNES: Yeah. These questions are for Mr. Miller. You are, your degree is in Environmental?

DR. MILLER: Engineering.

MS. BARNES: Engineering. Have you worked with wind technology?

DR. MILLER: Well, members of my team have. Oh, sorry, yes. I am the team lead as I --

MS. BARNES: Okay.

DR. MILLER: -- wanted to point out. We had another ten other experts in their various subject matter experts.

MS. BARNES: Okay.

DR. MILLER: For instance, when I, when I actually do a subject matter expert, mine's hydrology ground water, water resources, because that's where my discipline is. So we bring the appropriate expertise to the subject matter.

Appendix A

- C-1 | MS. BARNES: I was wondering on this assessment of wind and solar, granted Michigan doesn't have sunshine every day like the Western states. Solar really isn't feasible here as an alternate. But what about the wind? You're saying it's, it's a large concern because it takes a lot of land. How much of power for Palisades is sold out of state? What percent of the power is sold out of state?
- DR. MILLER: I'd like to address the wind, the wind point first and then I can ask others to address that.
- MS. BARNES: Okay. Well, this, this --
- DR. MILLER: But, may I address the wind part of it?
- MS. BARNES: Well, this, this, this all comes together because if you're taking this and you're saying 143,000 acres, but if Palisades, like DC Cook, sells most of its energy out of state, that's really not a proportionate summation.
- DR. MILLER: I, I think I understand your question. I think I understand your question.
- MR. CAMERON: -- please.
- MS. BARNES: And also I was wondering --
- MR. CAMERON: Kathryn, let me --
- MS. BARNES: One other thing, please. This is, this is important. What are you basing on, what size wind generators are you basing this summation on? The small little ones, or the ones that they're using now, the big ones that Consumers Energy's investing in to replace the nuclear? Palisades is up for sale. They want it off their hands. They were investing in green energy and it's working. So I wonder about this.
- C-2 | And also, this whole summation. It's all, you're all under the premise on this whole review that there's, nothing's going to happen. That there's no accidents. But there's things that happen all the time. So this, you're, you're, you're process, I think is defective.
- MR. CAMERON: And Kathryn --
- C-3 | MS. BARNES: But I would like to know, technically, all right, how you came to this summary and the size of the wind generators you took into account in this summary, et cetera, et cetera, et cetera. The whole detail.

MR. CAMERON: And if you could just, we appreciate your comments and we want to hear them.

MS. BARNES: I'd like some answers.

MR. CAMERON: But if you could just hold your comments until the comment period and we'll try to get you some answers to your question. And I just want to make sure that Dave gets a chance to answer the question about the analysis. And Bo you indicated you understand where Kathryn's going with the amount of power generated, shipped out of state. Why don't we let Dave talk about how that analysis was done on wind, and then you can tie that going out of state thing in, I think --

DR. MILLER: Sure.

MR. CAMERON: -- would be good.

DR. MILLER: Well, regarding, and I realize it is a complex issue, and that's why we do look at combinations of alternatives. And the details that are fairly significant would be difficult to get into completely here, but they are laid out both in the GEIS and then supplemental information in the supplement.

But to answer the basic question about the kind of wind generation capacity that's considered, it's not a single specific design. It's basically a design that uses current efficiencies ranging between about 25 to 35 percent efficiencies that, that would gather roughly 25 to 35 percent of the energy available in the wind, in that wind field at any single time. And so that, and then you look at the size of area that you need to support that amount of wind and you scale it by the 25 to 35 percent value, and that's how you come up with the acreage required for the wind replacement of the base level.

MS. BARNES: So you're --

MR. CAMERON: And its size, and Kathryn, I'm sorry, we need to get everybody on the transcript. And also, although I apologize for this, we can give so much of an answer now to the questions, and then we might have to talk to you after the meeting because we do want to hear your comments also. So let's go with the questions that you have on the floor, and I think that, did we answer? You did have a question about the size of the wind turbines that are used. Steve, can you say anything about that?

DR. MILLER: Yes. The analysis, the alternative analysis assumes that Palisades is producing 780 megawatts of electricity right now. And so we're trying, in all of our alternatives we try to baseline that as the replacement amount of energy that needs to be, that needs to be provided.

Appendix A

So based on that the scale of the wind farm or, you know, other sources, in the particular case of wind and solar, the amount of land use that's required for, to produce that capacity is going to have a greater impact. And that's why we, you know, we're not saying that wind power in general has a large effect on the environment. We're just comparing to what we have today. And so that's the basis of our comparison and analysis.

MR. CAMERON: Okay. And you can please talk to Kathryn after the meeting with more details on this. And I'm going to go to this gentleman over there, and then Corinne, and we're going to go on to the SAMA issue. Okay? Yes sir? And please introduce yourself.

D-1 MR. DAL MONTE: My name is DalMonte, and I am the President of -- Now my, my question is, in this regard, is that we are reading this report or your final result is administered by you and it's only, is going to say, well, that Palisades can continue. I mean, the fact that Palisades can continue operation is not unreasonable. And I understand that you are stressing that result. But on the side, you are taking position on alternative solutions that I read and I don't think is enough education in your point. Because the fact is that wind is flying. We are having wind all over the world and in here too. So I guess you missed the point in this. And I don't understand why you, you are so concerned on our selecting alternatives if we know about the alternatives. And really, you are not doing a good job and the guys are going to really make the decisions, went through the final decision. Okay, thank you.

MR. CAMERON: Mr. Dal Monte, thank you for that. And we are going to hear from you later on. I think that the question there that we could provide some information on is why do we do the alternatives analysis. Can you put that in perspective for us Bo?

MR. PHAM: Yeah, let me try to frame that. You know, like I said before, we take a baseline of what we're trying to replace, the energy source that we're trying to replace, which is the Palisades Nuclear Plant that's there right now. We're not, if you can try to look at it as not comparing wind power versus nuclear power versus anything else. We're looking what, what the potential environmental impact of each of those alternatives is going to result in. So that's what our analysis is.

We're not here, and we don't, the NRC doesn't have the jurisdiction really to make the energy policy of what, you know, what comes out of Palisades and what other different sources of energy. And so what we're here, and you know, I'm trying to, I guess, define the scope of what we look at is really, all these different alternatives and not comparing them and making the judgment of whether one is better than the other. We're just simply stating that this is what the environmental impact is going to be with wind power, with the nuclear power plant, or with solar power, or with other alternatives as well.

MR. CAMERON: And Rani, do you want to add to that?

MS. FRANOVICH: I just want to add something. You know, you're, you're looking at a nuclear power plant. It's already built. It's already operating today. So the impact of its continued operation is quite different from the impact of closing that facility, building a wind farm of large components that would harvest the wind energy, or another site that would have solar panels to harvest the energy of the sun. The environment associated with building those new sites is larger, it's a larger impact to the environment than continuing to run a facility that's already built and operating now. So on a logical level, that time makes sense.

MR. CAMERON: Okay. We're going to go to this gentleman.

MR. HENKEL: I'm Don Henkel.

MR. CAMERON: Yes, we usually --

MR. HENKEL: I'm still Don Henkel. Point of information. I understand there's some hundred and some odd nuclear power plants throughout the United States. How many of those have applied for renewal licenses? And of those who have successfully applied for a renewal license, how many have been approved and how many have been disapproved?

MS. FRANOVICH: Okay. That's a good question.

MR. CAMERON: And Rani, please, put that in the context too in terms of our process about rejection of applications, et cetera, et cetera. Thank you sir.

MS. FRANOVICH: There are 103 operating reactors across the country. We haven't quite gotten halfway through the fleet. I'd say 47 or 48 or so, thus far, have applied for renewal. And this is reactor units, not necessarily sites. There have been a couple that we've returned because the information in the application was not adequate or sufficient for the Staff to begin and complete its review.

For those that we did not return, we requested additional information and it depends on really the quality of the original submittal will dictate how many requests for additional information the NRC needs to put out there. But for the plant that I managed back a few years ago, there were 273 requests for additional information. So the Staff does not grant renewal for every application it receives because it's a pro forma review. The Staff will continue to get the information it needs to complete its review, and will not be satisfied until that information is received.

So when we issue our Safety Evaluation Reports, a number of times there are still open items that the Staff is not satisfied with. We do not issue a final Safety Evaluation Report and brief the ACRS on our work until the Staff is satisfied.

Appendix A

So the answer is we're roughly halfway through the fleet. We've returned a couple of applications for sufficiency issues. For the rest, we gathered more information than we received to insure we were satisfied with the information to complete our review.

MR. CAMERON: In terms of the number of licenses we've renewed though?

MS. FRANOVICH: I don't have the specific number off the top of my head, but I'm saying 40, I'm thinking 48, 49 --

MR. CAMERON: 39.

MS. FRANOVICH: 39 per unit.

MR. CAMERON: All right. And Corinne, you had a question?

F-1 MS. CAREY: Yes. Several things. Number one, I'm concerned that the kinds of answers we're hearing, I, I feel are very questionable. For instance, wind power in itself, you don't measure that by acreage because farmers are finding a very successful business for them to put the wind farms along their lot lines. And so it's a very definite advantage environmentally in that respect, and I didn't hear that kind of that thing in your report.

F-2 Secondly, I heard that solar and acreage. And it's my understanding that solar is very commonly mounted on rooftops and walls in cities, which also reduces the transmission loss, et cetera, that comes from centralized nuclear plants scattered around and have this great transmission loss over their process of getting the electricity to where it's needed. And there was a third point, and I can't think of it right now.

MS. FRANOVICH: Did you have a question?

MR. CAMERON: And no, I think Corinne is, I think the comment we have of what Corinne is saying is that there may, comments like she just made and like we're going to hear tonight, and I'm sure from Kathryn, for example, on wind power are all the things that we need to hear to consider in finalizing our report. And Dave Miller did a summary of the report and didn't get into every detail where that type of thing may be coming out. And I'm going to go to this lady back here for a question, and then I think we need to go on to SAMAS. If we have time to come back to you, Kathryn, we will. But we really need to get to the next presentation. Yes ma'am?

MS. HIRT: I'm Alice Hirt. And I do not really need to ask a question right now, but I want to respond to Ms. Franovich. Is that what your name? I, I feel that you respond to the question about the impact of other technologies on the environment with a very subjective answer. And I sort of resent you making that sort of sweeping statement. I don't believe that you are an expert on all other technologies and for you to say that new other sources, say wind and so forth,

would have a greater impact on the environment than keeping Palisades going, I, that is certainly not my estimation, and I don't believe that that was really your place to make that sort of a sweeping comment.

MR. CAMERON: Okay. And the, Alice, what we have in the report, and Rani is the Section Chief for the environmental section that does these, there's details in there that arrives at that conclusion as Mr. Miller presented. And he may have done that before you, I don't know if you were here for his presentation, but that is the conclusion. And indeed people will, can and will disagree with that, and we want people to tell us if they disagree with it and tell us why they disagree with it basically. And Rani, do you want to add anything else at this point? It wasn't --

MS. FRANOVICH: She's entitled to her --

MR. CAMERON: -- a question.

MS. FRANOVICH: -- view and I appreciate her expression of it. I, I'm not an expert. You're absolutely right. What I was doing was explaining the Staff's conclusions on the analysis that was performed by the experts.

MR. CAMERON: Which was done by the experts.

MS. FRANOVICH: Correct.

MR. CAMERON: Okay. And I'm sorry that we can't go back for second questions here.

MS. BARNES: I didn't have my first one answered. I asked questions and no one answered them.

MR. CAMERON: They tried their best to answer the question Kathryn.

MS. BARNES: I asked how much is sold out of state and what size wind, what size wind generators.

MR. CAMERON: Okay. That's two questions. How much is sold out of state and what is the size of the turbine? That's, that's true Kathryn.

MS. BARNES: No. What, what is the size in your analysis, what size, what size wind generators are you saying would take that much acreage? And how much of Palisades power is sold out of state? Those are two questions I asked they will not answer.

MR. CAMERON: You want to do this one? Okay. Exactly right.

Appendix A

MR. PHAM: Only can answer the first one. I do not have the numbers to provide for you regarding how much power is sold out from Palisades. That's, the NRC doesn't have any say in that, in that decision actually. Your second question regarding the, what size turbine, I believe we look at the predominant research that's out there based on the Department of Energy and other bodies. The National Academy of Sciences, for example, and take a look, and we use, we don't use specific models or types of turbines. We look at the general baseline efficiency of what wind turbines, the best and the worst of what the wind turbines can do right now.

MR. CAMERON: Okay. And if anybody does have the information on the amount of power sold out of state, if they can give Kathryn after the meeting, please, please do that. And, yes sir?

AUDIENCE MEMBER: I'm, I'm, my only questions is why was oil in the same category with solar and wind? That's, in the alternative, it was listed with the alternatives.

MR. CAMERON: And the answer to that question? And is it going to be Bo or Dave?

MR. PHAM: I would say that there was no connotation or nothing meant by it. Yeah, it's just one of the alternatives that we looked at.

MR. CAMERON: Okay.

MR. SCHAAF: I can, I can --

MR. CAMERON: All right. Bob Schaaf on that one.

MR. SCHAAF: What we look at in the alternatives analysis is, NEPA requires us to evaluate and assess the impacts of alternatives to the proposed action. The proposed action here is for the plant to continue operating for an additional 20 years. At the very least, we need to look at what's called the no action alternative, which would be not renewing the license and identify those impacts. The NRC has decided from a practical standpoint, if the plant does not continue to operate, something will need to be done to replace the generation lost when that plant ceases operation. That may be a new base load power generating facility. It may be purchasing power from outside of the service area. That may be renewable alternatives. It may be a new, large, base load power generating station.

When we do these alternatives' analyses, we look at the infrastructure that is in place in the vicinity of the site to look for what are the likely alternatives that we do a detailed analysis on. You have a gas fired plant just across the freeway from the Palisades site. So there is infrastructure in place to deliver natural gas which would allow you to install and construct a large base load gas-fired generating station. There's a rail line in the vicinity of the site, which would allow you to bring in coal to construct a coal-fired generating station. Although I believe in this case we didn't look at placing the coal-fired plant at the site. We looked at placing it

somewhere else in the service territory because of the sensitivity of the dunes area. We also looked at new nuclear construction because there is interest in the industry in constructing new nuclear generating stations.

Under other alternatives, the reason oil is in with the wind and the solar and the conservation, is because these are alternatives that we looked at in less detail because we didn't consider them to be the likely alternatives for replacing loss generation if the license was not renewed. There's not infrastructure in place necessarily to bring an oil, plus there are other uses for oil in transportation and in the chemical industry. That's why it's in there.

We're not saying that it's equivalent to some of these renewable sources that we considered, the wind, the solar. The reasons that the wind and solar aren't looked at in, in as great a detail frankly, is that we're talking about replacing a large base load generating station that is expected to operate for roughly 90 percent of the time. Wind won't generally do that. Solar won't generally do that. And so we consider those alternatives, and we discuss the impacts of those alternatives, but we don't view them in the same level of detail.

MR. CAMERON: Okay.

MR. SCHAAF: I guess that's, that's why it's in there.

MR. CAMERON: Thank you. That's very helpful.

MR. SCHAAF: And that's kind of a concise discussion on that.

MR. CAMERON: That's very helpful. We really, I'm sorry, we really do need to move on to Bob Palla.

MR. SCHAAF: And I'm available to discuss that after, after the meeting is over.

MR. CAMERON: Yes. I think that gentleman and a bunch of people might want to talk to you about that, Bob. Thank you Dave, Bob, Bo. And we're going to go to Bob Palla. And then we'll be back to Bo for some final comments here. These are accidents, the accident analysis.

[Presentation by Mr. Bob Palla]

MR. CAMERON: Okay. Thank you Bob. And that's all laid out in the Draft Environmental Impact Statement. Anybody have any questions on this SAMA aspect?

AUDIENCE MEMBER: Are they detailed in the EIS?

Appendix A

MR. CAMERON: Yes they are.

MR. PALLA: In the supplement. Chapter five is a summary, Appendix G is a detailed accounting.

AUDIENCE MEMBER: The ones that were not approved are detailed also?

MR. PALLA: The entire set is described there. And then which ones were deemed to be cost beneficial, and which ones are being further evaluated, that's all spelled out specifically.

MR. CAMERON: Thank you. Mr. Dal Monte?

D-2 MR. DAL MONTE: What I wondered is, the basis like sabotaging where taking account can be - in this way too. And if you have done that, because this, my contention is is a new issue. They're not the same like previous plan.

MR. CAMERON: Bob, I think this is a question that we get in terms of seismic, what are the subjects that are included within the scope of SAMA procedures.

MR. PALLA: Well, let me say what is included. The short answer is sabotage is not included within the risk profile that we do this, the SAMA analysis for. What we include is internally initiated events, fires within the plant, internal floods, seismic events, high wind events, things that we can analyze basically. When it comes to sabotage, even if we wanted to include it, it defies quantification and really systematic analysis. So that, that would be one deterrent to, to try and include it here, is that it just is very difficult to quantify the frequency of these events.

Now Rani Franovich mentioned at the beginning, this is, these issues are being addressed as part of the current situation with the plant. We're not done with that work yet. This is still in progress. Plants are, have beefed up their security arrangements and are looking further at mitigation strategies within the plant to deal with things like aircraft impact. This is all not being forgotten. But we're looking at it now. It's not really tied into license renewal. And it was not part of this evaluation.

MR. CAMERON: Okay. Thank you. And let's have one more question right here on SAMA, and then Bo if you could conclude and then we can go and hear what people have to tell us. Yes ma'am?

MS. MCFADDEN: I'm Jean McFadden. I'm a social worker. I'm assuming that the SAMA discussion doesn't relate to the embrittlement of the aging reactor.

MR. PALLA: That's correct.

MS. MCFADDEN: Okay.

MR. PALLA: That would be determined to be acceptable as part of the, as the safety review did.

MS. MCFADDEN: So, so then, looking at this other report on emergency finding and preparedness, are you confident in the ability of FEMA, after seeing Hurricane Katrina, to come in and manage an emergency here in Van Buren County?

MR. CAMERON: And can we just, this, this is an important issue, obviously, emergency planning. And can you just, Rani or Bo, can someone just lay out what the responsibilities are for emergency planning NRC, local government, FEMA, and we may need to talk to you further about that, but can you do that?

MR. PHAM: Yes.

MR. CAMERON: All right.

MR. PHAM: The, basically, the NRC, our jurisdiction as far as emergency planning is to make sure that the personnel on site are protected from the dose, dosage in the case of emergencies. Now in the case with outside of the, offsite, that's something that we coordinate with FEMA, local authorities and everything. I can't, I can't answer your question regarding do I have confidence in FEMA to do it.

MS. MC FADDEN: Why not?

MR. CAMERON: Okay. Rani, do you want to try to address this, and we'll just hear from the State of Michigan before we go on. But can we do, can we tell people what FEMA's responsibility is vis a vis local government and the NRC, at least tell them that?

MS. FRANOVICH: Yes. And we're experts more in the license renewal arena, so we don't have people at this meeting who can really speak to you on the details of, of, you know, the NRC's coordination with FEMA and local and state officials.

But I can tell you that licensees periodically conduct drills, and the NRC participates. So does FEMA, so do state and local officials. And after the drills there is a debriefing, there is a look at lessons learned, so that is where the NRC is engaged. We really can't comment, it wouldn't be even appropriate for us to comment on FEMA's capabilities. But I can tell you that our jurisdiction is, does the site have an emergency plan? Do they exercise that plan on a periodic basis? And does that involve coordination with other stake holders, state and local officials and --

Appendix A

MR. CAMERON: And I think we're going to hear from the, from the people who have direct responsibility, Jean, right now, with the state. Can you explain that please?

MS. ELZERMAN: The State of Michigan is very proactive in doing their own emergency planning. The state police, Emergency Management Division and Homeland Security are in charge as lead agency for the State of Michigan for any emergency. During a radiological emergency, we, the Department of Environmental Quality Radiological Protection, will step in and be their counterpart for the radiological part. In no way will we let FEMA take over. Our state will run the emergency until the very end. Thank you.

MR. CAMERON: Okay. Thank you for that. And Bo, can you summarize so we can on and --

MR. PHAM: Yes. Thank you for that comment, by the way. So turning on to our conclusions, we found that the impacts of the license renewal in all areas were small. We also concluded the alternative actions that we discussed in some subsequent discussions after Dr. Miller's presentation, including the no action alternatives, may have moderate to large environmental effects in some impact categories.

