

August 30, 2001

Mr. Oliver D. Kingsley  
President and CNO  
Exelon Nuclear  
Exelon Generation Company, LLC  
200 Exelon Way, KSA 3-E  
Kennett Square, PA 19348

SUBJECT: PEACH BOTTOM ATOMIC POWER STATION AND LIMERICK GENERATING STATION - NRC EMERGENCY PREPAREDNESS PROGRAM INSPECTION REPORT 50-277/01-012, 50-278/01-012 AND 50-352/01-013, 50-353/01-013

Dear Mr. Kingsley:

On August 2, 2001, the NRC completed an emergency preparedness (EP) baseline inspection at your Peach Bottom Atomic Power Station, Units 2 & 3 and Limerick Generating Station, Units 1 & 2. In addition, a supplemental inspection was conducted to assess the corrective actions associated with problems identified with the Alert and Notification System (ANS) (offsite sirens) which resulted in a White performance indicator (PI) at the Peach Bottom Atomic Power Station. The enclosed report documents both the EP baseline and supplemental inspection findings which were discussed on August 2, 2001, with Mr. K. B. Cellars and other members of your staff.

The supplemental inspection was conducted to provide assurance that the root causes and contributing causes of the White PI were understood, to assess the licensee's extent of the condition review, and to provide assurance that the corrective actions to 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 supplemental inspection, we concluded that your staff performed a sufficiently broad evaluation of the ANS, and in so doing, addressed the underlying causes of the White ANS Reliability PI. The potential enforcement associated with this issue is addressed by separate NRC correspondence issued on August 15, 2001.

The EP baseline 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 inspector reviewed selected procedures and records, observed activities, and interviewed personnel.

Mr. Oliver D. Kingsley

-2-

Based on the results of the baseline inspection, the inspector identified three issues of very low safety significance (Green) that were determined to involve a violation 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, 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 Inspectors at the Limerick and Peach Bottom Generating Stations.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosures 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 Web site at <http://www.nrc.gov/NRC/ADAMS/index.html> (the Public Electronic Reading Room).

Sincerely,

*/RA/*

Wayne D. Lanning, Director  
Division of Reactor Safety

Docket Nos: 50-277, 50-278  
50-352, 50-353  
License Nos: DPR-44, DPR-56  
NPF-39, NPF-85

Enclosure: Inspection Report Nos. 50-277/01-012, 50-278/01-012 and 50-352/01-013,  
50-353/01-013

Attachment: Supplemental Information

cc w/encl: J. Hagan, Senior Vice President, Mid-Atlantic Regional Operating Group  
J. Cotton, Senior Vice President, Operations Support  
W. Bohlke, Senior Vice President, Nuclear Services  
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, Vice President - Licensing and Regulatory Affairs  
M. Gallagher, Director, Licensing, Mid-Atlantic Regional Operating Group  
G. Hunger, Chairman, Nuclear Review Board  
W. Levis, Vice President - Limerick Generating Station  
R. C. Braun, Plant Manager, Limerick Generating Station  
P. Chabot, Director, Nuclear Oversight  
M. Kaminski, Manager, Regulatory Assurance  
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  
Chief, Division of Nuclear Safety  
Secretary, Nuclear Committee of the Board  
E. Cullen, Vice President, General Counsel  
Correspondence Control Desk  
Commonwealth of Pennsylvania  
State of Maryland  
TMI - Alert (TMIA)

Mr. Oliver D. Kingsley

-4-

Distribution w/encl:

- H. Miller, RA
- J. Wiggins, DRA
- M. Shanbaky, DRP
- S. Barr, DRP
- D. Florek, DRP
- J. Talieri, DRP
- R. Junod, DRP
- A. McMurtray, DRP - NRC Resident Inspector
- A. Burritt, DRP - NRC Resident Inspector
- D. Barss, NRR
- R. Haag, OEDO
- E. Adensam, NRR
- J. Boska, PM, NRR (Backup)
- C. Gratton, PM, NRR
- Region I Docket Room (with concurrences)
- W. Lanning, DRS
- R. Conte, DRS
- N. McNamara, DRS

DOCUMENT NAME: G:\OSB\MCNAMARA\LIMPB2001012013.WPD

After declaring this document "An Official Agency Record" it **will** be released to the Public.

