July 11, 2003

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

SUBJECT: PEACH BOTTOM - NRC SUPPLEMENTAL INSPECTION REPORT NOS. 50-277/03-011 AND 50-278/03-011

Dear Mr. Skolds:

On June 12-13, 2003, the U.S. Nuclear Regulatory Commission (NRC) conducted an emergency preparedness (EP) supplemental inspection at your Peach Bottom Atomic Power Station. The inspection was conducted to assess the evaluation and corrective actions associated with the untimely Alert declaration during the June 2, 2002, carbon dioxide discharge event. This issue resulted in a violation with White significance which was documented in Inspection Report No. 50-277/02-07;50-278/02-07. The enclosed report documents the supplemental inspection findings which were discussed on June 13, 2003, with you and other members of your staff.

The supplemental inspection was conducted to determine if the root and contributing causes of the White finding were understood, to assess the extent of the condition review, and to determine if the corrective actions for risk significant performance issues were sufficient to address causes and to prevent recurrence. To accomplish these objectives, the inspector reviewed your root cause analysis and evaluation of extent of condition and conducted an independent inspection to assess your conclusions. Based on our inspection, we concluded that your staff understood the root and contributing causes of the White finding, adequately assessed the extent of condition, and took adequate corrective actions to address the underlying causes and prevent recurrence.

Given your acceptable performance in addressing the untimely alert declaration issue, the White finding associated with this issue will only be considered in assessing plant performance through the period concluding at the end of the second calendar quarter of 2003, in accordance with the guidance in IMC 0305, “Operating Reactor Assessment Program.”

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 NRC's document system (ADAMS). ADAMS is accessible from the NRC website at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/

Wayne D. Lanning, Director
Division of Reactor Safety

Docket Nos. 50-277
50- 278
License Nos. DPR-44
DPR-56

Enclosure: Inspection Report 50-277/03-011 and 50-278/03-011

cc w/encl:
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President and CNO, Exelon Generation Company, LLC
Senior Vice President, Operations Support
Vice President, Mid-Atlantic Operations Support
Senior Vice President, Nuclear Services
Site Vice President, Peach Bottom Atomic Power Station
Plant Manager, Peach Bottom Atomic Power Station
Vice President - Licensing
Director, Licensing, Mid-Atlantic Regional Operating Group
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REGION I

Docket Nos:	50-277 50- 278
License No:	DPR-44 DPR-56
Report No:	50-277/03-011 50-278/03-011
Licensee:	Exelon
Facility:	Peach Bottom Atomic Power Station
Location:	Delta, Pennsylvania
Dates:	June 12 - 13, 2003
Inspector:	D. Silk, Senior Emergency Preparedness Inspector
Approved by:	R. J. Conte, Chief Operational Safety Branch Division of Reactor Safety

Enclosure

SUMMARY OF FINDINGS

IR 05000277/03-011 and 05000278/03-011; 06/12-13/2003; Peach Bottom Atomic Power Station; Supplemental Inspection Report - Violation - White significance.

The emergency preparedness (EP) supplemental inspection was performed on site by a region-based inspector. No findings were identified. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 3, dated July 2000.

Cornerstone: Emergency Preparedness

The NRC performed this supplemental inspection in accordance with Inspection Procedure 95001, to assess the licensee's evaluation and corrective actions regarding the delayed Alert declaration during the June 2, 2002, carbon dioxide discharge event. During this inspection, the inspector determined that Exelon performed a comprehensive evaluation of the circumstances contributing to the delayed classification. Exelon's evaluation identified the primary root cause of this issue to be that ERP-101, Classification of Emergencies, was not promptly reviewed to determine the EAL classification because EP training learning objectives for licensed operators for recognizing EALs was inadequate. Other contributing causes were identified. Corrective actions and effectiveness reviews were appropriate.

Given the licensee's acceptable performance in addressing the delayed emergency classification, the White finding associated with this issue will only be considered in assessing plant performance through the period concluding at the end of the second calendar quarter of 2003, in accordance with the guidance in IMC 0305, "Operating Reactor Assessment Program."