Based on these results, our preliminary recommendation is the adverse environmental impacts of license renewal is not so large that it would be unreasonable to forward the planning decision makers to leave that as an option.

This slide is a quick recap of our current status. The Draft, like I said before, the Draft Environmental Impact Statement was issued on February 14th. To go back to the question earlier about the 45 day period, the February 14th date is actually the date that the NRC issued or published our Environmental Impact, our Draft. Publicly it's not legitimate or it's not available to the public, per se, until the EPA recognizes it, checks it in the system, and publishes a Federal Registered Notice. And that was done on February 24th.

Now by regulations we are required to give a minimum of 45 days for comments from the time of issuance of the Draft, and we actually built in a 75 day period from the February 24th date. And like I said, even with that we have a little cushion for May 18th. So once again the comment period end date is going to be May 18th, and then we expect to issue the final impact statement sometime in October of this year.

This slide identifies me as your primary point of contact with the NRC for the preparation of the Environmental Impact Statement. It also identifies where the documents related to our review may be found in the local area. Palisades' Draft Environmental Impact Statement is available at the South Haven Memorial Library. All documents related to the review are also available at the NRC's website, www.nrc.gov.

And in addition, as you came in you were asked to fill out a registration card. If you did and you included your address on there, we will mail a copy of the draft and a final, final impact statement to you. If you did not fill out a card, I do encourage you that you do. And if you need to know how to do it, please contact, Cristina, could you raise your hand please? Cristina Guerrero will be out at the registration desk and they'll be able to give you the cards for the registration.

In addition to providing comments at this meeting, there are other ways that you can submit comments to, for our environmental review process. You can provide written comments to the Chief of our Rules and Directives Branch, at the address on the screen there. You could also make comments in person if you happen to be in Rockville, Maryland. We've also established, to make it easier, we've also established an e-mail address that you can write to us at palisadeseis@nrc.gov, there at the bottom.

This concludes my remarks and thanks again. Once again, thank you for taking the time to come this afternoon. And I suppose we can take a few more questions.

MR. CAMERON: Well, let's, I think what we're going to do is move on to the comments now, but I would just ask the NRC staff, you heard questions, concerns. After the meeting, if there's a possibility of talking to people. For example, we heard Kathryn, Corinne, others on, and Alice Hirt about the analysis of alternatives. You might want to talk to them, and I don't want to forget that Chester had some issues on sociological, so Dave I know you have a colleague with you. I don't know how much you can divide your time, but you might want to talk to them after the meeting.

And with that, we're going to go to hear from you. And we have to start with, three governmental folks. And we're going to start with Mary Ann Middaugh first, and then we're going to go to John Tapper, and then to Nancy Ann Whaley. Mary Ann, could you come up? And then after we hear from those three, we're going to go to Kevin Kamps, Ken Richards, and Don Henkel. Yes, please. And I guess that in order for this to really be heard, you're going to have to --

MS. MIDDAGH: I'm pretty good at that.

MR. CAMERON: -- speak in. Good, good, thank you.

MS. MIDDAGH: Politicians always want to be heard. My name is Mary Ann Middaugh. And the people of southwest Michigan voted to have me represent them in the Michigan legislature for six years, the maximum allowed under our Constitution. I served as Chair of the House Energy and Technology Committee when the electric restructuring was passed.

Appendix A

H-1 | During our hearings and other deliberations, it was clear that Michigan needs nuclear energy and Michigan needs the Palisades plant as it generates enough power for 500,000 of Michigan's residents. Because Michigan is a peninsula, we're limited in the amount of energy, we can't come across where the lakes are, limited in the amount of energy we can import from contiguous areas.

Our committee looked at the environmental and safety record of this plant and the record of how the Nuclear Management Company dealt with any problems that arose. The record is excellent on both counts. And we, as elected officials, were kept apprised of all activities at the plant.

I've had an opportunity to review the NRC's draft environmental report and want to commend you on a very thorough job you have done. Your conclusion that Palisades has not added anything harmful to the environment, has protected the endangered Pitcher's Thistle, monitors fish, water and crops monthly in the surrounding areas, and has kept reports and permits current with Michigan Department of Environmental Quality matches our findings.

Palisades employs about 600 individuals with a payroll of about \$60 million. We very much need the jobs that Palisades provides to this area. These employees are not only responsible while at work, they are also a very real asset to this area of the state. They are involved in their churches, schools, families and communities.

Palisades is also a good corporate neighbor. They pay a great deal of taxes to area governments, and are very supportive of the community and work together to make this area of the state a good place to live and raise a family. This is evident from the numerous letters and resolutions of support of re-licensing of this plant from area governmental bodies. I add my voice of support for re-licensure of this environmentally friendly electric generating plant. Thank you.

MR. CAMERON: Thank you very much, Mary Ann. We're going to go now to Mr. Tapper. And Mr. Tapper is a member of the Van Buren County Board of Commissioners. Mr. Tapper?

MR. TAPPER: Thank you.

MR. CAMERON: Your welcome.

MR. TAPPER: I'll make a quick comment because when I first talked with you earlier on, you elaborated five minutes. But I understand my five minutes started about ten minutes ago. Is that correct?

MR. CAMERON: No. I think we'll start it right now.

MR. TAPPER: Okay. Well, I'd like to tell you a little bit about myself, because I have been around Van Buren County all my life. I'm four 18's plus nine in age. I live in the house I was born in. And since '57, we've had a summer home along Lake Michigan between South Haven and the Palisades plant. And actually, with being around all these years, I had the opportunity to be in the County Board of Commissioners 30 years, well, I've served over 38 years, since '52. And actually, I remember when Palisades was in the thinking stage, because Consumer had us go down to Benton Harbor. We got on a DC-3 and flew up to Charlevoix to look at what they had up there prior to our resolution. And we did have a resolution way back then. Now I do have a resolution that we approved on March 22nd of '05, and I would really like to read it to you.

Report of the Administrative Affairs Committee. I'm a Board of Commissioners. I hope everybody can hear me. Okay, thanks.

I-1

Whereas, Palisades has been in operation since 1971, safely providing electricity to Consumer Energy customers for those 34 years, and;

Whereas, based on Palisades' continued improved performance, particularly over the past four years since Nuclear Management Company has been operating Palisades, Consumers Energy has increased confidence in the plant's safety, reliability and predictability, and;

Whereas, to that end, Consumers Energy announced last summer that it would seek a license renewing for Palisades. Nuclear Management Company will apply for a 20-year license renewal on behalf of the Consumers Energy next month with the U.S. Nuclear Regulatory Commission. When approved, Palisades' license will be renewed through the year 2031, and;

Whereas, this means continued employment to the residents of Van Buren County who operate and maintain the plant, continued tax revenue from the plant that are, revenues that are shared by various governments, hospitals, schools, county government, government throughout the region. And this really is continued support for the emergency management activities and continued employment paychecks that bolster your local economy.

Now therefore it be resolved that the Van Buren County Board of Commissioners support Consumers Energy in their application process.

This was approved March 22nd, '05 and signed by all seven commissioners. And really our livelihood since this plant has been here, has certainly helped. Helped schools particularly, and not just the Covert region. Thank you.

MR. CAMERON: Okay. Thank you Commissioner Tapper. And if you want us to attach a copy of the resolution to the transcript --

Appendix A

MR. TAPPER: Sure.

MR. CAMERON: -- we can do that.

MR. TAPPER: Okay.

MR. CAMERON: All right. Thank you very much. And now we're going to go to Nancy Ann Whaley who's Geneva Township Supervisor.

J-1 MS. WHALEY: Hello. I'm Nancy Ann Whaley from Geneva Township. And I, like Mr. Tapper, live on the same land that I was born and raised on.

Geneva Township is located directly east of South Haven Township and it corners with Colbert Township on our southwest corner and their northeast corner. We are in the 10 mile range of the speaker system that gives us the alert warnings. And our western three tiers of sections are located in that siren system of Palisades.

I never realized until I became a board member of Geneva Township in 1987 and became acquainted with the operations and effects at Palisades Nuclear Plant on the structure and economic well being of Geneva Township, as well as the surrounding area. Palisades plant and people continuing support of our communities, organizations and businesses through usage, involvement and monetary support enhancing the overall community health and welfare.

J-2 Many Palisades personnel live in Geneva Township and are tax payers which benefits Geneva Township, South Haven Area Emergency Services, Lake Michigan College, South Haven and Bangor Public Schools, Van Buren County Intermediate School District, South Haven Hospital, South Haven Senior Services and Van Buren County.

J-3 Being a South Haven Area Emergency Services Authority Board Member, I have watched as Palisades has contributed much to our fire and ambulance service in the way of training, equipment and support. This joint effort for the safety of our citizens and Palisades' personnel is a tribute to working together to make our community what it is today.

J-4 Over the years, we have been privileged to reports by Palisades' personnel at our Township board meetings, keeping us informed on happenings, new procedures, updating of siren warning system and just being available to answer questions that arise in our public settings.

The seminars presented by Palisades' personnel to provide exposure for the local municipalities, businesses and industry to review the plant and safety procedures that are in place, as well as having contact personnel for our comments and questions is indeed beneficial. Mark Savage, Palisades' employee as well as property owner in Geneva Township, is always available to review any concerns that arise.

At the April 12th 2005 board meeting, the Geneva Township Board unanimously voted to support the license renewal by resolution which was presented to Mark Savage at that meeting. It is my strong belief that the negative personal and economic impact that all of us will feel if the operating license for Palisades is not extended will be a loss of great magnitude to this community. I'm asking your full support for the 20 year renewal of the licensing for Palisades.

J-5

The resolution that was passed at the Geneva Township Board on April 12th, 2005 reads:

Whereas, Palisades Nuclear Plant has been in operation since December of 1971 safely providing, safely providing electricity to Consumers Energy customers for those 34 years, and based on Palisades continued improved performance, particularly over the past four years since Nuclear Management Company has been operating Palisades, Consumers Energy has increased confidence in the plant's safety, reliability and predictability, and to that end, CMS Energy announced last September that they would seek a license renewal for Palisades.

J-6

Nuclear Management Company will apply for the 20 year license renewal on behalf of Consumers Energy next month with the U.S. Nuclear Regulatory Commission. When approved, Palisades license will be renewed through the year 2031, and this means that the residents of Geneva Township and surrounding areas are receiving continued employment for those who operate and maintain the plant, continued tax revenues from the plant that are shared by the various governments, hospitals and schools throughout the region, continued support for energy management activities, and continued employee paychecks that bolster local economies, and to date, the NRC has approved 30 license renewals for generating stations and is reviewing applications for 10 others, and there are 103 operating nuclear plants in the United States that generate approximately 20 percent of the nations' electricity.

Therefore, be it resolved that the Geneva Township Board of Trustees supports Palisades' efforts in the application for a 20 year renewal of the operating license and their efforts to continue the enhancement of economic conditions in our area. This resolution was presented and supported by all Geneva Township board members. Thank you.

MR. CAMERON: Thank you very much, Nancy Ann. I realize that a lot of you that took the time to do a prepared written statement for us, and we really appreciate that. We are going to try to move through this so that we get to everybody, so if you are going to be longer than five to seven minutes, if you could just try to summarize and we will put the prepared statement on the record too. And that's not directed at you Nancy. You were right on time. But I just wanted to say that.

And now we're going to Kevin Kamps from Nuclear Information Resource Service. And Kevin, you have a long history here so, please tell us about that too.

Appendix A

MR. KAMPS: My name is Kevin Kamps, and I work for Nuclear Information and Resource Service in Washington, D.C. But I'm from Kalamazoo, Michigan and I'm still a board member of Don't Waste Michigan representing the Kalamazoo chapter.

A-3 How many of you here heard about the near drop of the fully loaded dry cask at Palisades last October? I have a question for folks at NRC. When we were having the hearing in early November in this, down the block here, how come that wasn't brought to our attention? I mean, our, if we have any credibility left in the NRC and in the company, if we had any trust left in the company and in this government agency that's supposed to protect our health and well being and our environment and our safety, it's gone. It's absolutely gone. And NRC's response in the press is, it was not a reportable incident.

A-4 The potential consequences, according to NRC's own documents of that incident, if the cask had dropped into the pool and damaged the pool and drained away the water, there could have been a radioactive inferno in the waste. And thousands to tens of thousands of people could have died downwind. Those are NRC's own numbers. I'm not making this stuff up. So it just is a real betrayal of the public to have on our part, to have taken part in good faith and at that very moment be kept in the dark about something as significant as that. So the outrage we'll try to control to an extent, but it's, it's deep burning at this point in the local community.

A-5 What I'd like to address in regards to this proceeding today is radioactive waste, speak of the devil, and reactor accidents. The NRC says in its Nuclear Waste Confidence decision that a repository for commercial irradiated fuel will open by 2025.

And it's appropriate to bring this up because the Bush Administration yesterday introduced a bill to get rid of any remaining impediments to opening Yucca Mountain. That means public health protections and safety regulations, that kind of thing. Just get rid of those. But the problem is that Yucca's in complete disarray. The last date DOE gave for its opening is 2012. They won't give dates anymore. They won't give cost estimates any more. It used to be \$60 billion, but they won't give that kind of prediction.

So the state of Nevada's challenging this NRC Waste Confidence decision in Federal court. So how NRC can dismiss this issue at Palisades is just really beyond me, especially given the irony that Palisades license is up in 2011, and that's the very year that Yucca will be full. Will have reached its legal limit long before it opens because there will be that much commercial waste in the country, 63,000 tons of it. Quite a bit of that at Palisades, its fair share.

A-6 So from 2011 to 2031 all waste made at Palisades would be excess to Yucca's capacity. So it would continue to sit at Palisades with nowhere to go, unless a second repository's opened, this time in the east. So would that be in Michigan or Wisconsin perhaps? So it needs to be pointed out that Palisades' current dry cask storage pads are in violation of NRC regulations. We raised this during the NRC licensing proceeding on this extension and were rejected. But our expert

A-7

witness on this matter is none other than Dr. Ross Landsman from NRC region three, whose job it was to inspect those pads and the casks on them. And he warned NRC since 1993 that the cask close to the lake, the pad close to the lake is in violation of safety regulations, specifically earthquake regulations. If there's an earthquake, the -- could open up, the lake could pour in, and one of those casks or more than one, could end up in the lake under water. And what could that mean? If water infiltrates the cask there's enough fissile material inside to sustain a nuclear chain reaction. So we could have a nuclear reaction in Lake Michigan.

In another scenario, the sand could open up in an earthquake and casks could be buried under the sand. Overheating could occur. The cask could be damaged. Radioactivity could escape. And it would be a matter of time before it hit the lake. NRC now says in another Orwellian twist that Dr. Landsman's allegations against the newer pad built in 2004, also that it violates earthquake regulations are under review. Those allegations are under review. They have been for years. The incredible thing is that while under review, the storage pad is used for storing waste. More and more waste as time goes on. The cask dangle that happened last October, was a part of that campaign to move dry casks to that newer pad, seven of them.

A-8

So we've got two pads at Palisades, both in violation of NRC's safety regulations, and just yesterday we filed an emergency petition to the NRC to enforce its own regulations and stop storing waste on those pads. So the question is, where is Palisades going to store 20 more years worth of waste?

A-9

In terms of reactor accidents, again I will point to NRC's own numbers. They haven't updated these since 1982, so of course the number of people has grown in this region, the economy has grown in this region, so these damages from a severe accident at Palisades would be much worse now than what's given. But NRC calculated that a severe accident and catastrophic radiation release, and this was a 1982 report, a radiation release from Palisades would kill 11,000 people downwind, injure 7,000 people, and do over \$50 billion in damages. That's 1982 figures, so if you adjust for inflation, it's over \$100 billion now. And of course, if there's a major radiation release from Palisades, that's it for Michigan's tourism, that's it for its agriculture, and that's the reason that our volunteer pro bono citizen's effort to try to stop this 20 year extension has been so determined and will continue to be so at every turn, because we care a lot about the future of this state.

A-10

AUDIENCE MEMBER: And our homes and our families.

MR. KAMPS: Amen. And I'd like to raise a point. In the back of the room, there's a summary of the findings of this EIS and one of them referred to, it's a contradiction with NRC's own report. It said historic and archaeological impacts would be small, but right in the beginning of this report it says that they may be small, but could be moderate for historic and archaeological resources.

A-11

Appendix A

And when you read the details in here, NRC actually verifies exactly what we raised last July 28th at this very podium and again during the licensing proceeding, but we got thrown out of that, that Native American sites very well could exist, very likely do exist, NRC is now saying that, at Palisades, but no site survey is going to be required. They can do 20 more years worth of routine radiation releases. If forced to build new dry cask pads that comply with safety regulations, that could be built right on top of a Native American archaeological site, burial grounds, village sites. It's not exactly far fetched when NRC admits that there are 15 such sites within a mile of Palisades or its transmission lines, including one 0.3 miles away, which I believe is the Brandywine in Palisades Park, exactly what we pointed out here.

So my question is, how in the world did we get booted out of the NRC licensing proceeding on that one? But --

MR. CAMERON: Kevin, can I ask you to --

MR. KAMPS: Yes.

MR. CAMERON: -- give a summary of this? Thank you.

MR. KAMPS: Yeah. Instead of five or seven minutes, of course, I could go on for five or seven days about this stuff. But I'm glad that there's a good turnout today and I look forward to hearing other concerned local citizens.

A-12 | And the last thing I'll say is NRC said that, you know, this license renewal may be granted but there are other factors out there that may end up, you know, deciding whether or not this place will operate for 20 more years. I'd like to say, yeah, there really is. One would be a severe accident at Palisades that would kind of take care of it right away for all of us.

A-13 | But another thing is, this coalition of ours, which is 25 group strong including Michigan Environmental Council, the biggest coalition of environmental groups in the state, 75 of them, 200,000 Michigan residents. The coalition's still growing, and we plan on fighting this at every turn and that's the factor that's going to stop this from happening. Thank you.

MR. CAMERON: Okay, thank you. Thank you Kevin. Ken, could we have you come up and talk to us?

MR. RICHARD: Hello. My name is Ken Richards, and I've been a resident of South Haven my whole life.

AUDIENCE MEMBER: We can't hear you.

AUDIENCE MEMBER: Use the mike.

MR. RICHARD: My name is Kenneth Richards, and I've been a citizen here in South Haven pretty much my whole life. And back when Palisades first went into dry cask storage in the early '90's, we formed a group called Palisades Conversion Group because, basically what they're doing out there is they're boiling water to make electricity and as Ralph Nader said, there's a lot of ways to boil water and make electricity.

So, having worked in two occupations within the nuclear field, laborer for J.A. Jones Construction Company in '71, '72 on the Donald C. Cook Nuclear Power Plant, then at the Palisades Nuclear Power Plant, Decon-Tech for Essential Services Company --

AUDIENCE MEMBER: Louder.

AUDIENCE MEMBER: We can't hear you.

MR. RICHARD: -- during a refueling outage in the '90's, I have seen construction of and then finished plants during tours. The plants then new and impressive, then again many years later aging, much obsolete, often highly contaminated equipment, malfunctioning devices such as the reactor containment hatch door inoperable for some time while I was de-conning when Consumers Energy operated the plant.

B-1

Things get old, dilapidated with time especially when they are neglected. I'm sorry, my glasses, I have to back off to read here. Things get old, dilapidated with time, especially when they are neglected, worn out, under the influence of radiation, outdated or used up such as the Palisades plant's fuel pool, now double racked. Steam generators replaced highly contaminated previous units within their own mortuary on the plant site. Along with approximately 30 V.S.C. 24 and 34 dry storage casks in use for above ground spent fuel assembly storage, also on site.

A cut rate move Consumers Energy Company took when their fuel pool was filled to maximum capacity. Well passed its original design capacity threatening a shut down of the plant. Breaking another promise made when the plant was first built, that no highly contaminated radioactive materials would be on the plant site outside of its high level containment structure. For purposes other than refueling and eventual removal of spent fuel assemblies to a national depository.

B-2

After 38 years of operation, Palisades Nuclear Power Plant and its reservation is showing its age and effects of embrittlement. Its pressure reactor vessel being protected with old, many cycled fuel assemblies, a case in point. Years now, no vessel replacement or further shielding in sight. Or 2007 says the NRC, 2011 say others. 2014 say Palisades' lawyers. This should have been replaced ten years ago. As P.R. spokesman Mark Savage told the local press back in 1993 when the problem surfaced during an interview with the South Haven Daily Tribune.

B-3

Appendix A

Once they finally got to admit, there was a metal condition called embrittlement affecting the reactor.

