April 7, 2000

Mr. G. Rainey, President
PECO Nuclear
Nuclear Group Headquarters
Correspondence Control Desk
P.O. Box 195
Wayne, Pennsylvania 19087-0195

SUBJECT: NRC INSPECTION REPORT 05000277/2000-004, 05000278/2000-004

Dear Mr. Rainey:

On March 10, 2000, the NRC completed an inspection of the Independent Spent Fuel Storage Installation (ISFSI) at the Peach Bottom Atomic Power Station. The enclosed report presents the details of that inspection. The results of this inspection were discussed on March 10, 2000, with Mr. Paul Rau and other members of your staff.

Overall, we considered your efforts related to the ISFSI to be acceptable, including the dry-run of the loading and movement of the cask, the procedures, and the management oversight.

In addition, the NRC staff met with representatives of PECO on January 28, 2000. The purpose of the meeting was to provide the NRC with an overview of the plans for the ISFSI dry-run. Attachment (2) to the Inspection Report is a copy of the handouts provided by PECO at the meeting, and Attachment (3) is a list of attendees at the meeting.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosures will be placed in the NRC Public Document Room (PDR).

We appreciate your cooperation.

Sincerely,

/RA/

Lawrence T. Doerflein, Chief
Systems Branch
Division of Reactor Safety

Docket Nos: 05000277, 05000278
License Nos: DPR-44, DPR-56

Enclosure: NRC Inspection Report No. 05000277/2000-004, 05000278/2000-004

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REGION I

Docket Nos.	05000277, 05000278
License Nos.	DPR-44, DPR-56
Report Nos.	05000277/2000-004, 05000278/2000-004
Licensee:	PECO Energy Company Correspondence Control Desk P.O. Box 195 Wayne, PA 19087-0195
Facility:	Peach Bottom Atomic Power Station Units 2 and 3
Inspection Period:	February 28 - March 10, 2000
Inspectors:	J. E. Carrasco, Engineering Inspector, Team Leader J. R. McFadden, Health Physics Specialist D. R. Reid, Senior Safety Inspector
Approved by:	Lawrence T. Doerflein, Chief Systems Branch Division of Reactor Safety

EXECUTIVE SUMMARY

Peach Bottom Atomic Power Station

NRC IR 05000277/2000-004, 05000278/2000-004

February 28 - March 10, 2000

This inspection report included observations of PECO engineering, health physics, and quality assurance activities related to the PBAPS Independent Spent Fuel Storage Installation (ISFSI).

Engineering

- The project group for the ISFSI was well organized, responsibilities were properly delegated, and resources were allocated based on priorities. Self-assessments were found to be self-critical and constructive. This was evident during discussions to resolve the minor design discrepancies identified during the dry-run.

- The inspected portion of the dry-run demonstrated that the personnel, equipment, and procedures were adequately prepared to perform the transport of the cask from the pad to the reactor building, and from elevation 135 to the refueling deck and into the spent fuel pool. The ISFSI site staff established the proper communications and interactions with the control room.

- The licensee's methods were satisfactory for verifying and documenting that the spent fuel placed in the dry storage cask was in accordance with the draft Certificate of Compliance. The selected fuel was identified as not leaking. Procedures required multiple and independent verification and documentation of the parameters and characteristics of spent fuel assemblies placed in the dry storage cask.

- Based on the review of a non-conformance regarding the over-pressure port flange interference with adjacent lid bolts, the team found that a detailed 10 CFR 72.48 evaluation was performed. The PECO resolution of the issue was found acceptable.

- Based on a satisfactory review of the reactor building cranes' historical records, the last annual inspection, and point-by-point comparison with the single-failure-criteria established in NUREG-0554 and NUREG-0612, Appendix C, the team concluded that PECO had reasonably demonstrated that the cranes were capable of handling a fully loaded cask.

- The operational procedures for the loading, unloading, and transferring activities associated with the TN-68 cask storage system included the appropriate acceptance criteria and met ISFSI program needs and regulatory requirements. The procedures were highly detailed, and reviewed and approved in accordance with the licensee's administrative program for document control.

