U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-10/82-11(DEPOS); 50-237/82-15(DEPOS); 50-249/82-16(DEPOS)

Docket No. 50-10; 50-237; 50-249 License No. DPR-2; DPR-19; DPR-25

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

Facility Name: Dresden Nuclear Generating Station, Units 1, 2 and 3

Inspection At: Dresden Site, Morris, IL

Inspection Conducted: June 24, 29, 30, and July 9, 1982

Inspectors: A. G. Januska — 7/23/82

for W. B. Grant — July 30, 1982

for N. A. Nicholson — July 30, 1982

for M. J. Smith — July 30, 1982

J. P. Patterson

Approved By: W. D. Axelson, Chief
Emergency Preparedness Section — July 23, 1982

Inspection Summary:

Inspection on June 24, 29, 30, and July 9, 1982 (Report No. 50-10/82-11(DEPOS); 50-237/82-15(DEPOS); 50-249/82-16(DEPOS))
Areas Inspected: Routine, announced inspection of the Dresden Nuclear Station's (1) full scale emergency exercise involving observations of key functions and locations by eight NRC representatives during the exercise and (2) full alarm test of the Prompt Public Notification system within the 10 mile EPZ. The inspection involved 119.5 inspector-hours on site by six NRC inspectors (1 resident inspector) and three consultants.
Results: No items of noncompliance or deviations were identified.

DETAILS

1. Persons Contacted

NRC Observers and Areas Observed

M. Jordan, Resident Inspector, NRC, Region III; Control Room
W. Grant, Region III; Technical Support Center (TSC)
A. Januska, Region III; (TSC)
W. Thomas, NRC Consultant; Operations Support Center (OSC) Post Accident Sampling Teams
G. Martin, NRC Consultant; (OSC) Inplant Health Physics
N. Nicholson, Region III; Emergency Operations Facility (EOF) Offsite Monitoring Team
M. Smith, Region III; (EOF) Public Information
T. Earle, NRC Consultant; (EOF)

Commonwealth Edison Company and Functions

T. Blackmon, Controller
J. Barr, Controller
J. Goldon, Chief Controller
R. Flessner, Controller
W. Brenner, Controller
R. Ragan, Participant
D. Scott, Controller
G. Wagner, Participant
B. Saunders, Participant
J. Sirovy, Controller
S. McDonald, Participant
J. Schrage, Participant
J. Bell, Participant
J. Wojciga, Participant
D. Strobel, Participant
D. Reese, Controller
G. Myrick, Participant
D. Niswonger, Participant
J. Brunner, Participant
J. Eenigenburg, Participant
M. Wright, Participant
R. Dwyer, Controller
C. Nellis, Controller
A. Mosel, Controller
R. Stobert, Controller

All of the above were present at the exit interview.

Prompt Public Notification

W. Brenner, CECo
F. Novy, Illinois ESDA, Communications Officer
K. Sommer, FEMA, Region V Representative

2. General

An off hours exercise of the licensee's Emergency Plan was conducted at the Dresden Nuclear Generating Station on June 29 and 30, 1982, testing the integrated responses of the licensee, State and local organizations to a simulated emergency. The exercise tested the licensee's and the State and local agencies' capability to respond to a hypothetical accident scenario involving the failure of Unit 2 to completely scram after a generator and turbine trip, resulting in containment overpressurization as the result of a torus vacuum relief valve that failed to close. Attachment 1 describes the scenario.

A full alarm test of the prompt public notification system, within the Dresden EPZ, was conducted on June 24, 1982.

3. General Observations

a. Procedures

This exercise was conducted in accordance with 10 CFR 50 Appendix E requirements using the licensee's Emergency Plan and Emergency Plan Implementing Procedures.

b. Coordination

The licensee's response was coordinated, orderly and timely. If the event had been real, the licensee's actions would have been sufficient to permit the State and local authorities to take appropriate actions for the protection of the public.

c. Observers

Licensee representatives and eight NRC observers monitored and critiqued this exercise.

d. Critique

The licensee held a critique on June 30, 1982. The NRC critique was held on the same day. Areas requiring additional attention are discussed in Paragraph 4.

