June 7, 2002

Mr. John Skolds
President and CNO
Exelon Nuclear
Exelon Generation Company, LLC
4300 Winfield Road
5th Floor
Warrenville, IL 60555

SUBJECT: LIMERICK GENERATING STATION - NRC INSPECTION REPORT 50-352/02-03, 50-353/02-03

Dear Mr. Skolds:

On May 11, 2002, the NRC completed an inspection at your Limerick Generating Station Units 1 and 2. The enclosed report documents the inspection findings which were discussed on May 15, 2002, with Mr. R. Braun and other members of your staff.

This inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed procedures and records, observed activities, and interviewed personnel.

Based on the results of this inspection, the inspectors identified two issues of very low safety significance (Green). These issues were determined to involve violations of NRC requirements. However, because of their very low safety significance and because they have been entered into your corrective action program, the NRC is treating these issues as Non-Cited Violations, in accordance with Section VI.A.1 of the NRC's Enforcement Policy. If you deny these non-cited violations, you should provide a response with the basis for your denial, within 30 days of the date of this inspection report, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Region I; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, D.C. 20555-0001; and the NRC Resident Inspector at the Limerick facility.

Immediately following the terrorist attacks on the World Trade Center and the Pentagon, the NRC issued an advisory recommending that nuclear power plant licensees go to the highest level of security, and all promptly did so. With continued uncertainty about the possibility of additional terrorist activities, the Nation's nuclear power plants remain at the highest level of security and the NRC continues to monitor the situation. This advisory was followed by additional advisories, and although the specific actions are not releasable to the public, they generally include increased patrols, augmented security forces and capabilities, additional security posts, heightened coordination with law enforcement and military authorities, and more limited access of personnel and vehicles to the sites. The NRC has conducted various audits of your response to these advisories and your ability to respond to terrorist attacks with the capabilities of the current design basis threat (DBT). On February 25, 2002, the NRC issued an

Order to all nuclear power plant licensees, requiring them to take certain additional interim compensatory measures to address the generalized high-level threat environment. With the issuance of the Order, we will evaluate Exelon's compliance with these interim requirements.

In accordance with 10 CFR 2.790 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 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 by
Donald J. Florek
Acting For/

Mohamed Shanbaky, Chief
Projects Branch 4
Division of Reactor Projects

Docket Nos: 50-352; 50-353
License Nos: NPF-39; NPF-85

Enclosure: Inspection Report 50-352/02-03, 50-353/02-03

Attachment 1: Supplemental Information

cc w/encl: Senior Vice President, Mid-Atlantic Regional Operating Group
President and CNO, Exelon Nuclear
Senior Vice President - Nuclear Services
Vice President - Mid-Atlantic Operations Support
Chairman, Nuclear Safety Review Board
Director - Licensing, Mid-Atlantic Regional Operating Group
Vice President - Licensing and Regulatory Affairs
Site Vice President - Limerick Generating Station
Plant Manager, Limerick Generating Station
Regulatory Assurance Manager - Limerick
Chief - Division of Nuclear Safety
Secretary, Nuclear Committee of the Board
Vice President, General Counsel and Secretary
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Chairman, Board of Supervisors of Limerick Township
Manager, Licensing - Limerick and Peach Bottom
Commonwealth of Pennsylvania

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J. Boska, PM, NRR
Region I Docket Room (with concurrences)

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DATE	06/10/02		06/7/02		06/7/02	

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U.S. NUCLEAR REGULATORY COMMISSION

REGION 1

Docket Nos: 50-352; 50-353

License Nos: NPF-39, NPF-85

Report No: 50-352/02-03, 50-353/02-03

Licensee: Exelon Generation Company, LLC

Facility: Limerick Generating Station, Units 1 & 2

Location: Evergreen and Sanatoga Roads
Sanatoga, PA 19464

Dates: March 31, 2002 through May 11, 2002

Inspectors: A. Burritt, Senior Resident Inspector
B. Welling, Resident Inspector
J. Noggle, Senior Health Physicist
L. Scholl, Senior Reactor Inspector
W. Schmidt, Senior Reactor Inspector
J. Jang, Senior Health Physicist

Approved by: Mohamed Shanbaky, Chief
Projects Branch 4
Division of Reactor Projects

SUMMARY OF FINDINGS

IR 05000352-02-03, IR 05000353-02-03; on 03/31-05/11/2002; Exelon Generation Company; Limerick Generating Station, Units 1 and 2; Radioactive Material Processing and Transportation, Problem Identification and Resolution.

