

## **Plan**

# **Three Mile Island Unit 2 Independent Spent Fuel Storage Installation Aging Management Program**

**Idaho  
Cleanup  
Project**

CH2M ♦ WG Idaho, LLC is the Idaho Cleanup Project  
contractor for the U.S. Department of Energy

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INTEC NRC FSV AND TMI-2 ISFSI MANUAL

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\*The current revision can be verified on EDMS.

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## 1. Introduction

The Three Mile Island, Unit 2 (TMI-2) Independent Spent Fuel Storage Installation (ISFSI) Aging Management Program (AMP) is developed following U. S. Nuclear Regulatory Commission (USNRC) guidance for the renewal of dry cask storage system (DCSS) licenses (USNRC 2011). Implementation of the AMP will ensure that no aging effects result in a loss of intended function of the Structures, Systems, and Components (SSCs) Important to Safety (ITS) that are within the scope of license renewal, for the term of the license renewal.

## 2. Description of the TMI-2 ISFSI and the Aging Management Program

### 2.1 TMI-2 ISFSI

The U.S. Department of Energy (USDOE) uses a modified NUHOMS<sup>®</sup> spent fuel storage system, designated NUHOMS<sup>®</sup>-12T, in the TMI-2 ISFSI located at the Idaho National Laboratory (INL) for interim storage of TMI-2 core and core handling debris. The TMI-2 core debris is in stainless steel canisters. The NUHOMS<sup>®</sup>-12T spent fuel storage system provides for the horizontal dry storage of up to twelve TMI-2 canisters inside a Dry Shielded Canister (DSC) which is placed inside a concrete Horizontal Storage Module (HSM).

The TMI-2 ISFSI design is based on the licensed NUHOMS<sup>®</sup> spent fuel storage system. The NUHOMS<sup>®</sup> spent fuel storage system has an extensive licensing and technical basis. The original NUHOMS<sup>®</sup> Topical Report was approved by the USNRC on March 28, 1986 for storage of seven spent pressurized water reactor (PWR) fuel assemblies per DSC and HSM (VECTRA M-39, USNRC 1986). The NUHOMS<sup>®</sup> Topical Report was revised to provide the generic design criteria and safety analysis for the larger 24 spent PWR fuel assembly design (NUHOMS<sup>®</sup>-24P) and an associated on-site transfer cask (VECTRA M-49). USNRC approval of the NUHOMS<sup>®</sup>-24P Topical Report was granted on April 26, 1989 (USNRC 1989). The standardized NUHOMS<sup>®</sup> design has since been expanded to include the NUHOMS<sup>®</sup>-52B for dry storage and on-site transfer of fifty-two boiling water reactor (BWR) fuel assemblies (VECTRA 1996). The NRC issued Certificate of Compliance 72-1004 on January 23, 1995 for the standardized NUHOMS<sup>®</sup> spent fuel storage system, addressing both the NUHOMS<sup>®</sup>-24P and the NUHOMS<sup>®</sup>-52B spent fuel storage systems (USNRC 1995). The approved NUHOMS<sup>®</sup>-24P Topical Report forms the basis for the NUHOMS<sup>®</sup>-12T spent fuel storage system. The NUHOMS<sup>®</sup>-12T spent fuel storage system was adapted for TMI-2 canister use and the system accommodates the internal baskets designed specifically to hold TMI-2 canisters.

The TMI-2 ISFSI is located at the INL and operated by CH2M-WG Idaho, LLC (CWI) for USDOE. The TMI-2 ISFSI is licensed (License No. SNM-2508) by the USNRC pursuant to 10 CFR 72 for authorization to receive, acquire, possess and

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store TMI-2 core and core handling debris at the TMI-2 ISFSI located at the INL within the perimeter of the Idaho Nuclear Technology and Engineering Center (INTEC) site in Scoville, Idaho (USNRC 1999).

Subsequent to the March 1979 accident at the TMI-2 Nuclear Power Station, USDOE agreed in March 1982 to accept the entire TMI-2 damaged core for research, development, and storage at a USDOE facility (DOE/ID-10400). USDOE selected the INL to perform the TMI-2 core debris investigations. Defueling of the TMI-2 reactor began in October 1985 and was completed in January 1990. The TMI-2 core debris was shipped from the TMI-2 Nuclear Power Station to the INL from July 1986 until April 1990 and received, examined, and stored at the TAN-607 Hot Shop and Fuel Storage Pool.

