NRC INSPECTION MANUAL

NMSS/SFST

MANUAL CHAPTER 2690

INSPECTION PROGRAM FOR DRY STORAGE OF SPENT REACTOR FUEL AT INDEPENDENT SPENT FUEL STORAGE INSTALLATIONS AND FOR 10 CFR PART 71 TRANSPORTATION PACKAGINGS

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2690-01 PURPOSE

To define the inspection program requirements for the dry storage of spent reactor fuel and other radioactive materials associated with spent fuel storage at an independent spent fuel storage installation (ISFSI). This Inspection Manual Chapter (IMC) covers all activities related to dry storage ISFSIs and transportation packagings, including: operations, maintenance, surveillance testing, preoperational testing, design control, fabrication, and construction. Guidance on scheduling inspections is contained in Appendices A, B, and C. The guidance contained in Appendix B of this IMC may also be used for the inspection of a monitored retrievable storage (MRS) facility and an away from reactor (AFR) site ISFSI.

2690-02 OBJECTIVES

02.01 To establish the general policy and responsibilities for the inspection of ISFSIs.

02.02 To define the program for inspecting ISFSIs and related activities.

02.03 To provide a framework to achieve a uniform level of inspection.

02.04 To define the program for inspections related to the design, fabrication, testing, and maintenance of transportation packagings.

2690-03 DEFINITIONS

03.01 ISFSI. An independent spent fuel storage installation (ISFSI) is a facility designed and constructed for the interim storage of spent nuclear fuel and other radioactive materials associated with the spent fuel (10 CFR 72.3). The term ISFSI refers to the facility authorized for storage of spent nuclear fuel under 10 CFR Part 72 and includes the storage pad, the storage containers, and any support facilities. However, if the ISFSI is located at a reactor site, it does not include any structures, facilities, or services that are part of the 10 CFR Part 50 license, unless they are identified as being shared jointly. Additional background information on ISFSIs may be found in Reference 07.01.

03.02 DCSS. Dry cask storage system (DCSS) is the term used to describe the physical system, either a cask or a canister in its shielding overpack, which holds the spent fuel and is a component of the ISFSI. An ISFSI may contain several different DCSS designs.

03.03 MRS. A monitored retrievable storage (MRS) installation is a complex designed, constructed, and operated by the Department of Energy under the “Nuclear Waste Policy Act of 1987” (NWPA) for the receipt, transfer, handling, packaging, possession, safeguarding, and storage of spent nuclear fuel and solidified high-level radioactive waste resulting from civilian nuclear activities (10 CFR 72.3).

03.04 For this inspection program, four different entities will be discussed.

a. Licensee. An organization that is operating an ISFSI for the storage of spent fuel and other radioactive materials associated with spent fuel under a 10 CFR Part 72 license. The licensee is ultimately responsible for ensuring that the ISFSI is designed, fabricated, constructed, and operated in accordance with the requirements contained in 10 CFR Part 72 and the specific license or the general license Certificate of Compliance (CoC). The licensee may also fabricate DCSS components or construct ISFSI structures, such as the storage pad.

b. Vendor. An organization, typically independent from the licensee, that is responsible for the design of a particular DCSS and ensuring that design commitments contained in the safety analysis report (SAR) are met during the fabrication of the DCSS. For a general license ISFSI, the vendor is also typically the CoC holder for the DCSS. For a specific license ISFSI, there is no CoC, and the SAR contains the relevant information on the design and fabrication of the specific DCSS being used. Regardless of the type of license, the vendor is also responsible for ensuring that the DCSS is designed and fabricated in accordance with the applicable requirements.

c. CoC Holder. A vendor that has obtained Nuclear Regulatory Commission (NRC) approval for a specific DCSS under 10 CFR Part 72, Subpart L. The issuance of a CoC to the vendor authorizes the use of the DCSS in an ISFSI under the general license.

d. Fabricator. An organization that is physically building the DCSS components and receives design oversight from either the vendor, licensee, or both. The fabricator is responsible for manufacturing the DCSS in accordance with the vendor's requirements and drawings.

03.05 There are two types of licenses governed by 10 CFR Part 72 - a general license or a specific license (10 CFR 72.6).

a. General License. Any person issued a license under 10 CFR Part 50 to possess or operate nuclear power reactors is also issued a general license under 10 CFR Part 72, Subpart K, to store spent fuel at an ISFSI located at that power reactor site. This general license authorizes the use of a DCSS that has been previously approved under 10 CFR Part 72, Subpart L.

b. Specific License. Any person or entity may submit an application under 10 CFR Part 72 for a specific ISFSI license. The application should contain detailed information on the ISFSI's site characteristics and the particular DCSS to be used. Under a specific license any DCSS design can be used at any location. While a specific 10 CFR Part 72 license is independent from a co-located 10 CFR Part 50 reactor license, some structures, systems, and programs—that are part of the licensing basis for the reactor license-may be shared.