B-4 One of the biggest complaints from plant critics is the operators have been less than forthcoming when problems surface. Make excuses, rosy predictions they know will never come to pass. Or lie to anyone listening when the information might or will be perceived as contentious, placing public trust in jeopardy.

B-5 Much of the same thing can be said of the NRC during these current rounds of scoping meetings concerning the re-licensing endeavor. Long time followers of this issue have seen or heard it all from a very different NRC under past presidential administrations. The difference between now and say, the early 90's, cannot be denied. This is a very business friendly NRC, not public or environmentally friendly.

B-6 Yesterday I received my copy of the Generic Environmental Impact Statement for License
B-7 Renewal of Nuclear Plants Supplement 27 regarding the Palisades Nuclear Power Plant. Reading through both the manual and its cover letters, I see, despite the potential radioactive hazards, the NRC insists the environmental impacts of the Palisades Nuclear Power Plant and the radioactive materials about its reservation is always regarded as small throughout this report. But when I turn to the alternative energy sources, which should be pursued at the Palisades Plant site, their impacts are often referred to as large. Which all considering, they would be, taking into account the enormity of the electrical power the plant puts on the grid, for alternatives to equal out in their current forms at this site.

A rather particular assumption bracketing both the plant and the NRC's positions well, yet ignoring the simple fact that if all the resources used to continue operation of this plant were put into renewables and other forms of electrical generation throughout the state, it would turn the argument on its head.

B-8 What my real concern here is the fact that the GEIS report does not take into consideration of
B-9 dry cask storage or other highly radioactive contaminated things such as the former steam generators on site. Many would argue the Palisades reservation is already a defacto high level nuclear waste dump. Which to their, our Palisades Conversion Group and my viewing of this issue, a large impact on this fragile lake shore environment. More to the point, potential impact should things not go as planned or designed or promised, which over the last 38 years, time and time again have been broken.

With an additional 20 years worth of above ground dry cask storage, along with other contaminated equipment, which is sure to be replaced should this plant be pushed so far past its original design capacity, which it already has by years now. Counter to the GEIS's insistence that no changes to the plant need to take place in the additional 20 years.

Isn't the reactor head soon to be replaced? In July perhaps? The pressure reactor vessel long in question operated in such a patchwork method since embrittlement was discovered more than ten years ago. How long before it's replaced? Annealed as once promised in court or a neutron thermal shield installed? Or the reactor replaced?

B-10

And yes, dry cask storage casks piling up on site. I'm sure we'll all hear about Yucca Mountain or the Goshutes, Skull Valley Indian Reservation taking all of this off our hands for the umpteenth time in the last 20 years. There are now over 20 to 30 dry casks on site. Will anyone here give us an exact number? Or are you going to just dodge the question again, insisting it's a Federal issue, none of this re-licensing businesses concern.

B-11

This is a local community concern for we will have to live with and care take all of this waste for generations to come. In '93 we were told these experimental, cut-rate dry storage casks would be gone in '98, time and time again by Mark Savage, the plant spokesman.

Now we're told by the NRC, they're licensed to store --

MR. CAMERON: Ken, I'm going to have to, I'm going to have to ask you to summarize. I'm sorry, Ken, we can attach your full statement to the record.

AUDIENCE MEMBER: Go on for years.

MR. RICHARD: Well, you know, you literally could go on for years because this thing has and it keeps piling up a good record for anybody that really takes a look at it.

MR. CAMERON: Okay. Thank you. Thank you very much. Is Mr. Henkel, is it --

MR. RICHARD: Do I hand these to him?

MR. CAMERON: Yes. Why don't you do that and we'll make sure that we get a copy of them as a formal comment for our purposes. But they will be attached to the transcript. So Mr. Henkel, do you want to still talk to us?

MR. HENKEL: My name is Don Henkel. I've had a cottage at Palisades Park Country Club for about 40 years. We're probably about the closest of anybody to the nuclear power plant. Before 9/11 I had many opportunities to walk in front of the power plant, to enjoy the beach area, et cetera. Our park is 100 years old so, both our cottage and myself and the park have preceded the nuclear power plant by a long period of time.

Appendix A

I am convinced that the way of producing electrical power in this country needs a great deal of attention. There's no doubt in my mind that coal burning and so on adds a great deal of pollutants that nuclear energy does not incur. But that's as long as the genie is in the bottle.

And for many years now I've heard on Saturday morning the sirens go off and this rather metered voice, terrible voice comes over, this is a test, this is only a test. And then at the end of that there's a cow-lunk, like somebody's dropped a hammer or something like that on the floor. And I don't think too much about it because I've experienced this for many, many years. But upon occasion I think, well, what if it were not a test. And that's of course when the genie comes out of the bottle.

E-1 One time I was sitting on the deck of my cottage, which is right on the shores of Lake Michigan, a stone's throw from the, from the plant and of course, this was after 9/11 and a no-fly zone was instituted. And all of a sudden a Japanese zero comes zooming down the lake shore there about 50 feet over the water. It of course flew right over the plant on its way up to an old plane show someplace up north along Michigan.

And I thought to myself well, how easy it would be for somebody, a plane to come on, and you know, I was really surprised that the accident report didn't include sabotage and other things along that line. So that's, that's kind of a problem. I'm a boater, and I boat past the plant many times from South Haven down to Palisades Park where the cottage is. And now it's not a no fly zone, but a no boat zone. The parameters of the property are 3/4's of a mile. And I looked at my boat and I said, boy, those casks are so easy. They're right,, right over there. So I think that somehow or another we need to entrust the issues of, of license renewal for just 20 years because we're really looking, according to what I read, 10,000 years down the pike.

E-2 And sooner or later human beings probably are going to make some errors. And with a gas-fired plant, right across the road you can -- facilities, as the Palisades Nuclear Power Plant that I kind of wondered, why in the world don't we go to a plant already on line there, already ready to deliver, as opposed to the aging Palisades Nuclear Power Plant. Thank you very much.

MR. CAMERON: Okay. Thank you Mr. Henkel. I'll, I am going to ask Viktoria Mitlyng who is one of our Public Affairs Officers from Region three to just summarize what the NRC's stance is, I guess, on the crane drop. And do you want to talk to us for a little bit up there Viktoria?

MS. MITLYNG: Good afternoon everyone. Can you hear me? Yes? My name is Viktoria Mitlyng, and I'm Public Affairs Officer for the NRC. From my accent you could probably tell I'm not a native to this country. Originally, I'm from Kiev which is about 40 miles from Chernobyl.

One of the reasons that I work for Nuclear Regulatory Commission is because I can stand here and tell you what happened. In my former country, I couldn't do that. So when Kevin was

talking about the NRC losing credibility because the public wasn't informed about the crane incident, it got me a little riled. My job is not to get riled, but I was.

The inspection reports that include information about all the findings at the plant are publicly available. There was so much information in our inspection reports produced by Resident Inspectors, by Specialists, that it is impossible at a meeting to come for us and give you a summary of what happened. It's not an expectation we can meet. Other we literally would spend our time sitting here and telling you, telling you what happened, or our Resident Inspectors instead of inspecting the plant. That's not possible.

So I'm hoping that if you're interested in what's going on at the plant, you can take a look at the reports that are publicly available. You can call me anytime and I will let you know what is going on and any information that you want provided about what the NRC is doing.

Now about the cask. I'm not going take long. I'm just going to say that the cask was secured in place. It was not an issue of the cask being about to get dropped. It was a procedural error. And that's why the NRC wrote it up, is because the operators were not supposed to manipulate the grade according to their own procedures, and they didn't. I have a picture of the cask if anybody's interested in taking a look at it. And it is not about to drop, to drop and cause a nuclear disaster.

So the very real issues that people are bringing up here that we want to hear about, however, there are certain things that I really wanted to respond to and one of them is public confidence and openness. The information is out there. And our job is to protect public health and safety, and we take it very seriously. I take it seriously for personal reasons, because, you know, half of my family is gone from leukemia, cancer, et cetera. So I would not stand here and tell you anything that's not true because it would be like, you know, shooting myself. There would be no reason for me to be in this country. And people I work with I trust. So that's what I wanted to say. If you want to talk to me further or you want to hear Russian jokes, come and talk to me after the meeting.

MR. CAMERON: Okay. I don't want to get to, I don't want to get into a long running discussion because we have to hear from, from people on this. Okay? We heard Kevin's viewpoint. We heard from the NRC, which I thought was important on this recent event to hear that.

MR. KAMPS: I just got a quote from the very document that Viktoria encouraged me to read.

MR. CAMERON: Okay.

MR. KAMPS: That -- from the NRC. It took several months to get, but I've got it right here. I'd love to read from it.

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MR. CAMERON: Well, let's go through the rest of these people, Kevin, and hear from them. And Kevin is here with a report from the NRC. If people want --

MR. KAMPS: Yeah, I'll just read it real quick. It'll take me 10 seconds. This is an NRC inspection report that Viktoria encouraged me to read.

MR. CAMERON: Kevin, if you, and this, again, is something that is, you know, we don't know what the context is. If you have 10 seconds, let's go 10 seconds from this. I just want to keep --

MR. KAMPS: What is the context? The context is the very incident she just described.

MR. CAMERON: Go ahead.

MR. KAMPS: The NRC Quarterly Inspection Report.

MR. CAMERON: Okay.

MR. KAMPS: Coming out many months after the incident occurred, so we're just supposed to wait I guess. If we wait long enough, that's okay.

MR. CAMERON: Okay. Kevin, go ahead.

A-14 MR. KAMPS: Well, got this through 4F everybody. This is the NRC inspectors writing. Therefore, the on scene inspectors concluded that working outside the bounds of the approved work package and manipulating the brake release on the crane represented an increase in the risk of a load drop, the load being the fully loaded cask on the crane. This increase in risk is directly associated with the reactor safety cornerstone objective of the spent fuel cooling system as a radiological barrier. What does that mean? The pool water could have drained away. What happens then? The waste catches on fire. What happens then?

MR. CAMERON: Kevin, Kevin, you read, you read from that. Okay? And I don't, you know, obviously it is an important issue. The report, you guys can do this later, okay? The report is there for people to read, and Kevin read from one part of it. Viktoria gave a summary of it, okay? And John who's our resident, I don't know if there's a bottom line you want to add to this, but I just want to conclude it.

MR. ELLEGOOD: Yeah, I'd like to conclude this, and we can talk afterwards. We wrote that because you cannot up and manipulate equipment without the proper procedures in place, without the right management oversight understanding what you're doing, without understanding the consequences of what you're doing. In this case, the worker went up there. Prior to going up there he had been briefed. It had been discussed. I have been in the meetings that they would not manipulate any components on the crane. It was to be an

inspection of the crane to understand exactly why the brake engaged, understand if there was any damage at all done to the crane, and understand what they needed to do to proceed to lower the load safely.

The individual up there in communication with an off site vendor decided to manipulate components of the crane and he simply should not have. It's very tough to quantify the change in risk when you've got an individual going up there. I have no idea how far he might have gone, how much he might have slipped. I judge that was an increase in risk. However, at all times there were two brakes fully engaged on that crane. Either one of those could support the full load. Looking through the documentation as to brake failures in cranes, it's about one every 10,000 events for a single brake, probably more than that. Therefore, with two brakes you've figured out is about one to the minus eight. With the guy manipulating it, there's an increase in risk. I don't know exactly how much. Maybe a couple of words of magnitude. One in a million chance. We took it seriously. We wrote a non-cited violation, and we remained observant of the licensee's activities in repairing cranes, maintaining cranes, and in crane operations.

MR. CAMERON: Okay. Thank you very much John, at the plant. And we're going to go back to license renewal now, and we know that there's concerns about these issues so it's important to discuss them. We're going to go to Mr. Dal Monte right now, and then to Mr. Mitchell, and then to Michael Martin. Mr. Dal Monte, do you want to come up? All right.

MR. DAL MONTE: Good afternoon. I am a resident of the South Haven area. I, we select this area for the end of our life. So I retired. I was working in Chicago, and then I came here. And now I have a little time to go overseas. My profession is an Electrical Engineer. I am from Illinois, and today we covered some of my concerns regarding the operating license renewal of Palisades Nuclear Power Plant.

My first concern, and more important I think, is in relation to the spent fuel. Everybody know that right now the spent fuel is stored outside, next to the power plant. So this keeps accumulating and there is a possibility of, theoretically send it to a central, national central depository. But it was impossible in 40 years to obtain or to realize this central depository. And the reason for that is not political. It's not because people are not doing their work. It's just because they, they waste half their -- long, long time, I mean. You have to keep it under control, under storage for at least 10,000 years. So nobody can guarantee that even the more stable place can guarantee that. So this is, if we continue doing that we are going to keep this material in that place forever. That's what we have to understand. I mean, this is a fact.

What, what, why we are scared? Because we are increasing the possibilities of an uncontrolled releases of radioactive material. The plant has a bigger accident and can have uncontrolled releases, but this other thing we're allowing here can also prove to have accidents by sabotage,

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by error, human error, by many things that, one important thing in life is imagination. So with a little bit of imagination, we, we can figure out that this is not way to go. It is not the way to go.

D-4 | Consequently, so I will leave this point for the time being and I continue that in this situation my recommendation is that, I request that no approval of operating license renewal be given unless all existing spent fuel is removed from the site and sent to a national central depository.

D-5 | My second concern is regarding the equipment refurbishing, refurbishing of our equipment. I have low opinions. A plant with 40 years is ready for a good refurbishing. You can tell that, you have done a wonderful job, but I don't believe it. And your report, the NRC is saying that they considered, I don't know, I don't think, this is requested by the licensee, but the NRC I don't know really, what he's, he's going to do, but it doesn't look like he's going to request --

MR. CAMERON: Mr. Dal Monte, you've raised two very important points, but I have to ask you to summarize now. Do you have another important point to tell us?

MR. DAL MONTE: Yeah.

MR. CAMERON: And if you could just state that and then we'll have to go on --

MR. DAL MONTE: Sure.

MR. CAMERON: -- to the next person. Thank you.

D-6 | MR. DAL MONTE: Okay. And my second concern is related a little with the first. The analogy that is used at Palisade has been following -- first. Through the use of a large amount of spent fuel waste, which is highly radioactive and this toxicity for a long time, 10,000 years.

Second, the waste contains plutonium which if enriched could be used in the manufacture of atomic bombs. Third, it is a low efficient use of the fuel, uranium. If continuing with this old technology, the amount of the available uranium in nature could be exhausted in a short time.

The Nuclear Power Industry is in the process of producing a new generation of reactors. General Electric Company, Western Electric Company, Westinghouse Electric Company are doing that using full fuel recycling. These reactors that could be approved by 2015 will not have the above mentioned drawbacks of the old reactor technology.

The spent fuel, the spent fuel in this reactors would be reduced in amount and would require shorter time in storage, 400 years. Therefore a Central depository could be readily found. It would use the energy content in the fuel much more efficiently. The uranium available in nature could last for many centuries. The plutonium in the waste is not usable for manufacture of weapons.

MR. CAMERON: Thank you. Mr. Dal Monte, I'm going to have to ask you to --

MR. DAL MONTE: But, I, I would just to say in regard to this concern, I recommend that any approval of operating license renewal of existing nuclear plants be in moratorium until the year 2015. Thank you for your, for your time.

MR. CAMERON: Thank you Mr. Dal Monte. Thank you very much. Do we have a Mr. Mitchell? Lewis Mitchell? Mr. Mitchell, oops, are you okay? All right. This is Mr. Lewis Mitchell.

MR. MITCHELL: Thank you.

MR. CAMERON: Your welcome.

MR. MITCHELL: My name is Lewis Mitchell. I'm a native of South Haven. We were gone for about 30 years and moved back. I'm retired from this, weekly newspaper publisher. We sold our paper in Illinois and moved back home and found a place out by Bangor, which is directly east of Palisade plant.

I knew about the plant when we bought the place. I wasn't concerned a bit about the plant being there, and I'm still not concerned about it. I believe that nuclear power is one of the best answers we've got to getting power in this country. With all of these other things that have been named, they either don't work fully or they're more expensive and they're harder on the environment. I personally am in favor of the nuclear power. And by the way, I'm also one that says thank god for the atomic bomb, because I was in the 77th infantry division and I saw the coast of Japan that we were supposed to hit. And the reason, one of the reasons I'm here today is because they dropped that bomb. And I'm not the least bit ashamed to say so.

Heard a lot of ifs today. If this, if that, if the other thing, and having been in the newspaper business, I'm a little more inclined to rely on some facts. Not if this happens or if that happens. I've never been in the plant. I've heard people talk about the condition of it. I've never been out there, so I do not know anything about the condition of that plant, whether it's good, bad, brittle or whatever. I'll leave that up to the people that know, the people that are experts. I think the NRC has a whole staff of experts and I'd rather trust them than somebody that's not on the site making inspections and so forth.

Talk about this crane hanging up. I've been around machinery enough to know that there's things like that do happen, and that things can be secured and there's no danger from them.

And this, heard a lot about alternate forms of generating electricity. And I've read quite a bit about it and nothing I have read has convinced me there is a better way. I'm local, sometimes a

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K-5 | lot of these people from far away come in and tell us how we're supposed to do things. I don't particularly appreciate that either. In my opinion, Palisades is safe and I want to see that license renewed.

MR. CAMERON: Okay. Thank you very much Mr. Mitchell. Thank you. We're going to go to Mr. Martin, and then Mr. Norm Knight and Mr. Milan. Mr. Martin?

L-1 | MR. MARTIN: Mark Savage if he was still here can well attest that I've been a gadfly at Palisades for 20 years now. And, thank you, I don't plan to be for another 20. It astounds me that this proceeding can go on like a runaway train in light of the fact that the industry has been allowed to run for 50 years with no high level waste facility, guaranteed or otherwise. Different things about Yucca Mountain are interesting in that they have gone on and approved almost everything that the opponents have suggested, seismic, water leaking into the -- underneath it, and other things. And then most recently, we hear that the original loading of it, if it were carried out would cause overheating and make --, if they were to use it, to have that capacity. And if it had opened 10 years ago when it was supposed to, that capacity wouldn't have taken care of what waste we had at that point anyway. So now it's, maybe a quarter of what we have, if they were to use it. And if they don't use it and the Indian Reservation is brought up as an alternative, it's, it will be interesting to see how the EIS has arranged for that. Maybe there's an -- under it like the Mississippi River for all we know. That sure would be a mess.

And the next part of what I have to say, it's interesting when you go west on the old Route 66 area, we see all the old barns painted with the taverns, and Missouri taverns and Arkansas, and so forth. And it seems back in the early 70's, Oklahoma Power Company decided they were going nuclear. And when they did this, there was a local woman a few miles away who decided that this would not happen and she decided to intervene. She mortgaged her farm, sold her nursing home, and we had quite an interesting intervention on that.

And at the time I worked for a newsman who had been a part of the Manhattan project and went around the country with a brief case locked to his wrist. Had a lot of secrets in it, I imagine. And after that he became an oil well person, drilled a lot of wells. And at the time I was working with him during the intervention and on his newspaper, he candidly admitted to me that he had drilled a well on the side of this Black Fox Nuclear Plant that they wanted to install just east of Tulsa. And when he drilled this well, it went so far until all of a sudden they were drilling into nothing. And they kept adding more divisions to the well, and it still struck nothing. And finally, they just hooked the drill point to a cable and they never did find bottom there. That was where the August nuclear industry was going to put its nuclear plant.

And you've heard of these places where the ground gives away in Florida and stuff. Here's one that could have taken the whole nuclear plant. And as it finally turned out the plant was turned down. They didn't really need that power to begin with. And it's kind of a situation where we're talking about that if we conserved a little bit, we could do without Palisades as well. Thank you.

MR. CAMERON: Okay. Thank you Mr. Martin. Is Mr. Knight here? Yes, Mr. Knight.

MR. KNIGHT: Thank you.

MR. CAMERON: You're welcome.

MR. KNIGHT: I am Norm Knight. I'm from Kalamazoo, Michigan. I've probably been involved with nuclear power more than anybody else in this room. I was involved with the first, dropping the first bomb on Okinawa, not on Okinawa, but from Okinawa to Hiroshima, and three days later on the second one over in Nagasaki. So that I knew these pilots, Mr. Tibbets and Mr. Sweeney on a personal basis and was involved with that for some time.

However, I was released from the Marine Corps and was involved with the studying about nuclear power about that time, and took my training at Edgewood Arsenal in Maryland under a fellow by the name of -- Joe Stillwell, the general from the far east. Since that time I've been involved with pharmaceuticals. I was an Upjohn person. I'm a chemist involved with chemistry. And I can remember one of our -- tests for sodium was to go ahead and mix it with uranium oxide. And then you wait to sodium urinate. Well, that was okay, fine.

