# AUDIT REPORT

Audit of NRC's Oversight of ISFSI Security

OIG-11-A-10    May 3, 2011

**UNITED STATES**
**NUCLEAR REGULATORY COMMISSION**
WASHINGTON, D.C. 20555-0001

May 3, 2011

MEMORANDUM TO:     R. William Borchardt
                   Executive Director for Operations


FROM:              Stephen D. Dingbaum **/RA/**
                   Assistant Inspector General for Audits


SUBJECT:           AUDIT OF NRC'S OVERSIGHT OF ISFSI SECURITY
                   (OIG-11-A-10)


Attached is the Office of the Inspector General's (OIG) audit report titled, *Audit of NRC's Oversight of ISFSI Security.*

The report presents the results of the subject audit. Agency comments provided at the April 13, 2011, exit conference have been incorporated, as appropriate, into this report.

Please provide information on actions taken or planned on each of the recommendations within 30 days of the date of this memorandum. Actions taken or planned are subject to OIG followup as stated in Management Directive 6.1.

We appreciate the cooperation extended to us by members of your staff during the audit. If you have any questions or comments about our report, please contact me at 415-5915 or Beth Serepca, Team Leader, Security and Information Management Audit Team, at 415-5911.

Attachment: As stated

# EXECUTIVE SUMMARY

## BACKGROUND

Independent Spent Fuel Storage Installations (ISFSI) are facilities licensed by the U.S. Nuclear Regulatory Commission (NRC) to store dry casks containing used nuclear reactor fuel, otherwise known as spent fuel.[1] These massive structures typically contain spent fuel assemblies within a sealed steel canister, which are located in a thick concrete and steel cask for shielding and protection, and then placed on thick concrete pads for added strength and stability. These casks can be stored either vertically or horizontally in concrete storage bunkers.

With the anticipated growth of nuclear power in the United States, and the uncertainty over the permanent storage of spent nuclear fuel at Yucca Mountain,[2] nuclear power plants have a growing need for additional spent fuel storage capacity to support continued plant operation. ISFSIs are generally regarded as a safe and practical means to store spent fuel as they are passive systems that do not require the maintenance of spent fuel pools.[3]

NRC, which regulates the safe and secure use of nuclear materials, issues licenses and oversees licensee compliance with regulations for ISFSI facilities. The first dry storage ISFSI was licensed by NRC in 1986. As of April 2011, there were ISFSIs storing spent nuclear fuel or preparing to store spent nuclear fuel in the near term at 57 different locations across the United States. Of these ISFSI sites, 47 were located at operating reactors and the remaining 10 were located away from an operating reactor.

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[1] NRC regulations allow the storage of spent fuel in both pool-type wet storage and dry casks. In 1971, the first ISFSI license was issued to a wet storage facility. This remains the only non-dry cask ISFSI in the United States.

[2] Yucca Mountain, Nevada, has been the leading candidate site for a spent nuclear fuel repository since the 1980s. However, in recent years, scientific and political concerns have emerged over the suitability of the location.

[3] Spent fuel pools are underwater storage facilities for spent nuclear fuel located within the reactor site. These pools were the most common method to store spent fuel until the emergence of dry cask storage in the late 1980s.

Following the terrorist attacks of September 11, 2001, NRC conducted a comprehensive review of its security policies and procedures, including those related to spent fuel storage. NRC recognized the need to reexamine basic assumptions underlying the civilian nuclear facility security and safeguards programs and embarked upon a comprehensive review of these programs. NRC issued advisories and orders to licensees possessing spent nuclear fuel that identified additional security measures and directed licensees to reevaluate the adequacy of their security programs, plans, and procedures.

## PURPOSE

The audit objective was to determine the adequacy of NRC's oversight of ISFSI security.

## RESULTS IN BRIEF

While NRC has taken steps to improve its oversight of ISFSI security, and the agency has not experienced any problems with ISFSI security, the Office of the Inspector General (OIG) identified the following opportunities to enhance management of the ISFSI security oversight program:

- Define key ISFSI security office roles and responsibilities.
- Update the ISFSI security inspection procedure.
- Train inspectors assigned to assess ISFSI security.
- Develop a centralized database of ISFSI security-related information.

