



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
611 RYAN PLAZA DRIVE, SUITE 400
ARLINGTON, TEXAS 76011-8064

March 14, 2000

Gregory M. Rueger, Senior Vice President
and General Manager
Nuclear Power Generation Bus. Unit
Pacific Gas and Electric Company
Nuclear Power Generation, B32
77 Beale Street, 32nd Floor
P.O. Box 770000
San Francisco, California 94177

SUBJECT: NRC INSPECTION REPORT NO. 50-275/00-02; 50-323/00-02

Dear Mr. Rueger:

This refers to the inspection conducted on February 14-17, 2000, at the Diablo Canyon Nuclear Power Plant, Units 1 and 2 facilities. The purpose of the inspection was to evaluate the operational readiness of your onsite emergency preparedness program. The enclosed report presents the results of this inspection. Follow-up telephone discussions were held with Messrs. S. Ketelsen and M. Lemke of your staff on February 22 and 28, 2000, to address changes to the inspection findings presented during the inspection exit meeting.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be placed in the NRC Public Document Room (PDR).

Should you have any questions concerning this inspection, we will be pleased to discuss them with you.

Sincerely,

/RA/

Gail M. Good, Chief
Plant Support Branch
Division of Reactor Safety

Docket Nos.: 50-275
50-323
License Nos.: DPR-80
DPR-82

Enclosure:
NRC Inspection Report No.
50-275/00-02; 50-323/00-02

cc w/enclosure:

Dr. Richard Ferguson
Energy Chair
Sierra Club California
1100 11th Street, Suite 311
Sacramento, California 95814

Nancy Culver
San Luis Obispo Mothers for Peace
P.O. Box 164
Pismo Beach, California 93448

Chairman
San Luis Obispo County Board of
Supervisors
Room 370
County Government Center
San Luis Obispo, California 93408

Truman Burns\Mr. Robert Kinoshian
California Public Utilities Commission
505 Van Ness, Rm. 4102
San Francisco, California 94102

Robert R. Wellington, Esq.
Legal Counsel
Diablo Canyon Independent Safety Committee
857 Cass Street, Suite D
Monterey, California 93940

Ed Bailey, Radiation Program Director
Radiologic Health Branch
State Department of Health Services
P.O. Box 942732 (MS 178)
Sacramento, CA 94327-7320

Steve Hsu
Radiologic Health Branch
State Department of Health Services
P.O. Box 942732
Sacramento, California 94327-7320

Christopher J. Warner, Esq.
Pacific Gas and Electric Company
P.O. Box 7442
San Francisco, California 94120

David H. Oatley, Vice President
Diablo Canyon Operations and Plant Manager
Diablo Canyon Nuclear Power Plant
P.O. Box 3
Avila Beach, California 93424

Managing Editor
Telegram-Tribune
1321 Johnson Avenue
P.O. Box 112
San Luis Obispo, California 93406

Robert A. Laurie, Commissioner
California Energy Commission
1516 Ninth Street (MS 31)
Sacramento, CA 95814

Training, Exercises, & Evaluation
Branch Chief
FEMA Region IX
Building 105
Presidio of San Francisco
San Francisco, CA 94129

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Previously concurred.

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ENCLOSURE

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Docket Nos.: 50-275
50-323

License Nos.: DPR-80
DPR-82

Report No.: 50-275/00-02
50-323/00-02

Licensee: Pacific Gas and Electric Company

Facility: Diablo Canyon Nuclear Power Plant, Units 1 and 2

Location: 7 1/2 miles NW of Avila Beach
Avila Beach, California and San Luis Obispo, California

Dates: February 14-17, 2000

Inspector(s): William A. Maier, Senior Emergency Preparedness Inspector

Approved By: Gail M. Good, Chief, Plant Support Branch

Attachment: Supplemental Information

EXECUTIVE SUMMARY

Diablo Canyon Nuclear Power Plant, Units 1 and 2
NRC Inspection Report No. 50-275/00-02; 50-323/00-02