03.06 AFRAway-from-Reactor (. For inspection purposes under this IMC, an away from reactor (AFR) ISFSI is defined to be 1) a specific licensed ISFSI whose associated support programs are not conducted under a 10 CFR Part 50 license, or 2) any general licensed

ISFSI where decommissioning and final survey activities related to reactor operations are completed and the only remaining operation conducted under the 10 CFR Part 50 license is the operation of the general licensed ISFSI. [Reference November 10, 2005, Memorandum under ML053040058].

03.07 IIP. An integrated inspection plan (IIP) is a document developed by the cognizant region, with input from the Spent Fuel Project Office (SFST) on technical, regulatory, prior performance, and lessons learned for each new specific license ISFSI site (see Section 05.05). The IIP provides supplemental guidance for planning and scheduling the numerous inspections and any technical reviews that are required before initial loading of spent fuel into the ISFSI. The IIP is intended to ensure that adequate resources are applied to perform the necessary inspections before initial loading of spent fuel into the ISFSI.

2690-04 RESPONSIBILITIES AND AUTHORITIES

04.01 Director, Division of Spent Fuel Storage and Transportation (SFST), Office of Nuclear Material Safety and Safeguards (NMSS). Directs the activities of the SFST and is responsible for their implementation. Approves the inspection program and procedures for activities relating to the dry storage of spent reactor fuel and other radioactive materials at ISFSIs.

04.02 SFST, NMSS.

a. Develops and implements the Agency's regulatory, licensing, and inspection programs for the storage of nuclear reactor spent fuel.

b. Develops and assesses the overall effectiveness of the spent fuel dry storage inspection program.

c. Develops, modifies, and revises inspection program guidance [NRC IMCs and inspection procedures (IPs)] under SFST's purview to ensure that ISFSI-related activities are conducted in accordance with appropriate regulations and standards. Incorporates lessons learned into the inspection program for IMCs and IPs under SFST's purview. Recommends changes to other organizations for IMCs and IPs under their purview.

d. Serves as a source of technical expertise for questions on DCSS' or ISFSIs (e.g., DCSS design requirements, ISFSI citing criteria, accident analysis, or conditions contained in the specific license or CoC).

e. Manages the assignment, scheduling, and performance of inspections of ISFSI vendors (including CoC holders) and fabricators.

f. Provides SFST inspection resources to support region-led inspections of ISFSIs. Plans, schedules, and coordinates, with the Regional Branch Chief, inspections of ISFSI vendors, fabricators, and CoC holders. Even though resources for ISFSI inspections are budgeted in advance, together with the Office of Nuclear Reactor

Regulation (NRR), the regions are allowed some flexibility in their actual allocation of ISFSI inspection resources to reflect changes in inspection schedule and scope.

g. Serves as the focal point for collecting lessons learned from previous IIPs and provides expertise in the development of new IIPs for specific license ISFSI.

h. Participates with the Regional Branch Chief in the development of an IIP for each new specific license ISFSI site (see Section 05.05).

   1. Provides input on technical and regulatory issues, associated with the specific ISFSI and DCSS being used, to the region, for inclusion in the IIP.

   2. Based on review of the NRC safety evaluation report (SER), identifies any special inspection resources necessary to resolve technical or regulatory issues for inclusion in the IIP.

   3. Based on lessons learned from prior IIPs and licensee, vendor, and fabricator performance, identifies any technical, regulatory, performance, or scheduling issues for inclusion in the IIP.

i. Interfaces, as necessary, with the various NRR Office, project and technical division staffs, regarding the inspection of ISFSI activities at 10 CFR Part 50 reactor sites.

04.03 SFST Project Manager (SFST/PM).

a. For all assigned ISFSIs, serves as the focal point of contact for technical and regulatory issues that affect the ISFSI. The NRR/PM is the point of contact for ISFSI issues that affect the reactor's structures, systems, and components (SSCs) (see Section 04.09).

b. For all assigned 10 CFR Part 50 reactor site ISFSIs, serves as the focal point of contact for the NRR/PM where operation of reactor affects the ISFSI's SSCs. Serves as the focal point of contact for the NRR/PM or Regional Branch Chief requests to obtain SFST resources.

c. For all assigned 10 CFR Part 50 reactor site ISFSIs, serves as the focal point of contact for all ISFSI issues after site project management responsibilities have been assumed by NMSS.

d. For all assigned AFR ISFSIs, serves as the focal point of contact for all AFR ISFSI issues.

