

U. S. NUCLEAR REGULATORY COMMISSION

REGION I

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Licensee: Duquesne Light Company

Facility: Beaver Valley Power Station

Dates: October 6-7, 1998

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## EXECUTIVE SUMMARY

Beaver Valley Power Station  
Full-Participation Emergency Preparedness Exercise Evaluation  
October 6-7, 1998  
Inspection Report 50-334 & 412/98-07

Overall licensee performance during this exercise was good as the emergency response organization demonstrated that it could implement the emergency plan. Facilities were activated in a prompt manner. Classifications and notifications were accurate and timely. Protective action recommendations were appropriate. Briefings and command and control in the technical support center and emergency operations facility were good. Minor communications problems in the operations support center and radiological operations center were observed. Some minor issues were observed regarding dose assessment, but overall performance in that area was good.

The licensee's critique process was good. Post-exercise facility debriefs were generally candid. At the formal critique, the licensee identified numerous issues, in addition to those identified by the NRC. Overall, the critique was balanced with positive and negative findings and was appropriately self-critical.

## Report Details

### **P4 Staff Knowledge and Performance**

#### a. Exercise Evaluation Scope

During this inspection, the inspectors observed and evaluated the licensee's biennial full-participation exercise in the control room drill center (CRDC), the technical support center (TSC), the operations support center (OSC), the radiological operations center (ROC), the emergency operations facility (EOF) and environmental assessment and dose projection (EA/DP) area. The inspectors assessed licensee recognition of abnormal plant conditions, classification of emergency conditions, notification of offsite agencies, development of protective action recommendations, command and control, communications, and the overall implementation of the emergency plan. In addition, the inspectors observed the post-exercise critique to evaluate the licensee's self-assessment of the exercise.

#### b. Emergency Response Facility Observations and Critique

##### CRDC

The CRDC consisted of an operating crew that was provided data sheets containing plant parameters on a regular frequency as the license did not utilize its simulator for this exercise. The crew promptly implemented the appropriate procedures. The crew accurately classified the alert condition and initiated offsite notifications and the emergency response organization (ERO) activation in a timely manner. During the offsite notifications, the communicator was unfamiliar with the conference call feature to contact all six offsite agencies at once. However, the communicator implemented a contingency method to contact the six agencies individually. When the ERO pagers were to be activated, the initial group signal did not function. However, the system proceeded to notify individual ERO members to fill positions when no one responded within 10 minutes to the initial pager signal. The licensee is investigating the cause of the group pager problem. Overall, the performance of the CRDC staff was good.

##### TSC

The facility was staffed and activated in a timely manner. The emergency director (ED) provided good command and control as he held informative and timely briefings regarding plant conditions. Activities within the TSC were conducted in a calm and orderly manner. As simulated plant conditions degraded, the TSC staff made appropriate classifications for the site area emergency and general emergency and the associated notifications were timely. The ED and the TSC coordinators maintained proper attention on repair activities and priorities as plant conditions changed. Overall, the performance in the TSC was good.

### OSC

Performance in the OSC was mixed. Accountability was performed well and concern for radiological exposure was demonstrated when a team designated for the containment airlock was not dispatched due to increasing dose rates in that area. There were examples of communication problems. For example, at one point, it was unclear who had assigned personnel to assess the hydrogen analyzer and recombiners. Multiple teams from the CRDC and OSC were sent to investigate the refueling water storage tank and fuel pool damage. Briefings were infrequent and did not include radiological conditions. One repair team was informed that the plant was shutting down due to airlock seal problems instead of a loss of coolant accident. It was observed that the OSC coordinator spent a lot of time on the telephone, which diverted his attention from directly managing the facility. An example of poor coordination occurred when it took one hour from the designation of a task as a top priority until the team arrived at the scene (without tools). However, despite these discrepancies, the OSC staff performance was adequate to address the simulated events and conditions during the exercise.

### ROC

Repair teams formed in the OSC went to the ROC for radiological briefings before being dispatched. Performance in the ROC was mixed. Area radiation monitor status sheets were updated frequently. Some good radiological practices were noted such as the handling of the contaminated individual near the fuel pool, reducing fuel pool damage assessment team for ALARA purposes, and a health physics (HP) technician pulled a team back from the containment airlock doors due to high dose rates in the area. However, respirator evaluations by the second airlock team were questionable because more consideration of changing plant condition should have occurred. One HP technician was not cognizant of post-accident sampling system team monitoring requirements (hand monitoring). Communications problems also existed in the ROC. Briefings were infrequent and lacked plant status, radiological conditions, and changing conditions. In one instance, there was a difference in task priorities between the OSC and ROC. However, despite these discrepancies, the ROC staff performed adequately to provide radiological support under simulated accident conditions.

### EOF

The EOF was staffed and activated in a timely manner. Status boards were excellent in the EOF as they were current, accurate, and easily readable because they were maintained by an individual who was very knowledgeable about plant systems. Good command and control was demonstrated by the emergency recovery manager (ERM). The ERM interfaced well with the ED throughout the exercise as they discussed classifications, plant conditions, and offsite implications. The ERM's briefings to the EOF staff were very good in the level of detail, length and timeliness. The ERM conducted frequent and thorough briefings with the offsite officials in the EOF. The EOF staff performed well in providing support under simulated accident conditions.