- A classroom training program for personnel involved with the dry-run activities was implemented appropriately. Dry-run operations personnel were given specialized

training in the equipment and procedures. The training of HP technicians for the radiological aspects of the dry-run evolutions was performed in a thorough manner.

- QA's involvement in the dry-run was thorough and complete.

Plant Support

- The licensee's plans and preparations for controlling radiological activities for the ISFSI were extensive and detailed. A specific radiation work permit included appropriate radiological controls and a review was conducted to maintain dose as low as is reasonably achievable (ALARA). A health physics supervisor and several technicians were dedicated to the ISFSI project. They were actively involved with the dry-run activities, provided pre-job briefings, and projected radiation conditions to the ISFSI work staff.

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REPORT DETAILS

The inspectors assessed the Independent Spent Fuel Storage Installation (ISFSI) at Philadelphia Electric Company's (PECO) Peach Bottom Atomic Power Station (PBAPS). The assessment included observation of a "dry-run" exercise where PBAPS personnel moved the cask from the storage facility to the spent fuel pool, evaluation of the procedures and design criteria associated with the change, and the involvement of station personnel and management. The inspection was conducted using NRC IP 60854, "Preoperational Testing of an ISFSI."

III. ENGINEERING

E1 Conduct of Engineering

E1.1 Management, Organization, Responsibilities, Self-Assessments, and Corrective Actions

a. Inspection Scope

The inspectors assessed the ISFSI dry-run exercise to verify that PECO's project management, organization, and responsibilities were properly established, and that PECO management was adequately engaged in the oversight of the project, including self-assessment and corrective actions.

b. Observations and Findings

PECO Energy's project and plant management were an integral part of the daily operations during the dry-run, including the movement of the cask from the storage pad to the reactor building elevation 135, to the refueling deck, and into the spent fuel pool. PECO management and engineering stopped the dry-run exercise temporarily to assess minor issues that were identified; these were corrected prior to continuing the dry-run. For example, when minor design deficiencies relating to cask fabrication were identified, they were properly assessed prior to lowering the cask into the fuel pool. The team attended several PECO meetings in which the issues were discussed in detail. These meetings were self-critical and constructive. PECO's project team and TransNuclear (the designer of the cask) assessed each of the deficiencies in a probing and professional manner, the possible root causes were preliminarily identified, and provisions were made to fix the deficiencies. The possible contributing factors for these deficiencies were also discussed and annotated for further evaluation.

The team also reviewed management's oversight of the contractors, including the design and fabrication of the TN-68 cask for the PBAPS. The team found that PECO's adequate oversight activities started from the inception of the project up to and including the dry-run. This oversight was documented in a report entitled "Chronology of Major Audits/Surveillances by Vendor," dated April 4, 1999, which delineated a number of surveillances that were performed by PECO. Specifically, Audit No. VA1103466 was performed on August 18-22, 1997, to determine the adequacy of TransNuclear's (TN's) Quality Assurance (QA) Program. The report showed numerous other surveillances, as recent as January 17, 2000. Surveillances covered suppliers of products for the fabrication of both the concrete pad and the cask.

c. Conclusions

The project group for the ISFSI was well organized, responsibilities were properly delegated, and resources were allocated based on priorities. Self-assessments were found to be self-critical and constructive. This was evident during discussions to resolve the minor design discrepancies identified during the dry-run.

E1.2 Dry-run Operations and Preparation for Cask Loading

a. Inspection Scope

The team observed selected dry-run activities to verify adherence to the approved procedures.

b. Observation and Findings

The dry-run started with a well organized pre-job briefing. After the implementation of key portions of procedure SF-900, “ISFSI Abnormal Condition Response,” Rev. 0, the cask was mounted onto the transporter and moved from the ISFSI pad to the reactor building. The team noted that, during the transportation, procedure SF-220, “Spent Fuel Cask Loading and Transport Operations,” Rev. 1, was properly implemented. Prior to passing over the underground station-black-out lines, the control room was notified in accordance with procedure SF-220. Inside the reactor building, the team noted that the critical lifts from the elevation 135 equipment hatch to the refueling deck and over the pool, were performed in accordance with procedures SF-220 and SF-240, “Lift Beam Assembly Operating Instructions,” Rev. 0. The team noted that clear communications between the assigned rigger and the crane operator occurred, and that the rigging equipment performed as expected.