In March 1999 the TMI-2 ISFSI was licensed by the USNRC pursuant to 10 CFR 72 for authorization to receive, possess, store, and transfer spent fuel and fuel debris, resulting from the 1979 TMI-2 accident, for a twenty-year term. The first core debris transfer from TAN-607 was completed in March 1999. Nine additional transfers were completed during 2000. The remaining nineteen transfers were completed during 2001, with the last one completed in April 2001. The TMI-2 ISFSI license expires on March 19, 2019. A license renewal application must be developed and submitted to the NRC no later than March 19, 2017.

## 2.2 Aging Management Program

The TMI-2 ISFSI AMP consists of the following primary elements:

- The scope of the program which includes the specific structures and components subject to an aging management review (AMR).
- Preventive actions to mitigate or prevent the applicable aging effects.
- Parameters monitored or inspected that are linked to the effects of aging on the intended functions of the particular structure and component.
- Detection of aging effects before there is a loss of any structure and component intended function. This includes aspects such as method or technique (i.e., visual, volumetric, surface inspection), frequency, sample size, data collection, and timing of new or one-time inspections to ensure timely detection of aging effects.
- Monitoring and trending that provides for prediction of the extent of the effects of aging and timely corrective or mitigative actions.
- Acceptance criteria, against which the need for corrective action are evaluated, to ensure that the particular structure and component intended

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functions are maintained under the existing licensing-basis design conditions during the period of extended operation.

- Timely corrective actions, including root cause determination and prevention of recurrence.
- A confirmation process that ensures preventive actions are adequate and appropriate corrective actions have been completed and are effective.
- Administrative controls that provide a formal review and approval process.
- Operating experience involving the AMP, including past corrective actions resulting in program enhancements or additional programs that provides objective evidence to support a determination that the effects of aging are adequately managed so that the structure and component intended functions will be maintained during the period of extended operation.

The AMP is designed around the context of the aging effects subject to aging management prevention; mitigation, condition monitoring, and performance monitoring programs; corrective actions; and component-specific guidance (USNRC 2011).

Potential aging effects for all SSCs within the scope of license renewal for the duration of the period of extended operation are identified. Only aging effects that could result in a loss of an SSC's intended function during the period of extended operation are of principal concern for license renewal. Potential aging effects and possible aging mechanisms that the AMP considers are listed in Appendix A. The importance of the implementation of confirmatory inspection and monitoring and surveillance being essential to resolving conflicting information or indications of the presence of a specific potential aging effect or degraded condition is recognized.

The operating history of the TMI-2 ISFSI, including corrective actions and design modifications, is an important source of information for evaluating the ongoing condition of in-scope SSCs. EDF-9959 and PLN-3660 discuss the history of the TMI-2 ISFSI in detail, both site-specific and industry-wide experience, as relevant, are considered as part of the overall condition assessment of the in-scope SSCs.

DSC materials were selected to be resistant to environmentally induced degradation during the initial license period. The confinement function of the canisters is ensured for the license renewal based on demonstration that the DSCs have not undergone unanticipated degradation. An NRC-accepted way to verify DSC condition has been by remote visual inspection of a lead DSC (HSM 16),

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selected on the basis of longest time in service, and An empty DSC overpack (HSM 15). The interior of the associated concrete HSM has also been examined as part of the lead canister inspection; the results of which will be included in the license renewal application and become part of the justification for license renewal.

The DSC/overpack support structures inside HSMs 15 and 16 have been inspected to support the license renewal application. The support structure inspection was done on a sampling basis whereby selection of the support structures inspected was based on longest service time and environmental conditions. The re-inspection interval for the support structure is indeterminate at the present time, but will eventually be based upon the findings of the initial license renewal inspection.