To receive a copy of this document, indicate in the box: "C" = Copy without attachment/enclosure "E" = Copy with attachment/enclosure "N" = No copy

OFFICE	RI/DRS		RI/DRS		RI/DRS/SRA		HQ/NRR		RI/DRP	
NAME	NMcNamara		RConte		JTrapp/JShedlosky		DCoe (RJC for KG for)		MShanbaky	
DATE	08/16/01		08/21/01		08/28/01		08/25/01		08/28/01	
OFFICE	RI/DRS									
NAME	WLanning									
DATE	08/30/01		09/ /01		09/ /01		09/ /01		09/ /01	

OFFICIAL RECORD COPY

U.S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket Nos: 50-277, 50-278  
50-352, 50-353

Report Nos: 50-277/01-012, 50-278/01-012  
50-352/01-013, 50-353/01-013

Licensee: Exelon Generation Company, LLC

Facilities: Peach Bottom Atomic Power Station, Units 2 & 3  
Limerick Generating Station, Units 1 & 2

Locations: Delta, Pennsylvania  
Limerick, Pennsylvania

Dates: July 15-August 2, 2001

Inspector: N. McNamara, Emergency Preparedness Inspector, DRS, RI

Observers: D. Ney, Nuclear Engineering, Pennsylvania Department of  
Environmental Protection (DEP), Bureau of Radiological  
Protection (BRP)  
D. Dyckman, Nuclear Engineering, DEP, BRP

Approved by: Richard J. Conte, Chief  
Operational Safety Branch  
Division of Reactor Safety

## SUMMARY OF FINDINGS

IR 05000277/01-012, IR 05000278/01-012, IR 05000352/01-013, IR 05000353/01-013; on 07/16/2001-08/02/2001; Exelon Generation Company, Peach Bottom Atomic Power Station, Units 1&2, Limerick Generation Station, Units 1&2. Alert and Notification System, Emergency Response Organization Augmentation Testing, Emergency Action Level and Emergency Plan Changes, Correction of Emergency Preparedness Weaknesses and Deficiencies, Performance Indicator Verification, Supplemental Inspection Report - White Performance Indicator.

These EP baseline and supplemental inspections were performed by a region-based inspector. The significance of most findings is indicated by their color (Green, White, Yellow, or Red) using IMC 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/NRR/OVERSIGHT/index.html>.

### A. Supplemental Inspection - White Performance Indicator

#### Cornerstone: Emergency Preparedness

This supplemental inspection was performed by the NRC using inspection procedure 95001, to assess the licensee's evaluation associated with a White Performance Indicator (PI) for the Alert Notification System (ANS) Reliability. In the third quarter of 2000, the PB ANS PI was White (previously Green in the prior quarter). The inspector determined that the licensee had performed a thorough evaluation in response to the PI's change in color. The licensee identified that the change in the PI was due to installed jumper wires, which bypassed failure detection circuitry. The licensee determined that of the 35 sirens, the system had falsely detected 14 operable sirens, if the sirens were actually inoperable. The licensee identified this issue, determined the cause and developed comprehensive corrective actions to address the causes and prevent recurrence. The licensee's root cause evaluation identified the contributing factors to be: (1) a lack of licensee oversight of contractor and utility personnel; (2) failure to enforce contractual requirements; (3) an over reliance on the failure detection system; and (4) inadequate self- assessment. The licensee's corrective actions to prevent recurrence included: (1) training for contractors regarding specification content and methodologies; (2) modification of contract content requirements to specify supervisory oversight; (3) development of guidelines for monitoring contracts concerning work performed independent of direct utility supervision; and (4) development of a siren program manual that will include self- assessment criteria and activities. The inspector determined that the licensee's corrective actions were appropriate and that the ANS Reliability PI had changed from White to Green for the first quarter of 2001.

## B. Baseline Inspection Findings

### Cornerstone: Emergency Preparedness

- Green. The inspector determined that the 2000 EP quality assurance audit failed to evaluate and document the EP staffs' interface problems with State and local governments in accordance with 10 CFR 50.54(t) requirements even though deficiencies were identified.

The finding was considered more than minor because there was a potential impact on public safety in that the offsite agencies are an integral part of the response to a radiological emergency. However, the inspector determined the licensee failed to implement a regulatory requirement which is not considered a failure to meet a planning standard as defined in Appendix B, Manual Chapter 0609. Also, there was no evidence of an actual interface problem affecting response capabilities. Therefore, this finding was determined to be of very low safety significance (Green). The inspector identified this as a non-cited violation for failing to properly document and assess offsite agency concerns as required by 10 CFR 50.54(t).

