November 18, 2008

Christopher J. Monetta, Mail Code J 26
GENE EHS Manager
GE Hitachi Nuclear Energy
PO Box 780
Wilmington, NC 28402-0780

SUBJECT: NRC INSPECTION REPORT 072-00001/2008-001(DNMS) - G.E. MORRIS

Dear Mr. Monetta:

This refers to the routine inspection conducted on November 5-6, 2008, at the GE facility in Morris, Illinois. The purpose of the inspection was to determine whether activities authorized by the licensee were conducted safely and in accordance with NRC requirements. Specifically, the inspection included evaluation of your emergency preparedness program, environmental monitoring and radiation protection programs, quality assurance program, surveillance and maintenance program, fire protection, training, and status of corrective actions described in your April 26, 2006, letter "Reply to a Notice of Violation." At the conclusion of the inspection, the findings were discussed with Mr. J. E. Ellis of your staff.

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.

Within the scope of the inspection, no violations of NRC requirements were identified.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosures will be available electronically for public inspection in the NRC Public Document Room or from the NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html.

We will gladly discuss any questions you have concerning this inspection.

Sincerely,

/RA/

Christine A. Lipa, Chief
Materials Control, ISFSI, and
Decommissioning Branch

Docket No. 072-00001
License No. SMB-2500

Enclosure:
Inspection Report 072-00001/2008-001(DNMS)

cc w/encl: J. E. Ellis, Manager, Morris Operation
E. W. Secko, Manager, Regulatory Compliance
C. Settles, Head Resident Inspection,
Illinois Emergency Management Agency

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No.:	072-00001
License No.:	SMB-2500
Report No.:	072-00001/2008-001(DNMS)
Licensee:	General Electric Company
Facility:	Morris Operation
Location:	7555 East Collins Road Morris, IL 60450
Dates:	November 5 through 6, 2008
Inspectors:	William G. Snell, Senior Health Physicist Jeremy Tapp, Health Physicist
Approved by:	Christine A. Lipa, Chief Materials Control, ISFSI, and Decommissioning Branch

Enclosure

EXECUTIVE SUMMARY

General Electric Company
Morris, IL 60521
NRC Inspection Report 072-00001/2008-001(DNMS)

The inspection consisted of observations and an evaluation of the licensee's programs including radiation protection, surveillance and maintenance, environmental monitoring, fire protection, training, quality assurance and emergency preparedness, and observation and evaluation of the Emergency Plan exercise.

Emergency Preparedness

- The licensee adequately demonstrated the effectiveness of its Emergency Plan and its ability to implement the Plan in response to an emergency. One Open Item was identified regarding inconsistencies between the licensee's Emergency Plan and regulatory requirements involving the classification of a contaminated and injured individual as an Alert and the use of the term "non-emergency unusual event." (Section 1.1)

Radiation Protection and Environmental Monitoring

- The licensee implemented its radiation protection and environmental monitoring programs in accordance with applicable regulations, its License, and the Technical Specifications. (Section 1.2)

Quality Assurance

- The licensee was conducting audits and Safety Review Committee meetings in accordance with the Technical Specifications and applicable procedural requirements. (Section 1.3)

Surveillance and Maintenance

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

Fire Protection

- The licensee implemented its fire protection program in accordance with the applicable regulations and Technical Specifications. (Section 1.5)

Training

- The licensee's training program complied with requirements of the applicable regulations and the license. (Section 1.6)

Report Details[1]

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

1.1 Emergency Preparedness

a. Inspection Scope

The inspectors observed and evaluated the conduct of the licensee's biennial emergency response exercise. The inspectors reviewed the General Electric Morris Operation (GE-MO) Emergency Plan and implementing procedures, and participated with the licensee in a pre-exercise briefing to go through the exercise scenario and the sequence of expected player and controller actions. The inspectors observed the licensee's formal post-exercise critique conducted with onsite and off-site participants and observers immediately following the exercise.

b. Observations and Findings

Section 8.5 of the GE-MO 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, 2008, exercise involved a simulated heart attack and subsequent contamination of a site employee. The Coal City Fire Department provided offsite medical support in real time in response to the simulated emergency.