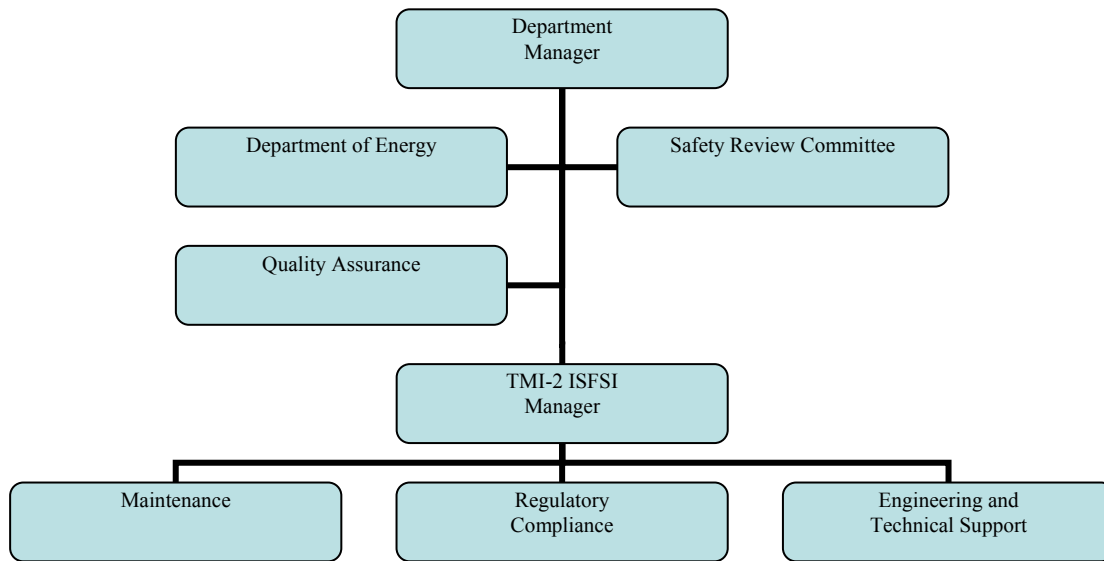
### **3. Objective and Scope**

A license renewal application must be developed and submitted to the USNRC no later than March 19, 2017. A Project Execution Plan for developing the license renewal application is documented (PLN-3660). A scoping evaluation identifying the SSCs of the TMI-2 ISFSI that need to be reviewed for aging effects is also documented (EDF-9959).

### **4. Organization**

The TMI-2 ISFSI AMP organization, under the direction of the Manager, ISFSI Management, consists of three tiers with each tier having an integrated team of qualified individuals. These tiers consist of both permanently assigned and matrixed personnel as well as subcontractors when necessary. The organizational relationship is depicted in the chart below.

|                                                                                                              |                      |
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**Figure 1.** TMI-2 ISFSI AMP Organization

## 5. Aging Management Program Processes

Each SSC with an identified aging effect requiring management has an associated AMP presented in Appendix B. Each AMP effectively manages and monitors SSC-specific aging effects. The AMP processes generally include one or more of the following four types:

- Prevention programs to keep the aging effect from occurring,
- Mitigation programs to attempt to slow the effects of aging,
- Condition monitoring programs to search for the presence and extent of aging effects,
- Performance monitoring tests to verify the ability of the SSCs to perform their intended functions.

## 6. Aging Management Phasing and Milestones

Aging management reviews are being performed to assess the SSCs determined to be within the scope of license renewal (EDF-9959). Each AMR consists of the identification of the materials of construction or fabrication, the environmental conditions to which they have been exposed, and any aging effects that could adversely affect the ability of the SSCs to perform their intended functions during the period of extended operation. The AMR approach is coordinated with structural, health physics, thermal, criticality, and quality assurance disciplines as appropriate.

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Each aging effect requires development of either a Time Limited Aging Analysis (TLAA) or an AMP. A TLAA is a process to assess SSCs that have a time-dependent operating life. Any developed TLAA must conclude whether or not continued operation of the SSC is acceptable for the period of extended operation. Future monitoring of any potential aging effects analyzed in TLAA's is to be considered. The purpose of the AMP is to ensure that no aging effects result in a loss of intended function of the SSCs that are within the scope of license renewal for the term of the renewal. Although the elements of an AMP or inspection may vary, depending on the specific SSC, the elements of an AMP that are considered to determine the adequacy and applicability of any proposed method for managing an aging effect include the scope of the program, preventive actions, parameters monitored or inspected, detection of aging effects, monitoring and trending, acceptance criteria, corrective actions, confirmation process, administrative controls, and operating experience.