- Green. The inspector identified that the licensee had not conducted the annual media training for the year 2000 as required per Section 6.1.4 of the licensee's Emergency Response Plan (ERP).

This finding was more than minor because there was a potential impact on public safety in that the information to the general public via the media needs to be disseminated accurately to avoid confusion. However, it was of very low safety significance because, during this time period, the issue was limited in scope, the licensee had conducted the 2000 training in March of 2001, and the issue is viewed as an implementation problem. The inspector identified this as a non-cited violation for the licensee failing to conduct training according to the ERP and as required per 10 CFR 50.54(q) and 10 CFR Part 50, Appendix E.IV.F.1.

- Green. The inspector identified that the licensee had not conducted the annual radiological monitoring drill for the year 2000 which would include the actual collection and analyses of environmental samples as described in the ERP Section 6.2.7.

This finding was more than minor because there was a potential impact on public safety in that the licensee conducts drills or training in order to maintain proficiency in case an actual radiological emergency occurs. However, it was of very low safety significance because there was no evidence of a loss of proficiency for the group of responders and the issue is viewed as an implementation problem. The inspector identified this as a non-cited violation for the licensee not conducting drills according to the ERP and as required per 10 CFR 50.54(q) and 10 CFR Part 50, Appendix E. IV.F.1.

## TABLE OF CONTENTS

	PAGE
SUMMARY OF FINDINGS .....	ii
1. REACTOR SAFETY .....	1
01 Inspection Scope (95001) .....	1
02 Evaluation of Inspection Results .....	1
02.01 Problem Identification .....	1
02.02 Root Cause and Extent of Condition Evaluation .....	3
02.03 Corrective Actions .....	4
1EP2 Alert and Notification System Testing .....	5
1EP3 Emergency Response Organization (ERO) Augmentation Testing .....	6
1EP4 Emergency Action Level (EAL) Revision Review .....	6
1EP5 Correction of Emergency Preparedness Weaknesses and Deficiencies .....	7
4. OTHER ACTIVITIES [OA] .....	9
4OA1 Performance Indicator Verification .....	9
4OA6 Meeting, Including Exit .....	9
Attachment 1: Supplemental Information	



## Report Details

1. **REACTOR SAFETY**  
Cornerstone: Emergency Preparedness

### **SUPPLEMENTAL INSPECTION**

- 01 Inspection Scope (95001)

This supplemental inspection was performed to assess the licensee's evaluation associated with the ANS Reliability White PI for Peach Bottom. The inspector reviewed pertinent corrective action reports, vendor contracts, program procedures, self-assessment reports, a root cause analysis report (PEP I0011714) and an analysis by an independent contractor of the ANS failures on the coverage of the general population around Peach Bottom. In addition, interviews were conducted with various EP personnel, new siren contractors and senior management responsible for correcting or implementing the ANS program. The licensee also provided a demonstration of its testing and maintenance automated tracking system. A list of documents reviewed is attached.

#### Background

Exelon's ANS consists of sirens located in the Berks, Chester, Montgomery, York, Harford, Lancaster and Cecil counties, in both Pennsylvania and Maryland. In September 2000, the licensee discovered that jumper wires, used to mask problems with siren rotation, had been installed on 35 offsite siren boxes which bypassed, in part, failure detection circuitry. This resulted in four (4) sirens around the Limerick Generating Station and ten (10) sirens around the Peach Bottom Atomic Power Plant being detected as operable, when they were not. They also determined that a number of siren testing maintenance records had been falsified by two former contract technicians.

The ANS Reliability PI is determined by dividing the number of successfully scheduled siren tests by the number of sirens (165 at Limerick, 97 at Peach Bottom) tested over a period of four calendar quarters. Data is collected from weekly silent tests and monthly full activation tests. The weekly silent test consists of verifying electrical continuity of the ANS activation circuit via transmission of a test signal through a telephone circuit to each siren. The monthly full activation test verifies proper ANS functioning via sounding of all sirens from their respective county emergency centers. The licensee recalculated the ANS PI data for the third quarter of 2000 and the Limerick PI remained in the Green licensee response band; however, the Peach Bottom PI crossed the Green response band threshold to White.

