

November 19, 2007

Mr. Timothy J. O'Connor
Site Vice President
Monticello Nuclear Generating Plant
Nuclear Management Company, LLC
2807 West County Road 75
Monticello, MN 55362-9637

SUBJECT: MONTICELLO NUCLEAR GENERATING PLANT
NRC INSPECTION REPORT 072-00058/07-01(DNMS)

Dear Mr. O'Connor:

On November 13, 2007, the U.S. Nuclear Regulatory Commission (NRC) completed its inspection of the dry cask storage pad construction activities at the Monticello Nuclear Generating Plant. The purpose of this routine inspection was to determine whether the dry cask storage pad design and construction activities were conducted safely and in accordance with NRC requirements and design specifications. At the conclusion of the onsite inspection on July 31, 2007, the NRC inspector discussed the preliminary inspection findings with members of your staff. At the conclusion of the inspection on November 13, 2007, during an exit teleconference, the inspector discussed the final disposition of the issues identified during the inspection. The enclosed report presents the results of this inspection.

The inspection was an examination of the dry fuel storage pad construction activities as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. Specifically, the inspectors observed placement of structural fill, reinforcement, and concrete for the storage pad and the east approach slab. The inspectors also performed an in-office review of structural calculations related to the storage pad and the haul path. Areas examined during the inspection are identified in the enclosed report. Within these areas, the inspection consisted of selected examinations of procedures and representative records, observations of activities, and interviews with personnel.

Based on the results of this inspection, the NRC has determined that a Severity Level IV violation of NRC requirements occurred. The violation was associated with a failure to space the reinforcing steel in accordance with design drawings and failure to properly place concrete during the construction of an Independent Spent Fuel Storage Installation (ISFSI) pad. Because this violation was of very low safety significance, was not repetitive or willful, and was entered into your corrective action program, this violation is being treated as a Non-Cited Violation (NCV), consistent with section VI.A.1 of the NRC Enforcement Policy. The NCV is described in the subject inspection report. If you contest the violation or significance of the NCV, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001, with copies to: (1) the Regional Administrator, Region III; (2) the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and (3) the Resident Inspector at the Monticello Nuclear Generating Plant.

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/readingrm/adams.html>. To the extent possible, your response should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the Public without redaction.

Sincerely,
/RA/
Patrick L. Loudon, Chief
Decommissioning Branch

Docket No. 50-263, 72-058
License No. DPR-22

Enclosure:
Inspection Report 072-00058/07-01(DNMS)

cc w/encl: M. Sellman, President and Chief Executive Officer
D. Cooper, Senior Vice President and Chief Nuclear Officer
Manager, Nuclear Safety Assessment
J. Rogoff, Vice President, Counsel, and Secretary
Nuclear Asset Manager, Xcel Energy, Inc.
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Letter to Timothy J. O'Connor from Patrick L. Loudon dated November 19, 2007

SUBJECT: MONTICELLO NUCLEAR GENERATING PLANT
NRC INSPECTION REPORT 072-00058/07-01(DNMS)

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No. 072-00058

License No. DPR-22

Report No. 072-00058/07-01(DNMS)

Licensee: Nuclear Management Company, LLC

Facility: Monticello Nuclear Generating Plant

Location: 2807 West County Road 75
Monticello, MN 55362-9637

Inspection Dates: Onsite: June 28, 2007; July 25 through July 27, 2007;
July 30 through August 1, 2007; and August 29 through
August 31, 2007. In-office review completed on
November 13, 2007

Exit Teleconference: November 13, 2007

Inspectors: Magdalena Gryglak, Reactor Inspector
Sarah Bakhsh, Health Physicist

Approved by: Patrick L. Loudon, Chief
Decommissioning Branch
Division of Nuclear Materials Safety

Enclosure

EXECUTIVE SUMMARY

Monticello Nuclear Generating Plant NRC Inspection Report 072-00058/07-01(DNMS)

The purpose of the inspection was to observe and evaluate the licensee's activities associated with construction of a new Independent Spent Fuel Storage Installation (ISFSI) pad. The inspectors also reviewed the design of the new pad to ensure compliance with the regulations and the design specifications.

