U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Reports No. 50-254/85015(DRSS); 50-265/85017(DRSS)

Docket Nos. 50-254; 50-265 Licenses No. DPR-29; DPR-30

Licensee: Commonwealth Edison Company
Post Office Box 767
Chicago, Illinois 60690

Facility Name: Quad Cities Nuclear Generating Station, Units 1 and 2

Inspection At: Quad Cities Station, Cordova, Illinois

Inspection Conducted: August 26-28, 1985

Inspectors: G. Brown — Team Leader — 9/18/85 Date

T. Ploski — 9/18/85 Date

W. Snell — 9/18/85 Date

M. Smith — 9/18/85 Date

Approved By: M. P. Phillips, Chief
Emergency Preparedness Section — 9/18/85 Date

Inspection Summary

Inspection on August 26-28, 1985 (Reports No. 50-254/85015(DRSS); 50-265/85017(DRSS))

Areas Inspected: Routine, announced inspection of the Quad Cities Station emergency preparedness exercise involving observations by nine NRC representatives of key functions and locations during the exercise. The inspection involved 185 inspector-hours onsite by five NRC inspectors and four consultants.

Results: No items of noncompliance or deviations were identified. Exercise weaknesses which require a written response are identified in the report and in the Appendix to the report's transmittal letter.

DETAILS

1. Persons Contacted

NRC Observers and Areas Observed

G. Brown, Control Room, Technical Support Center (TSC), and Operational Support Center (OSC)
A. Johnson, Control Room
A. Madison, Control Room, TSC
W. Snell, TSC
G. Arthur, TSC, OSC
E. Watson, OSC
T. Lonergan, Field Monitoring Teams
T. Ploski, Emergency Operations Facility (EOF)
M. Smith, Joint Public Information Center (JPIC)

Commonwealth Edison and Areas Observed

*N. Kalivianakis, Station Manager
*T. Balckmon, Corporate Emergency Preparedness (EP)
*G. Spedl, Quad Cities Administration
*T. Tamlyn, Services Superintendent
*R. Robey, Assistant Superintendent, Operations
*J. Flood, General Electric
*W. Bielasco, Health Physicist
*J. Schnitzmeyer, Control Room Controller
*B. Schnell, EOF Observer
*R. Bax, Production Superintendent
*D. VanPelt, Assistant Superintendent, Maintenance
*S. Horvath, Radiation Protection
*J. McMillan, Radiation Protection
*N. Griser, Quality Assurance
*C. Norton, Quality Assurance
T. Ziakis, EOF Controller
T. Greene, EOF Controller
R. Dwyer, TSC Controller
C. Bennett, TSC Controller
*A. Lewis, Rad/Chem Controller
A. Nykiel, Offsite Monitoring Controller
M. Vincent, Offsite Monitoring Controller
K. Klotz, OSC Controller
*M. Leetzow, Exercise Observer
*K. Budzeika, Exercise Observer

*Indicates those present at the August 28, 1985 exit meeting.

2. Licensee Actions on Previously-Identified Items

(Closed) Open Item No. 254/84-09-03 and 265/84-08-03: The EOF staff failed to complete all required initial offsite notifications following an emergency reclassification. All required notifications were made in a

timely manner. It was noted that responsibility for notification of the NRC is under the cognizance of the TSC, not the EOF, as previously indicated when this item was opened. The TSC accomplished notification to the NRC in a timely manner. This item is considered closed.

3. General

An exercise of the licensee's Generating Stations' Emergency Plan (GSEP) and the Quad Cities Annex was conducted at the Quad Cities Station on August 26-28, 1985. The exercise tested the licensee's and offsite emergency support organizations' capabilities to respond to a hypothetical accident scenario resulting in a major release. The attachment describes the scenario. The exercise was integrated with a test of the Clinton County (Iowa), and Scott County (Iowa) emergency plans. This was a full-participation exercise for these counties and the State of Iowa. The State of Illinois and the counties of Rock Island (Illinois) and Whiteside (Illinois) did not participate.