OIG acknowledges the agency's post-September 11, 2001, categorization of ISFSIs as a relatively low security risk and its decision to place security resources on higher risk programs; however, making certain basic improvements in program management will facilitate the continued success of ISFSI security and prevent lapses that could occur in the absence of such improvements.

**RECOMMENDATIONS**

This report makes recommendations to improve the agency's ISFSI security program. A list of these recommendations appears on page 14 of this report.

**AGENCY COMMENTS**

At an exit conference on April 13, 2011, agency management stated their general agreement with the findings and recommendations in this report. Agency management also provided supplemental information that has been incorporated into this report, as appropriate. As a result, the agency opted not to provide formal comments for inclusion in this report.

# ABBREVIATIONS AND ACRONYMS

| | |
|---|---|
| ADAMS | Agencywide Documents Access and Management System |
| ASM | Additional Security Measures |
| FSME | Office of Federal and State Materials and Environmental Management Programs |
| ICM | Interim Compensatory Measures |
| ISFSI | Independent Spent Fuel Storage Installation |
| NMSS | Office of Nuclear Material Safety and Safeguards |
| NRC | U.S. Nuclear Regulatory Commission |
| NSIR | Office of Nuclear Security and Incident Response |
| OIG | Office of the Inspector General |

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**APPENDIX**

# I.   BACKGROUND

Independent Spent Fuel Storage Installations (ISFSI) are facilities licensed by the U.S. Nuclear Regulatory Commission (NRC) to store dry casks containing used nuclear reactor fuel, otherwise known as spent fuel.[4] These massive structures typically contain spent fuel assemblies within a sealed steel canister, which are located in a thick concrete and steel cask for shielding and protection, and then placed on thick concrete pads for added strength and stability.  These casks can be stored either vertically or horizontally in concrete storage bunkers.



**Figure 1.  Horizontal dry cask storage at Susquehanna.**
**Source:  NRC**

ISFSIs can be located in three types of locations:  (1) the "protected area," which is located within the security fence that surrounds a nuclear reactor; (2) the "owner-controlled area," which is the area immediately outside the security fence that surrounds a nuclear reactor; and (3) away from an operating reactor, as in a standalone facility or in a decommissioned reactor site.  All ISFSIs, regardless of location, are required to meet certain security standards to protect the facility.

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[4] NRC regulations allow the storage of spent fuel in both pool-type wet storage and dry casks.  In 1971, the first ISFSI license was issued to a wet storage facility.  This remains the only non-dry cask ISFSI in the United States.
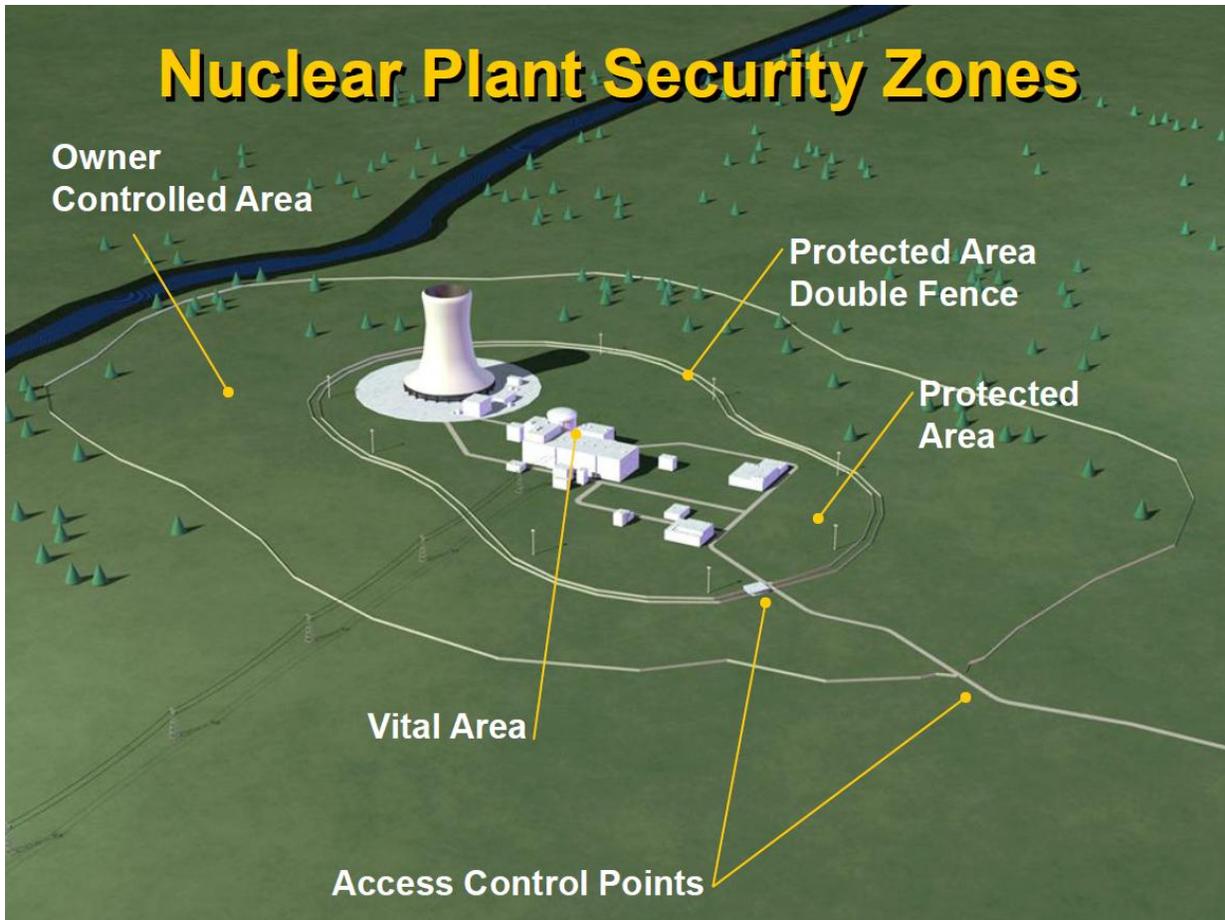
**Figure 2.   Nuclear Plant Security Zones**
**Source:  Nuclear Energy Institute**

