UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION III
2443 WARRENVILLE ROAD, SUITE 210
LISLE, IL 60532-4352

October 23, 2009

Mr. Charles G. Pardee
Senior Vice President, Exelon Generation Company, LLC
President and Chief Nuclear Officer, Exelon Nuclear
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: NRC INSPECTION REPORT NOS. 072-00070/08-01(DNMS); 050-00373/09-08; 050-00374/09-08 – LASALLE COUNTY STATION

Dear Mr. Pardee:

On October 9, 2009, the U.S. Nuclear Regulatory Commission (NRC) completed its inspection of the dry cask storage pad construction activities at the LaSalle County Station. The purpose of the 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 inspection on October 9, 2009, during an exit teleconference, the NRC inspectors discussed the preliminary inspection findings with members of your staff. 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. 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 these inspections, the inspectors did not identify any violations of NRC requirements. The storage pad construction activities were conducted in accordance with applicable regulations and license conditions. However, inspectors identified an Unresolved Item pertaining to the pad design that still requires further review. The high number of questions and concerns identified by the inspectors during their initial review of the pad design documents and the time taken by the licensee for response or resolution contributed to the extended duration of this inspection.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of the NRC's Agencywide Documents Access and Management System (ADAMS). ADAMS is accessible from the NRC Website at http://www.nrc.gov/reading-rm/adams.html.

We will gladly discuss any questions you may have regarding this inspection.

Sincerely,

/ RA George M. McCann, Acting for /

Christine A. Lipa, Chief
Materials Control, ISFSI, and
Decommissioning Branch
Division of Nuclear Materials Safety

Docket Nos. 72-070; 50-373; 50-374
License Nos. NPF-11; NPF-18

Enclosure:
Inspection Report No. 072-00070/08-01(DNMS);
050-00373/09-08; 050-00374/09-08

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket Nos.	72-070; 50-373; 50-374
License Nos.	NPF-11; NPF-18
Report No.	072-00070/08-01(DNMS); 050-00373/09-08; 050-00374/09-08
Licensee:	Exelon
Facility:	LaSalle County Station
Location:	2601 North 21st Road Marseilles, IL 61341
Inspection Dates:	Onsite: July 30, 2008, October 29 through October 30, 2008, and July 23, 2009. In-office review completed on October 9, 2009.
Exit Teleconference:	October 9, 2009
Inspectors:	Sarah Bakhsh, Reactor Inspector Vijay Meghani, Reactor Inspector
Approved by:	Christine A. Lipa, Chief Materials Control, ISFSI, and Decommissioning Branch Division of Nuclear Materials Safety

Enclosure

EXECUTIVE SUMMARY

LaSalle County Station
NRC Inspection Report Nos. 072-00070/08-01(DNMS); 050-00373/09-08; 050-00374/09-08

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. During this inspection period, the inspectors also reviewed the design of the new pad to ensure compliance with the regulations and the design specifications.

Review of 10 Code of Federal Regulations 72.212(b) Evaluations, Appendix A, Review of ISFSI Storage Pad Design

- The inspectors reviewed the licensee's evaluations pertaining to the storage pad design and identified technical issues that remain unresolved and require further review. Pending resolution by the licensee and Nuclear Regulatory Commission review, these issues will be treated as Unresolved Item 07200070/2008001-01, ISFSI Pad Analysis Issues. (Section 1.1)

Independent Spent Fuel Storage Pad Construction

- The licensee's site characterization was adequate and the soil compaction activities were performed in accordance with specifications, design drawings, and industry standards. (Section 2.1)

- The inspectors concluded that the construction activities for the ISFSI concrete storage pad complied with specifications contained in the licensee's approved Engineering Change package, design drawings, Civil Construction Specifications, work orders, and applicable industry standards. (Section 2.2)

- The inspectors concluded that the licensee adequately evaluated the proposed transfer route for the expected dry cask loads. (Section 2.3)

