

July 19, 2002

EA-02-121  
EA-02-142

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

SUBJECT: PEACH BOTTOM ATOMIC POWER STATION - NRC INSPECTION REPORT  
50-277/02-07, 50-278/02-07

Dear Mr. Skolds:

On July 1, 2002, the NRC completed an inspection at the Peach Bottom Atomic Power Station. The enclosed report documents inspection findings that were discussed with Mr. Jay Doering, and other members of your staff on June 25, 2002, and July 1, 2002.

This inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspection consisted of a review of emergency preparedness activities associated with your staff's formal critique of a February 14, 2002, emergency preparedness exercise and your staff's emergency response to the Alert declared at Peach Bottom on June 2, 2002.

Based on the results of this inspection, we identified two preliminary findings of low to moderate safety significance (White). The findings do not present an immediate safety concern. One finding is associated with an inadequate critique of a February 14, 2002, emergency preparedness exercise. The weaknesses and deficiencies observed by the inspector were not identified and discussed during the Exelon critique. These weaknesses and deficiencies were related to the operating crew in the simulator not recognizing conditions or effectively communicating key information needed by the Emergency Director to classify the simulated event as a General Emergency. Emergency classification is a risk significant planning standard. The finding was determined to have low to moderate safety significance, in accordance with Emergency Preparedness Significance Determination Process (MC 0609, Appendix B, Sheet 1), because there was a failure to identify a risk significant planning standard problem during a critique.

The second white finding is associated with the length of time that it took Exelon to declare an Alert emergency classification during an actual event that occurred on June 2, 2002. On that date, the cardox (carbon dioxide) fire suppression system unexpectedly discharged into the E-3 emergency diesel generator room of the Diesel Generator Building. A cardox system discharge into a diesel generator room creates an atmosphere in the room that is life threatening to plant

personnel in the room. Exelon's Alert emergency classification was not timely, (10CFR 50.54, 50.47, and Appendix E require prompt notification) because it occurred 31 minutes after toxic gas was released into the Diesel Generator Building. This finding was determined to have low to moderate safety significance using the Emergency Preparedness Significance Determination Process (MC 0609, Appendix B, Sheet 2) because this finding was associated with the improper implementation of a risk significant planning standard during an actual event.

The failure to effectively critique the February 14, 2002, emergency preparedness exercise is an apparent violation of 10 CFR 50, Appendix E, IV.F.2.g. The failure to make a timely Alert declaration on June 2, 2002, is an apparent violation of 10 CFR 50.54(q), 50.47(b)(4), Appendix E IV.B, and Appendix E IV.D.1. Both apparent violations are being considered for escalated enforcement action in accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions" (Enforcement Policy), NUREG-1600. The current Enforcement Policy is accessible from the NRC Web Site at <http://www.nrc.gov>.

Although both are separate findings that occurred over a period of time, one in a training environment and the other in an actual event, both are related to your staff's apparent difficulty in recognizing conditions that are directly associated with emergency action levels. Both findings also appear to have been related to prior issues contained in your corrective action program.

We believe that we have sufficient information to make our final significance determination for both findings. Nevertheless, you have the opportunity to either request a regulatory conference to discuss your evaluation and any differences with the NRC evaluation of either or both issues, or to send us your position in writing. Please contact Dr. Mohamed Shanbaky at (610) 337-5209 within 7 days of the date of this letter to inform the NRC of your intentions. If we have not heard from you within 10 days, we will continue with our significance determination and enforcement decision, and you will be advised by separate correspondence of the results. Since the NRC has not made a final determination in these matters, no Notices of Violation are being issued at this time. In addition, please be advised that the characterization of the apparent violations described in the enclosed report may change as a result of further review.

In addition, the inspectors identified one issue of very low safety significance (Green). This issue was determined to involve a violation of NRC requirements. However, because of its very low safety significance and because it has been entered into your corrective action program, the NRC is treating this issue as a non-cited violation, in accordance with Section VI.A.1 of the NRC's Enforcement Policy. If you deny any non-cited violation noted in this report, 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 Inspector at the Peach Bottom facility.

John L. Skolds

3

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 Web site at <http://www.nrc.gov/reading-rm/adams.html> (The Public Electronic Reading Room).

If you have any questions please contact me at 610-337-5229.