But I've been a proponent, and I'd like to thank Mr. Mark Savage for the wonderful job that he's done over there at Palisades. And in the winter time, I also winter out in Arizona. At that point I'm about 20 miles from the Palo Verde Nuclear Power Plant, which is the largest one in the country. It supplies most of the electricity for Phoenix. I have some pictures which I forwarded to Mark Savage, and have some of them here, which involves replacement of the steam generators. These came up, these were too large to come through the Panama Canal, so they shipped them around South America and up through Mexico, and from there they were transported by fazoli trains up to the Palo Verde Nuclear Power Plant. And I still think nuclear power is the way to go. I think today, approximately 70 percent of the power that's distributed in France is by nuclear power. Why we can't go ahead and listen to these people even if we can't speak French. But, I would like to thank everybody here. I enjoyed your program very much. And I'm a proponent of nuclear power, still. Thank you.

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MR. CAMERON: Okay. Thank you Mr. Knight. Mr. Milan? Corinne? Can you just point that at you?

MS. CAREY: Great. We'll do that. In fact, while the other people involved in my presentation come up --

AUDIENCE MEMBER: Can't hear you.

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MS. CAREY: Oh, well, I, just a minute.

MR. CAMERON: And Corinne, it's fine to do a little theater, but we do need to watch the time.

MS. CAREY: Yeah. Oh, yes. We will. Yes.

MR. CAMERON: All right.

MS. CAREY: If the other people involved in my presentation will come up please. The Raging Grannies? And we've invited a few grandpa's in the meantime also.

MR. CAMERON: All right.

MS. CAREY: Yeah.

MR. CAMERON: Here we go.

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MS. CAREY: All right. Okay. Now, we do want to say that one of the important points, and the word I haven't heard, is sustainable. We have not talked sustainable power and energy. And in the 21st century and beyond, we need sustainable power, not the fossil fuel which nuclear is also. There's a limit to uranium involved, so it's about time that we began to think for our great grandchildren. And we have, anybody else? This little guy's going to help us here. This is an adaptation of the Raging Grannies presentations that they have given all across the country in various ways.

Oh, give me a home, where the rivers don't foam, and the squirrels and the chipmunks can play. Where lakes all have fish, you can put on your dish, and the skies are not smoggy and gray. Home, home, on the earth, you're beauty's beginning to fade. We've got to act fast, our -- won't last, our home you just can't throw away.

There's nuclear waste, are inclined to escape, and into the ground they are dumped. We don't want PCB's, in the birds and the bees, and dioxins on our babies rumps.

Oh, give me a home, safe inside the ozone, there is danger in those cosmic rays. Oceans up to our necks, from the greenhouse effect, please don't wash all this beauty away.

And I know that's a silly, superfluous approach. Thank you. I do want to encourage people to find out that radioactive releases from nuclear power plants in the Great Lakes basin, what are the dangers. There are copies of this at that table, and other things. If there's more than one, you are free to take it.

On this table are some other things also. In fact, this gives you quite an interesting map. Some other things, including those thick books, like the one I got from Bruce. Now Bruce is the nuclear facility, I've heard it's the world's biggest. They have, is it nine or 11, reactors in their complex, 50 miles from Michigan. Right across from the thumb on the little pinky finger that sticks out of Canada there. And that is their Yucca Mountain in progress.

Luckily, the wind doesn't very often blow to, on us from the east, so we usually don't concern ourselves with the fact that there, we could be downwind from that. We are downwind. I'm from Grand Rapids, and we are downwind from Palisades obviously. 50 miles was the intervener zone. It goes through Jennison, so I wasn't able to be one of the interveners. I'm another 10 miles in, but that's not far enough if a dangle drops, or any of the kinds of things that can happen in a Chernobyl situation. I would suggest that particularly you pick up one of these. It gives you several interesting articles, including the one that's current about the British report on finding, they call it the Queen's -- Depleted uranium measured in Britain's atmosphere. If it's measured in Britain's, what about the U.S. Who's going to do that? Who makes those studies? Who's going to pay for that? The taxpayers? The nuclear plants? The NRC? How do we know what's going on? I understand one of the problems in our intervener court, court suit is that we don't have specific data from Palisades. Well, who's going to pay for that? Taxpayers? Nuclear plants? Not likely.

Another thing back there at this table is the summary report. And not only is it several pages long, it's based upon U.S. Nuclear Regulatory Commission Freedom of Information Act response documents, and so on. But you can have your very own picture of the cask. So it's back there on the top, stack back there.

I was, I have an encore ready if you'd like.

MR. CAMERON: I heard, I heard no. I heard yes. But thank you. Thank you very much Corinne. Kathryn, Kathryn Barnes? And we're running a little bit late over here, but we'll be done soon.

MS. BARNES: I want to say no matter where you stand on the nuclear issue, if you think Palisades is great and you like nuclear energy, or if you're opposed to it, we're all in the same boat, all of us that live here in this area. And that is that. What happens there is going to affect us. It's not only going to affect us, but it's going to affect our children's children's children. You might be the last person in your lineage if that thing blows because you'll never have any, any offspring with normal DNA, if at all, you survive it. If at all, that you can reproduce.

What happened in Chernobyl was disastrous. Kevin Kamps, who is one of my good friends, brought children from Chernobyl over here. I worked on the U.S., U.S.S.R. Reconciliation Project to stop the nuclearization and the cold war, and we, we were successful. And when I

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see these children from Chernobyl whose beautiful souls with their sunken eyes, and they're severely handicapped, and I see American kids who are bright and bouncing around and having fun, Corinne and I ran the Children's Peace Camp and we had American children and Chernobyl kids. The, the contrast between the children was so immense, yet they're all innocent beautiful little children. The only difference is Chernobyl blew and Palisades hasn't yet.

C-7 And I am convinced that because it's of the geology, the problematic problems, the history, the track record at Palisades, the possibility of terrorism, the probability of increased nuclear waste problems, that it's only a matter of time something's going to happen there. And I don't think the risk is worth it. Even though right now were in that, were in a crossroads. And you can take this day and live in this day forever. You could live here. But if after a disaster, you couldn't.

C-8 And there's so much to lose. It's not just your lives, your children's lives and the possibility of grandchildren, great grandchildren, but it's a life in this area. It's the soil. It's our relationship with Canada. Do you think Canada would every forgive us for the fall out? Do you think that we could ever restore the Great Lakes, our water table, if something happened there? And the, and the, the mounds of nuclear waste got into the Great Lakes that's stored there? I don't think you can get it back people. Not with radiation, and not with the huge contamination that an accident would cause.

C-9 And it was only built for a certain amount of time. The engineers that designed that place built it, they thought it would last that long, and the licensing is, is beyond that point. I believe that so far these band-aids have, people have been very lucky that we haven't had accidents with stuck valves, leaking coolant, all accidents that have happened at Palisades over and over again, they've always been able to fix it in time.

C-10 I know someone that worked inside of Palisades. He said he wouldn't work in the Michigan anymore. He works in another state. I won't mention his name. I won't mention what state he works at, although the NRC and other people have tried to find out. He told me that Palisades is the most likely to blow of all the nuclear reactors in the United States. He said it's a well known fact in the nuclear industry. And I said well why, you know, like at DC Cook I know that for ten years they operated with a cooling system that wouldn't function in the case of a melt down. I said are they trying to cover something up at Palisades? He says no, it's just the way they run things. He says they don't report things. He says there's so much that goes on that people don't know about. He says the NRC doesn't know about it, and I don't know what he was talking about. I tried to get more information out of him. He wouldn't talk, but that bothers me.

And I think that a lot people are in the dark and I'm one of them. And I come here. I take time out of my life, and like Kevin and other people, we're doing this without any monetary reward. We're using our own gas money which is expensive and everything else, and I hope somehow

that something I'm saying makes a difference, you know. That something is going, that somehow that something I say or write or do is going to forestall a big disaster. And I don't know if it, if it means anything at all. I don't know if everything I say is futile, if anybody's listening, if anybody cares. But I know that if it blew, then your little plant that's full of holes, if it blew, that people would understand what I'm talking about because you can't get it back. An acceptable risk, as far as you're dealing with something this big, if you can shut it down, go to natural gas, Consumers Energy is already --, then do it. Why not.

MR. CAMERON: Okay. Thank you Kathryn. We have two final speakers. Alice Hirt, could you join us, and then we're going to go to Paul Harden. And then we're going to ask Rani to just adjourn the meeting. Here's Alice Hirt.

MS. HIRT: Thank you. I'm going to be very brief. I, responding I think to David Miller or whoever said that the consequences of the daily releases into the environment of radioactive nuclides is small, I don't know what small means. I know cells are small. And I know that the newest report by the National Academy of Sciences has said that there is no safe threshold for radiation. Not one bit of it. So how do you determine, this is new information. You didn't have that information when you licensed this plant 40 years ago. So this should be considered in your re-licensing process. It's new information. Are you talking about a small person, or a small cell, you know? I'm a small person and I don't want one of my small cells injured. So I think that information needs to be considered in this license application. So please look at that information.

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Now the other thing is the issue of embrittlement, and the question was have you considered an accident based on the fact that Palisades is quite embrittled. When Palisades was licensed 40 years ago, the issue of embrittlement I don't think was considered because you didn't really know that that's what was happening or would happen. So in my understanding, this is, if there is an accident, the result, as a result of embrittlement, it would be a beyond design accident, if that's the correct terminology. So that's an accident that you're not considering, but that's new information since this plant was re-licensed 40 years ago. So I think you need to look at what would happen if there is an accident as a result of embrittlement, since you didn't know that when you licensed this plant 40 years ago.

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My last thing, in yesterday's New York Times, I don't know if you all saw it, but maybe some of you from the NRC might get red ears when you read this article, because it is, after consulting with the industry, the Nuclear Regulatory Commission weakened security regulations it had proposed for reactors, government auditors said in a report to be released Tuesday. This is a GAO report. The audits said the process, quote, created the appearance that the changes were made based on what the industry considered reasonable and feasible, feasible to defend against rather than assessment of the terrorist threat itself. The report, by the Government Accounting Office, stopped short of saying that the Commission had made changes, quote,

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based solely on industry views. This cozy relationship between the NRC and the industry is what really bothers all of us.

MR. CAMERON: Okay. Thank you Alice. I would just ask Juan if you want to talk to Alice afterwards about the embrittlement issue. And Dave, I think the Draft Environmental Impact Statement might address the -- 7 report that Alice mentioned to us. So if you could talk to her about that.

And finally, I think Corinne or someone put a copy of a Wednesday New York Times article on the table over there that talks about a hearing, a Congressional hearing yesterday that provides further amplification on what you mentioned. Okay.

Let's go to our final speaker. This is Mr. Paul Harden, who's the site Vice President at Palisades.

MR. HARDEN: As Chip mentioned, my name is Paul Harden. I'm the site Vice President at Palisades. I'm also a Nuclear Engineer, so I happen to understand the topics and the issues and discussion here very, very well as we discuss them.

N-1 First, I'd like to focus my comments on the purpose of the meeting, the Draft Supplemental Environmental Impact Statement. And I'd like to commend the NRC on the scope and depth of the report. It's very comprehensive and a lot went into it. A lot of views have gone into it. Nuclear Management Company will also have comments on it. Our preliminary review showed, has come up with no issues of significance, but as we complete the review we will also submit our comments.

N-2 Before I address a few of the facts, I'd like to talk about regarding environmental impact to operating the plant, I'd first like to state that not everyone in the public is ever going to agree on whether nuclear power is a good or bad thing. Not everyone in the public is ever going to agree whether the method that this country has chosen to store fuel is a good or bad thing. The diversity of the people, the diversity of the views, and our freedom to express them, that's part of what makes this country great. So I think it's okay that there are differing views out there. But I would like to address a few facts regarding the environmental impact of operating Palisades Nuclear Plant.

Environmental responsibility is built in to the design, the operation, the management and the regulation of nuclear power plants. There are multiple redundancies. There are multiple levels of safety. There's defense in depth, and there's a regulatory agency that's very, very intrusive into how we do business to insure that environmental responsibility.

The employees at the plant, they're also residents. We raise our children, my baby in the back of the room, here in South Haven and we have a vested interest in also insuring that the plant is

environmentally responsible. We continuously monitor radiation levels at the plant. We continuously monitor the release paths from the plant. That's not all we do. We go on to verify it. We sample soil. We sample fruits. We sample fish. We sample water from surrounding areas as an additional validation that we are maintaining the environment safe.

And there are multiple regulatory agencies, not just the Nuclear Regulatory Commission. There's Environmental Protection Agency, and there's the Michigan Department of Environmental Quality all of which enforce strict regulations and review what we do at the Palisades Nuclear Plant to insure that we are safe to the environment.

Consumers Energy and Nuclear Management Company are convinced that Palisades can be operated safely with minimal impact or adverse impact to the environment. That's why we're investing millions of dollars in the plant in upgrading the plant and the equipment today as we proceed forward with our license renewal process.

We're satisfied the continued operation of this plant is an environmentally responsible decision, and I'm also quite gratified that the Draft Supplemental Environmental Impact Statement has come to that conclusion. And we look forward to a long and prosperous operation and a very safe and environmentally sound manner at the Palisades Nuclear Plant.

N-3

MR. CAMERON: Okay. Thank you very much Mr. Harden. I'm going to ask Rani Franovich to just --

MS. FRANOVICH: Are there any more comments?

MR. CAMERON: No.

MS. FRANOVICH: Okay.

MR. CAMERON: We're good.

MS. FRANOVICH: I just wanted to again thank you all for coming to our meeting. I mentioned at the beginning of the meeting, and I really mean it. Your comments, your participation is really important to our process. It helps us to insure that we didn't miss anything. So thank you for your input.

Excerpts of Transcripts of the Evening Public Meeting on April 5, 2006, in South Haven, Michigan

[Introduction by Mr. Cameron]

[Presentation by Ms. Franovich]

Appendix A

[Presentation by Mr. Bo Pham]

MR. CAMERON: Okay. Thank you, thank you both. Thanks, Rani.

Are there any questions on the review process with the NRC? And please just introduce yourself too.

MS. BARNES: My name is Kathryn Barnes. I have a question. You mentioned biocides. I was wondering what biocides are used at Palisades and for what purpose.

MR. PHAM: I don't have the, I just gave that as an example. I would have to probably get back to you on that on the specific biocides. But that's just an example of, you know, things that are released and the known release into bodies of water if any that we document in the generic environmental impact statement.

I do not have, I don't have the specific on that right now.

MR. CAMERON: And Kathryn, if we have more information we'll get that to you. John.

MR. ELLEGOOD: Just real quick, a lot of licensees use some sort of biocide to limit the growth of clams in service water systems. Palisades is no exception to this in terms of biocides that would be used --

MR. CAMERON: Thank you.

MS. BARNES: Do you know what it is.

MR. CAMERON: Now what --

MS. BARNES: I, I was wondering what kind, what kind of chemical components --

MR. ELLEGOOD: I'd have to get back to you --

MS. BARNES: Hydrocarbons or?

MR. ELLEGOOD: We'll get back to you.

MR. CAMERON: We'll find out specifically for you. Process, did you have something, you don't, okay.

MR. SCHAAF: I don't have the specifics off the top of my head but we, that's one of the things we, we did talk about in the supplement. It, it'll be identified in the supplement to the GEIS and

also those are, those releases are permitted by the State of Michigan and, and the permit includes conditions on which materials are, are able to be released. And at what, what concentrations.

MR. CAMERON: And if Kathryn wants to see the specifics she can find that in the draft environmental impact statement.

MR. SCHAAF: The permit is available in our document management system. The utilities are required to submit a copy of, of their permit when it's renewed. These permits are renewed on a, on a five year basis.

So we can identify the accession number in our document management system if you're interested in that information.

MR. CAMERON: Okay. Thank you very much. Process questions? Yeah, and.

MR. RICHARDS: One of the things, Ken Richards, one of the things I was looking through the manual for was the plant's original decommissioning date. I found decommissioning dates in there but I've always been curious what was the original decommissioning date for the Palisades Plant.

When it was first built we were told 20, 25 years.

MR. CAMERON: Right.

MR. RICHARDS; They'd be building another plant after that. They even worked on it, and it's been like 38 years and now they want to go another 20 years with this. But I'm wondering what was the original decommission date. And I've been all through this thing --

MR. CAMERON: Okay. We're going to try and see if we know that.

MR. PHAM: I don't have, I don't know what the intention was for the original decommissioning date. However, as Rani said in her part of the presentation that when the NRC licenses a nuclear power plant the, the life of the license is for 40 years --

MR. RICHARDS: 40 from that?

MR. PHAM: Yes. And that's, that's also based on economic reasons not on plant aging.

MR. RICHARDS: Well, what does that --

Appendix A

MR. CAMERON: Okay. Can we, we need to get everybody on the transcript. Could we follow up on this.

MR. RICHARDS: Well, when did they issue a 40 year permit? Because I remember back in the late 60s, early 70s they were talking 20, 25 years. Now they're saying 40.

MR. CAMERON: And I think the very simple answer is when we, when we gave this license to Palisades originally what was the length of the license time.

MR. PHAM: The, 2011 is the --

MR. CAMERON: Okay. Carry on.

MR. RICHARDS: That's the current --

MR. CAMERON: All right.

MR. PHAM: We haven't, we have --

MR. CAMERON: Let's, let's, do you have anything else then?

MS. FRANOVICH: That's, that's the length of the license. Now maybe the utility at time has talked about closing before the license ends. Maybe that's the information he has.

MR. CAMERON: Okay.

MS. FRANOVICH: And that would be their decision, it would be a business decision.

MR. CAMERON: Yes, sir and please introduce yourself.

MR. ADAMS: Duane Adams. My question is what was the design during the 60s when, when this was on the planning books. You design a piece of equipment to last a certain period of time.

What was that in that original document and is it in this document that you just issued? Because normally the plants are built to last a certain period of time much like cars are.

MR. CAMERON: All right.

MR. PHAM: I think the answer to that would be that when the plant, the plant was, I don't, I don't think this plant was specifically designed with components lasting a certain period of amount of time.

Everything that the NRC does basically is to ensure the health and safety of the public and so we had ongoing safety programs to ensure that the plants are operated safely.

And part of that is the equipment managing process in which we look at the safety equipment and make sure they're operating and, and they're going to be sustainable throughout the life of the plant.

MR. ADAMS: But there are certain components you cannot look at.

MR. CAMERON: Okay, sir, sir. We need to get all comments on the record and maybe Rani can provide a little bit more on that question.

MS. FRANOVICH: Yeah, with the, with the license being for 40 years the utility may have purchased certain components that may have a life of 40 years or less in which case they replace or refurbish those components to ensure that they perform their intended functions during the extended period of operation.

MR. CAMERON: Okay.

MR. ADAMS: All the components have --

MS. FRANOVICH: No.

MR. CAMERON: Sir.

MS. FRANOVICH: No.

MR. CAMERON: Sir, we need to get you, you know, on the transcript so.

MS. FRANOVICH: Those that may have a design life for 40 years or less may be replaced or refurbished to ensure that their intended functions are performed. That's what we inspect.

MR. CAMERON: Okay. Thank you. Let's go to one other question here and then go to, to the draft EIS.

Yes, sir.

MR. HANNON: My name is Robert Hannon. I just want to, I, I think what the gentleman is getting at is I'd like to ask the engineer, there was an engineer over here. The major components of that plant I think what the guy was trying to get at is anything that's built like that the critical stages of when it's break, it's break in point and when it ages.

Appendix A

And I'd just like to know from the engineer if, if indeed that is, that's correct. Just a yes or no would be fine.

MR. CAMERON: And the question is whether the critical point is the break in period and then in, as it gets --

MR. HANNON: As it --

MR. CAMERON: -- to its end of its useful life --

MR. HANNON: Yeah.

MR. CAMERON: -- aging.

MR. HANNON: Exactly.

MR. CAMERON: All right. John.

MR. ELLEGOOD: What you're thinking of is with components you typically have a infant mortality and, and a life mortality of the component when it fails.

At the power plants they do routine inspection surveillance as preventive maintenance activities on components a lot of predictive maintenance to determine if that particular component is nearing it's end of life and try to replace it for pro actively before it fails.

As part of the license renewal process there was an extensive evaluation of the aging management programs to make sure that they were in place and licensing was doing additional inspections above and beyond what they had historically been doing to find out those types of issues.