In response to the event, the licensee took adequate and timely actions to address the simulated medical event. The licensee correctly classified the event according to the Emergency Plan, made timely notifications, augmented personnel as needed, conducted adequate radiological monitoring, and ensured the safety of personnel. Licensee personnel maintained control throughout the scenario, starting with a prompt recognition of the initiating event and through recovery discussions. Although there were times when information could have been better communicated between responders, overall communications were acceptable. During the post exercise critique, the licensee adequately evaluated its emergency response and management capability by identifying strengths and weaknesses, and a number of improvements that could be made.

Two issues were identified as a result of the exercise. One issue involved the licensee's emergency classification for a contaminated and injured individual, and the second issue involved the classification terminology of a non-emergency Unusual Event.

Regarding the first issue, Section 5.9.4 of the GE-MO Emergency Plan and Section 1.7 of Attachment 1 to Implementing Procedure MOI-233, Situation Plan, state that the identification of a contaminated and injured individual is classified as an Alert. Procedure MOI-233 indicates this Alert classification requires a one-hour notification to the NRC. This is inconsistent with 10 CFR 72.75(c)(3)

[1] A List of acronyms used in the report is included at the end of the Report Details.

which states that “any event requiring transport of a radiologically contaminated person to an offsite medical facility for treatment” is an eight-hour non-emergency notification to the NRC. This is also inconsistent with the emergency response classification used for a contaminated and injured individual by the majority of the plants in the nuclear power reactor industry, including the Dresden Nuclear Generating Station located near the Morris Operations facility. In addition, the NRC issued an Emergency Preparedness Position (EPPOS) dated June 1, 1995 (see ADAMS ML022970165) for 10 CFR Part 50 licensees that stated that the “transportation of contaminated injured individual from site to offsite hospital” does not meet the threshold of the Unusual Event emergency class, is not a precursor to a more serious event, and is reportable as a non-emergency.

In the second case, Section 3.2 of the GE-MO Emergency Plan defines and discusses an Unusual Event classification and refers to it as a “non-emergency” event. This is inconsistent with 10 CFR 72.32(a)(3) which states that the Emergency Plan must provide “a classification system for classifying accidents as “alerts,” and 10 CFR 72.75 specifies “emergency notifications” and “non-emergency notifications” as having separate reporting requirements, and neither requirement discusses or defines Unusual Events. This is in contrast to Part 50 licensees, where Appendix E to 10 CFR Part 50 specifically defines the emergency classes to include a “notification of unusual events”.

The NRC is concerned that the GE-MO Emergency Plan classification, response and reporting actions, although conservative, are inconsistent with 10 CFR Parts 50 and 72. Because the offsite responders to a contaminated and injured individual would normally be the same for both the Morris Operations facility and the Dresden Generating facility, inconsistent notifications of the classification of the event could be misleading and/or confusing. This may also cause misunderstandings during communications with State and NRC notifications. The inspectors discussed these issues with the licensee and the licensee agreed to review the GE-MO Emergency Plan and Implementing Procedures to potentially eliminate the non-emergency Unusual Event classification and the contaminated and injured individual from the Alert classification. Since these changes would make the Emergency Plan consistent with regulatory requirements and NRC guidance, it would not downgrade the effectiveness of the Emergency Plan and not need NRC approval. However, the licensee should obtain concurrence with State and local officials. This issue will be tracked as an Open Item (07200001/2008-001-01).

c. <u>Conclusion</u>

The licensee adequately demonstrated the effectiveness of its Emergency Plan and its ability to implement the Plan in response to an emergency. One Open Item was identified regarding inconsistencies between the licensee’s Emergency Plan and regulatory requirements involving the classification of a contaminated and injured individual as an Alert and the use of the term “non-emergency unusual event.”

