

June 5, 2008

Mr. Charles G. Pardee
Chief Nuclear Officer (CNO) and Senior Vice President
Exelon Generation Company, LLC
Chief Nuclear Officer (CNO)
AmerGen Energy Company, LLC
200 Exelon Way
Kennett Square, PA 19348

SUBJECT: PEACH BOTTOM ATOMIC POWER STATION - NRC EVALUATED
EMERGENCY PREPAREDNESS EXERCISE – INSPECTION REPORT NO.
05000277/2008502 and 05000278/2008502

Dear Mr. Pardee:

On April 28, 2008, the United States Nuclear Regulatory Commission (NRC) completed an inspection of the 2008 evaluated emergency preparedness exercise at your Peach Bottom Atomic Power Station (PBAPS), Units 2 and 3. The enclosed inspection report documents the inspection results, which were discussed on April 28, 2008, with Mr. M. Massaro and other members of your staff.

The 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 selected procedures and records, observed activities, and interviewed personnel.

The report documents one NRC-identified finding of very low safety significance (Green). This finding was determined to involve a violation of NRC requirements. However, because of the very low safety significance and because it is entered into your corrective action program, the NRC is treating the finding as a non-cited violation (NCV) consistent with Section VI.A.1 of the NRC Enforcement Policy. If you contest the NCV in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the NRC, ATTN: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, Region I; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at the PBAPS.

C. Pardee

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Sincerely,

/RA/

James A. Trapp, Chief
Plant Support Branch 1
Division of Reactor Safety

Docket Nos: 50-277, 50-278
License Nos: DPR-44, DPR-56

Enclosures: Inspection Report 05000277/2008502 and 05000278/2008502
w/Attachment: Supplemental Information

C. Pardee

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cc w/encl:

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R. Ayers, Deputy Mgr, Harford County Div of Emergency Operations
E. Crist, Harford County Div of Emergency Operations
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R. Brooks, Cecil County Dept of Emergency Services
Mr. & Mrs. Dennis Hiebert, Peach Bottom Alliance
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J. Johnsrud, National Energy Committee, Sierra Club
Mr. & Mrs. Kip Adams
R. Fletcher, Dir, MD Environmental Program Manager, Radiological Health Program
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U.S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket Nos.: 50-277, 50-278

License Nos.: DPR-44, DPR-56

Report No.: 05000277/2008502 and 05000278/2008502

Licensee: Exelon Generation Company, LLC

Facility: Peach Bottom Atomic Power Station (PBAPS), Units 2 and 3

Location: Delta, Pennsylvania

Dates: April 21-28, 2008

Inspectors: S. Barr, Sr. Emergency Preparedness Inspector, DRS, Region I (Lead)
D. Silk, Sr. Operations Engineer, DRS, Region I
R. Cureton, Emergency Preparedness Inspector, DRS, Region I
R. Rolph, Health Physicist, DRS, Region I
M. Brown, Peach Bottom Resident Inspector, DRP, Region I

Approved by: James A. Trapp, Chief
Plant Support Branch 1
Division of Reactor Safety

Enclosure

SUMMARY OF FINDINGS

IR 05000277/2008-502, 05000278/2008-502; 04/21-28/2008; Peach Bottom Atomic Power Station (PBAPS), Units 2 and 3; Exercise Evaluation; Emergency Action Level and Emergency Plan Changes; Emergency Preparedness Performance Indicators.

This was an announced inspection conducted by four region-based inspectors and one resident inspector. One Green non-cited violation (NCV) was identified. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process" (SDP). Findings for which the SDP does not apply may be Green or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4, dated December 2006.

Cornerstone: Emergency Preparedness

A. NRC-Identified and Self-Revealing Findings

Green. A NRC-identified non-cited violation (NCV) of 10 CFR 50.47(b)(9) and 10 CFR Part 50, Appendix E, Section IV.B, was identified for failure of the licensee's dose assessment program to provide for the means for continually assessing the impact of the release of radioactive materials. The licensee's procedures limited the use of the dose assessment procedure and program to only those conditions in which the fuel clad barrier was considered lost or potentially lost. The licensee entered the issue into their corrective action program and immediately corrected their procedures.

