



UNITED STATES  
**NUCLEAR REGULATORY COMMISSION**  
REGION IV  
1600 EAST LAMAR BLVD  
ARLINGTON, TEXAS 76011-4511

August 14, 2012

Mr. Richard B. Provencher, Manager  
Department of Energy  
Idaho Operations Office  
1955 Fremont Ave., MS 1203  
Idaho Falls, ID 83415

SUBJECT: THREE MILE ISLAND, UNIT 2, ISFSI – NRC INSPECTION OF THE  
INDEPENDENT SPENT FUEL STORAGE INSTALLATION - INSPECTION  
REPORT 07200020/2012-001

Dear Mr. Provencher:

A routine inspection of spent fuel storage activities at the U.S. Department of Energy's (DOE) Three Mile Island, Unit 2 (TMI-2), Independent Spent Fuel Storage Installation (ISFSI) was conducted on June 27, 2012. At the conclusion of the inspection on July 16, 2012, an exit briefing was conducted with members of your staff. The enclosed report presents the scope and results of the inspection.

The inspection examined activities conducted under your license, as they relate to public health and safety, to confirm compliance with the Commission's rules and regulations and with the conditions of your license. This inspection focused on issues that were identified in the March 2011 inspection (ADAMS Accession ML11097A0281). Two inspection open items (NOD 72-20/1101-01 and IFI 72-20/1101-02) were identified in the March 2011 inspection report. The first item was regarding a Notice of Deviation (NOD) that was issued for removing a commitment from the Emergency Plan. The second, an inspector follow-up item (IFI), was to review the repairs made to the horizontal storage modules (HSM) and to ensure a monitoring program was established by your organization to monitor those repairs and any further degradation.

The licensee's staff has appropriately responded to the NOD by replacing the commitment back into the Emergency Plan. The licensee has implemented changes to their administrative procedures to identify, maintain, and track commitments made to the NRC to avoid further deviations. The NRC has concluded that Open Item NOD 72-20/1101-01 can be closed.

During the March 2011 inspection of the ISFSI, observations were made of the condition of the concrete on the horizontal storage modules. These modules were originally designed for a 50-year service life when constructed in 1999, but were showing significant cracking and degradation due to water intrusion into the concrete and the numerous freeze-thaw cycles experienced. Since the March 2011 inspection, the DOE has initiated and completed a concrete repair program to address, mitigate, and stabilize the degradation of the horizontal storage modules (before and after photos are included as Attachment 2). The licensee plans to perform a base line inspection this year and in subsequent years to monitor the condition of the repairs and to analyze any additional degradation that occurs. The NRC has reviewed the licensee's analysis of the structural integrity of the horizontal storage modules to perform their

safety function, the corrective actions to repair the concrete, and the proposed monitoring program and have concluded that Open Item IFI 72-20/1101-02 can be closed.

Based on the results of these inspections, the NRC has determined that one Severity Level IV violation had occurred. The Severity Level IV violation was associated with a failure to assure that applicable regulatory and design basis requirements were included or referenced in material procurement documents as required by 10 CFR 72.148. The violation is being treated as a noncited violation (NCV), consistent with Section 2.3.2 of the NRC Enforcement Policy. This issue is described in the subject inspection report.

If you contest this violation or the significance of this violation, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, D.C. 20555-0001, with copies to the Regional Administrator, U.S. Nuclear Regulatory Commission, Region IV, 1600 East Lamar Blvd, Arlington, TX 76011-4511.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response if you choose to provide one, will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's document system (ADAMS), accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>. To the extent possible, your response should not include any personal privacy or proprietary information so that it can be made available to the public without redaction.

Should you have any questions concerning this inspection, please contact the undersigned at 817-200-1191 or Mr. Lee Brookhart at 817-200-1549.