With the anticipated growth of nuclear power in the United States, and the uncertainty over the permanent storage of spent nuclear fuel at Yucca Mountain,[5] nuclear power plants have a growing need for additional spent fuel storage capacity to support continued plant operation.  ISFSIs are generally regarded as a safe and practical means to store spent fuel as they are passive systems that do not require the maintenance of spent fuel pools.[6]

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NRC, which regulates the safe and secure use of nuclear materials, issues licenses and oversees licensee compliance with regulations for ISFSI facilities.  The first dry storage ISFSI was licensed by NRC in 1986.  As of April 2011, there were ISFSIs storing spent nuclear fuel or preparing to store spent nuclear fuel in the near term at 57 different locations across the United States.  Of these ISFSI sites, 47 were located at operating reactors and the remaining 10 were located away from an operating reactor.  Figure 3 is a map of ISFSI locations within the United States.

## Locations of Independent Spent Fuel Storage Installations
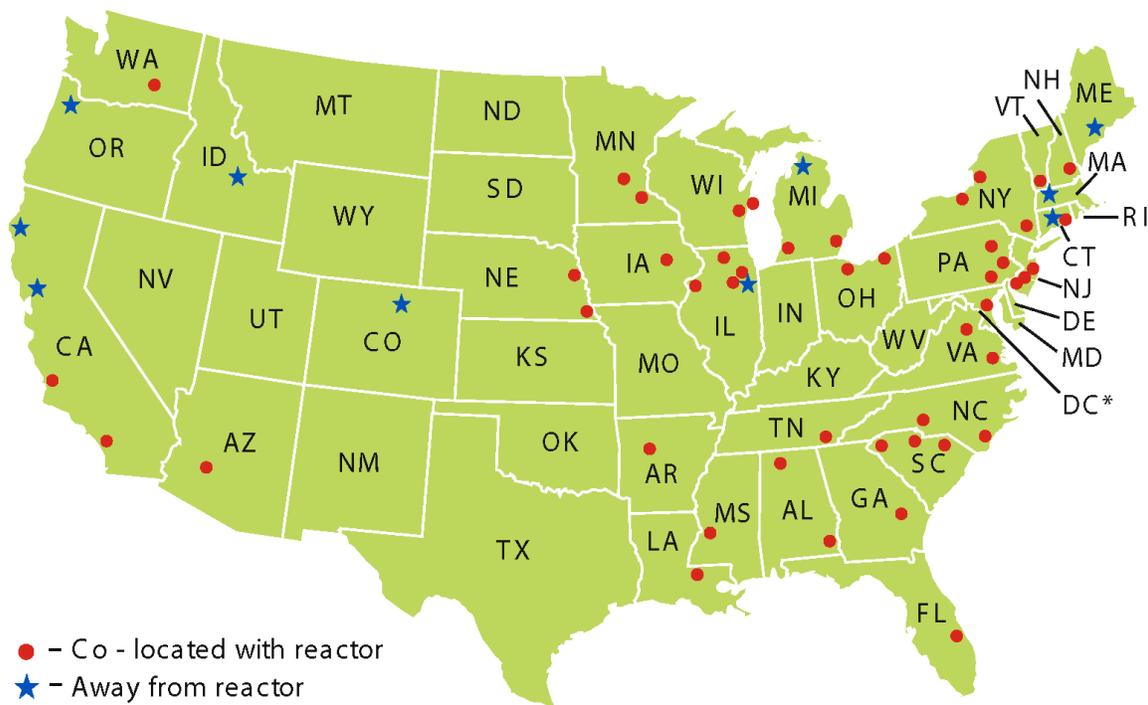


**Figure 3.  U.S. ISFSI Map, April 2011**
**Source:  NRC OIG**

Security Requirements

Following the terrorist attacks of September 11, 2001, NRC conducted a comprehensive review of its security policies and procedures, including those related to spent fuel storage.  NRC recognized the need to reexamine basic assumptions underlying the civilian nuclear facility security and safeguards programs, and embarked upon a comprehensive review of these programs.  As part of this effort, NRC conducted

assessments of the potential consequences and risks of terrorist attacks on a broad range of licensed facilities and activities, including spent fuel storage. These assessments helped NRC determine where efforts should initially be directed. This prioritization placed ISFSIs low on the priority list based on the robust structure of the ISFSI, and the fact that a majority of the ISFSIs are co-located with nuclear reactor facilities.[7]