Sincerely,

*/RA/*

A. Randolph Blough, Director  
Division of Reactor Projects

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

Enclosure: Inspection Report 50-277/02-07, 50-278/02-07

cc w/encl: Senior Vice President, Mid-Atlantic Regional Operating Group  
President and CNO, Exelon Nuclear  
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 and Regulatory Affairs  
Director, Licensing, Mid-Atlantic Regional Operating Group  
Director, Nuclear Oversight  
Regulatory Assurance Manager - Exelon Generation Company, LLC  
Senior Vice President and General Counsel  
D. Quinlan, Manager, Financial Control, PSEG  
R. McLean, Power Plant Siting, Nuclear Evaluations  
D. Levin, Acting Secretary of Harford County Council  
R. Ochs, Maryland Safe Energy Coalition  
Mr. & Mrs. Dennis Hiebert, Peach Bottom Alliance  
Mr. & Mrs. Kip Adams  
R. Janati, Chief, Division of Nuclear Safety  
Vice President, General Counsel and Secretary  
Correspondence Control Desk  
Commonwealth of Pennsylvania  
State of Maryland  
TMI - Alert (TMIA)  
Peach Bottom Township Board of Supervisors  
R. Fletcher, Department of Environment, Radiological Health Program  
J. Johnsrud, National Energy Committee, Sierra Club  
Public Service Commission of Maryland, Engineering Division  
Manager, Licensing - Limerick and Peach Bottom

Distribution w/encl: H. Miller, RA/J. Wiggins, DRA (1)  
 S. Collins, NRR (ridsnrrod)  
 J. Johnson, NRR  
 M. Sykes, NRR  
 D. Dambly, OGC  
 B. Sheron, NRR  
 F. Congel, OE (OEMAIL)  
 S. Figueroa, OE  
 D. Holody, ORA  
 R. Urban, ORA  
 M. Shanbaky, DRP  
 D. Florek, DRP  
 J. Talieri, DRP  
 S. Iyer, DRP  
 R. Junod, DRP  
 A. McMurtray, DRP - NRC Senior Resident Inspector  
 H. Nieh, RI EDO Coordinator  
 S. Richards, NRR (ridsnrrdlpmlpdi)  
 J. Boska, PM, NRR (Backup)  
 C. Gratton, PM, NRR  
 Region I Docket Room (with concurrences)

\* per phone call with D.Nelson (OE)

DOCUMENT NAME: G:\BRANCH4\Peach Bottom\PB0207.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/DRP	RI/DRP	RI/DRP	RI/DRS
NAME	ABurritt /DJF for/	AMcMurtray /DJF for/	MShanbaky /MMS/	RConte /RJC/
DATE	07/13/02	07/13/02	07/16/02	07/10/02
OFFICE	HQS/OE	RI/DRP		
NAME	JLuehman /DJF for/*	ABlough /ARB/		
DATE	07/15/02	07/19/02		

OFFICIAL RECORD COPY

U. S. NUCLEAR REGULATORY COMMISSION  
REGION I

Docket Nos: 50-277, 50-278

License Nos: DPR-44, DPR-56

Report Nos: 50-277/02-07, 50-278/02-07

Licensee: Exelon Generation Company, LLC  
Correspondence Control Desk  
200 Exelon Way, KSA 1-N-1  
Kennett Square, PA 19348

Facility: Peach Bottom Atomic Power Station Units 2 and 3

Location: 1848 Lay Road  
Delta, Pennsylvania

Inspection Period: April 1, 2002 through July 1, 2002

Inspectors: A. Burritt, Senior Resident Inspector  
A. McMurtray, Senior Resident Inspector  
M. Buckley, Resident Inspector  
N. McNamara, Emergency Preparedness Specialist

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

## SUMMARY OF FINDINGS

IR 05000277-02-07, IR05000278-02-07; Exelon Generation Company; on 04/01-07/1/2002; Peach Bottom Atomic Power Station; Units 2 and 3. Drill Evaluation, Event Response

The report covered an inspection by resident inspectors and a regional emergency preparedness specialist. This inspection identified two Preliminary White findings that are apparent violations and one Green finding that is considered a non-cited violation. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter 0609 "Significance Determination Process (SDP)." Findings for which the SDP does not apply 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 3, dated July 2000.