REPORT DETAILS

01 INSPECTION SCOPE

History

On June 2, 2002, at 12:31 A.M., an automatic injection of the cardox system occurred in a room located in the Emergency Diesel Generator (EDG) building while the diesel was being operated for testing purposes. Two operators present in the room immediately evacuated the area and reported conditions to the control room. Simultaneously, the control room received a cardox discharge signal. The shift manager (SM) established accountability and secured the area (about 8 minutes from initiating conditions).

The SM then focused on implementing a new administrative procedure (OP-AA-106-101, Significant Event Reporting) for calling a 24-hour duty station manager to begin notifying Exelon senior management of plant conditions. The 24-hour duty station manager could not be reached by telephone nor by pager causing the SM to spend more time implementing this procedure. At the start of the event, the SM did not associate the emergency action level (EAL) contained in ERP-101, Classification of Emergencies, regarding toxic gas, with the discharge of cardox into the EDG Building. Although the event started at 12:31 A.M., the SM did not enter ERP-101 until about 20 minutes later. Once in ERP-101, the SM recognized the applicable EAL but was uncertain as to whether the EAL applied to the entire EDG Building or just part of the building. This resulted in some additional delay in declaring the alert. The shift technical advisor (STA) was not readily available in the control room to assist the SM in classifying the event. (The STA went to the EDG Building to observe the fire brigade. During emergency drills, Exelon routinely utilizes the STA to provide expert technical advice to the SM and assist with the interpretation of the EALs.) After some discussion and clarification, the SM declared an Alert at 1:02 A.M., approximately 31 minutes after this condition was met, based on EAL 8.2.2.b which states “report or detection of toxic gases within Plant Vital Structures in concentrations that will be life threatening to plant personnel.”

In a letter from the NRC to Exelon dated November 26, 2002, the NRC issued a final significance determination (White) and a notice of violation for not properly using the standard emergency classification action level scheme which ultimately delayed the Alert declaration on June 2, 2002, during the cardox discharge event.

Supplemental Inspection Scope

On June 12-13, 2003, the NRC performed a supplemental inspection using Inspection Procedure 95001 to assess Exelon’s evaluation of the issues associated with the delayed emergency classification during the June 2, 2002, cardox discharge event. This performance issue was previously characterized as a White finding in NRC Inspection Report numbers 50-277&278/02-07 and is related to the emergency preparedness (EP) cornerstone in the reactor safety strategic performance area. The objectives of this supplemental inspection are 1) to provide assurance that the root causes and

contributing causes of significant performance issues are understood, 2) to provide assurance that the extent of condition of risk significant issues is identified, and 3) to provide assurance that licensee corrective actions to risk significant performance issues are sufficient to address the root causes and contributing causes, and to prevent recurrence.

02 EVALUATION OF INSPECTION REQUIREMENTS

02.01 Problem Identification

a. Determination of who (i.e., licensee, self-revealing, or NRC) identified the issue and under what conditions.

The root cause analysis (RCA) did not specifically address who identified the issue. The RCA was completed on August 7, 2002. In a readiness assessment report prepared for this inspection (signed June 10, 2003), Exelon considered the delayed classification to be self-identified during critiques conducted immediately after the event. Also, Exelon recognized that the Alert classification was untimely and considered it to be an unsuccessful performance indicator opportunity. The inspector concurs with Exelon's recent assessment of the identification of the issue.

b. Determination of how long the issue existed, and prior opportunities for identification.

Due to the nature of the performance issue, its pre-existence cannot be determined. However, Exelon reviewed condition reports (CRs) and corrective actions (CAs) pertaining to mis-classifications during drills. One mis-classification was associated with a toxic gas EAL and another was an over-classification based upon a mis-understanding of an EAL bases (not pertaining to toxic gases). Exelon considered these mis-classifications to have been missed opportunities to revise and provide further training on their EALs. Although the circumstances and issues in these two drills were somewhat different than the June 2, 2002, event, the inspector concurs with Exelon's assessment that additional EAL training could have mitigated the cardox discharge event classification issue.

c. Determination of the plant-specific risk consequences (as applicable) and compliance concerns associated with the issue.