This inspection was conducted by resident inspectors, regional health physicists, and reactor inspectors. The inspection identified two Green findings, which were non-cited violations. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter 0609, "Significance Determination Process" (SDP). Findings for which the SDP does not apply are indicated by "No Color" or by the severity level of the applicable violation. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described at its Reactor Oversight Process website at http://www.nrc.gov/reactors/operating/oversight.html

A. Inspector Identified Findings

Cornerstone: Public Radiation Safety

Green. The inspector identified a non-cited violation of 10 CFR 20.1801 having very low safety significance. On March 11, 2002, Exelon failed to prevent five bags of trash, marked as containing radioactive material and stored in an unrestricted area within the protected area, from being transported to the Pottstown Landfill for disposal. The Pottstown Landfill was not licensed under 10 CFR 61, "Licensing Requirements for Land Disposal of Radioactive Waste," to dispose of radioactive materials.

Exelon's failure to prevent the removal of five bags of radioactive material from the protected area to the Pottstown Landfill for disposal was determined to have very low safety significance using the Public Radiation Significance Determination Process. The finding involved radiation material control but not transportation. Public exposure was not greater than 0.005 rem, and there have not been more than 5 instances of such occurrences in the current inspection period. (Section 2PS2)

Other Activities

Green. The inspector identified a non-cited violation of 10 CFR 30.41 having very low safety significance. On December 21, 2001, Exelon transferred byproduct material to General Electric (GE),Wilmington, North Carolina, an Agreement State licensee, without verifying that GE-Wilmington's license authorized receipt of the type, form, and quantity of byproduct material prior to transfer, in accordance with 10 CFR 30.41, "Transfer of byproduct material," section (c). Exelon transferred 1.28 curies of Kr-85 byproduct material in the form of sealed sources to GE-Wilmington licensee that was only authorized to receive sealed sources in the amount of 0.2 curies.

The nature of this particular finding is not encompassed by any existing cornerstone or Safety Significance Determination Process, but has been reviewed by NRC management and was determined to be a finding having very low safety significance. The inspector determined that there was no actual safety consequence associated with

this condition in that the GE-Wilmington facility was able to appropriately receive, control, repackage, and ship the sealed sources to a licensee authorized to receive such material. (Section 4OA2)

Report Details

Summary of Plant Status

Units 1 and 2 began this inspection period operating at 100% power and remained at or near that power level except for brief periods of planned testing and control rod pattern adjustments.

1. REACTOR SAFETY
Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity [Reactor - R]

1R01 Adverse Weather Protection (71111.01)

a. Inspection Scope

The inspectors toured the spray pond pump house (SPPH), including emergency service water and residual heat removal service water systems, and the circulating water pump house. The inspectors verified the adequacy of summer weather protection for key components. The inspectors discussed a condition report related to summer weather preparations and manual SPPH damper controls with system managers. The inspectors referred to the following documents:

- Condition Report (CR) 104847, Ineffective Corrective Actions for SPPH Damper Issue
- Design Basis Document L-S-08D, Miscellaneous HVAC Systems
- S81.1.A, Startup of Misc. Structure HVAC systems
- GP 7.1, Summer Weather Preparation and Operation
- GP 7, Cold Weather Preparation and Operation
- Piping and Instrumentation Diagram 8031-M-81
- Design Calculations M-81-27, M-81-10, M-81-28
- PEP I0011282, SPPH Manual Dampers Not Controlled

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment (71111.04)

.1 Partial Walk-downs

a. Inspection Scope

The inspectors performed partial system walk-downs to verify system and component alignment and to note any discrepancies that would impact system operability. The inspectors verified selected portions of redundant or backup systems or trains were available while certain system components were out of service. The inspectors reviewed selected valve positions, general condition of major system components, and electrical power availability. The partial walk-downs included the following systems:

- D11, D12 and D13 emergency diesel generators with the D14 emergency diesel generator in a maintenance overhaul using Procedure S92.9.N, “Routine Inspection of the Diesel Generators”.

- Unit 2 “A” core spray loop, while Unit 2 “B” core spray loop was out of service for planned maintenance using Piping and Instrumentation Diagram 8031-M-52.

b. Findings

No findings of significance were identified.

