UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
245 PEACHTREE CENTER AVENUE NE, SUITE 1200
ATLANTA, GEORGIA 30303-1257

September 6, 2011

Florida Power and Light Company
ATTN: Mr. Mano Nazar, Senior Vice President
Nuclear and Chief Nuclear Officer
P.O. Box 14000
Juno Beach, FL 33408-0420

SUBJECT: TURKEY POINT NUCLEAR PLANT – NRC INDEPENDENT SPENT FUEL STORAGE INSTALLATION (ISFSI) INSPECTION REPORT NOS.: 05000250/2011011, 05000251/2011011 and 07200062/2011002

Dear Mr. Nazar:

The enclosed report documents the inspection conducted between July 11 and July 29, 2011, at your Turkey Point Units 3 and 4. The report also documents the inspection of a welding demonstration conducted on May 24-25 in Aiken, South Carolina, to support ISFSI activities. This inspection involved a review of the pre-operational demonstration (the dry run) and initial loading activities of spent fuel into the ISFSI facility as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspection covered all aspects associated with the preparation, movement, and placement of spent fuel into the ISFSI facility and consisted of field observations, extensive examination of procedures and documents, and interviews with personnel. The inspectors reviewed dry run preparations and determined that they were thorough and that individuals were appropriately trained and qualified in the performance of ISFSI-related tasks. The inspectors observed sound, conservative decision-making throughout the performance of the dry run and the initial loading of spent fuel into the ISFSI facility. The inspectors noted that ISFSI activities were implemented in a safe manner. Based on results of this inspection, no violations or findings were identified. The inspection results were discussed with Mr. Kiley and other members of your staff via a debrief on July 14 and an exit meeting on July 29, 2011. The results of the welding inspection were discussed with Mr. Wyatt Jenkins of your staff in Aiken, South Carolina, on May 25, 2011.

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 any) will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS).

ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/

Joel Rivera-Ortiz, Acting Chief
Engineering Branch 3
Division of Reactor Safety

Docket No.: 50-250, 50-251
License No.: DPR-31, DPR-41

Enclosure: Inspection Report 05000250, 251/2011011, and 07200062/2011002
w/Attachment: Supplemental Information

cc w/encl.: (See page 3)

ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

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Letter to Mano Nazar from Joel Rivera-Ortiz dated September 07, 2011.

SUBJECT: TURKEY POINT NUCLEAR PLANT – NRC INDEPENDENT SPENT FUEL STORAGE INSTALLATION (ISFSI) INSPECTION REPORT NOS.: 05000250/2011011, 05000251/2011011 and 07200062/2011002

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U. S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket Nos.:	50-250, 50-251, and 72-062
License Nos.:	DPR-31, DPR-41
Report Nos.:	05000250/2011011, 05000251/2011011 and 07200062/2011002
Licensee:	Florida Power & Light Company (FP&L)
Facility:	Turkey Point Nuclear Plant, Units 3 & 4
Location:	9760 S. W. 344th Street Homestead, FL 33035
Dates:	May 24, 2011 through July 29, 2011
Team Leader:	Robert Carrion, Senior Reactor Inspector, Region II
Inspectors:	Cecil Fletcher, Senior Reactor Inspector, Region II Robert Prince, Fuel Facilities Inspector, Region II Robert Temps, Senior Storage and Transportation Safety Inspector, Office of Nuclear Materials Safety and Safeguards (NMSS) Brendan Collins, Reactor Inspector, Region II
Approved by:	Joel Rivera-Ortiz, Acting Chief Engineering Branch 3 Division of Reactor Safety

Enclosure

SUMMARY OF FINDINGS

IR 05000250/2011011, 05000251/2011011, and 07200062/2011002; 05/24/11 - 07/29/11; Turkey Point Nuclear Power Plant, Units 3 and 4; welding demonstration, spent fuel pre-loading demonstration, and initial loading of the Independent Spent Fuel Storage Installation (ISFSI).

This report covers on-site inspection and in-office review by regional and headquarters-based inspectors of activities related to the dry cask storage of spent fuel, including the preparation for, and the initial loading of, spent fuel from the Unit 3 spent fuel pool (SFP) to the Transnuclear, Inc. Standardized Nuclear Horizontal Modular Storage (NUHOMS®) System for Irradiated Fuel at the ISFSI. Upon completion of the dry run demonstrations, on July 14, 2011, the licensee began activities to begin the transfer of Unit 3 spent fuel to the onsite ISFSI. Units 3 and 4 were at power operations during this period.

The inspectors reviewed the welding and pre-operational loading activities to confirm that personnel had been trained, equipment had been tested, and station programs and procedures had been developed and were adequate to safely load spent fuel into the ISFSI. The inspectors also observed selected portions of the initial spent fuel processing and transfer to the ISFSI to confirm that these activities were performed safely, in accordance with the approved procedures, the Certificate of Compliance (CoC), and Technical Specification (TS) requirements.