The results of an AMR are documented in an Engineering Design File (EDF), the conclusion of which includes aging management recommendations. All of the AMRs are scheduled to be completed no later than September 2015. All EDFs are maintained in the Electronic Document Management System (EDMS). Aging management recommendations are captured in this plan and implemented accordingly. Baseline aging conditions are established for some SSCs or remote visual inspections presented in Table 1. Implementation of the AMP is assessed on a periodic basis.

## **7. Aging Management Identification**

The SSCs ITS that have been determined to be in-scope for aging management review, as documented in EDF-9959, include the DSC, HSM, DSC Support Structure, End Module Shield Wall, DSC Basket Assembly, DSC Overpack, DSC Overpack Support Structure, TMI-2 Defueling Canister, and TMI-2 Core Debris. Concluding recommendations documented in each of the respective AMR EDFs are captured in Appendix B and implemented in accordance with MCP-3388. The AMR results establish new technical baseline aging conditions for each of the SSCs ITS.

## **8. Data Management**

AMP data is managed on a case-by-case basis depending on the aging conditions being managed. In some cases a technical report is adequate to document the aging condition status. In other cases an EDF may be warranted to analyze a changing condition.

## **9. Document Control System**

All documents generated during implementation this AMP are managed and controlled in accordance with MCP-135 and MCP-557.



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## 10. Control of Baseline Documents

Baseline documents for the TMI-2 ISFSI AMP that are maintained in EDMS are presented in Table 1. Table 1 is updated as new baseline documents, or revisions to existing baseline documents, are generated.

| Document             | Title                                                                                            | Date           |
|----------------------|--------------------------------------------------------------------------------------------------|----------------|
| EDF-8465             | Evaluation of Concrete Efflorescence and Cracks of the TMI HSMs                                  | October 2007   |
| EDF-8903             | TMI-2 HSM 2008 Evaluation Report                                                                 | August 2008    |
| EDF-9208             | TMI-2 HSM Core Drilling                                                                          | March 2013     |
| EDF-9516             | TMI-2 ISFSI Concrete Evaluation of HSMs and Base Mat                                             | March 2010     |
| EDF-9565             | TMI-2 HSM Roof Slab Bolt Holes Filled with Polyurethane Foam                                     | April 2010     |
| EDF-9897             | TMI-2 ISFSI 2010 HSM and Base Mat Concrete Evaluation                                            | April 2011     |
| FDC-6797             | Placing Polyurethane Foam in HSM Roof Bolt Holes                                                 | March 2010     |
| FDC-7682             | TMI-2 ISFSI HSM Roof Bolt Protective Cover Installation                                          | May 2011       |
| FDC-7715             | TMI-2 ISFSI HSM Roof Bolt Protective Cover Installation                                          | June 2011      |
| FDC-7803             | TMI-2 ISFSI Resin Injection of HSM Cracks                                                        | August 2011    |
| FDC-7901             | TMI-2 ISFSI HSM Concrete Weatherproofing Coating                                                 | September 2011 |
| FDC-8636             | Sealing HSM End Shield Wall Coil Insert Holes from Moisture                                      | September 2012 |
| RPT-1170             | Visual Inspection of the TMI-2 ISFSI HSM End Shield Walls                                        | January 2013   |
| RPT-1193             | Visual Inspection of the TMI-2 ISFSI Horizontal Storage Modules                                  | May 2013       |
| TBD                  | Remote Visual Inspection of TMI-2 ISFSI HSMs 15 and 16                                           | TBD            |
| WO 623556            | TMI-2 HSM and Base Mat Assessment                                                                | April 2009     |
| WO 624131            | TMI-2 Core Sampling                                                                              | May 2009       |
| WO 627046            | TMI-2 HSM Roof Slab Bolt Hole Fill                                                               | October 2009   |
| WO 635917            | CPP-1774 Install 120 Bolt Hole Protective Covers Over the Four Roof Bolts on Each of the 30 HSMs | June 2011      |
| WO 636531            | Seal/Repair Cracks in TMI-2 Base Mat                                                             | November 2011  |
| WO 636977            | TMI-2 ISFSI HSM Repair Sealing Cracks                                                            | September 2011 |
| WO 637273            | TMI-2 ISFSI HSM Crack Repair Apply Sealant                                                       | October 2011   |
| WO 642973            | Fill Holes in End Shield Walls with Silicone Sealant                                             | October 2012   |
| WJE Report 2008.1917 | Three Mile Island Facility CPP-1774 Structural Inspection of Horizontal Storage Modules and Pad  | July 2009      |
| JLS-04-12            | Three Mile Island Unit 2 Independent Spent Fuel Storage Installation HSM Concrete Repairs        | June 2012      |