.2 Complete Risk Important System Walkdown

a. Inspection Scope

The inspectors performed a complete system walkdown of the risk important portions of the emergency service water system to verify that the equipment was properly aligned. The walkdown included reviews of valve positions, major system components, electrical power availability, and equipment deficiencies. The inspectors referred to the following documents:

- Piping and Instrumentation Diagram 8031-M-11
- System Simplified Drawings 011-01 and 011-02
- various maintenance action requests
- Design Basis Document L-S-02, Emergency Service Water System

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05)

a. Inspection Scope

The inspectors toured high risk areas at Limerick Unit 2 to assess Exelon’s control of transient combustible material and ignition sources, fire detection and suppression capabilities, fire barriers, and any related compensatory measures. The inspectors reviewed the respective pre-fire action plan procedures and Section 9A of the Updated Final Safety Analysis Report (UFSAR). The following fire areas were inspected:

- Unit 2, reactor core isolation cooling compartment (fire area 56)
- Unit 2, 4 KV switchgear compartment (fire area 17)
- Unit 2, Class 1E battery room (fire area 10)

b. Findings

No findings of significance were identified.

1R12 Maintenance Rule Implementation (71111.12)

a. Inspection Scope

The inspectors evaluated the follow-up actions for selected system, structure, or component (SSC) issues and reviewed the performance history of these SSCs to assess the effectiveness of Exelon's maintenance activities. The inspectors reviewed Exelon's problem identification and resolution actions, as applicable, for these issues to evaluate whether Exelon had appropriately monitored, evaluated, and dispositioned the issues in accordance with Exelon's procedures and the requirements of 10 CFR 50.65(a)(1) and (a)(2), "Requirements for Monitoring the Effectiveness of Maintenance." In addition, the inspectors reviewed selected SSC classification, performance criteria and goals. The inspectors reviewed the associated maintenance action request and discussed the issue with engineering personnel. The following issue was reviewed:

- (A1365106) Emergency service water valve HV-011-077 exceeded stroke time

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13)

a. Inspection Scope

The inspectors reviewed the assessment and management of selected maintenance activities to evaluate the effectiveness of Exelon's risk management for planned and emergent work. The inspectors compared the risk assessments and risk management actions to the requirements of 10 CFR 50.65(a)(4) and the recommendations of NUMARC 93-01 Section 11, "Assessment of Risk Resulting from Performance of Maintenance Activities." The inspectors evaluated the selected activities to determine whether risk assessments were performed when required and appropriate risk management actions were identified.

The inspectors reviewed scheduled and emergent work activities with work control center planning personnel to verify whether risk management action threshold levels were correctly identified. The inspectors assessed those activities to evaluate whether appropriate implementation of risk management actions were performed in accordance with Exelon's procedures.

The inspectors compared the assessed risk configuration to the actual plant conditions and any in-progress evolutions or external events to evaluate whether the assessment was accurate, complete, and appropriate for the issue. The inspectors performed control room and field walk-downs to verify whether the compensatory measures

identified by the risk assessments were appropriately performed. The selected maintenance activities included:

- D14 emergency diesel generator overhaul
- Unit 2 “B” core spray system outage
- Unit 1 “C” core spray logic system functional test

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

The inspectors reviewed operability determinations that were selected based on risk insights, to assess the adequacy of the evaluations, the use and control of compensatory measures, and compliance with the Technical Specifications. In addition, the inspectors reviewed the selected operability determinations to verify whether the determinations were performed in accordance with Exelon Procedure LS-AA-105, “Operability Determinations”. The inspectors used the Technical Specifications, Updated Final Safety Analysis Report (UFSAR), associated Design Basis Documents, and applicable action request and condition report documents during these reviews. The issue reviewed included:

- (A1365086) Emergency service water piping pin hole leak

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing (71111.19)

a. Inspection Scope

The inspectors observed portions of post-maintenance testing activities in the field to determine whether the tests were performed in accordance with the approved procedures. The inspectors assessed the test’s adequacy by comparing the test methodology to the scope of maintenance work performed. In addition, the inspectors evaluated the test acceptance criteria to verify whether the test demonstrated that the tested components satisfied the applicable design and licensing bases and the Technical Specification requirements. The inspectors reviewed the recorded test data to determine whether the acceptance criteria were satisfied. The maintenance activities reviewed included:

- D14 emergency diesel generator jacket water system
- D14 emergency diesel generator fuel oil system

The inspectors referred to testing procedures and work order documents, including:

- R0839862; Activities 36, 37
- C0200300; Activities 2, 3
- CR 108548, PMT Typo's and Wrong Activity referenced in PMT

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors reviewed and observed portions of following surveillance tests, and compared test data with established acceptance criteria to verify the systems demonstrated the capability of performing the intended safety functions. The inspectors also verified that the systems and components maintained operational readiness, met applicable Technical Specification requirements, and were capable of performing the design basis functions. The observed or reviewed surveillance tests included:

- ST-6-107-640-1, Reactor Vessel Temperature Monitoring
- ST-2-052-103-1, Unit 1 "C" Core Spray Logic System Functional Test
- ST-2-041-434-1, Main Steam Line Flow High; Channels A and C Calibration/ Functional Test

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY
Cornerstone: Public Radiation Safety [PS]

2PS2 Radioactive Material Processing and Transportation (71122.02)

a. Inspection Scope

The most recent radio-chemical radioactive waste stream analyses were reviewed for appropriate use in classifying waste shipments for transport in accordance with 10 CFR 61.55, which included: waste sludge, bead resin, reactor water cleanup sludge, dry active waste, fuel pool dry active waste, oily waste, and control rod drive filter wastes.