REPORT DETAILS

Summary of Facility Activities

Florida Power & Light Company (FP&L) selected the Transnuclear Inc. Standardized NUHOMS®-HD Horizontal Modular Storage System for dry storage of spent nuclear fuel at the Turkey Point Nuclear Plant, Units 3 & 4. The Nuclear Regulatory Commission (NRC) had certified the NUHOMS®-HD system under CoC No. 72-1030, Amendment No. 1, effective March 29, 2011.

Preparations for loading spent fuel from the Unit 3 SFP to the Transnuclear, Inc. Standardized NUHOMS® System for Irradiated Fuel were initiated during this inspection period. Upon completion of the dry run demonstrations, on July 14, 2011, the licensee began activities to transfer Unit 3 spent fuel to the onsite ISFSI. Units 3 and 4 were at power operations during this period.

From May 24 – July 29, 2011, inspectors performed three evaluations. The first evaluation, from May 24 to May 25, was to determine if the personnel who were contracted to do the welding and associated nondestructive examination (NDE) of the dry shielded canister (DSC) were qualified and working to approved procedures. The inspectors observed welding of the root pass and NDE of the inner top cover. The majority of the welding was done with an Automatic Welding System (AWS) using the gas shielded tungsten electrode (GTAW) process. The use of manual GTAW welding was also discussed and personnel qualifications were reviewed and found to be acceptable per the ASME Code. The application of visual examination (VT) and dye penetrant testing (PT) on the welds was observed by the inspectors. In addition, the inspectors compared the welding procedures and NDE procedures to their respective work practices for compliance to applicable codes and standards. The inspectors also reviewed welding procedure documentation, welder performance qualifications, and NDE procedures and NDE personnel qualifications to verify that their respective Code and procedural requirements were met. The second evaluation, from July 11 to July 14, was to determine if the ISFSI personnel had been trained, the equipment had been tested, and the procedures had been developed to the extent necessary to safely load spent fuel into dry storage at the ISFSI. During the third evaluation, from July 25 to July 29, NRC inspectors observed activities associated with the initial loading of spent fuel into dry storage to ensure that those activities were performed safely, in accordance with approved procedures and within the TS limits, and to determine if the Florida Power & Light (FP&L) Company programs were adequate for continued operation and maintenance of the ISFSI once the ISFSI was loaded.

Note: DSC drying and helium backfilling operations and DSC unloading and lid cutting operations had been demonstrated by the licensee in December 2007 on a fleet-wide basis; therefore, these evolutions were not demonstrated during the current Dry Run activities. (Refer to NRC Inspection Report 05000335/2007005, 05000389/2007005, Section 4OA5.5.) Also, the ISFSI pad construction activities were observed during the summer of 2010 and documented in NRC Inspection Report 05000250/2010004, 05000251/2010004; and 07200062/2010002, Section 4OA5.2. And an inspection of the ISFSI crane was completed in the spring of 2011 and documented in NRC Inspection Report 05000250/2011009, 05000251/2011009, and 07200062/2011001.)

Turkey Point ISFSI Activities

1. Preoperational Test Program

a. Inspection Scope (Inspection Procedure (IP) 60854)

The CoC for the Standardized NUHOMS® Horizontal Modular Storage System for Irradiated Fuel requires the licensee to conduct preoperational testing to demonstrate the loading, closure, and transfer of the cask system prior to the first loading of spent fuel assemblies. The NRC conducted an onsite inspection to observe the licensee's demonstration of the activities required by the CoC. The inspection consisted of field observations, interviews with licensee personnel, and review of licensee documentation.

b. Observations and Findings

The CoC for the NUHOMS® Horizontal Modular Storage System for Irradiated Fuel includes a requirement (in Condition 8, Pre-Operational Testing and Training Exercise) to demonstrate specific activities prior to loading the first DSC. Specifically, a dry run of the DSC loading, transfer cask (TC) handling and DSC insertion into the horizontal storage module (HSM) shall be held. This dry run shall include, but not be limited to, the following:

1. Functional testing of the TC with lifting yokes to ensure that the TC can be safely transported over the entire route required for fuel loading, washdown pit (decontamination area) and trailer loading.
2. DSC loading into the TC to verify fit and TC/DSC annulus seal.
3. Testing of TC on transport trailer and transported to ISFSI along a predetermined route and aligned with an HSM.
4. Testing of transfer trailer (TT) alignment and docking equipment. Testing of hydraulic ram to insert a DSC loaded with test weights into an HSM and then retrieve it.
5. Loading a mock-up fuel assembly into the DSC.
6. DSC sealing, vacuum drying, and cover gas backfilling operations (using a mock-up DSC).
7. Opening a DSC (using a mock-up DSC).
8. Returning the DSC and TC to the spent fuel pool.

The onsite inspection was performed to observe the various phases of the pre-operational test plan. The licensee developed procedures, personnel training and qualification programs, and conducted practice sessions as part of the preoperational program.

The inspectors reviewed the work package for the dry run activities. It contained all applicable procedures associated with the scope of the dry run activities including loading the TC onto the TT, preparation of the TT for movement, transport of the TC to the ISFSI, DSC insertion into a HSM location, and retrieval of a DSC from a HSM. The procedures were comprehensive and adequately addressed key aspects of the evolutions; they contained sufficient detail to support safe handling, and movement of the TC and TT.