### A. Inspector Identified Findings

#### **Cornerstone: Emergency Preparedness**

- **Preliminary White.** The inspector identified an apparent violation of 10 CFR 50, Appendix E, IV.F.2.g. Exelon's formal critique of the February 14, 2002, emergency preparedness exercise did not identify and correct weaknesses or deficiencies related to event classifications, a risk significant planning standard. The formal exercise critique did not identify weaknesses or deficiencies observed by the inspector that were directly related to being able to classify an event, including when the operating crew did not recognize conditions or effectively communicate key information needed by the Emergency Director to classify a General Emergency. The final exercise critique did not fully evaluate why the exercise response team classified the exercise as a General Emergency based on Emergency Director judgement rather than a General Emergency when reactor water level decreased to below the top of active fuel.

Emergency classification is a risk significant performance standard. Exelon's failure to identify performance deficiencies associated with a risk significant planning standard was determined to be a finding of low to moderate safety significance using Manual Chapter 0609, Appendix B "Emergency Preparedness Significance Determination Process" Sheet 1, Middle Path, Section 4. (Section 1EP6)

- **Preliminary White.** The inspector identified an apparent violation of 10 CFR 50.54(q), 50.47(b)(4), Appendix E IV.B, and Appendix E IV.D.1, because Exelon did not make an Alert emergency classification declaration in a timely manner for an actual event on June 2, 2002. On that date, the cardox (carbon dioxide) fire suppression system unexpectedly discharged into the E-3 emergency diesel generator room of the Diesel Generator Building. A cardox system discharge into a diesel generator room creates an atmosphere in the room that is life threatening to plant personnel. Exelon's Alert emergency classification was not timely (10 CFR 50.54(q), 50.47(b)(4), Appendix E IV.B, and Appendix E IV.D.1 require prompt notification) because it occurred 31 minutes after Exelon's emergency action level for toxic gas release into a plant vital structure was reached. Exelon's emergency response procedure ERP-101, Peach Bottom's emergency action level scheme, did not clearly require Exelon to accomplish emergency classifications in a manner to assure a prompt notification of government officials and,

## Summary of Findings (cont'd)

therefore, the public.

Exelon's failure to make a timely classification during an actual event is associated with a risk significant planning standard (10 CFR 50.47(b)(4)) and determined to be a finding of low to moderate safety significance using Manual Chapter 0609, Appendix B, "Emergency Preparedness Significance Determination Process", Sheet 2. (Section 4OA3)

- **Green.** The inspector identified a non-cited violation of 10 CFR 50.47(b)(2) because during a declared Alert on June 2, 2002, Exelon failed to activate their Technical Support Center (TSC) within 60 minutes as stated in their Nuclear Emergency Plan.

Exelon's failure to activate an emergency facility in a timely manner is associated with a significant planning standard and determined to be a violation of very low safety significance using Manual Chapter 0609, Appendix B, "Emergency Preparedness Significance Determination Process," Sheet 2. (Section 4OA3)



## Report Details

### 1. REACTOR SAFETY

#### Emergency Preparedness [EP]

##### 1EP6 Drill Evaluation

###### a. Inspection Scope

The purpose of this inspection was to review an unresolved item (URI) 50-277;278/02-02-03 pertaining to the adequacy of Exelon's critique of the February 14, 2002, emergency preparedness exercise. The inspector reviewed relevant facts provided by Exelon, including a detailed timeline which included key plant parameters, operator actions, and declarations. Documents reviewed included the drill and exercise performance (DEP) analysis, available player and controller logs, condition reports associated with exercise issues, and the final exercise report issued on March 18, 2002. The inspector also reviewed documents created after the exercise critique was issued including:

- an addendum to the final exercise report
- an event and causal factor analysis and a detailed exercise timeline
- radiological data strip charts and summary sheets
- dose assessment results
- operational data summary sheets and a reactor level strip chart
- ERP-101, "Classification of Emergencies" and the associated bases document
- several position papers prepared by Exelon concerning exercise performance

Following the issuance of the exercise critique report, on March 18, 2002, the inspector met with Exelon's staff to discuss the scenario timeline and to understand the facts related to the crew's performance. The inspector reviewed this information to determine if weak or deficient areas in the exercise were identified by Exelon and entered into the corrective action program.

###### Background

On February 14, 2002, Exelon conducted an exercise that included the activation and participation of all its emergency preparedness facilities. The exercise scenario was used in a past biennial exercise and was run on the simulator twice prior to the drill without any noted problems. Exelon evaluators were in each facility. There was one evaluator assigned to the control room simulator and this individual had a simultaneous responsibility as the lead controller for the exercise. The exercise scenario was designed to reach the General Emergency (GE) classification based on a loss of two fission product barriers with the potential or loss of the third, in accordance with Exelon's emergency action level barrier scheme, when simulated reactor water level decreased to below the top of the active fuel (TAF). During the exercise the Emergency Director (ED) declared a GE classification based on his judgement that some radiological conditions indicated a potential or loss of fuel barrier. Exelon credited all the DEP performance indicators as successful and considered the overall exercise performance as satisfactory.