- 02 Evaluation of Inspection Results

- 02.01 Problem Identification

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

On September 15, 2000, PECO Energy Security informed Nuclear Quality Assurance that there was a report that some sirens around Limerick and Peach Bottom were inoperable for an extended period of time without being detected. The licensee immediately informed the NRC of their concerns, and once they confirmed the placement of the jumper wires, they made 10 CFR 50.72 notifications to the NRC on September 21 and 22, 2001. (ENS Nos. 37361 and 37370)

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

The licensee was not able to precisely determine how long this issue existed because records indicated maintenance work was being routinely performed and testing data from the detection system was unknowingly compromised. The licensee believes they may have missed opportunities for identification dating back to 1995 because they entrusted the program to the subject matter experts. The 1995 contract was maintained by an individual that had no contract management training and there was no independent verification of work performed.

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

The ANS is risk significant to the general public because the counties use the ANS to notify the general public within the Emergency Planning Zone of a radiological emergency. The counties use the detection system to identify inoperable sirens. For areas with inoperable sirens, the county officials may choose to initiate route alerting in which the local fire and police departments would alert the public using various communication methods. The failure of the detection system to provide accurate information to the counties may have resulted in the licensee not meeting a risk significant planning standard 10 CFR 10.47(b)(5) and its related requirements of 10 CFR Part 50, Appendix E, Section IV, which states, in part, "procedures have been established to provide early notification and clear instruction to the populace within the plume exposure pathway Emergency Planning Zone."

The licensee had an independent contractor review the siren problem at Peach Bottom in relation to the effect on public coverage with the sirens that were found inoperable. Due to multiple siren coverage in the Limerick area, the review did not include Limerick. The report concluded that most of the areas covered by the inoperable sirens (within two to five miles) were in low population densities and based on that, regardless of the several siren failures, 95% of the population was covered by adequate alert sound coverage for the Peach Bottom area.

This apparent violation was addressed by separate correspondence from the NRC issued on August 15, 2001.

## 02.02 Root Cause and Extent of Condition Evaluation

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

The licensee used a combination of structured root cause analysis techniques to evaluate this issue, including personnel interviews, documentation reviews, event and causal factor charting and barrier analysis. The root cause analysis was conducted by the Manager-EP using the guidelines delineated in Exelon Procedure No. LR-C-10, "Performance Enhancement Program" and LR-CG-10-1, "Causal Factor, Trend Code Translational Matrix." In addition, the licensee hired an independent contractor to perform an analysis of the effect of the siren failures on the populace coverage within the Emergency Planning Zone around the Peach Bottom Atomic Power Station. The inspector found that the licensee had adequately conducted the root cause analysis in accordance with their procedures.

- b. Level of detail of the root cause evaluation.

The licensee's evaluation was thorough and had a sufficient level of detail. The licensee's root cause report indicated that the primary root cause was the lack of technician oversight by contractor and licensee personnel. Furthermore, the licensee identified that they failed to enforce contractual requirements, had an over reliance on the failure detection system and performed less than adequate self-assessments.

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

The licensee's root cause did not identify any prior occurrences of this problem. However, the licensee stated that they were aware that the EP Siren Analyst had discovered in the 1993-1994 time frame, that a previous contractor had placed a jumper wire on one siren to bypass the detection system to use it for troubleshooting purposes. The EP Siren Analyst told the contractor to remove the wire and instructed him that the practice was unacceptable. The licensee had no knowledge or suspicion that the new contractors hired in 1995 had knowledge of or were using jumper wires.

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

The licensee's evaluation considered the potential for common cause and extent of condition associated with the ANS problem. The licensee determined that the issue of contractor control was not limited to the EP program and had direct impact on plant personnel who routinely used contractors to work independent of licensee supervision. The root cause analysis identified that there is a natural tendency for licensee supervision to "trust" their subject matter expert. This can lead to supervision losing touch with work practices, and in cases, may cause workers to think supervision doesn't care. The lack of oversight allowed the siren contractor to set their own standards or drop their standards over time due to a lack of reinforcement of the correct standards.

Although the root cause analysis did not address an extent of condition review at the Three Mile Island Station, Unit 1 and the Oyster Creek Generating Station, (Exelon part-owned facilities) the EP staff reviewed their siren programs and did not find similar problems to those found at Peach Bottom and Limerick. Both plants have different types of sirens and typically require little maintenance. Three Mile Island's ANS is maintained by a siren contractor and the Oyster Creek's ANS is maintained by station technicians with supervisory oversight. Due to the Limerick/Peach Bottom problem, in October 2000, the EP staff had performed independent verifications of work performed on sirens at both plants and identified no problems that were similar. The licensee's long term correction as described in Section 02.03 of this report extended to the four Exelon sites.

Overall, the licensee's review of the potential causes and extent of condition was thorough.