04.04 Regional Administrator.

a. Oversees the implementation of the ISFSI inspection program elements that are performed by the regional office.

b. Ensures, within assigned budget limitations, that the regional office staff includes adequate numbers of inspectors necessary to carry out the inspection program described in this IMC.

04.05 Regional Division Director.

a. Manages the implementation of the ISFSI inspection program as assigned by the Regional Administrator.

b. Directs the execution of the ISFSI inspection program elements that are performed by his/her division.

c. Ensures that allocated inspection resources are appropriately scheduled for the routine inspection of the Region's ISFSIs, using the regional planning process.

d. Ensures that necessary reactive inspection resources are applied to deal with events and problems at the Region's ISFSIs, as required.

e. Approves the IIP (generally by memorandum) prepared for each new specific license ISFSI site in the region (see Section 05.05).

04.06 Regional Branch Chief.

a. For each assigned ISFSI, manages the planning, scheduling, and performance of inspections of ISFSIs using the inspection resources allocated by the regional planning processes.

b. For each assigned ISFSI, contacts the SFST/PM, as necessary, to request SFST resources in response to any events or problems at his/her assigned ISFSIs.

c. For each assigned ISFSI, ensures that accountability is maintained over the implementation of the inspection program per the guidance in Sections 05.03 and 05.05.

d. For each assigned ISFSI, notifies the SFST/PM of any changes to inspection frequencies for the inspections listed in Tables A-2 and B-2 of Appendices A and B of this IMC.

e. For each assigned ISFSI, ensures that inspections of ISFSI activities are documented in accordance with Sections 05.07 and 05.08.

f. For each assigned new ISFSI, create an IIP in accordance with Section 05.05. Provide feedback and any lessons learned to the applicable SFST/PM, after the IIP has been completed.

04.07 Regional Liaison for Spent Fuel Storage Issues [Optional].

a. Provides assistance to Regional Branch Chiefs and inspectors to ensure consistency in inspection planning and oversight of the region's ISFSI activities.

b. Serves as a regional point of contact for interactions with the SFST and NRR on ISFSI policy and program issues.

04.08 NRR.

a. Retains oversight of spent fuel at operating and decommissioned reactors, until the fuel has either been safely stored in an ISFSI or transferred offsite.

b. Provides inspection resources, as requested, to NMSS or the Regions for routine and reactive ISFSI inspection activities performed at 10 CFR Part 50 licensees in accordance with IMCs 2515, "Light-Water Reactor Inspection Program - Operations Phase," and 2561, "Power Reactor Inspection Program - Decommissioning."

04.09 NRR Project Manager (NRR/PM).

a. Serves as the focal point of contact on issues where the operation of an ISFSI, located at a 10 CFR Part 50 reactor site, affects the reactor's SSCs (e.g., 10 CFR 50.59 issues). Informs the SFST/PM if any such issues are identified and of any technical and regulatory issues related to a particular ISFSI.

b. Serves as the point of contact for the SFST/PM in obtaining NRR resources and support on ISFSI issues, for an ISFSI located at a 10 CFR Part 50 reactor site.

c. Contacts the assigned SFST/PM with any requests for SFST resources and support on issues where the ISFSI is affecting the 10 CFR Part 50 reactor site.

d. Serves as the point of contact for public and media inquiries on ISFSI issues, for an ISFSI located at a reactor site, and for any AFR ISFSI sites in the region. Contacts the assigned SFST/PM for additional information or guidance as required.

2690-05 PROGRAM DESCRIPTION

05.01 Inspection Program for 10 CFR Part 50 ISFSI Activities. The program for inspecting either a general or specific licensed ISFSI whose associated support programs are conducted under a 10 CFR Part 50 license, is described in Appendix A of this IMC.

05.02 Inspection Program for AFR ISFSI Activities. The program for inspecting AFR ISFSIs is described in Appendix B of this IMC.

05.03 Planning, Scheduling, and Tracking of Inspection Activities. Each region should implement a system for planning, scheduling, and recording of completed inspections of ISFSI activities in accordance with regional requirements.

05.04 SFST Scheduling of Fabricator Inspections. The scheduling of vendor and fabricator inspections should consider vendor or fabricator performance and recent vendor or fabricator inspections performed for other ISFSI licensees. Additional inspections may be conducted as required. The SFST will inform any affected regions of the schedule for

inspecting vendors or fabricators and any schedule changes, as soon as the need for the change is identified.