###### b. Findings

Introduction:

The inspectors identified a finding, that is preliminarily determined to be of low to moderate safety significance (White), involving a violation of 10 CFR 50, Appendix E, IV.F.2.g. Exelon's formal critique of the February 14, 2002, exercise failed to identify weaknesses or deficiencies related to event classifications, a risk significant planning standard problem. The weaknesses or deficiencies observed by the inspector, but not by Exelon, were related to the operating crew in the simulator not recognizing conditions or effectively communicating key information needed by the Emergency Director to classify a General Emergency.

Description:

Exelon's final exercise critique report dated March 18, 2002, did not identify or evaluate several weaknesses or deficiencies related to event classification. On two occasions the operating crew did not recognize or effectively communicate to the Emergency Director (ED) that simulated reactor water level was below the top of the active fuel (TAF). Information that the reactor water level was below TAF was key information for the ED to upgrade the event classification to a GE. The final exercise critique did not fully evaluate why the exercise response team classified the exercise event as a GE based on ED judgement rather than a GE based on the potential loss of the third barrier when reactor water level decreased to below TAF. These weaknesses or deficiencies directly related to the recognition of conditions or effective communication of key information needed by the ED to classify a GE. The specific weaknesses or deficiencies included:

- Exelon's exercise critique failed to address operation crew weaknesses related to the recognition or communication of information related to water level below the TAF that was key information for the ED to use to upgrade the classification to a GE. About 4 minutes before the ED declared the GE based on judgement, reactor water level decreased below TAF when the crew intentionally terminated flow into reactor vessel for event mitigation per the emergency operating procedures. The operating crew did not anticipate the likelihood that reactor water level would drop below TAF based on their actions to intentionally lower reactor level. When reactor water level dropped below the TAF, which met the criteria for the ED to upgrade the classification to a GE, the operating crew did not either promptly or effectively communicate this key reactor water level information to the ED. As a result, the ED did not use this key information when he later declared a GE classification based on judgement that some radiological conditions indicated a potential or loss of fuel barrier. The use of judgement to declare the GE was not part of the scenario. The formal exercise critique did not identify the weakness related to recognition or communication of key reactor water level information and did not fully evaluate why the exercise response team classified the exercise event as a GE based on ED judgement rather than a GE based on the reactor water level decrease to below TAF.

- Exelon's exercise critique did not address crew weakness related to the recognition and communication of information related to water level below the TAF that met the criteria for escalating the event classification about 20 minutes prior to the actual GE declaration. Following the loss of the containment barrier, the operator did not inform the shift manager that he had difficulty maintaining reactor water level within the specified band which caused reactor water level to approach the TAF. As a result, when the planned trip of the reactor feedwater pump occurred in the scenario, reactor water level dropped to below TAF for about one minute. The operating crew either did not notice or did not effectively communicate to the ED that reactor water level was below TAF. The reactor water level decrease below TAF provided plant conditions that briefly met the criteria for a GE classification. The formal exercise critique did not identify the weakness related to recognition or communication of key reactor level information or evaluate if plant conditions warranted an escalation of the event classification at that time.
- Exelon's exercise critique did not address a crew deficiency when the crew's event mitigation actions challenged the ability to cool the core. The shift manager directed the crew in the simulator to terminate injection into the reactor vessel in preparation for an emergency depressurization, apparently based on his judgement that radiological conditions could not be maintained below the radiation release emergency action level threshold for a GE. Consequently, reactor water level dropped below 2/3 core height, ultimately to about mid-core height. This amount of level drop challenged the ability to cool the core. The formal exercise critique did not address whether the operator actions related to the preparation for an emergency depressurization were appropriate.

The inspector determined that the single evaluator in the simulator had other assigned responsibilities, such as controlling exercise radiological data, that distracted him from evaluating the exercise. Due to the distractions, the evaluator had limited time observing the crew in the simulator and apparently did not observe much of simulator performance after the first hour of the four-hour exercise. This observation is based on the lack of evaluator notes after the first hour of the exercise and also based upon an inspector interview.