On April 24, 2002, the final dewatering verification of processed spent bead resin was observed with respect to the requirements of NRC approved Topical Report STD-R-05-011NP-A, of the ATG mobile dewatering process; radwaste resin dewatering procedure RW-429, Rev. 7; 10 CFR Parts 61, and 71 and 49 CFR Parts 170-189.

The inspector reviewed ten radioactive shipment records for compliance with radwaste shipping procedure RW-C-244; and federal regulations in 10 CFR Parts 20, 61, and 71

and 49 CFR Parts 170-189.

Exelon's oversight of the radwaste transportation program was reviewed and during the previous two years included one quality assurance (QA) surveillance of a radioactive material shipment performed on April 27, 2000 and the QA review of shipper's training records on June 1, 2000. In addition, one shipping self-assessment was performed on February 28, 2002. The above documents were reviewed with respect to the requirement for a comprehensive periodic and independent audit of the radioactive material shipping program as required in 10 CFR 71.137.

The inspector walked down the liquid and solid radwaste processing plant equipment spaces and reviewed them with respect to radwaste processing design descriptions in the Updated Final Safety Analysis Report (UFSAR) Sections 11.2 and 11.4.

The inspector reviewed the onsite radioactive waste oil incineration procedures and records for January 3 through February 28, 2001 waste oil incineration with respect to 10 CFR 20.2004 and Offsite Dose Calculation Manual requirements.

b. Findings

Introduction:

The inspector identified a non-cited violation of 10 CFR 20.1801 having very low safety significance (Green). On March 11, 2002, Exelon failed to prevent five bags of trash, marked as containing radioactive material and stored in an unrestricted area within the protected area, from being transported to the Pottstown Landfill for disposal. The Pottstown Landfill was not licensed under 10 CFR 61, "Licensing Requirements for Land Disposal of Radioactive Waste," to dispose of radioactive materials.

Description:

On March 7, 2002, five bags of trash (contained in yellow plastic bags and marked as containing radioactive materials) were received at the Limerick Station from Exelon's off-site laundry contractor. The bags were received inside the protected area but outside of a radiologically controlled area. Technicians placed the five bags of trash in a pickup truck to transfer them to the Dry Active Waste extension facility (a radiologically controlled area within the protected area) for processing. Due to a human performance error, instead of the intended action to transfer the bags into the Dry Active Waste extension facility, a technician placed these bags into a dumpster. The dumpster was inside the protected area but outside of the radiologically controlled area and was reserved for the disposal of bagged trash and waste materials that were considered to be clean (i.e., non-radioactive).

On March 11, 2002, the dumpster was picked up from the protected area and transferred to the Pottstown Landfill without any further radiological evaluation by Exelon since they assumed that the contents were non-radioactive. When the dumpster was unloaded at the Pottstown Landfill, the landfill operators observed the marked yellow bags and informed Exelon. Upon being informed, Exelon promptly dispatched a team of radiation protection personnel to the landfill. The radiation protection personnel

surveyed the dumpster, the bags, and the immediate vicinity. They determined that all bags were intact and there was no spread of contamination in the vicinity. The highest localized contact radiation level on any of the bags was determined to be no greater than 0.5 millirem per hour. Subsequently, the material was returned to Limerick for proper disposal in accordance with NRC regulatory requirements.

The estimated potential public radiation exposure from this occurrence was no more than 0.00002 rem. This estimated radiation exposure does not result in any actual public health and safety consequence.

Analysis:

Exelon's failure to prevent the transport of five bags of radioactive material from the protected area to the Pottstown Landfill for disposal is considered a performance deficiency since Exelon's radioactive material control program is expected assure that radioactive materials stored in controlled or unrestricted areas are secure from unauthorized removal in accordance with 10 CFR 20.1801. Traditional enforcement does not apply because the issue did not have any actual safety consequence or potential for impacting the NRC's regulatory function and was not the result of any willful violation of NRC requirements or Exelon's procedures. The finding was considered more than minor in that the issue was associated with the radioactive material release attribute of the Public Radiation Safety cornerstone and affected the objective of this cornerstone in that failure to prevent the bags of radioactive material from unauthorized removal allowed an unintended radioactive material release into the public domain.