4. General Observations

a. Procedures

The exercise was conducted in accordance with 10 CFR Part 50, Appendix E requirements using the GSEP, Quad Cities Annex, and the Emergency Plan Implementing Procedures (EPIPs) employed by the Station and the Emergency Operations Facility (EOF).

b. Observers

Licensee observers monitored and critiqued this exercise along with nine NRC observers and a number of observers representing Region VII of the Federal Emergency Management Agency (FEMA). FEMA observations of the responses by the State and local governments will be provided in a separate report.

c. Critique

The licensee held critiques following the exercise on August 27, 1985. The NRC critique was held at the Station Visitor's Center on August 28, 1985. In addition, a public critique was held on the afternoon of August 28, 1985 to present the preliminary findings regarding the onsite and offsite activities by the NRC and FEMA exercise observers, respectively.

d. Conclusions

The licensee's response was generally coordinated, orderly, and timely. If these events had been real, the actions taken by the licensee would have been sufficient to permit State and local authorities to take appropriate actions.

5. Specific Observations

a. Control Room

The escalating emergency conditions were adequately ascertained and proper authorities were notified in a timely manner. Transfer of control from the Shift Engineer to the Station Director was smooth and timely. Control Room participants exhibited good teamwork throughout the exercise.

The following improper action was identified:

The log for Unit 2 was not adequately detailed. Critical events were missing. Had the Unit 2 recordkeeping been more conscientious, it is probable that the licensee's failure to terminate Unit 2's Unusual Event would have been discovered by the licensee.

Based on the above findings, the overall performance by the licensee in this area was acceptable.

b. Technical Support Center (TSC)

The TSC was activated in a timely manner upon declaration of the Alert. The TSC staff was adept in using procedures to rapidly evaluate conditions, make decisions, and promptly notify appropriate personnel and agencies. They displayed an in-depth knowledge of plant systems and used it to good advantage in devising innovative methods to replace and increase the water level in the refueling pool. The Station Director conducted numerous briefings which were timely, accurate, and informative.

Assembly/accountability was completed within 30 minutes. The participants properly considered adverse actions in considering evacuation of nonessential personnel, such as the loss of both Standby Gas Treatment system trains. Dose projections and verification of wind direction were properly ascertained prior to evacuation.

The following improper actions were observed:

Recordkeeping was inadequate. While each individual did keep personal notes on events, there was no formal documentation on the decisionmaking process that led to various courses of action. Recreation of events at a later time could not have been accomplished from the formal records but would have required those personal notes.

Radiological control for access to the TSC was inadequate. A frisker monitoring station was established at the entrance to the TSC but it was located in an area not visible to personnel responsible for control of access to the TSC. No Rad/Chem personnel were available to ensure that personnel entering the

TSC properly monitored themselves upon entering or to provide assistance in the event the personnel entering happened to be contaminated. This is an Open Item (Open Item 254/85015-01 and 265/85017-01).

The TSC participants were slow to recognize the need to restore "D" Residual Heat Removal (RHR) pumps as a means of restoring water in the fuel pool. They were overly cautious in considering sending work teams into the 1-2 Rem/hr field to repair the pumps even though the radiological impact on the general public resulting from their lack of action may have been sufficient to take the risk.

The Unusual Event was initiated by a Unit 2 condition with the later problems occurring at Unit 1. Subsequently the Unit 2 problems were mitigated, however, there was no deescalation of the Unit 2 condition.

The TSC staff was so engrossed in managing the myriad of problems that they failed to recognize one of the most significant events in the scenario, that the Unit 1 refueling platform had fallen into the reactor cavity, even though the scenario provided sufficient evidence. However, even without this knowledge, the staff took sufficient action in treating the symptoms to provide adequate protection for the public.

c. Operational Support Center

The OSC was activated in a timely manner. Exposure control of personnel and their exposure limits were carefully considered for each mission. Records of task assignments and Radiation Work Permits were well maintained.

Facilities for taking a post accident sample of containment atmosphere and vessel water were excellent. The post accident sample team members were well trained in sampling procedures.

Good briefings on task assignments and radiation levels were given to each work team.

The following improper actions were observed:

Status boards in the OSC were inadequate and not well maintained. A blackboard was used to provide the status of Units 1 and 2. When the board was full, the data was erased and new data entered.

Some workers were not adequately instructed on proper radiological protection methods. 10 CFR 19.12 states, in part, "All individuals working in or frequenting any portion of a restricted area shall be instructed in precautions or procedures to minimize exposure, and in the protective devices employed."

Contrary to this requirement, two workers who were sent to unlock and open the skimmer surge tank valve indicated that they had received inadequate radiological instruction when they failed to follow proper procedure in donning or removing protective clothing. They did not wear plastic gloves, as required, they failed to tape openings in clothing; and one wore his protective hood open. This is an exercise weakness and will be tracked as Open Item Nos. 254/85015-02; 265/85017-02.