1.2 Radiation Protection and Environmental Monitoring

a. Inspection Scope

The inspectors reviewed select portions of the radiation protection and environmental monitoring programs to verify compliance with the applicable regulations, the License, and the Technical Specifications. The inspectors conducted a walkdown of the facilities to verify the adequacy of radiological posting and labeling and the control of radiation areas.

b. Observations and Findings

The results of the annual occupational dose data for site personnel were reviewed for calendar years 2006 and 2007. The total site dose for 2006 was 2108 millirem (mrem), which included 692 mrem for the replacement of a high integrity container (HIC) of radioactive waste, and 1670 mrem for 2007. Quarterly airborne activity results were reviewed for the 4th Quarter of 2006 through the 2nd Quarter of 2008. The highest average quarterly radionuclide concentrations varied from less than (<) 1.2 percent to <4 percent of the limit for natural uranium for gamma emitters, and <1 percent of the limit for Co-60 for beta emitters.

The inspectors reviewed the records of leak tests of the licensee's four sealed sources, three 250 millicurie (mCi) americium-241 sources and one 100 mCi cesium-137 source. The tests were conducted quarterly per SOP 16-110, Sealed Source Inventory and Leak Check. For 2007 and the first three quarters of 2008, all tests had been completed and documented as required. All leak tests were negative.

The inspectors reviewed the records of operability tests of the licensee's sand filter. The tests were conducted monthly per SOP 16-82, Sand Filter Delta P, to verify the ability of the sand to mitigate the flow of airborne radioactive contaminants. For January 2007 through September 2008, the monthly tests had been completed and documented as required. No problems were noted with the airflow.

The licensee monitors the groundwater at eight monitoring wells within the owner controller area on a quarterly basis. The licensee provides an annual environmental monitoring and effluent report documenting their estimate of quantities of principal radionuclides released to the environment. The inspectors reviewed the most recent data available, which was provided to the NRC by cover letter dated February 21, 2008 (see ADAMS ML080560072). The letter provides an estimate of the maximum potential dose to the pubic resulting from effluents released in 2007. The letter states that the only particulate radionuclide present on the stack monitor filters was cesium-137. Gaseous radionuclides evaluated were hydogen-3 (tritium) and krypton-85. The quantity of tritium released was calculated by multiplying basin water evaporative losses by the average tritium levels in the fuel basins. The amount of krypton-85 released was calculated by multiplying the concentration found in samples taken directly over the basin water, by the airflow through the basin area. Based on the quantities

determined, the licensee calculated a resultant maximum potential dose of 3.9 E-7 mrem/year from airborne releases.

The licensee releases no liquid effluents from the site. However, trace quantities of tritium are found in the site monitoring wells. Analysis of surface water samples from the site's sanitary lagoons showed tritium levels below minimum detectable levels. Tritium values below detectable levels are conservatively reported as the minimum detectable level of 164 pCi/liter. The maximum potential dose to the public that could occur from surface water was calculated to be 7.48 E-3 mrem, based on a person consuming water all year from the sanitary lagoons. The inspectors reviewed the records of compliance tests of the licensee's North and South Sanitary Lagoons and the North Ditch. The tests were conducted monthly per SOP 16-100, Effluent Water Analysis, to assess for gross alpha and beta and tritium. For 2007 and 2008 through September, the monthly tests had been completed and documented as required. No water was collected from the North Ditch during this period because it was always dry. No anomalous results were identified.

The maximum potential dose to the public that could occur from groundwater was calculated to be 7.89 E-3 mrem, based on a person consuming water all year from the DM-8 monitoring well, based on 173 pCi/liter.

Measurement of direct radiation at the GE Morris Operation owner control boundary is accomplished using TLDs prepared and processed by a contractor, and direct measurement techniques. The calculated maximum dose to the public that could occur from direct radiation at the boundary of the owner controlled area was calculated to be 0.411 mrem assuming the maximum time spent at the boundary is 24 hours per year.

The maximum potential radiation dose to the public for 2007 would result from the sum of the stack effluent releases, the dose from drinking surface water from the sanitary lagoons, ground water from the monitoring well, and from direct radiation at the owner controlled boundary. The sum of these sources for 2007 is 0.426 mrem. This is well below any regulatory limits.