Exelon's failure to prevent the removal of these five bags of radioactive material from the protected area was determined to have very low safety significance (Green) using the Public Radiation Significance Determination Process. The finding was determined to involve radiation material control not transportation. Public exposure was not greater than 0.005 rem, and there have not been more than 5 instances of such occurrences in the current inspection period.

Enforcement:

10 CFR 20.1801, "Security of stored material," requires licensees to secure radioactive materials, that are stored in controlled or unrestricted areas, from unauthorized removal or access. Contrary to the above between March 7 - 11, 2002, Exelon failed to secure five bags of trash, marked as containing radioactive material and stored in an unrestricted area, (outside of the radiological control area but within the protected area) from unauthorized removal in accordance with 10 CFR 20.1801. Consequently, on March 11, 2002, the bags were inadvertently transported to the Pottstown Landfill for disposal. The Pottstown Landfill is not licensed under 10 CFR 61, "Licensing Requirements for Land Disposal of Radioactive Waste," to dispose of radioactive materials. Exelon documented this occurrence in Condition Report 98759. Because this violation was of very low safety significance and Exelon entered this finding into its corrective action program, this violation is being treated as a Non-Cited Violation (NCV), consistent with Section VI.A of the NRC Enforcement Policy. **(NCV 50-352; 50-353/02-03-01)**

Exelon initiated corrective actions that included increased attention to the receipt and handling of incoming shipments from their laundry contractor and the requirement to survey every dumpster leaving Limerick's protected area. Exelon's is also reviewing several long term corrective actions that include plans to centralize the various satellite locations of the laundry handling facility and improve the labeling and identification of onsite waste receptacles. The underlying cause was personnel error relative to the inadvertent deposit of the bags of radioactive material in a waste container reserved for the disposal of non-radioactive materials.

The determination of this finding results in closure of the following previously identified unresolved inspection item:

URI 50-352; 50-353/02-02-01 Radioactive waste transferred to a local landfill.

2PS3 Radiological Environmental Monitoring Program (REMP) (71122.03)

.1 REMP Inspection

a. Inspection Scope

The inspector reviewed the following documents to evaluate the effectiveness of Exelon's REMP. The requirements of the REMP were specified in the Technical Specification/Offsite Dose Calculation Manual (TS/ODCM):

- the 2000/2001 Annual REMP Reports, including selected analytical data for 2002 REMP samples;
- the most recent ODCM (Revision 20, August 1999) and technical justifications for ODCM changes, including sampling locations;
- the most recent calibration results (acceptance criteria contained in Safety Guide 23, Onsite Meteorological Programs) of the primary and backup meteorological monitoring instruments for wind direction, wind speed, and delta temperature, as listed in Tables I3.1-1 and I3.1-2 of the ODCM;
- Availability of the meteorological monitoring instruments from January 1, 2001 to April 30, 2002;
- the most recent calibration results for all five TS required air samplers;
- implementation of the environmental thermoluminescent dosimeters (TLDs) program;
- annual training records for REMP sample collectors;
- Exelon's Quality Control evaluation of the interlaboratory comparison program and the corrective actions for any deficiencies;
- Condition Report Nos. 88894, 88929, 105103, and 105150, and corrective actions;
- 2002 REMP Self-assessment;
- the 2001QA audit (NOSA-KS-01-4Q) for the REMP/ODCM implementations and the contractor laboratory audit;
- the Land Use Census procedure and the 2000/2001 results, and
- associated REMP procedures, including vendor's analytical procedure (analysis of iodine-131 in milk samples).

The inspector also toured and observed the following activities to evaluate the

effectiveness of Exelon's REMP.

- charcoal cartridge and filter sampling techniques;
- surface water sampling techniques (grab and automatic water samples); and
- walkdown for determining whether air samplers, milk farms, and 25%TLDs were located as described in the ODCM (including control and indicator stations) and for determining the equipment material condition.

b. Findings

No findings of significance were identified.

.2 Radioactive Material Control Program

a. Inspection Scope

The inspector reviewed the following documents and observed Exelon activities to ensure that Exelon's surveys and controls were adequate to prevent the inadvertent release of licensed material to the public domain.

- the methods used for control, survey, and release from the Radiologically Controlled Area;
- the most recent calibration results for the radiation monitoring instrumentation (small articles monitor, SAM-9), including the (a) alarm setting, (b) response to the alarm, (c) the sensitivity, and (d) alarm failure rate;
- the use of SAM-9 by Exelon;
- the most recent calibration results for the gamma measurement system to use the material control program;
- Exelon's criteria for the survey and release of potentially contaminated material;
- associated procedures and records to verify for the lower limits of detection; and
- Condition Report Nos. 89777 and 99677 and corrective actions.