EA/DP

The EA/DP coordinator and the dose assessment team members arrived at the EOF soon after the alert declaration and immediately established communications with the TSC and ROC and implemented the emergency procedures. The EA/DP coordinator continuously assessed plant radiological conditions and provided detailed status briefings to the ERM and EOF staff. However, the EA/DP coordinator did not discuss the dispatch of the field monitoring teams or any updates regarding their locations or radiological findings to apprise the ERM of offsite conditions. The EA/DP coordinator used procedure EPP/IP 4.1, "Offsite Protective Actions" for providing the protective action recommendation (PAR) to the ERM and the recommendation was made to the states within minutes of the general emergency declaration. The team performed dose calculations using the dose assessment computer model and kept the EA/DP coordinator apprised when conditions worsened. When doses were projected to exceed the protective action guidelines at 5 miles downwind, the EA/DP coordinator appropriately recommended an upgrade of the PAR to the ERM.

During the exercise, while assessment and dose projection activities were adequate to satisfy the planning standard, the team made the following observations: 1) no effluent grab samples from the monitored release pathway were taken to characterize the release; 2) habitability announcements were not made during the simulated release to apprise facility personnel of possible radiological conditions caused by the plume; 3) the field monitoring teams experienced about a 30 minute delay when being dispatched; and 4) the teams were placed on hills that were impractical for identifying the plume edges of a ground release.

Licensee Exercise Critique

Immediately following the exercise, the licensee began its critique process with players, as well as controllers, providing debriefs. Players were generally candid and receptive to comments except in the ROC and OSC where there was limited input from the repair team members and there appeared to be some defensiveness regarding a controller comment pertaining to respirator usage. At the formal licensee critique on October 7, 1998, the licensee identified issues in addition to the ones identified by the inspectors. Positive and negative items were noted. Overall, the critique was thorough and appropriately self-critical and was assessed as good.

c. Overall Exercise Conclusions

Overall licensee performance during this exercise was good as the ERO demonstrated that it could implement the emergency plan. Facilities were activated in a prompt manner. Classifications and notifications were accurate and timely. PARs were appropriate. Briefings and command and control in the TSC and EOF were good. Minor communications problems in the OSC and ROC were observed. Some minor issues were observed regarding dose assessment, but overall performance in that area was good.

The licensee's critique process was good. Post-exercise facility debriefs were generally candid. At the formal critique, the licensee identified numerous issues, in addition to those identified by the NRC. Overall, the critique was balanced with positive and negative findings and was appropriately self-critical.

**P8 Miscellaneous EP Issues**

**P8.1 Scenario Preparation and Exercise Control**

An in-office review of the exercise objectives and scenario was conducted by the inspectors prior to the exercise. It was determined that the scenario supported the demonstration of the stated objectives and satisfactorily exercised a significant portion of the emergency response capabilities.

During the exercise, controllers generally performed well and drillsmanship was good. However, in some instances at the ROC and OSC, controllers appeared to be unsure of their authority, such as, in informing players whether to wear anti-contamination clothing. Inconsistent field simulation made it difficult to determine if the spread of contamination was occurring. Also at the ROC and OSC, players were asking numerous unnecessary questions of the controllers. Controllers generally responded appropriately to the questions. At the ROC, there was an instance when the ROC coordinator decided what to simulate instead of the controller.

**P8.2 Updated Final Safety Analysis Report (UFSAR) Review**

A recent discovery of a licensee operating their facility in a manner contrary to the UFSAR description highlighted the need for a special focused review that compares plant practices, procedures, and/or parameters to the UFSAR or the emergency plan. During this exercise, the inspectors observed the licensee's compliance with the emergency plan regarding ERO staffing, facility activation, procedural usage, classification of simulated events, and notification of offsite agencies. No discrepancies were observed.

**P8.3 (Closed) Violation 50-334 & 412/97-09-03: Failure to test telephone lines at the alternate EOF (AEOF).** The inspectors verified that the licensee had modified its emergency plan to specify the testing of the telephone lines at the AEOF. The licensee had also modified its administrative procedure governing the surveillances of EP equipment to include testing those lines. The inspectors verified, by reviewing records, that these surveillances had been conducted at the AEOF on a quarterly basis during 1998. The inspectors concluded that the licensee's corrective actions were appropriate.

V. Management Meetings**X1 Exit Meeting**

The inspectors presented the inspection results to members of licensee management at the conclusion of the inspection on October 7, 1998. The licensee acknowledged the inspectors' findings.

## INSPECTION PROCEDURES USED

82301: Evaluation of Exercises for Power Reactors

82302: Review of Exercise Objectives and Scenarios for Power Reactors

## ITEMS OPENED, CLOSED, AND DISCUSSED

### Opened

None

### Closed

VIO 97-09-03

Failure to test telephone lines at the alternate EOF

### Discussed

None



## LIST OF ACRONYMS USED

AEOF	Alternate Emergency Operations Facility
CRDC	Control Room Drill Center
ED	Emergency Director
EOF	Emergency Operations Facility
ERM	Emergency Recovery Manager
ERO	Emergency Response Organization
HP	Health Physics
OSC	Operations Support Center
PAR	Protective Action Recommendation
ROC	Radiological Operations Center
TSC	Technical Support Center
UFSAR	Updated Final Safety Analysis Report