Over the period of July 11 to July 14, 2011, the inspectors observed the dry run activities, including loading of the TC onto the TT, transportation of the TC to the ISFSI along the designated haul path, and insertion and retrieval of the DSC into and from the HSM. The licensee conducted a pre-job briefing on July 11 and each subsequent day during the demonstration with personnel involved with dry run activities. The briefings were comprehensive and effectively covered key aspects of the evolution, including procedural adherence expectations, safety aspects of the activities, use of three-way communications, Quality Assurance (QA) hold points, as well as a detailed overview of the tasks to be performed. Procedure compliance was strictly followed during the performance of the activities. Radiological conditions were simulated and appropriate measures implemented to provide a degree of realism during the performance of the dry run. The inspectors noted that the licensee had simulated radiological postings in order to prepare workers for the radiological conditions that could be encountered during actual transfer of spent fuel. The inspectors interviewed cognizant personnel to verify their knowledge of procedural requirements and responsibilities. The inspectors also noted that activities were performed in a deliberate manner. The responsible supervisor maintained the work package in his possession throughout the performance of the activity. Procedure steps were followed and, for those steps requiring the performance of a specific task (e.g., independent verification of equipment configuration or position of a control switch), repeat-back communication techniques were employed.

The licensee demonstrated the capability to safely place a DSC into the TC. Rigging, movement, and placement of the DSC into the TC were performed in a controlled manner with good coordination and communication observed among individuals involved in the activity. Throughout the entire dry run exercise, the work package was periodically reviewed by the inspectors to verify compliance with procedures and related work documents. The inspectors noted that procedure steps were initialed or otherwise notated by the responsible supervisor to signify completion of a given step and that work order documents were strictly followed.

The licensee demonstrated the ability to safely load the TC onto the TT and subsequently transport the loaded TC to the ISFSI. The placement of a DSC into the TC to verify fit and confirmation that the DSC fuel storage cells were capable of accepting spent fuel assemblies was also successfully demonstrated. The licensee successfully aligned the DSC with the HSM-H and demonstrated the ability to insert and retrieve a DSC. ISFSI project personnel were qualified to perform their assigned functions and were knowledgeable of their responsibilities. Procedures and work-related documentation were accurate with strict procedural compliance demonstrated by workers in the field.

No findings were identified.

2. Review of Evaluations

a. Inspection Scope (IP 60856 and IP 60857)

A general license for the storage of spent fuel in an ISFSI at power reactor sites is granted per 10 CFR 72.210, “General license issued.” Per 10 CFR 72.212, “Conditions of general licenses issued under 72.210,” the holder of the general license is required to perform written evaluations prior to use (specifically under 72.212(b)(5)) to establish that the ISFSI design can be used at that site and that site operations can accommodate

operation of an ISFSI. Turkey Point holds a general license for operation of its ISFSI. Turkey Point documented the results of the required evaluations in PTN-ISFS-10-091, 72.212 Evaluation Report for the Turkey Point Nuclear Plant Independent Spent Fuel Storage Installation (ISFSI) Units 3 & 4, Revision 0.

The inspectors reviewed the technical report and various referenced supporting documents to evaluate the licensee's compliance with the requirements of 10 CFR 72.212. The inspectors also conducted interviews with cognizant licensee personnel.

b. Observations and Findings

The licensee is required, as specified in 10 CFR 72.212(b)(1), to notify the NRC of the intent to store spent fuel at an ISFSI at least 90 days prior to the first storage of spent fuel. FP&L notified the NRC on October 16, 2010, of its intent to use Transnuclear NUHOMS® storage casks and to store spent fuel at its ISFSI in July, 2011. This letter met the requirements for the 90-day notification. The licensee is also required, as specified in 10 CFR 72.212(b)(2), to register the use of each cask with the NRC within 30 days of using that cask to store spent fuel. The licensee provided this registration to the NRC per Letter L-2011-310, dated August 19, 2011.

The inspectors reviewed a copy of the Turkey Point 72.212 evaluation report. Based on the review, the inspectors assessed that, overall, the evaluation report was comprehensive and adequately addressed the areas required to be evaluated under 72.212(b)(5) through (8). No concerns were identified.

The inspectors also reviewed several supporting documents referenced in the evaluation report, including, Calculation FPL025-CALC-010, Fire Hazards Evaluation for the Turkey Point ISFSI Cask Hauling and Storage, Revision 1, and Calculation FPL025-CALC-011, Explosion Hazards Evaluations for the Turkey Point ISFSI Cask Hauling and Storage, Revision 1. The reports contained the results of the fire and explosion hazard analysis for the ISFSI haul path and storage location and prescribed required standoff distances for various hazards as well as any other physical or administrative controls required for ISFSI operations. The inspectors reviewed the above-referenced documents and determined that the supporting engineering evaluations for the fire/explosion hazards analyses were detailed and used a systematic approach to evaluate all potential fixed and transient fire/explosion hazards. The inspectors walked the haul path and noted that all fixed sources of combustible material were sufficiently distanced from the ISFSI or heavy haul path or sufficiently shielded so as not to represent a hazard to the Transfer Cask/Dry Shielded Canister or HSM. The inspector noted that the combustible energy of transient combustibles along the heavy haul path and at the ISFSI was limited by administrative controls in the licensee's ISFSI operating procedures.