05.05 IIP. For a new specific license ISFSI site being constructed, the applicable Regional Branch Chief, with input and assistance from the SFST, should develop an IIP in accordance with the guidance listed below. The cognizant Regional Division Director should approve the IIP and the SFST will concur in it. The IIP should be forwarded to the NRR/PM for information and for use in planning and scheduling any requested Headquarters inspections or technical reviews. The Region should inform the SFST/PM and NRR/PM if any changes are subsequently made to the IIP, as soon as the need for the change is identified.

a. The IIP should be developed as early as possible with a goal of issuance 12 to 24 months before the licensee or applicant intends to begin storage of spent fuel in the ISFSI.

b. For activities directly relating to the ISFSI (e.g., design, construction, fabrication, preoperational testing, and operations), the IIP should include a list of the IPs to be used, the number of inspections required to complete a specific IP, estimated inspection resources, a principal inspector, and any requests for NRR or SFST technical assistance or inspection resources.

c. For activities that support operation of the ISFSI (e.g., the licensee's or applicant's programs for quality assurance, security, emergency preparedness, or radiation protection), the IIP should contain information similar to that specified in paragraph b. above. SFST should provide input on the scope of these reviews. Each support program being reviewed should be listed as a specific element in the IIP.

d. The IIP should indicate licensee milestones, planned inspection dates, and any linkages between the two (e.g., the relationship between dates for inspecting the ISFSI support pad and the licensee's planned pad construction and concrete placement schedule).

e. Based on the SAR, SER, previous inspections, vendor or fabricator prior performance, and lessons learned from previous IIPs, the SFST should identify to the region any technical, regulatory, or performance issues that should be included as specific elements in the IIP. This may include inspections of vendors or fabricators.

f. For an AFR ISFSI, the SFST and the region should jointly determine which NRC Inspection Manual IPs, or sections of IPs, are appropriate to inspect the licensee's or applicant's implementation of those programs that support operation of the ISFSI (see list of typical programs in Section B of Appendix B).

g. The following guidance should be used in scheduling inspections of licensee or applicant activities:

1. Inspection of the quality assurance program should be completed before design activities are finished. If possible, inspections should be completed before design activities are begun.

2. Inspection of design activities should be performed during the design process and should be completed before construction or fabrication activities begin, if possible.

3. Inspection of design activities should include a review of any design changes or modifications made by the licensee or CoC holder and the associated safety evaluations completed in accordance with 10 CFR 72.48 or the CoC (see also Section 05.09).

4. Inspection of a general licensee's 10 CFR 72.212(b) evaluations (if available) should be completed before the preoperational testing begins. Review of the 10 CFR 72.212(b) evaluations (if available) of the ISFSI support pad should be performed before the support pad is completed. Refer to IP 60856, "Review of 10 CFR 72.212(b) Evaluations."

5. Initial inspection of ISFSI operating procedures (e.g., loading, unloading, abnormal, and emergency) should be performed before the preoperational testing occurs. A final inspection, if required, of the licensee's approved procedures should be completed before the licensee begins to store spent fuel in the ISFSI. Note: Some licensees may use the dry run (part of the preoperational testing) as a method of validating these procedures before approving them for use.

h. After the IIP has been completed, the Regional Branch Chief should provide an assessment of the IIP and any lessons learned to the SFST/PM for use in developing future IIPs.

05.06 Reporting Procedures. Results of inspections conducted by the regional offices shall be documented in accordance with regional requirements. Results of inspections conducted by headquarters shall be documented as described below in Section 05.07. Inspection reports or inspector notes shall contain the relevant 10 CFR Part 72 docket number and, for specific licensees, the license number. Inspections of 10 CFR Part 72 activities that are combined with inspection reports of 10 CFR Part 50 activities, for ISFSIs located at reactor sites, shall also include the relevant 10 CFR Part 72 docket number and, for specific licenses, the 10 CFR Part 72 license number.

05.07 Methods of Documenting Inspection Results for Headquarters-Led Inspections. Inspection results shall be documented in inspector notes or in narrative report format depending on inspection outcome. When using inspector notes, NRC Form 591 shall be used to document the result of the inspection with respect to enforcement status. At SFST discretion, narrative reports may be used outside of the situations described below in 05.07(b).

a. Each IMC 2690 inspection procedure has a corresponding inspector notes form that shall be used for inspection planning and for documenting inspection results. SFST maintains the files for these forms. Inspector notes do not have to be typed, but should be legible and should contain: (1) sufficient detail to describe the inspection that was conducted, including observations; (2) the compliance status of topics examined during the inspection; (3) the status of follow-up items involving prior enforcement or reported licensee or vendor events; (4) any additional information related to violation findings, and completed or anticipated corrective actions to any identified violations, documented on the NRC Form 591; and (5) sufficient detail for management and other inspectors to evaluate the licensee's or vendor's overall status with respect to implementation of their quality assurance program. A different inspector should be able to use the inspector notes in preparing for a subsequent inspection, and to determine whether corrective actions have been taken.

b. A narrative report is required for reactive inspections and for findings which may involve an enforcement conference or escalated enforcement. For escalated cases, the narrative report should only address the areas in which safety concerns and violations are identified and all other areas shall be covered in the inspector notes. Inspector notes must document routine inspection activities that are not covered in the narrative report. All inspection documentation shall be filed in the licensee or vendor docket file.

