

March 16, 2001

Mr. Oliver D. Kingsley  
Chief Nuclear Officer  
Exelon Generation Company  
1400 Opus Place  
Downers Grove, IL 60515-5701

SUBJECT: PEACH BOTTOM ATOMIC POWER STATION - NRC INSPECTION REPORT  
05000277/2001-002, 05000278/2001-002

Dear Mr. Kingsley:

On February 17, 2001, the NRC completed an inspection at the Peach Bottom Atomic Power Station. The enclosed report documents the inspection results which were discussed on March 7, 2001, with Mr. Jay Doering and other members of your staff.

This inspection was an examination of 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.

No findings of significance were identified.

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If you have any questions, please contact me at 610-337-5233.

Sincerely,

*/RA/*

Curtis J. Cowgill, Chief  
Projects Branch 4  
Division of Reactor Projects

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

Enclosure: Inspection Report No. 05000277/2001-002 and 05000278/2001-002

Attachments: (1) Supplemental Information  
(2) NRC's Revised Reactor Oversight Process

cc w/encls:  
J. Hagan, Senior Vice President, Nuclear Operations

J. Skolds, Chief Operating Officer  
J. Doering, Vice President, Peach Bottom Atomic Power Station  
G. Johnston, Plant Manager, Peach Bottom Atomic Power Station  
J. A. Benjamin, Licensing - Vice President, Exelon Nuclear  
J. A. Hutton, Director, Licensing, PECO Energy Company  
G. Hunger, Chairman, Nuclear Review Board  
P. Chabot, Director, Nuclear Oversight  
A. F. Kirby, III, External Operations - Delmarva Power & Light Co.  
A. A. Winter, Manager, Experience Assessment  
J. W. Durham, Sr., Senior Vice President and General Counsel  
H. C. Kresge, Manager, External Operations, Connectiv  
N. J. Sproul, Manager, Financial Control & Co-Owner Affairs, Connectiv  
R. McLean, Power Plant Siting, Nuclear Evaluations  
D. Levin, Acting Secretary of Harford County Council  
R. Ochs, Maryland Safe Energy Coalition  
J. H. Walter, Chief Engineer, Public Service Commission of Maryland  
Mr. & Mrs. Dennis Hiebert, Peach Bottom Alliance  
Mr. & Mrs. Kip Adams  
Commonwealth of Pennsylvania  
State of Maryland  
TMI - Alert (TMIA)

Mr. Oliver D. Kingsley

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U. S. NUCLEAR REGULATORY COMMISSION  
REGION I

Docket Nos: 05000277  
05000278

License Nos: DPR-44  
DPR-56

Report Nos: 05000277/2001-002  
05000278/2001-002

Licensee: Exelon Generation Company  
Correspondence Control Desk  
P.O. Box 160  
Kennett Square, PA 19348

Facility: Peach Bottom Atomic Power Station Units 2 and 3

Inspection Period: January 1, 2001 through February 17, 2001

Inspectors: A. McMurtray, Senior Resident Inspector  
M. Buckley, Resident Inspector

Approved by: Curtis J. Cowgill, Chief  
Projects Branch 4  
Division of Reactor Projects

## SUMMARY OF FINDINGS

IR 05000277/2001-002, 05000278/2001-002, on 01/01/01-02/17/01; Exelon Generation Company; Peach Bottom Atomic Power Station; Units 2&3. Resident Inspector report.

This report was conducted by resident inspectors. The inspection identified no findings of significance.

The significance of all findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter 0609, "Significance Determination Process" (SDP) (see attachment 2). Findings for which the SDP does not apply are indicated by "no color" or by the severity level of the applicable violation.

## Report Details

### SUMMARY OF PLANT STATUS

#### UNIT 2

Unit 2 operated at approximately 100% power throughout the inspection period except for scheduled power changes to support maintenance activities.

#### UNIT 3

Unit 3 operated at approximately 100% power throughout this inspection period except for scheduled power changes to support maintenance activities.

### **1. REACTOR SAFETY**

#### **Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity**

#### 1R04 Equipment Alignment

##### a. Inspection Scope

The inspectors performed partial walkdowns of the following systems to verify that they were properly aligned for operation. The inspectors verified critical portions of redundant or backup system/trains while a system was out of service. The inspectors reviewed valve positions, electrical power availability, and the general condition of major system components.

- Unit 2 high-pressure coolant injection during reactor core isolation cooling maintenance outage and MO-131 votes testing
- 3A&C high-pressure service water and residual heat removal during 3D high-pressure service water leak repair
- E1, E2, E3, and emergency buses during E4 outage for exhaust repair

The inspectors performed a complete walkdown of the following system to verify that it was properly aligned for operation. The inspectors reviewed valve positions, electrical power availability, and the general condition of major system components.