The loading, transportation, and storage operations of the NUHOMS® HD- 32PTH System HSM-H at Turkey Point were reviewed under the 10 CFR 50.59 Process. Reliability of structures systems and components important to safety was evaluated. The inspectors noted the performance of numerous screening and evaluations that had been performed in accordance with the requirements of 10 CFR 50.59 for activities associated with the ISFSI. No activities or modifications related to ISFSI implementation required prior approval as documented in the 10 CFR 50.59 screenings/evaluations.

A 10 CFR 50.59 evaluation of the construction and operation of the ISFSI and plant interfaces had been performed to demonstrate that changes to plant TSs or a license amendment were not required. The licensee had established an additional Protected Area for the ISFSI outside of original Protected Area for Units 3 and 4. The NUHOMS system design parameters enveloped the reactor site parameters described in the Turkey Point Unit 3 FSAR.

Other general license requirements dealing with review of reactor emergency plans, quality assurance program, training, and radiation protection program must also be satisfied pursuant to 10 CFR 72.212(b)(10). Records and procedural requirements for the general license holder are described in 10 CFR 72.212(b)(11), (12), (13), and (14). The inspectors reviewed selected referenced records and procedure changes related to emergency preparedness, fire protection, training, health physics and quality assurance programs. The inspectors interviewed cognizant personnel to confirm that they were knowledgeable of the impact of ISFSI-related activities. For instance, the inspectors interviewed Fire Protection management with respect to coordination with offsite organizations which may be called upon to respond during a major fire at the plant. The inspectors also interviewed the Emergency Planning Supervisor concerning the Emergency Action Levels (EALs) associated with ISFSI operations. The emergency plan, quality assurance program, training program, radiation protection program, and fire protection program had been evaluated and their effectiveness was determined not to be decreased by ISFSI activities.

The licensee performed an extensive review of the dry cask storage program to ensure compliance with the requirements of 10 CFR 72, Subpart K, General License for Storage of Spent Fuel at Power Reactor Sites. Specifically, the 10 CFR 72.212 evaluation report was found to be acceptable, containing sufficient objective evidence that written evaluations which confirmed that the conditions set forth in the CoC had been met, the ISFSI pad had been designed to support the stored load of the casks, and the requirements of 10 CFR 72.104 had been met for radiological impact to members of the public. Applicable reactor site parameters, such as earthquake intensity, tornados, wind-generated missile impacts, flooding, temperature, fire and explosion, and lightning, were evaluated for acceptability with the bounding values specified in the NUHOMS® Safety Analysis Report (SAR) and the NRC Safety Evaluation Report (SER). The evaluations demonstrated that the design features for the NUHOMS® HD Horizontal Modular Storage System for Irradiated Nuclear Fuel enveloped the site specific characteristics of the Turkey Point site.

No findings were identified.

3. Fuel Characterization and Verification

a. Inspection Scope (IP 60854)

The CoC for the NUHOMS® HD - 32PTH dry cask storage system specifies the parameters that must be met in order to allow spent fuel to be stored at the ISFSI. The inspectors evaluated licensee programs to verify that spent fuel assemblies selected for storage met the applicable requirements of the CoC. The inspection consisted of interviews with licensee personnel and review of licensee documentation.

b. Observations and Findings

The inspectors reviewed the licensee's process for selecting and verifying fuel assemblies for placement in the first DSC. The inspectors reviewed documents associated with the qualification, characterization, and selection of fuel assemblies for storage at the ISFSI. These documents were contained in Engineering Evaluation PTN-ISFSI-10-092, Irradiated Fuel Assembly Selection for Turkey Point Unit 3 2011 ISFSI Campaign. Technical Specifications require that selected fuel assemblies be visually inspected; be within specified limits for parameters such as fuel enrichment, burn-up, and decay heat output; be independently identified; and be limited as per the number of damaged fuel assemblies allowed per DSC. The inspectors discussed the fuel selection process with licensee personnel and determined that they were knowledgeable of the TS requirements. The inspectors noted that the selected fuel assemblies met all appropriate TS requirements for placement into a DSC for dry storage. Supporting documentation adequately characterized the selected fuel assemblies for initial loading at the ISFSI.

The licensee had developed a cask loading plan in accordance with approved procedures. Licensee documentation supported the proper characterization of the first 32 fuel assemblies to be loaded into the initial DSC and the selected assemblies were in compliance with design parameters specified in the CoC.

No findings were identified.

4. Welding and Nondestructive Examination (NDE)

a. Inspection Scope (IP 60854)

The inspectors observed and evaluated the welding and NDE to determine whether the Turkey Point staff and contractor had developed the capability to properly weld and perform NDE on the specific type of DSC to be used for storage of spent fuel at the Turkey Point site. The inspection consisted of interviews with cognizant personnel, review of documentation, and field observations associated with welding activities for the initial DSC loading.

