

U.S. NUCLEAR REGULATORY COMMISSION
REGION I

Report No. 50-352/85-17

Docket No. 50-352

License No. CCPR

Priority -

Category B-1

Licensee: Philadelphia Electric Company
2301 Market Street
Philadelphia, PA 19101

Facility Name: Limerick Generating Station

Inspection At: Limerick, Pennsylvania

Inspection Conducted: April 2-4, 1985

Inspectors: I. Cohen
I. Cohen, Exercise Team Leader,
EPS, DRSS

af Vito for
J. Wiggins, NRC Resident Inspector

af Vito for
D. Matthews, EPB, IE, NRC

af Vito for
J. Hawxhurst, EPS, DRSS

af Vito for
J. Pappin, PNL

af Vito for
E. King, PNL

af Vito for
F. Murphy, PNL

Approved by: af Vito for
T. L. Harpster, Chief, EPS, DRSS

May 17, 1985
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Inspection Summary: Inspection on April 2-4, 1985 - Report No. 50-352/85-17

Areas Inspected: Routine, announced emergency preparedness inspection and observation of the licensee's Emergency Exercise conducted on April 3, 1985.

Results: The inspection involved 186 hours by a team of 7 NRC inspectors and NRC contractor personnel. The licensee's emergency response actions for this exercise were adequate to provide protective measures for the health and safety of the public. No violations were identified.

Details

1. Persons Contacted

The following licensee representatives attended the exit meeting on April 4, 1985.

Robert W. Bulmer, Superintendent, Nuclear Training Section
M. J. Cooney, Manager - Nuclear Production
James M. Corcoran, Jr., Supervisor Quality Assurance
A. J. Hogan, Jr., Staff Engineer
John F. Franz, Assistant Superintendent
Roberta A. Kankus, Director Emergency Preparedness
Walter J. Knapp, Director Radiation Protection
G. M. Leitch, Superintendent - LGS
Jack E. Pelly, LGS Site Emergency Planning Coordinator
Jerry L. Phillabaum, LGS Site Emergency Planning Coordinator
John J. Tucker, PBAPS Site Emergency Planning Coordinator
W. T. Ullrich, Superintendent Nuclear Generation

In addition the inspectors interviewed or observed the actions of numerous licensee personnel during the conduct of the exercise.

2. Emergency Exercise

The Limerick Generating Station small scale exercise was conducted on April 3, 1985 from 9:00 am until 6:00 pm.

2.1. Pre - exercise Activities

Prior to the emergency exercise, NRC Region I representatives had telephone discussions with licensee representatives to review the scope and content of the exercise scenario. As a result, minor revisions were made by the licensee of certain scenario data.

In addition, NRC Observers attended a licensee briefing for licensee controllers and observers on April 2, 1985, and participated in the discussion of emergency response actions expected during the various phases of the scenario.

The exercise scenario included the following events:

- Loss of reactor feedwater
- Injured and contaminated individuals
- Loss of emergency cooling due to a fire
- A stuck open containment purge valve
- A rupture of a core spray line which caused the core to be uncovered
- Large off-site releases of radioactivity

The above events caused the activation of all of the licensee's emergency response facilities.

2.2. Exercise Observation

During the conduct of the licensee's exercise, NRC team members made detailed observations of the activation and augmentation of the emergency organization; activation of emergency response facilities; and actions of emergency response personnel during the operation of the emergency response facilities. The following activities were observed:

- (1) Detection, classification and assessment of scenario events;
- (2) Direction and coordination of the emergency response;
- (3) Notification of licensee personnel and off-site agencies;
- (4) Communications/information flow, record keeping, and sample distribution;
- (5) Assessment and projection of radiological doses and protective action recommendations;
- (6) Off-site and in-plant radiological surveys;
- (7) Technical support to operations;
- (8) Repair and corrective actions;
- (9) First Aid and rescue;
- (10) Radiological controls for emergency workers;
- (11) Security and access controls.

The NRC team noted that the licensee's activation and augmentation of the emergency organization and activation of the emergency response facilities were generally consistent with their emergency plan and implementing procedures. The team also noted the following areas where the licensee's activities were thoroughly planned and efficiently implemented:

- The scenario format, conduct of initial briefing to controllers and evaluators and conduct of the critique were organized and presented in an effective manner. Appropriate changes were made to the scenario to satisfy NRC concerns.
- There was no evidence of a failure to demonstrate any of the exercise objectives nor was there evidence of prompting on the part of the controllers - evaluators who performed in a professional manner throughout the exercise.