NRC also issued advisories and orders to licensees possessing spent nuclear fuel that identified additional security measures and directed licensees to reevaluate the adequacy of their security programs, plans, and procedures. In October 2002, NRC issued "Interim Compensatory Measures (ICM) for Dry Independent Spent Fuel Storage Installations" to all ISFSI licensees. This document served as the single security order for all ISFSI licensees until 2007, when it was replaced by "Additional Security Measures (ASM) for the Protection of Dry Independent Spent Fuel Storage Installations." The ASM contains the same requirements as the ICM but was renamed to remove any connotation of a "temporary" status. While licensees that originally received the ICM must comply with that particular order, all ISFSIs licensed subsequent to September 2007 must comply with the ASM.

NRC Office Responsibilities

The two primary offices involved in ISFSI security oversight are NRC's Office of Nuclear Material Safety and Safeguards (NMSS) and the Office of Nuclear Security and Incident Response (NSIR).

NMSS is responsible for the oversight of safe storage, transportation, and disposal of high-level radioactive waste and spent nuclear fuel. As part of these responsibilities, NMSS implements a regulatory program that includes ISFSI licensing, inspection, and assessment of licensee performance.

NSIR is the technical support office for the ISFSI security program. NSIR develops overall agency policy and provides management direction for evaluation and assessment of technical issues involving security at nuclear facilities. NSIR is also responsible for developing emergency preparedness policies, regulations, programs, and guidelines for both

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[7] All nuclear reactors were deemed a high priority and therefore the co-located ISFSIs were already receiving additional security requirements by association.

currently licensed nuclear reactors and potential new nuclear reactors. Related to ISFSI security, NSIR writes the security orders and the inspection guidelines and serves as the main point of contact for any technical questions related to the ISFSI security program. Furthermore, NSIR staff have traveled to NRC regional offices to provide training on ISFSI security as well as help conduct ISFSI security inspections.

Inspection Guidance

NRC conducts inspections to ensure licensee compliance with regulatory security requirements. ISFSI security inspections are primarily conducted by NRC's four regional offices, in accordance with Temporary Instruction 2690, "Inspection of Additional Security Measures for Dry Cask Storage at Independent Spent Fuel Storage Installation(s)." Temporary Instruction 2690 is not part of the permanent inspection program and will expire in June 2011.