The review was against criteria contained in 10 CFR 20, NRC Circular 81-07, NRC Information Notice 85-92, NUREG/CR-5569, Health Position Data Base (Positions 221 and 250), and Exelon's procedures.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES [OA]

4OA1 Performance Indicator Verification (71151)

The inspectors reviewed the accuracy and completeness of the supporting data for the following Limerick performance indicator:

- Scrams (April 2001 to March 2002)

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems (71152)

.1 Shipping of Radioactive Material

a. Inspection Scope

The inspector reviewed nineteen Condition Reports (CRs) related to the processing and shipping of radioactive material between June 2001 and April 2002 to evaluate Exelon's threshold for identifying and resolving problems in implementing the radioactive material transportation program.

b. Findings

Introduction:

The inspector identified a non-cited violation of 10 CFR 30.41 having very low safety significance (Green). On December 21, 2001, Exelon transferred byproduct material to General Electric (GE),Wilmington, North Carolina, an Agreement State licensee without verifying that GE's license authorized receipt of the type, form, and quantity of byproduct material prior to transfer, in accordance with 10 CFR 30.41, "Transfer of byproduct material," section (c). Exelon transferred 1.28 curies of Kr-85 byproduct material in the form of sealed sources to GE-Wilmington that was only authorized to receive sealed sources in the amount of 0.2 curies.

Description:

On November 20, 2001, Limerick received a shipment of contaminated fuel inspection equipment, including 5 sealed sources from GE-Vallecitos, California. The records for the shipment documented the contaminated equipment and five individual source sheets. On December 21, 2001, Limerick shipped the contaminated fuel inspection equipment and the 5 sealed sources to GE-Wilmington, North Carolina, an Agreement

State licensee. The shipping records from Limerick indicated the contaminated equipment and only one sealed source, totaling 0.0695 curies. Upon receipt at the GE-Wilmington facility, GE-Wilmington determined that the shipment actually contained 5 sealed sources, totaling 1.28 curies; and that the actual total activity of the shipment was 1.34 curies. The five sealed sources had a total activity of 1.28 curies, an amount of activity that exceeded the conditions of the Agreement State license which limited sealed source activity to 0.2 curies. GE-Wilmington notified the State of North Carolina and Limerick Station of this condition. Subsequently, GE-Wilmington repackaged and shipped the material to the GE-Vallecitos facility, a facility that was licensed to receive this material.

Analysis:

The transfer of byproduct material from Limerick to GE-Wilmington in excess of GE-Wilmington's license is considered a performance deficiency since it represents an occurrence that was contrary to NRC regulatory requirements that pertain to the proper handling and control of radioactive materials. Traditional enforcement does not apply because the issue did not have any actual safety consequence or potential for impacting the NRC's regulatory function, and was not the result of any willful violation of NRC requirements or licensee procedures. The finding was considered more than minor because it caused GE-Wilmington to be in violation of its Agreement State license. The nature of this particular finding is not encompassed by any existing cornerstone or Safety Significance Determination Process. Although the finding is not suitable for Significance Determination Process evaluation, it was reviewed by NRC management and determined to be a finding having very low safety significance (Green). The inspector determined that there was no actual safety consequence associated with this condition in that the GE-Wilmington facility was able to appropriately receive, control, repackage, and ship the sealed sources to a licensee authorized to receive such material.

Exelon initially identified this matter in Condition Report (CR) 89954 on January 11, 2002. The CR indicated that the GE-Wilmington byproduct material license authorized the receipt of up to 10 curies of contaminated tools and equipment. Accordingly, the CR was closed on January 17, 2002, indicating that the shipment was correct (except that the incorrect amount of radioactivity was specified in the shipping documentation) and indicated the determination that GE-Wilmington was authorized to receive this material. The inspector identified that Exelon failed to determine that the GE-Wilmington Agreement State license contained a license condition for sealed sources that limited its receipt to no more than 0.2 curies of activity in the form of sealed sources. Exelon had failed to effectively verify that GE-Wilmington was authorized to receive the type, form, and quantity of material that was to be shipped. Upon this recognition, Exelon reopened Condition Report 89954 to correct the initial determination and initiate effective corrective actions, including improvement to procedures and practices for verifying that the transferee's license authorizes the type, form, and quantity of byproduct material to be transferred.