Report Details

1 Review of 10 Code of Federal Regulations (CFR) 72.212(b) Evaluations, Appendix A, Review of Independent Spent Fuel Storage Installation (ISFSI) Storage Pad Design (60856)

1.1 Site Characterization and Design of the ISFSI Pad

a. Inspection Scope

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

b. Observations and Findings

Soil Analysis

The licensee's ISFSI pad was located northeast of the plant. The licensee outlined two additional pads in its drawings in the same area for future expansion if it would be needed. The licensee built the pad at the northernmost location of the three proposed pads which was a change from the original proposed southernmost location. The licensee's Geotechnical Engineering Services report had soil boring data from the southernmost area. After a review of the site's consistent historic soil core boring data, the licensee performed an engineering judgment and did not require similar core bores of the northernmost section to be taken.

A total of six borings were drilled within the general vicinity of the ISFSI facility to determine the site subsurface conditions. 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 approximately 1 to 5 ½ feet (ft.) of clayey topsoil and undocumented fill. This was underlain by medium stiff to stiff, silty clay with areas of sand to bedrock at a depth of approximately 100 ft. below existing grade. Groundwater was not found in borings until 17 to 66 ft. below existing grade. The sub-grade was drained with drain pipes (field tile) around the perimeter of the pad which discharge into the lake intake canal bank.

Seismic Soil Structure Analysis and ISFSI Pad Structural Analysis

The inspectors reviewed structural calculations related to the ISFSI pad. In calculation L-003347, "Dynamic Analysis of HI-Storm 100 Cask on LaSalle ISFSI Pads, Revision 3," in lieu of performing a detailed dynamic analysis to determine seismic response of the cask, the licensee used the methodology described in the NUREG/CR 6865, "Parametric Evaluation of Seismic Behavior of Free Standing Spent Fuel Dry Cask Storage System." NUREG/CR 6865 documents results of parametric analyses in form of nomograms. The licensee used the nomograms to determine the seismic response of the cask in terms of the maximum cask displacements, including sliding and rotation, and used the results to determine the maximum loads for the pad structural analysis calculation L-003346. The inspectors noted that the LaSalle plant spectra analysis used an acceleration value of 0.20g for the safe shutdown earthquake. From a review of the LaSalle Updated Final Safety Analysis Report, the inspectors noted that the spectra used was applicable to the

foundation level and did not represent the accelerations at the ground surface level. The inspectors noted that the ISFSI pad was placed after removal of the existing surface fill and replacing it with dense graded structural fill. Structural analysis for the pad was performed in accordance with American Concrete Institute (ACI) 318. The licensee also performed a Non-Mechanistic Tip-Over Analysis to demonstrate that the foundation satisfies the energy absorption requirements of the cask system Final Safety Analysis Report (FSAR). The Tip-Over Analysis showed that the foundation stiffness was adequate to ensure that in case of a tip-over, the cask deceleration levels will remain below the FSAR design basis value.

The inspectors identified that the licensee's design calculation L-003346 did not demonstrate that the pad was designed to adequately support the static and dynamic loads of the stored cask as required per 10 CFR 72.212(b)(2)(i)(B). Specifically, the licensee's evaluations: (1) did not determine the total and differential settlements; (2) did not demonstrate that the soil bearing pressures for static and dynamic loads were within the corresponding allowable values and that sliding will not occur under seismic loads; and (3) did not evaluate the pad for stresses and potential uplift conditions resulting from partial or sequential cask loading. The inspectors identified that in calculation L-003347, for determining the seismic response of the cask, the licensee used the free field foundation level seismic spectra, while the methodology described in the NUREG/CR 6865 required use of free field ground surface level spectra. The inspectors also identified that the calculations did not address the impact of soil liquefaction potential as described in the Soil Liquefaction Analysis section of the report. The licensee captured these concerns in Action Request (AR) 900610 which required closure of these concerns before the ISFSI pad was authorized for use. The licensee also revised calculations to address the identified concerns. The licensee also issued AR 973263 to initiate a detailed review of the pad design for the 10 CFR Part 72 requirements which were not met and the calculations of which are still under inspector review.