4. Areas Requiring Additional Attention

Areas requiring additional attention identified by the NRC observers and discussed during the exit interview are listed below:

a. Examine the procedure for the accountability of Operations personnel to assure that an accurate count is obtained considering that the group will be located in several areas.

b. Review the adequacy of the station public address system for those areas which may be occupied during an emergency, e.g., High Range Sampling System building.

c. Review communications, which may assist various teams, e.g., Health Physics, Maintenance, Post Accident Sampling, to provide continuous contact for relaying of information, completing accountability and direction.

d. Correct procedural and/or equipment interface problems for post accident sampling.

e. Review maps used by Environmental Monitoring Teams to correct errors and establish consistency in sample designations on all maps. Add details necessary to assure that sampling locations can be found quickly, to provide timely sample data and reduce the potential for personnel exposure.

5. Specific Observations

a. Control Room (CR)

The resident inspector observed the Control Room operations throughout the course of the exercise. Observations included verification that Operations personnel understood their responsibilities and that appropriate procedures were used in a timely manner, e.g., classification of the incident and notification of personnel.

Overall, the operation of the CR was adequate during the exercise; however, one area requiring additional attention was noted:

- The accountability procedure for the Operations staff should be examined to assure that personnel in both the CR and in the OSC are accounted.

b. Technical Support Center (TSC)

Inspectors observed the licensee's activities in the TSC during the exercise. The TSC was activated in a timely manner. The required staff reported to the TSC and followed appropriate procedures in preparing to assume their responsibilities when command and control would be transferred from the CR. The TSC Director (Station Director) carried out his responsibilities in an efficient manner and although some initial confusion was noted, the facility was well managed.

The transfer of control from the CR to the TSC was smooth and efficient. Periodic updates by the Station Director were given over a public address system that served both the TSC and Operations Support Center (OSC). A comprehensive summary of events was given at the time of a shift change by the Station Director.

The Rad/Chem Director and his staff operated very effectively. A new (Prime) computer was tested for dose assessment against the existing system (SYFA) with favorable results. Dose assessments at various distances from the site were calculated on these systems and the Rad/Chem Director applied the results to the Recommended Protective Action Table in the emergency plan which resulted in the appropriate recommended protective measures for the public.

Communications appeared to be satisfactory. Plant parameters and other pertinent plant information were adequately displayed on a status board.

The TSC was managed and functioned very well throughout the exercise.

c. Operations Support Center (OSC)

The OSC was activated in a timely manner and well managed. Briefing of personnel and obtaining radiation exposure history information was performed soon after the OSC activation. In anticipation of the possible need for reactor coolant samples, in the event that the incident escalated, station personnel performed preliminary steps on the High Range Sampling System (H.R.S.S.) serving Unit 2 which would allow for quicker sample collection. Habitability monitoring was performed. Rad/Chem Technicians who accompanied various teams were assigned based on anticipated radiation problems. In one case, a Rad/Chem Technician erred by leaving a team with no monitoring coverage while he escorted a team member to the maintenance shop.

A new roster and dose histories for the relief shift coming on duty were made, and the new OSC director was briefed on the plant status and pertinent events. The operation of the OSC appeared adequate.

d. Post Accident Sampling

A post accident sampling team was accompanied to the H.R.S.S. building for Unit #2. They were to perform preliminary steps, required for sampling, in anticipation of a request for liquid and gas samples. Radiation surveys were performed continuously during the team's stay in the H.R.S.S. building. Although difficulties were encountered in procedures and equipment, the decision to setup for sampling prior to samples being requested

provided sufficient time to overcome these difficulties and collect samples in a timely manner. Public address communications could not be heard in the H.R.S.S. and therefore would have been useless in assisting in locating individuals for accountability. Also, the assembly alarm could not be heard in this building.

In spite of difficulties encountered, team members were able to collect and analyze requested samples in the required time; however, three areas requiring additional attention were noted:

- Public address coverage for those areas which may be occupied during an emergency should be examined.
- Communications between teams and base stations to provide the means for relaying information, directions, etc. should be reviewed.
- Procedural and/or equipment interface problems for sampling should be reviewed and corrected.

e. Emergency Operations Facility (EOF)

The interim nearsite EOF was activated. The Recovery Manager arrived and took charge of the EOF direction approximately 20 minutes after the arrival of the first EOF personnel. He held update meetings with the EOF staff, checked that required jobs were complete, discussed changes in the emergency levels, contacted state representatives regarding evacuation and in general did a very good job in directing this facility. Inspectors noted some difficulty in controlling the noise level in the EOF and that visual aids needed upgrading.

One individual who reported to the EOF was assigned the responsibility of assuring the operability of communication equipment. When a telephone stopped working, the individual was able to repair it and restore communications.