NRC is currently working to formalize the ISFSI security orders into a regulation through the rulemaking process. The goal of the rulemaking is to update and clarify the regulations to support the current regulatory environment, address insights gained from the previous ISFSI security assessments, and apply a consistent approach across all ISFSIs irrespective of their location. One NRC staff member heavily involved with this effort estimates that this rulemaking process will take an additional 5 to 7 years for complete implementation of the regulation.

## II.  PURPOSE

The audit objective was to determine the adequacy of NRC's oversight of ISFSI security. The report Appendix contains information on the audit scope and methodology.

## III. FINDING

### Improvements Are Needed in the ISFSI Security Program

While NRC has taken steps to improve its oversight of ISFSI security, and the agency has not experienced any problems with ISFSI security, the Office of the Inspector General (OIG) identified the following opportunities to enhance management of the ISFSI security oversight program:

- Define key ISFSI security office roles and responsibilities.
- Update the ISFSI security inspection procedure.
- Train inspectors assigned to assess ISFSI security.
- Develop a centralized database of ISFSI security-related information.

OIG acknowledges the agency's post-September 11, 2001, categorization of ISFSIs as a relatively low security risk and its decision to place security resources on higher risk programs; however, making certain basic improvements in program management will facilitate the continued success of ISFSI security and prevent lapses that could occur in the absence of such improvements.

### Structured and Efficient Programs

According to Federal Government guidance, including the Government Accountability Office's "Standards for Internal Control in the Federal Government," a program's efficiency is dependent on (1) clearly delineated roles and responsibilities of offices and individuals involved to avoid confusion and ensure that people understand their roles and responsibilities, (2) guidance documents to establish management expectations and ensure that all staff involved understand their roles, (3) training to ensure that employees have the skills needed to perform their work, and (4) data that is organized to facilitate use by staff and managers for decisionmaking.

### Improvements in ISFSI Security Program Needed

NRC has made efforts to strengthen its oversight of ISFSI security since the terrorist attacks of September 11, 2001; however, the program lacks:

A. An overarching process document to ensure that the various offices and entities with ISFSI security program responsibilities are carrying out their responsibilities efficiently and effectively, especially given the number of different offices involved.

B. A permanent ISFSI security inspection procedure.

C. Inspectors trained specifically on ISFSI systems and security.

D. A single database of ISFSI security information that is consistently organized and accessible to inspectors and program managers.

*(A) Overarching Process Documentation Needed*

NMSS, NSIR, and the Office of Nuclear Reactor Regulation, along with four regional divisions, have all played important roles in providing oversight of ISFSI security. NMSS is responsible for issuing the security requirements to ISFSI licensees and providing the resources to the inspectors who conduct the security inspections. NSIR developed and maintains the additional security requirements over ISFSIs and the technical guidance used by inspectors to ensure licensee compliance with security orders. The Office of Nuclear Reactor Regulation issued Inspection Procedure 81001, "Independent Spent Fuel Storage Installations."[8] Regional inspectors have the responsibility for ensuring licensee compliance; however, each NRC regional office determines which regional inspection group will conduct these inspections. Two regions utilize inspectors based within the Division of Nuclear Materials Safety, who have materials safety qualifications (primarily health physicists), and two regions utilize inspectors based within the Division of Nuclear Reactor Safety, who have reactor security qualifications.

Although staff involved with ISFSI security oversight understand their roles, there is no process document that outlines the roles and responsibilities of all offices involved. Without this global perspective, there are no assurances that lapses do not occur with the shared responsibilities. The following examples illustrate some of the challenges and inefficiencies in program management based on the lack of an overarching process document.

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[8] This inspection procedure was issued in 1991 to establish security inspection procedures for ISFSIs.

**Example 1:**  While NSIR developed the additional security requirements over ISFSIs after September 11, 2001, it was NMSS who issued these requirements to licensees through security orders.  Licensees were required to submit responses on their implementation schedules, any compliance issues, and when compliance is achieved.  These responses were returned to NMSS; however, NSIR staff, who are the technical experts on the details of the security requirements, were not involved with reviewing these responses.  NSIR's involvement with this type of licensee compliance verification only began after NSIR issued Temporary Instruction 2690 in 2008.

