

U. S. NUCLEAR REGULATORY COMMISSION

REGION V

Report Nos. 50-206/90-34, 50-361/90-34, and 50-362/90-34

License Nos. DPR-13, NPF-10, and NPF-15

License: Southern California Edison Company
Irvine Operations Center
23 Parker Street
Irvine, California 92718

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

Inspection at: San Onofre Site, San Diego County, California

Inspection Conducted: October 15-19, 1990

Inspector:

Phillip M. Qualls
Phillip M. Qualls, Reactor Inspector

11/15/90
Date Signed

Arthur D. McQueen
Arthur D. McQueen, Emergency Preparedness
Analyst

11/15/90
Date Signed

David L. Solorio
David Solorio, Reactor Inspector

11/15/90
Date Signed

Team Members: J. Muth, PNL
J. Jamison, PNL

Approved by:

G. P. Yuhas
G. P. Yuhas, Chief
Reactor Radiological Protection Branch

11/15/90
Date Signed

Areas Inspected: Announced routine emergency preparedness inspection to evaluate the annual emergency preparedness exercise and critique. Inspection procedures 30703, 82302, and 82301 were covered. The NRC fully participated in this exercise and licensee interactions with the NRC during this exercise were also evaluated.

Results: Based on the results of the exercise observed, there is reasonable assurance, that in the event of an emergency, appropriate protective measures can and will be taken. No significant weaknesses were identified. Significant strengths were observed in licensee management of emergency response facilities, event classification, protective action recommendations, and communication of plant status to other agencies.

DETAILS

1. Persons Contacted

W. Zintl	Manager, Site Emergency Preparedness
M. Wharton	Manager, Nuclear Engineering Design Organization
C. Anderson	Emergency Planning Specialist
L. Cash	Manager, Station Maintenance
R. Garcia	Emergency Planning Engineer
D. Hall	Shift Supervisor
P. Johnson	Emergency Planning Engineer
S. Popowski	Nuclear Training Instructor
P. Champion	Manager, Security Compliance
G. Tilton	Shift Supervisor
B. Culverhouse	Associate Emergency Planning Specialist
S. Schofield	Health Physics Engineer
P. Haralson	Computer Engineering
J. Simpson	Computer Engineering
S. Wood	Consulting Engineer
R. Maisel	Consulting Engineer
M. Foster	Consulting Engineer

2. Exercise Planning (responsibility, scenario/objectives development, control of scenario)

The licensee's Emergency Preparedness (EP) staff has the overall responsibility for developing, conducting and evaluating the annual emergency preparedness exercise. The EP staff developed the scenario with the assistance of licensee staff from other organizations possessing appropriate expertise (e.g. reactor operations, health physics, maintenance, etc.). In an effort to maintain strict security over the scenario, individuals who had been involved in the exercise scenario development were not participants in the exercise. The objectives were developed in concert with the offsite agencies. NRC Region V responded to and participated in this exercise. Region V provided to the licensee, a set of NRC objectives which were incorporated into the exercise. NRC Region V and the Federal Emergency Management Agency, Region IX, were provided an opportunity to comment on the proposed scenario and objectives. The exercise document included objectives and guidelines, exercise scenario and necessary messages and data and was tightly controlled before the exercise. Advance copies of the exercise document were provided to the NRC evaluators and other persons having a specific need. The players did not have access to the exercise document or information on scenario events. This exercise is intended to meet the requirements of IV.F 2 of Appendix E to 10 CFR Part 50.