### 02.03 Corrective Actions

#### a. Appropriateness of corrective actions.

The licensee took immediate corrective actions to assess the adequacy of their siren system. Technicians went to every Limerick and Peach Bottom siren, removed any found jumper wires, tested the operability of the sirens and those found inoperable were immediately fixed and retested. The licensee also conducted daily siren tests and compared them to the detection system printout to verify the accuracy of the system. Following that review, the licensee stated they were confident that the detection system was reliable without the interference of the jumper wires. The root cause analysis identified 22 corrective actions, some of which included:

- Develop a training program for EP "contract owners" for contracts that have work performed independent of utility supervision.
- Nuclear Oversight to develop an oversight program for those cornerstone activities where a contractor has input to the cornerstone results.
- Determine if there are any other systems in EP that fall into the same category and if so, develop program manuals for those systems. (Generic Implications)
- Evaluate the cost effectiveness of changing the computer program to identify no sound as a test failure or set a management expectation that any partial test failures be treated as a siren failure.
- Determine which contracts have work performed without normal licensee supervision and based on that review, conduct assessments of actual work performed versus contractual requirements to assure a similar condition does not exist.
- Provide information to the operating experience coordinators across the fleet to review for applicability to other programs.

- The EP Siren Analyst shall enter into an automated tracking system siren repairs and testing results to establish a history for trending and for continual assessment.
  - Review the need to replace the current siren system.
  - Contractor work will be independently assessed by another contractor on a sample of sirens. EP staff will routinely perform unannounced observations of the contractors performing work.
- b. Prioritization of corrective actions.

Immediate corrective actions were taken with consideration of the risk significance to the general public and to ensure confidence in the operability of the ANS. They were completed within seven days of the discovery of the problem. The licensee's long term actions related to the root and direct causes of the overall evaluation and were appropriately prioritized for completion by March 2001.

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

The inspector determined that the corrective actions had been completed. The completion schedule was reasonable and the licensee met the designated due dates.

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

During the month of October 2000, the licensee sounded sirens on a daily basis to ensure operability and that the detection system was operating as intended. The EP Siren Analyst routinely communicated with the siren contractor to ensure compliance with the contract, routinely evaluated the information, and documented all siren problems for trending purposes. The licensee has performed several unannounced visits to the contractors while they were performing their work. The ANS Reliability PI will be used as the measure of success for Exelon's corrective actions. At the time of this inspection, the ANS Reliability PI was in the Green licensee response band for both the Limerick Generation Station and the Peach Bottom Atomic Power Plant.

### **BASELINE INSPECTION**

#### **1EP2 Alert and Notification System Testing**

##### **a. Inspection Scope**

An onsite review of the licensee's ANS was conducted to ensure prompt notification of the public to take protective actions. The inspector reviewed: (1) the design of the siren system; (2) siren testing data; and (3) maintenance records for correcting siren failures. In addition, the inspector reviewed the following procedures: (1) EP-C-9, "Preventive

Maintenance of Off Site ANS Sirens”; (2) EP-CG-4, “Assessment of the Emergency Alert and Notification ANS Siren Guideline”; and (3) EP-C-10, “Corrective Maintenance of Offsite Alert and Notification System Sirens.” The inspector interviewed both the siren contractors and the licensee’s ANS program manager. As well as, observed a routine maintenance and testing of one of the offsite sirens. The review was conducted in accordance with NRC Inspection Procedure 71114, Attachment 02, and the applicable planning standard, 10 CFR 50.47(b)(5) and its related 10 CFR 50, Appendix E requirements were used as reference criteria.

b. Findings

No findings of significance were identified. (Refer to the supplemental inspection report details of this report which describes ANS problems identified by the licensee in September 2000).

1EP3 Emergency Response Organization (ERO) Augmentation Testing

a. Inspection Scope

An onsite review of the licensee’s ERO augmentation staffing requirements and the process for notifying the ERO was conducted to ensure the readiness of key ERO staff for responding to an event and timely facility activation. The inspector reviewed the licensee’s ERP qualification records for key ERO positions, procedures for initiating ERO call-in and surveillance test records of the automated pager and autodialer notification systems. Also, two augmentation call-in drill reports and a self-assessment report on the adequacy of ERO response during off hours were reviewed to determine if the licensee identified ERO augmentation deficiencies. The review was conducted in accordance with NRC Inspection Procedure 71114, Attachment 03, and the applicable planning standard, 10 CFR 50.47(b)(2) and its related 10 CFR 50, Appendix E requirements were used as reference criteria.

b. Findings

No findings of significance were identified.