The team noted that the preparation for a brief shutdown of fuel pool cooling and the lowering of the pool water level during the cask insertion in the pool were performed in accordance with procedures SF-220 and SF-420, “HP Requirements During Spent Fuel Cask Loading and Transport Operations,” Rev. 0. Coordination and communication with control room and plant operators were evidenced by the direct involvement of operations in the planning with the project team for the gradual insertion of the cask into the spent fuel pool and the water level manipulations that would be required, by their presence at the Plant Evolution/Special Test Program briefings on days when spent fuel pool activities were scheduled, and by their presence and involvement on the day that the cask was lowered into the spent fuel pool.

Decontamination and transportation to the lay down area, and the detorquing of the cask lid, were done per procedures SF-290, “Spent Fuel Cask Transport and Unloading Operations,” Rev. 0, and SF-490, “Health Physics Requirements During Spent Fuel Cask Unloading and Transport Operations,” Rev. 0.

c. Conclusions

The inspected portion of the dry-run demonstrated that the personnel, equipment, and procedures were adequately prepared to perform the transport of the cask from the pad to the reactor building, and from elevation 135 to the refueling deck and into the spent fuel pool. The ISFSI site staff established the proper communications and interactions with the control room.

E1.3 Fuel Verification

a. Inspection Scope

The inspection team reviewed the licensee's methods for verifying and documenting the parameters and characteristics of spent fuel placed in the TN-68 dry storage cask per the draft CoC. Selected portions of the following procedures and documents were reviewed:

- SF-220, Spent Fuel Cask Loading and Transport Operations, Rev. 1, 03/04/00
- SF-300, TN-68 Cask Spent Fuel Assemblies Storage Selection and Document Requirements, Rev. 1, 02/09/00
- RE-C-40, Core Component Transfer Authorization Sheet Generation and Administration, Rev. 7, 02/04/2000

Information was gathered through observation of activities, including the dry-run activities required by the draft CoC, tours of the affected areas, discussions with cognizant personnel, and review and evaluation of procedures and documents.

b. Observation and Findings

Procedure SF-300 established the necessary controls to ensure that appropriate fuel was selected to be placed in the TN-68 dry storage cask, with appropriate documentation. This procedure provided guidance on selecting fuel assemblies for storage by reference to the CoC restrictions on fuel assemblies. It also required the generation of core component transfer authorization sheets (CCTASs) used to track the transfer of the fuel assemblies to the cask and required the performance of an evaluation of fuel condition. By procedure, ALARA (maintaining radiation dose As Low As is Reasonably Achievable) was considered in the cask loading pattern selected, such that fuel was arranged in the cask with the older fuel placed in the outer assembly locations. This provided shielding for the higher dose, more recently off-loaded fuel assemblies in the interior locations of the cask.

A review of a document titled "PB U2 Fuel Sipping for Dry Cask Storage Results" showed that 850 fuel assemblies were vacuum sipped in June 1999. Of these, eight fuel assemblies were identified as leakers. The fuel assemblies selected for the first cask had been identified as not leaking.

Procedure SF-220 required that fuel assemblies be loaded into a cask in accordance with an approved loading sequence in accordance with CCTASs, and that a copy of the

completed CCTAS be attached to SF-220. It also required that, when cask loading was complete, double and independent verification of fuel assembly serial numbers, locations, orientation, and freedom of debris be performed and be video recorded.

c. Conclusions

The licensee's methods were satisfactory for verifying and documenting that the spent fuel placed in the dry storage cask was in accordance with the draft Certificate of Compliance. The selected fuel was identified as not leaking. Procedures required multiple and independent verification and documentation of the parameters and characteristics of spent fuel assemblies placed in the dry storage cask.