Specifically, the inspectors reviewed TN CoC No. 72-1030, Amendment No. 1, to determine if the American Society of Mechanical Engineers (ASME) Code and exceptions to the Code had been incorporated into the welding fabrication control documents and to ensure that the fabrication specifications were consistent with the design commitments and requirements documented in the SAR, the CoC, and the TSs. The inspectors also reviewed the TN canister-welding contractor welding process control procedures for compliance to TN's CoC commitment to the Spent Fuel Project Office Interim Staff Guidance (ISG) -15 (Materials Evaluation) requirements for limiting the amount of weld metal deposited per weld pass and the need to perform a multilevel liquid penetrant (PT) examination. The inspectors observed welding of the cask mock up lid-to-shell root pass and the intermediate weld pass and verified that the weld metal deposited in any given pass was less than 0.25". The inspectors reviewed the training and certification of personnel performing quality-related activities and interviewed personnel to determine their familiarity with the specified design, designated fabrication techniques, testing requirements, and quality controls associated with the construction of the dry cask storage system (DCSS). The inspectors reviewed and verified that the

welding procedures met ASME, Section IX, requirements and were acceptable for the demonstration. The inspectors reviewed the PT examination procedure to determine whether it met the ASME Code Section V, Article 6, requirements.

b. Observations and Findings

The licensee utilized the services of a dedicated contractor for welding and an NDE team experienced in the DSC type to be used by the licensee.

The inspectors observed the welding equipment setup, welding on the mockup, visual weld examination, and liquid penetrant examination. The inspectors determined that on-site fabrication personnel were familiar with the specified design, designated fabrication techniques, examination requirements, and quality controls associated with the construction of the DCSS. The inspectors reviewed welder qualifications and verified that the welders met the ASME Section IX requirements. The inspectors observed the NDE technicians perform a visual examination (VT-1) and liquid penetrant (PT) examination of lid-to-shell root pass to verify compliance with ASME Section V requirements. The inspectors verified that the NDE technicians were qualified to perform the VT-1 and PT and that the NDEs were performed in accordance with the established procedures. During the first loading campaign, the inspectors observed preparations for welding the inner top cover of the DSC and noted that contractor personnel were knowledgeable of their work activities and worked closely with licensee personnel and that rigging and handling of the top covers, welding machine, and associated equipment were performed in a safe manner. The individuals were knowledgeable of procedural requirements and followed approved rigging and lifting practices.

The inspectors concluded that the capability to adequately weld and perform NDE on DSCs was sufficiently demonstrated on the mockup and further verified during the first loading campaign. Personnel were qualified to perform their assigned functions.

No findings were identified.

5. Procedures and Technical Specifications

a. Inspection Scope (IP 60854)

The CoC for the NUHOMS dry cask storage system in conjunction with the associated Technical Specifications (Appendix A to CoC 1030, Amendment 1) specifies requirements to ensure the safe handling and storage of spent nuclear fuel. The inspectors confirmed that copies of the CoC and referenced documents were current.

b. Observations and Findings

The inspectors reviewed licensee procedures and documentation to confirm that the TS requirements were incorporated into ISFSI work-related documents and work packages. The inspectors noted that TS requirements were incorporated into a series of ISFSI-related procedures. The licensee developed procedures to address loading the TC onto the TT, preparation of the TT for movement, transport of the TC to the ISFSI, DSC insertion into a HSM-H location, and retrieval of a DSC from a HSM-H. The

procedures were comprehensive and adequately addressed key aspects of the evolutions. Procedures contained sufficient detail to support safe handling and movement of the TC and TT. The inspectors noted that the procedures covered all aspects of dry storage cask handling, loading, and storage requirements, as required by the TSs.

The transfer cask was leased from Areva-Transnuclear by the licensee. Inspections of the transfer cask required by the CoC are performed by the contractor. The inspectors reviewed the Certificate of Conformance provided by Areva-Transnuclear to the licensee. The certificate confirmed that the required inspections were current to support the licensee's initial fuel loading campaign.

The inspectors interviewed a Unit 3 shift manager concerning the availability and knowledge of the Emergency Action Levels (EALs) associated with ISFSI operations. The shift manager readily retrieved the EAL chart and demonstrated awareness of the ISFSI EALs.

No findings were identified.

6. Quality Assurance (QA) Program

a. Inspection Scope (IP 60854)

Per TS Section 1.1.3, Quality Assurance, activities at the ISFSI shall be conducted in accordance with a Commission-approved quality assurance program which satisfies the applicable requirements of 10 CFR Part 50, Appendix B, and which is established, maintained, and executed with regard to the ISFSI.