In addition, the inspectors identified that the licensee's use of NUREG/CR 6865 in lieu of performing a dynamic analysis may be inappropriate. Based on discussions with the Office of Nuclear Materials Safety and Safeguards staff, NUREG/CR 6865 was intended to assist staff in the study of the Dry Cask Storage System behavior under a design basis seismic event, and if necessary, to provide bases for revision to 10 CFR Part 71 and Part 72 regulations. The licensee entered the concern in AR 966506 but had not provided resolution of this concern by the conclusion of this inspection. This AR stated that the ISFSI pad would not be declared operational until this issue was resolved. This issue could potentially impact calculations L-003346 and L-003347 noted above. The issues described above involving calculations L-003346 and L-003347 and the use of NUREG/CR 6865 will therefore remain unresolved pending further review and will be treated as Unresolved Item (URI) 07200070/2008001-01, ISFSI Pad Analyses Issues.

Soil Liquefaction Analysis

The inspectors noted that the licensee did not perform a soil liquefaction analysis. In the Design Consideration Summary in Engineering Change (EC) 366243, Revision 0, "Dry Cask Storage Project Independent Spent Fuel Storage Installation Pad," it was stated that the soil consists of clay which is not subject to liquefaction. The inspector noted that this was not consistent with the 10 CFR 72.103(c) requirement that sites other than bedrock sites must be evaluated for their liquefaction potential. In response to the

inspectors' concerns, the licensee provided a copy of Addendum #2 to the Geotechnical Engineering Services Report that addressed the liquefaction potential at LaSalle. However, the inspectors noted that the report did not use the site specific earthquake data in their analysis. The licensee subsequently issued a report determining the liquefaction susceptibility of the soil in form of Geotechnical White Paper prepared by URS, Washington Division. This report concluded that some pore pressure build up and volumetric strains may occur in the shallow isolated sand pockets with the expected post earthquake settlements at the ground level of up to 0.6 inches. Since the conclusions of this report affect the calculations L-003346 and L-003347, final determination on the findings and significance will be discussed in the Seismic Soil Structure Analysis and Structural Analysis of ISFSI Pad section of the report.

Flooding Analysis

The plant probable maximum precipitation was approximately 710 ft., which is the governing water elevation for the plant site. The ISFSI pad is located at higher elevation than its surroundings (at approximately 717 ft.) and maximum water level due to a probable maximum precipitation event should not rise due to the construction of the ISFSI pad. In addition, the east side of the ISFSI pad drains southeast to the circular water intake channel and the west drains to the southwest to a diversion barrier which leads to the lake. To address any frost heave concerns during cold weather, the licensee placed a frost free granular material under the pad.

c. Conclusion

Inspectors reviewed the licensee's evaluations pertaining to the storage pad design and identified technical issues that remain unresolved and require further review. Pending resolution by the licensee and Nuclear Regulatory Commission (NRC) review, these issues will be treated as URI 07200070/2008001-01, ISFSI Pad Analysis Issues.

2 Independent Spent Fuel Storage Pad Construction (60853)

2.1 Excavation and Soil Compaction Activities

a. Inspection Scope

The inspectors evaluated the licensee's site characterization, and observed soil compaction activities for the new dry cask storage pad to verify the licensee's compliance with its specifications, design drawings, and industry standards.

b. Observations and Findings

The licensee constructed a reinforced concrete ISFSI storage pad northeast of the plant. The licensee excavated the soil, ensuring removal of topsoil, organic, and all undesirable material. Rolling of the underlying in-situ material ensured that a suitable subgrade existed under the pad area. Following receipt of satisfactory compaction results for the subgrade, the licensee backfilled the area with 3 ft. of non-frost susceptible granular base material (gravel/sand) and compacted the fill to a minimum of 95 percent of the maximum dry density as indicated in American Society for Testing and Materials (ASTM) D1557.