E2 Engineering Support of Facilities and Equipment

E2.1 Design Change Reviews

a. Inspection Scope

The team assessed PECO design change activities affecting the ISFSI, particularly on selected aspects of the design and fabrication of the TN-68 cask, to verify that a documented and acceptable program was in place.

b. Observation and Findings

The team reviewed the licensee's 10 CFR 72.48 evaluation to determine the adequacy of its review. The team attended a Plant Oversight Review Committee (PORC) meeting at which PECO staff presented nonconformances identified at Precision Components Corporation (PCC), the fabricator of the TN-68 cask. The nonconforming conditions covered an array of issues related to the fabrication of dry storage cask No. 1. Some of the issues were related to minor dimensional deviations; for example: an oversized chamfer, a slightly oversized lid bolt hole, surface finish deviations, and extraneous machine tool marks.

The 10 CFR 72.48 evaluation also included issues regarding items that were important to safety. Specifically, a TN nonconformance report (NCR) identified an interference between the overpressure port cover flange and two adjacent cask lid bolts. A portion of the two bolt heads overlapped the flange which prevented the overpressure monitoring system from being removed from the cask without removal of the cask lid bolts. As a result, the cask lid could not be unbolted in the sequence required by the Cask Safety Analysis Report. This issue was appropriately documented and dispositioned in the corrective action programs of PCC, TN, and PECO, on NCRs NR-98065, 2000-002, and 00-00071, respectively. A repair plan was approved for casks numbered 1 through 5, to reshape the flange to alleviate the interference with the closure bolt head. This required two other modifications: 1) the original bolt hole pattern in the flange changed from four holes to three, and 2) drilling of a new hole in the flange and cask lid to match the new hole in the flange. PECO's technical analysis properly addressed the technical considerations of the redesigned flange focusing on maintaining leak tightness to meet the design basis. The team reviewed the issues presented at the PORC meeting

regarding Cask No.1, and found PECO's technical evaluation to be clear, concise, and complete.

PECO considered this 10 CFR 72.48 review to be preliminary, as the cask design was not yet approved by the NRC. However, an approval was given by the PORC to facilitate completion of the dry-run. Formal approval of this issue will be returned to the PORC after the NRC issues a Certificate of Compliance for the cask and successful helium leak testing of the flange.

c. Conclusions

Based on the review of a non-conformance regarding the over-pressure port flange interference with adjacent lid bolts, the team found that a detailed 10 CFR 72.48 evaluation was performed. The PECO resolution of the issue was found acceptable.

E2.2 Rigging and Control of Heavy Loads

a. Inspection Scope

The team reviewed the reactor building cranes' historical records, the annual inspection performed last May and a point-by-point comparison with the single-failure-criteria established in NUREG-0554 and NUREG-0612, Appendix C. The team held several meetings to discuss the load handling for the actual weight of the cask.

b. Observation and Findings

The team review of the reactor building crane history revealed that, during original construction, PECO installed a 125-ton overhead crane in each reactor building to handle the heavy load lifts in the spent fuel areas. At that time (early 1970s), these cranes were not designated as single failure cranes (criteria had not yet been established). Although the original crane design incorporated a dual load path hoisting system (single failure proof crane feature), it was not evaluated separately to distinguish the design rated load (DRL) from the maximum critical load (MCL) rating.

In December 1980, the NRC issued Generic Letter 80-113, which requested that licensees review and analyze their cranes and heavy load procedures against the guidelines of NUREG-0612, "Control of Heavy Loads at Nuclear Power Plants," and NUREG-0554, "Single Failure Proof Cranes for Nuclear Power Plants." The inspection team noted that in the mid-1990s, Peach Bottom installed a new reactor vessel strong back/carousel, which required an increase to the MCL capacity of the cranes. A wear analysis was performed to verify the cranes' ability to handle loads at the new MCL rating, while meeting the guidelines of NUREG-0612 and NUREG-0554. The reactor building cranes were also seismically analyzed at a rating of 125-tons. Upon the completion of these analyses, the reactor building cranes were rated at an MCL of 120-tons and DRL of 125-tons. The inspection team reviewed historical records and verified that, in 1972, both reactor building cranes were tested by the fabricator and demonstrated a lifting capacity of 125-tons, plus additional 39.76 tons, for a total of 164.76 tons.