Quality assurance associated with ISFSI activities is organized within the corporate Nuclear Oversight organization. The involvement and role of QA was evaluated to ensure that sufficient independence by Nuclear Oversight was established to verify that the ISFSI program was effectively developed and implemented to support the safe operation of the ISFSI facility. The use of the condition reporting program in support of ISFSI activities was also evaluated. The inspection consisted of field observations, interviews with licensee personnel, and review of licensee documentation.

b. Observations and Findings

The inspectors interviewed the ISFSI Project Manager and the site QA Manager. FPL developed an Integrated Assessment Plan for the ISFSI project using QA audits, QC inspections, and field observations. Issues were to be identified and reported through audits and Condition Reports (CRs). The inspectors noted that QC personnel attended the dry run briefings and were present in the field to observe work activities. The inspectors interviewed a QC Technical Analyst to gain an understanding of his role throughout the dry run process. The analyst had developed the plan for QC observation of ISFSI activities. Field observations were not formally scheduled, and not all dry run activities were scheduled to be observed. QC inspectors performing field observations did not use inspection checklists but used the applicable procedures during their observations. QC technical analysts performed the Nuclear Oversight review of ISFSI procedures. During the review, QC analysts would prescribe QC hold points and designate procedural steps requiring independent verification.

The inspector reviewed licensee self-assessments. The results of the audited areas were documented and tracking items identified for unresolved items.

The inspector reviewed CRs issued by the licensee pertaining to the ISFSI program and activities. The inspector noted that action items were identified and being tracked to closure and that issues required to be addressed prior to the first loading of spent fuel were completed or closed.

The Nuclear Oversight organization provided effective independent review of ISFSI activities. Quality control and assurance efforts were appropriately incorporated into ISFSI activities. QA personnel were actively engaged in field activities and verified that hold points, technical specifications, and work order requirements were implemented in accordance with approved procedures and related work documents. The identification and tracking of issues were implemented in accordance with the licensee's corrective action program, with the proper review and evaluation of action items performed prior to initial loading of spent fuel in the ISFSI facility.

No findings were identified.

7. Training and Qualifications

a. Inspection Scope (IP 60854)

The licensee's training program was reviewed to verify that appropriate training requirements were identified for ISFSI-related tasks and that personnel were qualified to perform ISFSI-related activities. The licensee's training program was also reviewed to verify that the required elements described in 10 CFR 72, Subpart I, Training and Certification of Personnel, and TS Section 1.1.5, Training Module, were incorporated into the ISFSI training program. The inspection consisted of a review of licensee documentation, interviews with cognizant personnel, and field observations.

b. Observations and Findings

The licensee utilized the services of TN personnel and a subcontractor to TN to perform ISFSI activities. Contractor personnel were experienced in the operations and activities that they were responsible for performing.

The inspectors interviewed training personnel regarding training and qualification of personnel performing ISFSI activities. Overview training was provided to personnel with ISFSI-related responsibilities. Several training modules were specifically developed for ISFSI activities. These modules covered such activities as general overview of the ISFSI project to job-task specific modules, covering such activities as operation of the transfer trailer, DSC/HSM-H alignment operations, and TC/DSC preparation and drying. The inspectors reviewed selected training modules and noted that they were comprehensive and adequately covered training aspects of a given task. The inspectors noted that the licensee had developed a student qualification matrix that designated individuals qualified to perform a given task based upon successful completion of the required training modules. The inspectors reviewed selected names from the qualification matrix and reviewed training records to verify that individuals observed in the field were qualified for the tasks that they were performing. Medical qualifications for

crane operators were confirmed to be current.

The licensee utilized experienced contractor personnel qualified to perform ISFSI-related tasks and activities. Appropriate training modules were developed for the various tasks. Individuals were properly trained and qualified to perform their assigned functions.

No findings were identified.

8. Initial Loading of the HSM

a. Inspection Scope (IP 60855)

The inspectors observed activities associated with the first loading of spent fuel into the HSM-H on the ISFSI on July 29, 2011. The inspection consisted of field observations, review of licensee documentation, and interviews with licensee and contractor personnel.

b. Observations and Findings

The inspectors observed activities associated with the first loading of spent fuel into an HSM-H from the pre-job brief of July 25th to the insertion of the DSC into the HSM-H at the ISFSI on July 29. The pre-job briefing was thorough and covered all pertinent issues associated with the initial loading. The inspectors reviewed the DSC loading documentation, including the fuel loading map developed for the initial DSC loading configuration and the final DSC loading verification video, to confirm that the selected fuel assemblies previously characterized for loading were configured as described. The inspectors observed control room operators recording fuel assembly movements utilizing fuel handling log sheets as fuel assemblies were placed into the DSC. Adequate communication was maintained between control room operators and fuel handlers. Documentation was accurate and completed in accordance with approved procedures. The inspectors also held discussions with licensee personnel and made field observations to determine if the spent fuel assemblies were loaded into the initial DSC per the approved loading plan.

Local area radiation monitors were staged at strategic locations in the immediate vicinity of the SFP and areas adjacent to DSC handling operations. These monitors were equipped with local alarms and remote readout displays.

The field supervisor maintained custody of the work package and confirmed that procedure steps were performed and properly signed-off.

