

Central Doc. Control Desk



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October 25, 1991

Mr. B. E. Thomas  
Planning, Program, and Management Support Branch  
Office of Nuclear Reactor Regulation  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Dear Mr. Thomas:

DRESDEN NUCLEAR POWER STATION (DNPS) EMERGENCY PREPAREDNESS EXERCISE -  
10/09/91 (Inspection Report #50-237 and 249/91-023)

Enclosed is the final report of observations made by the Pacific Northwest Laboratory staff during the subject exercise. Only minor changes have been made to the draft provided to the Nuclear Regulatory Commission team leader at the site.

If you have any questions regarding this report, please contact me on  
(509) 375-3782.

Sincerely,

J. D. Jamison, Project Manager  
Operational Health Physics Group  
HEALTH PHYSICS DEPARTMENT

JDJ:djm

In triplicate

Enclosure

cc w/encl:  
RA Erickson  
TJ Ploski

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DRESDEN NUCLEAR POWER STATION (DNPS) EMERGENCY PREPAREDNESS EXERCISE

(Inspection Report #50-237 and 249/91-023)  
October 9, 1991

- A. Name: G. R. Bryan, Jr.
- B. Assignment: Technical Support Center (TSC) Observer

<u>Type of Hours</u>	<u>Number of Hours</u>
Travel and Preparation	12
On-Site	<u>24</u>
Total	36

- C. Site Personnel Contacted:

D. Sharper, DNPS Emergency Preparedness (EP) Coordinator; D. Hoogheen, Quad Cities EP Coordinator; T. Edmons, Commonwealth Edison (CECo) EP Staff; P. Elkmann, CECo EP Staff; D. Strobaugh, CECo EP Staff (Contractor); L. Holden, CECo EP Staff; S. Cieszewicz, DNPS, Health Physics (HP); M. Evans, DNPS EP Trainer; G. Smith, DNPS Assistant Superintendent of Operating Procedures (OPs).

- D. Positive Findings:

- TSC work prioritization was timely and generally proper, although frequent changes may have led to some Operational Support Center (OSC) performance degradation.
- The 1052 TSC Station Director (SD) briefing was particularly effective.

- Incident to the loss of TSC lighting, the SD rapidly assigned subordinates investigative tasks to determine the extent of the power outage.
- The exercise was complicated by multi-unit casualties. TSC generally tracked the unit casualties very effectively.

E. Negative Findings:

- Occasionally, approved plant procedures were not used or were used ineffectively.
  - One and a half hours after the Alert declaration, the SD had only completed six of the eleven initial actions in his Alert Checklist (EPIP-105-51). None of the ongoing action steps had been completed.
  - The Assistant Station Director (ASD) used a draft, uncontrolled copy of EPIP-107-51, Rev. 2, the ASD Alert Checklist. The effective copy of this procedure is the Revision 1 version dated March 1991.
- The plant paging system speakers in the TSC were turned down or off during the exercise.
- The scenario lacked a comprehensive time line.
  - The scenario was simulator-driven.
  - Scenario message injects were located in seven different sections of the scenario manual.
  - The narrative summary was classification oriented, not time specific.

Lack of a comprehensive time line had no impact upon the players or controllers, but made it difficult for evaluators to anticipate actions which should be observed.

- Evacuation maps handed out to Dresden evacuees do not identify the destination.
  - The maps were reproduced from EPIP-400 TE A-H, Site Evacuation maps.
  - In the procedure, the destination was identified in the verbiage, but not on the actual maps.
  
- The SD did not make it immediately obvious to the TSC staff when he declared the Site Area Emergency (SAE) and the General Emergency (GE).
  - SAE - Declared at 1000; declassified at 1002 based upon rod insertion. Declared again at 1004; questioned by the ASD; posted on status board at 1006; discussed with the Manager of Emergency Operations (MEO) at 1007. Finally classified in 1007 briefing, SAE as of 1000.
  - GE - 1031 SD briefed "going to declare GE". GE declared at 1034 based upon SD judgment (not required by Emergency Action Levels (EALs); predictable soon, however). (It was a valid classification.)
  
- On several occasions, TSC discipline broke down, most notably at 1036 when noise levels were excessive and 26 of 44 persons present were up and moving around the space.
  
- The Security Director's decision as to the designated evacuation route appeared to be late.
  - SAE was declared at 1000.
  - Accountability was completed at 1022.
  - Evacuation route was designated at 1042.
  
- The fact that one person was contaminated significantly about 0900 was generally unknown in the TSC and was not brought to the attention of the the site team.

- The initial notification message was revised after it had been approved by the SD. It was then transmitted without SD review.
  - The TSC Technical Director added block 10 additional information after SD approval.
  - It was then transmitted, as revised, without SD review. The content was accurate.
  
- The performance of the TSC Operations Director (OD) appeared to be occasionally degraded.
  - The computer terminal at the OD's desk was not used to obtain real time data. Instead, he relied upon the talker and the status boards.
  - He was not always aware of changes significant to classification (e.g., the steam line break).
  - The plant had met prerequisite conditions for entry into long-term shutdown cooling before any planning on how to make the transition was accomplished (e.g., vent/do not vent).
  