For example a pipe a certain wall thickness eventually is going to erode, make sure they have a process in plan to determine the remaining wall thickness and replace that pipe if necessary.

So the answer becomes they had an ongoing program and the license renewal process adds additional inspection activities and aging management activities to replace components before they fail.

MR. CAMERON: Thank you very much, John.

We're going to go to Dr. Dave Miller to talk about the findings in the draft environmental impact statement now. And then we'll go back to your questions.

[Presentation by Mr. Dave Miller]

MR. CAMERON: We're going to get a bunch of questions so if you could just --

DR. MILLER: Oh --

MR. CAMERON: Maybe we won't get a bunch but we'll get some questions --

MR. PHAM: Chip, I just wanted to follow up with Kathy on her question and, and we verified in our document that the State of Michigan does license Palisades to, to use Chlorine, Bromine and Amine as far as their permit for biocides.

MR. CAMERON: And if you could when after the meeting why don't you point out where that is to her so she can see the content. But let's go, thank you, Bo.

Let's go to see if there is questions on the, the analysis on the presentation you just heard. Any, any questions on, on that. Yes. And just please introduce yourself to us.

MS. MORGAN: My name is Jeanise Morgan. I was wondering what does it take to get denied or, you know, the license denied. And has this group ever done that?

MR. CAMERON: Okay, good, thanks Denise.

MS. MORGAN: Jeanise with a J.

MR. CAMERON: Jeanise, I'm sorry. Jeanise, two questions is what does it take for a denial. That means all the different parts of the analysis and what is our history in terms of denial, how do we modify applications that come in.

Bo, do you want to start us off on that?

MR. PHAM: Yeah, the first part of that question what does it take to deny a request is basically the standard that I had, that I put up before is we look at the environmental impact to see if it's large enough to the point where it would be unreasonable for us to leave -- as an option.

Now that sounds like a very subjective measure I realize that but it's, it goes back to for example the hypothetical example that Dave used on the fishery on the lake for example.

MS. MORGAN: Can you give me a real example of one that you denied?

MR. CAMERON: Let him, let him get there and we'll go to that.

Appendix A

MR. PHAM: So that's the answer to the first part --

MR. CAMERON: That's why it's, it's not a complete answer in the sense that that's only the one part of the review the environmental part of the review.

MS. MORGAN: I understand that but I just want an example have you ever --

MR. PHAM: From a, yeah, from an environmental perspective if a resource is impacted to the point where it cannot be sustained is the general answer on that, okay.

MS. MORGAN: Is that --

MR. PHAM: The second part of, the second part of your question has it ever been denied. No, the NRC has never denied. We have, we have returned applications to applicants because of lacking of information or inadequate formatting of the information that they provided us. I remember, the process isn't a go no go process.

The applicant submits their application. We review it for consistency with our standards and if it contains the adequate information that's required per regulation.

Now if it doesn't to the point where it's not, it's not quite at the, you know, at the effort where we should be putting the effort into doing the review without adequate information then we will return it to the applicant and have them look at it again or review it for quality of purpose prior to trying to, to trying to submit such a document.

MR. CAMERON: And Rani, do you have anything to add to that for Jenise?

MS. FRANOVICH: Did that answer your question or are you satisfied with that answer?

MS. MORGAN: I was hoping for a good example of one you might have stopped because it just seems to me there would be one that would need to be shut down.

MS. FRANOVICH: Okay.

MS. MORGAN: And I'm sure you have a lot of years under your belt to say that there would be one that was just so bad it shut down.

MS. FRANOVICH: Well, to tell you the truth when applicant comes to the NRC with a license renewal application they have advanced invested a substantial amount of time and money in putting together their application to demonstrate to the NRC that that plant will be safe to operate and will not adversely impact the environment.

If an applicant cannot do that then they will probably decide not to apply for license renewal because it's costly endeavor.

So if an applicant feels they cannot demonstrate that to the NRC they will not pursue license renewal.

MR. CAMERON: Okay. That, I think might give Jeanise an idea of why a lot of the applications end up being granted --

MS. FRANOVICH: The applications will be typically accepted by the NRC we have returned applications that we felt were not adequate or sufficient for us to conduct our review.

MS. MORGAN: But 100 percent of those have been okayed then? 100 percent?

MS. FRANOVICH: Well, when we, when we get the application we review it. We typically will ask a number, a large number of additional questions. When I was project manager for license renewal for Catawba and McGuire we had 273 requests for additional information.

So the application comes, the staff looks at it. The staff almost always is not satisfied with that which is in the application. So we engage with the, with the applicant to get more information so we're satisfied that continued operation of the plant will be safe.

MS. MORGAN: I guess it's just hard to believe that never one has never been, you know, denied like that.

MR. CAMERON: Okay.

MS. BARNES: Wasn't there two --

MR. CAMERON: We're going to go, Kathryn please just don't just speak out we need to try to get people in turn --

MS. BARNES: I think --

MR. CAMERON: -- and get them on the record and we're going to go to this gentleman over here. Please introduce yourself, sir.

MR. KAUFFMAN: Maynard Kauffman. And I have a question for Dr. Miller and ask if you really want to stand by those figures that you cited on wind energy 125,000 acres for I presume the kind of megawatts the plant currently produces.

P-1

Appendix A

If you, if you, if you do the calculations here I know there's been machines that put out four megawatts each and there could be, you know, maybe you'd need about 200 of them or so to do that and that would be about 500 acres per machine. And that makes it look as if wind is really impossible but it's not. And I think there's a fallacy in there.

MR. CAMERON: Okay. Dave, do you want to address that and we're going to go to, to another questioner.

DR. MILLER: Yes. The, the information I provided to you is in the generic environmental impact statement and you'll see that in the references.

And I would encourage you to provide us as a part of you comments any additional updated information that you might have on that because that is exactly the kind of thing we would look at.

MR. KAUFFMAN: All right, I appreciate that.

MR. CAMERON: Thank you, thank you Maynard. Yes, ma'am.

Q-1 MS. ADAMS: My name is Sandra Adams and I'm curious as to where Homeland Security and terrorism falls in this environmental impact. Are you going to discuss that tonight or are you going to discuss that later?

MR. PHAM: Security is part of an ongoing review process at the plants. So emergency preparedness and security are part of the everyday items that we look at at the NRC. And there are processes in place that look at the adequacy of the security of the plant. So therefore it's not part of the license renewal process. So we look at more than aging management of equipment. And in our case our team looks at the environmental impacts of it.

And so no we will not address that tonight because it's beyond the scope of --

MR. CAMERON: And as Bo pointed out and I think Rani did in her presentation it's considered an everyday issue that we need to look at. Yes.

MS. ELLIGIN: My name is Mary Ann Elligin. I'm with the Michigan Department of Environmental Quality and to answer, was it Jeneane,

MS. MORGAN: Jeanise.

MS. ELLIGIN: Jeanise's question we had Big Rock Point out just a couple years ago. They went through this study prior to putting it down to the NRC and submitting it and they decided they could no longer operate under this kind of condition.

And so the plants themselves are wise enough not to pay to go through the NRC process and to take themselves off.

MS. MORGAN: Yeah, I knew about that.

MR. CAMERON: Okay. Thank you, thank you very much. Let's go over here. Yes.

MS. TIDWELL: Hi, I'm Carol Tidwell. I just have a question about the Argonne National Lab. Is that related to the government? Is it part of the government --

DR. MILLER: Argonne National Laboratory is one of a number of national laboratories. The, the structure is such that the Department of Energy owns our facilities but we are operated under contract to the government by the University of Chicago.

Other labs are operated by other consortiums typically universities but sometimes they're corporations of some sort.

MS. TIDWELL: So is there, is there a private not connected to the government agency that reviews these plans/

MR. PHAM: Yes, actually we are using a contractor Earthtech that is doing the review for one of other plants as well.

MR. CAMERON: And you might want to note that whenever, for any contractor that we use to help us with this there is a specific conflict of interest review that has to take place to make sure there's no conflicts between who is doing it and the work they're doing. So is that right, Bo?

MR. PHAM: Yes. The answer is yes we are using commercial contractors.

MR. CAMERON: Okay. Did you want to add anything, Rani?

MS. FRANOVICH: I just wanted to affirm what you said, Chip. We cannot use a contractor that is for example engaged in doing work for the very applicant that has requested license renewal.

MR. CAMERON: Okay. Let's to Mr. Hannan and then Kathryn.

MR. HANNAN: I, you mentioned the amounts of radiation that are admitted or released annually was small. Does radiation accumulate in the body over time? And has anybody ever tested people who live in Covert medically to see the amounts of radiation that, that are in their bodies?

Appendix A

MR. CAMERON: Okay. Two, two good questions. And one of them is the accumulation and the second one is whether there has ever been a health study done --

MR. HANNAN: Yes.

MR. CAMERON: -- on, on radiation here.

MR. PHAM: I'm going to try to answer this man and Rich can help me in the back there.

But to answer the question yes radiation does accumulate in the body. The amount of radiation released from the plant is in our definition per the EPA standard. We don't look at specifically at the content but at the dose that's received from the population and that's the standard we're, we're looking at.

The second part of your question I believe you were asking is anybody looking, looked at the accumulation, Rich, which could you provide additional information on that.

MR. CAMERON: Okay.

MR. EMCH: Yes, I'll be happy to. My name is Richard Emch and I'm a health physicist and I work for the U.S. Nuclear Regulatory Commission.

To get back to the first question, sir, about, about accumulation in the body. Yes, there is, there is some chance of accumulation in the body. And in fact there are certain radio nuclides that you have in your body all the time no matter how far away from a nuclear power plant you live, okay.

In addition to that though I wanted to point out the dose models that are used where we calculate doses and let's say you receive a certain amount of -- or something like that from the plant the dose models that we calculate have what we call a 50 year dose commitment.

In other words we're saying when we calculate the dose we're saying the dose that you're going to receive from this amount of radioactive material, we're, we're estimating what that dose is going to be over a 50 year period.

We're assigning it all in the one year but it's estimated over a 50 year period.

The second question I believe was about health effects about monitoring of health effects.

MR. CAMERON: And whether there's ever been a study of health effects in Covert --

MR. EMCH: In 1990 the, the Congress commissioned the National Cancer Institute to do an evaluation of, of available data about cancer incidents around nuclear power plants. And then they also looked at control, what we call control counts and Palisades was one of the plants that they looked at.

And the conclusion was that they saw no increased incidents, no, no evidence of increased incidents of cancer from living near a nuclear power plant. And that includes Palisades.

Beyond that what I would like to point out and I'll give you an example of why that's the case.

Earlier Dave said that the doses from, were very small. In reality the doses are less than 100th of one milligram per year maximum dose for an individual living or working near a power plant.

For usefulness of comparison the standards, the EPA standard is 25 milligram per year from the entire fuel cycle. The, if you go to the dentist and get dental X-rays you're probably looking at 5 to 20 milligram. You take a cross country flight you're probably looking at 2 to 5 milligram. Just by being an inhabitant of planet earth you're getting in the neighborhood of 300 milligram a year from all sources including radon.

So you can see that the doses, the difference in doses here we're talking this much versus this much.

That's, that kind of thing is not going to show up in health studies. And so as far as I know there's been nothing specific done in Covert.

Now we did talk to the state agencies to, to the State of Michigan about this and they indicated that they were aware of no problem. So we did look at that as well.

MR. CAMERON: Great, thank you. Kathryn. Let me get you this microphone.

MS. BARNES: Yeah, two things. First of all I believe that there was a couple of the reactors in the State of Maine. The Yankee Row and another one that were trying to get re licensed and they were denied a re licensing. And also I have heard, read that the level for nuclear power plant workers is higher as if they're super human. In other words their level for milligrams per year is higher than an average person.

And I also read that the, the standards for how much, how many milligrams per year a person can have was increased. And I wonder how that's justifiable. I don't believe there their physiological beings are any different than anybody else's. So two things.

MS. FRANOVICH: Actually I counted three.

Appendix A

MR. CAMERON: Okay. And the first one in terms of --

MS. FRANOVICH: Yankee Row and --

MR. CAMERON: -- Yankee --

MS. FRANOVICH: Yankee Row was considering license renewal back in the early to mid 90s before we actually even finished our rule and realized that they really could not demonstrate that the plant could be run safely. It didn't generate a large number of megawatts.

And so they made a business decision to not go through license renewal. In fact I think they actually shut down and are decommissioning.

As far as Maine Yankee goes they did not ever file for license renewal either. They also decided to shut down the plant. It was a business decision. They did not produce a lot of electricity to, either. And so they decided to shut down and they are decommission those, that plant.

So no those plants never did come in for renewal. One of them I know did consider it and decided for economic reasons not to.

The second question or second comment.

MR. CAMERON: Question is the standards for the radiation doses that workers at a plant can get, are --

MS. FRANOVICH: It's a different standard --

MR. CAMERON: -- higher than the standard for the general public is, is what Kathryn was saying --

MS. FRANOVICH: I believe that's the case --

MR. CAMERON: -- is that, is that true and why. Do you want Rich to do it or do you want to do it?

MS. FRANOVICH: I'm going to let Rich comment on that but I think she also made an assertion that they receive higher levels than the general public.

MS. BARNES: No, that the level was increased for the general public --

MS. FRANOVICH: The standard was increased.

MS. BARNES: Yes.

MS. FRANOVICH: Okay, Rich.

MR. CAMERON: Okay. We got an answer over here, Kathryn. Richard.

MR. EMCH: Okay. I'm a little confused. I'm going to try it and if I don't quite get it you let me know, okay.

I am not aware of any increase in radiation standards for either members of the public or for occupational workers ever. I, I don't ever remember seeing that. Occupational workers are limited by Part 20 to five rem, I was talking earlier about millirem. Now I'm taking rem, five rem per year for an occupational exposure limitation.

And as I said before the 10CFR, I'm sorry 40CFR190 which is the EPA regulations, we have a set of regulations ourselves but they're, but they're supposed implement the, the EPA regulations.

The EPA regulations are, must be less than 25 millirem to any member of the public from the entire fuel cycle and that includes Palisades or, you know, if another plant was nearby it would be both plants are included.

Did I cover what you were asking? I'm not sure I did but.

MR. CAMERON: Why are they higher?

MS. BARNES: So there is, there is a different standard, there's a different standard?

MR. EMCH: There's a different standard for members of the public and for --

MS. BARNES: Right.

MR. EMCH: -- occupational, for workers yes.

MS. BARNES: Right. They're stand, they can tolerate supposedly more radiation than average people.

MR. EMCH: Actually in fact biologically no. They're just very healthy members of the public, okay. And, and in fact a member of the public could get five rem and you would probably see no, no health impact on them either, okay.

Appendix A

But the belief is because the worker makes a conscious decision to work at the plant and, and undergo whatever risk there is just like working at, if you're a fireman or a, or a policeman or whatever there's certain risks inherent with your job.

But occupational worker like at the plant makes a decision that he's going to incur those risks, okay. The plant does a good job of trying to make sure that he gets a very low dose.

When we're talking about members of the public that's a different story. You folks aren't volunteering for anything in terms of radiation exposure so that's why the standard is so much lower for members of the public.

MR. CAMERON: Okay. Thank you. And I just want to go the State of Michigan to add anything that she wants to on this. We're going to take a couple more questions and then we're going to go to Bob Palla so we can hear about the severe accident aspect. Go ahead.

AUDIENCE: I just want to back Rich up. As a radiation worker I have protective clothing and I also have other protective features that we have available to us. These are not available to the public. So politically we have determined that the public needs a lower dose because you are not aware of what you can do to help your dose. And you're not aware of that you're getting the dose.

So the State of Michigan chose an even lower one than the DPH standard and we have our own administrative limits for our public.

MR. CAMERON: Okay. Thank you. Thank you very much. Let's go over here and then Ken and then Maureen. Go ahead.

R-1 MR. ADAMS: Wade Adams. I have a couple of questions actually. One goes to the lady over here. It's my recollection that Big Rock went, went into service about 1959 or 60 about 11 years before Palisades. And it's my recollection that Big Rock has not been running really as a power plant for some number of years here now. And it's got a lot of trouble.

So that means that if you go ahead and, and renew this you'll be, this reactor will be far exceeding the line time of the Big Rock Plant in terms of production.

R-2 My second question is to the health scientist. Is there any level of radiation where you cannot achieve an increase in incidents of cancer.

It is my understanding that there is a linear relationship and there is no threshold between the incidents of cancer and your exposure to radiation, the lifetime.

MR. CAMERON: All right. I don't know what we can say about the Big Rock comparison to, to this plant. I don't think we'll be able to say anything about that.

But, Rich, can you talk about the, the, you know, the linear no dose threshold and maybe you can go up there and do that and then we're going to go to this young lady here and over here and then we'll go back to a presentation.

MR. EMCH: It wasn't actually part of what I was supposed to answer but I think you're, you're assumption is correct, sir, if the, if the, if Palisades is granted a renewed license I'm sure they will operate longer than Big Rock Point did.

MR. CAMERON: Can --

MR. EMCH: I'm sorry, can you not hear me?

MR. CAMERON: We want to go to the --

MR. EMCH: To what I'm really up here for?

MR. CAMERON: Yeah.

MR. EMCH: Okay. Fair enough, all right. Yes, sir, you are correct. And in fact the NRC does stand by what's called the linear non threshold theory. You've seen it probably in a number of places. It was mostly recently reconfirmed in something called the BIER 7 report which I earlier today somebody mentioned to us.

And basically this theory is that there is, that there is some but there is no actual threshold that this is some amount of risk associated with any amount of exposure. Okay, very simplistically, okay.

What I was, and, and the NRC follows that, that theory as do most of the, the low radiation protection community does. And, and that's part of why the, the, those limits that I was talking about for the public are as low as they are.

Earlier when I said that there was I think I think I mentioned something about no recorded or no health effects below five rems or something like that I was talking about things that had been reported or things that had been found in the studies.

But again back to the very basic philosophy. The NRC's philosophy, the NRC's theory our, our regulations are based on the concept of a linear non threshold theory, yes.

Appendix A

MR. CAMERON: Okay. Thank you and there is a discussion of the BIER 7 report in the draft environmental impact statement.

Do you have a quick follow up, sir, because we really need to move on.

S-1 AUDIENCE: Well, I wondered if I, I presume that you couldn't calculate an increase number of cancers that would develop because of the increased exposure to radiation in the locality of this plant.

And second the study you cited that was commissioned by the National Cancer Institute was a bonafide epidemiology study that, that really looked for a hot spot.

MR. EMCH: What they did was they looked at all of the available data from various counties, the counties where these, where these plants were located, control counties that, that would presumably not have any effects from them and that we can certainly give you that information.

It's, it's full of information like, I don't want to get into it because it actually, some of it I have trouble understanding.

But I'm a health physicist not an epidemiologist, that's why I have some difficulty with part of it.

I'm sorry, what was the, there was another part of it or? Oh, yes, yes.

Actually these the, the international committees like the international, I can never remember, it's commission and radiation protection, I believe it is, they have, there's a publication ICRP-60 that does have coefficients that you can, that you multiply these coefficients times a dose.

If you say this person got a certain dose you can calculate it times those coefficients.

Now if you took, those coefficients are really intended to be used for population dose. But if you took those coefficients and multiplied them times a number like .01 milligram per year it's, it's not worth doing. It's so small.

MR. CAMERON: Okay. Thank you, Rich. Yes.

T-1 MS. OVERHEISER: My name is Liz Overheiser and I have two questions involving the last point on the board there.

That includes, well, yes I guess, all of, and when you consider those solar and wind power would that be like a centralized like field of windmills and --

MR. PHAM: Yeah. The, the model --

MS. OVERHEISER: -- sun panels.

MR. PHAM: Again the modeling assumption, can you hear me okay.

The modeling assumption is that Palisades produces a certain amount of megawatts right now, 780 plus some change.

The, so what we look at as an alternative is a, that we're going to replace that we need something to provide the same capacity.

And so whether the, the wind farm is separated into several different areas or all centralized in one location. The bottom line is you, we have certain, some [thumb]rules that we have for X amount of, a certain number of, of megawatts per acreage for the wind farm production.

So in the end aggregately you're going to need that much acreage, you know, even if it's in one place or all separated.

MS. OVERHEISER: Well, I'm --

MR. CAMERON: Okay. Do you want to a follow up there, go ahead.

MR. OVERHEISER: I'm worried about like the environmental effects. Is that moderate or large considering that it would be all in one place.

MR. CAMERON: And there's a, there's a good, a good point is that conceivably there would be different environmental effects depending on whether it was centralized or decentralized. Good comment also but Dave can you talk to, to that in terms of how we considered that in the draft? Thank you.