The inspectors reviewed the Radiation Protection Work Plan for the initial ISFSI campaign which includes a total of nine DSCs to be loaded into HSM-H in the ISFSI. Based on operational experience from other ISFSI campaigns at other licensee plants, the licensee assigned a dose goal of 250 person-mrem per DSC for the initial campaign. The inspectors noted that the Radiation Work Plan specified adequate radiological controls associated with dry cask storage activities. Based on field observations the inspectors noted strict adherence to radiological work practices and monitoring of personnel exposures thoughout the work stages for the initial DSC loading. The inspectors noted that the dose total for the initial DSC loading was 445 mrem.

The licensee safely loaded the first DSC containing spent fuel into an HSM-H on July 29. Work activities were performed in accordance with approved procedures and met the requirements of the technical specifications. Spent fuel loaded into the DSC was properly characterized. The DSC was properly sealed, tested, surveyed and inspected, and met the requirements of the CoC.

No findings were identified.

Exit Meeting

The preliminary results of the inspection were discussed at an exit meeting on July 29, 2011, with Mr. Kiley, Plant General Manager, and other members of the staff.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel
C. Cashwell, Radiation Protection Manager
M. Crosby, Site Quality Assurance Manager
P. Czaya, Licensing Engineer
M. Epstein, Emergency Planning Supervisor
R. Flynn, Operations
C. Gears, ISFSI Project Engineering Manager
M. George, Fire Protection Systems Analyst
O. Hanck, Acting Licensing Manager
A. Hay, ISFSI Projects (Procedures)
G. Hollinger, Fleet ISFSI Manager
W. Jenkins, ISFSI Project Manager
A. Keary, ISFSI Project Manager (St. Lucie)
M. Kiley, Site Vice President
J. McGinnis, Reactor Engineering Supervisor
R Vandevender, Nuclear Projects Project Manager
R. Welty, Radiation Protection
R. Wright, Operations Manager

Transnuclear Personnel
M. Williams, Project Manager

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened and Closed
None

Closed
None

Discussed
None

List of Documents Reviewed

Procedures

0-ADM-016.1, Transient Combustible and Flammable Substances Program, Revision 2
0-ADM-215, Plant Surveillance Tracking System, Revision 3
0-EPIP-20101, Duties of Emergency Coordinator, Revision 4
0-GMP-116.01, ISFSI HSM Material Identification, Control and Storage, Revision 0
0-GMP-116.02, ISFSI HSM Assembly, Revision 0
0-GMP-116.03, ISFSI DSC Upending and Cold Fit Test, Revision 0
0-GMP-116.04, ISFSI TC/DSC Preparation for Fuel Loading, Revision 3
0-GMP-116.05, ISFSI TC/DSC Handling Operations for Fuel Loading, Revision 1
0-GMP-116.06, ISFSI/DSC Sealing Operations, Revision 2
0-GMP-116.07, ISFSI DSC Transport from CHF to HSM, Revision 2
0-GMP-116.08, Transport from HSM to CHF, Revision 2A
0-GMP-116.09, ISFSI TC/DSC Handling Operations for Fuel Off-Load, Revision 1
0-GMP-116.10, ISFSI DSC Lid Removal, Revision 1
0-GMP-116.11, ISFSI Contingency Plan, Revision 0
0-OSP-116.01, Horizontal Storage Module Thermal Performance Verification
0-OSP-200.1, Schedule of Plant Checks and Surveillances, Revision 3
0-OSP-200.5, Miscellaneous Tests, Checks and Operating Evaluations, Revision 4
3-NOP-116.01, Dry Shielded Canister Fuel Loading, Revision 0
3-NOP-116.02, Dry Shielded Canister Fuel Off-Load, Revision 0
4-NOP-116.01, Dry Shielded Canister Fuel Loading, Revision 0
4-NOP-116.02, Dry Shielded Canister Fuel Off-Load, Revision 0
Industrial Testing Laboratory Services (ITLS) 888, Leak Testing Procedure, Revision 3
ITLS 889, Visual Examination Procedure, Revision 2
ITLS 890, Liquid Penetrant Examination Procedure, Revision 2
OM-NUH-07-134, NUHOMS® AREVA Automated Welding System Operations and Maintenance Manual, Revision 3
PTIP 11271-9.1, NUHOMS® HD 32PTH1 DSC Closure Procedure, Revision B
RP-TP-103-3001, ISFSI Radiological Controls, Revision 0
SPM 9.1, TransNuclear General Welding Procedure, Revision 0
SPM 9.1a, TransNuclear Welding Procedure Specification and Qualification, Revision 0
SPM 9.1b, TransNuclear Welder Performance Qualification, Revision 0
SPM 9.1c, TransNuclear Filler Metal Control
Transnuclear (TN) P8-P8-GT1, Welding Procedure Specification (Machine), Revision 0
TN P8-P8-GT2, Welding Procedure Specification (Manual), Revision 0
TN P8-P8-GTAW3, Procedure Qualification Record (Manual), dated 5/23/11
TN P8-P8-GTAW5, Procedure Qualification Record (Machine), dated 5/23/11