**Table 1.** TMI-2 ISFSI AMP Baseline Documents

## 11. Aging Management Control

The TMI-2 ISFSI AMP is implemented and controlled in accordance with established procedures delineated in the Quality Assurance Program Plan (PLN-466), and following

|                                                                                                              |                                                       |
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the guidance of this plan, PLN-3660, and NUREG-1927. The functions, responsibilities, and authority of the entities presented in Figure 1 are delineated in the applicable procedures. All as-found aging conditions are screened and/or evaluated in accordance with 10 CFR 72.48.

## 12. Aging Management Status Accounting

The AMP methods for collecting, recording, processing, and maintaining data necessary to provide aging management information accounting include the development of EDFs and technical reports. Work activities to repair or mitigate aging conditions are documented in Work Orders and Facility Design Changes. The current AMP activities being implemented are presented in Appendix B based on the documented aging conditions, recommendations and conclusions from the documents included in Table 1.

## 13. Aging Management Assessment

The AMP is assessed on a biennial frequency consistent with TMI-2 ISFSI Technical Specification 5.4.2 (USNRC 1999) in accordance with MCP-1221.

## 14. References

EDF-9959, Revision 1, *Scoping Evaluation for the TMI-2 ISFSI Aging Management Review*, April 2012.

MCP-135, *Document Management*, September 2012

MCP-557, *Records Management*, February 2013

MCP-1221, *Performing Inspections and Surveillances*, December 2012

MCP-3388, *ISFSI Work Order Generation*, November 2012

NUREG-1927, *Standard Review Plan for Renewal of Spent Fuel Dry Cask Storage System Licenses and Certificates of Compliance*, March 2011.

PLN-466, *Quality Assurance Program Plan for ISFSI Management*, November 2012

PLN-3660, Revision 1, *Three Mile Island Unit 2 Independent Spent Fuel Storage Installation License Renewal*, May 2011.

U.S. Nuclear Regulatory Commission, Office of Nuclear Materials Safety and Safeguards, *Safety Evaluation Report for Nutech Horizontal Modular System for Irradiated Fuel Topical Report*, NRC Docket No. M-39, March 28, 1986.

|                                                                                                              |                                                        |
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U.S. Nuclear Regulatory Commission, Office of Nuclear Materials Safety and Safeguards, *Safety Evaluation Report Related to the Topical Report for the Nutech Horizontal Modular Storage System for Irradiated Nuclear Fuel NUHOMS®-24P Submitted by Nutech Engineers, Inc.*, NUH-002, Revision 1A, NRC Docket No. M-49, April 1989.

U.S. Nuclear Regulatory Commission, Office of Nuclear Materials Safety and Safeguards, *Certificate of Compliance for Dry Spent Fuel Storage Casks*, Certificate No. 1004, Docket No. 72-1004, January 23, 1995

U.S. Nuclear Regulatory Commission, *Materials License SNM-2508 for the Three Mile Island, Unit 2, Independent Spent Fuel Storage Installation*, March 19, 1999.

U.S. Department of Energy, DOE/ID-10400, *Historical Summary of the Three Mile Island Unit 2 Core Debris Transportation Campaign*, March 1993.