Independent Spent Fuel Storage Pad Construction

- The licensee's engineering evaluation of the in situ soil was adequate. The soil compaction activities were being performed in accordance with technical specifications and industry standards. (Section 1.1)
- The inspectors concluded that overall the construction activities for the ISFSI concrete pad and the east approach slab complied with specifications contained in the licensee's approved Engineering Change Package, design drawings, Work Orders and applicable industry standards. The inspectors identified one violation of 10 CFR 72.150, "Instructions, Procedures, and Drawings." Specifically, the licensee failed to: 1) appropriately space the reinforcing steel, and 2) appropriately place and vibrate concrete during placement of the ISFSI pad. These findings are being treated as a Non-Cited Violation consistent with Section VI.A.1 of the NRC Enforcement Policy. (Section 1.2)
- The inspectors concluded that the licensee adequately evaluated the proposed transfer route for the expected dry cask loads. (Section 1.3)

Review of 10 CFR 72.212(b) Evaluations, Appendix A, Review of ISFSI Storage Pad Design

- The inspectors concluded that the licensee adequately characterized the subsurface conditions for the new ISFSI site. The ISFSI pad has been designed in accordance with the Certificate of Compliance, 10 CFR Part 72 requirements, and industry standards. (Section 2.1)

Report Details¹

1.0 Independent Spent Fuel Storage Pad Construction (60853)

1.1 Excavation and soil compaction activities.

a. Scope:

The inspectors reviewed the licensee's engineering evaluations of the in situ soil and observed soil compaction activities to verify the licensee's compliance with its specifications and industry standards.

b. Observations and Findings

The proposed ISFSI facility is located approximately 800 feet (ft.) west and south of the Monticello Reactor Building. The proposed ISFSI site ranged in elevation from 937 to 945 ft. All of the vegetation and the top upper soil layer was removed down to elevation 936.5 ft. The licensee then proof rolled the underlying in-situ material to ensure that a suitable subgrade existed under the pad area. During this evolution, the licensee encountered some water seepage in the northwest corner of the proposed pad. The licensee excavated further to the west to locate the source and removed all of moisture. Eventually, the area was backfilled and brought back to subgrade level and proof rolled again. Following receipt of satisfactory compaction results for the subgrade, the licensee backfilled the area with 4 ft. of non-frost-susceptible granular base material (gravel/sand). The inspectors observed the licensee place and compact the 4 ft. of structural fill in layers of 8 inches each. Drawing No. NGS-04Q166-201626, specified the structural fill to be compacted to minimum 95 percent dry density in accordance with American Society for Testing and Materials (ASTM) D1557-02, entitled "Standard Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³ [2,700kN-m/m³])."

The inspectors reviewed and observed the certified personnel perform field tests using a moisture density gauge to verify that the individual lifts met the minimum compaction, maximum dry density (by converting from the measured wet density) and moisture content as specified in technical specifications and established during laboratory tests. Field tests showed that the minimum compaction was achieved. The inspectors did notice that the percent moisture content was lower than the specified optimum value of 13 percent. However, the technical specifications allowed for lower moisture content due to the granular nature of the backfill material which drained easily.

The inspectors also reviewed the laboratory gradation analysis for the structural fill which demonstrated acceptance of the fill. Due to slightly greater percentage passing through #200 sieve, the licensee revised its specification for the structural fill. The inspector also reviewed personnel certification records to perform field and laboratory compaction tests.

¹ NOTE: A list of acronyms used in the report are included at the end of the report.

c. Conclusions:

The licensee's engineering evaluation of the in situ soil was adequate. The soil compaction activities were being performed in accordance with technical specifications and industry standards.

1.2 Pad Construction Activities

a. Scope:

The inspectors evaluated whether construction activities for the Independent Spent Fuel Storage Installation (ISFSI) concrete pad and the east approach slab complied with specifications contained in the licensee's approved Engineering Change Package, design drawings, Work Orders and applicable industry standards. The inspectors also reviewed select material, batch plant tickets, and personnel certification records.

b. Observations and Findings:

The inspectors reviewed an approved Engineering Change Package which delineated responsibilities and provided specifications for the pad construction activities. The site is large enough to accommodate a pad which could store up to 66 Horizontal Storage Modules allowing for a future expansion. However, the current Phase I work construction activities will construct an ISFSI that will accommodate 30 HSMs, which will be stored in two back-to-back rows of 15 HSMs with end shield walls constructed at both ends. The pad was designed to be 2.5 ft. thick and measured approximately 153 by 42 ft.