Sincerely,

*/RA/*

D. Blair Spitzberg, PhD, Chief  
Fuels Safety and Decommissioning Branch

Docket: 07200020  
License: SNM-2508

Enclosure:  
NRC Inspection Report 072-020/2012-001  
w/attachments

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-3-

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U.S. NUCLEAR REGULATORY COMMISSION  
REGION IV

Docket: 072-020

License: SNM-2508

Report: 072-020/2012-001

Licensee: U.S. Department of Energy

Facility: Three Mile Island, Unit 2, Independent Spent Fuel Storage  
Installation

Location: Idaho Operations Office  
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Dates: June 27, 2012

Inspectors: Lee Brookhart, Health Physicist  
Fuels Safety and Decommissioning Branch

Ray Kellar, Senior Enforcement Specialist  
ACES Branch

Approved By: D. Blair Spitzberg, PhD., Chief  
Repository & Spent Fuel Safety Branch

Attachment 1: Supplemental Inspection Information

Attachment 2: Before and After Photographs of HSM Concrete Repair

ENCLOSURE

## **EXECUTIVE SUMMARY**

### **U.S. Department of Energy NRC Inspection Report 072-20/12-01**

The U.S. Department of Energy-Idaho Operations (DOE) was licensed by the U.S. Nuclear Regulatory Commission (NRC) to operate the Three Mile Island Unit 2 (TMI-2) Independent Spent Fuel Storage Installation (ISFSI) located at the Idaho National Laboratory (INL) site.

#### **Away from Reactor ISFSI Inspection Guidance (60858)**

- The ISFSI facility was toured and found to be properly posted and maintained in a good physical condition. Significant degradation of the horizontal storage modules that had occurred over the years due to water intrusion had been repaired. The inspectors observed that the licensee had substantially completed the recommendations from the 2009 evaluation report by filling the bolt hole blockouts with polyurethane foam to prevent the accumulation of water, installing a protective cap over the bolt area, repairing the areas where the cracks occurred by installing a resin injection, and applying a sealant to the outer concrete surface. An inspection of the repaired areas of the horizontal storage module (HSM) concrete revealed that over the course of the first freeze thaw cycle, the resin injection was holding up very well. Based on completion of the HSM concrete repairs, combined with licensee plans to implement a baseline inspection and an aging monitoring program on the HSMs, Inspector Follow-up Item IFI 72-20/1102 from the last inspection, in March 2011, has been closed.

NRC has determined that one Severity Level IV violation had occurred. The Severity Level IV violation was associated with a failure to assure that applicable regulatory and design basis requirements were included or referenced in material procurement documents as required by 10 CFR 72.148. The violation is being treated as a noncited violation (NCV), consistent with Section 2.3.2 of the NRC Enforcement Policy (Section 1.2.a).

- From the last inspection, in March 2011, NRC Region IV issued a Notice of Deviation (NOD) to the DOE for failure to satisfy a written commitment, when the licensee removed a requirement from their Emergency Plan. This issue was being tracked as Open Item NOD 72-20/1101. The licensee's staff has appropriately responded to the Notice of Deviation by replacing the commitment back into the Emergency Plan. The licensee has implemented changes to their administrative procedures to identify, maintain, and track commitments made to the NRC to avoid further deviations. The NRC has concluded that Open Item NOD 72-20/1101 can be closed (Section 1.2.b).
- The corrective action system was being used to capture issues and document corrective actions. Deficiency reports were being adequately resolved (Section 1.2.c).

#### **Review of 10 CFR 72.48 Evaluations (60857)**

- All safety screenings had been performed in accordance with procedures and 10 CFR 72.48 requirements. No safety evaluations had been performed since the last inspection (Section 2.2).

## **Report Details**

### **Summary of Facility Status**

The TMI-2 ISFSI is located within the security perimeter of the Idaho Nuclear Technology and Engineering Center at the INL site. The storage system used at the TMI-2 ISFSI is the NUHOMS® - 12T cask system. A license was issued to the DOE by the U. S. Nuclear Regulatory Commission (NRC) on March 19, 1999. On March 31, 1999, the first dry shielded canister (DSC) containing TMI-2 core debris was moved from the test area north facility to the ISFSI. Each DSC contained 12 TMI-2 canisters. The TMI-2 canisters contained the rubble from the TMI-2 reactor core. The 29th, and final DSC, was loaded into the ISFSI on April 20, 2001. This completed the loading of the TMI-2 ISFSI. A tour of the ISFSI area and review of site records found the facility to be in good physical condition. The DOE staff had continued to maintain the spent fuel in a safe configuration and had established, through procedural and quality assurance processes, the necessary documentation and records to confirm compliance with NRC regulations and the site license.