Overall, the operation of the EOF was managed and functioned well during the exercise.

f. Joint Public Information Center (JPIC)

The JPIC was established in a room adjacent to the interim EOF, located in the G.E. training center. Media personnel were not present and it was therefore difficult for CECo public information personnel to maintain good professional attitudes throughout the exercise. Because of congestion, the flow of information was not as smooth as it should have been. Except for two state maps, visual aids were non-existent. A licensee representative stated that arrangements have been made to supplement telephone communications, should the need arise and that communications, visual aids, reproduction services, clerical, etc. will be upgraded in the permanent EOF.

The utility and state both provided informational packets for the press. The Illinois ESDA press packet included the states' responsibility in an emergency along with evacuation information. The CECo Reporters Guide included a brief summary of Boiling Water Reactor functions and information regarding radiation. Written copies of both the utility's and state's press releases were presented after every news briefing.

g. Environmental Monitoring Teams

Two, three member environmental monitoring teams (EMT) were dispatched offsite from the Emergency Operations Facility (EOF) at 9:40 p.m. Members initially assembled at the OSC and picked up sampling kits from the GSEP trailer in route to the EOF. The EOF recovery manager noted a delay in securing the teams for initial dispatch.

EMT #1 was observed performing field operations, which included direct dose rate monitoring, grass and river water sample collection, and simulated changeout of a fixed Radiological Environmental Monitoring Program (REMP) air sample. Radio contact with the EOF environs base team and/or manager was good; messages were repeated to minimize error and misinterpretation. The teams were able to communicate with each other in the field also. The EMT van was adequately equipped with appropriate sampling equipment, maps, GSEP procedures, and supportive apparatus, e.g., flashlights for night use and ladders. The inspector verified that sampling apparatus available in the GSEP kit on board the van corresponded to the attached kit's inventory listing.

EMT #1 monitored dose rates in route to sample points in the projected plume sectors, while the environs base team plotted and assigned routes to minimize travel time in these sectors.

Sample locations for vegetation were marked with spray paint for future identification.

The Environmental Monitoring Team observed performed adequately; however, one item requiring additional attention was noted:

- Individual maps depicting various environmental media sampling stations carried in the vans should be examined to correct errors, establish consistency in numbered sampling stations for all sample media at the same location, and be detailed enough for an EMT to locate the various sample stations, particularly at night.

6. Prompt Public Notification/Warning System

In lieu of full activation of the Dresden siren system in the 10 mile EPZ during this exercise, Region III agreed to permit the licensee to conduct a full alarm test in Grundy, Will and Kendall County on June 24, 1982.

The Emergency Service and Disaster Agency (ESDA) of the State of Illinois had field monitors at most siren locations within the 10 mile EPZ. The ESDA Communications Officer coordinated the siren monitoring data, the results of which were then forwarded to the licensee. Preliminary information confirming which sirens did not fully alarm was relayed to the licensee and then by the licensee to the NRC inspector on July 9, 1982.

During the actual test a FEMA, Region V representative, observed the encoder activation of the Will County sirens. At the same time an NRC inspector observed similar activation of the Grundy County sirens at the Sheriff's dispatchers office in Morris, Illinois.

The results of the siren test in the three counties are listed below along with the results of the initial siren testing prior to February 1, 1982.

County	No. of Sirens	Fully Alarmed	Did Not Fully Alarm
Grundy	30	28	2
Will	26	24	2
Kendall	4	1	3
Totals	60	53	7

Original "Growl Test" performed prior to February 1, 1982.

		Worked	Failed
Grundy	30	19	11
Will	26	14	12
Kendall	4	0	4
Totals	60	23	27

The inspection team concluded that those sirens which did not fully activate, including those which did not rotate as designed, must be repaired and retested within four months of this finding as required by 10 CFR 50.54(s)(2). This deficiency is addressed in the Appendix to this report.

7. Exit Interview

The inspectors held an exit interview with licensee representatives denoted in Paragraph 1 on June 30, 1982, and by phone with a licensee representative associated with the siren test on July 9, 1982. The licensee agreed to consider the items listed in Paragraph 4.