PECO initiated Engineering Change Requests (ECRs) 99-02673 and 99-02675 to increase the MCL rating of the reactor building cranes to 125-tons, to accommodate the lifting and rigging of a loaded spent fuel cask which weighs approximately 121.5 tons. The team reviewed ECR 99-02673 and noted that a point-by-point comparison to NUREG-0554 and NUREG-0612, Appendix C, was performed satisfactorily. In addition, a calculation was performed to verify that load dependent components of the crane had sufficient margin to accommodate the handling of a MCL rating of 125-tons, with a 15 percent wear margin (additional 18.75 tons). This calculation met the requirements established in NUREG-0554, Section 2.2. The team also noted that PECO had performed a seismic analysis that demonstrated an adequate strength of the crane to handle a MCL rating of 125-tons.

Further, the inspection team verified that the annual reactor building crane inspections were performed, as required; the next inspection is scheduled for May 2000. These inspections were performed following PECO procedure M-017-001. This procedure called for inspection of the structural members, welded and bolted connections, mechanical and electrical components, and the full length of the wire rope. In addition, the surfaces of the hook box and the hook were examined using nondestructive testing methods. Measurements were taken to verify that the hook was not distorted. The crane was also tested to ensure that all safety functions were operating correctly, and the crane was properly calibrated, using the 103 ton shield plug. PECO management stated that prior to the actual lifting and rigging of the fully loaded cask, they intended to verify the 125-ton capacity by handling a load close to or equal to a fully loaded cask (120 tons).

c. Conclusions

Based on a satisfactory review of the reactor building cranes' historical records, the last annual inspection, and point-by-point comparison with the single-failure-criteria established in NUREG-0554 and NUREG-0612, Appendix C, the team concluded that PECO had reasonably demonstrated that the cranes were capable of handling a fully loaded cask.

E3 Engineering Procedures and Documentation

E3.1 Procedures, Document Controls, & Records

a. Inspection Scope

The inspection team reviewed selected portions of operational procedures for the loading, unloading, and transferring activities of the TN-68 cask storage system. This review was to determine if the procedures provided clear instructions to the users, established limitations and action levels, directed the workers on what to do if unsafe conditions arose, and provided for clear recognition when an NRC commitment activity was being performed. The inspection team selectively verified that the operational procedures met the requirements and commitments specified in the design documents and the license commitments. The inspection team selectively verified that the

operational procedures for the dry storage cask activities had been approved in accordance with the licensee's administrative programs.

b. Observation and Findings

The operational procedures were detailed and covered the full scope of activities involved in loading, unloading, and fuel transferring. The procedures and their acceptance criteria were verified to have adequately addressed the requirements specified in the TN-68 Dry Storage Cask Safety Analysis Report (SAR) (Rev. 0, 01/23/98), the draft Preliminary Safety Evaluation Report (SER), the draft Certificate of Compliance (CoC) (Certificate No.1072, TN-68 Dry Storage Cask (Revision No. 0)), the licensee's QA program, and Title 10 of the Code of Federal Regulations Part 72 (10 CFR 72). A licensee document, PBAPS Preliminary 10 CFR 72.212 Report (Rev. 1), addressed their review of these requirements and their determination of how compliance had been implemented for each requirement. The document was organized and detailed.

The inspection team selectively verified that the operational procedures for the TN-68 dry storage cask activities had been approved in accordance with the licensee's administrative programs. Document control was in place for approval and issuance of the procedures. The licensee had developed draft procedures by witnessing ISFSI activities at other sites and by internal procedure reviews. The site ISFSI team validated the approved procedures by their trial use during the dry-run evolutions at PBAPS. The licensee used multiple procedures, with sufficient overlap, such that all required major critical activities were addressed. The procedures had a sufficient level of detail, hold points, and sign offs to provide clear instructions to the workers, and contained draft CoC and other licensing requirements associated with the procedures' scope and purpose. Cautionary personnel safety notes were placed in appropriate places in the procedures.

c. Conclusions

The operational procedures for the loading, unloading, and transferring activities associated with the TN-68 cask storage system included the appropriate acceptance criteria and met ISFSI program needs and regulatory requirements. The procedures were highly detailed, and reviewed and approved in accordance with the licensee's administrative program for document control.