The inspectors observed certified personnel perform field tests using a moisture density gauge to verify that each individual lift met the minimum compaction, maximum dry density, and moisture content as specified in technical specifications and established during laboratory tests. The licensee's contractor obtained this data by performing field tests which included wet and dry density, moisture content, and lift thickness, all within the frequencies required by the appropriate ASTM standards. After placement of the engineered backfill, the licensee placed a 6-inch mudmat which provided a work surface to facilitate rebar installation and concrete placement.

The licensee performed soil plate load tests for the engineered fill (prior to mud mat placement) to determine the value of the Young's Modulus. This parameter measured the stiffness of the material and was calculated using field tests. There is both a lower and upper limit required to ensure the pad's structural qualifications are met. The lower limit of the Young's Modulus was the minimum required for the strength of the pad while the upper limit was to ensure that the deceleration values of the fuel assemblies do not exceed design requirements during a non-mechanistic tipover of the cask.

The licensee committed to follow the ASTM D1194 standards in its Civil Construction Specification and EC package for the plate load tests which required the use of at least three test locations. However, the specification contradicted this by stating that "at least one Soil Plate Load Test shall be performed near the center of the pad location." The inspectors highlighted this discrepancy to the licensee. The licensee used three test locations and revised the specification to state that the licensee's contractor "shall perform at least three Soil Plate Load Tests in accordance with ASTM D1194 and at least one Soil Plate Load Test shall be performed near the center of the pad location."

The licensee and the designer of the proposed pad (Holtec) indicated that although they did plan to use three test or more locations, they were not required to do so because the standard was to be used as a guidance document. The inspectors explained the need for the licensee to emphasize adherence to codes and standards and the inspectors' understanding that there needs to be full compliance to documents that the licensee committed to in their design documents. The licensee modified its documents to better reflect their intent to use the standards as guidance documents. Discrepancies would be submitted to Owner's Engineering for evaluation and to obtain acceptance from Holtec prior to proceeding with construction.

The results for the three tests were forwarded to Holtec to determine the Young's modulus. The first two preliminary tests performed produced results of 3.3 and 3.5 kilo-pound-force per square inch (ksi) which were outside the 7.5 to 15 ksi range specified in the design documents. The licensee indicated that it rained the night prior to the plate load tests which contributed to the low test results. After further review the licensee indicated that original analysis had very restrictive testing methods. Holtec revised the parameters of the plate load test including decreasing the size of the load increments to facilitate the test, terminating the test at a smaller maximum value to better reflect a load that the ISFSI would encounter and changing the plate size used in the test from a 2x2 to a 1x1. Changing the plate size ensured that the data was representative of the engineered fill without significant contribution from the in-situ soil beneath the fill. The licensee performed four additional tests using these parameters. All except one of the tests were within the specified range. The final test performed indicated a Young's Modulus of 19.4 ksi as documented in AR 808412. Holtec re-calculated the cask tip

over analysis and determined that an upper limit of 20 ksi for the Young's Modulus for the site was acceptable.

c. Conclusion

The licensee's site characterization was adequate and the soil compaction activities were performed in accordance with specifications, design drawings, and industry standards.

2.2 Pad Construction Activities

a. Inspection Scope

The inspectors evaluated whether construction activities for the ISFSI concrete storage pad complied with specifications contained in the licensee's approved EC, 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 storage pad was designed to be a 246 ft. long, 90 ft. wide, and 2 ft. thick reinforced concrete slab. The storage pad was supported by a 6 inch thick concrete mat foundation set on top of 3 ft. of dense graded aggregate.

Placement of Reinforcing Steel

After placement and satisfactory compaction of the engineered fill, the licensee installed forms and placed reinforcement bars (rebar). The reinforced concrete was designed for a nominal compressive strength between 3,000 pounds per square inch (psi) and 4,200 psi at 28 days and the rebar conformed to ASTM A615 Grade 60 steel.