DR. MILLER: It, it does depend on what alternative source you're talking about. Now for instance the gas, coal, they have to be in one place to replace that base load.

The, the combination of alternatives that we look at which would mean drawing from more than one single source to make up that amount would therefore be a smaller incremental part compared to the overall whole.

I hope I'm getting to your question. Because, because the impacts then are looked at. So for the one where you'd need a coal plant on an entire site that would look at consuming that entire site.

Appendix A

For the kind of individual piecing together of different sources of energy then it's fractioned by the amount they contribute. So that's how the impacts are evaluated. Does that get to what you're after?

MR. CAMERON: And maybe, maybe we should also consider that as a comment.

DR. MILLER: Yeah, I was about to say --

MR. CAMERON: Yeah, okay --

DR. MILLER: -- I mean that's something we, we are going to take away with us today. It's a simple answer and current modeling in what we looked at in alternatives. Yes, it's all collectively or is all centralized in one location.

MR. CAMERON: Okay. Let me, let me try to, I know we have two people here we haven't heard from, from you. So let me, let's just do some, try to do this quickly so we can get --

MS. ANDERSON: Elizabeth Anderson. I would like to ask Rani this question. You know, because -- if you really feel that a place should be shut down are you allowed to deny the license renewal or are you only allowed to give recommendations?

MS. FRANOVICH: If we feel that a plant needs to be shut down license renewal is not even a consideration. We will issue an order to shut them down when we feel it is necessary.

License renewal is should they extend operation from the end of their current term, which is a 40 year terms, for another 20 years.

If we have a concern about utilities performance today to the point where we're not comfortable with letting them continue to operate we won't wait for license renewal to take action.

MS. ANDERSON: This recommendation --

MR. CAMERON: The NRC is not an advisory body. They're a regulatory body and if the regulations are, are violated and the plant needs to be shut down we have the authority to --

MS. FRANOVICH: We have the authority to issue an order to shut the plant down. We have a number of other tools in our toolbox to either impose additional requirements if we feel that there are safety issues at the plant and to enforce existing requirements to demand information.

I mean we're a regulatory agency. We, we determine whether or not a plant is safe enough to operate. And if we don't think that they're safe enough to operate irrespective of license renewal we will take the actions that --

MR. CAMERON: Okay. Thank you for that question too. And Ken and then with Corrine and then Bob are you ready.

MR. RICHARD: I have a quick one for the health risk physicist. When you were answering her question you were -- alpha, beta, gamma radiation like it was altogether, it's all the same thing. And now you're talking about normal background; can you explain to me the difference between alpha, beta and gamma radiation

MR. CAMERON: We have them, we have them behind you right over here. Okay, Rich, you got a question, right?

MR. EMCH: Yes.

MR. CAMERON: Okay, good. And Corrine we're going to go to you and then we're going to go back to presentations.

MR. EMCH: As you pointed out, sir, there are a number of different kinds of radiation alpha, beta, gamma and neutrons. Actually if you look at some of the documents you'll find that we even attribute a different quality of factor to fission product fragments.

MR. CAMERON: Speak up, Richard, if you can.

MR. EMCH: Okay. And all, I mean all this is when, when I'm saying a dose I'm usually talking in terms of the whole body or total body dose, okay.

But we do also look at organ doses. We look at internal, you know, doses taken through ingestion and through inhalation. And, and when we do that that's when you really start, that's when the ones like the alpha and the, and the beta really start to come into play because they're really not dangerous at all outside of the body but once they get inside the body they can be, yes.

And those are included in the dose models, yes, sir.

MR. CAMERON: Okay. Corrine.

MS. CAREY: Yes. Regarding the screen that is showing up there. Which one of those is insignificant? Small, moderate, large. Because time and again I keep hearing reference to impact is insignificant.

MR. CAMERON: Can you just give us, why don't you discuss the individual items and explain those very quickly to Corrine and I think it will be obvious, Dave.

Appendix A

MS. CAREY: I wanted a specific answer --

MR. CAMERON: Right.

MS. CAREY: -- and I wanted to know if significance is a matter of a cumulative situation like radiation is itself and if so at what numerical point does insignificance become significant.

MR. CAMERON: Okay. We got a little bit more information on what Corrine's question is with that. Do you think you can --

DR. MILLER: I think I can.

MR. CAMERON: Okay.

DR. MILLER: And Corrine help me --

MR. CAMERON: Good.

DR. MILLER: -- if I don't get it.

MR. CAMERON: Okay.

DR. MILLER: We try to be very careful not to call anything insignificant in our evaluations. In fact we try to stick because of the definitions I provided earlier to small, moderate and large.

And if I use the term insignificant anywhere I, I should be corrected. But I, I hope that I didn't. I don't think I did.

In terms of quantification there are elements of these that simply aren't quantifiable but we use weight of evidence and multiple lines of evidence to come to the conclusion about whether it's a small, medium or large.

And we use those definitions that I had provided earlier and we would skip back to them if you like. That, that, to look at the impact to the resource that we're concerned about and, and in essence the semi quantitative magnitude of that impact.

MR. CAMERON: Okay. And if, if Corrine needs further information please, please talk to her. Bob Palla. Thank you, thank you both, Dave and thank you Rich and Rani. Bob.

[Presentation by Mr. Bob Palla]

MR. CAMERON: All right, thank you.

MR. PALLA: -- questions.

MR. CAMERON: Thank you. Any questions on SAMAs at all? Okay. We have one question, two questions and then we're going to go on to Bo for a wrap up so that we can get to you all for comments. And this is Kathryn.

MS. BARNES: Yeah, if you could give me an example of a severe accident that might happen and the SAMA that you would procure for it just as an example such as what would happen during a meltdown with the embrittlement issue.

MR. PALLA: Well, I'm, I'm not going to give you an example of an embrittlement issue because it doesn't, it doesn't really tie in very well.

But I guess an example that may be a little easier to understand is just that if you, if one looks at the risk profile of the plant, meaning the different types of sequences or scenarios that could lead to core damage one that always seems to get a lot of attention is called the station blackout sequence.

Basically you loss, it's a loss of offsite power. The plant is equipped with several diesel generators. In this particular type of an event they would fail. They fail to start or they fail to run but they are not available so the plant is basically sitting there without any power to, to supply the pumps.

So the way that this could be covered through SAMAs, and I'm, I'm flipping pages here just to find the ones that are applicable.

One of the SAMAs, SAMA 10 it's described in more detail in Chapter 5 and in Chapter, in Appendix G but this SAMA would involve modifying turbine driven auxiliary feed water systems so it can be operated indefinitely without AC DC or pneumatic support.

So basically by implementing that SAMA the plant would be able to continue to supply water to the steam generators which would remove heat from the reactor core.

This could be sustained for, for several hours and in the meantime in, in PRA space we always look at recovery of offsite power and there's a, there's a curve that describes the probability of recovering as a function in time.

But if you can extend the ability of the plant to cope with these station blackout events for, for several hours you increase the change of recovering power. And so then at that point the main line front, front, front line systems would be available and --

Appendix A

MS. BARNES: Is that with a --

MR. CAMERON: Okay, yeah. Let's, let's go to this gentleman here and then maybe you can get more into those examples with Kathryn after the meeting because it is, it seems very complex. But you did a good job of providing a simplified explanation.

S-2 AUDIENCE: Have you factored into your considerations the impact of an earthquake. And the reason I ask that is that, well, we don't have earthquakes here really. The largest earthquake in the continental United States occurred in the Midwest in the early 19th century. That could happen again. Have you taken that into consideration --

MR. PALLA: Yeah --

AUDIENCE: -- in your computations.

MR. PALLA: -- within the, I'll explain how we handle that and --

AUDIENCE: And that regards to both the reactor and as well as those waste storage containers that are sitting there on the shore of Lake Michigan.

MR. PALLA: Okay. So --

MR. CAMERON: Okay --

MR. PALLA: I'll, well, I'll begin by saying we did not look at the waste containers in this, in the, it's not in the scope of the SAMA analysis.

What we looked at is the impact on the plant. We, the way that this [was] done we have a probabilistic safety assessment that looks at internally initiated events. This is what I referred to as the PSA.

And then there, in the early to mid 1990s all plants were requested to perform an individual plant examination for external events. And this is done via a generic letter from NRC. It's not, it, it basically required every licensee to look at the, the vulnerabilities of the plants to external events in, including seismic events.

So those, the insights from the, that study were brought to bear in the process of looking for potential improvements to the plant. So we, we, we have quantified estimates in core damage frequency for internal events, we have some estimate of approximately how much a seismic event contribute relative to what an internal, internally initiated event would contribute.

And as part of this study we did in fact identify one seismic related change and there's a SAMA that involves replacing some under voltage relays with seismic requalified relays that these, these relays were judged to be a, kind of a soft spot so to speak in, in the design.

So this was an improvement that was identified specifically for seismic.

AUDIENCE: But what was your --

MR. CAMERON: Okay. Thank you.

AUDIENCE: -- decision on the --

MR. CAMERON: Sir. Now let's go to a quick follow up because we really need to move on so that we can hear from all of you. Go ahead.

AUDIENCE: I would like a quick question as to what sort of seismic event did you assume in this calculation. In other words on a Richter scale. And second why wouldn't you include the waste or the spent rod storage in this calculation because I don't think we can count on, on Yucca Mountain coming online because as I understand it there have been some conflicting information that's been presented on the Yucca Mountain situation and that might not be approved for many years.

S-3

MR. CAMERON: And Bob can you try to put this into a little bit of perspective --

MR. ELLEGOOD: Let me --

MR. CAMERON: -- just because, John, can I just finish, thank you.

Just because the spent fuel pool or the dry storage and this may be where you're going, John, isn't considered as a SAMA doesn't mean that the NRC isn't concerned and take account of seismic in terms of that. And, John, go ahead.

MR. ELLEGOOD: Let me answer the seismic question for you. The entire plant is designed to survive seismic events. The earthquake for Palisades for safe shutdown or designed basis is a point 2G earthquake. That's not characterized in terms of the Richter scale because the Richter scale is more of a energy release during an earthquake and for seismic analysis it doesn't provide the right type of scale to use for the design activity.

In terms of how frequently are you going to get that size of an earthquake here that's going to be about every 15,000 years you would achieve an earthquake of about .2G which is the design basis earthquake.

Appendix A

The plant was designed for that as well as the original storage pads were designed for that size of an earthquake.

Does that answer your question.

AUDIENCE: Well, I guess I don't understand how you can say it's 15,000 years for this part of the Midwest because new information suggests that it's a rebound of the land --

MR. CAMERON: Okay, I think we've --

MR. ELLEGOOD: It comes from a series of government studies that calculated that particular turn frequency.

MR. CAMERON: And we really need to, to move on and if you can provide more information to, to that gentleman offline fine. But, Bob, thank you.

MR. PALLA: You don't want me to say --

MR. CAMERON: Do you, did you, did you want to add anything more?

MR. PALLA: Well, what I, what I would add is that from the risk point of view what we would look at in, in contrast to a specific G value for the design within a seismic risk study you look at the whole range of potential seismic levels. And it's, it's called seismic hazard.

Obviously you could postulate extremely high G levels but the probabilities of those things are correspondingly much lower. And in this individual plant examination that I spoke of this seismic analysis that, that I spoke of it relies on, on the seismic hazard curve for the site.

And you, you look at the ability of the various components and the structures to be able to withstand that, the, the spectrum of, of the loads. And at some point they don't, they would fail and, and this is all solved in a very complicated matter.

But the end result if you, you end up with some components that are generally thought to be the, the lowest prone to fail and they might give you the, via the greatest interest for looking at them in terms of reducing risk.

So we did go to the individual plant examination. We used it to help identify seismic related fixes that would have the greatest impact on risk.

MR. CAMERON: Great. That, I'm glad you added that seismic hazard curve that looks at different G factors and probability. All right.

MR. PHAM: I'm sure Bob is available afterwards, sir, if you want to address the question some more.

MR. CAMERON: Okay. Bo.

MR. PHAM: Okay. So Dave and Bob has, have gone through the details of our analysis and right now I'd like to turn us to the conclusion in which we found as David and Bob both mentioned that the impact of license renewal are small in all areas.

We also concluded that the alternative actions including the no action alternative may have moderate to large environmental -- impact in some categories.

Based on these results our preliminary recommendation is that the adverse environmental impacts of license renewal for Palisades are not so great that it is not unreasonable to preserve the option for license renewal for the energy planning decision makers.

This slide is a quick recap of where we are right now. We issued the draft environmental impact statement for Palisades on February 14th, 2006. The comment period for the draft ends on May 18th, 2006. There are regulations require a 40, 45 day period from the issuance of the draft until the, until the closing of the comment period but we actually build in a 70, at least a 75 day period there.

So we expect to issue the final impact statement around October time frame of this year.

And then this slide identifies me as your primary point of contact with the NRC awaiting preparation of the environmental impact statement for Palisades.

It also identifies where the documents related to our review may be found in the local area at the South Haven Memorial Library.

The documents are also available online at the www.nrc.gov website.

And in addition as you came in today you were asked to fill out a registration card. If you included your name or address on that card we will automatically mail a copy of the draft and final environmental impact statements to you.

If you did not fill out a card I encourage you to do so as it, it's a good opportunity for us to include you in the part of the public outreach process that we have for the review.

And if you need to register please see Christina or Laura out front would be your best.

Appendix A

In addition to providing comments at this meeting there are other ways you can submit the comments for our review process. You can provide written comments to the chief of rules and directives branch at the address on the screen. You may also make the comments in person if you happen to be in Rockville but for many of you that's not the case so we provided an email address for Palisadeseis@nrc.gov.

All of our comments, your comments will be collected and considered.

And this concludes my remarks and presentation.

MR. CAMERON: Thank, thank you very much.

MR. PHAM: Thank you all again for coming.

MR. CAMERON: And thank you, Carl, those, those were very very good questions.

We're going to go to the comment part of the meeting so we have an opportunity to hear from you and we're going to go first to Mr. Tom Tanzos who is the chair of the Van Buren County Board of Commissioners. And after Mr. Tanzos we'll hear from one of his colleagues Richard Freestone and then Mr. Wayne Radell Covert Township supervisor. And this is Mr. Tanzos, the chair.

MR. TANLZOS: Thank you.

MR. CAMERON: Thank you.

MR. TANLZOS: I'll use the microphone. My name is Tom Tanzos, county commissioner. I represent South Haven Township, South Haven City and the northern half of Covert Township which includes the plant.

I'm also the chairman of the commissioners for Van Buren County.

U-1 | On March 22nd we did pass in 2005, we passed the unanimous resolution in support of the license renewal of the nuclear power plant and I will submit that as a certified copy to you.

U-2 | One of the things even though you might see it was an economic decision for the County, for the Township and the area, yes, these are all true benefits of having the plant in our area.

U-3 | But if there was any concern that it was harming the environment or the residents of this county or this area we would not have taken such action.

So I would like to present this to you and on behalf of the Board of Commissioners that we unanimously support the license renewal application.

Thank you.

MR. CAMERON: Okay, thank you, Chairman Tanlozos. And we'll attach this to the transcript and also have this as a formal comment on your record too. So, Ron, I'm just going to give this to you right now.

How about Mr. Freestone. Is he still here?

MR. FREESTON: I don't have anything additional to add to what Mr. Tanlozos said. I'm also a county commissioner and support the renewal license.

V-1

MR. CAMERON: Okay. Thank you, Mr. Freestone.

Mr. Radell. Covert Township supervisor.

MR. RADELL: Yes. My name is Wayne Radell and I'm the supervisor for Covert Township. Covert Township has supported Palisades Plant since its inception in 1965. The plant's very location is a direct result of the township's encouragement to construct and operate a nuclear plant in this area.

W-1

Consumers Energy, it's predecessor, Consumers Power and the plant's current operator Nuclear Management Company have been good stewards of the environment. At no time since the plant's beginning operation in December of 1971 to the present has posed any threat or danger to the residents of Covert or the surrounding area.

W-2

The Covert Township board has officially gone on record to support Palisades license renewal activities through a resolution of support enacted on March 8th, 2005.

W-3

As the host township for Palisades nuclear plant Covert Township and seven other taxing entities received over \$6 million annually in taxes from the plant. Over the years this tax money for the township has funded paving roads throughout the township, building water mains throughout the township, lighting intersections and increased fire and police protection for our citizens.

W-4

Covert public schools receives the lion share of that tax money and provides first class school facilities and services.

Appendix A

- w-5 | Covert Township is very much in favor of Palisades Nuclear Plant's license renewal. It has been, there has been a partnership between Covert Township and Palisades since the beginning.
- We look forward to that partnership continuing for another 20 years and longer. Thank you.
- MR. CAMERON: Okay, thank you, Mr. Radell.
- Now we're going to hear from Mr. Dale Lewis and then we'll hear from Mr. Maynard Kauffman and then Mr. Wade Adams.
- Mr. Lewis.
- MR. LEWIS: I just had an operation on my throat, nose last week so I can't speak very loud so I won't speak very long either.
- X-1 | Palisades is a great vehicle for industrial growth and growth in South Haven. At the present time during normal operations Palisades employees 600 people from their operations. And if you can imagine in your town, and I presume that most of you are from outside South Haven since I don't recognize too many of you, if you have something that, a plant that employed 600 people and that were to close down there would be great economic impact on the area.
- So the nuclear plant right now, Palisades, is in a refueling outage where 900 more people come in to South Haven to work on the outage to repair things, to improve things.
- You can imagine what that does to the hotels, motels in South Have. It's a great economic boost to South Haven.
- If you were to close Palisades down and I haven't heard a good reason tonight for doing it, it would make South Haven a ghost town almost because there just wouldn't be the jobs that are there now.
- X-2 | And I have, as I say I haven't heard a word that says anything about a good reason to close Palisades down.
- So and we as a city council, oh by the way, I was mayor of South Haven for four years and while I was mayor we passed a resolution also endorsing the continuation of Palisades. Thank you.
- MR. CAMERON: Thank you, Mr. Lewis. Thank you, thank you very much.

We're going to go to Ryan McCoy at this point because he's here with his family and his young son and maybe they want to go bed. But --

MR. McCOY: I didn't mean to interrupt.

MR. CAMERON: Go ahead.

MR. McCOY: I'll be real brief.

MR. CAMERON: Go ahead.

MR. McCOY: My name is Ryan McCoy. I'm a citizen of South Haven. I'm not affiliated with anyone. I'm here mainly to be educated about it. I, I'm blessed to live close to the beach and I'm on the beach every day and I see that plant every day and I'm, frankly I'm worried so I want to know what's going on.

Y-1

What I've heard from our former mayor and, and some of the commissioners has all been economic based. It's all about economy and jobs.

And this touches me deeply because I'm a recently unemployed worker who was selling topical plants and I lost my job from environmental impact from hurricanes.

So I'm unemployed and I still stand opposed to it. I want to know what I'm seeing here more is public relations and not a lot of truth. There was a gentleman asked a really profound question why the dry cast things weren't affiliated or weren't in with the seismic analogy. And to me that seems more important than the deteriorating radioactive, see and I don't even know the terminology, so forgive me.

Y-2

But what I want to see happen is that economy take a backseat to ecology. If this is not ultimately safe for our citizens, if our citizens are breathing radioactive fumes, if there's a potential for a major accident that wipes us all out there's no need for an economy.

Y-3

I'd like to see economy take a backseat to ecology. I'd like better answers on, on the questions that are asked, a lot less lip service.

I have a young child I want to see grow up in South Haven. I want him to grow up healthy. It's a beautiful community. We'll find ways to replace the economy.

These alternatives that you say have vast potential for economic sustain ability. The waste generated, dry casting it there and not having a home for it worries me. 20 years from now

Appendix A

what's that going to be like or where are we going to be with, how much more waste will they produce in those 20 years.

Y-4 And right now from what I've read and again I'm naive so I'm here to be educated but we don't have a home or a place to put this waste that's one of the most toxic substances on the plant from what I understand. It's sitting 150 yards from our precious resource the lake. Why that doesn't trouble more people I don't know.

Y-5 I understand the need for economy and jobs. Let's get that behind us and let's look at the ecology. I think that's most important.

You know, I'm happy to remain unemployed for another couple of months if that's what it takes. But I'd like to see some true answers, some truth, a lot less PR, a lot less bureaucracy and let's, you know, let's really talk about what's, what matters here.

I could go on and on but thank you for listening and for the opportunity and clearly I'm opposed to the re licensing. I've got a lot more to learn. But I think the economy is no, is no reason, it shouldn't be the top consideration.