E5 Engineering Staff Training and Qualification

E5.1 Training

a. Inspection Scope

The inspection team selectively reviewed the ISFSI training program, materials, and records. The inspection included the criteria to determine which individuals required training, and the draft CoC requirement that training should include an overview, radiological safety issues, off-normal event procedures, and licensing requirements.

Information was gathered through observation of activities, including the dry-run activities, tours of the affected areas, discussions with cognizant personnel, and review and evaluation of procedures and documents.

b. Observation and Findings

Training to comply with the draft CoC's requirement was conducted in three ways:

- Classroom training by the site training organization,
- Hands-on training by the work groups during functional testing of various pieces of ISFSI equipment, and
- Additional hands-on training during the dry-run activities.

For example, the Maintenance training group provided classroom training for hydraulic jacking tower operation, ISFSI overview for cask upending riggers and cask transport operators, ISFSI cask transport operators, TN-68 cask operations, PB refuel platform controls upgrade (MOD P00758), and helium leak detection applications and techniques. This group also conducted job performance measures for ISFSI cask transporter operations and for hydraulic jacking tower operation. The Health Physics (HP) training group conducted classroom training which provided an ISFSI overview to the involved HP personnel. Maintenance personnel received hands-on training during functional testing of ISFSI equipment on the refuel floor. Some hands-on training for helium leak testing took place at the cask fabrication site. And, finally, hands-on training in equipment operation and in radiological controls occurred during the dry-run. The classroom training materials were detailed and thorough. The classroom training attendance was documented. During dry-run activities, personnel who had not yet had hands-on experience received that training. The dry-run activities which were witnessed by the inspection team proceeded without any significant problems.

c. Conclusions

A classroom training program for personnel involved with the dry-run activities was implemented appropriately. Dry-run operations personnel were given specialized training in the equipment and procedures. The training of HP technicians for the radiological aspects of the dry-run evolutions was performed in a thorough manner.

E7 Quality Assurance in Engineering Activities

E7.1 Quality Assurance and Quality Control

a. Inspection Scope

The team assessed Quality Assurance programs and implementation applicable to component fabrication and to the ISFSI dry-run exercise.

b. Observation and Findings

During the entire dry-run exercise, continuous QA oversight coverage was provided. The licensee's inspection coverage started from the beginning of the exercise where the cask was placed on the transporter on the storage pad, and continued through each step of the procedures to the insertion of the cask into the fuel pool. Throughout the exercise, QA staff demonstrated complete familiarity with the numerous procedures that were required for the dry-run and verified inspection points, as required, while the procedures were being implemented.

The team reviewed the licensee's implementation of its QA oversight at the fabricator's facility. PECO had an inspector stationed at PCC, who performed an oversight inspection function, including the releasing of hold points and witness points as required by procedure. The team reviewed the procedures and the process that PECO used to institute and release inspection hold points and witness points and found it to be acceptable. For example, the licensee verified PCC Manufacturing Procedure No. MI-83-002, Revision B, which included both PECO and TN notification and witness points. The procedure had a sufficient level of detail, and ample procedure references to convey clear instructions to the workers. PECO's Inspection Point Notification Forms used at PCC provided evidence of formal acknowledgments and release by QA.

c. Conclusions

QA's involvement in the dry-run was thorough and complete.

IV. PLANT SUPPORT

R1 Radiological Protection and Chemistry Controls

R1.1 Health Physics Support

a. Inspection Scope

The inspection team selectively reviewed health physics (HP) planning and preparation, radiation work permits (RWPs), the potential radiological hazards identified, and the radiological controls to be implemented for the TN-68 dry storage cask loading, unloading, and transferring activities. Information was gathered through observation of activities, including the dry-run activities required by the draft CoC, tours of the affected areas, discussions with cognizant personnel, and review and evaluation of procedures and documents.