- Unit 3 high-pressure coolant injection system

##### b. Issues and Findings

No findings of significance were identified.

### 1R05 Fire Protection

#### a. Inspection Scope

The inspectors performed walkdowns of the following plant areas to assess control of transient combustible material and ignition sources, fire detection and suppression capabilities, fire barriers, and any related compensatory measures:

- Unit 3 reactor core isolation cooling room
- Main control room, cable spreading room, and fan room (165' elevation)
- Unit 2 and Unit 3 high-pressure coolant injection rooms

#### b. Issues and Findings

No findings of significance were identified.

### 1R11 Licensed Operator Requalification

#### a. Inspection Scope

The inspectors observed the following to identify deficiencies and discrepancies in training, and to evaluate licensed operator performance and evaluator's critiques:

- A crew simulator exercise, including emergency action level classification for emergency preparedness
- Licensed operator classroom training

#### b. Issues and Findings

No findings of significance were identified.

### 1R12 Maintenance Rule Implementation

#### a. Inspection Scope

The inspectors interviewed appropriate facility personnel and reviewed documentation to determine whether the selected systems met maintenance rule requirements with respect to: scoping, risk significance, performance criteria, goals, characterization of failures, and corrective action programs. The following systems were reviewed for Units 2 and 3.

- Standby gas treatment
- 4 KV emergency electrical buses

#### b. Issues and Findings

No findings of significance were identified.

### 1R13 Maintenance Risk Assessment and Emergent Work Evaluation

a. Inspection Scope

The inspectors reviewed Exelon's risk evaluation and contingency plans for selected planned and emergent work activities to verify that appropriate risk evaluations were performed and to assess the licensee's management of overall plant risk. The inspectors attended planning meetings and discussed the risk management aspect of the activities with operators, maintenance personnel, system engineers, and work coordinators for the following issues:

- 2A residual heat removal full flow test valve (MO-2-10-34A) yoke crack indications
- E4 emergency diesel generator exhaust manifold repair
- Station blackout modification work

b. Issues and Findings

No findings of significance were identified.

1R14 Personnel Performance During Non-Routine Plant Evolutions

a. Inspection Scope

The inspectors reviewed the performance of operations personnel in response to the following non-routine evolution:

- Unit 3 low pressure turbine intercept valve #5 clamp installation

b. Issues and Findings

No findings of significance were identified.

1R15 Operability Evaluations

a. Inspection Scope

The inspectors reviewed four operability evaluations to ensure that the required Technical Specification actions were satisfied and the component or system remained available so that no unrecognized increase in risk occurred. The inspectors discussed the evaluations with cognizant engineering personnel and control room supervisors. The following evaluations were reviewed:

- Standby gas treatment B train with reactor building damper failure
- 3B core spray automatic depressurization system pressure switch snubber slow response
- 3D High pressure service water pinhole leak
- 2A residual heat removal full flow test valve (MO-2-10-34A) yoke crack indications

b. Issues and Findings

No findings of significance were identified.

1R16 Operator Work-Arounds

a. Inspection Scope

The inspectors verified that Peach Bottom personnel had identified degraded or non-conforming conditions, which would complicate the operation of plant equipment and would be compensated for by operator action. The inspectors also verified that Peach Bottom personnel had identified these conditions at an appropriate threshold and had incorporated them into the corrective action program.

b. Issues and Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing

a. Inspection Scope

The inspectors reviewed and observed portions of the following post-maintenance testing:

- Unit 2 reactor core isolation cooling after maintenance outage
- E4 emergency diesel generator exhaust and modification
- Unit 3 high-pressure service water leak test after code repair near MO-89D
- Unit 3B residual heat removal system after maintenance outage

b. Issues and Findings

No findings of significance were identified.

1R22 Surveillance Testing

a. Inspection Scope

The inspectors reviewed and observed portions of the following surveillance tests, and compared test data with established acceptance criteria to verify the system demonstrated the capability of performing its intended safety functions and its operational readiness.

- E3 Diesel Generator Slow Start and Full Load and IST Test (ST-O-052-213-2, Rev. 13)
- Unit 3 High-Pressure Service Water Pump, Valve and Flow Functional Test, Rev. 8)

b. Issues and Findings

No findings of significance were identified.

**Cornerstone: Emergency Preparedness**1EP6 Drill Evaluationa. Inspection Scope

The inspectors observed two separate simulator-based training evolutions on January 23 and 30, 2001 and an emergency preparedness drill conducted by the licensee on January 24, 2001. The inspectors evaluated the conduct of the drill or training evolutions, the adequacy of the critiques, and compared the licensee's identified weaknesses and deficiencies to those identified by the inspectors. This included determining whether the licensee was identifying any failures to properly make classification declarations for existing conditions, to make appropriate notifications, and to develop appropriate protective action recommendations during the drill or training evolutions.

b. Issues and Findings

No findings of significance were identified.