05.08 Methods of Transmitting Inspection Results. Region-based inspection reports shall be transmitted to licensees in accordance with regional instructions. For headquarters-led inspections, results shall be reported to the licensee or vendor by issuing the following: 1) an NRC Form 591 (in accordance with the guidance in this IP and the Enforcement Manual), or 2) issuance of a narrative report for those situations described in 05.07(b).

Inspector notes (used for headquarters-led inspections) shall be reviewed and signed by the Rules, Inspections and Operations (RIO) Branch Chief and shall be entered into the Agency-wide Documents Access and Management System (ADAMS).

a. NRC Form 591, "Safety Inspection," shall be used: (1) to document clear inspections and inspections resulting in Severity Level IV violations (that are neither willful nor repetitive) that can be corrected while the inspector is present, or that the licensee or vendor is able to correct easily; and (2) to document non-cited violations (NCVs), as discussed in the Enforcement Manual, Section 4.3. When the NRC Form 591 is used to document the results of an inspection, the inspector must ensure that for each cited and non-cited violation, the form includes a brief statement of the circumstances, including the date(s) of the violation or NCV and the facts necessary to demonstrate that a requirement was not met, and reference to the regulation or license condition that was violated. The inspector shall also document on the form (as well as in inspector notes) the corrective actions that the licensee or vendor has taken or plans to take to address each violation identified. The following are examples of how to document citations on an NRC Form 591:

1. Design calculation did not receive required independent review. [10 CFR 72.146(b)]

2. Purchased material was not obtained from an approved vendor. [10 CFR 72.154(a)]

The inspector must also ensure that the findings are documented in the inspector notes in sufficient detail for the reader to determine what requirement was violated, how it was violated, who violated the requirement, and when it was violated. If the licensee or vendor provides corrective action for the violations, this information should also be included in the inspector notes. In addition, for NCVs, the inspector notes shall document why the violation was not cited and the corrective action taken or planned. The inspector will present NRC Form 591 to the licensee or vendor at the conclusion of the exit interview, or, on rare occasions where consultation with management is necessary, the inspector may mail NRC Form 591 from the office.

05.09 Authority to Approve Changes to the ISFSI or DCSS. Effective with a rule change that became effective April 5, 2001, licensees, vendors and CoC holders are all authorized by the provisions of 10 CFR 72.48 to make changes to the ISFSI or DCSS described in the SAR, to approve changes to procedures described in the SAR, or to perform tests or experiments not described in the SAR without prior NRC approval.

05.10 Enforcement Action Follow-up. If a licensee has open items resulting from traditional enforcement including violations, deviations, Confirmatory Action Letters (CALs), Confirmatory Orders, and Confirmatory Orders associated with the Alternative Dispute Resolution (ADR) process, inspectors should review the open items and status. Any in-office or on-site inspection or follow-up review should be conducted in accordance with IP 92702, "Followup on Traditional Enforcement Actions Including Violations, Deviations, Confirmatory Orders, and Alternative Dispute Resolution Confirmatory Orders."

2690-06 DEFINITION OF INSPECTION FREQUENCIES

06.01 When Required (W). The inspection effort should be performed when the activity or event occurs at the facility as specified in Appendices A, B, or the guidance section of specific inspection procedures.

2690-07 REFERENCES

NUREG-1571, "Information Handbook on Spent Fuel Storage Installations," December 1996.

NUREG-1536, "Standard Review Plan for Dry Cask Storage System," February 1997.

NUREG-1567, "Standard Review Plan for Spent Fuel Storage Facilities," March 2000.