Attachment: Exercise Scenario

June 9, 1982

SCENARIO OUTLINE

DRESDEN STATION JUNE 29, 1982

PHASE	MSG NO.	TIME ISSUED	TYPE MESSAGE	ISSUED TO	OUTLINE OF CONTENTS
Initial Situation (1800-1815)	1	Prior to 1800	Control	All	- Ground Rules (Pre-published)
	2	1800	Control	C.R.	- Normal Operating information. -- Unit 1 OOS -- Unit 2 operating at 820 Mwe -- Unit 3 operating at 760 Mwe --- Wind Direction - From WSW (242°) --- Wind Speed 10 mph --- Δ T = +2C°/100 meters
Alert (1815-1945)	3	1815	Control	C.R.	- Plant Status -- Unit 2 reactor SCRAM -- Number of control rods failed to insert - Metro Data: --- Wind Direction From WSW (242°) --- Wind Speed 10 mph --- Δ T = +2C°/100m
	C.I.A	(1815-2400)	C.I.	C.R.	- Control Rod Position Graph.
	C.I.B	(1815-2400)	C.I.	Lab	- Results of Drywell Air and Reactor Coolant Samples drawn at various times during the exercise (Chart Form)
	C.I.C	(1815-1945)	C.I.	E.P. Teams	- Dose Rates in Plant.
	C.I.D	(1815-1945)	C.I.	Any CECo. Center	- Meteorological Forecast -- Expect extremely stable inversion.
	C.I. E&F	(1815-2400)	C.I.	Maint. Team	- Results of attempts to insert Control Rods.
	C.I. G&H	(1815-2400)	C.I.	C.R.	- States of SBLC injection.
	C.I. I,J,&K	(1815-2400)	C.I.	Maint. Team	- Status of SBLC Pump 2A & Relief Valve 1105B to SBLC Tank.
	C.I. L&M	(1815-2400)	C.I.	Maint. Team	- Maintenance Status of Control Rod Position.
	4	1830	Control	C.R.	- Plant Status - Metro Data: --- Wind Direction From WSW (242°) --- Wind Speed 10 mph --- T = +2C°/100m
	5	1845	Control	C.R.	- Plant Status - Metro DAta: --- Wind Direction From WSW (242°) --- Wind Speed 10 mph --- Δ_T = +2C°/100m
	3A	1845	Contingency	C.R.	- Declare Alert - Activate Station Group - Send NARS message to System Power Supply
	6	1900	Control	C.R.	- Plant Status - Metro Date: --- Wind Direction From WSW (242°) --- Wind Speed 10 mph --- ΔT = +2C°/100m

SCENARIO OUTLINE

DRESDEN STATION JUNE 29, 1982

BASE	MSG NO.	TIME ISSUED	TYPE MESSAGE	ISSUED TO	OUTLINE OF CONTENTS
Alert (1815-1945) (Continued)	3B	1900	Contingency	Nuclear Duty Person	- Alert - Notify Illinois ESDA & DNS NARS Form.
	7	1915	Control	C.R.	- Plant Status - Metro Data: --- Wind Direction From WSW (242°) --- Wind Speed 8 mph --- ΔT = +3C°/100m
	C.I. N&O	(1915-2300)	C.I.	Maint. Team	- Status of failed Relief Valve.
	8	1930	Control	C.R.	- Plant Status - Metro Data: --- Wind Direction From WSW (242°) --- Wind Speed 8 mph --- ΔT = +3C°/100m
Site Emergency (1945-2045)	9	1945	Control	C.R.	- Plant Status -- Drywell High Pressure Alarm -- LPCI & CS initiated - Metro Data: --- Wind Direction From WSW (242°) --- Wind Speed 8 mph --- ΔT = +3C°/100m
	C.I.P	1945-2045	C.I.	H.P. Teams	- Dose Rates in Plant.
	C.I.Q	1945-2400	C.I.	Environs Teams	- Dose Rates in Environs.
	C.I.R	1945-2400	C.I.	Maint. Team	- Status of LPCI Valve.
	10	2000	Control	C.R.	- Plant Status — Drywell Rad Level 700 R/hr - Metro Data: --- Wind Direction From WSW (242°) --- Wind Speed 6 mph --- ΔT = +4.5C°/100m
	11	2015	Control	C.R.	- Plant Status -- Torus Radiation Level 1300 R/hr - Metro Data: --- Wind Direction From WSW (242°) --- Wind Speed 6 mph --- ΔT = +4.5C°/100m
	C.I.S	(2015-2400)	C.I.	C.R.	- ACAD Pressure Bleed Sub. System Shows no Flow.
	12	2030	Control	C.R.	- Plant Status -- Torus Radiation Level 1500 R/hr - Metro Data: --- Wind Direction From WSW (242°) --- Wind Speed 6 mph --- ΔT = +4.5C°/100m
	9A	2030	Contingency	EOF	- Site Emergency - Transmit NARS Form