#### Analysis:

Exelon's inadequate critique of the February 14, 2002, exercise is considered a performance deficiency because it failed to identify and correct the weaknesses or deficiencies related to event classifications, a risk significant planning standard, as required by 10 CFR 50, Appendix E, IV.F.2.g. Traditional enforcement does not apply because the issue did not have any actual safety consequences or potential for impacting the NRC's regulatory function and was not the result of any willful violation of NRC requirements or Exelon's procedures. Exelon's inadequate critique of the February 14, 2002, exercise was considered more than minor since it was associated with an attribute and affected the objective of the Emergency Preparedness cornerstone. The applicable attribute was the response organization performance in an exercise which affected the objective of this cornerstone to ensure that Exelon is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. Exelon's inadequate critique of the

February 2002 exercise was determined to be a finding of low to moderate safety significance (White) using the Emergency Preparedness Significance Determination Process (MC 0609, Appendix B, Sheet 1, Middle Path, Section 4). Exelon's exercise critique failed to identify that the operating crew had failed to recognize conditions or effectively communicate key information needed by the Emergency Director to classify a General Emergency. Emergency classification is a risk significant planning standard.

The inspector determined that this exercise critique problem was a repeat of a similar drill critique problem at Limerick. Both Limerick and Peach Bottom have a combined Emergency Plan and the emergency preparedness staff at the corporate office manage the program. The corporate office writes the scenarios, evaluates the drills, writes the critique report and enters condition reports into a shared corrective action system. In 2001, NRC identified a White finding at Limerick for failure to adequately critique a drill conducted at Limerick related to a judgment GE classification. Several of the root causes to the drill problems at Limerick were similar to the Peach Bottom problem (lack of evaluators, evaluator not observing key performance issues, poor critique report, etc).

Enforcement:

10 CFR 50, Appendix E, IV.F.2.g, requires that all training, including exercises, shall provide for formal critiques in order to identify weak or deficient areas that need correction. Any weaknesses or deficiencies that are identified shall be corrected. Contrary to this requirement, Exelon's formal critique of the February 14, 2002, exercise failed to identify weak or deficient areas directly related to being able to recognize conditions or effectively communicate key information needed by the Emergency Director to classify a General Emergency (a risk significant planning standard problem). This finding does not present an immediate safety concern. This is considered an apparent violation. **(AV 50-277; 50-278/02-07-01)** Based on the action above, unresolved item URI 50-277;278/02-02-03 is closed.

The inspector determined that Exelon's exercise critique failed to identify the weaknesses and deficiencies, in part, because the single evaluator in the simulator had other assigned responsibilities, such as controlling exercise radiological data, that distracted him from evaluating the exercise. The inspector concluded that the evaluator's limited time observing the crew in the simulator detracted from Exelon's ability to identify the performance weaknesses and deficiencies.

#### 4. OTHER ACTIVITIES [OA]

##### 4OA3 Event Followup (71153)

###### a. Inspection Scope

The purpose of this inspection was to assess Exelon's emergency preparedness response during an actual event which occurred on June 2, 2002. The review included interviews with the shift manager (SM) and control room supervisor that was on-shift during the event and plant personnel who conducted the root cause investigation. The inspector also reviewed the following documentation: (1) Peach Bottom Prompt Investigation Report, Condition Report (CR) No. 110334; (2) Draft Root Cause Investigation Report; (3) Limerick/Peach Bottom Nuclear Emergency Plan; (4) Emergency Response Procedure (ERP), No. 101, "Classification of Emergencies"; (5) Prompt Mobilization Communication Test record, dated December 18, 2001; (6) Emergency Response Facility sign-in sheets; (7) Exelon operator qualification drill reports for 2001 and 2002; (8) control room event logs; and (9) a selected number of condition reports generated from drills conducted in 2001 and 2002.

###### b. Findings

###### .1 Alert Declaration

###### Introduction:

The inspector identified a finding that is preliminarily determined to be of low to moderate safety significance (White) involving a violation of 10 CFR 50.54(q), 50.47(b)(4), Appendix E IV.B, and Appendix E IV.D.1. On June 2, 2002, Exelon did not make an Alert emergency classification declaration in a timely manner for a known toxic gas discharge into the Diesel Generator Building in a concentration that was life threatening to plant personnel. Exelon's emergency response procedure ERP-101, Peach Bottom's emergency action level scheme, did not clearly require Exelon to accomplish emergency classifications in a manner to assure a prompt notification of government officials and, therefore, the public.