- TSC management of the one off-site field monitoring team appeared to be ineffective.
  - The only deployed team was located at a fixed point near the plume edge.
  - As of 1125, the team had not determined plume center line or right/left edges.
  - The environs evaluator was questioned to determine whether the NRC inspector's conclusions were correct. He confirmed that team direction was inadequate.
  
- The Emergency Operations Facility (EOF) activated at 1142, one hour and 42 minutes after the declaration of Site Area Emergency (SAE).  
NOTE: EOF activation time was not an objective in this exercise. The inspector was informed that the licensee has not committed to an EOF activation time goal.

- The exercise concluded before any core damage assessment based upon Post-Accident Sampling System (PASS) sample results was made.
  - PASS sample was taken at 1125.
  - Sample results were available at 1245.
  - The exercise transitioned to recovery planning about 1300 and concluded about 1350.
  - PASS-based core damage assessment was not completed.

F. Chronology:

<u>Time</u>	<u>Observation</u>
0710	At TSC; no pre-staging observed.
0725	SD, two operations and several security staff reported to the TSC to oversee the demonstration. No classification made; 10 CFR50.72 report filed (to NRC simulation cell).
0800	Demonstration-oriented players departed TSC. Demonstration has disbanded; one simulated arrest.
0835	First in; reason unknown (plant page was turned down/off in TSC; an <u>Alert</u> was declared as of 0830).
0845	SD reported to TSC completing TSC minimum manning requirements.
0846	Initial TSC/Operational Support Center (OSC) page system brief. <ul style="list-style-type: none"> <li>- Unit 3 (U3) shutting down due to non-isolable containment leak; pressure and N<sub>2</sub>/O<sub>2</sub> levels holding.</li> <li>- U2 Core spray (CS) A inoperative.</li> </ul>
0854	TSC ventilation shifted to emergency alignment; momentary HVAC trouble alarm.
0856	ASD noted using an uncontrolled draft copy of EPIP-107-51, Rev. 2, the ASD Implementing Procedure Alert Checklist. The current version is Revision 1, dated March 1991.
0858	Telephone turnover between the shift engineer and the TSC SD.
0900	TSC SD assumed the emergency coordinator responsibilities.
0915	Lost pressure in the U2 control rod drive pump discharge.
0916	Torus area radiation increasing, U2.
0920	Possible release.

<u>Time</u>	<u>Observation</u>
0928	TSC concluded that there was no release.
0931	Initial phone conversation between SD and prospective EOF MEO, the recovery manager.
1000	U2 Anticipated Transient without Scram (ATWS). SD declared SAE.
1001	All rods in; SD declared no longer in SAE.
1004	SD declared SAE based upon steam break outside containment.
1005	ASD questioned SAE - "Is there a break?".
1006	SD/MEO telephone conversation; not clear that SAE is proper.
1007	SD briefed - SAE as of 1000, EAL2.0. SD ordered siren and assembly.
1010	ASD brief of (simulated) NRC deployed site team TSC players.
1015	Significant increase in stack radiation.
1023	Accountability completed.
1028	Initial Protective Action Recommendations (PARs); at SAE, shelter 0-2 miles and keyhole to 10 miles.
1031	Nuclear Accident Reporting System (NARs) message 4, the PAR notification message, was revised after SD approval.
1034	SD paging system brief - "Going to declare GE."
1036	Inspector noted extremely high noise levels in the TSC; discipline has broken down; 26 of 44 persons present were standing/moving versus seated at assigned locations.
1039	Controller inject blocked the GE declaration.
1042	SD designated evacuation route one for use.
1046	To this time, neither the OD or his assistant has used the assigned computer terminal, the primary source for plant data. Instead, they have relied upon status boards and orally conveyed data.
1048	TSC SD declared GE based upon EAL IV; stack noble gas readings $\geq 4.8 \text{ E7 } \mu\text{Ci/second}$ . NOTE: Actual reading was approximately $3.0\text{E7}$ ; however, the RP Director's trend plot indicated $4.8\text{E7}$ was imminent and there

TimeObservation

was no projection that the open Main Steam Isolation Valves (MSIVs) could be shut, terminating the release. This inspector concurs with the GE decision at this time.

1049 Lost TSC normal lighting.

1052 Excellent TSC brief; SD assigned subordinates tasking to verify site power availability, TSC HVAC lineup, etc.

1115 Initial core damage assessment 2.4% based upon installed radiation monitor readings.

1120-1130 Observed TSC environs section; one off-site team deployed, in position outside the plume. No field team verification of plume center line or right/left edges to date.

1135 Site evaluation completed.

1137 With U2 pressure at 65 psi/and level at 30, feed system in automatic; Low Pressure Coolant Injection (LPCI) in recirculation and not injecting, TSC operations section discussed options for shutdown cooling.

1142 EOF is in charge, TSC has retained field team management and Emergency Notification System (ENS) communications which will transfer separately.

1151 "A" loop of shutdown cooling in service.

1245 1125 PASS sample results available, passed to technical for core damage assessment.

1305 Shifted focus to recovery planning.

1350 Exercise terminated in the TSC.