UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION III
2443 WARRENVILLE RD. SUITE 210
LISLE, IL 60532-4352
December 4, 2014

Mr. Tim A Christman
Advanced Programs Asset
Management Services, Manager
General Electric-Hitachi Nuclear Energy
6705 Vallecitos Road
Sunol, CA 94586

SUBJECT: NRC INSPECTION REPORT 07200001/2014-002(DNMS) - GENERAL ELECTRIC HITACHI MORRIS OPERATIONS FACILITY

Dear Mr. Christman:

On November 7, 2014, the U.S. Nuclear Regulatory Commission (NRC) completed inspection activities at the General Electric-Hitachi Morris Operations Facility in Morris, Illinois. The purpose of the inspection was to determine whether activities authorized by the license were conducted safely and in accordance with NRC requirements. Specifically, during an on-site inspection on November 4-7, 2014, the inspectors evaluated your emergency preparedness program, environmental monitoring and radiation protection programs, quality assurance program, surveillance and maintenance program, and training program. At the conclusion of the inspection, the results were discussed with you and your staff during an exit meeting on November 7, 2014.

Areas examined during the inspection are identified in the enclosed report. Within these areas, the inspection consisted of a selective examination of procedures and representative records, interviews with personnel, and observations of activities in progress.

Based on the results of this inspection, the inspectors did not identify any violations of significance of NRC requirements.

In accordance with Title 10 of the *Code of Federal Regulations* (CFR) 2.390 of the NRC's "Rules of Practice," a copy of this letter will be available electronically for public inspection in the NRC'S Public Document Room or from the NRC's Agencywide Documents Access and Management System (ADAMS), accessible from the NRC's website at http://www.nrc.gov/reading-rm/adams.html.

We will gladly discuss any questions you have concerning this inspection. If you have questions, please contact Mr. Matthew Learn of my staff at (630) 829-9603.

Sincerely,

/RA/

Robert J. Orlikowski, Chief
Materials Control, ISFSI, and
Decommissioning Branch

Docket No. 07200001
License No. SNM-2500

Enclosure:
IR 07200001/2014-002(DNMS)

cc w/encl: A. McFadden, Morris Operation
C. Settles, Head Resident Inspection
Illinois Emergency Management Agency
J. Klinger, State Liaison Officer
Illinois Emergency Management Agency
J. Sheldon, Fire Chief
Coal City Fire Department

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No.:	072-00001
License No.:	SNM-2500
Report No.:	07200001/2014-002(DNMS)
Licensee:	GE-Hitachi Nuclear Energy Americas, LLC
Facility:	Morris Operation
Location:	7555 East Collins Road Morris, IL 60450
Dates:	November 4-7, 2014
Inspectors:	Matthew Learn, Reactor Engineer Navid Tehrani, Health Physicist Daniel Strohmeyer, Health Physicist (Observer)
Approved by:	Robert J. Orlikowski, Chief Materials Control, ISFSI, and Decommissioning Branch Division of Nuclear Materials Safety

Enclosure

EXECUTIVE SUMMARY

GE-Hitachi Nuclear Energy Americas, LLC
Morris Operation
NRC Inspection Report 07200001/2014-002(DNMS)

The inspection consisted of observations of site activities and an evaluation of the licensee's programs including emergency preparedness, radiation protection and environmental monitoring, quality assurance, surveillance and maintenance, and training.

Emergency Preparedness

- The licensee established and maintained its emergency plan in accordance with applicable regulations, the License, and Technical Specifications. (Section 1.1)

Radiation Protection and Environmental Monitoring

- The licensee established and maintained its environmental monitoring and radiation protection programs in accordance with applicable 10 CFR Part 20 and 72 regulations, the License, and Technical Specifications. (Section 1.2)

Quality Assurance

- The licensee conducted, audits, Safety Review Committee meetings, corrective actions, and procedural changes in accordance with the Technical Specifications, regulatory requirements, and applicable site procedural requirements. (Section 1.3)

Surveillance and Maintenance

- The licensee implemented its surveillance and maintenance program in accordance with applicable regulations, the License, and Technical Specifications. (Section 1.4)

Training

- The licensee's training program complied with the requirements of the applicable regulations and the License. (Section 1.5)

Report Details

1.0 Away from Reactor Independent Spent Fuel Storage Installation (ISFSI) (IP 60858)

1.1 Emergency Preparedness

a. Inspection Scope

The inspectors reviewed the General Electric-Hitachi Morris Operation (GEHMO) Emergency Plan and reviewed the licensee's post-exercise assessment.

b. Observations and Findings

The GEHMO Emergency Plan was revised on August 21, 2014. The inspectors reviewed changes to the Emergency Plan to ensure they did not create a decrease in effectiveness.