###### Description:

###### Emergency Classification Declaration:

On June 2, 2002, Exelon declared an Alert at 1:02 A.M. following an unexpected discharge of the cardox (carbon dioxide) fire suppression system into the E-3 emergency diesel generator (EDG) room in the Diesel Generator Building at 12:31 A.M. This occurred 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. A cardox system discharge into an EDG room results in a carbon dioxide level in the room that is life threatening to plant personnel.

The SM established personnel accountability and secured the area (about 8 minutes after the initiating conditions). After personnel accountability was established and the

area was secured, the SM 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 immediately reached by telephone or 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 Emergency," regarding the release of toxic gas into a plant vital structure with a discharge of cardox into the Diesel Generator Building. Although the event occurred at 12:31A.M., the SM did not enter ERP-101 until about 20 minutes later. ERP-101 states that identification and classification of emergencies "should be accomplished within 15 minutes after applicable emergency action levels are met." Once the SM entered ERP-101 and recognized that there was an EAL that was applicable to the current plant conditions, the SM was unsure as to whether the EAL required all of the Diesel Generator Building to be affected or just part of the building which cause some additional delay in declaring an Alert. After some discussion and clarification, the SM declared an Alert emergency classification at 1:02 A.M. based on emergency action level (EAL) 8.2.2.b in ERP-101. EAL 8.2.2.b requires an Alert classification for a, "report or detection of toxic gases within Plant Vital Structures (Table 8.1) in concentrations that will be life threatening to plant personnel." Table 8.1 lists the diesel generator building as a Plant Vital Structure.

The inspector also noted that the Shift Technical Advisor (STA) was not readily available in the control room to assist the SM in classification of the event. The work control supervisor (WCS) was performing several functions (WCS, floor supervisor and STA) because the normal floor supervisor was on vacation. Normally the WCS performs the STA function during an event. Although Exelon still met their control room minimum staffing commitment when the WCS went to the EDG building to observe the fire brigade (a duty normally performed by the floor supervisor), there was no individual available to perform the STA function in the control room. As a result the STA was not available to prompt the SM about referring to ERP-101. The inspector determined that during emergency drills, Exelon routinely utilizes the STA to provide expert technical advice to the SM and assist with the interpretation of the EALs.

#### Analysis:

Exelon's failure to make a timely classification on June 2, 2002, is considered a performance deficiency. 10 CFR 50.54(q), 50.47(b)(4), Appendix E IV.B, and Appendix E IV.D.1 expect that the Exelon's emergency response procedures would specify an emergency classification declaration to be made promptly after an emergency action level is met. Traditional enforcement does not apply because the issue did not have any actual safety consequences or potential for impacting the NRC's regulatory function and was not the result of any willful violation of NRC requirements of Exelon's procedures. Exelon's failure to make a timely classification was considered more than minor since it was associated with an attribute and affected the objective of the Emergency Preparedness Cornerstone. The applicable attribute was the response organization performance in an actual event and affected the objective of this cornerstone to ensure that Exelon is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. Exelon's failure to make a timely classification on June 2, 2002, was determined to have low to moderate safety

significance (White) using the Emergency Preparedness Significance Determination Process (MC 0609, Appendix B, Sheet 2). This finding was associated with the improper implementation of a risk significant planning standard (10 CFR 50.47(b)(4), Emergency Classification and EAL scheme) during an actual event.

A condition report generated from a June 2001, Peach Bottom operator license requalification drill indicated that a SM missed the classification following a discharge of the cardox system. Although the reasons for the missed classification were different than the event of June 2, 2002, the condition report documented questions Exelon staff raised regarding the adequacy of the EAL and the bases document. Although the associated condition report was incorporated into another condition report related to several questions about several EALs, as of the time of this event, Exelon had not yet addressed the questions related to the adequacy of the EAL associated with a discharge of the cardox system.

### Enforcement

10 CFR 50.54(q) requires, in part, that a licensee shall follow and maintain in effect emergency plans which meet the standards in 10 CFR 50.47(b) and requirements in Appendix E. 10CFR 50.47(b)(4) and Appendix E.IV.B require, in part, use of an emergency action level scheme for determining when protective measures should be considered within and outside the site boundary to protect health and safety. Timely use of the emergency action level scheme is a prerequisite for the prompt notification of government officials and, therefore, the public as required by 10 CFR50 App. E.IV.D.1. Contrary to the above, on June 2, 2002, Exelon's Alert emergency classification that occurred 31 minutes after emergency action level 8.2.2.b was met during an actual event, did not assure prompt notification. Exelon established emergency response procedure ERP-101 as Peach Bottom's emergency action level scheme to comply with the aforementioned requirements. ERP-101 did not clearly require Exelon to accomplish emergency classifications in a manner to assure a prompt notification of government officials and, therefore, the public. This finding does not present an immediate safety concern. This is considered an apparent violation. **(AV 50-277; 50-278/02-07-02).**