1EP4 Emergency Action Level (EAL) Revision Review

a. Inspection Scope

A regional in-office review of revisions to the ERP, implementing procedures and EAL changes was performed to determine that the changes did not decrease the effectiveness of the Plan. The revisions covered the period from January through May 2001. The review was conducted in accordance with NRC Inspection Procedure 71114, Attachment 04, and the applicable requirements in 10 CFR 50.54(q) were used as reference criteria.

b. Findings

No findings of significance were identified.

1EP5 Correction of Emergency Preparedness Weaknesses and Deficiencies

a. Inspection Scope

The inspector reviewed corrective actions identified by the licensee pertaining to findings from drill/exercise reports for 2000 and 2001, regular self-assessments, and from self-revealing problems resulting from surveillances and actual events. Problem reports assigned to the EP Department were also reviewed to determine the significance of the issues and to determine if repeat problems were occurring. In addition, the inspector reviewed Nuclear Oversight's Continuous Assessment Quality Assurance Reports (quarterly assessments) and its audit checklists for 2000 and 2001 to determine if the licensee had met the 10 CFR 50.54(t) requirements and if any repeat issues were identified. This review was conducted according to NRC Inspection Procedure 71114, Attachment 05, and the applicable planning standard, 10 CFR 50.47(b)(14) and its related 10 CFR 50, Appendix E requirements were used as reference criteria.

b. Findings

The inspector determined the 2000 quality assurance audit did not meet the regulatory requirements of 10 CFR 50.54(t). The audit checklist for the fourth quarter of 2000 had documented staffing and training concerns with the licensee's EP program from the Pennsylvania Emergency Management Agency and the county officials located in Pennsylvania. Yet, the county agencies' concerns were not evaluated or documented in the assessment report reviewed by senior management nor entered into the corrective action system for resolution and/or trending. A discussion with the EP staff indicated that while they were aware from their own discussions with the offsite officials of program concerns, they had not seen specific comments documented in the audit checklist. In addition, Nuclear Oversight assessed this area as satisfactory which appeared to be in conflict with the offsite agencies' comments and the licensee's audit procedures.

This is a violation of 10 CFR 50.54(t), which states that an independent audit shall be conducted to evaluate and document the EP staffs' interface with State and local governments and of licensee drills, exercises, capabilities and procedures. Following the guidance of Inspection Manual Chapter 0610\*, Appendix B, this issue was determined to be more than minor because there was a potential impact on public safety in that a potentially inadequate interface (as suggested by licensee audit findings that were not addressed) could affect the integrated responses by the licensee and local officials to a radiological emergency. Inspection Manual Chapter 0609, Appendix B, was used to assess the risk significance of this more than minor finding. The inspector determined the licensee failed to implement a regulatory requirement which is not considered a failure to "meet" a planning standard as defined in Appendix B, Manual Chapter 0609. More specifically, there was no evidence of an actual interface problem affecting response capabilities. Therefore, this finding was determined to be of very low

safety significance (Green) and was entered into the licensee's corrective action system (CR No. 70730). Accordingly, this issue is being treated as a non-cited violation consistent with Section VI.A.1 of the NRC Enforcement Policy (NUREG 1600). **(NCV 50-277/01-012-01, 50-352/01-013-01)**

The inspector identified that the licensee had not conducted the annual media training for 2000 as required per Section 6.1.4 of the licensee's ERP and therefore did not meet the requirements of 10 CFR 50.54(q) and 10 CFR Part 50, Appendix E.IV.F.1.

10 CFR Part 50, Appendix E.IV.F.1 states, in part, that "radiological orientation training shall be made available to local services personnel; e.g., local news media persons" and Section 6.1.4 of the ERP, which states that the licensee "will offer an annual opportunity for news media personnel to become familiar with nuclear energy and emergency planning effort." Following the guidance of Inspection Manual Chapter 0610\*, Appendix B, this issue was determined to be more than minor because there was a potential impact on public safety in that the infrequent media training may result in the information to the general public via the media not being disseminated accurately resulting in public confusion on a radiological emergency. Inspection Manual Chapter 0609, Appendix B, was used to assess the risk significance of this more than minor finding. The inspector determined this issue was of very low safety significance (Green) because, during this time period, the issue was limited in scope, the licensee had conducted the 2000 training in March of 2001 (late for the year 2000), and the issue is viewed as an implementation problem. While this finding was a failure to "meet" a regulatory requirement (Sheet 1, Appendix B, MC 0609) it was considered an implementation problem and not a failure to meet a planning standard. This issue was entered into the licensee's corrective action system (CR No. 61193). Accordingly, the issue is being treated as a non-cited violation consistent with Section VI.A.1 of the NRC Enforcement Policy (NUREG 1600). **(NCV 50-277/01-012-02, 50-352/01-013-02)**