This finding is greater than minor because it is associated with the Emergency Response Organization Performance attribute and affected the objective of the Emergency Preparedness Cornerstone to ensure that the licensee is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. In accordance with the Emergency Preparedness Significance Determination Process, this finding is of very low safety significance because licensee expectations and training have, despite the procedural limitations, resulted in licensee personnel performing dose assessments across the full range of reactor events, and the procedure deficiencies did not degrade the risk significant planning standard, nor did they adversely affect the outcome of protecting the health and safety of the public. (Section 1EP1)

B. Licensee-Identified Violations

None.

REPORT DETAILS

1. REACTOR SAFETY

Cornerstone: Emergency Preparedness (EP)

1EP1 Exercise Evaluation (71114.01 – 1 Sample)

a. Inspection Scope

Prior to the April 23, 2008, emergency preparedness exercise, the NRC inspectors conducted an in-office review of the exercise objectives and scenario, which Exelon had submitted to the NRC, to determine if the exercise would test major elements of the Peach Bottom emergency plan as required by 10 CFR 50.47(b)(14). This overall exercise inspection activity represented the completion of one sample on a biennial cycle.

The exercise evaluation consisted of the following review and assessment:

- The adequacy of Peach Bottom's performance in the biennial full-participation exercise regarding the implementation of the risk-significant planning standards (RSPS) described in 10 CFR 50.47(b)(4), (5), (9), and (10), which are: emergency classification; offsite notification; radiological assessment; and, protective action recommendations, respectively.
- The overall adequacy of Peach Bottom's emergency response facilities with regard to NUREG-0696, "Functional Criteria for Emergency Response Facilities," and Emergency Plan commitments. The facilities assessed were the Control Room Simulator, Technical Support Center (TSC), and Emergency Operations Facility (EOF).
- A review of other performance areas, such as: the emergency response organization's (ERO's) recognition of abnormal plant conditions; command and control; intra- and inter-facility communications; prioritization of mitigating activities; utilization of repair and field monitoring teams; interface with offsite agencies; staffing and procedure adequacy; and, the overall implementation of the emergency plan and its implementing procedures.
- A review of past performance issues from the last NRC exercise inspection report and Peach Bottom's EP drill reports, to determine the effectiveness of licensee corrective actions as demonstrated during the April 23 exercise and to ensure compliance with 10 CFR 50.47(b)(14).
- The licensee's post-exercise critiques, to evaluate Peach Bottom's self-assessment of its ERO performance during the April 2 exercise and to ensure compliance with 10 CFR 50, Appendix E, Section IV.F.2.g.

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The inspectors reviewed the documents listed in the attachment to this report.

b. Findings

Introduction: The inspectors identified a Green non-cited violation associated with emergency preparedness planning standard 10 CFR 50.47(b)(9), as well as the requirements of 10 CFR Part 50, Appendix E, Paragraph IV.B, for the failure of station procedures to provide for dose assessment performance before the loss or potential loss of the fuel clad barrier.

Description: 10 CFR 50.47(b)(9) requires adequate methods, systems, and equipment for assessing and monitoring actual or potential offsite consequences of a radiological emergency condition are in use. 10 CFR 50, Appendix E, Section IV.B, requires that the means to be used for determining the magnitude of, and for continually assessing the impact of, the release of radioactive materials be described. NUREG-0654/FEMA-REP-1, Section II.I, specifies evaluation criteria by which the staff, in the absence of a licensee proposed alternative, evaluates the licensee's compliance with planning standard 50.47(b)(9). This section states that each licensee have methods and techniques for determining: (1) the source term of releases of radioactive material; (2) the magnitude of the release based on plant parameters and effluent monitors; and, (3) the relationship between these releases and onsite and offsite exposures and contamination.