The inspector determined that the following apparently contributed to untimely Alert declaration:

- a. The SM did not enter ERP-101 until about 20 minutes following the start of the event. At the start of the event the SM did not associate the EAL in ERP-101 regarding the release of toxic gas into a plant vital structure with the discharge of cardox into the E-3 EDG room.

- b. The SM spent a significant time implementing a new administrative procedure (OP-AA-106-101) for calling a 24-hour duty station manager to begin notifying Exelon Senior Management of plant conditions.
- c. Once the SM entered ERP-101 and recognized that there was an EAL that was applicable to the current plant conditions, the SM was initially unsure as to the basis of the EAL, whether the EAL required all of the Diesel Generator Building to be affected or just part of the building.
- d. ERP 101 did not clearly require Exelon to accomplish emergency classifications in a manner to assure a prompt notification of government officials and, therefore, the public. ERP-101 only recommended that emergency classification "should be accomplished within 15 minutes after applicable emergency action level(s) are met." The NRC staff position for assessing and classifying is noted in the conclusion section of EPPOS-2 (Emergency Preparedness Position on Timeliness of Classification of Emergency Classification of Emergency Conditions). That section indicates:

*"with the understanding that EALs are designed to determine when and what type of protective measures should be considered within and outside the site boundary to protect health and safety, classification is expected to be made promptly following indications that conditions have reached an emergency threshold in accordance with the licensee's EAL scheme. The staff position is that a 15-minute goal is a reasonable period of time for assessing and classifying an emergency once indications are available to control room operators that an EAL has been exceeded. Moreover, a delay in classifying an emergency for up to 15 minutes will have minimal impact upon the overall emergency response to protect the public health and safety. However, this 15 minutes should not be interpreted as providing a grace period in which a licensee may attempt to restore plant conditions and avoid classifying the emergency.*

*The 15-minute goal may be used as one of the guidelines for triggering further, more detailed staff evaluation of a licensee's performance in responding to an actual event. It should be emphasized that the 15-minute guideline is not a regulatory requirement, but rather may be used by the staff in its followup evaluation in conjunction with the 15 minute notification of offsite agencies and the one hour notification of the NRC and with other relevant information to determine the adequacy of a licensee's response actions. Other factors, that may be considered are classification level, safety significance of the event, historical performance of the licensee in event classification, and root cause(s) for the delay."*

Furthermore, emphasis on the 15 minute goal is noted in NUREG 0654 Revision 1 and NEI 99-02 for the Emergency Preparedness Cornerstone for Drill/Exercise Performance.



## .2 Technical Support Center (TSC) Activation

### Introduction

The inspector identified a non-cited violation of very low safety significance (Green) of 10 CFR 50.47(b)(2) because during an Alert declaration on June 2, 2002, Exelon did not activate their Technical Support Center within the 60 minutes stated in their Nuclear Emergency Plan.

### Description

On June 2, 2002 Exelon declared an Alert at 1:02 a.m. Once the Alert classification was declared, Exelon activated their emergency notification system for activating the emergency response organization (ERO) approximately nine minutes after the declaration. With the exception of the TSC, the emergency response facilities were operational within the Nuclear Emergency Plan goal of 60 minutes after the Alert declaration. The TSC was activated 77 minutes after the Alert was declared.

### Analysis

Exelon's failure to activate the Technical Support Center within 60 minutes of the Alert declaration on June 2, 2002, is considered a performance deficiency since Exelon's emergency plan procedures require the TSC to be activated within 60 minutes after an Alert is declared. Traditional enforcement does not apply because the issue did not have any actual safety consequences or potential for impacting the NRC's regulatory function and was not the result of any willful violation of NRC requirements or Exelon's procedures. Exelon's failure to activate the Technical Support Center within 60 minutes of the Alert declaration on June 2, 2002, was considered more than minor since it was associated an attribute and affected the objective of the Emergency Preparedness cornerstone. The applicable attribute was the response organization performance in an actual event and the affected the objective of this cornerstone to ensure that Exelon is capable of implementing adequate measures to protect the health and safety of the public in the event of a radiological emergency. Exelon's failure to activate the TSC within 60 minutes of the Alert declaration on June 2, 2002, was determined to have very low safety significance using the Emergency Preparedness Significance Determination Process (MC 0609, Appendix B, Sheet 2). Exelon's failure to activate an emergency facility in a timely manner is associated with a planning standard, 10 CFR 50.47(b)(2) during an actual event.