The delayed classification of the Alert had no plant-specific risk consequences (to core damage) due to the nature of the issue. Exelon's investigation RCA (conducted under CR 110334) was classified as a level 1A indicating that the issues involved potential high consequences pertaining to impacting the public. Initially, Exelon's August 7, 2002, root cause report concluded that the associated risk significant planning standards (RSPS) were met because 1) there was no error in recognition of the appropriate classification, 2) state and local agencies were notified within 15 minutes of the

classification, and 3) there was no threat of radiological release to the public. After a regulatory conference on August 23, 2002, the NRC issued a final significance determination of White in a letter dated November 26, 2002. The licensee made no appeal of the final determination. Based upon the readiness assessment report, Exelon recognizes the compliance (timeliness of the classification) and significance of the issue.

02.02 Root Cause and Extent of Condition Evaluation

a. Evaluation of methods used to identify the root causes and contributing causes.

To evaluate this issue, Exelon used the Tap Root method of Event and Causal Flow Chart / Barrier Analysis to determine root cause and contributing causes. The root cause analysis was done in accordance with Exelon Nuclear procedure LS-AA-125, Corrective Action Program (CAP), and T&RM LS-AA-125-1001, Root Cause Analysis Manual. This method included pertinent document reviews and personnel interviews. The investigation evaluated all aspects of the June 2, 2002, cardox discharge event - the cause of the cardox initiation, the delayed Alert classification, and the untimely activation of the technical support center. The investigation was performed by a nine-person team, one of whom had emergency preparedness experience. The team leader was trained in RCA methods.

b. Evaluation of the level of detail of the root cause investigation.

The licensee's root cause evaluation identified a root cause for the delayed classification, as well as, several contributing causes. The root cause was that ERP-101 was not promptly reviewed by shift personnel to determine EAL classification because EP training learning objectives for licensed operators for recognizing EALs was inadequate. The contributing causes included the fact that EAL declaration is a knowledge based decision, the crew did not focus on EAL assessments, the EAL basis was unclear if the EAL applied to one or all or the diesel generator rooms, and corrective actions from mis-classification during drills missed EAL training opportunities. The inspector concurred with Exelon's assessment of the causes and the level of detail of the RCA.

c. Consideration of prior occurrences of the problem and knowledge of prior operating experience.

Exelon's evaluation included a review of the corrective action system for similar events to determine if repetitive problems had been identified at Peach Bottom Station. There were three instances at Peach Bottom involving EAL classification issues during drills. (There were no classification issues at the site during actual events.) The licensee determined that corrective actions for these three issues were not broad enough to establish effective actions to address the root cause of these instances. An industry-wide operating experience (OE) search was performed by Exelon. Sources checked included NRC and INPO. Exelon identified actual carbon dioxide system or discharge events from 1976 to 2001. The inspector determined that the licensee's search for similar prior events was thorough.

d. Consideration of potential common causes and extent of condition of the problem.

Exelon applied its extent of condition review to the entire EP training program. Because the root cause pertained to a training weakness and because the EP training program is not SAT (systems Approach to Training) based, the licensee determined that the EP training program will be reviewed to enhance overall emergency response organization training and not just EAL training. Because of the unique EP-related aspects of this issue, the inspector agreed with Exelon's finding that there were no common causes.

02.03 Corrective Actions

a. Evaluation of the appropriateness of the corrective actions.