b. Observation and Findings

An HP group supervisor was assigned and involved with this project from its early stages. More recently, several HP technicians were assigned to this project. Specific radiological hazards were identified in HP procedures, SF-420, "HP Requirements During Spent Fuel Cask Loading and Transport Operations," and SF-490, "Health Physics Requirements During Spent Fuel Cask Unloading and Transport Operations." An RWP containing the radiological controls to be implemented was available. In addition, a procedure had been developed to implement the requirement for a cask

surface dose rate program, as described in the draft CoC's Technical Specification 5.2.3. A cask diagram annotated with expected dose rates for a loaded cask was prepared for pre-job HP briefings during the dry-run activities. The pre-job HP briefings for work crews were conducted during the dry-run activities. The RWP stated that hot particle controls would be implemented in addition to the routine radiological contamination controls, and described the radiation monitoring and alarm systems involved in the various evolutions. In accordance with 10 CFR 72.212(b)(6), the licensee documented a review of their HP program to determine if its effectiveness would be decreased by the ISFSI operation. The team determined that the onsite activities involved with the operation and maintenance of the ISFSI would be adequately controlled under current site HP-related Technical Specifications and procedures.

Offsite dose calculations, for the annual dose equivalent to any real individual beyond the controlled area during normal operations, were available. Based on those calculations, the 10 CFR 72.212 evaluation stated that up to 17 casks could be stored on the pad without exceeding the limits in 10 CFR 72.104(a) and the draft CoC's Technical Specification 5.2.3. This estimate for the allowed number of stored loaded casks was based on the use of the currently-selected dry storage cask and its shielding design, the ISFSI pad location, and the pad's physical configuration and surroundings.

c. Conclusions

The licensee's plans and preparations for controlling radiological activities for the ISFSI were extensive and detailed. A specific radiation work permit included appropriate radiological controls and a review was conducted to maintain dose as low as is reasonably achievable (ALARA). A health physics supervisor and several technicians were dedicated to the ISFSI project. They were actively involved with the dry-run activities, provided pre-job briefings, and projected radiation conditions to the ISFSI work staff.

V. MANAGEMENT MEETINGS

X1 Exit Meeting Summary

The inspectors presented the results of the inspection to members of licensee management on March 10, 2000. The licensee acknowledged the findings presented.

X3 Management Meeting Summary

The NRC staff met with representatives of PECO on January 28, 2000. The purpose of the meeting was to provide the NRC with an overview of the plans for the ISFSI dry-run, prior to the inspection. Attachment (2) to this Inspection Report is a copy of the handouts provided by PECO at the meeting, and Attachment (3) is a list of attendees at the meeting.

LIST OF ATTACHMENTS

Attachment 1 - Partial List of Persons Contacted, Acronyms, PECO Documents Reviewed

Attachment 2 - Handouts Provided by PECO During Meeting on January 28, 2000

Attachment 3 - Personnel Attending the January 28, 2000 Meeting

ATTACHMENT 1

Partial List of Licensee Personnel Contacted:

Paul Rau, Project Manager
John Dent, Manager-NMD Technical Staff
John Anthony, Manager-Reactor Services
Mike Weidman, Manager-Engineering Design Change
Dave Foss, Radwaste
Joe Brozonis, Engineering
Bill Bianco, NMD Engineering
Brain Kozeimchak, NMD Engineering

Tare Neider - TransNuclear

List of Acronyms Used:

ALARA	as low as is reasonably achievable
CCTAS	Core Component Transfer Authorization Sheet
CoC	Certificate of Compliance
ECR	engineering change request
HP	health physics
IP	NRC Inspection Procedure
ISFSI	independent spent fuel storage installation
NRC	Nuclear Regulatory Commission
PBAPS	Peach Bottom Atomic Power Station
PCC	Precision Components Corporation
PECO	PECO Energy
PORC	Plant Oversight Review Committee
Rev.	Revision
QA	Quality Assurance
SAR	Safety Analysis Report
TN	TransNuclear, Inc.