3. Exercise Scenario (82302)

The exercise objectives and scenario were evaluated by the NRC and considered appropriate as a method to demonstrate Southern California Edison's capabilities to respond to an emergency in accordance with their Emergency Plan and implementing procedures. The exercise scenario

started with an event classified as an alert and ultimately escalated to a general emergency classification. The initiating condition for the alert classification was Reactor Coolant System (RCS) leakage in excess of 50 gpm. Later, a simulated traffic accident on I-5 resulted in the crash of two media helicopters into the switchyard causing loss of all offsite AC power to Units 2 and 3. When AC power was lost, the RCS leakage was increased to about 9000 gpm. At this time the event was escalated to a Site Area Emergency. As RCS pressure decreased to about the Low Pressure Safety Injection (LPSI) pump shutoff head pressure, the LPSI pump failed. At this time, the licensee declared a General Emergency. Later steam was found leaking from a containment penetration and the available emergency diesel generator failed. The resulting inability to provide any water supply to the RCS resulted in core uncover, fuel damage and a release to the environment. The exercise was terminated after the players restored a diesel generator and a LPSI pump and after the proper source term release calculations were performed and offsite agencies had taken appropriate protective actions.

4. Federal Evaluators

Five NRC inspectors evaluated the licensee's response to the scenario. Inspectors were stationed in the (simulator) Control Room, Technical Support Center (TSC), Operations Support Center (OSC), and in the Emergency Operations Facility (EOF). The inspector in the OSC also accompanied repair/monitoring teams. FEMA was not scheduled to evaluate this exercise.

5. Exercise Observations (82301)

a. Control Room/Simulator

The following aspects of Control Room (CR) operations were observed during the exercise: detection and classification of emergency events, notification, frequent use of emergency procedures, and innovative attempts to mitigate the accident. The following are NRC observations of the CR activities. The observations, as appropriate, are intended for improving the program.

- 1) The CR staff acted promptly and professionally to classify the RCS leakage and take proper actions to mitigate the event.
- 2) Due to contradictory orders, the RO in the Control Room lost natural circulation in the cooldown process by stopping all steaming from the generators. The problem was corrected at 0913 when the Shift Supervisor directed the RO to reestablish cooldown.
- 3) Good briefings of CR personnel were performed during the event.
- 4) The CR operators were not aware when the Alert classification was upgraded to a Site Area Emergency (SAE) for a period of 12 minutes.

5. The STA was directed by the SS to monitor the Critical Safety Function Status. At 1022 the STA noted that they had failed the safety function status checks for core heat removal and coolant inventory control; however, he did not notify the SS of these conditions until 1037.

b. Technical Support Center (TSC)

The following aspects of TSC operations were observed: activation, accident assessment/classification, notification, interactions between the various emergency response facilities. The following represent the NRC findings in the TSC. The observations, as appropriate, are intended to be suggestions for improving the program.

- 1) The TSC was manned in a timely, efficient manner.
- 2) TSC notifications, event classification and protective action recommendations were timely and accurate.
- 3) No announcement was made in the TSC when the Emergency Coordinator function was transferred from the TSC to the Emergency Operations Facility (EOF), causing some confusion among the notification staff.
- 4) The TSC technical staff appeared to need some drawings which were not available in "hard copy" after power was lost to the microfiche machine.
- 5) TSC personnel kept the status boards updated and current.

c. Operations Support Center (OSC)

The following aspects of OSC operations were observed: activation of the facility, functional capabilities, and the disposition of various in-plant/monitoring teams. The following are NRC observations of the OSC activities. The observations, as appropriate are intended for improving the program.

1. Staffing of the OSC was prompt and orderly.
2. The process of establishing, briefing and dispatching the field teams was timely and efficient.
3. OSC management displayed the ability to form, dispatch and brief a large number of teams.
4. Health Physics (HP) technicians accompanying the field teams regularly checked with the OSC to ensure that radiological conditions had not changed.
5. Some in-plant posted telephone numbers were unreadable resulting in the field teams using the radio for communications.