**4. OTHER ACTIVITIES**4OA1 Performance Indicator Verificationa. Inspection Scope

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

- Unit 2 and Unit 3 reactor core isolation cooling safety system unavailability

b. Issues and Findings

No findings of significance were identified.

#### 4OA3 Event Follow-up

##### .1 (Closed) LER 3-00-002: Primary Containment Isolation when Suppression Chamber Purge and Vent Valves Closed Due to a Spurious Invalid Signal Generated by a Lightning Strike

On December 17, 2000, with Unit 3 at approximately 18% power, a lightning strike caused an isolation of the outboard vent and purge valves to the primary containment suppression chamber. This occurred when a lightning strike caused the failure of a communications circuit board to a main off gas stack radiation monitor which resulted in a spurious invalid signal causing the isolation. Operators reset the isolation, resumed the purge and vent with circuit board repairs and subsequent testing completed the same day. The licensee entered this occurrence into their corrective action program as PEP I0012078. The on-site review of this LER identified no findings of significance.

#### 4OA6 Meetings

##### .1 Exit Meeting Summary

The inspectors presented the results of the inspection to Mr. J. Doering and members of Exelon's management on March 7, 2001. Exelon management acknowledged the findings presented. No proprietary information was identified.

**SUPPLEMENTAL INFORMATION**

**ITEMS OPENED, CLOSED, AND DISCUSSED**

Opened

None

Opened/Closed

None

Closed

3-00-002	LER	Primary Containment Isolation when Suppression Chamber Purge and Vent Valves closed due to a Spurious Invalid Signal Generated by a Lightning Strike.
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**PARTIAL LIST OF PERSONS CONTACTED**

Exelon Generation Company

J. Doering, Site Vice President  
G. Johnston, Plant Manager

## **NRC's REVISED REACTOR OVERSIGHT PROCESS**

The federal Nuclear Regulatory Commission (NRC) recently revamped its inspection, assessment, and enforcement programs for commercial nuclear power plants. The new process takes into account improvements in the performance of the nuclear industry over the past 25 years and improved approaches of inspecting and assessing safety performance at NRC licensed plants.

The new process monitors licensee performance in three broad areas (called strategic performance areas): reactor safety (avoiding accidents and reducing the consequences of accidents if they occur), radiation safety (protecting plant employees and the public during routine operations), and safeguards (protecting the plant against sabotage or other security threats). The process focuses on licensee performance within each of seven cornerstones of safety in the three areas:

<b>Reactor Safety</b>	<b>Radiation Safety</b>	<b>Safeguards</b>
<ul style="list-style-type: none"><li>● Initiating Events</li><li>● Mitigating Systems</li><li>● Barrier Integrity</li><li>● Emergency Preparedness</li></ul>	<ul style="list-style-type: none"><li>● Occupational</li><li>● Public</li></ul>	<ul style="list-style-type: none"><li>● Physical Protection</li></ul>

To monitor these seven cornerstones of safety, the NRC uses two processes that generate information about the safety significance of plant operations: inspections and performance indicators. Inspection findings will be evaluated according to their potential significance for safety, using the Significance Determination Process, and assigned colors of GREEN, WHITE, YELLOW or RED. GREEN findings are indicative of issues that, while they may not be desirable, represent very low safety significance. WHITE findings indicate issues that are of low to moderate safety significance. YELLOW findings are issues that are of substantial safety significance. RED findings represent issues that are of high safety significance with a significant reduction in safety margin.

Performance indicator data will be compared to established criteria for measuring licensee performance in terms of potential safety. Based on prescribed thresholds, the indicators will be classified by color representing varying levels of performance and incremental degradation in safety: GREEN, WHITE, YELLOW, and RED. GREEN indicators represent performance at a level requiring no additional NRC oversight beyond the baseline inspections. WHITE corresponds to performance that may result in increased NRC oversight. YELLOW represents performance that minimally reduces safety margin and requires even more NRC oversight. And RED indicates performance that represents a significant reduction in safety margin but still provides adequate protection to public health and safety.

The assessment process integrates performance indicators and inspection so the agency can reach objective conclusions regarding overall plant performance. The agency will use an Action Matrix to determine in a systematic, predictable manner which regulatory actions should be taken based on a licensee's performance. The NRC's actions in response to the significance (as represented by the color) of issues will be the same for performance indicators as for inspection findings. As a licensee's safety performance degrades, the NRC will take more and increasingly significant action, which can include shutting down a plant, as described in the Action Matrix.

More information can be found at: <http://www.nrc.gov/NRR/OVERSIGHT/index.html>.