Plant Support

- Event classification was in accordance with the emergency plan and implementing procedures (Section P1).
- Onsite emergency facilities were maintained and ready to support emergency response. Facility surveillances were appropriately completed. Communication circuit testing was completed in accordance with licensee procedures and NRC requirements (Section P2).
- The emergency plan and implementing procedures were appropriately maintained. Emergency plan and implementing procedure changes were properly evaluated to ensure compliance with NRC regulations (Section P3).
- Some facility maintenance procedures were either not kept current or lacked guidance. Outdated procedure binders were referenced in the technical support center inventory procedure. The procedure lacked detail on how to determine the current revisions of wall maps. The emergency operations facility maintenance procedure lacked specific details on how to perform certain tasks. These minor discrepancies did not impact facility readiness (Section P3).
- During the simulator walkthroughs, most tasks were completed accurately and timely. Notifications were appropriately performed. The licensee's critique process was effective in identifying problems requiring follow-up investigation or correction (Section P4).
- Operations management policies contributed to an unnecessary delay in the declaration of a site area emergency during the simulator walkthroughs. The emergency coordinator waited 12 minutes to declare the event even though the conditions were known to have exceeded the specified threshold. The licensee appropriately entered this issue into its corrective action system (Section P4).
- During the simulator walkthroughs, one crew entered nonconservative assumptions into the on-line dose assessment program, yielding low offsite dose projections. The licensee also identified the performance problem and took prompt and appropriate corrective action (Section P4).
- The emergency response organization was trained in accordance with emergency plan and implementing procedure requirements (Section P5).
- The licensee's consolidation of the emergency response organization from four teams to three was appropriately evaluated prior to implementation. The licensee's reduction of emergency planning staff was effectively accomplished by the use of improved work processes and the delegation of tasks to other organizations (Section P6).

- The licensee's 1999 review of the emergency preparedness program generally met all NRC requirements. However, an unresolved item was identified for using a member of the emergency planning staff as an audit team member (Section P7).

Report Details

IV. Plant Support

P1 Conduct of Emergency Preparedness Activities

a. Inspection Scope (93702-03.02, 03)

The inspector reviewed licensee event reports issued for the last 2 years for proper classification and reporting.

b. Observations and Findings

There were no declared emergencies or improperly classified events in the last 2 years.

c. Conclusions

Event classification was in accordance with the emergency plan and implementing procedures.

P2 Status of Emergency Preparedness Facilities, Equipment, and Resources

a. Inspection Scope (82701-03.02)

The inspector toured the control room, technical support center, and emergency operations facility to determine their operational readiness. The inspector spot-checked these facilities for adequate supplies, operable and calibrated radiation monitoring equipment, and operable communication circuits. The inspector also reviewed a sample of completed communication circuit tests performed in the last calendar year.

b. Observations and Findings

Emergency supplies and equipment at the onsite emergency response facilities inspected were as specified in licensee procedures with a few exceptions in the technical support center. First, a radiation survey instrument had exceeded its calibration. The licensee recognized the condition and immediately calibrated the instrument. Second, some silver-zeolite filter cartridges were contained in an unsealed package, voiding their shelf life. These cartridges were not specified for drill use and may have been used in an actual event, yielding nonconservative values of radioiodine airborne concentration due to saturation by nonradioactive airborne contaminants. The licensee removed the cartridges from the facility. The inspector did not consider these discrepancies significant enough to impact the operational readiness of the technical support center.

The reviewed communication tests were performed as required by licensee procedures and NRC regulations. Emergency response organization notification tests, using the voice activated notification system, were performed weekly. No discrepancies were noted.

c. Conclusions

Onsite emergency facilities were maintained and ready to support emergency response. Facility surveillances were appropriately completed. Communication circuit testing was completed in accordance with licensee procedures and NRC requirements.

P3 Emergency Preparedness Procedures and Documentation

a. Inspection Scope (82701-03.01)

The inspector discussed the licensee's emergency plan and implementing procedure review process with the emergency planning staff. The inspector also reviewed the 10 CFR 50.54(q) effectiveness evaluation performed on the most recent emergency plan revision. Inventory procedures for the emergency response facilities were reviewed. The inspector also spot-checked procedures in place at the onsite emergency response facilities to determine if current, approved procedures were present.

b. Observations and Findings

The licensee's process for controlling changes to the emergency plan and implementing procedures included licensing basis impact evaluations and an independent technical review. The effectiveness determination for Revision 3, Change 19, of the emergency plan was comprehensive and detailed.