**Example 2:**  Because the regional offices use different groups of inspectors to conduct ISFSI security inspections, there is no single forum for all counterpart ISFSI security inspectors to discuss their findings or concerns.  While there are counterpart meetings and weekly telephone calls involving the four regional materials divisions and also involving the four regional reactor divisions, only two groups of ISFSI security inspectors attend either meeting.  The two regions using reactor-based inspectors attend one set of meetings while the two regions using materials-based inspectors attend the other set of meetings.  Therefore, all groups involved with ISFSI security do not regularly communicate.

**Example 3:**  During interviews conducted by OIG, one senior NSIR official and 26 percent of the 23 regional inspectors and managers interviewed referred to Inspection Procedure 81001 as being part of the ISFSI security program when, in fact, this inspection procedure was rescinded in 2001.  Furthermore, it was not until November 2010 that an NSIR manager discovered that the Office of Nuclear Reactor Regulation had rescinded this inspection procedure in 2001.  NSIR managers said they were unaware this had occurred and that it had not been communicated to them.

### (B) Inspection Procedure Needed

The ISFSI security program lacks clear documentation of expectations for the security inspection program.  Specifically, there is no inspection procedure related to current ISFSI security requirements.  After the security orders were issued to licensees beginning in October 2002, NRC did not issue any updated inspection guidance to check licensee compliance until 2008.  Currently, inspectors use Temporary Instruction 2690, "Inspection of Additional Security Measures for Dry Cask Storage at

Independent Spent Fuel Storage Installation(s)," to evaluate licensee compliance with the related security orders. This temporary instruction requires inspectors to conduct only an initial security inspection on all ISFSI licensees, but does not mandate any additional inspections or reviews to ensure compliance.

Furthermore, Temporary Instruction 2690 provides only basic information on how to conduct the inspection and does not clearly define what licensee measures would satisfy the security requirements. For example, it states that inspectors should "verify that the licensee performed sufficient analyses." The use of "sufficient" is subjective and up to individual inspector interpretation to determine if a licensee's actions address the intent of the security requirements. As a result, some licensees said that they have observed regional differences in how inspections are conducted and the level of review conducted by the inspectors.

One NSIR official and several inspectors commented that the temporary instruction lacks sufficient specificity. The NSIR official stated that the temporary instruction leaves too much to the inspector's discretion. According to the NSIR official, the instructions are not descriptive or precise enough, which allows differing interpretations by inspectors with different backgrounds. A regional inspector told OIG he would like to see an established inspection frequency, as well as guidance, to help inspectors understand expectations. Two other inspectors stated that specific examples are needed in the inspection guidance to help inspectors determine if licensee actions meet the security requirements.

NSIR has made significant strides toward developing more detailed guidance documentation. A long-term effort is underway to establish a regulation to formalize the security requirements over ISFSIs through the rulemaking process. In the meantime, NSIR has been working to reinstate Inspection Procedure 81001 to provide more extensive, formal guidance for ensuring licensee compliance with ISFSI security orders. This reinstated inspection procedure will also establish a regular inspection frequency. NSIR anticipates this inspection procedure will be implemented in June 2011, when Temporary Instruction 2690 expires.

*(C) Formal Qualification Program Needed*

There is no established qualification program to train and qualify individuals as "ISFSI security" inspectors.  Each region makes determinations on who should conduct ISFSI security inspections.  While the individuals selected to conduct ISFSI security inspections have been qualified as inspectors under at least one of NRC's two inspector qualification programs, neither of the programs focuses specifically on ISFSI security.  NRC's two qualification programs focus on different aspects of regulation and inspection:

- Inspection Manual Chapter 1246, "Formal Qualification Programs in the Nuclear Material Safety and Safeguards Program Area," outlines training and qualification requirements for those inspecting materials safety.

- Inspection Manual Chapter 1245, "Qualification Program for Operating Reactor Programs," outlines training and qualification requirements for those inspecting reactor security.