SCENARIO OUTLINE

DRESDEN STATION JUNE 29, 1982

PHASE	MSG NO.	TIME ISSUED	TYPE MESSAGE	ISSUED TO	OUTLINE OF CONTENTS
General Emergency (2045-2400) (Continued)	13	2045	Control	C.R.	- Plant Status -- Torus Radiation Level 3550 R/hr - Metro Data: --- Wind Direction From WSW (242°) --- Wind Speed 6 mph --- T = +4.5C°/100m
	C.I.	2045-2400	C.I.	H.P. Teams	- Dose Rates in Plant
	14	2100	Control	C.R.	- Plant Status -- Torus Radiation Level 3555 R/hr - Metro Data: --- Wind Direction From WSW (242°) --- Wind Speed 6 mph --- Δ T = +4.5C°/100m
	15	2115	Control	C.R.	- Plant Status -- Torus Radiation Level 3555 R/hr - Metro Data: --- Wind Direction From WSW (242°) --- Wind Speed 6 mph --- Δ T = +4.5C°/100m
	16	2130	Control	C.R.	- Plant Status -- Torus Radiation Level 4050 R/hr - Metro Data: --- Wind Direction From WSW (242°) --- Wind Speed 6 mph --- Δ T = +4.5C°/100m
	13A	2130	Contingency	EOF	- General Emergency - NARS Forms
	17	2145	Control	C.R.	- Plant Status -- Torus Radiation Level 4050 R/hr - Metro Data: --- Wind Direction Level 4050 R/hr --- Wind Speed 6 mph --- Δ T = +4.5C°/100m
	18	2200	Control	C.R.	- Plant Status: -- Torus Radiation Level 4050 R/hr - Metro Data: --- Wind Direction From WSW (242°) --- Wind Speed 6 mph --- Δ T = +4.5C°/100m
	19	2215	Control	C.R.	- Plant Status -- Torus Radiation Level 4100 R/hr - Metro Data: --- Wind Direction From WSW (242°) --- Wind Speed 6 mph --- Δ T = +4.5C°/100m
	20	2230	Control	C.R.	- Plant Status -- Torus Radiation Level 4150 R/hr - Metro Data: --- Wind Direction From WSW (242°) --- Wind Speed 6 mph --- Δ T = +4.5C°/100m
	21	2245	Control	C.R.	- Plant Status -- Torus Radiation Level 4150 R/hr - Metro Data: --- Wind Direction From WSW (242°) --- Wind Speed 6 mph --- Δ T = +4.5C°/100m

BASE	MSG NO.	TIME ISSUED	TYPE MESSAGE	ISSUED TO	OUTLINE OF CONTENTS
General Emergency (2045-2400) (Continued)	22	2300	Control	C.R.	- Plant Status -- Torus Radiation Level 4150 R/hr - Metro Data: --- Wind Direction From WSW (242°) --- Wind Speed 6 mph --- Δ T = +4.5C°/100m
	23	2315	Control	C.R.	- Plant Status -- Torus Radiation Level 4150 R/hr - Metro Data: --- Wind Direction From WSW (242°) --- Wind Speed 6 mph --- Δ T=+4.5c°/100m
	24	2330	Control	C.R.	- Plant Status -- Torus Radiation Level 4150 R/hr - Metro Data: --- Wind Direction From WSW (242°) --- Wind Speed 6 mph --- Δ T = +4.5C°/100m
	25	2345	Control	C.R.	- Plant Status -- Torus Radiation Level 4150 R/hr - Metro Data: --- Wind Direction From WSW (242°) --- Wind Speed 6 mph --- Δ T = +4.5C°/100m
	26	2355	Control	All	- Time has elapsed.
Recovery (2400)	27	2400	Control	All	- Plant Status -- All Rods in -- Torus Radiation Level 250 R/hr - Metro Data: --- Wind Direction From WSW (242°) --- Wind Speed 12 mph --- Δ T = 0C°/100m
	27A	2415	Contingency	EOF	- Downgrade to Alert - NARS Form
	28	As Directed by Exercise Director	Control	All	- Terminate Exercise - Conduct Critique