Emergency response facility inventory procedures contained some discrepancies. For example, the technical support center emergency equipment inventory procedure referenced binders for positions which had been deleted. The procedure directed verification that wall maps in the facility were the most current revision but did not specify how to perform the verification. The maps were not licensee controlled documents. Also, the emergency operations facility maintenance procedure did not specify how to check two-way communication for the radio circuits. Also, it did not specify how to verify plant process computer monitor operability. However, none of these discrepancies were serious enough to impact readiness of the response facilities. The licensee had identified these problems in a review of the inventory procedures and planned to update them. The planned actions satisfactorily addressed the inspector's concerns.

c. Conclusions

The emergency plan and implementing procedures were appropriately maintained. Emergency plan and implementing procedure changes were properly evaluated to ensure compliance with NRC regulations.

Some facility maintenance procedures were either not kept current or lacked guidance. Outdated procedure binders were referenced in the technical support center inventory procedure. The procedure lacked detail on how to determine the current revisions of wall maps. The emergency operations facility maintenance procedure lacked specific

details on how to perform certain tasks. These minor discrepancies did not impact facility readiness.

P4 Staff Knowledge and Performance in Emergency Preparedness

a. Inspection Scope (82701)

The inspector observed the performance of two control room crews as each responded to a dynamic walkthrough scenario on the control room simulator. The inspector evaluated the crews' abilities to classify events accurately, perform offsite notifications in a timely manner, assess the dose consequences of radiological releases, and make accurate and timely offsite protective action recommendations. The inspector also assessed the crews' and licensee evaluators' abilities to accurately critique performance.

Two crews responded to a scenario involving an earthquake with aftershocks that caused a reactor coolant system leak. Loss of emergency core cooling flow resulted in a loss of core subcooling margin and eventual core uncover. A hydrogen burn created a pressure surge in the reactor containment, causing two relief dampers to unseat, which in turn initiated a monitored release of radioactive material from the containment to the environment.

The inspector also interviewed two senior site managers and members of two control room crews to determine their knowledge of duties and awareness of recent changes to the licensee's onsite emergency preparedness program.

b. Observations and Findings

Both crews accurately assessed plant conditions and entered the appropriate emergency operating procedures to respond to emergency events. All emergency classifications were made within 15 minutes of event initiation and were accurate. All offsite notifications were both accurate and timely. Protective action recommendations were accurate and timely. Offsite dose assessment was performed properly in one scenario.

Post-walkthrough critiques were comprehensive, and the emergency preparedness aspects of each crew's performance were appropriately discussed. The licensee's evaluation of each crew's performance was consistent with the inspector's evaluation. Issues requiring resolution were documented for discussion with senior operations management.

Two issues were identified as a result of the simulator walkthroughs. First, the shift manager in the first scenario delayed the declaration of a site area emergency for 12 minutes after plant conditions exceeded the emergency action level threshold for declaration. The purpose for this delay was to allow diagnosis of the accident using the Emergency Operating Procedure E-0, "Reactor Trip/Safety Injection."

This delay was in accordance with Operations Department Procedure OP1.DC11, "Conduct of Operations - Abnormal Plant Operations," Revision 15, which stated that if Procedure E-0 was entered, then classification of an event should normally be made only after E-0 was exited. This delay was also consistent with licensee senior operations management expectations. The inspector expressed concern that the 12-minute delay was unnecessary and excessive, because the shift manager knew a site area emergency condition existed 3 minutes after the initiating event. The licensee considered the policy to be prudent, but initiated Action Request A0503311 to evaluate the inspector's concern. The unnecessary delay in classification of the site area emergency condition was not classified as an exercise weakness because it did not exceed the 15 minute guideline specified in NRC Emergency Preparedness Position 2, "Timeliness of Classification of Emergency Conditions."

The second issue involved inaccurate calculation of an offsite dose projection during the second scenario. Nonconservative assumptions of core damage severity and release duration were entered into the on-line dose assessment program and generated a site boundary dose projection that was 14 times lower than the predicted value for the scenario. The low value did not affect the initial protective action recommendation; however, it did preclude the consideration of protective actions beyond the emergency planning zone area. The inaccurate calculation of the site boundary dose was identified as an exercise weakness, warranting corrective action (IFI 50-275;-323/0002-01).