END

Appendices:

A. “Inspection Program Guidance for Reactor Site ISFSIs”

B. “Inspection Program Guidance for Away From Reactor Site ISFSIs”

C. “Inspection Program Guidance for Transportation Packagings”

Appendix A

INSPECTION PROGRAM GUIDANCE FOR REACTOR SITE ISFSIs

A. SCOPE

This appendix describes the inspection program for ISFSI activities authorized under the provisions of a general or specific license for an ISFSI associated with a 10 CFR Part 50 reactor site and whose support programs are conducted under the reactor site's 10 CFR Part 50 license. Guidance is provided on the scheduling and conduct of inspections during various phases of ISFSI activities: design, fabrication, and construction; preoperational testing; loading and unloading; and storage monitoring. Guidance is also provided on the frequency of performing periodic inspections once spent fuel has been placed in the ISFSI for storage. For the purposes of this Appendix, ISFSI activities are viewed as occurring in the following four phases: (NOTE: Phase 3 and 4 activities may occur concurrently)

Phase 1 - Design, fabrication, and construction

Phase 2 - Preoperational testing, including dry runs

Phase 3 - Spent fuel loading and unloading operations

Phase 4 - Storage monitoring of the loaded ISFSI

Because the ISFSI is associated with a 10 CFR Part 50 reactor site, the licensee's programs (e.g., quality assurance, safety evaluations, radiation protection, emergency preparedness, or security) that support operation of the ISFSI were previously reviewed under the IMC 2500 series inspection programs. Consequently, for an ISFSI associated with a 10 CFR Part 50 reactor site, the IMC 2690 inspection program has been simplified with regard to reviewing these licensee or applicant programs. Inspection efforts should be directed at verifying that activities relating to the ISFSI have been properly incorporated into the existing licensee programs such that a full reinspection of the licensee's or applicant's programs is not required. In contrast, activities specifically related to the ISFSI (e.g., DCSS fabrication, support pad construction, and loading and unloading procedures) are unique and should be reviewed in depth. The scope and time frame of these inspections should be defined in the IIP (See Section 05.05 of the IMC).

B. CONDUCT OF ROUTINE INSPECTIONS

Table A-1 provides milestones for completing inspection activities during Phases 1, 2, and 3, before initial storage of spent fuel in the ISFSI. Although performance of these IPs is mandatory, individual sections may be omitted if the licensee has recently demonstrated satisfactory performance in the inspected area or if this would duplicate inspection activities. The scope and dates of these inspections should be defined in the IIP for specific license ISFSIs.

The completion milestones in Table A-1 should be viewed as "by no-later-than"(NLT) dates for each IP. Conversely, sections of specific IPs may need to be completed before the overall milestone specified in Table A-1 due to the need to observe in-process work or because of weak prior performance in some areas. If several casks are being fabricated at one time, then the milestone associated with IP 60852 should be completed before the fabricator finishes manufacturing the last of that series of casks.

Selected IPs from Table A-1 should be re-performed if a licensee intends to use a new model or type of DCSS. Specifically, portions of IPs 60854 through 60856 should be re-performed to verify that the licensee can safely use the new model or type of DCSS.

TABLE A-1

IP NUMBER	IP SUBJECT	NLT MILESTONE
60851	Design control of ISFSI components	Beginning of fabrication
60852	ISFSI component fabrication by outside fabricators	Completion of fabrication
60853	On-Site fabrication of components and construction of an ISFSI	Completion of construction
60854	Pre-operational testing of an ISFSI	Completion of preop testing
60855	Operation of an ISFSI (other than initial fuel loading, unloading, and surveillances)	Before loading begins[1]
60856	Review of 10 CFR 72.212(b) Evaluations	Completion of preop testing[2]
60857	Review of 10 CFR 72.48 evaluations	As needed to support above IPs

[1] Note: All loading and unloading procedures should be reviewed before initial loading of spent fuel into the ISFSI.
[2] Note: Inspection of a general licensee's 10 CFR 72.212(b) evaluations (if available) should be completed before the preoperational testing begins. Review of the 10 CFR 72.212(b) evaluations (if available) of the ISFSI support pad should be performed before the support pad is completed. Refer to IP 60856, "Review of 10 CFR 72.212(b) Evaluations."

Subsequent to initial cask loading, Phases 3 and 4 inspection activities should focus on loading/unloading activities, modifications, 10 CFR 72.48 safety evaluations, 10 CFR 72.212(b) evaluations if new DCSS designs are used, and surveillance monitoring of active

ISFSIs. Inspection guidance for these activities is contained in IPs 60855, 60856, and 60857. Table A-2 provides guidance on scheduling Phase 3 and 4 inspection activities. Scheduling and performance of these inspections should be tracked in accordance with Section 05.05 of this IMC.