U.S. Nuclear Regulatory Commission, Office of Nuclear Material Safety and Safeguards, NUREG-1927, *Standard Review Plan for Renewal of Spent Fuel Dry Cask Storage System Licenses and Certificates of Compliance*, March 2011

VECTRA Technologies, Inc., *Topical Report for the Nutech Horizontal Modular Storage System for Irradiated Nuclear Fuel*, NUH-001, Revision 2A, San Jose, California, NRC Docket No. M-39.

VECTRA Technologies, Inc., *Topical Report Amendment 2 for the Nutech Horizontal Modular Storage System for Irradiated Nuclear Fuel - NUHOMS®-24P*, Revision 2A, File No. NUH002.0103, NRC Docket No. M-49

VECTRA Technologies, Inc., *Safety Analysis Report for the Standardized NUHOMS® Horizontal Modular Storage System for Irradiated Nuclear Fuel*, NUH-003, Revision 4A, File No. NUH003.0103, NRC Docket No. 72-1004, June 1996.

## 15. Appendices

Appendix A, Aging Effects and Possible Mechanisms

Appendix B, Status and Disposition of Aging Conditions

|                                                                                                              |                                                        |
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## Appendix A

### Aging Effects and Possible Mechanisms (USNRC 2011)

| Aging Effects of SSCs                              | Possible Aging Mechanisms          |
|----------------------------------------------------|------------------------------------|
| Concrete Structures:                               |                                    |
| Scaling, cracking and spalling                     | Freeze-thaw                        |
| Increase in porosity and permeability              | Leaching of calcium hydroxide      |
| Increase in porosity and permeability, cracking    | Aggressive chemical attack         |
| Expansion and cracking                             | Reaction with aggregates           |
| Loss of strength and modulus                       | Elevated temperature               |
|                                                    | Irradiation of concrete            |
| Deformation                                        | Creep                              |
| Cracking                                           | Shrinkage                          |
| Loss of material                                   | Corrosion                          |
|                                                    | Abrasion and cavitation            |
| Cracking                                           | Restraint, shrinkage, and creep    |
| Loss of strength                                   | Concrete interaction with aluminum |
| Cathodic protection effect on bond strength        | Cathodic protection current        |
| Structural Steel:                                  |                                    |
| Loss of material                                   | Corrosion, local or atmospheric    |
| Loss of strength and modulus                       | Elevated temperature               |
| Loss of fracture toughness                         | Irradiation                        |
| Crack initiation and growth                        | Stress-corrosion cracking          |
| Reinforcing Steel (Rebar):                         |                                    |
| Cracking, spalling, loss of bond and material      | Corrosion of embedded steel        |
| Loss of strength and modulus                       | Elevated temperature               |
|                                                    | Irradiation                        |
| Miscellaneous:                                     |                                    |
| Cracking, distortion, increase in component stress | Settlement                         |
| Loss of fracture toughness                         | Strain aging of carbon steel       |
| Reduction in design margin                         | Loss of prestress                  |
| Loss of material                                   | Corrosion of steel piles           |
|                                                    | Corrosion of tendons               |
| Cask Internals:                                    |                                    |
| Loss of material                                   | Corrosion, boric acid corrosion    |
| Change in dimension                                | Creep                              |
| Wall thinning                                      | Erosion, corrosion                 |
| Crack initiation and growth                        | Stress-corrosion cracking          |
| Loss of fracture toughness                         | Neutron irradiation embrittlement  |
|                                                    | Thermal embrittlement              |
| Loss of preload                                    | Stress relaxation                  |
| Attrition                                          | Wear                               |

|                                                                                                              |                                                        |
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**Appendix B****Status and Disposition of Aging Conditions**