Enforcement:

10 CFR 30.41, "Transfer of byproduct material," section (c), requires licensees to verify

that the transferee's license authorizes the receipt of the type, form, and quantity of byproduct material to be transferred before actually transferring the byproduct material to a licensee, including an Agreement State licensee. On December 21, 2001, Exelon transferred byproduct material to GE-Wilmington, an Agreement State licensee, without verifying that GE-Wilmington's license authorized receipt of the type, form, and quantity of byproduct material prior to transfer, in accordance with 10 CFR 30.41(c). Consequently, Exelon transferred 1.28 curies of byproduct material in the form of sealed sources to General Electric in Wilmington, North Carolina, an Agreement State licensee that was only authorized to receive sealed sources in the amount of 0.2 curies. Exelon documented this occurrence in Condition Report 89954. Because this violation was of very low safety significance and Exelon entered this finding into its corrective action program, this violation is being treated as a Non-Cited Violation (NCV), consistent with Section VI.A of the NRC Enforcement Policy. **(NCV 50-352; 50-353/02-03-02)**

Exelon's planned corrective actions include improvement to procedures and practices for verifying that the transferee's license authorizes the type, form, and quantity of byproduct material to be transferred.

.2 Selected Issue Follow-up Inspection - Safety Related Inverter Failures

a. Inspection Scope

The inspectors performed an in-depth review to verify that Exelon has taken appropriate corrective actions for a design error that resulted in the failure of inverters utilized to provide 120 Vac electrical power for control and indication functions in various safety systems. This issue was selected for inspection based on the risk significance of the safety systems (reactor core isolation cooling, high pressure coolant injection, and emergency core cooling system logic) which use the inverters and the occurrence of a momentary ground on the 250 volt DC bus that had resulted in simultaneous inverter failures.

The inspectors reviewed Exelon's actions to determine if they had adequately addressed the following attributes:

- Complete, accurate and timely identification of the problem;
- Evaluation and disposition of operability and reportability issues;
- Consideration of previous failures, extent of condition, generic or common cause implications;
- Prioritization and resolution of the issue commensurate with the safety significance;
- Identification of the root and contributing causes of the problem; and,
- Identification and implementation of corrective actions commensurate with the safety significance.

b. Findings

No findings of significance were identified.

.3 Selected Issue Follow-up Inspection - Water Intrusion into the Emergency Diesel Generator Fuel Oil Storage Tanks

a. Inspection Scope

The inspectors reviewed Exelon's evaluation of problems associated with water intrusion into the emergency diesel generator (EDG) fuel oil storage tanks as the result of rain water backup and overflow from the fuel oil storage tank access pit. In 1989 water backed up through the plant drain system and into a fuel oil storage tank with subsequent intrusion into an EDG's fuel oil day tank during the EDG operation. The most recent occurrence was in July 2001, when Exelon identified water in the D-12 EDG fuel oil storage tank above that allowed by the tank water/sediment collection sump. This occurrence was documented in NRC inspection report 50-352/01-12 and 50-353/01-12. Water did not enter the D12 fuel oil day tank because the water level in the fuel oil storage tank was below the fuel oil transfer pump suction point. The inspectors also reviewed Exelon's corrective actions to determine if they addressed the identified causes and were completed or scheduled commensurately with the significance of the problem.

The inspectors reviewed Exelon's evaluation documented in CR 61223 and in LER 2001-01. Exelon issued a Licensee Event Report (LER) because the surveillance test that had been performed to test for water in the fuel oil storage tank had not been successful at identifying the water.

b. Findings

No findings of significance were identified.

The inspectors concluded that Exelon's evaluation of the July, 2001, fuel oil storage tank water intrusion identified the likely causes and the corrective actions taken appeared to address these likely causes. Exelon's evaluation also identified that the corrective actions to earlier occurrences of water intrusions into the fuel oil storage tank pits and subsequently into a fuel oil storage tank had not been fully effective at preventing re-occurrence.

4OA6 Meetings, Including Exit

.1 Exit Meetings

The inspectors presented the inspection results to Mr. Braun and other members of station management on May 15, 2002.

The regional inspectors presented the results of radiological protection inspections to members of Exelon management at the conclusion of the inspections on April 26 and on May 10, 2002.

The inspectors asked Exelon whether any materials examined during the inspections should be considered proprietary. No proprietary information was identified.