Section 8.5 of the GEHMO Emergency Plan requires the licensee to perform a biennial exercise to demonstrate emergency response capabilities and effectiveness of the Emergency Plan. The scenario for the November 5, 2014, exercise involved a simulated fire involving radioactive material and an injured individual with minimal onsite management present. The scenario required onsite response from the Coal City Fire Department who participated in the drill. The inspectors attended the licensee's post exercise evaluation where the effectiveness of the licensee's exercise response was evaluated against pre-established criteria. The inspectors noted that the planning, implementation, and evaluation of the exercise was comprehensive.

No findings of significance were identified.

c. Conclusion

The licensee established and maintained its emergency plan in accordance with applicable regulations, the License, and Technical Specifications.

1.2 Radiation Protection and Environmental Monitoring

a. Inspection Scope

The inspectors reviewed the licensee's 2012 and 2013 Environmental Operating Report as required by 10 CFR Part 72 and Technical Specification 8.2.1 to verify the maximum potential dose to a member of the public was below the required 10 CFR Part 72 limit. The inspectors evaluated the site boundary thermoluminescent dosimeter (TLD) values for 2012, 2013, and 2014 to verify the results were consistent with site radiological conditions and that the values were correctly reported in the Environmental Operating Reports. The licensee's Environmental Monitoring Program was also reviewed to determine the adequacy of the licensee's method of determining the maximum public dose. In addition, the inspectors reviewed site occupational dose data for calendar years 2012, 2013, and 2014 to verify all doses were under the limits established in 10 CFR Part 20.

b. Observations and Findings

The licensee's Environmental Monitoring Program defines the methodology for determining the maximum potential public dose at the site fence from direct radiation. This process uses the most conservative TLD value from each quarter and an occupancy factor for a member of the public at the site fence. The inspectors determined that the TLD values were consistent with site radiological conditions. The inspectors noted that an occupancy factor was being utilized for TLD values on the site fence near the north owner controlled area line of the GEHMO site. The inspectors questioned whether use of this occupancy factor was appropriate due to its close proximity to the owner controlled area and as such the site's ability to exercise control of individuals. The inspectors reviewed north site fence TLD values and determined that even without the utilization of an occupancy factor, 10 CFR Part 20 requirements were met.

The inspectors determined the 2012 and 2013 Environmental Operating Report values for maximum potential dose to a member of the public from direct radiation was consistent with the Environmental Monitoring Program methodology using the most conservative TLD data. This value, when combined with nearly negligible effluent release dose values, was well below the 10 CFR Part 20 regulatory limits.

The inspectors determined that the occupational doses for radiation workers for both 2012, 2013, and 2014 were consistent and reasonable when evaluated against the work performed by site personnel, and well under the regulatory occupational dose limits.

No findings of significance were identified.

c. Conclusion

The licensee established and maintained its environmental monitoring and radiation protection programs in accordance with applicable 10 CFR Part 20 and 72 regulations, the License, and Technical Specifications.

1.3 Quality Assurance

a. Inspection Scope

The Inspectors reviewed the licensee's audit, Safety Committee, and corrective action program, as well as the most recent audit report and minutes from the Safety Committee meetings. The inspector reviewed corrective action reports from 2012 through 2014 to determine the licensee's effectiveness in identifying, resolving, and preventing problems. The inspector also reviewed a sample of procedural changes from 2012 through 2014 to verify compliance with the applicable regulations and site procedural requirements.

b. Observations and Findings

Technical Specification 6.4.2 requires audits to be conducted in accordance with GE Nuclear Energy Management procedures. Morris Operation Instruction (MOI) 702, "MO Internal Audits," Revision 9, is used for guidance on conducting audits. Audits were conducted in 2012, 2013, and 2014, to evaluate the implementation of the General Electric-Hitatchi Morris Quality Assurance plan and the applicable instructions and

procedures. The audit did not identify any findings or concerns. In addition to internal audits various external audits were conducted by organizations independent of GEHMO. Specifically, the inspectors reviewed an Xcel Energy Source Surveillance Report dated May 21, 2014. The surveillance scope included review of controls for: organization, material handling and storage, inspection and test, nonconformance material controls, records, and control of measuring and test equipment.

The Safety Committee and its function are specified in Section 6.4.1 of the Technical Specifications and in MOI-904, "Safety Committee," Revision 16. The safety committee is required to meet every 45 days and with a minimum of three members. The function of the Committee is to review plans, procedures, and operations involving the elements of radiological safety prior to implementation. A sample of meeting minutes since the last inspection was reviewed. The minutes indicated that the Committee: met monthly; always contained the required number of members; reviewed site activities involving radiological safety; and reviewed monthly employee dose reports.