## **1      Away from Reactor ISFSI Inspection Guidance (60858)**

### **1.1      Inspection Scope**

The ISFSI inspection included review of selected records and interviews with site personnel to verify ISFSI operations were in compliance with the TMI-2 License SNM-2508, Technical Specifications, Amendment 4, and the Safety Analysis Report, Revision 6. A tour of the ISFSI was conducted to confirm the facility was being maintained in good physical condition for the safe storage of the spent fuel. The TMI-2 ISFSI routine operational inspection reviewed selected aspects of the emergency response program, the corrective action program, the safety evaluation program, and the HSMs' concrete repair documentation.

### **1.2      Observations and Findings**

#### **a.      Condition of the Horizontal Storage Modules**

The licensee had performed an extensive effort to correct the degrading concrete of their HSMs since the last inspection in March 2011. The concrete on all but one of the HSMs had experienced damage from the freezing and thawing process over the years due to water getting into the space around the roof anchor bolts resulting in cracks occurring in the concrete. The damage was extensive on several of the HSMs. Despite the damages, the HSMs continued to fully fulfill their safety function.

The problem was first recognized in 2000. At that time, the cracking was not significant and was determined to be cosmetic. However, in 2007 the licensee became concerned that the cracking was continuing and efflorescence growth due to calcium carbonate was being observed. By 2008, the licensee recognized that the continued cracking of the HSMs brought into question the ability of the HSMs to fulfill their originally planned 50-year service life as an important to safety component and appeared to be prematurely deteriorating. The HSMs were precast concrete components built in Washington state for Transnuclear West, Inc. and delivered to the INL site in 1999. The HSMs provided a structural storage unit to protect the carbon steel canister containing

the spent fuel rubble from adverse natural phenomena and to serve as shielding. The prefabricated modules consisted of two pieces, a body and a roof connected together with anchor bolts. All sections were a minimum of 2 feet thick.

In 2009, a comprehensive evaluation of the HSMs and base mat concrete was performed by Wiss, Jamney, Elstner Associates and a report was issued July 31, 2009. The evaluation included a field investigation and laboratory analysis to evaluate the concrete material quality, strength, and long-term durability potential. The 2009 evaluation found a noticeable increase in deterioration on the roof slabs since 2008, most pronounced on the northern corners of the roof. Little change was observed on the base of the HSMs. The analysis of the condition of the TMI-2 HSMs concluded that the roof slabs and base units still met their structural design loading capability, assuming the deterioration to the HSMs was limited to the observed cracking and spalling.

During the NRC inspection in March of 2011, only a few actions that had been recommended by the independent consultant (Wiss, Jamney, Elstner Associates) were completed and the rest were scheduled but not yet budgeted at the time. At the time of the inspection in 2011, the anchor bolt hole blockouts, located in the concrete roofs of the HSMs, had been filled with polyurethane foam to prevent water intrusion. The completion of the remaining repairs was being tracked in the last report as an Inspection Follow-up Item (IFI 72-20/1101-02). The inspection report (ADAMS Accession ML11097A0281) dated April 7, 2011, requested the DOE to provide the NRC with information on what actions would be taken to stabilize the concrete degradation, when those actions would be complete, and what provisions would be established to monitor and confirm that the repairs made were effective. On May 3, 2011, the DOE responded in a letter to the NRC (ML11130A1261). The letter stated that the DOE would: (a) verify effectiveness of the polyurethane foam in the HSM anchor blockouts to prevent water intrusion; (b) install nut, bolt, and plate covers over the HSM anchor blockouts; (c) repair the cracks on the HSMs; and (d) apply moisture coating to the top surfaces of the HSMs. All actions were scheduled for completion in fiscal year 2011. Furthermore, the letter stated that the DOE would develop an "Aging Management Program," for license renewal, to monitor and confirm the effectiveness of the corrective maintenance actions in stabilizing the concrete degradation. On May 26, 2011, the NRC responded (ML1114606152) to the DOE's letter accepting the planned actions and proposed schedule, but requested notification upon completion of the actions and additional information describing the monitoring plans between completion of the concrete repairs and application for license renewal. On June 26, 2012, the DOE responded in a letter (ML12193A104) informing the NRC that actions to stabilize the concrete from further degradation were completed on October 12, 2011, and an aging monitoring program would be implemented starting in 2012.