Documents Reviewed:

SF-100, Independent Spent Fuel Storage Process Control Program, Rev. 2, 01/26/00
SF-101, Control of the Independent Fuel Storage Safety Analysis Report and 10 CFR 72.212 Report, Rev. 2, 02/08/00
SF-102, Independent Spent Fuel Storage Installation Change Reviews, Rev. 2, 02/03/00
SF-110, ISFSI Vendor Document Reviews, Rev. 0, 12/23/98
SF-130, Rock Run Creek Crossing Control, Rev. 1, 12/27/99
SF-140, Independent Spent Fuel Storage Training Program Plan, Rev. 1, 01/20/00
SF-200, ISFSI Upending Equipment Operations, Rev. 0, 02/09/00
SF-210, Preparation for A Independent Spent Fuel Storage Campaign, Rev. 0, 02/24/00
SF-220, Spent Fuel Cask Loading and Transport Operations, Rev. 1, 03/04/00
SF-230, ISFSI Transporter Operations, Rev. 0, 02/10/00
SF-240, Lift Beam Assembly Operating Instructions, Rev. 0, 02/29/00
SF-250, Varian 979-70 Helium Leak Detector Operations and Calibration, Rev. 0, Effective Date 02/25/00
SF-290, Spent Fuel Cask Transport and Unloading Operations, Rev. 0, 03/02/00
SF-300, TN-68 Cask Spent Fuel Assemblies Storage Selection and Document Requirements, Rev. 1, 02/09/00
SF-420, HP Requirements During Spent Fuel Cask Loading and Transport Operations, Rev. 0, 02/25/00
SF-490, Health Physics Requirements During Spent Fuel Cask Unloading and Transport Operations, Rev. 0, 02/26/00
SF-500, Pre-Operational Testing and Training Exercise for the TN-68 Cask, Rev. 0, 03/02/00
SF-600, ISFSI Upender Frequent and Periodic Maintenance Inspection, Rev. 0, 02/10/00
SF-630, ISFSI Transporter Periodic Maintenance and Inspection, Rev. 0, 02/10/00
SF-631, ISFSI Transporter Frequent Maintenance Inspection, Rev. 0, 02/09/00
SF-900, ISFSI Abnormal Condition Response, Rev. 0, 02/25/00
SF-910, Spent Fuel Cask Leakage Location Determination, Rev. 0, 02/25/00
SF-930, Independent Spent Fuel Storage Activities During a Plant Emergency, Rev. 0, 02/25/00
A-C-023, Plant Evolution/Special Test (PEST) Program, Rev. 2, 02/16/00
A-C-033, Nuclear Generation Group Process for Verification of Quality, Rev. 4
A-C-079, Procedure Adherence and Use, Rev. 1, 06/30/94
ST-W-071-201-2, ISFSI Cask Ambient Temperature Verification, Rev. 0, 02/29/00
ST-W-071-601-2, ISFSI Cask Drying, Backfill, and Leak Tests, Rev. 0, 02/29/00
ST-H-071-801-2, ISFSI Cask Surface Dose Rate and Contamination, Rev. 0, 02/25/00

ATTACHMENT 2

Handouts Provided by PECO During Meeting on January 28, 2000

ATTACHMENT 3

PECO Energy

Brian Kozemchak, Campaign Coordinator
Bill Bianco, LSRO/Fuel Handling Lead
Steve Kohlbus, Rad Protection Lead Support
Jeff Heyne, Transporter
Jeff Hart, I&C (Pressure Switches)
Wayne Trump, Security
Wayne Emberger, Training
Joe Brozonis/Paul Kester, Engineering
Mike Holmes, Reactor Engineering & Fuel Pool
Dave Foss, Program/Procedure Support
Terry Stone, Work Management
Pat Navin, Ops Contact
Mark Fry, Chemistry
Cathie Hardee, Decon
Bill Heckman, Quality Assurance
Jerry Phillabaum, Licensing
Bob Cairns, Store Room

PECO Management Review Team

Paul Rau
Brian Kozemchak
Bill Eckman
Dave Foss
Jim Hearn
Steve Hess
Fred Crosse

United States Nuclear Regulatory Commission

Lawrence T. Doerflein, Chief Systems Branch, DRS
Joseph E. Carrasco, ESB, Team Leader, Engineering ISFSI, DRS
John R. McFadden, Radiation Safety and Safeguards Branch, DRS
Mary J. Ross-Lee, Project Manager, SFPO, NMSS
Blake Welling, Resident Inspector