Exelon's corrective actions for an earlier identified problem in timely activation of emergency response facilities were not adequately implemented. In Exelon's last unannounced call-in drill that was conducted off-hours in December 2000, Exelon identified that it failed to meet its emergency facility activation goals at the onsite emergency facilities. Exelon's corrective actions included the EP Manager (Corporate) issuing a letter to the ERO that all ERO responders would respond to the site regardless if they are "on-call." Nevertheless, the EP group didn't ensure that the message on the notification system coincided with those directives. During the event, rather than responding to the site per the directions from the corporate letter, a number of ERO staff called into the notification system and heard a message that stated "your position has

been filled, don't report." As a result of this message, many of those individuals did not respond.

### Enforcement

10 CFR 50.54(q) requires, in part, that a licensee shall follow and maintain in effect emergency plans which meet the standards in 10 CFR 50.47(b). Planning standard 10 CFR 50.47(b)(2) requires, in part, that an ERO must be capable of responding in a timely manner. The Nuclear Emergency Plan, Section 5.1.3, states that the TSC will be activated within 60 minutes subsequent to the declaration of an Alert or higher. Contrary to the above, on June 2, 2002, Exelon did not activate the TSC until 77 minutes after an Alert was declared. Exelon entered this issue in their corrective action system in condition report CR 110334. Because this violation was of very low safety significance and Exelon entered this finding into its corrective action program, this violation is being treated as a Non-Cited Violation (NCV), consistent with Section VI.A of the NRC Enforcement Policy. **(NCV 50-277; 278/02-07-03)**.

The following contributed to the late activation of the TSC: Exelon determined that its normal sequence of making offsite notifications first and then activating the ERO notification system caused an unnecessary delay in notifying the members of the ERO needed to staff the TSC. Exelon did not adequately consider the driving distance from private residences to the site for ERO responders, some which can exceed 60 minutes. Exelon's current pager system that activates groups of pagers sequentially caused some pagers to receive the message about 30 minutes after the pager system was activated.

#### 4OA6 Meetings

##### .1 Exit Meeting Summary

The inspector presented the results of the inspection to Mr. J Doering and members of Exelon's management on June 25 and July 1, 2002. Exelon management acknowledged the findings presented. No proprietary information was identified.

## ATTACHMENT 1

**SUPPLEMENTAL INFORMATION****a. Key Points of Contact**Exelon generation Company

A. Coppa, EP Coordinator, PB  
 J. Doering, Site Vice President  
 B. Hanson, Operations Director  
 D. Henry, Regulatory Assurance Manager  
 G. Johnston, Plant Manager  
 D. Neff, EP Coordinator, Corporate Office

**b. List of Items Opened, Closed, and Discussed**Opened

50-277;278/02-07-01	AV	Exelon's formal critique of the February 14, 2002, emergency preparedness exercise failed to identify and correct performance deficiencies related to event classifications, a risk significant planning standard.
50-277;278/02-07-02	AV	Exelon's failure to declare an Alert in a timely manner during a June 2, 2002, cardox discharge into an emergency diesel generator room.

Opened / Closed

50-277;278/02-07-03	NCV	Exelon did not activate the Technical Support Center within the 60-minute activation goal during an actual declared Alert on June 2, 2002.
---------------------	-----	--

Closed

50-277;278/02-02-03	URI	Adequacy of Exelon's critique of the February 14, 2002, emergency preparedness exercise.
---------------------	-----	--

**c. List of Acronyms**

CFR	Code of Federal Regulations
CR	Condition Report
DEP	Drill and Exercise Performance
EAL	Emergency Action Level
ED	Emergency Director
EDG	Emergency Diesel Generator
ERO	Emergency Response Organization
ERP	Emergency Response Procedure
GE	General Emergency
NCV	Non-cited Violation
NRC	Nuclear Regulatory Commission
SDP	Significance Determination Process
SM	Shift Manager
STA	Shift Technical Advisor
TAF	Top of Active Fuel
TSC	Technical Support Center
URI	Unresolved Item
WCS	Work Control Supervisor