On May 31, 2011, NRC Region IV submitted a Technical Assistance Request (TAR) to NRC's Division of Spent Fuel Storage and Transportation (SFST). In short, the TAR requested SFST to: (a) review the DOE proposed corrective actions and technical basis for such actions; (b) make an independent determination of the adequacy of the independent consultant's evaluation that the design basis function of the HSMs is still being met; (c) determine if a follow-up inspection, with an individual knowledgeable in structural concrete capable of assessing the adequacy of the corrective actions taken, is warranted; and (d) determine if a generic evaluation may be appropriate for the potential of this same problem to occur at other sites.



On January 9, 2012, NRC SFST responded to the TAR (ML120100134). In short, the TAR response stated that: (a) the mitigative actions taken and proposed by the DOE appeared to be adequate; (b) the independent consultant's technical report sufficiently identified the extent of the problem and the staff agreed that the report gave reasonable assurance that the HSMs still met their design bases in their current condition; (c) a follow-up inspection was warranted and repairs could be verified by visual inspection from regional inspectors; and (d) due to the limited use of this particular design HSM and other sites not having the same extensive freeze/thaw cycle as experienced in Idaho Falls, the SFST staff reached the conclusion there are no significant issues with the use of this design at other sites.

The inspectors observed that the licensee had substantially completed the recommendations from the 2009 evaluation report by filling the bolt hole blockouts with polyurethane foam to prevent the accumulation of water, installing a protective cap over the bolt area, repairing the areas where the cracks occurred by installing a resin injection, and applying a sealant to the outer concrete surface. Additionally the licensee was implementing a monitoring plan to monitor future concrete degradation.

The actions to stabilize the HSM concrete were completed on October 12, 2011. A synopsis of the repairs performed was documented in Work Order Package 0063697701. The inspectors noted that there were a few non-structural areas associated with the HSM shield walls that needed attention. These areas included some superficial concrete spalling near the concrete pad surface and the threaded connections embedded on the top of the shield wall, which were showing initial indications of freeze/thaw distress.

An inspection of the repaired areas of the HSM concrete revealed that over the course of the first freeze/thaw cycle, the resin injections were holding up very well. Selected photographs of the HSM concrete before the repair and after the resin injection are shown in Attachment 2.

The licensee had utilized a system to rate the severity level of the cracking that existed on the HSMs prior to the repair and documented this information in a table. The severity rating scale varied from a Severity Level 1, indicating a very slight crack (less than 0.005 inch), to a Severity Level 5, indicating very severe cracking (greater than 0.118 inch). This was documented in Appendix D, "Crack Severity Table," of Engineering Design File 9897, "TMI-2 ISFSI 2010 HSM and Base Mat Concrete Evaluation," Rev. 0, which indicated that the HSMs had 14 individual areas that were classified as Severity Level 5, "very severe," and 9 areas that were classified as Severity Level 4, "severe cracks" (0.039 inch and 0.118 inch). As part of the epoxy repair program conducted during 2011, the licensee repaired all of the Severity Level 5 and 4 cracks, along with most of the cracks rated as Severity Level 3, "moderate cracks" (0.012 inch to 0.039 inch), with the resin injection.

As part of the program to determine the cause of the cracking, the licensee removed concrete core samples from several of the HSMs and replaced the cored concrete with a high strength and high density grout. The TMI-2 Safety Analysis Report stipulated that the HSM concrete is classified as important to safety, with a compressive strength of 5,000 pounds per square inch (psi) and a nominal density of 140 pounds per cubic foot (pcf). The licensee purchased the replacement grout using Purchase Order 0000722859. The grout was dedicated using commercial-grade item dedication Plan

CGI-743. The dedication plan stipulated that the grout would have a 28-day compressive strength of 5,000 psi. Testing was conducted by Material Testing and Inspection that verified that the grout exceeded the minimum required compressive strength requirement of 5,000 psi.