The inspector identified that the licensee had not conducted an annual radiological monitoring drill for 2000, which was to include actual collection and analyses of environmental samples (e.g., air for particulate and iodine, water, and vegetation) as described in the ERP Section 6.2.7.

This is a violation of 10 CFR Part 50, Appendix E.IV.F.1, which states that the training program shall include periodic drills of radiation emergency plans or training to ensure that employees are familiar with their specific emergency response duties. Following the guidance of Inspection Manual Chapter 0610\*, Appendix B, this issue was determined to be more than minor because there was a potential impact on public safety in that infrequent drills may result in a loss of proficiency for radiological monitoring personnel which could adversely affect offsite radiological assessment capabilities. Inspection Manual Chapter 0609, Appendix B, was used to assess the risk significance of this more than minor finding. While this finding was a failure to meet a regulatory requirement, the inspector determined this issue to be of very low safety significance (Green) because there was no evidence of degraded proficiency for technicians who collect and analyze environmental samples as a result of the missed drill or training. However, the inspector determined this issue was an implementation problem and not a failure to "meet" a planning standard (Appendix B, MC 0609). This issue was entered



into the licensee's corrective action system (CR No. 70889) and is being treated as a non-cited violation consistent with Section VI.A.1 of the NRC Enforcement Policy (NUREG 1600). (**NCV 50-277/01-012-03, 50-352/01-013-03**)

#### **4. OTHER ACTIVITIES [OA]**

##### 40A1 Performance Indicator Verification

###### a. Inspection Scope

The inspector reviewed the licensee's procedure for developing the data for the EP PIs which are: (1) Drill and Exercise Performance (DEP), (2) ERO Drill Participation and (3) ANS Reliability. The inspector also reviewed the licensee's drill/exercise reports, training records and ANS testing data for both Limerick and Peach Bottom from July 2000 to 2001 to verify the accuracy of the reported data. The review was conducted in accordance with NRC Inspection Procedure 71151. The acceptance criteria are 10 CFR 50.9 and NEI 99-02, Revision 1, Regulation Assessment Performance Indicator Guideline.

###### b. Findings

There were no findings of significance identified with the Limerick PIs. However, the inspector was not able to evaluate the Peach Bottom DEP data because the documentation used for determining the PI data calculations for several licensed operator requalification training sessions, either was not completed or missing. At the end of this inspection, the licensee was continuing to locate the information to support the reported data. In order to allow the licensee some additional time to locate the information and/or correct the discrepancy, this issue will be treated as an Unresolved Item (**URI 50-277/01-012**) and was entered into the licensee's corrective action system (CR No. 61189).

##### 40A6 Meetings, including Exit

The inspector presented the inspection results to Mr. Cellars, and other licensee personnel, at the conclusion of the inspection on August 2, 2001. The licensee acknowledged the findings presented and agreed with the accuracy of the facts supporting those findings.

## Attachment 1

### SUPPLEMENTAL INFORMATION

#### KEY POINTS OF CONTACT

##### Exelon Generation Company

R. Braun Plant Manager, Limerick  
G. Johnston Plant Manager, Peach Bottom  
W. Jefferson Director, Mid-Atlantic Regional Operating Group (MAROG)  
J. Grisewood Manager - Emergency Preparedness, MAROG  
J. Anderson Emergency Preparedness Senior Specialist, MAROG  
C. Hardee Peach Bottom Emergency Preparedness Coordinator  
R. Mandik Limerick Emergency Preparedness Coordinator  
W. Eckman Peach Bottom, Acting Manager- Nuclear Oversight  
M. Brison Limerick, Assessor - Nuclear Oversight

##### Hake Bogan, Inc. (Contractor)

J. Segner Siren Technician  
A. Votz Siren Technician

##### Pennsylvania Department of Environmental Protection

D. Ney Emergency Preparedness Coordinator, Bureau of Radiological  
Protection (BRP)  
D. Dyckman Emergency Preparedness Coordinator, BRP