Placement of Reinforcing Steel

After placement and satisfactory compaction of the engineered fill the licensee placed reinforcement bars (rebar) and installed forms. A number of field changes were performed to address the existing field conditions which deviated from prescribed drawings. One of the field changes involved unacceptable spacing of the rebar in the west section, along the length of the pad.

After placing the rebar and securing the forms, the licensee performed a thorough inspection of the proposed pad before placement of concrete. The inspectors reviewed the design drawings and the field changes and performed an independent walk down of the proposed pad. The pad area was relatively flat, and free of debris and excessive moisture. The rebar was placed in two upper and lower layers joined by U-shaped bar with an adequate overlap. The licensee placed the correct size of rebar and met the requirements for the concrete cover between the rebar and the forms as well as the top and bottom of the pad for protection of reinforcing steel as specified in the design drawings. The inspectors measured the spacing between the rebar and identified a section in the south end of the pad in the upper layer where the spacing was outside of the tolerance band. The drawing allowed for rebar spacing ranging from 11 to 13 inches. The inspectors observed rebar spacing which varied from the minimum permitted spacing by as much as 2.25 inches. The licensee entered this issue into its corrective action program.

After the initial assessment and consultation with a designer, a field change was issued to capture the as built condition. Subsequently, the licensee reevaluated the as built condition of the rebar placed in the south section where the spacing differed from the assumptions made in the pad design calculation and the original drawings. Based on ACI 318-02 design provisions, Sections 3.3.2 and 7.6.1, and the steel reinforcing ratio of the section, the licensee accepted 6 inches minimum spacing to provide adequate tolerance for as built measurements. The as built rebar spacing would not affect the required strength and provided for a ductile failure mechanism in the design. A field change was subsequently issued to capture the as built condition.

Placement of Concrete for the Storage Pad

The storage pad construction activities were performed in accordance with the American Concrete Institute (ACI) 301-99. The inspectors observed concrete placement for the main storage pad as well as for the east approach slab. The licensee deposited concrete in one continuous placement. The licensee checked batch tickets for every truck to confirm that each concrete batch was mixed as specified in the mix design and the mixing time and the number of drum revolutions satisfied code requirements to ensure the concrete was suitable for placement. At the job site, the licensee added a superplasticizer to each batch as specified in the mix design to increase the concrete workability.

The inspectors observed the licensee place the concrete by transporting it through an elevated pump with a hose vertical position adequate to prevent separation of the aggregate. The inspectors observed that the crew did not maintain careful control of the discharge hose and at times, the hose was discharging concrete at random and the point of discharge was as high as approximately 5 ft. from the final position. The code specified depositing concrete as near as practicable to the final position to avoid segregation. The inspectors also observed at times, the crew vibrate the concrete at random without a set pattern and the vibrators were not inserted deep enough to consolidate the individual lifts. The inspectors provided their observations to the licensee. The licensee subsequently notified the contracted supervisor and the inspectors noticed improvement in technique, specifically during the placement of the concrete for the east approach slab.

Title 10 CFR 72.144, "Quality Assurance Program," requires, in part, that the licensee identify the structures, systems, and components to be covered by the quality assurance program.

The Monticello Nuclear Generating Plant Administrative Work Instruction 4 AWI-01.03.01, Rev 14, "Quality Assurance Program Boundary" defines the boundaries of the Quality Assurance Program at Monticello and provides instructions for application of the program to ISFSI. Section 4.5 of the Work Instruction states that the Monticello quality assurance program shall be applied to Monticello ISFSI activities. Section 4.5.3 states that ISFSI SSC's that are not classified in the NUHOMS Final Safety Analysis Report, or items that Monticello Nuclear Generating Plant elects to reclassify into a more conservative category shall be indicated on the appropriate ISFSI design documents. Section 4.5.4 of the Work Instruction states that Important to Safety C systems, structures, and components require applicability in five of the eighteen aspects of the

quality program including 1) quality assurance organization; 2) instructions; 3) procedures and drawings; 4) document control; and 5) corrective action.