However, the dedication plan for the important-to-safety grout did not specify that the grout needed to meet a required nominal density of 140 pcf for radiation shielding purposes. At the request of the inspectors, the licensee provided data from a group of four cylinders which indicated that the nominal density of the grout samples averaged 149 pcf, which exceeded the required minimum density of 140 pcf. The failure to stipulate the density requirements in the purchase order dedication plan is a violation of 10 CFR 72.148, which requires, in part, that the licensee shall establish measures to assure that applicable regulatory requirements, design bases, and other requirements which are necessary to assure adequate quality are included or referenced in the documents for procurement of material, whether purchased by the licensee or by their contractors. Contrary to this requirement, on April, 28, 2009, the licensee failed to establish measures to assure that applicable regulatory requirements, design bases, and other requirements which are necessary to assure adequate quality are included or referenced in the documents for procurement of material. Specifically, the licensee failed to stipulate the density requirements of 140 pcf minimum in the purchase order and the commercial dedication plan. Because this violation was entered into the licensee's corrective action program as Deficiency Report 12-ISFSI-07-DR-001, this violation is being treated as an NCV in accordance with Section 2.3.2 of the NRC Enforcement Policy (NCV 72-20/1201-01).

The licensee committed to perform follow-up concrete inspections in a letter addressed to the NRC dated June 26, 2012 (ML12193A104). This included: (1) an annual visual inspection of the repaired areas for any signs of additional cracking from freeze/thaw action; (2) that the personnel performing the inspection or evaluations would meet the requirements of American Concrete Institute (ACI) 349.3R-02, Chapter 11, *Qualifications of Evaluation Team*; (3) that visual inspections of accessible HSM concrete surfaces for aging effects would be performed per instructions contained in ACI 349.3R-02, Section 3.5.1, *Visual Inspections* and ACI 201.IR-08, *Guide for Conducting a Visual Inspection of Concrete in Service*.

Based on completion of the HSM concrete repairs, combined with licensee plans to implement a baseline inspection and an aging monitoring program on the HSM's, IFI 72-20/1102 has been closed.

b. Emergency Planning

During the last NRC inspection (ML11097A0281) in March 2011, NRC Region IV issued a NOD to the DOE for failure to satisfy a written commitment to the NRC when the licensee removed a requirement from their Emergency Plan. Commitment 2, from the licensee's Response to NRC Request for Additional Information dated October 27, 2005 (ML053070505), stated: "Upon NRC approval of the revised TMI-2 ISFSI emergency plan, the DOE commits to add the following sentence to the end of Section 3.7 of the TMI-2 ISFSI emergency plan: The written agreement for offsite emergency medical services will be reviewed every five years and updated as needed." In Revision 1 to the TMI-2 ISFSI emergency plan, PLN-1610, effective December 10, 2007, the requirement to review the written agreements for offsite emergency medical

services every 5 years and update as needed was deleted from the emergency plan, thereby removing the commitment made to the NRC.

The NOD was being tracked as Open Item NOD 72-20/1101. On May 2, 2011, the DOE responded to the NOD in a letter to the NRC (ML11143A0190). The letter stated that the immediate corrective action was to revise the TMI-2 ISFSI Emergency Plan to return the commitment, including a notation that it was a commitment made to the NRC. The long-term corrective action to prevent recurrence was to review and revise, as appropriate, the administrative procedures addressing commitment management. On May 25, 2011, the NRC wrote a letter (ML1114508812) to the DOE accepting immediate corrective action, but requested a written response describing the changes made to administrative procedures to avoid further deviation. The DOE responded to the NRC in a letter (ML12199A456) on June 18, 2012. The letter described the changes made to three different procedures. Management Control Procedure (MCP) MCP-2925, "Screening and Evaluation Changes," was revised to require NRC approval before performing an activity that would change a commitment made to the NRC. Procedure MCP-3191, "ISFSI Commitment Management," was revised to identify, maintain, and track closure of commitments through the NRC Open Items List or LST-14, "ISFSI Commitment Matrix." Procedure MCP-3177, "ISFSI License Basis Documents," was revised to have a License Basis Document Owner verify that a change request does not change a historical NRC commitment by reviewing MCP-3191 and LST-14.