Table A-2

IP NUMBER	INSPECTION ACTIVITY	FREQUENCY
60855	Loading additional casks and performing surveillances as deemed necessary dependent upon prior inspection history, licensee performance, lessons learned, or scheduling issues; any cask unloading occurrences should be inspected	W
60856	First use of different DCSS design	W
60857	Modifications to the ISFSI or DCSS design	W

Licensee programs that support ISFSI operations are under the 10 CFR Part 50 license and are subject to periodic reinspection by the IMC 2515 and IMC 2561 programs. Consequently, these licensee programs that support operation of the ISFSI need not be periodically reinspected per IMC 2690 until the sites meet the definition of an AFR under Section 03.06 of this IMC. These licensee programs should then be periodically reinspected using the guidance for an AFR ISFSI contained in Appendix B.

C. CONDUCT OF REACTIVE INSPECTIONS

The SFST/PM and the Regional Branch Chief should coordinate with the cognizant NRR/PM, as necessary, regarding the conduct of reactive inspections at ISFSIs located at 10 CFR Part 50 licensees. Reactive inspections of abnormal situations and events may use the IPs given in Table A-1. However, this inspection guidance may be supplemented by other IPs from the IMC 2515 and IMC 2561 inspection programs, as appropriate. The SFST/PM and the Regional Branch Chief should coordinate with the cognizant NRR/PM, as necessary, regarding the conduct of Augmented Inspection Team (AIT) inspections at ISFSIs located at Part 50 licensees. The conduct of AITs should be per IP 93800, “Augmented Inspection Team Implementing Procedure.”

END

Appendix B

INSPECTION PROGRAM GUIDANCE FOR AFR ISFSIs

A. SCOPE

This appendix describes the inspection program for AFR ISFSI as defined in Section 03.06 of IMC 2690. Guidance is provided on scheduling and conducting inspections of the applicant's programs that support operation of the ISFSI and of design, fabrication, construction, preoperational testing, loading and unloading, and storage-monitoring activities. Guidance is also provided on the frequency of performing periodic inspections once spent fuel has been placed in the ISFSI for storage. For the purposes of this Appendix, AFR ISFSI activities are viewed as occurring in the following four phases: (Note: Phases 3 and 4 activities may occur concurrently)

Phase 1 - Design, fabrication, and construction activities

Phase 2 - Preoperational testing and dry runs

Phase 3 - Spent fuel loading and unloading operations

Phase 4 - Storage monitoring of the loaded ISFSI

B. ISFSI SUPPORT PROGRAM REVIEW

In addition to the inspections described in the following four Phases, inspection of the applicant's programs that support operation of the ISFSI should also be performed. These programs include, but are not limited, to the following:

- Quality Assurance Program
- Operations Program
- Maintenance Program
- Radiation Protection Program
- Radioactive Waste Management Program (Radwaste)
- Radiological Effluents and Environmental Monitoring Program (REMP)
- Packaging, Shipping, and Transportation Program
- Emergency Preparedness Program
- Training Program

- Security Program
- Material Control and Accounting Program
- Fitness for Duty Program
- 10 CFR Part 21 Program
- Fire Protection
- Administration

The applicant for a specific ISFSI license has provided information on these programs as part of its application and SAR. After SFST has reviewed the applicant's programs as part of the licensing process, a list of the programs that require inspection of implementing procedures should be provided to the Regional Branch Chief for inclusion as elements in the IIP for specific license ISFSIs (see Section 05.05 of the IMC). For each program that is required to be inspected, SFST and the Region should identify which NRC Appendix B, Inspection Manual IPs or sections of IPs will be used to perform the inspections. This information should be included in the IIP. When establishing the scope of these inspections any questions raised during review of the SAR and the applicant's previous experience and performance should be considered. Questions on applicant programs that support operation of the ISFSI should be referred to the SFST/PM for further assistance, if required. For timekeeping purposes, all time spent inspecting the implementation of these programs should be charged to IP 60855.

C. CONDUCT OF ROUTINE INSPECTIONS

Table B-1 provides milestones for completing inspection activities during Phases 1, 2, and 3, before initial storage of spent fuel in the ISFSI. Although performance of these IPs is mandatory, individual sections may be omitted if the licensee has recently demonstrated satisfactory performance in the inspected area or if this would duplicate inspection activities. The scope and dates of these inspections should be defined in the IIP.

The completion milestones in Table B-1 should be viewed as "by no-later-than"(NLT) dates for each IP. Conversely, sections of specific IPs may need to be completed before the overall milestone specified in Table B-1 due to the need to observe in-process work or because of weak prior performance in some areas. If several casks are being fabricated at one time, then the milestone associated with IP 60852 should be completed before the fabricator finishes manufacturing the last of that series of casks.

Selected IPs from Table B-1 should be re-performed if a licensee intends to use a new model or type of DCSS. Specifically, portions of IPs 60854 through 60856 should be re-performed to verify that the licensee can safely use the new model or type of DCSS.