The licensee documents issues in its corrective action program as required by 10 CFR 72.172.

The licensee performed three 72.48 applicability analyses for changes, tests, and experiments since the last inspection. The inspectors determined the licensee performed the change and associated applicability analysis in accordance with their 72.48 program and the determination that no 72.48 evaluation was required was consistent with the applicable site procedures and 10 CFR Part 72 regulations.

No findings of significance were identified.

c. Conclusion

The licensee was conducting audits, Safety Review Committee meetings, corrective actions, and procedural changes in accordance with the Technical Specifications, regulatory requirements, and applicable site procedural requirements.

1.4 Surveillance and Maintenance

a. Inspection Scope

The inspectors reviewed the licensee's surveillance and maintenance program associated with wet fuel storage to verify compliance with the applicable regulations, Technical Specifications, and applicable site procedures. The inspectors walked down the spent fuel basin (SFB), observed preventative maintenance activities, interviewed personnel, and reviewed select documents.

b. Observations and Findings

During the walk down of the site and SFB, the inspectors noted the radiological controlled areas to be generally clean and free of dirt and debris, and adequately marked and posted as required. The Basin Leak Detection System is used to provide indication of a leak in the spent fuel basin liner. The leak rate is approximately 150 gallons per day.

In accordance with Technical Specification 4.1 requirements, the licensee performed effluent air samples between the main stack and the sand filter on a weekly basis to measure activity in the air leaving the sand filter for environmental monitoring purposes. The inspectors evaluated the documentation provided for 2012, 2013, and 2014 and noted all activity values were below those specified in the applicable site procedure and Technical Specifications.

In accordance with Technical Specification 4.2 requirements, the licensee utilized Standard Operating Procedure (SOP) 16-100, "Effluent Water Analysis – Compliance Test," Revision 19 to collect water samples of the sanitary lagoons on a monthly basis to measure activity in the water for environmental monitoring purposes. The inspectors evaluated the documentation provided for 2012, 2013, and 2014 and noted all activity values were below those specified in the applicable site procedure and Technical Specifications.

In accordance with Technical Specifications 4.3 requirements, the licensee utilizes SOP 16-110, "Sealed Source Inventory and Leak Check – Compliance test," Revision 14 to perform leak testing of sealed sources on a quarterly basis. The inspectors evaluated the documentation provided for 2013 and 2014 and noted all leak tests results were below those specified in the Technical Specifications.

In accordance with Technical Specifications 4.5 and 4.6 requirements, the licensee utilizes SOP 16-10, "Basin Water Analysis – Compliance Test," Revision 15, to perform SFB water samples on a monthly basis to measure the conductivity and activity in the water to ensure adequate aging management. These values were monitored in order to maintain a benign environment for fuel and equipment stored in the SFB. The inspectors evaluated the documentation provided for 2013 and 2014 and noted all conductivity and activity values were below those specified in the Technical Specifications.

The licensee utilizes SOP 16-97, "Criticality Alarms Operability – Compliance Test," Revision 11 and SOP 16-98, "Area Radiation Monitor Calibration – Compliance Test," Revision 19, to partially fulfill Technical Specifications 4.4 requirements. Technical Specification 4.4 states that systems and equipment shall be tested for operability and calibrated at least once during the intervals specified in Table 4-2.

Table 4-2 states that criticality monitors shall be operability tested on an annual basis and calibrated on a quarterly basis. The licensee performed criticality monitor surveillance in accordance with Technical Specification 4.4 and Table 4-2.

Table 4-2 states that area radiation monitors shall be operability tested on a quarterly basis and calibrated on a quarterly basis. The licensee performed criticality monitor surveillance in accordance with Technical Specification 4.4 and Table 4-2.

No findings of significance were identified.

c. Conclusion

The licensee implemented its surveillance and maintenance program in accordance with applicable regulations, the License, and Technical Specifications.

1.5 Training

a. Inspection Scope

The inspectors reviewed the licensee's training program.

b. Observations and Findings

The inspectors reviewed the training program as well as the qualification records of Operations personnel. MOI-155, "MO Training," and MOI-606, "MO Training Program," were reviewed as well as a sample of qualification records for plant staff. No significant changes have taken place to the training program since the last inspection. The inspectors verified that all operators met the required training requirements.

No findings of significance were identified.

c. Conclusion

The licensee's training program complied with the requirements of the applicable regulations and the License.