The inspectors identified a performance deficiency involving a failure of Exelon's dose assessment procedures to provide for dose projections before the declaration of a loss or potential loss of the fuel clad. Specifically, procedure EP-MA-110-200, Dose Assessment, Step 4.2.1.2, stated that "If Loss or Potential Loss of Fuel Clad per Emergency Action Levels (EALs) has not been declared then DO NOT use DAPAR to perform dose projections." DAPAR is the Dose Assessment and Protective Action Recommendation program for the Peach Bottom Atomic Power Station, and is the program directed to be used by EP-MA-110-200. The procedural caution to not use DAPAR was placed in the procedure because the current version of DAPAR predicts overly conservative dose rates prior to the loss of the fuel clad barrier. The inspectors observed during the April 23, 2008, exercise that before the fuel clad barrier had been declared potentially lost, a plant release was in progress while radiation readings in the Unit 2 drywell exceeded 600 rad/hour. The licensee dose assessment team did not present any dose projections to offsite agencies, citing compliance with EP-MA-110-200. During the licensee critique process, the inspectors determined that the licensee dose assessment team had in fact conducted dose assessments and projections throughout the exercise.

The week following the emergency exercise, the inspectors solicited and received information from Exelon related to past drill and exercise performance of their ERO related to performance of dose assessments and projections. The inspector reviewed drill reports and data for annual exercises and quarterly drills, from January 2007 through March 2008. The inspectors determined that the Exelon dose assessment teams routinely performed dose assessments and made dose projections throughout

Enclosure

the range of plant conditions during the drills, the over-conservatism of DAPAR before fuel clad loss notwithstanding. Following the identification of the issue, the licensee entered the concern into their corrective action process and made timely changes to the EP-MA-110-200 procedure.

Analysis: The inspectors determined that the failure of the licensee's program to provide for dose assessments and projections before fuel clad barrier failure occurred was a failure to comply with risk significant planning standard function 10 CFR 50.47(b)(9) and was more than minor because it affected the Emergency Response Organization Performance attribute of the Emergency Preparedness Cornerstone to ensure that the licensee is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency.

The inspectors assessed the finding using Inspection Manual Chapter (IMC) 0609, Appendix B, Emergency Preparedness Significance Determination Process, and determined the finding to be of very low safety significance. IMC 0609, Appendix B, Sheet 1, "Failure to Comply" and Section 4.5 of Appendix B were used to reach this determination. Using IMC 0609, Appendix B, Sheet 1, the failure to comply with 10 CFR 50.47(b)(9) was a risk-significant planning standard (RSPS) problem, but it was not a RSPS functional failure. Due to Exelon's organizational expectations, drill acceptance criteria, and historical drill performance, the inspectors determined the RSPS function had not been degraded, and the finding was of very low safety significance (Green). The procedure deficiencies did not affect the outcome of protecting the health and safety of the public.

Enforcement: 10 CFR 50.47(b)(9) requires that "Adequate methods, systems, and equipment for assessing and monitoring actual or potential offsite consequences of a radiological emergency condition are in use."

10 CFR Part 50, Appendix E, Section IV.B states, in part, "The means to be used for determining the magnitude of and for continually assessing the impact of the release of radioactive materials shall be described..."

Contrary to the above, the Peach Bottom dose assessment capability and the associated dose assessment procedures did not provide for a continuous assessment and monitoring of the impact of the offsite radiological release, and was in noncompliance with planning standard 10CFR50.47(b)(9) and the requirements of Appendix E to Part 50. Because this finding is of very low safety significance, and because it was entered into the licensee's corrective action program (Issue Report 772773), this violation is being treated as an NCV, consistent with Section VI.A of the NRC Enforcement Policy: NCV 05000277 & 278/2008502-01, Failure of the Peach Bottom Dose Assessment Program to Meet the Requirements of 10CFR50.47(b)(9).

1EP4 Emergency Action Level (EAL) and Emergency Plan Changes (71114.04 – 1 Sample)**a. Inspection Scope**

Since the last NRC inspection of this program area, Revision 18 of the Exelon Nuclear Standardized Radiological Emergency Plan and Revision 16 of the Peach Bottom Atomic Power Station Emergency Plan Annex were implemented by Exelon. Exelon had determined that in accordance with 10 CFR 50.54(q), that the changes in those revisions resulted in no decrease in effectiveness of the Plans, and that the revised Plans continued to meet the requirements of 10 CFR 50.47(b) and Appendix E to 10 CFR 50. The inspectors reviewed all EAL changes made since June 2007, and conducted a sampling review of other Emergency Plan changes, including changes to lower-tier emergency plan implementing procedures, to evaluate for any potential decreases in effectiveness of the Emergency Plans. However, this review was not documented in a Safety Evaluation Report and does not constitute formal NRC approval of the changes. Therefore, these changes remain subject to future NRC inspection in their entirety.

a. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES (OA)**4OA1 Performance Indicator (PI) Verification (71151 – 3 Samples)****a. Inspection Scope**

The inspectors reviewed data for the Peach Bottom EP PIs, which are: (1) Drill and Exercise Performance (DEP); (2) Emergency Response Organization (ERO) Drill Participation; and, (3) Alert and Notification System (ANS) Reliability. The last EP inspection at Peach Bottom was conducted in the second quarter of 2007, so the inspectors reviewed supporting documentation from EP drills and tests from the second, third, and fourth calendar quarters of 2007, and the first quarter of 2008, to verify the accuracy of the reported PI data. The review of these PIs was conducted in accordance with NRC Inspection Procedure 71151, using the acceptance criteria documented in NEI 99-02, "Regulatory Assessment Performance Indicator Guidelines," Revision 5.

This inspection activity represented the completion of three samples on an annual cycle.

b. Findings

No findings of significance were identified.

4OA6 Meetings, Including Exit

On April 28, 2008, the inspectors presented the results of this inspection to Mr. M. Massaro, the Peach Bottom Plant Manager, and other members of the Peach Bottom staff. No proprietary information was provided to the inspectors during this inspection.

ATTACHMENT

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

K. Kemper, Exelon Corporate Emergency Preparedness Director
J. Karkoska, Exelon Corporate Emergency Preparedness Manager
G. Jardel, Peach Bottom Emergency Preparedness Manager

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

None

Opened/Closed

05000277&278/2008502-01	NCV	Failure of the Peach Bottom Dose Assessment Program to Meet the Requirements of 10CFR50.47(b)(9) (Section 1EP1)
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Closed

None

LIST OF DOCUMENTS REVIEWED

Section 1EP1: Exercise Evaluation

Exelon Nuclear Standardized Radiological Emergency Plan (Revision 18)
PBAPS Radiological Emergency Plan Annex (Revision 16)
PBAPS Emergency Plan Implementing Procedures
PBAPS April 23, 2008, Emergency Exercise Scenario Package
PBAPS Emergency Preparedness Drill Reports, January 2007 – March 2008
Issue Reports written for the April 23, 2008, exercise:
IR 767296, IR 767298, IR 767501, IR 767531, IR 767587, IR 767659,
IR 767667, IR 768504, IR 768506, IR 768512, IR 768514

Section 1EP4: Emergency Action Level and Emergency Plan Changes

Procedure EP-AA-120-1001, 10 CFR 50.54(q) Change Evaluation (Revision 4)
Procedure CC-AA-10, Configuration Control Process Description (Revision 4)
Procedure CC-AA-102, Design Input and Configuration Change Impact Screening (Revision 15)
Procedure LS-AA-104, Exelon 50.59 Review Process (Revision 5)
10 CFR 50.54(q) Reviews, Performed June 2007 – March 2008

Section 40A1: Performance Indicator Verification

Procedure EP-AA-125-1001, EP Performance Indicator Guidance (Revision 5)
Procedure EP-AA-125-1002, ERO Performance – Performance Indicator Guidance
(Revision 4)
Procedure EP-AA-125-1003, ERO Readiness - Performance Indicator Guidance
(Revision 6)
Procedure EP-AA-125-1004, Emergency Response Facilities & Equipment - Performance
Indicator Guidance (Revision 4)
DEP PI data, April 2007 - March 2008
ERO Drill Participation PI data, April 2007 - March 2008
Public Notification System PI data, April 2007 - March 2008

LIST OF ACRONYMS

ANS	Alert and Notification System
CFR	Code of Federal Regulations
DAPAR	Dose Assessment and Protective Action Recommendation
DEP	Drill and Exercise Performance
EAL	Emergency Action Level
EOF	Emergency Operations Center
EP	Emergency Preparedness
ERO	Emergency Response Organization
NCV	Non-cited Violation
NRC	Nuclear Regulatory Commission
PBAPS	Peach Bottom Atomic Power Station
RSPS	Risk Significant Planning Standard
SDP	Significance Determination Process
TSC	Technical Support Center