The licensee also recognized the inaccurate dose assessment calculation and discussed it in the post-walkthrough critique with the crew. The event was considered an isolated performance deficiency. Prompt remedial training for the responsible individual was conducted. The licensee also entered the event in the emergency planning action item tracking system to trend similar performance problems. The inspector considered the licensee's actions to be appropriate.

c. Conclusions

During the simulator walkthroughs, most tasks were completed accurately and timely. Notifications were appropriately performed. The licensee's critique process was effective in identifying problems requiring follow-up investigation or correction.

Operations management policies contributed to an unnecessary delay in the declaration of a site area emergency during the simulator walkthroughs. The emergency coordinator waited 12 minutes to declare the event even though the conditions were known to have exceeded the specified threshold. The licensee appropriately entered this issue into its corrective action system.

During the simulator walkthroughs, one crew entered nonconservative assumptions into the on-line dose assessment program, yielding low offsite dose projections. The licensee also identified the performance problem and took prompt and appropriate corrective action.

P5 Staff Training and Qualification in Emergency Preparedness

a. Inspection Scope (82701)

The inspector reviewed training records for 33 individuals sampled from the active emergency response organization to determine if emergency preparedness continuing training was being administered in accordance with emergency plan and implementing procedure requirements.

b. Observations and Findings

The inspector found that 3 of the 33 sampled individuals had continuing training discrepancies. Two of these individuals were already identified by the licensee, and their training was completed at the end of the inspection week. The licensee removed the remaining individual from the emergency response organization. As a follow-up to the inspector's sample, the licensee conducted a thorough screen of the entire emergency response organization and identified two additional responders with training discrepancies. One individual was immediately retrained, and the other was removed from the emergency response organization. The loss of the removed individuals did not adversely affect the licensee's overall response capability since they were in positions having more than one qualified responder on each response team.

c. Conclusions

The emergency response organization was trained in accordance with emergency plan and implementing procedure requirements.

P6 Emergency Preparedness Organization and Administration

a. Inspection Scope (82701)

The inspector interviewed the emergency planning supervisor and staff to determine the department's organizational structure and management control systems. Recent changes to the emergency response organization and the emergency planning staff were discussed.

b. Observations and Findings

The licensee reduced the emergency response organization from four teams to three as a corrective action for an identified training deficiency. This reduction consolidated the most knowledgeable individuals into optimum positions. Senior site management was briefed and approved the reduction. Drill frequency was maintained to provide more drill participation opportunities for responders. Duty rotations were extended to accommodate vacation planning needs.

Several changes to the emergency planning management structure and staffing had occurred. Emergency planning was moved to the Operations Services Department, which included operations, chemistry, and radiation protection. The move was lateral in

the organization, because the emergency planning supervisor maintained a direct report to a major department manager.

The staffing level for the emergency planning group was significantly reduced since the last inspection (from 11 to 5). This reduction was compensated by the adoption of more efficient work practices. These included the adoption of computer-based training courses, delegation of emergency planning tasks to other departments, and streamlined methods for developing emergency preparedness drills. Except for minor discrepancies noted in the onsite emergency response facilities (see Section P2 above), no adverse consequences from either the staff reduction or the new work practices were noted.

c. Conclusions

The licensee's consolidation of the emergency response organization from four teams to three was appropriately evaluated prior to implementation. The licensee's reduction of emergency planning staff was effectively accomplished by the use of improved work processes and the delegation of tasks to other organizations.

P7 Quality Assurance in Emergency Preparedness Activities

a. Inspection Scope (82701-03.05)

The inspector reviewed the two most recent Nuclear Quality Services annual audits of the onsite emergency preparedness program to determine compliance with NRC requirements. The inspector verified that audit results were made available to appropriate offsite authorities. The inspector also reviewed condition reports resulting from the annual audits.

b. Observations and Findings

The audits covered all the areas required by 10 CFR 50.54(t), including drills, exercises, and adequacy of interfaces with state and local governments. Prior to 1999, the annual audits were performed as four quarterly reports that included emergency planning as a portion of the audit report. These quarterly reports were primarily performance-based, concentrating on drill performance. The 1998 audits revealed knowledge deficiencies in the offsite dose assessment staff. This generated a nonconformance report (N0002075) that was very critical and detailed. Licensee corrective actions for this nonconformance report were broad and long-term (continuing at the time of the inspection).