##### NRC

A. McMurtray Senior Resident Inspector, Peach Bottom  
A. Burritt Senior Resident Inspector, Limerick  
R. Conte Chief, Operations Safety Branch, Division of Reactor Safety

#### LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

<u>Opened:</u>	NCV	50-277/01-012-01 50-352/01-013-01	Inadequate Resolution 10 CFR 50.54(t) Audit Finding Related to the Interface Between the Licensee and Local Government/Agencies
	NCV	50-277/01-012-02 50-352/01-013-02	Annual Media Training Not Conducted
	NCV	50-277/01-012-03 50-352/01-013-03	Annual Radiological Monitoring Training Not Conducted
	URI	50-277/01-012-01	Peach Bottom DEP PI Could Not Be Verified Due to a Lack of Information

Closed:

None

Discussed:

None

**LIST OF DOCUMENTS REVIEWED\***  
(Not Referenced in Report)

Emergency Plan and Implementing Procedures:

Emergency Plan for Limerick, Units 1&2 and Peach Bottom, Unit 2&3  
 ERP-101 Bases, Technical Basis Manual (Limerick), Rev. 1  
 ERP-101 Bases, Technical Basis Manual (Peach Bottom), Rev. 1  
 ERP-C-1000, Minimum Staffing Positions Necessary to Activate the EOF, Rev. 0  
 ERP-C-1300-5, Determination of Protective Action Recommendations, Rev. 1  
 EP-C-6, Preparation, Conduct and Evaluation of Emergency Response Drills and Exercises,  
 Rev. 4  
 EP-C-9, Siren Preventive Maintenance, Rev. 0  
 EP-C-12, Corrective Maintenance of the Control Stations Associated with the Offsite ANS,  
 Rev. 0  
 EP-C-13, Troubleshooting the Control Stations Associated with the Offsite ANS, Rev. 0

Other Licensee Procedures:

LR-CG-15, Collection of NRC Performance Indicators, Rev. 0  
 LS-AA-125, Corrective Action Program (CAP) Procedure, Rev. 0  
 LS-AA-126, Self Assessment, Rev. 0  
 EP-CF-4, Assessment of the Emergency ANS Guideline, Rev. 0  
 EP-CG-4-1, Siren Data Analysis Check Sheet, Rev. 0  
 EP-CG-4-2, Siren Independent Verification Check Sheet for LGS/PBAS, Rev. 0  
 EP-CG-4-3, Siren Observation Check Sheet, Rev. 0  
 EP-CG-2-3, 10 CFR 50.54(q) Determination Process, Rev. 0  
 EP-CG-3-2, ERO Qualification Checklist, Rev. 0  
 EP-CG-1, Investigation and Evaluation of EP Related Events, Rev. 1  
 NO-AA-200-001-1002, Exelon Nuclear Assessment Handbook Volume 2, April 23, 2001

Miscellaneous Documents:

Root Cause Evaluation Report, PEP I00011714, Inoperable Sirens Around LGS and PBAPS,  
 dated November 21, 2000.  
 Analysis Report, Analysis of Siren Failure on the Alert Coverage of Peach Bottom Nuclear  
 Power Station, Rev. 1, Prepared by Acoustic Technology, Inc., dated December 2000  
 Emergency Preparedness Self Assessment, Readiness Review for NRC Inspections and  
 Effectiveness Review of the Emergency Preparedness Program, dated May 25, 2001  
 Exelon Emergency Response Organization Training Records for Key Personnel  
 White Paper - ERO Augmentation for Limerick and Peach Bottom, dated June 19, 2001

Self-Assessment of Emergency Response Organization Performance at Indian Point Station -  
Year 2000, Rev 0

Self-Assessment of Evaluation of Primary and Alternate Methods for the Notification ERO  
Personnel Based on Lessons-Learned from June 2001 Alert at Cooper Station, dated  
July 5, 2001.

Self-Assessment of the Post Indian Point Unit 2 Event for Peach Bottom  
Master Oversight Plan, Audit Checklist, NO-AA-001-1001, dated April 23, 2001

### **LIST OF ACRONYMS**

ANS	Alert and Notification System
CR	Condition Report
EP	Emergency Preparedness
ERO	Emergency Response Organization
EAL	Emergency Action Level
ERP	Emergency Response Plan
PI	Performance Indicator
DEP	Drill and Exercise Performance
SDP	Significance Determination Process

\* - Does not include all procedures reviewed in preparation for the EP baseline and supplemental inspection.