During a walkdown of the facilities the inspectors verified the licensee was maintaining control of radiation areas. Radiological and contaminated areas were noted to be appropriately posted and controlled, step off pads were correctly placed, and workers were knowledgeable of radiation protection requirements.

c. Conclusion

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

1.3 Quality Assurance Activities

a. Inspection Scope

The inspectors reviewed the licensee's audit, Safety Committee, and corrective action programs, and the most recent audit report and minutes from Safety Committee meetings.

b. Observations and Findings

Technical Specification Section 6.4.2 requires audits to be conducted in accordance with GE Nuclear Energy Management and procedures. Morris Operations Instruction 702, Internal Audits, provided the instructions for conducting the audits. The most recent internal audit was conducted during December 2007, to verify implementation of the GE-MO QA Plan and applicable instructions and procedures. The audit identified no findings or concerns.

The Safety Committee and its function are specified in Section 6.4.1 of the Technical Specification and in MOI-904, Safety Committee. The Safety Committee is required to meet at least every 45 days and with a minimum of three members. The function of the Committee is to review plans, procedures and operations involving elements of radiological safety prior to implementation. The meeting minutes were reviewed for January 2007 through October 2008. The minutes indicated the Committee met monthly, always contained the required number of members in attendance, and reviewed site activities involving radiological safety, including the monthly reports of worker doses.

The licensee has written no corrective action reports since the previous inspection.

c. Conclusion

The licensee was conducting audits and Safety Review Committee meetings in accordance with the Technical Specifications and applicable procedural requirements. No corrective action reports were written since the previous inspection.

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, the License, and Technical Specifications. The inspectors walked down the wet storage pool, observed daily surveillance activities, reviewed the licensee's contingency plans, interviewed personnel, and reviewed select documents.

b. Observations and Findings

The inspectors conducted a walk down of the site and observed an Operations Technician perform daily surveillances of site equipment and processes important to safety. The Operator verified systems were operating as required and within Technical Specification parameters and assessed the material condition of site equipment important to safety. The inspectors confirmed through observation on the tour and through interviews with an Operations Technician that the licensee maintained the water level at approximately 12 feet above the top of the fuel. Licensee operators have access to real-time spent fuel basin water level and verify level on a specified frequency, which is nominally every four hours.

In accordance with regulatory requirements, the licensee took spent fuel basin (SFB) water samples per SOP 16-10, Basin Water Analysis-Compliance Test, on a monthly basis to measure the conductivity and activity in the water in order to maintain a benign environment for fuel and equipment stored in the SFB. Also, the licensee pulls monthly samples of spent fuel basin make-up water as a conservative measure in order to provide assurance that the spent fuel basin water is not adversely affected by addition of make-up water. The inspectors reviewed documentation of test results from January 2007 through September 2008 to verify the SFB basin water conductivity and activity did not exceed regulatory limits. In addition, the licensee maintains a spent fuel basin water leak detection system. The inspectors verified by a records review from January 2007 through September 2008 that the licensee verifies calibration of the leak detection instrumentation on a monthly basis per SOP 16-12, Basin Leak Calibration-Compliance. The average leak rate varied between approximately 80 and 130 gallons per day. The inspectors also verified the leak detection alarm was tested per SOP 16-11, Basin Leak Detection Alarm – Operability Test, on a monthly basis to ensure the alarm setpoint is within its required tolerance and operates as expected.

The licensee maintains two Area Radiation Monitors (ARMs) in the spent fuel basin area, one on the east wall and one on the west wall. These also perform the function of a criticality monitor and are set to alarm at a dose rate of 50 mrem/hr. The inspectors reviewed quarterly calibration records and alarm tests that were performed from January 2007 through September 2008 in accordance with SOP 16-98, ARM Calibration and Compliance Test, and SOP 16-97, Criticality Alarms – Compliance Test, respectively. All calibrations and tests were performed satisfactorily. During the tour with the Operations Technician, the inspectors assessed the material condition of the ventilation system and observed it was operating as required. The inspectors also reviewed the annual ventilation system test performed in 2007 and 2008 per SOP 16-81, Ventilation System – Operability Test, and found it was performed successfully with no degradation in system performance since the last inspection.

c. Conclusion

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

1.5 Fire Protection

a. Inspection Scope

The inspectors reviewed the facility's fire protection program to verify compliance with the applicable regulations and technical specifications.