Welder Qualifications

AREVA Welder Performance Qualifications (Beacham), dated 5/2/11
AREVA Welder Performance Qualifications (Dennis), dated 5/2/11
AREVA Welder Performance Qualifications (James), dated 5/2/11
AREVA Welder Performance Qualifications (Joyner), dated 5/2/11
AREVA Welder Performance Qualifications (Lucas), dated 5/2/11
AREVA Welder Performance Qualifications (Patrick), dated 5/19/11
AREVA Welder Performance Qualifications (Williams), dated 5/2/11
AREVA Welding Operator Performance Qualification (Dennis), dated 5/2/11

AREVA Welding Operator Performance Qualification (James), dated 5/2/11
AREVA Welding Operator Performance Qualification (Joyner), dated 5/19/11
AREVA Welding Operator Performance Qualification (Lucas), dated 5/2/11
AREVA Welding Operator Performance Qualification (Manning), dated 5/2/11
AREVA Welding Operator Performance Qualification (Miner), dated 5/2/11
AREVA Welding Operator Performance Qualification (Patrick), dated 5/2/11
AREVA Welding Operator Performance Qualification (Rego), dated 5/2/11
AREVA Welding Operator Performance Qualification (Strickland), dated 5/2/11
AREVA Welding Operator Performance Qualification (Vandiford), dated 5/2/11
AREVA Welding Operator Performance Qualification (Williams), dated 5/2/11
ITLS Certificate of Qualification and Certification Summary (Leak Testing, Oblich), dated 9/8/09
ITLS Certificate of Qualification and Certification Summary (Penetrant Testing, Oblich), dated 8/4/09
ITLS Certificate of Qualification and Certification Summary (Penetrant Testing, Stanford), dated 5/17/11
ITLS Certificate of Qualification and Certification Summary (Penetrant Testing, Simile), dated 2/15/11
ITLS Certificate of Qualification and Certification Summary (Visual Testing, Oblich), dated 5/19/11
ITLS Certificate of Qualification and Certification Summary (Visual Testing, Stanford), dated 5/17/11
ITLS Certificate of Qualification and Certification Summary (Visual Testing, Simile), dated 5/19/11
ITLS Visual Acuity Certification (Oblich), dated 1/3/2011
ITLS Visual Acuity Certification (Stanford), dated 2/26/11
ITLS Visual Acuity Certification (Simile), dated 1/3/2011

Condition Reports (CR)

CR 01666744, ISFSI Heavy Haul Trailer Flat Tire Discovered
CR 01660989, Unsatisfactorily Execution of ISFSI Dry Run Activities
CR 01660959, Observation

Others
10 CFR 72.48, Irradiated Fuel Assembly Selection for Turkey Point Unit 3 2011 ISFSI Campaign
ALARA Package No. 2011-001, Pre-Job ALARA Review, 2011 ISFSI Loading Campaign
Appendix A to CoC No. 1030, NUHOMS HD system Generic Technical Specifications, Amendment 1
Areva-Transnuclear Inc., Certificate of Conformance, Dated 6/3/2011
Calculation FPL025-CALC-010, Fire Hazards Evaluation for the Turkey Point ISFSI Cask Hauling and Storage, Revision 1
Calculation FPL025-CALC-011, Explosion Hazards Evaluations for the Turkey Point ISFSI Cask Hauling and Storage. Revision 1
Engineering Change (EC) 271693, Engineering Evaluation for Turkey Point Units 3 and 4, PTN-ISFSI-11-005, Revision 0
EC 250181, Irradiated Fuel Assembly Selection for Turkey Point Unit 3 2011 ISFSI Campaign, PTN-ISFSI-10-092, Revision 0
Engineering Evaluation 250181, PTN-ISFSI-10-092, Irradiated Fuel Assembly Selection for Turkey Point Unit 3 2011 ISFSI Campaign, Revision 0
FPL Memorandum, dated October 16, 2010, Notification of Intent to Store Spent Fuel in an

Independent Spent Fuel Storage Installation in Accordance with a General License
PTN-ISFS-10-091, 72.212 Evaluation Report for the Turkey Point Nuclear Plant Independent Spent Fuel Storage Installation (ISFSI) Units 3 & 4, Revision 0
PTN ISFSI Internal Dry Run Management Observations, June 25, 2011
RP Work Plan #2011-005, ISFSI-Related Work Activities
Radiological Work Permit (RWP) 2011-0021, Task 7, ISFSI Activities, Revision 5
RWP) 2011-0021, Task 8, ISFSI Activities – Including Decon, Revision 5
Safety Evaluation Report, Transnuclear Inc. NUHOMS HD Horizontal Modular Storage System for Irradiated Nuclear Fuel Docket No. 72-1030, Amendment No. 1
Standard STD-F-040, Dry Cask Storage Fuel Assembly Assignments. Revision 4
Turkey Point Radiological Emergency Plan, Revision 53
Transnuclear, INC Systematic Approach to Training program
Multiple qualification records for ISFSI workers
Turkey Point Nuclear Station Nuclear Training Department Lesson Packages for ISFSI
Turkey Point Pool to Pad, ADM-310, Personnel Certifications and Resumes
FPL Letter L-2006-218, Notification of Intent to Apply Previously Approved 10 CFR 50 App B QA Program to ISFSI Activities, dated October 11, 2006