MR. CAMERON: Okay. Thank you, Mr. McCoy. And I'm going to ask John Ellegood at some point not, not now, John.

MR. ELLEGOOD: Whatever you want.

MR. CAMERON: But since you're here in the community and since there's lots of questions that I think Mr. McCoy has is the draft, at some point not necessarily tonight but at some point, you guys could hook up and maybe you could, you could talk about some of these issues. That may be, may be helpful to him.

And, Mr. McCoy, did your, did your wife want to say anything? I know she's out there but --

MR. McCOY: I'm sure she doesn't. She's a little tied up.

MR. CAMERON: Yeah.

MR. McCOY: Our opinions are very similar.

MR. CAMERON: Okay. All right.

MR. McCOY: I'll just stand behind what I said.

MR. CAMERON: Good. Thank you very much. Let's go to Mr. Kauffman, Michigan Land Trust and then we'll go to Mr. Adams.

MR. KAUFFMAN: I appreciate the opportunity to speak. Maynard Kauffman speaking on behalf on Michigan Land Trustees. P-2

I live on a farm about ten miles straight east of here. And my comments are about alternatives. And what I want to do first is say I am opposed to the 20 year extension of the Palisades operating license. I think it's a needless risk. And I'll try to explain why.

My hope is that by the time the current license expires in 2011 that nuclear power should be replaced by wind power and by a lot more conservation and more efficient use of electrical energy. That is possible. I'll come back to that. P-3

Also it's cheaper. Currently as according to my latest figures and I've been doing a lot of reading on this, wind energy is sold for four cents a kilowatt power or less sometimes when it's under long term contract to where as I understand the cost of nuclear energy is about three times higher than that. P-4

So we the taxpayers, the ratepayers are paying so somebody else can make money. And it's not necessary. Let me explain.

Palisades sits on 432 acre site of which 80 acres is developed or I presumed used. That leaves 200 to 300 acres of land which could be available for wind turbines. If you figure four acres per turbine and they're really large, this would be a four megawatt turbine and they exist, you would need or you would have room for about 50 large wind turbines. They could be erected on the site, more land could be rented for farmers down the line along the transmission line too. P-5

But even these 200 megawatts that would be produced here by wind is not negligible. That's one fourth as much roughly as the current nuclear plant provides.

Now on page of the GEIS on page 845 I understand that wind power had been considered and rejected for a number of reasons. One of which is that it said could be intermittent and there's sense in which you could say that but I, I have a wind generator next to my house, nearby, and I say that wind power isn't seasonal. P-6

Because in this season it hasn't quit running for weeks and weeks. So it's not just intermittent but it might be seasonal. So certain other seasons might require a different mix of energy to keep the customers going.

So that's one of the problems I have here. It isn't simply intermittent. It's seasonal.

Appendix A

- In any case wind power is really growing worldwide. It's growing at the rate of 30 percent per year. Most of this is happening in Europe and in Europe Germany is in the lead with I believe at this point 14,600 megawatts of electricity from wind. They seem to know how to do it.
- P-7 So I suggest to the people at the NRC or to the, to the management company that they should go to Germany and ask and say we don't know how to make wind power work here maybe you could tell us how to do it. You may to say this in German so you might want to say ve con mein dusche dunday so they really understand what you're trying to do, okay.
- Okay. I'm not here to entertain.
- P-8 I want to suggest that there are three paragraphs on page 8-45 of this GEIS dealing with wind power and together the three paragraphs includes so many distortions, falsehoods or simple stupidity that I think if this is a kind of an indication of what's in this book it's bad news because this is not going to gly.
- P-9 The way this is put down here is to sort of make wind a non starter. And it's not true because as I just said it is growing worldwide and it could here too if people were to take a different kind of attitude.
- P-10 And incidently wind generators and their, their towers can be reused and recycled over and over again so that they have that advantage as well. And they provide the jobs that you're so concerned about in this community.
- So let me wind this up.
- P-11 There, I already mentioned in my comment earlier that it does not require 500 acres for a single wind generator and if the large ones, you know, the, the way the GEIS puts it you really have a system here where they say you need 500 acres or well actually they say 150,000 acres in order to provide 1000 megawatts.
- I've been on wind farms and many of you have seen them. They're not one per 500 acres. This is either a big mistake by somebody that should have known better or it's a blatant distortion. As I suspect the latter because they don't want to deal with wind power they'd rather deal with nuclear because that's the business that they're in both for the commercial and governmental agency.
- So I, I worry about this.
- P-12 Finally I have to say that according to the GEIS again Consumers Energy has decided they didn't want to deal with what they call DSM and for you who haven't read the book DSM mean demand supply management. In other words giving advise to the consumer to use less energy

to get complex for, you know, all of the things that could save energy. Oodles of it. They chose not to do that. Why?

Well, it might be very costly or this or that. Now come on. This would be a way of trying to sort of curtail the need for licensing this plant in a risky way for another 20 years.

Any relevance has said that we could do with 50 percent less electricity if we used it intelligently and if we conserved. And I think this certainly true because I see all over the place that people do waste a lot.

So my point is that I think the, the put down of wind energy in this book is so blatant that I suspect I have to say I'm afraid I lose, I think that the nuclear regulatory commission loses credibility by people who know something about this.

P-13

And that's a serious thing because I don't want to live in a society where governmental agencies lose credibility because they're supposed to be responsible. Thank you.

MR. CAMERON: Thank you, Mr. Kauffman, serious, serious comments that we have to seriously consider. So thank you for pointing that out, pointing that out to us tonight.

And then we're going to go Mr. Adams.

MR. ADAMS: Thank you very much. I'm Wade Adams. I'm from Kalamazoo, Michigan. I decided to take the, I decided to come over with my wife and, and waste that energy. I hope it's not a waste. I didn't come here to have it, to be a waste.

My concern is a catastrophic event. And as this plant becomes older and older as we already heard the Big Rock plant up in Charlaboy has been closed and it hasn't been generating electricity for some time. And as Mr. Kauffman said generating power by nuclear plants is not the cheapest way to generate energy.

R-3

Now I came from Kalamazoo because we're right downwind of what could happen if radiation was released from the Palisades Plant. It would be devastating to Southern Michigan perhaps Northern Indiana. It could, if you look at the Chernobyl case and I would guess that all those government authorities there in the Ukraine were just 100 percent behind Chernobyl until they had their accident.

And of course I also lived through the 3 mile island incident when Jimmy Carter was president. So I, I believe that we would be far better to spend our money on safer distributing energy sources like wind power particularly in Michigan.

R-4

Appendix A

My wife and I just came back from California. Even a state like Wyoming has tremendous numbers of wind generating plants now. Wyoming has tremendous amounts of coal. They have tremendous amounts of oil yet they are going to wind generation.

And you look out across this nation the idea that you, you cannot have distributed types of energy production is insane in my view point.

R-5 So in that respect we do not have to take the chance even though it might be in your estimation small on re licensing this plant. This plant if re licensed could be in operation for 60 years. I do not believe it was engineered to last 60 years and I don't believe you can change all the components in that plant to make it really be safe for 60 years or even 50 years.

So let's invest in alternative energy sources. I hope and, and as far as jobs I'm a PHD did research in Kalamazoo for 27 years. 2500 of us lost our jobs quite recently when Pfizer decided to close that research facility. We're managing.

Certainly South Haven, Covert Township and this county will survive if you happen to have to close this plant in the next five years. Trust me.

Finally I'd like to say that I hope when you do your consideration that you listen to what Abraham Lincoln said. We need government of the people, by the people and for the people.

And what I am seeing increasingly in this nation is government of the corporation, by the corporation and for the corporation.

I hope you will keep the people in mind. Thank you.

MR. CAMERON: Thank you, Mr. Adams. We're going to next go to, to Mr. Hannan, Robert Hannan and then to Gary Kartch and Barb Geisler.

Mr. Hannan, do you want to come up.

MR. HANNAN: Thank you for allowing me to speak.

Z-1 It's just hard for me to imagine that, that we're all here in this room even talking about this. I think the humanity of, of this nuclear thing is, is not good. And if, and everyone in here is a human being and therefore we should all be able to define the meaning of humanity.

And to take a risk like this in my mind I, I don't care how safe it is, you know, it's, it's still a risk and you people you're here defending yourselves from a risk, a potential risk.

So therefore you're admitting that there could be a meltdown. So I, I just find this whole thing just, us being here talking about this is totally insane. We shouldn't even, man should have never split the atom to begin with. It was a bad thing. It's very bad.

Z-2

And that's all, that's all I have to say.

MR. CAMERON: Gary Kartch.

MR. KARTCH: Thank you also for letting me speak. I wasn't really planning on saying anything but I am compelled to do so.

The statement by the resident, Ryan McCoy, was very eloquent. He said he thinks the economy should take a backseat to ecology. I agree. But the secret that the people, the citizens of this country and state and county do not realize that the economics are indeed an issue.

And forgive me for not having the information with me, the facts and figures at the moment, but the information I have been reading indicates that nuclear industry has received more government subsidies during its lifetime than any other industry. It's well over 50 percent of all of the tax incentives, breaks, guaranteed loans, supplementing catastrophic insurance for the industry etcetera.

AA-1

The amount of money that the taxpayers are paying out of their tax, taxes to the industry on top of these high electric rates that they're having to pay monthly rates is absolutely extraordinary. If people knew that and if that was, if that was analyzed down to a level and given to them so they could see it they would be absolutely appalled.

AA-2

And the renewable, the percentage of, of money going to renewal is something like 11 percent of all the money and the nuclear industry gets well, well over 50 percent as I say.

AA-3

Now in the, and the media has, you know, made some, had been reporting a large subsidy and tax incentives to the oil industry and everybody is appalled over that. The nuclear industry has them by a mile.

AA-4

So if this money were diverted to the renewables and the technology to wind and solar you would and perhaps let's pretend that the, the information in the environmental impact statement is correct for a minute but as submitted by the, in the EIS, that, that wind turbines need X amount of acreage and all this and they can only produce X amount of megawatts etcetera.

AA-5

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If you take even a minuet amount of the money that is given to the nuclear industry just as a given and divert that to renewables and, and improve the technology of the renewables this would absolutely not be an issue.

AA-6 And I also concur with Mr. is it Hannan, who said these, how can we even be in this year of, of, of 2006 still being, trying to justify the manufacture of a waste that is absolutely lethal for hundreds and thousands of years. What are we going to do with it.

Who, nobody wants it. This is the substance of which we are having international, you know, traumas over right now with North Korea and a few years ago it was, you know, India, Pakistan and every, every nation on earth wants nuclear and we're giving it to other nations. It's absolutely preposterous.

AA-7 The process by which we are generating electricity is the same process that was used to make the atomic bomb that was dropped on, on Hiroshima and Nagasaki. So this is a technology of death make no mistake about it.

We are made of better stuff than this. We are intelligent enough to create electricity in a manner that does not produce a waste. And to have the waste off of discussion for the environmental impact statement is absolutely scandalous.

That is my comments. Thank you very much.

MR. CAMERON: Is, is Barb Geisler still here.

MS. GEISLER: Yes.

MR. CAMERON: Oh, hi, Barb.

MS. GEISLER: Hi.

MR. CAMERON: Would you like to join us up here. This is Barb Geisler.

MS. GEISLER: Thank you. I live 10 miles from here on a farm. I'm going to address something a little differently.

In the early 80s I became, can you hear me or do I need to be over here more.

MR. CAMERON: Maybe we, maybe we can bend it over a little towards you.

MS. GEISLER: Yeah, okay.

MR. CAMERON: See this, this.

MS. GEISLER: I'm a little shorter than the guys.

MR. CAMERON: Okay. Go ahead and see how that works.

MS. GEISLER: Dose that work.

MR. CAMERON: Is that better. It sounds good.

MS. GEISLER: Okay. In the early 80s I, I became concerned about nuclear issues in, in a broad way. And I remember a film from that era which was called The Dark Circle documentary. And it, they interviewed lots of people in the nuclear industry both the weapons industry and the power industry.

BB-1

And what I remember from that is how intertwined they all are. That it, that you can't really separate atoms for peace, atoms for industry from, from the weapons industry. And Gary Kartch said, you know, it's, it's about death. Do we choose death or do we choose life. It really is about that ultimately.

And in going to various meetings and conferences through the last 25 years I want to focus on just one thing which is I've heard a lot of whistle blowers speak. And their lives have been ruined.

BB-2

Now some of you may have seen the film about Karen Silkwood and maybe you thought that was over dramatized or not true or whatever. But I sat down with a woman in her 70s at at least three of these events who told me what happened to her.

She went, and this is I'm, I'm moving to the inside here. She was an innocent young girl. She went to work for the industry and she noticed that some figures weren't quite right. And so she thought she better tell her boss and she did and that was the beginning.

Basically she was told you can either do the figures the way we want them or you can leave. And she realized either way she was a marked woman. And yes she did have to go underground. She, the, the act that protected people that came out I believe after Silkwood she, she, she literally had to go underground. This is, this a grandma tell me this.

She, she was, she felt, she feels deliberately exposed. She was dying of bone cancer.

Now this is just one woman speaking. I don't think she was lying but I can't prove this. But she's only one of several that I've talked to who had their lives ruined in one way or another.

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Ann Harris at Lockspar, part of TVA, Curtis Overall eight years ordeal, same place. Finally won on appeals. Wrongful termination. I, he was in tears, divorced, everything else. Ann Harris was run off the road.

Interestingly enough it was Curtis Overall whose, who pointed out the flaws Lockspar which led to Cook very near us, DC Cook being shut down for three years because they had the same kind of system.

And I remember hearing a guy in St. Joe talk about working at Cook and becoming a whistle blower and his life was ruined too. That's very near us. People are threatened. They are called on the phone. They are run off the road.

So knowing this I wonder if this isn't just a charade. How many of you within the industry would have the guts if you, if you decided it was, there were things that weren't quite right to say so in public. You'd, you'd pay a heavy price number one.

BB-3 Number two because of all this and because of the nature of this dangerous industry that has to be closed, it has to be secret, it has to be top down, it has to be authoritarian. This isn't a real democratic meeting here. It couldn't possibly be, you see. This is so we think we have some input.

And when I look at our country as some others here mentioned tonight and I see it moving more and more toward secrecy and authoritarianism and it's Orwellian, isn't it. We live in a democracy but you know what? If you're a little Quaker lady in Palm Beach our wonderful new spy people are down there, you know, we're all being spied on you know that don't you.

They wrote a report that these, and these are passivists, you know, Quakers are passivists, they wrote a report saying that this was a very dangerous group. We went through this in Viet Nam. Quakers are dangerous. They're not the real terrorists are they.

BB-4 So I guess I want to end by saying I don't think you can have nuclear weapons and nuclear power, the Dark Circle and also have democracy. And I think that's what we're up against in this country right now if you want to look at, excuse me, the big picture.

BB-5 So let's look for alternatives. We need a whole new way of living. We can get along with a lot less of this, look at this. Lights on all night. You go to the cities they're, and frankly we're going to, we're running out of oil, we're running out of natural gas, we're running out of a lot of stuff. We're going to have to think about doing things a different way guys.

BB-6 And just keeping this little plant open 20 more years and maybe it won't blow maybe it will but it's not looking at what we're going to need in the future. That will be very different so let's, let's think about a new way.

Thank you.

MR. CAMERON: Thank you, Barb. Thank you. Is Michael -- still here and did he, Michael, did you want to, okay.

Let's go to, let's go to Kevin. Kevin, did you want to speak again.

MR. KAMPS: Yeah.

MR. CAMERON: Okay. Let's go to Kevin and then we'll go to Kathryn and Ken and Corrine and Mr. Hart.

Kevin Kamps.

MR. KAMPS: My name is Kevin Kamps. I work for Nuclear Information and Resource Service in Washington, D.C. But I'm from Kalamazoo, Michigan, a board member of Don't Waste Michigan for the Kalamazoo chapter.

And what I thought I would really focus on because it really caused quite a stir earlier today and I think it deserves as much attention from the public as it can get because the public deserves to know about it was the incident last October involving the cask that was stuck on a crane above the pool at Palisades.

CC-1

And I just wanted to read some passages from NRC documents from Palisades documents that reveal the serious nature of that incident.

So I'll start with something I read earlier.

The NRC inspectors concluded that working outside the bounds of a work package on a crane with a suspended load that if dropped would damage the spent fuel pool warranted a safety significance determination. Had the load dropped the spent fuel pool could have sustained severe damage.

The inspectors concluded working outside the bounds of the approved work package and manipulating the break release represented an increase in the risk of a load drop. This increase in risk is directly associated with the reactor safety cornerstone objective of the spent fuel, spent fuel cooling system as a radiological barrier.

And what that last sentence means is if the cask which weighed 107 tons had fallen into the pool it would have cracked the floor of the pool, drained away the water which cools the waste

Appendix A

in the pool. And in a matter of time, some hours, the waste would catch on fire and it would be a large scale radiation release perhaps worse than Chernobyl.

So what were the potentially catastrophic consequences had the cask dropped. And again this is from an NRC report entitled Technical Study of Spent Fuel Pool Accident Risk published in February of 2001.

The analysis exclusively considered drops severe enough to catastrophically damage the spent fuel pool so that pool cooling water inventory would be lost rapidly and it would be impossible to refill the pool using onsite or offsite resources.

There is no possibility of mitigating the damage only preventing it in the first place. The staff assumes the catastrophic heavy load drop creating a large cooling water leakage path in the pool would lead directly to a zirconium fire.

Zirconium is the metal cladding around the fuel rods. It's, it's a combustible material, highly combustible.

The time from a load drop until a fire varies depending on fuel age, burn up and configuration. The dose rates in the pool area before any zirconium fire are tens of thousands of rem per hour making any recovery actions very difficult. Tens of thousands of rems per hour would deliver a lethal dose of radiation to someone close to that in a matter of minutes.

And that's what happened to the firefighters at Chernobyl. They received deadly doses of radiation in a very short period of time. They died two weeks later because their red blood cells stopped reproducing.

MR. CAMERON: And that, that part is not in the --

MR. KAMPS: I'm sorry I'm, I'm trying to translate from --

MR. CAMERON: Oh, if you, I think it just needs to be clear if you're purporting to read --

MR. KAMPS: Okay.

MR. CAMERON: -- from our document and then you're editorializing just tell us when you're editorializing.

MR. KAMPS: I sure will, Chip.

MR. CAMERON: All right.

MR. KAMPS: I'm sorry that I was --

MR. CAMERON: I know you didn't, I know you didn't intend it.

MR. KAMPS: Right. I did not intend to at all.

MR. CAMERON: Thank you, Kevin.

MR. KAMPS: I'm reading directly from the NRC again.

Based on discussions with NRC staff structural engineers it is assumed that only spent fuel casks are heavy enough to catastrophically damage the pool if dropped.

In fact NRC has reported, "the possibility of a zirconium fire leading to a large fission product release cannot be ruled out even many years after final shutdown of a reactor".

Palisades is an operating reactor so the waste in the pool is thermally hot, it's radioactively hot. All the more likely to lead to worst case end results.

So this is a quote from a study done by Robert Alvarez and others in 2003 and it was about pool fires. This is the quote: "Spent fuel recently discharged from a reactor could heat up relatively rapidly to temperatures at which the zirconium fuel cladding could catch fire and the fuel's volatile fission products including 30 year half life, cesium 137 would be released. The fire could well spread to older spent fuel. The long term land contamination consequences of such an event could be significantly worse than those from Chernobyl".

Another quote from that same report, "The damage that can be done by a large release of fission products was demonstrated by the April 1996 Chernobyl accident. More than 100,000 residents from 187 settlements were permanently evacuated because of contamination by cesium 137. Strict radiation dose control measures were imposed. The total area of this radiation control zone is huge equal to half the area of the State of New Jersey. During the following decade the population of this area declined by almost half because of migration to areas of lower contamination". From the Alvarez study.

And so we found out about this cask incident by a fluke because a number of us attended an unrelated NRC technical meeting where a piece of it was mentioned. But we understood what it could mean and so we followed up.

And we did a Freedom of Information Act request which NRC informed us would take two to four weeks to get back to us. Well, it took two months to reach us.

CC-2

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And in the meantime we found out all that we could and we found the tables in that earlier report I read from about spent fuel waste fires and the casualty figures downwind were quite remarkable. The NRC's own numbers again 20,000 to 44,000 cancer deaths over time downwind out to a distance of 500 miles away from a pool fire. That was at 2001 NCR study.