b. Observations and Findings

The licensee does not have a separate fire protection plan. It is part of the Emergency Plan and Situation Plan. The inspectors reviewed the applicable sections of each that describe the actions to be taken in the case of fire or explosion. In addition, during the facility walkdown, the inspectors noted the fire protection equipment in the areas examined by the inspectors had been inspected within calendar year 2008 and the material condition would not be adverse to its function. In addition, the inspectors observed no unused equipment or transient combustibles as potential fire hazards during the walkdown.

c. Conclusions

The licensee has satisfied the conditions of its license and the associated Technical Specifications regarding the Fire Protection program.

1.6 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 verifying required training was taken by the appropriate personnel. The inspectors verified that all site personnel had taken the required site access training and any person requiring access to a radiation area had the required radiation worker training.

c. Conclusions

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

2.0 Closure of Violations (VIO)

(Closed) VIO 07200001/2006-01-01: Failure to properly document a disposal of two uranium sources and update the site general inventory.

The inspectors verified the corrective actions described in an April 26, 2006, letter "Reply to a Notice of Violation," were taken. Specifically, the licensee stated the "Accountability Procedure" was revised to provide better direction and the personnel involved in inventory operations have been trained in the revised procedure. Therefore, inspectors verified MOI-314, Subject: SNM Accountability, had been revised as stated and questioned the licensee on who would perform inventory activities. Only the Radiation Safety Officer (RSO) will perform inventory activities and the revision to the procedure controls this requirement. The current RSO performed the revision to the procedure and thus, is adequately trained to perform inventory activities per procedure. This item is closed.

(Closed) VIO 07000001/2006-01-02: Failure to document two Technical Specification violations as non-conformances in the licensee's corrective action program.

The inspectors verified the corrective actions described in an April 26, 2006, letter "Reply to a Notice of Violation," were taken. Specifically, the licensee stated the GE-MO Corrective Action Program (CAP) has been revised to specifically detail a Corrective Action Report (CAR) shall be prepared when any deficiency in NRC required reporting or process and procedure deficiencies for Safety Significant Components (SSCs) important to safety are discovered. In addition, the licensee states that all personnel on site have been trained in Corrective Action requirements. The inspectors first verified the revision to MOI-717, Subject: Corrective Action Reporting and Management, contained the stated revisions to ensure NRC reporting requirement deficiencies are captured in the future, and then interviewed the Regulatory Assurance Manager who is in charge of the CAP at the site and verified all personnel had been trained appropriately. This item is closed.

3.0 Exit Meeting

The inspectors presented the inspection results to members of the licensee staff at the conclusion of the onsite inspection activities on November 6, 2008. The licensee did not identify any of the documents reviewed or statements referenced to specific processes in as proprietary in nature.

Attachment: Supplemental Information

SUPPLEMENTAL INFORMATION

PARTIAL LIST OF PEOPLE CONTACTED

J. Ellis, Plant Manager
E. Secko, Regulatory Compliance Manager
A. McFadden, Radiation Safety Officer
T. Maikoff, Operations/Maintenance Manager

INSPECTION PROCEDURE USED

60858	Away-From-Reactor ISFSI Inspection Guidance

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened	Type	Summary
07200001/2008-001-01	OI	Emergency classification for a contaminated and injured individual and classification terminology of a non-emergency Unusual Event

Closed	Type	Summary
07200001/2006-001-01	VIO	Failure to properly document a disposal of two uranium sources and update the site general inventory
07200001/2006-001-02	VIO	Failure to document two Technical Specification violations as non-conformances in the licensee's corrective action program

Discussed

None

ACRONYMS

CAP	Corrective Action Program
CFR	Code of Federal Regulations
mCi	milliCurie
MO	Morris Operation
Mrem	millirem
NRC	Nuclear Regulatory Commission
OI	Open Item
pCi	picoCurie
QA	Quality Assurance
RSO	Radiation Safety Officer
SFB	Spent Fuel Basin

LIST OF DOCUMENTS REVIEWED

Documents used during the inspection were specifically identified in the Report Details, above.