The licensee's Emergency Plan, PLN-1610, Revision 4, dated April 14, 2011 (ML11173A262), returned Commitment 2 back into the Emergency Plan. Based on completion of the immediate and long-term corrective actions, Open Item NOD 72-20/1101 is closed.

c. Deficiency Reports

The licensee provided a list of the deficiency reports initiated in the corrective action system since the last inspection of the TMI-2 ISFSI. A total of 18 deficiency reports were issued since the last inspection. Many of the deficiency reports were the result of quality assurance audits and surveillances. Issues included such topics as: inconsistent implementation of the screening process, records retention, training recording requirements, incomplete forms, and procedure enhancement. All deficiency reports reviewed were adequately resolved.

During the course of the NRC inspection, an issue adverse to quality was identified by one of the inspectors. When the issue was discussed with the contractor, CH2M-WG Idaho, LLC (CWI), and the DOE, the contractor personnel failed to recognize that the issue met the program requirements to be placed into the corrective action process. The contractor is responsible for overseeing day-to-day ISFSI operations, while the DOE is a license holder and provides oversight on CWI's activities. The DOE personnel did recognize the issue as adverse to quality and generated the appropriate deficiency report. The reluctance by the contractor to place the condition into their corrective action process became a topic of further discussion. A subsequent phone call was held with the DOE management personnel regarding the training performed on the corrective action system requirements, the threshold for placing issues into the system, and management involvement or influence on issues being placed into that

system. The assessment of the conversation concluded that the DOE management personnel understood and exhibited the appropriate qualities for conducting a corrective action program that is maintained by NRC licensees.

### 1.3 Conclusions

The ISFSI facility was toured and found to be properly posted and maintained in good physical condition. Significant degradation of the horizontal storage modules that had occurred over the years due to water intrusion had been repaired. The inspectors observed that the licensee had substantially completed the recommendations from the 2009 evaluation report by filling the bolt hole blockouts with polyurethane foam to prevent the accumulation of water, installing a protective cap over the bolt area, repairing the areas where the cracks occurred by installing a resin injection, and applying a sealant to the outer concrete surface. An inspection of the repaired areas of the HSM concrete revealed that, over the course of the first freeze/thaw cycle the resin injection was holding up very well. Based on completion of the HSM concrete repairs, combined with licensee plans to implement a baseline inspection, and an aging monitoring program on the HSMs, IFI 72-20/1102 from the last inspection, in March 2011, has been closed.

NRC has determined that one Severity Level IV violation had occurred. The Severity Level IV violation was associated with a failure to assure that applicable regulatory and design basis requirements were included or referenced in material procurement documents as required by 10 CFR 72.148. The violation is being treated as an NCV, consistent with Section 2.3.2 of the NRC Enforcement Policy.

From the last inspection, in March 2011, NRC Region IV issued an NOD to the DOE for failure to satisfy a written commitment, when the licensee removed a requirement from their Emergency Plan. This issue was being tracked as Open Item NOD 72-20/1101. The licensee's staff has appropriately responded to the NOD by replacing the commitment back into the Emergency Plan. The licensee has implemented changes to their administrative procedures to identify, maintain, and track commitments made to the NRC to avoid further deviations. The NRC has concluded that Open Item NOD 72-20/1101 can be closed.

The corrective action system was being used to capture issues and document corrective actions. Deficiency reports were being adequately resolved.

## **2 Review of 10 CFR 72.48 Evaluations (60857)**

### 2.1 Inspection Scope

Changes to the facility and procedures since the last inspection in March 2011 were reviewed to determine if the licensee had performed the required evaluations in accordance with 10 CFR 72.48.

## 2.2 Observations and Findings

A list of screenings performed since March 2011 was reviewed. No 72.48 safety evaluations had been initiated as a result of the screenings. There had been 14 screenings since the last inspection. Six of those screenings were selected for further review (Screens 11-009, 11-010, 11-011, 11-023, 11-029, and 12-003). The screenings had been performed on activities such as the cause and recommended corrective actions for the HSM concrete repairs, placing protective covers over the HSM roof slab bolts, applying a sealant to the base mat and HSMs, revisions to procedures, misplaced parts for the spare HSM and over-pack, and work orders associated with the inspection and repair of the HSM concrete cracks.

## 2.3 Conclusions

All safety screenings had been performed in accordance with procedures and 10 CFR 72.48 requirements. No safety evaluations had been performed since the last inspection.