So we finally got the FOIA, this was after the Detroit Free Press exposed the incident in that front page article. We only received a partial FOIA response at this point. And the, the document that I read from earlier was the quarterly inspection report from the NRC. That was the first public document of that incident.

But the details that came out in the FOIA were quite interesting. The precursors that led to the incident. Here's, here's a quote from an internal Palisades mia copa done by the inspection crew that inappropriately handled the crane.

MR. CAMERON: And, Kevin, could you just sort of, sort of wrap up --

MR. KAMPS: Uh-huh.

MR. CAMERON: -- on this and, you know, feel free I mean read the quote or whatever but we'll just need to go on to some, some other, other people.

MR. KAMPS: Well, I'd like to encourage everybody to go over to that table in the back corner and get their own copy of this thing and read it because it's worth it.

CC-3 | So this is, this is the company's workers who made the mistake that could have overridden the emergency brake. That's the whole point. They shouldn't have handled the crane because they didn't understand the crane.

We failed to consider the severity of the consequences if our troubleshooting caused the load to slip or fall into the spent fuel pool. This is why we set up an event response organization to, to allow an open forum with full consideration of how these activities will affect the plant and the health and safety of the public.

This is the company saying this.

The NRC earlier said that the risk of a load drop was increased because of this inappropriate handling.

So I'll just, please do pick up a copy. The precursors of the event that led to this thing, the false setting of the emergency brake were due to the fact that Palisades lacks knowledge of the crane. They have to bring in the crane company to help them operate the crane.

The crane company representative who came last August to set the emergency brake had to get to vacation. He was in a hurry. So instead of setting the emergency brake correctly with three checks on the emergency brake he did one check. And he set it wrong that time. He thought he set it at 175 foot pounds. He actually set it at 140.

So that was one precursor. He had to go home on vacation. And the other one was that Palisades doesn't know how to handle the crane. The people that did know how to handle it have left the company.

And one of the amazing admissions by the company is that there may be other aspects of operations where we also lack full knowledge not just this crane.

MR. CAMERON: Thank you. Thank you, Kevin. Kevin's report is back there on the table. I would also urge you to read the NRC inspection report so you can see what the NRC said about this particular incident. If you need to find out how to get a copy of that we'll be glad to get you a copy of the inspection report.

There was also a dialogue this afternoon on this particular issue. It is in the transcript that will be available from this afternoon's meeting and we're going to go to, to Kathryn Barnes and then Ken Richards, Corrine, Paul Harden.

Kathryn Barnes.

MS. BARNES: I'm a member of Don't Waste Michigan. I'm one of the people that decide the, one of the intervenors. I live within a 50 mile radius of Palisades. I have a son that attends Western Michigan. He's in electrical engineering. He's almost graduated. He's nearby.

I have my other son and their father work in Kalamazoo in carpentry. And my family pretty much all lives in the danger zone and a lot of my friends do.

And I'm concerned about Palisades because through the years, you know, growing up here in Michigan the last time I was in Lake Michigan was as a baby, when I was a baby my mother has a photo of me in the water.

When I was growing up I went swimming quite a lot in Lake Michigan. I can remember drinking the water, swimming, enjoying it. I can remember how many people were on the beach. It was just glorious.

And I can remember drinking the water and it was clean, sometimes it tasted a little fishy but, you know, it wasn't a bad taste, you could drink it. You can't drink it now.

Appendix A

Since the, the building of the nuclear reactors the water quality has deteriorated. Last time I went swimming last year my daughter and my granddaughter, I have a little almost three year old granddaughter now, precious.

They went swimming and they both got stinging rashes. And I got a rash myself although I was only in the water for a couple of minutes. And we cannot drink the water, it's got a bad, foul taste and I don't know if this is because of the chlorine, bromine and amean released or if it's from other things.

DD-2 One time I sat on the beach and I had the sand in my fingers etcetera and there was a lot of gas coming out of Palisades that day and I was near the plant. I got real sick afterwards.

It reminded me of when I was out at the nuclear test site the feelings I had afterwards being very tired and nauseous and just really dead tired.

I'm a cancer survivor. I know what it's like to go through that dark cloud. I've seen children from Chernobyl. I've seen their sunken eyes and their handicaps and I feel so sad for what they've gone through, what their parents that carried them went through. That's an end to the, to the lineage of people.

Once you have a nuclear disaster you lose your DNA. When you lose your DNA quality you use up the seed for cancer and then you set the seed for death. And there's no getting it back.

DD-3 I live on land where there's pesticide use. I'm been a victim of that which is an essentially a cause of cancer not radiation but radiation does cause cancer too.

DD-4 I've seen frogs with ten arms. I've seen a lot of things from broken DNA. And here what you have is, I know a man who worked at Palisades and he's still in the nuclear industry he's got a real high job in the nuclear industry.

DD-5 And he told me that it's well known quote un quote, is what he said it's well know within the nuclear industry that Palisades is the most likely to blow of all the nuclear power plants in the United States at this time.

And I asked him well why is that. I said is it, are they covering something up like they did at DC Cook which for ten years they covered up the fact that they had a non functioning coolant system. Or if they had a meltdown they could not have, they could not have stopped the meltdown.

And only by the grace of God we have not had a meltdown yet.

Well, they covered that up and as people have mentioned the whistle blower got in trouble for that. And now he said no he says Palisades they don't cover things up he says they just don't report it.

And I think this, this incidents of the crane that was just mentioned that's another incident I believe that was not reported to the NRC. And I believe that Palisades asked for an exemption that they don't want to report things any more.

DD-6

I think that the premiss is upside down where they consider the, another 20 years of, of Palisades operating as, environmentally a small issue and they consider alternatives as a great impact. I think it's opposite actually.

DD-7

I think that Palisades was burgeoning nuclear waste which is a problem, unstable geological strata, the singing sands, the shifting sands, freezing and thawing conditions on the casks. Cask number four which is surrounded by other casks has bad welds, could crack.

DD-8

There's a lot of problems there and, and these aren't being addressed. The, at one of the meetings earlier and I've been to all of these meetings now, this is before there was a lot of people here. Thank God there's more people getting involved but maybe this is the last meeting.

They were talking about the experimental use of sealants. And that wasn't addressed. There was other things that the NRC themselves wanted to address.

DD-9

And when I came to the meeting supposedly for that, those issues they switched locations and so they kept this, the public in the dark on that one.

So where's, and I, I don't know the answers to those questions or if they were ever answered to the NRC's specifications. But I know there's real issues at Palisades.

The biggest issue I've heard about and this is not disputed, this is fact. Is that it is embrittled. In a layman's terms I'll try to explain to you what embrittlement is.

DD-10

When a nuclear reactor has, of the, the design at Palisades is, had so many reactions through the years it gets like little finger holes in it, lots of little holes from all this stress and these reactions. Cooling, heating, cooling heating and the near misses they've had.

And after you get this, these holes in the, in the design structure it becomes embrittled which means that if there was a stuck valve, broken coolant pipes, lots of things could happen to cause a meltdown, okay, and then it starts heating up. And they cool, they had to cool it real

Appendix A

fast. So they flood it with water. If the plant is embrittled as Palisades is it's like taking a really hot glass coffee pot and immersing it in cold water. Bang.

That's what accurate embrittlement is and that's what I've hear would, would be the most probable thing that would happen to cause a meltdown.

DD-11 Well, what does a meltdown mean here. Okay, well, if you live in Covert, you know, you don't have a chance to say goodbye to anyone.

If you live anywhere close to Palisades you, you'll, you'll, you're gone. If you live downwind which could be in any direction but usually the wind comes from the Great Lakes. It comes from, from the west going east.

MR. CAMERON: Kathryn, could you just try --

MS. BARNES: I will try and wrap up, yes, I will to wrap up.

DD-12 What it means that there is a huge area of contamination. It could go into Canada. It could affect all of us in Michigan and Canadians. And as in the case of Chernobyl that year Meyer -- had the most insane bizarre food. I am sure in Michigan because of all our precipitation we had fallout.

I had turnips, they got this big with a little narrow and then they bulged out again and they were rotten inside. I had cabbage that was huge and rotten inside. That's not normal. It's never happened since.

But I, I think that it can affect everybody in the world.

DD-13 I would like to see with your rules, a rule be made if, if this nuclear power plant is relicensed that everybody that is in on the decision to relicense it be obligated with their families to live within five miles of Palisades until the plant is shut down.

MR. CAMERON: Okay. Kathryn, thank you.

MS. BARNES: That might make a difference.

MR. CAMERON: Thank you. Ken Richards. Then we're going to Corrine and to Mr. Paul Harden.

Ken Richards.

KEN RICHARDS; Good evening. I'm Ken Richards Palisades Conversion Group. I'm going to try to get this down a bit but --

MR. CAMERON: We will have to keep you to five at this point.

KEN RICHARDS: Yeah. Recently I got the generic impact statement license renewal and I've been reading through both the manual and its cover letters. I see despite potential radioactive hazards the NRC insists that environmental impact of the Palisades Nuclear Power Plant, all the radioactive materials about its reservation, such as the casks is always regarded as small throughout the report.

O-1

But when I turn to alternative energy sources which should be pursued at Palisades plant site they're impacts are often referred to as large which all considering they would be taken into account the enormity of nuclear power the plant puts on the grid for alternatives to equal out in their current forms at the site.

O-2

A rather particular assumption bracketing both the plant and the NRC's position as well yet ignoring the simple fact that of all the resources used to continue operation of this plant or renewables and other forms of electrical generation throughout the state it would turn the argument on its head.

But my real concern here is the fact that the GEIS report does not take into consideration of dry cask storage. Other highly radioactive contaminated things such as the former steam generators on the site.

Many would argue that Palisades reservation is already a defactile high level nuclear waste dump which to their, Palisades Conversion Group and my way of viewing the issue a large impact on this fragile lakeshore enviroment.

O-3

More to the point potential in fact should things not go as designed or planned or promised which over the last 38 years time and time again have been broken. With an additional 20 years worth of above ground dry storage cask along with other contaminated equipment which is sure to be replaced should this plant be pushed so far past its original design capacity which it already has by years now.

O-4

Counter to the GEIS' insistence that no changes to the plant need take place in the additional 20 years. Isn't the reactor head soon to be replace in July perhaps.

O-5

I talked with the vice president and he said 2000 and something.

Appendix A

The pressure reactor vessel long in question operating in a patchwork method since embrittlement was discovered more than ten years ago. How long before this is replaced.

Annealed as once promised in court or a neutron thermal shield installed. And yes, the dry cask storage casks piling up on site.

I'm sure we'll all hear about Yucca Mountain or the -- Indian reservation taking all of this off our hands for the umpteenth time in the last 20 years.

Now there are over 20 to 30, somebody told me 29 here but I keep getting different answers, dry cask storage onsite. Will anyone here give us an exact number. Somebody did give me 29.

O-6 This is a community concern for we will have to live with and care take all of this waste for generations to come. In '93 we were told these experimental cut waste storage casks would be gone in 1998 time and time again by Mark Savage the plant's spokesperson.

Now we're told by the NRC there license to store fuel assemblies for 20 years. It'll last for 150 years and above ground storage is our nation's nuclear future since the Feds haven't found a hole deep or dry enough to put all this radioactive waste and materials in.

After nearly 50 years of looking, instructing, spending and charging us ratepayers for a place to take all of it off our lakeshore nothing but this. Another promise broken, more public trust going by the wayside.

O-7 On April 4th the Squaw Valley Reservation will be approved for above ground storage but with Yucca Mountain's inability to take this slated cask off the Goshute's hands, there will not be move in either nuclear waste storage site for all the waste piling up at Palisades now much less that all the additional waste produced during the 20 year relicensing period. All for a little electricity now. Decades perhaps centuries of radioactive waste for the local citizenry to look at.

Yet the operators still insist this is a cheap form of power generation.

Another concern is the plant's original seven mile cooling loop rumored to be back in use again. It's affect of Lake Michigan's eco system. Is it or is it not back in use.

MS. ELLEGOOD: There's no seven mile cooling loop.

MR. RICHARD: Okay.

MR. RICHARD: I, I agree --

MR. CAMERON: -- I would have to ask you to, to wrap for us now.

MR. RICHARD: I know Mr. Bradley a welder who built it back in the 60s, oh yeah.

MR. CAMERON: Okay, Ken, so if you could just make your main point for us.

MR. RICHARD: Yeah, wrap it up. Questions about --

AUDIENCE: It's the last chance people have, let him speak.

MR. RICHARD: -- the Palisades -- crane break down on October 11th. 55 hour shutdown with a 110 casks containing spent fuel assemblies partially suspended broke in the air fell partly submerged over the fuel pool.

O-8

The fuel pool went well beyond its original design capacity with fuel assemblies going back to the 70s. I gather from the Tribune article all the brakes froze because plant personnel did not set the emergency brake properly just before leaving for his vacation.

How big a rem stream would this situation be giving off. How many rems the article certainly didn't say. Did the whole fuel pool area must have had, must have had to been decontaminated. How much did it receive.

All that spent fuel at risk should that cask have dropped down onto decades where for spent fuel assemblies it would have caused a fire making for an accident much worse than Chernobyl.

The article also pointed out this incident was considered of low significance by the NRC within its quarterly report. Quite a change from the NRC in the early 90s when dry storage cask storage was initiated at Palisades hearing the operators 30 violations for everything from cracked pipes to mishandled drop fuel assembly rods into its reactor vessel. Did they ever find the two pounds of missing fuel.

To Palisades Conversation Group this incident further demonstrates the aged long time ineffectiveness of both the equipment and the personnel at the Palisades Plant right along with the current NRC not handing out violations for such --

This must have been some long term radiation being released for over two days within the flow through area. Were procedures fumbled, could not get their crane to budge for days because one brake froze and all the brakes shut down for 55 hours. What were the plant personnel doing scratching their heads.

A further explanation of partly suspended a 110 pound metal inner cask leaves me with cause for concern as it did others, was not made clear in the article.

Appendix A

Just insistent that everything was okay. Just what is the shielding of a bare metal cask --

MR. CAMERON: Ken, I'm going to have to ask you --

MR. RICHARD: -- that neutron thermal shielding --

MR. CAMERON: -- to wrap up --

MR. RICHARD: -- that they're -- in the cask at the time.

MR. CAMERON: Ken --

AUDIENCE: Let him talk.

AUDIENCE: This needs to be answered in public record. This is the last chance he has.

MR. CAMERON: He can submit his whole thing to us.

AUDIENCE: We want to --

AUDIENCE: We want --

MR. CAMERON: Could you just please wrap up and then we're going to go to Corrine, okay.

MR. RICHARD: We're wrapped up.

MR. CAMERON: All right. Thank you. Corrine.

MR. RICHARDS: Thank you.

MS. CAREY: Will the volunteers for the Raging Grannies please come forward if you're available. You've seen this guy before. He was --

MR. CAMERON: We have, we have.

MS. CAREY: Yes. He's built as --

MR. CAMERON: -- come up here again.

MS. CAREY: -- a recycle but I added a couple touches here.

MR. CAMERON: All right.

MS. CAREY: All right. Okay. I do encourage you to, yes, yes, all of you who would like to come, any honorary grannies are more than welcome.

The, yes, I urge you to get the materials that are on these tables on the side. People look at these over here including some rare books. And do get this one which is the radioactive releases from nuclear power plants in the Great Lakes Basin including a picture down here of the Palisades Plant and it's, it's, yeah, it's discharge holes and a map etcetera of the Great Lakes area.

And your very own picture of the current situation at the cask or the one that we heard about on March 18th. It happened in October. It made the federal reserve or the federal report to, yeah, register, in January.

So yes we, we all question that.

All right. So we are going to skip the one that says about -- this, the great region grannies are all over the country but they originated out in the Washington State area. There is another one the earth is going to throw up over, all over us. We'll skip that one.

Give me a home where the rivers don't foam. But this one is, happens to be about the land of the beaver. Oh, I forget to use this. Now this is an example of how inadequate this kind of protection would be in a nuclear event, totally inadequate just like the fallout shelters of years back.

So land of the beaver. Here in the land of the beaver (singing) they say we are nuclear free. We want to be happy believers but ask ourselves how can it be.

There are nuclear ships in our harbors and the tridents are out in the straights. We have tested the crews, terrorized caribou's, do we look like the 51st state.

They told us that we'd never do it. That no nuc mess would ever be found. But it's starting to look like we blew it and the bad stuff is spinning around.

There are nuclear ships in our harbors and the tridents are out in the straights. We have tested the crews, terrorized caribou's maybe we'll be the dirtiest state.

When business and George Bush are talking they put on their friendship display, big smiles, friendship display.

Appendix A

We wish they would do something shocking and have Georgie -- every state. We'll take nuclear ships from our harbors. We'll take tridents away from the straights. We'll not test the crews, terrorized caribou's and we won't be the dirtiest state. No, we won't be the dirtiest state neah, neah, neah.

We won't be the dirtiest state, neah, neah, neah. And that includes Michigan so.

MR. CAMERON: All right. Okay, thank you and Chester.

Mr. Paul Harden, site vice president at Palisades.

EE-1 MR. HARDEN: My name is Paul Harden. I'm the site vice president of Palisades Plant. And I'll focus my comments on the purpose of the meeting and that's the draft supplemental environmental impact statement.

And I'd like to start off by commending the Nuclear Regulatory Commission on the scope and depth of that report. It's very comprehensive and Nuclear Management Company agrees with the conclusions although we may have some comments that are minor that we'll submit as well by the date none of which will affect the conclusions of the report.

EE-2 I'd like to spend a few minutes addressing the environmental impact of operating, continuing to operate the Palisades Nuclear Plant.

EE-3 But before I do that I'd like to recognize not all of us are ever going to agree whether nuclear power plants should exist. Not all of us are ever going to agree the public policy that this country has taken on how to deal with spent nuclear fuel. That's okay. That doesn't bother me.

The fact that we have diverse people, diverse views and we have the freedom to speak our opinions is part of what makes this country great.

What I would like to do is share a few facts.

AUDIENCE: -- opinions and knowing --

MR. CAMERON: Excuse me.

MR. HARDEN: Some of the facts --

MR. CAMERON: Could we have the courtesy to just listen to the speaker. Thank you.

MR. HARDEN: Some of the facts are the environmental responsibility is built into the design of nuclear power plants. There are multiple redundancies so that no single failures of whether it's

human failure or equipment failures can cause incidents that would be adverse to the environment.

There's environmental responsibility built into the way the plants are operated, the way they're managed and the regulatory oversight. The nuclear industry is one of the more heavily regulated and industries that has additional oversight that there are out there. And the inspectors do a very good job of challenging everything we do.

Another fact is that in addition to continuously monitoring radiation levels on the site and monitoring all the release pathways from the site we go beyond that to verify that we're not having an adverse effect to the environment or the people that surround the plant.

We regularly sample soil. We sample fish. We sample fruits. We sample cows milks to verify that there are no low or trace levels of radioactive material that could have come from the plant. And we do that on a regular basis.

Another fact is that the employees that work at the Palisades Nuclear Plant over 600 employees they're also residents of the local areas. They raise their children here too and they have a deep respect and desire to keep the environment safe as well. They're just as concerned about their children as everyone else.

Given that Consumers Energy and Nuclear Management Company are confident that we can operate Palisades Nuclear Plant and extend the license renewal period safely and with no adverse impact to the environment.

EE-4

That is why we are spending hundreds of millions of dollar each year as we proceed forward through the license renewal process upgrading the plant, changing the equipment.

I heard some of the concerns in here with aging of equipment. In a nuclear power plant we are required to have what we call aging management programs.

EE-5

We do regularly change out components. Components that aren't changed out get inspected or tested to verify that they are in good condition to continue to operate. And if they start to degrade or the testing shows that there is degradation we change out those components to keep them going.

I'm not up here to change the mind of anyone who is against nuclear power. But I do want to get those facts out.

EE-6

We agree that, with the conclusions of the draft report that there are no significant or adverse impacts of operating the Palisades Nuclear Plant in the continued license renewal period.

Appendix A

And if anyone would like to be educated on the facts or learn more about the plant I would be happy to discuss that with you. If you don't trust talking to someone who works for the plant I'd encourage you to talk to the Nuclear Regulatory Commission because nuclear power can be a safe and viable entity.

Everything we do in life has risks. It's a matter of agreement whether those risks are worth endeavoring whether it's a chemical plant, a coal plant or a nuclear plant.

But for the purpose of this meeting the draft environmental impact statement we agree with its conclusions and we look forward to operating the plant in a continued operating period.

MR. CAMERON: Okay, thank you, thank you very much.