Consequently, inspectors qualified under Inspection Manual Chapter 1246 lack detailed training of the security environment related to ISFSIs.  One inspector qualified under Inspection Manual Chapter 1246 stated that security is a very specialized area and that these inspections are not something that can just be added on to his duties as a materials inspector.  The inspector said that security is too important an area to have unqualified people performing inspections as non-experts cannot identify security weaknesses or vulnerabilities.  A different inspector with a materials background said that he is not completely comfortable with conducting inspections on ISFSIs located within the protected area because he feels he needs more training in that area.

Inspectors qualified under Inspection Manual Chapter 1245 lack detailed training on ISFSI systems and equipment.  Several inspectors qualified under Inspection Manual Chapter 1245 stated that having some sort of training course with basic information and guidance related to ISFSIs would be useful.

Of the 23 regional inspectors and managers interviewed, 18 said they believe there should be some form of ISFSI security training. One regional manager remarked that there should be a formalized ISFSI security training program as ISFSIs are unique and do not fall exclusively under reactors or materials.

NSIR has recently initiated discussions to establish a formal "ISFSI security" inspector qualification program. One NRC manager involved with the project stated that NSIR plans to develop individual-based training requirements based on the inspectors' previous qualifications. Those inspectors qualified under Inspection Manual Chapter 1246 would be required to take additional training courses that include different security aspects, while those inspectors qualified under Inspection Manual Chapter 1245 would be required to take additional training courses that focus on the design and functionality of ISFSIs. This effort is in an early stage and an NSIR manager estimates that it will take approximately 2 years to establish any formal qualification program.

### (D) Centralized Repository Needed

There is no centralized database that contains ISFSI security-related information. Currently, ISFSI security-related information is located in multiple database systems. Specifically, security orders issued and individual licensee responses to these orders are located within the Agencywide Documents Access and Management System (ADAMS), one of NRC's electronic recordkeeping systems. However, if any of this information is considered Safeguards Information,[9] it may not be stored within ADAMS, but instead must be stored in the agency's new electronic Safeguards Information filing system. Furthermore, easy retrieval of ISFSI information within ADAMS is not always possible. ISFSI information is usually stored within ADAMS by the unique ISFSI license number; however, since a majority of ISFSIs are co-located with reactors, the related ISFSI information is sometimes stored under the reactor license number. One inspector stated that his region's reports are filed under the reactor license number because the ISFSI inspection was performed in conjunction with a reactor security inspection.

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[9] Safeguards Information is a special category of sensitive unclassified information authorized by the Atomic Energy Act of 1954. Safeguards Information is protected similar to Government classified confidential information and significantly more than other sensitive unclassified information (e.g., privacy and proprietary information).

Without a centralized repository, inspectors are unable to quickly and easily research information prior to performing security inspections.  One NRC official stated that when conducting security inspections, it is important to do some prior research such as reviewing security orders issued to that site and the licensee's response as to how the licensee will comply with these requirements.  Because there is no organized way of finding such information, individual inspectors must take time to try to locate related information stored within multiple systems, including ADAMS and the electronic Safeguards Information filing system.  Another headquarters employee stated that the Safeguards Information located in this system can be very difficult to find because it is not categorized well.  Furthermore, a regional branch chief remarked that there have been instances where the licensee had documents or information related to their site that NRC should have had, but did not have, in its records.

In October 2005, NMSS developed an office instruction, SFPO-17, "Issuance, Processing, and Tracking of Security-Related Orders," that required NMSS to track the status of all security-related orders issued to materials licensees in a centralized database.  This database was to help track the status of licensee compliance with security orders.  However, 1 year later, in October 2006, NMSS was divided to create an additional NRC office, the Office of Federal and State Materials and Environmental Management Programs (FSME).  As a result, the responsibility of maintaining the new database shifted from NMSS to FSME.  While the database contained some ISFSI information, no new ISFSI information was entered into the system after the database responsibility was transferred.

While the 2005 effort to organize ISFSI security information was never completed, NSIR has begun a new effort to organize and centralize security-related ISFSI information.  Specifically, NSIR has created a SharePoint site, which is an online centralized database for document sharing.  However, the success of this database depends on the input and participation of the staff involved with the program.