After placing the rebar and securing the forms, the licensee performed an inspection of the first third (south side) of the proposed pad prior to concrete placement. The inspectors reviewed the design drawings and performed an independent walk down of the proposed first third of the pad. The pad area was free of debris and excessive moisture. The rebar was placed in two upper and lower layers joined by U-shaped bars. The licensee placed the correct size of rebar. The inspectors measured the spacing between the rebar and identified several instances where the spacing for the U-shaped bars was outside the allowed tolerance specified in the design drawing mainly due to fabrication issues. Thus a number of field changes were performed to try and address the existing field conditions which deviated from the prescribed drawings. Where it was not practical, the licensee contacted Holtec regarding the discrepancies. Due to the immediacy of the issue (concrete was planned to be placed the next day), an email from Holtec was sent to the licensee dispositioning the deviations as acceptable. The inspectors questioned how thoroughly the issue was described to Holtec representatives, especially without the use visual aids or a written technical explanation. There was only a brief description over the phone which resulted in an email approval by Holtec accepting the as-found condition. The licensee then sent pictures, further discussed the issue requesting a more accurate and technical basis for acceptance and received further communication from Holtec followed later by a formal letter which discussed the dispositioning of the issues.

The inspectors emphasized the need for the licensee to improve its methods of resolving in-process issues especially when the issue is time sensitive so the process is streamlined and the resolutions are clear with accurate explanations of their basis for acceptance. Since this was an issue that required a quick turnaround time, a better initial process of communication by the licensee would have streamlined the flow of NRC inquiries between the licensee and Holtec. The licensee entered this into its corrective action program as AR 837618.

Placement of Concrete for Storage Pad

The storage pad was designed in accordance with ACI 318 and constructed in accordance with ACI 301. The inspectors observed concrete placement for the first third of the main storage pad. The licensee deposited concrete in this section in one continuous placement. The licensee checked the concrete batch tickets for every truck to confirm that each concrete batch was mixed as specified in the mix design and the mixing time and number of drum revolutions satisfied code requirements to ensure the concrete was suitable for placement. The inspectors observed that the concrete was transported by conveyor belt and deposited in the areas of placement as indicated by the forms. The inspectors noted that the contractor staff maintained careful control of the discharge hose and ensured that concrete had an unrestricted vertical drop to the point of placement to prevent segregation of the aggregate. The contractor used a systematic pattern of vibration to ensure proper consolidation, thereby preventing voids in the concrete slab. The proposed ISFSI pad was constructed in three segments allowing three separate continuous placements of concrete. The licensee applied a broom finish as required by the design to the pad after placement in order to achieve the appropriate surface friction factor.

Concrete Field Tests

The licensee's contractor obtained concrete samples approximately every 50 cubic yards to test air content, temperature, and slump tests. The field tests were satisfactory and within the allowed acceptance criteria with a few exceptions. During placement of the last third of the proposed pad, the batch ticket of the last truck containing one cubic yard of concrete had a lower water to cement ratio than required. The licensee added three gallons of water to bring the water to cement ratio closer to the mix design. The licensee entered this issue into its corrective action program as AR 846213.

In addition to the field tests, the qualified individuals collected concrete samples in cylinders for the concrete strength tests. The cylinders were adequately stored in accordance with ACI and ASTM standards. The cylinders were cured and tested after 28 days by an independent laboratory to measure the compressive strength of the concrete. The inspectors reviewed the 28-day concrete compressive strength test results taken from the storage pad to ensure they met the minimum strength of 3,000 psi and maximum of 4,200 psi as specified by the design requirements. There were three 28-day test results that exceeded the 4,200 psi maximum strength, the highest one being at 4370 psi. Although the design requirements indicated a maximum value of 4,200 psi, the Tip-Over Analysis used a bounding value of 4,500 psi thus no revision to the calculation was required. The licensee entered this into its corrective action program as AR 00857322.