Monticello Nuclear Generating Plant Specification M-6553 Rev 0, an ISFSI design document, "Technical Specification for the Construction of the ISFSI Cask Storage Pad, Electrical Equipment Shed, Roadwork, Grading, and Drainage" Section 12.4.1 states that all work associated with the construction of the concrete storage pads and approach slabs (ground preparation, form work, rebar, rebar placement, concrete, concrete placement) will be considered as "Important to Safety." The Purchaser (Nuclear Management Company, LLC) desires to document the activities as Important to Safety Category C.

Title 10 CFR 72.150, "Instructions, Procedures, and Drawings," requires, in part, that the licensee prescribe activities affecting quality by documented instructions, procedures, or drawings of a type appropriate to the circumstances. In addition, 10 CFR 72.150 requires that these instructions, procedures, and drawings be followed.

Contrary to the above, on July 30 and July 31, 2007, the inspectors observed that the licensee did not follow the instructions, procedures, and drawings, as specified in 10 CFR 72.150 during an NRC inspection of the reinforcement steel and subsequent placement of concrete. Specifically, the licensee failed to: 1) appropriately space the reinforcing steel as specified in Drawing No. NGS-04Q166-201629; Concrete Storage Pad and Approach Slab Detail; Revision B; dated April 18, 2007, and 2) appropriately place and vibrate concrete during placement of the ISFSI pad as specified in the ACI 301-99 standard, "Standard Specifications for Structural Concrete," Section 5.3.2.4. Because this violation was of very low safety significance, was not repetitive or willful, and was entered into your corrective action program, this violation is being treated as a Non-Cited Violation (NCV) of 10 CFR 72.150 (NCV 07200058/2007-001-01). The inspectors discussed their observations regarding concrete placement and vibration technique with plant management. The licensee entered these findings into its corrective action program (CAP) as CAP 01104356 and CAP 01104559, respectively. In addition, the licensee completed an apparent cause evaluation for these issues.

Placement of Concrete for the East Approach Slab

Approximately a month later, the licensee placed rebar and concrete for the east approach slab. The inspectors verified that the licensee implemented adequate corrective actions regarding the issues identified during the rebar and concrete placement for the storage pad. The inspectors observed the licensee perform a thorough briefing with contract supervisors and individual groups placing and vibrating concrete and performing concrete testing before work commenced. The briefing included discussion of code requirements, proper execution, and the purpose of performing work per code requirements. During work on the east approach slab, the work crew demonstrated full adherence to the code requirements. The concrete was deposited near its point of placement and properly vibrated.

Concrete Field Tests

During the placement of the concrete for the main storage pad and the east approach slab, qualified personnel performed temperature, air content, and slump tests for select concrete batches as specified by the ACI-301. The field test results were satisfactory with one exception in which the air content was lower than the minimum required and one in which the slump was outside the acceptance criteria. An air entraining mixture was added to remaining loads and subsequent tests were acceptable in both air content and slump. The licensee evaluated the impact of the two tests that were outside the acceptance criteria and concluded that it was reasonable to accept the slight variations in air content and slump since the design characteristics of the ISFSI pad were not affected.

The licensee personnel sampled and collected concrete cylinders to perform break tests. In addition to limiting mechanical injury, ACI and ASTM standards require the temperature and moisture of the concrete strength samples to be controlled. The inspector observed that the cylinders were initially stored in a construction trailer with direct sunlight and next to a heavy foot traffic area. The cognizant individuals responsible for the onsite testing recognized the need to secure the area to maintain sample integrity and quality. Immediately, the cylinders were moved to a different area. In subsequent placement, the area was roped off to minimize traffic. The cylinders were cured and tested initially after 7 days and then after 28 days by an independent laboratory to measure the compressive strength of the concrete. The inspectors verified through review of the 7 and 28 day laboratory test results that the concrete cylinders taken for the storage pad and the east approach slab met the design minimum specified compressive strength of 4000 psi after 28 days of curing time.

During placement of concrete for the main storage pad, the form on the north side of the pad failed causing the concrete to flow away from the intended place of deposit. The section was reworked, but the north and northwest section of the storage pad exhibited areas of honeycombing combined with some linear indications in the areas where the forms were removed. The licensee evaluated the condition by investigating the depth and extent of the affected areas. The licensee concluded that the visible indications were surface defects and did not impact the structural integrity of the pad. However, the licensee grouted the areas to provide for adequate cover for the reinforcing steel and to prevent seepage of water.