## 3 **Exit Meeting**

The inspectors reviewed the scope and findings of the inspection during an exit meeting conducted at the conclusion of the inspection on July 16, 2012. The licensee did not identify any information as proprietary that was provided to, or reviewed, by the inspectors.

## **SUPPLEMENTAL INSPECTION INFORMATION**

### **PARTIAL LIST OF PERSONS CONTACTED**

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A. Marshbank, NRC Facility Director  
S. Murphy, ISFSI QA Staff  
K. Whitham, Assistant Manager FMDP

#### **CWI**

R. Ellwood, ISFSI Maintenance Manager  
G. Hall, Regulatory Affairs  
S. Haight, ISFSI Management  
J. Kaylor, Director of INTEC Operations  
H. Lord, Safety Analysis  
J. Stalnaker, TMI-2 Facility Manager

### **INSPECTION PROCEDURES USED**

IP 60857      Review of 10 CFR 72.48 Evaluations  
IP 60858      Away From Reactor ISFSI Inspection Guidance

### **ITEMS OPENED, CLOSED, AND DISCUSSED**

#### **Opened**

72-20/1201-01      NCV      Inadequate Procurement Documentation

#### **Discussed**

None

#### **Closed**

72-20/1101-01      NOD      Removal of a Commitment Made to the NRC from the  
Emergency Plan  
72-20/1101-02      IFI      Completion of HSM Concrete Repairs  
72-20/1201-01      NCV      Inadequate Procurement Documentation

## LIST OF ACRONYMS

ACI	American Concrete Institute
CFR	<i>Code of Federal Regulations</i>
CWI	CH2M-WG Idaho, LLC
DOE	Department of Energy-Idaho Operations
DSC	dry shielded canister
HSM	horizontal storage module
INL	Idaho National Laboratory
IFI	inspection follow-up item
ISFSI	Independent Spent Fuel Storage Installation
MCP	management control procedure
NCV	noncited violation
NOD	Notice of Deviation
NRC	Nuclear Regulatory Commission
Pcf	pounds per cubic foot
Psi	pounds per square inch
SFST	Spent Fuel Storage and Transportation
TAR	Technical Assistance Request
TMI-2	Three Mile Island, Unit 2