- It was readily apparent within the response facilities (e.g. Control Room (CR) Technical Support Center (TSC) and Emergency Operations Facility (EOF)) as to who was in charge of the operations.
- CR staff were able to effectively use Emergency Operating and Emergency Plan Implementing Procedures.
- The TSC was manned in an orderly manner. Checklists were used effectively to verify readiness and readiness was reported when requested.
- Both Emergency Directors had good knowledge of the plant, directed actions of the TSC groups and kept other stations well informed.
- Briefings at the TSC and EOF were conducted at appropriate times and in an effective manner.
- A number of good practices related to operational support activities were observed:
 - The OSC was promptly activated
 - Dosimetry was issued to personnel prior to being assigned as team members
 - Health Physics Personnel kept track of changing plant conditions by writing survey data on plexiglass which covered plant diagrams.
 - Health Physics Coordinator conducted good briefings with Health Physics Technicians.
 - ALARA was considered in routing of inplant teams.
 - A search and rescue team provided good response in that members were knowledgeable about first aid and they practiced good contamination control.
 - All instruments observed were in good working order and within calibration.
 - A number of good practices relating to EOF dose assessment were observed:
 - Offsite monitoring teams were well tracked and positions clearly indicated on status boards.
 - The dose assessment team performed timely dose calculations and maintained good chronological data records.

- The dose assessment team leader and offsite survey team group leader were well informed and demonstrated effective overall communications skills.
- A number of good practices related to offsite monitoring were observed:
 - Teams were briefed prior to being dispatched and were dispatched in a timely manner.
 - Emergency kits contained the required items.
 - Dosimeters and survey instruments were calibrated in accordance to procedures.
 - Team members demonstrated the ability to read the survey maps and readily find each survey location.
 - Direct radiation readings (open & closed window) were taken at waist level.
 - Team members were proficient in taking air samples.
 - Monitoring results were promptly and correctly reported to the TSC or EOF where dose assessment was being performed.

The NRC Team findings in areas for licensee improvement some of which were also detected by the licensee were as follows:

Certain practices noted within the control room that could have contributed to a degraded response were:

- There was use of an uncontrolled set of piping and instrument drawings
- It wasn't clearly evident whether habitability was determined.
- The attempt to close the stuck open containment valve should have been more carefully planned.
- Events should have been documented in a more formal manner.
- The requests for two different evacuations of the reactor enclosure building within a short time period could have lead to confusion.

The licensee's actions regarding these concerns will be reviewed during a subsequent NRC:RI inspection (50-352/85-17-01).

Certain practices related to operational support or inplant activities that could have contributed to a degraded response were:

- The Operational Support Center (OSC) was crowded.
- The OSC Logs were kept on looseleaf paper and were frequently torn from the pad.
- The handling of the medical emergency could have been done in a more effective manner.
- Some operators did not seem fully knowledgeable in the dressing of protective clothing and use of respirators.

The licensee's actions regarding these concerns will be reviewed during a subsequent NRC:RI inspection (50-352/85-17-02).

Certain practices related to offsite monitoring could have contributed to a degraded response were:

- Air samplers were not operationally checked before being used.
- Direct radiation readings were not taken at ground level by the Green Team.
- The Green Team Health Physics technician did not know how many net counts were statistically significant nor could he detect the reason for an inoperable survey meter.
- Unnecessary information via radio was given to survey teams (e.g. stability class).

The licensee's actions regarding these concerns will be reviewed during a subsequent NRC:RI inspection (50-352/85-17-03).

Certain practices relating to dose assessment could have contributed to a degraded response were:

- The Dose Assessment Team Leader should have considered equipment repair or correction times to estimate the duration of the radioactive release.
- The Dose Assessment Team Leader needs to more effectively utilize personnel in verification of input and output parameters used in computerized dose calculations and for presentation on status boards.

- The field survey group status board information on measured values are normalized to centerline values. This information should not be identified as actual field data.

The licensee's actions regarding these concerns and will be reviewed during a subsequent NRC:RI inspection (50-352/85-17-04).

c. Exercise Critique

The NRC team attended the licensee's post-exercise critique during which the Site Emergency Planning Coordinator presented strengths and improvements items which were detected by the evaluators. In addition, the NRC team members were given a copy of the licensee's findings.

3. Exit Meeting and NRC Critique

Following the licensee's self-critique, the NRC team met with the licensee representatives listed in Section 1 of this report. The team leader summarized the observations made during the exercise and discussed the areas described in Section 2.b. of this report.

The licensee was informed that no violations were identified. Although there were areas identified for improvement, the NRC team determined that within the scope and limitations of the scenario, the licensee's performance demonstrated that they could implement their Emergency Plan and Emergency Plan Implementing Procedures in a manner which would adequately provide protective measures for the health and safety of the public.

Licensee management acknowledged the findings and indicated that appropriate action would be taken where necessary.

At no time during this inspection did the inspectors provide any written information to the licensee.