The "Task Assignment Form" had no provision for the date and time of the request. This information would be critical in recreating the event.

Tools for the HRSS sampling event were inadequately staged. Lacking a screwdriver, one worker improvised and used a knife. The knife collapsed and would have cut through potentially contaminated gloves had the event been real.

Poor methods were used to transport the HRSS samples from the sample gallery to the counting room. At one point the highly irradiated sample was removed from shielding and manually carried to the counting room. This would have resulted in unnecessary personnel exposure. This is an Open Item (Open Item Nos. 254/85015-03 and 265/85017-03).

The following item should be considered for improvement:

- Add a section for the time and date of request on the "Task Assignment" form.

d. Field Monitoring Team

The environs teams were formed and dispatched smoothly and efficiently. They properly conducted complete inventories and operational checks of emergency equipment prior to use. In the field, the samples taken were properly identified showing location, type, date, and time.

The following improper actions were noted:

The Environment Assessment Logs were incomplete. The "Time On," "Time Off" and "Volume" of air samples were not completed in the logs.

Both silver zeolite cartridges and particulate filters were improperly stored in the same plastic container. This is contrary to Procedure EG-11, Appendix A, Item 1.

One team, using a portable radio transceiver experienced numerous communications problems throughout the exercise.

e. Emergency Operations Facility (EOF)

The EOF was activated in a timely and orderly manner. The Recovery Manager (RM) established a target time for activation and was kept apprised of the staff's progress toward this target.

The following improper actions were noted:

Initial offsite Protective Action Recommendations (PAR) associated with the Site Area Emergency and General Emergency declarations were inadequate. Errors were made in either formulating, reviewing, documenting or communicating the PARs. For instance, a PAR for the Site Area Emergency improperly recommended evacuation of personnel out to ten miles. This recommendation passed through two reviews before it was finally halted by the controller. 10 CFR 50.47(b)(9) requires that the licensee use adequate methods and systems for assessing actual or potential offsite consequences of a radiological emergency condition. This is an exercise weakness and will be tracked under Open Item Nos. 254/85015-04 and 265/85017-04.

Procedure TSN-EOF-10 requires the Advisory Support Director (ASD) to establish contact with organizations which will participate in the "Advisory Support Panel." The NRC is erroneously included in this panel. Additionally, the ASD was tasked with completing information needed to fulfill the GSEP followup message commitment to State agencies. This information was compiled into "Information Reports" and telefaxed to the agencies. The ASD lacked procedural guidance to ensure that all types of "information to be included" as listed in NUREG-0654 Item E4 and the GSEP were addressed in his "Information Reports."

The Environmental status board was not effectively maintained in this exercise. Valid times for weather forecasts were not indicated; distances for the 1-Rem and 5-Rem dose lines were provided for the General Emergency, but not for the Site Area Emergency conditions; and the status boards did not indicate whether the plotted PARs were those recommended, implemented, or both. Additionally, no data was plotted for the Offsite Monitoring Team.

Based on the above findings, one exercise weakness was identified. In addition, the following items should be considered for improvement:

- The NRC should be deleted from the "Advisory Support Panel" in Procedure TSN-EOF-10.

- Additional training to personnel should be provided to responsible for maintaining the Environmental status board.

f. Joint Public Information Center (JPIC)

The Joint Public Information Center (JPIC) staff provided press packets and Emergency Information Booklets which were adequate and informative.

The following improper actions were noted:

The JPIC facilities were inadequate. This was pointed out in NRC Inspection Report Nos. 50-254/84-09(DRSS) and 50-265/84-09(DRSS). The only observed improvement since the last exercise was the placement of two portable fans in the facility.

Information disseminated was inaccurate and inadequate. The meaning and significance of Emergency Action Levels was not described. Also, the field monitoring teams' purpose and functions were not described. In response to a question regarding the monitoring of television and radio, the individual was incorrectly advised that the EOF and corporate office were monitoring them. Since one of the exercise objectives was to demonstrate the ability to provide timely and accurate information, this failure to do so is an exercise weakness, and will be tracked as Open Item Nos. 254/85015-05 and 265/85017-05.

Based on the above findings, one exercise weakness was identified in this area.

6. Exit Interview

On August 28, 1985 an exit interview with the licensee representatives was held to present the NRC's preliminary findings. The inspector discussed the likely content of the inspection report. The licensee did not identify any of the materials as proprietary or safeguards.