In addition to field observations, the inspectors reviewed certification for the following materials used that could affect the quality of the concrete pad and its design function: 1) the reinforcing steel; 2) aggregates; 3) cement; and 4) chemical admixtures. The inspectors verified that the materials used were tested in accordance with applicable codes and met design requirements. The inspectors also reviewed documentation regarding the batch plant's certification which was certified in accordance with the Minnesota Department of Transportation specifications. The inspectors reviewed quality control records including instrument calibration, batch plant scale calibration, elevation surveys of the structural fill, the forms and the pad, delivery truck inspection records, and the field test results. In addition, certifications of personnel performing field tests were reviewed. The provided material was satisfactory and fulfilled the licensee's commitments.

c. Conclusion:

The inspectors concluded that overall the construction activities for the ISFSI concrete pad and the east approach slab complied with specifications contained in the licensee's approved Engineering Change Package, design drawings, Work Orders and applicable industry standards. The inspectors identified one violation of 10 CFR 72.150, "Instructions, Procedures, and Drawings." Specifically, the licensee failed to: 1) appropriately space the reinforcing steel, and 2) appropriately place and vibrate concrete during placement of the ISFSI pad. These findings are being treated as an NCV (NCV 07200058/2007-001-01) consistent with Section VI.A.1 of the NRC Enforcement Policy.

1.3 Dry Cask Transfer Route

a. Scope:

The inspectors reviewed the licensee's evaluation of the new transportation route from the reactor building to the new pad to verify that the licensee evaluated the proposed transfer route for the expected loads.

b. Observations and Findings:

The licensee performed a detailed characterization and review of the proposed ISFSI haul path. The haul path is located between Unit 1 and 2 Reactor Buildings inside the protected area and then transits a portion of parking the lot and leads to the ISFSI north entrance gate. The licensee identified buried commodities including pipes, electrical conduits, yard drainage piping, raceway, and communication cables buried under the proposed haul path. The evaluation resulted in a few modifications of the haul path. The licensee excavated some conduits and encased them in concrete, backfilled and installed new asphalt. In addition, sections of the parking lot and concrete shoulders adjacent to the railroad tracks were replaced with a new subgrade and new asphalt to strengthen areas. Visual inspections will be performed in the future to evaluate the condition of the haul path and make repairs, if necessary.

c. Conclusions:

The inspectors concluded that the licensee adequately evaluated the proposed transfer route for the expected dry cask loads.

2.0 Review of 10 CFR 72.212 (b) Evaluations, Appendix A, and Independent Spent Fuel Storage Installation (ISFSI) Storage Pad Design (60856)

2.1 Site Characterization and Design of the ISFSI Pad

a. Inspection Scope:

The inspectors evaluated the licensee's site characterization and engineering design analyses for a new dry cask storage pad to verify licensee's compliance with the Certificate of Compliance, 10 CFR Part 72 requirements, and industry standards.

b. Observations and Findings:

A total of 13 borings were drilled within the general vicinity of the ISFSI facility to determine the subsurface conditions on site. The inspectors reviewed the licensee's report and the soil boring test results. Based on the soil sample analysis, the subsurface soil profile for the ISFSI consists of primarily very dense silty sand and sand with some gravel from existing grade at approximate elevation of 946 ft. to the granite bedrock at approximate elevation of 860 ft. The boring logs indicated some sandstone lenses between elevations 860 and 875 ft. and one, 11 to 15 ft. thick, clay layer was encountered between elevations 880 and 900 ft. Groundwater was encountered in the borings at approximate elevation of 907 to 908 ft. The normal river level adjacent to the plant is at elevation 905 ft., which is indicative that the groundwater is flowing towards the river.

The inspectors compared the ISFSI site profile with the plant area. The general soil profile under the plant area consisted of a medium dense to very dense silty sand to sand with some gravel. The bedrock consisted of an upper highly weathered sandstone layer at approximate elevation 870 ft. underlain by granite at approximately elevation 860 ft. Two intermediate clay layers were present at approximate elevations of 915 ft. and 890 ft. Groundwater was encountered at the same elevation of 907 ft.