6. An air sampler taken to investigate the penetration room steam leak failed to operate because available electric outlets did not work.
7. A frisking station with step-off pad was established in the corridor outside the OSC early in the exercise. However, the station was not manned or identified as being "for exercise use only". This confused both players and non-players alike. Some refused to cross it in either direction. Others simply ignored it.
8. Although respirator-qualified, the members of the team sent to investigate the penetration room leak were not well practiced in self-contained breathing apparatus (SCBA) use. One was forced to go without his corrective lenses because he did not have respirator glasses. Both had difficulty testing the SCBA alarms and required substantial coaching from the HP technician regarding proper use of SCBAs and protective clothing (PCs).
9. Two team members removed their SCBA's and PC's inside of the contaminated penetration room.

d. Emergency Operations Facility (EOF)

The following EOF operations were observed: activation and coordination with state, local, and federal agencies; accident assessment and classification; dose assessment; notifications to state and local agencies; and the formulation of protective action recommendations. The following are NRC observations of EOF activities. The observations, as appropriate, are intended for improving the program.

- 1) The exercise play in the EOF was enthusiastic and generally effective. Coordination with offsite authorities and the NRC was also noted to be very good. Emergency classifications and Protective Action recommendations were appropriate and timely. Activities were performed in a quiet professional manner.
- 2) Status boards were kept updated with the latest available plant information.
- 3) The EOF was activated within the one hour guideline. It was stationed in 57 minutes.
- 4) The EOF was slow to comprehend the magnitude of the large RCS leak (9000 gpm) at 0900. At 0925 the offsite agencies were briefed that the leak was "a couple hundred gallons per minute".
- 5) The RCS Leak Rate was not updated frequently enough in the EOF resulting in inaccurate core recovery estimates.
- 6) There appeared to be a limited number of plant and event status briefings of the technical staff players.

- 7) The core damage and source term estimates determined from PASS sample results were accurate and timely.

6. Critiques

Immediately following the exercise, critiques were held in each of the emergency facilities. The critique process included comments from both licensee players and evaluators. A summary of the licensee's critiques was presented to management on October 18, 1990. The NRC also attended this meeting. The following represent some of the critique findings presented during this meeting.

- 1) Parts were needed for the Emergency Diesel Generator (EDG) but the warehouse players were not used.
- 2) Plant systems knowledge between EOF players varied considerably. There should be some minimum baseline knowledge level established.
- 3) Critical Functions Monitoring System (CFMS) at times indicated incorrect Charging flow and pressurizer level.
- 4) The licensee's source term calculation does not differentiate between containment spray pump on or off.
- 5) A controller improperly engaged in discussions with participants regarding the reason for charging flow greater than the capacity of the number of operating pumps.
- 6) A need was identified for I & C prints in the simulator.

7. Exit

An exit interview was held on October 19, 1990, to discuss the preliminary NRC findings. The attachment to this report identifies the personnel who were present at this meeting. The licensee was informed that no deficiencies or violations of NRC requirements were identified during the inspection. Items discussed are summarized in Sections 2 through 5 of this report.

ATTACHMENT

NRC EXIT INTERVIEW ATTENDEES

H. B. Ray, SCE
H. E. Morgan, SCE
B. Katz, SCE
M. P. Short, SCE
L. O. Cash, SCE
J. Madigan, SCE
R. Pappert, SCE
P. Handley, SCE
B. Culverhouse, SCE
W. Zintl, SCE
K. Bellis, SCE
B. Lacy, SDG&E
J. Curran, SCE
P. Dooley, SCE
R. Garcia, SCE
M. Foster, SCE
R. Maisel, SCE
K. Fowler, SCE
S. Wood, SCE
P. Johnson, SCE
G. Buzzelli, SCE
B. Erickson, SDG&E
J. Wallace, SCE
J. Jamerson, ONL
E. Medling, SCE
R. Waldo, SCE
D. Lokker, SCE
R. Krieger, SCE
D. Bennette, SCE
J. Reilly, SCE
C. Anderson, SCE
D. Solorio, NRC
A. McQueen, NRC
J. Jamison, BNL
J. Muth, BNL
P. Qualls, NRC