Subsequent to initial cask loading, Phases 3 and 4 inspection activities should focus on loading/unloading activities, modifications, 10 CFR 72.48 safety evaluations, 10 CFR

72.212(b) evaluations if new DCSS designs are used, and surveillance monitoring of active ISFSIs. Inspection guidance for these activities is contained in IPs 60851, 60855, 60856, 60857 and 60858. Table B-2 provides guidance on scheduling Phase 3 and 4 inspection activities. Scheduling and performance of these inspections should be tracked in accordance with Section 05.05 of this IMC.

TABLE B-1

IP NUMBER	IP SUBJECT	NLT MILESTONE
60851	Design control of ISFSI components	Beginning of fabrication
60852	ISFSI component fabrication by outside fabricators	Completion of fabrication
60853	On-Site fabrication of components and construction of an ISFSI	Completion of construction
60854	Pre-operational testing of an ISFSI	Completion of preoperational testing
60855	Operation of an ISFSI (other than initial fuel loading, unloading, and surveillances)	Before loading begins[1]
60857	Review of 10 CFR 72.48 evaluations	As needed to support above IPs
60858	Away-From-Reactor ISFSI Inspection Guidance	Routine ISFSI program reviews not performed under IP 60855

[1]Note: All loading and unloading procedures should be reviewed before initial loading of spent fuel into the ISFSI.

Table B-2

IP NUMBER	INSPECTION ACTIVITY	FREQUENCY
60851	Modifications to the ISFSI	W
60855	Loading additional casks (each occurrence), performing surveillances, and unloading casks (each occurrence)	W
60856	First use of different DCSS design	W
60857	Modifications to the ISFSI or DCSS design	W
60858	Routine ISFSI operation program inspections	W

The Regional Division Director should adjust the inspection frequency of these inspections based on the licensee's performance and the presence of activity (e.g., review of the transportation program should be deferred if no shipments of radioactive material are occurring). Similarly, the licensee's fire protection program should only be reinspected if the ISFSI has significant fire hazards (e.g., a radwaste storage area or maintenance area where flammable liquids are stored).

D. CONDUCT OF REACTIVE INSPECTIONS

The SFST/PM and the Regional Branch Chief should coordinate with each other regarding the conduct of reactive inspections at AFR ISFSIs. Reactive inspections of abnormal situations and events may use the IPs given in Table B-2. However, this inspection guidance may be supplemented by other IPs from the IMC 2515 and IMC 2561 inspection programs, as appropriate.

The SFST/PM and the Regional Branch Chief should coordinate with each other regarding the conduct of Augmented Inspection Team (AIT) inspections at AFR ISFSIs. The conduct of AITs is addressed by IP 93800, "Augmented Inspection Team Implementing Procedure."

END

Appendix C

INSPECTION PROGRAM GUIDANCE FOR TRANSPORTATION PACKAGINGS

A. SCOPE

This appendix provides guidance related to IP 86001 for the inspection program for activities related to the design, modification, fabrication, assembly, testing, procurement, repair, and maintenance of transportation packagings. The certificate of compliance (CoC) holder is responsible for maintaining all permanent records required by 10 CFR Part 71, Subpart H.

B. INSPECTION REQUIREMENTS OF TRANSPORTATION PACKAGINGS

Inspections are performed to establish that radioactive material transportation packaging activities are performed in accordance with commitments and requirements specified in the CoC, Safety Analysis Report for Packagings (SARP), NRC-approved Quality Assurance Program for Transportation of Radioactive Materials, and 10 CFR Part 71, and to determine that the transportation packaging is safe to use based on observation of activities, and examination of permanent quality records and other supporting documentation. The SARP describes design, fabrication, test, and maintenance commitments and functions for a given transportation packaging. Additional inspection guidance is in NUREG/CR-6314, "Quality Assurance Inspections for Shipping and Storage Containers." The related document is Regulatory Guide 7.10, "Establishing Quality Assurance Programs for Packaging Used in the Transport of Radioactive Material."

TABLE C-1

IP NUMBER	IP SUBJECT	NLT MILESTONE
86001	Design, fabrication, testing, and maintenance of transportation packagings	Beginning of fabrication

END

Attachment 1

Revision History

Commitment Tracking Number	Issue Date	Description of Change	Training Required	Training Completion Date	Comment Resolution Accession Number
N/A	05/03/07 CN 07-015	Incorporate recognition of new IP 60858, revise definition of AFR ISFSI, and recognize name change of SFPO to SFST and other minor editorial changes.	None	N/A	ML070430050
N/A	08/04/08 CN 08-022	Incorporate guidance for follow-up of traditional enforcement including Alternate Dispute Resolution (ADR) open items.	None	N/A	N/A