Seismic Soil Structure Analysis

The soil profiles under the ISFSI pad and the plant area are similar. The site Design Basis Earthquake maximum horizontal ground acceleration of 0.12 g has been applied to the reactor building foundation, elevation of 896.5 ft., the control room Building foundation, elevation of 928 ft., and the off-gas Stack Foundation, elevation of 927 ft. Due to the close proximity of the new pad to the plant structure, similarities in soil profiles and elevations, the pad horizontal and vertical seismic accelerations are comparable to the site Design Basis Earthquake horizontal and vertical accelerations of 0.12 g and 0.08 g, respectively. Therefore, the pad site specific seismic ground motion acceleration is bound by the cask design basis seismic ground motion acceleration of 0.25 g horizontal and 0.17 g vertical for the pad. The results of the seismic soil structure analysis indicated that the plant peak design basis earthquake will generate a horizontal acceleration of 0.16 g and a vertical acceleration of 0.08 g which are bounded by the cask design basis accelerations of 0.4 g and 0.17 g.

Soil Liquefaction Analysis

The licensee performed an evaluation of the potential against liquefaction of the soils underlying the site proposed ISFSI pad. The boring logs showed presence of dense to very dense soils on site as indicated by high Standard Penetration Test blow counts. High blow counts are indicative of high resistance to liquefaction. Based on the boring log data, the calculated factors of safety against liquefaction exceeded 2. The high factors of safety indicate that the soils at the site will not liquefy due to shaking caused by the design earthquake; that the margin for safety is large and post earthquake settlement should not occur.

Flooding Analysis

The inspectors evaluated the site specific flooding conditions. The plant probable maximum flood level, which is based on the probable maximum flood discharge flow of 364,000 cubic feet/second from the Mississippi River is 939.2 ft. mean sea level. The design drawings show that the bottom of the pad will be located at an elevation of 940.8 ft., which is above the plant flood plain. The ISFSI pad has been designed to drain to swales running along the east and the west side of the facility which drain to the existing detention pond located south of the plant. The detention pond is sized for a 100-year storm. To address any frost heave concerns during cold weather due, the licensee placed a frost free granular material under the pad.

The pad has been designed in accordance with provisions contained in NUREG 1536 and 1567 and requirements of ACI-318. The licensee designed the pad as a reinforced concrete foundation. Different combinations of normal operating loads, off normal and accident loads including wind, tornado and seismic loads were considered. Using the finite element analysis, the shears, moments, pad settlement, and the soil bearing were determined. The inspectors reviewed the assumptions, results, and conclusions contained in the analysis. The pad design contained adequate design margins against failure. The soil bearing pressure capacity was adequate to support the static and dynamic loads resulting from the HSMs. Average and differential settlement of the pad was calculated to be 0.4 inches for both. The factor of safety against sliding and overturning of the pad was 2.875 and 1.6 respectively.

c. Conclusions:

The inspectors concluded that the licensee adequately characterized the subsurface conditions for the new ISFSI site. The ISFSI pad has been designed in accordance with the Certificate of Compliance, 10 CFR Part 72 requirements, and industry standards.

3.0 Exit Meeting Summary

On November 13, 2007, the inspectors conducted a final exit meeting by telephone to present the results of the inspection. The licensee acknowledged the findings presented and did not identify any information discussed as being proprietary.

Attachment: Supplemental Information

SUPPLEMENTAL INFORMATION

PARTIAL LIST OF PERSONS CONTACTED

*Ken Albrecht	General Manager Fleet Major Projects
*Tim Blake	Regulatory Affairs Manager
Steve Mager	ISFSI Construction Manager
Mark McKeown	ISFSI Project Manager
*Tim O'Connor	Site Vice President
*Scott Quiggle	ISFSI Project Engineer
*Brad Sawatzke	Plant Manager
*Kathryn Shriver	ISFSI Project Support

* Persons present during the November 13, 2007, telephone exit meeting.