In addition to field observations, the inspectors reviewed the rebar certification which could affect the quality of the concrete pad and its design function. The inspectors also reviewed documentation regarding the batch plant certification which was certified in accordance with the Illinois Department of Transportation.

c. Conclusion

The inspectors concluded that the construction activities for the ISFSI concrete storage pad complied with specifications contained in the licensee's approved EC package, design drawings, Civil Construction Specifications, work orders, and applicable industry standards.

2.3 Dry Cask Transfer Route

a. Inspection Scope

The inspectors reviewed the licensee's heavy haul road design and underground utilities evaluation to verify that the licensee evaluated the proposed transfer route for the expected loads.

b. Observations and Findings

The licensee evaluated the haul path concrete roads and associated pads for the maximum loading due the moving transporter truck using the ultimate strength design method in accordance with the ACI 318 and the project design criteria. In order to avoid surface wear and tear, the construction and turning pads were designed using higher strength 7000 psi concrete. All buried utilities including piping, conduits, duct banks, and culvers located along the haul path and the pads were evaluated for the heavy loads and were found to be acceptable in the calculations. However, the inspectors identified a number of deficiencies in the calculations such as use of incorrect soil cover values or pipe dimensions, inadequate explanation of the terms and expressions used. The licensee revised the calculations as necessary to clarify and correct the deficiencies. The corrections did not change the conclusions. The licensee also entered these deficiencies into their corrective action program as AR 900610.

c. Conclusion

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

3 Exit Meeting Summary

On October 9, 2009, the inspectors conducted an exit teleconference to present the results of the inspection. The licensee acknowledged the findings presented and did not identify any information discussed as being proprietary in nature.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

PARTIAL LIST OF PERSONS CONTACTED

Licensee Employees

*John Basher Engineering Director
Donald Carpenter, Senior ISFSI Project Manager
Philip Endress, Design Engineer
William Hilton, Senior Manager, Design Engineering
*Brian Maze, ISFSI Project Manager
*David Rhoades, Station Manager
*Dan Schmit, Design Engineering
Terrence Simpkin, Regulatory Assurance Manager
*Stephen Shields, Regulatory Assurance

* Persons present during the October 9, 2009, 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

Opened	Type	Summary
07200070/2008001-01	URI	ISFSI Pad Analysis Issues

Closed
None

Discussed
None

LIST OF DOCUMENTS REVIEWED

AR 00805884; LaSalle ISFSI Backfill Does Not Pass Plate Load Test; August 11, 2008

AR 00808412; LaSalle ISFSI Backfill Exceeds the Plate Load Test; August 18, 2008

AR 00837618; NRC Identified: U-Bars for ISFSI Pad Pour 1 Out of Tolerance; October 29, 2008

AR 00846213; 3 Gal. Water Added to Last Concrete Truck for ISFSI Pour 3; November 17, 2008

AR 00857322; ISFSI Pad-Compressive Strength Test Results High; December 17, 2008

AR 00900610; Documenting ISFSI Project Issues/Questions from NRC; March 31, 2009

AR 00939475; ISFSI Pad Dynamic Analysis Used Incorrect G-Values; July 7, 2009

AR 00966506; Use of NUREG-6865 in the Dynamic Analysis of the ISFSI Slab; September 7, 2009

AR 00973263; NRC Identified: ISFSI Pad Pre-Exit Technical Debrief Items; October 1, 2009

Design Analysis S-66 Pages 1-5; Local PMP for As-Built Condition; Revision 005B; September 5, 2008

Design Analysis L-003316; Evaluation of Buried Utilities Located Along the Transporter Haul Path for Dry Cask Storage; Revisions 0 and 1

Design Analysis L-003321; Foundation Design of the Reinforced Concrete Haul Path Between Reactor Building and ISFSI; Revision 0