<u>ISFSI Security Program Has Been a Low Priority</u>

NRC lacks (a) a single entity to facilitate coordination among the various offices with roles pertaining to ISFSI security, (b) a permanent inspection procedure, (c) ISFSI security training for inspectors, and (d) a centralized

database with ISFSI security information because the ISFSI security program has been a low priority.  In the aftermath of September 11, 2001, NRC deemed ISFSI security to be a relatively low risk area, especially when compared to operating reactors.  Steps were taken to increase the security requirements of ISFSI licensees; however, additional steps are needed to make this low priority program as efficient and effective as possible.

Agency managers also explained that the ISFSI security program has not developed further because of significant knowledge loss within NSIR due to staffing issues.  In conducting numerous interviews with NRC staff and management, it was noted that the main individual involved with ISFSI security within NSIR unexpectedly passed away in 2009.  This was a significant loss for the ISFSI security group as this individual was the subject matter expert and most of his knowledge and vision for the program had not been transferred or documented.  Over the past couple of years, NSIR staff have attempted to replace the lost knowledge through educating new staff and better documenting and organizing policies and decisions made.  However, the ISFSI security program has suffered additional staff turnover, which has further impeded the group's progress.

Lack of Efficient Management

By implementing several basic program management improvements, NRC will promote coordination and efficient management of the ISFSI security program.  Without overarching program coordination, well-documented roles and responsibilities, inspection guidance, a comprehensive training program, and a centralized repository of security-related ISFSI information, there is no clear basis for timely and fully informed decisions which could result in licensee non-compliance with security requirements.  This could negatively impact NRC's mission to ensure adequate protection of public health and safety, promote the common defense and security, and protect the environment.

### Recommendations

OIG recommends that the Executive Director for Operations:

1.  Develop and implement an overarching process document that defines and clearly documents the roles and responsibilities of all offices involved with ISFSI security.

2.  Develop and implement a comprehensive ISFSI security inspection procedure which includes a defined frequency for inspections to occur.

3.  Develop and implement a formal ISFSI security qualification program.

4.  Develop and implement a centralized repository of relevant ISFSI security information.

## IV. AGENCY COMMENTS

At an exit conference on April 13, 2011, agency management stated their general agreement with the findings and recommendations in this report. Agency management also provided supplemental information that has been incorporated into this report as appropriate. As a result, the agency opted not to provide formal comments for inclusion in this report.

# SCOPE AND METHODOLOGY

Auditors evaluated the adequacy of NRC's oversight over ISFSI security. The audit team reviewed relevant criteria, including "Interim Compensatory Measures (ICM) for Dry Independent Spent Fuel Storage Installations"; "Additional Security Measures (ASM) for the Protection of Dry Independent Spent Fuel Storage Installations"; "Physical Protection of Dry Independent Spent Fuel Storage Installations"; Inspection Procedure 81001, "Independent Spent Fuel Storage Installations"; and Temporary Instruction 2690, "Inspection of Additional Security Measures for Dry Cask Storage at Independent Spent Fuel Storage Installation(s)."

At NRC headquarters, in Rockville, MD, auditors interviewed NSIR and NMSS staff and managers to gain an understanding of their roles and responsibilities in the oversight of ISFSI security. Auditors also traveled to and interviewed NRC staff and management located in Region I (King of Prussia, PA), Region II (Atlanta, GA), Region III (Lisle, IL), and Region IV (Arlington, TX). Additionally, at Nuclear Energy Institute headquarters (Washington, D.C.), OIG interviewed representatives from the Nuclear Energy Institute and various licensees on their involvement within the ISFSI security program. Furthermore, auditors observed an ISFSI security inspection at Palo Verde Nuclear Generating Station located outside Phoenix, AZ.

We conducted this performance audit at NRC headquarters and in the four NRC regional offices from September 2010 through January 2011 in accordance with generally accepted Government auditing standards. Those standards require that the audit is planned and performed with the objective of obtaining sufficient, appropriate evidence to provide a reasonable basis for any findings and conclusions based on the stated audit objective. OIG believes that the evidence obtained provides a reasonable basis for the report findings and conclusions based on the audit objective. Internal controls related to the audit objective were reviewed and analyzed. Throughout the audit, auditors were aware of the possibility or existence of fraud, waste, or misuse in the program. The work was conducted by Beth Serepca, Team Leader; Rebecca Underhill, Audit Manager; Maxinne Lorette, Senior Auditor; and Michael Blair, Management Analyst.