INSPECTION PROCEDURES USED

IP 60853	Construction of an Independent Spent Fuel Storage Installation
IP 60856	Review of 10 CFR 72.212 (b) Evaluations, Appendix A, Review of ISFSI Storage Pad Design

ITEMS OPENED, CLOSED, AND DISCUSSED

<u>Opened</u>	<u>Type</u>	<u>Summary</u>
07200058/2007-001-01	NCV	Reinforcement spacing and concrete placement
<u>Closed</u>		
07200058/2007-001-01	NCV	Reinforcement spacing and concrete placement
<u>Discussed</u>		
None		

LIST OF DOCUMENTS REVIEWED

Administrative Work Instruction 4 AWI-01.03.01; Quality Assurance Program Boundary; Revision 14

Calculation CA-05-075; Liquefaction Analysis and Estimation of Post-Earthquake Settlements at ISFSI; Revision 0

Attachment

Calculation CA-06-112; Evaluation of Buried Equipment for 100-Ton Cask Transfer Trailer Road; dated December 15, 2006

Calculation CA-07-012; Geotechnical Parameters for ISFSI Design; Revision 0

Calculation CA-07-013; ISFSI Pad Soil Structure Interaction Analysis; Revision 0

Calculation CA-07-015; Heavy Haul Road Design; Revision 0

Calculation CA-07-016; ISFSI Pad and Approach Slab Design; Revision 0

Calculation CA-07-016; ISFSI Pad and Approach Slab Design; Revision 1

Calculation CA-07-033; Geo-technical Report for the Independent Spent Fuel Storage Installation; Revision 0

CAP No. 01087285; ISFSI QA Categories Not Correlated to Procurement Classes, dated April 11, 2007

CAP No. 01099250; NOS Questioned Compliance With FP-IH-EXC-01 for ISFSI; dated June 26, 2007

CAP No. 01099300; Water is seeping into the North end of the ISFSI support pad; dated June 27, 2007

CAP No. 01101085; ISFSI Field Test for Frost Free Granular Fill Failed; dated July 10, 2007

CAP No. 01103291; ISFSI Construction Work Packages Missing Signatures; dated July 24, 2007

CAP No. 01103446; ISFSI Reinforcement Bar Not Placed iaw Dwg's, Rework; dated July 25, 2007

CAP No. 01103499; Instrument Used for ISFSI Out of Calibration; dated July 25, 2007

CAP No. 01103840; Vibration Equip for ISFSI Concrete Pour Doesn't Meet Spec; dated July 27, 2007

CAP No. 01104356; Rebar Spacing Too Close South End of ISFSI Pad; dated July 31, 2007

CAP No. 01104556; Failed Tests During Field Testing of an ISFSI Main Pad; dated August 2, 2007

CAP No. 01104558; Form Work on North Side of Main ISFSI Pad Failed During Pour; dated August 2, 2007

CAP No. 01104559; NRC observations during Construction of the ISFSI main pad; dated August 3, 2007

CAP No. 01104861; Form bracing removal exposed concrete side wall; dated August 2, 2007

CAP No. 01106721; Visual indications on north end of ISFSI pad; dated August 13, 2007

CAP No. 01109518; ISFSI concrete sample results out of specification; east approach pad; dated August 30, 2007

CAP No. 01109521; NRC observations East ISFSI Approach pad; dated August 30, 2007

CCR 786-003; Update of Drawing No. NGS -04Q166-201626, Rev B; dated July 10, 2007

CCR 786-005; Allow for Broader Spectrum of Aggregate Size, Provide Relief from Unit Weight Testing, Clarify the 0.3 weight percent chloride . . . ; dated July 18, 2007

CCR 786-008; Add rebar Fab Drawing to the Controlled Drawing Log . . . ; dated July 18, 2007

CCR 786-009; N/S main rebar edge distance to form greater than ½ the bar spacing . . . ; dated July 26, 2007

CCR 786-010; U-bar at north and south ends of the pad didn't fit, fab drawing update; dated July 27, 2007

CCR 786-011; Documents as-built configuration of the rebar for the ISFSI storage pad; dated July 27, 2007

CCR 786-012; Test data on the frost free fill exceeded the 2% tolerance specified in Specification M-6553; dated July 28, 2007; dated July 28, 2007

CCR 786-013; Change rebar specification from #8 to #9 on Drawing NGS-04Q166-20169; dated July 30, 2007