**Before and After Photographs of HSM Concrete Repair**



PHOTO 1 – HSM 01 NW CORNER OF ROOF PRE REPAIR



PHOTO 2 - HSM 01 NW CORNER OF ROOF POST REPAIR





PHOTO 3 - HSM 01 NW CORNER ROOF PRE REPAIR

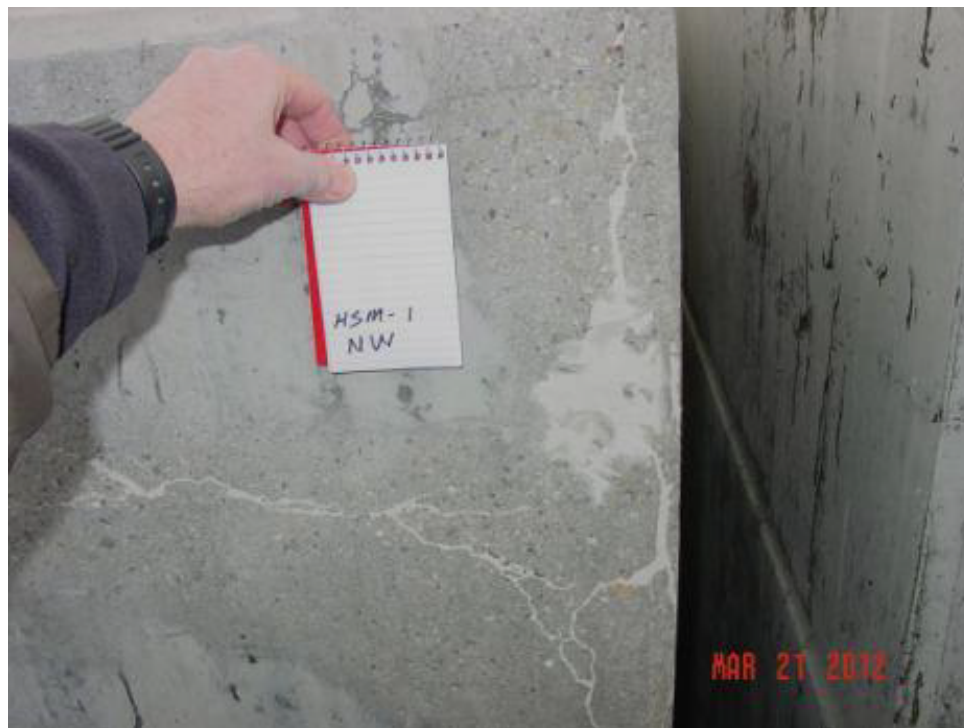


PHOTO 4 - HSM 01 NW CORNER ROOF POST REPAIR



PHOTO 5 – HSM 02 NW CORNER ROOF PRE REPAIR



PHOTO 6 – HSM 02 NW CORNER ROOF POST REPAIR



PHOTO 7 – HSM 02 NW CORNER ROOF PRE REPAIR



PHOTO 8 – HSM 02 NW CORNER ROOF POST REPAIR





PHOTO 9 – HSM 03 NE CORNER PRE REPAIR



PHOTO 10 – HSM 03 NE CORNER POST REPAIR



PHOTO 11 – HSM 04 SE CORNER BASE PRE REPAIR



PHOTO 12 – HSM 04 SE CORNER BASE POST REPAIR

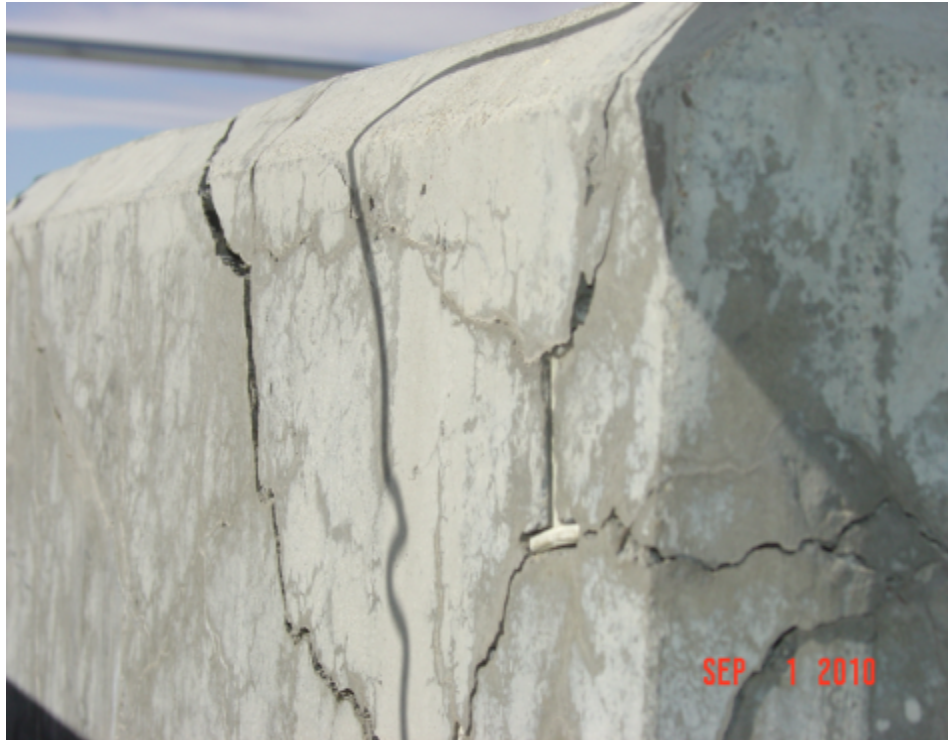


PHOTO 13 – HSM 05 NE CORNER ROOF PRE REPAIR



PHOTO 14 – HSM 05 NE CORNER ROOF POST REPAIR





PHOTO 15 – HSM 05 NW CORNER ROOF PRE REPAIR



PHOTO 16 – HSM 05 NW CORNER ROOF POST REPAIR



PHOTO 17 – HSM 06 NE CORNER ROOF PRE REPAIR



PHOTO 18 – HSM 06 NE CORNER ROOF POST REPAIR





PHOTO 19 – HSM 09 NE CORNER ROOF PRE REPAIR



PHOTO 20 – HSM 09 NE CORNER ROOF POST REPAIR