Attachment 1 SUPPLEMENTAL INFORMATION

a. Key Points of Contact

Exelon Generation Company

R. Braun	Plant Manager
E. Callan	Director - Maintenance
W. Harris	Radiation Protection Manager
W. Levis	Site Vice President
C. Mudrick	Director - Engineering
W. O'Malley	Director - Operations
J. Stone	Director - Outage Management
J. Tucker	Senior Manager - Plant Engineering

b. List of Items Opened, Closed, and Discussed

Closed

50-352; 50-353/02-02-01	URI	Radioactive waste sent to local landfill. (2PS2)

Opened and Closed

50-352; 50-353/02-03-01	NCV	Failure to secure five bags of trash, marked as containing radioactive material and stored in an unrestricted area, from unauthorized removal in accordance with 10 CFR 20.1801. (Section 2PS2)
50-352; 50-353/02-03-02	NCV	Transfer of byproduct material to an Agreement State licensee without verifying that the transferee's license authorized receipt of the type, form, and quantity of byproduct material to be transferred in accordance with 10 CFR 30.41(c). (Section 4OA5)

c. List of Documents Reviewed

Radioactive Shipment Records:

Shipment No.		Shipped
00-109	Contaminated equipment	08/17/00
01-26	Bead resin	02/15/01
01-40	Contaminated metal	03/20/01
01-62	DAW	04/06/01
01-68	Contaminated equipment	04/10/01
01-91	Bead resin	05/03/01
01-134	DAW	08/02/01
01-161	Bead resins	10/04/01
01-185	Contaminated equipment + source	12/21/01

02-08 Powdered resin/sludge 02/12/02

Condition Reports:

10012205, 61087, 61129, 76887, 77460, 74878, 80860, 83173, 87703, 89954, 97644, 98321, 98759, 103503, 103949, 102484, 103952, 104766, 105156

Corrective Action
CR 00061234 Unanalyzed Failure Mode of Inverters
PEP I0012756 Unplanned Limiting Condition for Operation Entered and Unplanned Repair of Inverter
PEP I0012873 Unanalyzed Failure Mode of Inverters

Engineering Change Requests
LG 01-00752 Potential Loss of Fire Safe Shutdown Inverter from DC System Ground

Work Orders
CO198277 E/S X-M1-11008 Remove Ground Wire Per NCR 01-00752
CO198284 E/S X-M1-11007 Remove Ground Wire Per NCR 01-00752
CO198296 Rework E/S X-M1-11011 per Engineering's Direction
CO198293 E/S X-M1-21007 Remove Ground Wire Per NCR 01-00752
CO198301 E/S X-M1-11012 Perform Rewire per NCR 01-00752
CO198355 Rework E/S X-M1-21012 per Engineering's Direction
CO198280 E/S X-M1-11041 Remove Ground Wire per NCR 01-00752

Procedures
M-095-005 Replacement of Station Battery Cells, Rev. 3
NE-CG-964 Failure Modes and Effects Analysis Design Guide, Rev. 1
SE-1-2 Protected Power Source, Rev. 6

Drawings
- E-33 Sheet 1, Rev. 44, Single Line Meter and Relay Diagram - 125/250VDC System Unit 1
- E-33 Sheet 2, Rev. 42, Single Line Meter and Relay Diagram - 125/250VDC System Unit 1
- M-1-E21-1040-E-015 Sheet 1, Rev. 36, Elementary Diagram - Core Spray System Unit 1
- M-1-E21-1040-E-023 Sheet 1, Rev. 11, Elementary Diagram - Core Spray System Unit 2
- M-1-E51-1040-E-005 Sheet 1, Rev. 19, Elementary Diagram - Reactor Core Isolation Unit 1
- M-1-E51-1040-E-030 Sheet 1, Rev. 9, Elementary Diagram - Reactor Core Isolation Unit 2
- M-1-E41-1040-E-004 Sheet 1, Rev. 26, Elementary Diagram - HPCI System Unit 1
- M-1-E41-1040-E-030 Sheet 1, Rev. 11, Elementary Diagram - HPCI System Unit 2
- M-1-C61-1050-E-001 Sheet 1, Rev. 63, Elementary Diagram - Remote Shutdown System Unit 1
- M-1-C61-1050-E-012 Sheet 1, Rev. 24, Elementary Diagram - Remote Shutdown

System Unit 2

d. List of Acronyms

CFR	Code of Federal Regulations
CR	Condition Report
DBT	Design Basis Threat
EDG	Emergency Diesel Generator
GE	General Electric Company
HPCI	High Pressure Coolant Injection
HVAC	Heating, Ventilation, Air Conditioning
LER	Licensee Event Report
LGS	Limerick Generating Station
NCR	Nonconformance Report
NCV	Non-cited Violation
NRC	Nuclear Regulatory Commission
ODCM	Offsite Dose Calculation Manual
QA	Quality Assurance
REMP	Radiological Environmental Monitoring Program
RW	Radwaste
SDP	Significance Determination Process
SPPH	Spray Pond Pump House
TLD	Thermoluminescent Dosimeter
TS	Technical Specification
UFSAR	Updated Final Safety Analysis Report