CCR 786-014; Crowded rebar at the south end of pad; dated July 30, 2007

CCR 786-015; Clarify QA requirements for ISFSI construction specification M-6553, dated August 9, 2007

CCR 786-017; Update joint filler information on drawing NF-201629; dated August 29, 2007

CCR 786-018; Replace U-bars on approach pad north and south ends; dated August 29, 2007

CCR 786-021; North/south rebar crowded on west side of west approach slab; dated September 5, 2007

Concrete Field test results; storage pad, dated July 31, 2007

Concrete Field test results; east approach slab, dated August 30, 2007

Concrete Field test results; west approach slab, dated September 6, 2007

Design Package, Engineering Change No. 786; Monticello ISFSI Storage Pad and Haul Path; Revision 0

Drawing No. 7129; Slab Reinforcing; Sheet No. R1

Drawing No. NGS-04Q166-201623; Concrete Work General Notes; Revision A; dated September 12, 2006

Drawing No. NGS-04Q166-201624; ISFSI Grading, Drainage And Heavy Haul Road Plan; Revision C; dated May 8, 2007

Drawing No. NGS-04Q166-201625; Phase II ISFSI Grading and Drainage Plan; Revision C; dated May 8, 2007

Drawing No. NGS-04Q166-201626; ISFSI Storage Pad Details; Revision B; April 24, 2007

Drawing No. NGS-04Q166-201627; Vertical Profile For Road "A"; Revision A, dated September 12, 2006

Drawing No. NGS-04Q166-201629; Concrete Storage Pad and Approach Slab Detail; Revision B; dated April 18, 2007

Drawing No. NGS-04Q166-201635; Equipment Layout And Exposed Conduit Plan; Revision A; dated April 24, 2007

Drawing No. NGS-04Q166-201636-1; ISFSI Temperature Monitoring System Layout Plan; Revision A; dated April 24, 2007

Drawing No. NGS-04Q166-201636-2; Plan-Typical Conduit and PullBox Arrangement At Storage Modules; Revision A; dated April 24, 2007

Drawing No. NGS-04Q166-201639; Lighting System Layout Plan; Revision A; dated April 24, 2007

Reinforcement certification, ASTM 615

Work Order Package 00306554-03; ISFSI Construction-Backfill; dated June 26, 2007

Work Order Package 00306554-04; ISFSI Construction- Concrete Main Pad Placement and Forming; dated July 16, 2007

Work Order Package 00306554-12; ISFSI Construction-Excavate; dated June 6, 2007

Work Order Package 00306554-13; ISFSI Construction-Concrete Placement and Forming-Approach Pad East; dated August 31, 2007

Work Order Package 00306554-14; ISFSI Construction-Concrete Placement and Framing-Approach Pad West; dated August 16, 2007

Work Order Package 00306554-16; ISFSI Concrete Storage Pad Repairs; dated August 23, 2007

Technical Specification No. M-6553; Technical Specification for the Construction of ISFSI; Revision 0

Veit Report; 7-day compressive strength test results; main pad; dated August 9, 2007

Veit Report; 7-day compressive strength test results; west approach pad; dated September 18, 2007

Veit Transmittal Form #5-B; Concrete Mix Design; dated July 11, 2008

Veit Transmittal Form #41; Field Compaction Test Results and Laboratory Test Results; Frost Free material and CI-06; dated July 9, 2007

Veit Transmittal Form #62; Field Compaction Test Results and Concrete Compressive Strength Tests; storage pad at 28 days; dated September 4, 2007

Veit Transmittal Form #66; Concrete Compressive Strength test and Unit Weight Test Results; 7-day concrete strength test results for the east approach pad and unit weight test results for the main pad; dated September 11, 2007

LIST OF ACRONYMS USED

ACI	American Concrete Institute
ADAMS	Agencywide Documents Access Management System
ASTM	American Society for Testing and Materials
CAP	Corrective Action Program
CFR	Code of Federal Regulations
CoC	Certificate of Compliance
ft	feet
g	Acceleration of Gravity
ISFSI	Independent Spent Fuel Storage Installation
ksi	Kips per square inch
mm	Millimeter
NCV	Non-Cited Violation
NRC	Nuclear Regulatory Commission
PARS	Publicly Available Records
psi	pounds per square inch
SAR	Safety Analysis Report