| SSC                    | Aging Management Program                                                                                                                                              | Aging Management Activity                                                                                                                                                                                                                                                                                         |
|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DSC                    | Remote visual inspection of DSC in HSM 16 performed in 2012.                                                                                                          | Results pending publication of technical report.                                                                                                                                                                                                                                                                  |
|                        | AMR is on-going.                                                                                                                                                      | Results pending publication of EDF.                                                                                                                                                                                                                                                                               |
| HSM                    | Annual concrete surface monitoring program as recommended and/or documented in EDF-8465, EDF-8903, EDF-9565, and EDF-9897.                                            | Results pending publication of RPT-1193.                                                                                                                                                                                                                                                                          |
|                        | Repair of deteriorated concrete and cracks as necessary recommended in EDF-8465, EDF-8903, and EDF-9516.                                                              | Injected resin into cracks (FDC 7803, WO 636977).                                                                                                                                                                                                                                                                 |
|                        | Protection against water intrusion recommended in EDF-8465 including sealing and eliminating bolt hole voids (EDF-9516) and application of surface sealer (EDF-9516). | Filled bolt hole voids with polyurethane foam and gasket cover (FDC 6797, WO 627046).                                                                                                                                                                                                                             |
|                        |                                                                                                                                                                       | Installed stainless steel protective covers over bolt hole voids (FDC 7682, WO 635917).                                                                                                                                                                                                                           |
|                        |                                                                                                                                                                       | Applied surface sealer (FDC 7901, WO 637273).                                                                                                                                                                                                                                                                     |
|                        | Nondestructive examination recommended in EDF-8903.                                                                                                                   | Evaluated condition of concrete (WO 623556, WO 624131, WJE Report 2008.1917).                                                                                                                                                                                                                                     |
|                        | Remote visual inspection of HSM 15 and 16 performed in 2012.                                                                                                          | Results pending publication of technical report.                                                                                                                                                                                                                                                                  |
| DSC Support Structure  | Remote visual inspection of DSC Support Structure in HSM 16 performed in 2012.                                                                                        | Results pending publication of technical report.                                                                                                                                                                                                                                                                  |
|                        | AMR is on-going.                                                                                                                                                      | Results pending publication of EDF.                                                                                                                                                                                                                                                                               |
| End Module Shield Wall | Annual inspection recommended and performed (RPT-1170).                                                                                                               | No cracking in excess of ACI 349.3R first-tier criteria observed, no efflorescence observed, grout intact and in good condition, significant spalling at base exceeding ACI 349.3R second-tier criteria observed, surface sealant did not pass water bead test, and minor cracking observed in coil insert holes. |
|                        |                                                                                                                                                                       | Coil insert holes filled with silicone sealant (FDC 8636, WO 642973).                                                                                                                                                                                                                                             |
|                        | Evaluation and testing of adequacy of surface sealer recommended in RPT-1170.                                                                                         | Results pending publication.                                                                                                                                                                                                                                                                                      |
|                        | Evaluation of repair options for spalling recommended in RPT-1170.                                                                                                    | Results pending publication.                                                                                                                                                                                                                                                                                      |
|                        | AMR is on-going.                                                                                                                                                      | Results pending publication of EDF.                                                                                                                                                                                                                                                                               |

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| <b>THREE MILE ISLAND UNIT 2 INDEPENDENT SPENT<br/>FUEL STORAGE INSTALLATION AGING<br/>MANAGEMENT PROGRAM</b> | Identifier: PLN-4493<br>Revision*: 0<br>Page: 13 of 13 |
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| SSC                            | Aging Management Program                                                                | Aging Management Activity                        |
|--------------------------------|-----------------------------------------------------------------------------------------|--------------------------------------------------|
| DSC Basket Assembly            | AMR is on-going.                                                                        | Results pending publication of EDF.              |
| DSC Overpack                   | Remote visual inspection of DSC Overpack in HSM 15 performed in 2012.                   | Results pending publication of technical report. |
|                                | AMR is on-going.                                                                        | Results pending publication of EDF.              |
| DSC Overpack Support Structure | Remote visual inspection of DSC Overpack Support Structure in HSM 15 performed in 2012. | Results pending publication of technical report. |
|                                | AMR is on-going.                                                                        | Results pending publication of EDF.              |
| TMI-2 Defueling Canister       | AMR is on-going.                                                                        | Results pending publication of EDF.              |
| TMI-2 Core Debris              | AMR is on-going.                                                                        | Results pending publication of EDF.              |
| Base Mat                       | Annual inspection and nondestructive examination recommended in EDF-8903 and EDF-9897.  | Results pending publication of RPT-1193.         |
|                                | Application of surface sealer recommended in EDF-9516.                                  | Sealed and repaired cracks (WO 636531).          |