Design Analysis L-003345; Non-Mechanistic Tipover of the HI-STORM 100S Version B at Byron and LaSalle Power Station ISFSI Pads; Revision 1

Design Analysis L-003346; Structural Qualification of the ISFSI Pad at LaSalle Under Static Plus Seismic Loading; Revision 0

Design Analysis L-003347; Dynamic Analysis of HI-STORM 100 Cask on Byron, Braidwood, and LaSalle ISFSI Pads; Revisions 1 and 2

Drawing S-1724; ISFSI Pad Plan, Details, and Section; July 7, 2008

Drawing S-1731; Dry Cask Fuel Storage ISFSI Pad Plan, Details, and Sections; July 7, 2008

Email from Brian Maze to Holtec representatives; Re: LSCS U-Shaped ISFSI Rebar Issues; October 29 and 30, 2008

EC 366243; Dry Cask Storage Project Independent Spent Fuel Storage Installation (ISFSI) Pad; Revisions 0 and 1

EC 366999; Dry Cask Spent Fuel Storage (ISFSI) Haul Path Installation; Revision 0

Engineering Document; LaSalle Geotechnical White Paper prepared by URS; April 17, 2009

Geotechnical Engineering Services Report, Addendum #1, prepared by PSI; EC 366243; November 28, 2007

Geotechnical Engineering Services Report, Addendum #2, prepared by PSI; February 11, 2009

Gerdau Ameristeel Rebar Chemical and Physical Test Report

Holtec International Letter; LSCS ISFSI Pad Plate Load Tests; Document ID 1678025; July 28, 2008

Holtec International Letter; LSCS ISFSI Pad Plate Load Tests; Document ID 1678026; August 13, 2008

Holtec International LSCS Third ISFSI Plate Load Test; Document ID 1678029; September 2, 2008

Holtec International LSCS ISFSI Rebar Clarifications; Document ID 1678035a; October 31, 2008

LaSalle Independent Spent Fuel Storage Installation Civil Construction Specification; EC 366243; Revisions 0 and 1

LaSalle ISFSI Pad South Portion (Pour1) Reinforcement Inspection; November 14, 2008

LaSalle ISFSI Pad North Portion (Pour 2) Reinforcement Inspection; November 14, 2008

LaSalle ISFSI Pad Middle Portion (Pour 3) Reinforcement Inspection; November 14, 2008

Terracon Concrete Compressive Strength Test Report; 28 Day Report for North Third of ISFSI Pad; November 4, 2008

Terracon Concrete Compressive Strength Test Report; 28 Day Report for Middle Third of ISFSI Pad; November 12, 2008

Terracon Concrete Compressive Strength Test Report; 28 Day Report for South Third of ISFSI Pad; October 30, 2008

NOS Objective Evidence Report-Concrete Pour; October 30, 3008

Relocation of ISFSI Pad, Passport Text; October 29, 2008

URS Washington Division Batching Plant Inspection Trip Report; June 27, 2008

Work Order 01037637-01; Installation of ISFSI Pad per EC 366543

LIST OF ACRONYMS USED

ACI	American Concrete Institute
ADAMS	Agencywide Documents Access and Management System
ASTM	American Society for Testing and Materials
AR	Action Request
CFR	Code of Federal Regulations
DNMS	Division of Nuclear Materials Safety
EC	Engineering Change
FSAR	Final Safety Analysis Report
ft.	feet
ISFSI	Independent Spent Fuel Storage Installation
ksi	kilo-pound-force per square inch
NRC	Nuclear Regulatory Commission
PARS	Publicly Available Records
psi	Pounds per Square Inch
URI	Unresolved Item

We will gladly discuss any questions you may have regarding this inspection.

Sincerely,

/ RA George M. McCann, Acting for /

Christine A. Lipa, Chief
Materials Control, ISFSI, and
Decommissioning Branch
Division of Nuclear Materials Safety

Docket Nos. 72-070; 50-373; 50-374
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