2.0 Exit Meeting

The inspectors presented the inspection results to licensee management at the conclusion of the inspection on November 7, 2014.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

PARTIAL LIST OF PEOPLE CONTACTED

A. McFadden, Plant Manager, GE-H Morris Operations
B. Partney, Coordinator, Operations and Maintenance
J. Legner, Administrator, EHS and Procurement
E. Saito, Manager, Emergency Technologies
M. Venters, Manager, Emergency Preparedness
T. Christman, Manager, Advanced Programs Asset Management Services

INSPECTION PROCEDURE USED

60858	Away-From-Reactor ISFSI Inspection Guidance

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened	Type	Summary
None		

Closed	Type	Summary
None		

Discussed	Type	Summary
None		

LIST OF ACRONYMS USED

ADAMS	Agencywide Documents Access and Management System
CFR	Code of Federal Regulations
CSAR	Consolidated Safety Analysis Report
DNMS	Division of Nuclear Materials Safety
GEHMO	General Electric-Hitachi Morris Operation
NRC	United States Nuclear Regulatory Commission
MCID	Materials Control, ISFSI, and Decommissioning Branch
MO	Morris Operations
MOI	Morris Operation Instruction
SFB	Spent Fuel Basin
SOP	Standard Operating Procedure
TLD	thermoluminescent dosimeter

LIST OF DOCUMENTS REVIEWED

[Water Samples 2012]

[Water Samples 2013]

[Water Samples 2014]

16-84 Stack Sample Analysis – Compliance Test; Revision 16, 2012, 2013, and 2014

72.44 Applicability Review; August 21, 2014

72.44 Applicability Review; June 27, 2013

72.48 Applicability Analysis; dated June 5, 2012

72.48 Applicability Analysis; dated May 23, 2012

Basin Building Structural Inspection; dated November 2, 2011

Basin Building Structural Inspection; dated November 6, 2014

Basin Building Structural Inspection; dated October 1, 2012

Basin Building Structural Inspection; dated September 3, 2014

Basin Water Sample; March 27, 2012

Environmental Operating Report; Letter to NRC RIII Regional Administrator; February 26, 2013

Environmental Operating Report; Letter to NRC RIII Regional Administrator; February 24, 2014

GE Morris Drill Evaluations; dated December 18, 2013

GE Morris Drill Evaluations; dated June 25, 2014

GE Morris Drill Evaluations; dated March 5, 2014

GE Morris Drill Evaluations; dated May 29, 2013

GE Morris Drill Evaluations; dated September 18, 2013

GE Morris Drill Evaluations; dated September 29, 2014

GE Morris Operation Biennial Emergency Plan Exercise Evaluation Report; April 4, 2013

GE Morris Operation Independent Radiation Protection Program Review dated October 7, 2013

GE Morris Response to ANI Information Bulletin 11-02, Neutron Monitoring dated July 2, 2013

MOI 430; Preparation of Safety Analysis; Revision 9

MOI-903; Morris Operations (MO) Health Physics Technician Training; 2012-2014

Morris Operation Emergency Plan; August 21, 2014, Revision 4

NQA-2012-01; Morris Audit; dated August 12, 2012

NQA-2013-02; Morris Audit; dated February 28, 2014

NQA-2014-07; Morris Audit; dated August 4, 2014

Quality Assurance Plan for Morris Operations, Revision 2

Radiation Dosimetry Reports; 1st through 4th Quarter 2012, 2013, and 1st through 3rd Quarter 2014

Radiation Protection Program – Internal Audit Report; January 9, 2013

Sealed Source Inventory – Compliance Test 2013 and 2014

SNM-2500; License for Independent Storage of Spent Nuclear Fuel and High-Level Radioactive Waste, GE-Hitatchi Nuclear Energy Americas, LLC; Amendment 13

SOP 16-10; Basin Water Analysis Compliance Test Data Sheets; January 2012 through September; Revision 15

SOP 16-100; Effluent Water Analysis Compliance Test Surface Water Data Sheets; Revision 20, 2012, 2013, and 2014

SOP 16-11; Basin Leak Detection Alarm –Operability Test; 2012-2014

SOP 16-12; Basin Leak Detection Calibration – Compliance Test; 2012-2014

SOP 16-13; Basin Leak Detection (Pumpout) Operability Test; 2012-2014

SOP 16-16: Basin Leak Detection System Operation- Operability Test; 2012-2014

SOP 16-90; Emergency Generator Operability Test; 2012-2014

SOP 16-91; Back-Up Diesel Generator – Operability Test; 2012-2014

SOP 16-97; Criticality Alarms Operability – Compliance Test; 2012-2014

SOP 16-98; Area Radiation Monitor Calibration – Compliance Test; 2012-2014

Xcel Energy External Audit May 21, 2014