Exelon established immediate and long term corrective actions to address the root cause and contributing causes for this issue. Shortly after the event, an informational aid was placed in the control room to assist operators in the recognition of EAL entry conditions. This aid was removed after EAL training had been conducted for the operators and procedural cues were incorporated to prompt users to refer to the EALs during off-normal events. The corrective action for the root cause was to perform a systematic review of EAL training for those responsible for making emergency classifications. Effectiveness reviews for this corrective action were to measure the ability of personnel to recognize non-standard EAL entry conditions (conditions beside those associated with the fission product barriers) during simulator exercises. The corrective actions for the contributing causes included revising station procedures to prompt users to consider implementing ERP-101, and to review and revise EALs and the bases to enhance clarity.

The inspector concluded that corrective actions were appropriate.

b. Evaluation of the prioritization of the corrective actions.

The inspector determined that immediate and long term corrective actions were appropriately prioritized and given reasonable due dates. (Many had already been completed as of the date of this inspection.) This issue was screened as a 1A significance / classification per licensee procedure.

c. Establishment of schedule for implementing and completing the corrective actions.

The inspector determined that the licensee's schedule for implementing and completing the corrective actions was adequate. Many of the corrective actions had been completed before this inspection, such as EAL training and procedural modifications. Outstanding items pertaining to broad programmatic reviews of the EP program.

d. Establishment of quantitative or qualitative measures of success for determining the effectiveness of the corrective actions to prevent recurrence.

The inspector reviewed the corrective action effectiveness review for corrective actions completed for the RCA. Prior to this inspection, Exelon performed an assessment of the corrective actions associated with the cardox discharge event. The corrective actions were graded on completeness and thoroughness of supporting documentation. Items receiving low grades resulted in additional condition reports for further action.

Furthermore, the EP department, with the support of the operations training department, had just completed a series of simulator drills with non-standard EAL entry conditions. Personnel responsible for making classifications made the appropriate classifications during these drills.

03 MANAGEMENT MEETINGS

Exit Meeting Summary

The inspector presented the inspection results to Mr. R. West, Site Vice President, and other members of licensee management, on June 13, 2003, at the conclusion of the inspection. The licensee acknowledged the findings presented.

The licensee did not indicate that any of the information presented at the exit meeting was proprietary.

Attachment 1

SUPPLEMENTAL INFORMATION

Key Points of Contact

Licensee Personnel:

D. Foss	Regulatory Assurance
A. Coppa	Emergency Preparedness Manager
S. Sullivan	Shift Manager

NRC Personnel:

A. McMurtray	Senior Resident Inspector

List of Items Opened, Closed, and Discussed

Opened: None

Closed:

AV 50-277;50-278/02-07-02	White. Exelon's operation crew did not properly use the standard emergency classification and act level scheme as per 10CFR50.54 (q), 10CFR50.47(b)(2) and (4).

Discussed: None

List of Documents Reviewed

Root Cause Investigation (Condition Report 110334)
Emergency Preparedness NRC Inspection Readiness Assessment, June 10, 2003
OP-AA-106-101, Significant Event Reporting, Rev 1
OP-AA-106-101-1001, Event Response Guidelines, Rev 1, 2
OP-AA-106-101-1002, Exelon Nuclear Issues Management, Rev 2
Emergency Preparedness Training Lesson Plan, PEPP-6010, Rev 5
OJT Qualification Manual, Emergency Director, PEPP-6110, Rev 1
Emergency Plan Training; Assess, Classify and Notify; Module S-5, Rev 1
AR 00061207, Misclassification of an Event During EP Drill
AR 00061007, Site Area Emergency Declared During Training Drill
AR 00110334, CARDOX Injection in E3 EDG Room During Surveillance Testing
AR 00161469, CR#110334 evaluation some responses less than adequate
AR 00100813, Ineffective Management Oversight of 2/14/02 Drill / Critique

List of Acronyms

CA	Corrective Action
CR	Condition Report
EAL	Emergency Action Level
EDG	Emergency Diesel Generator
EP	Emergency Preparedness
NRC	Nuclear Regulatory Commission
OE	Operating Experience
RCA	Root Cause Analysis
SAT	Systems Approach to Training
SM	Shift Manager
STA	Shift Technical Advisor