The 1999 audit (Audit 991310019) was a single review, conducted from July to November. It was a broad and detailed review of the emergency planning program, discussing compliance and performance issues. The audit generated 13 action requests, 14 event trend reports, and 3 recommendations. The 1999 audit was originally planned as an emergency planning group self-assessment with Nuclear Quality Services support but was later credited with meeting the 10 CFR 50.54(t) requirement for an annual independent emergency preparedness program review.

However, a member of the emergency planning staff was included on the audit team. This practice appeared inconsistent with 10 CFR 50.54(t), which requires the audit be performed by persons who have "no direct responsibility for implementation of the emergency preparedness program." The inspector discussed this item with Nuclear Quality Services management, who stated that the practice was consistent with the licensee's audit philosophy to include technical experts from the organization being audited. However, no previous audits of the licensee's emergency preparedness program, intended to satisfy the requirements of 10 CFR 50.54(t), included licensee emergency planning staff on the audit team.

The licensee stated that controls were established to regulate the emergency planning staff member's activities during the audit. Independent review of the individual's findings and limitation of the scope of participation were considered adequate to justify inclusion on the audit team. However, the individual developed the audit checklist and performed the section of the audit dealing with emergency planning organization management and control. In this capacity, the individual was expected to assess the emergency planning supervisor's performance. The NRC is currently reviewing this matter in conjunction with another plant (Task Interface Agreement 99TIA021). The inclusion of the emergency planning staff member on the 1999 Nuclear Quality Services audit team was identified as an unresolved item (URI 50-275;-323/0002-02) pending further NRC review.

The licensee did not consider the use of the emergency planning staff member to be a potential regulatory issue. It did acknowledge the inspector's concern and entered the issue into its corrective action system (Action Request A0503012) for investigation and resolution.

c. Conclusions

The licensee's 1999 review of the emergency preparedness program generally met all NRC requirements. However, an unresolved item was identified for using a member of the emergency planning staff as an audit team member.

P8 Miscellaneous Emergency Preparedness Issues

P8.1 (Closed) Inspection Follow-up Item 50-275;-323/97022-03: Verify emergency plan corrections (off-hours/unannounced drill and 50.54(t) audit frequency). Section 8.1.3.2.c of Revision 3, Change 18, of the emergency plan included provisions for off-hours and unannounced exercises/drills. Section 8.2.1 described the conduct of independent audits every 12 months.

P8.2 (Closed) Inspection Follow-up Item 50-275;-323/97022-04: Assess corrective actions from October 1997 off-hours drill. The licensee conducted an unannounced, off-hours report-in drill on January 28, 1998. The results were satisfactory. The licensee performed an additional unannounced, off-hours report-in drill on August 3, 1999. Results for this drill were considered unsatisfactory because one position was not filled in the required time period. The licensee took appropriate corrective action to address the problem. A remedial drill conducted in December 1999, was satisfactory.

V. Management Meetings

X1 Exit Meeting Summary

The inspector presented the inspection results to members of licensee management at the conclusion of the inspection on February 17, 2000. The licensee acknowledged the findings presented. No proprietary information was identified.

Follow-up telephone discussions were held with licensee staff on February 22 and 28, 2000, to address changes to the inspection findings presented during the inspection exit meeting.

ATTACHMENT

SUPPLEMENTAL INFORMATION

PARTIAL LIST OF PERSONS CONTACTED

Licensee

J. Becker, Manager, Operations Services
C. Belmont, Director, Nuclear Quality Services
T. Grebel, Director, Regulatory Services
S. Ketelsen, Supervisor, Regulatory Services
M. Lemke, Supervisor, Emergency Planning
M. Mosher, Senior Supervisor, Nuclear Quality Services
D. Oatley, Vice President and Plant Manager
D. Taggart, Director, Nuclear Quality Services
L. Womack, Vice President, Nuclear Technical Services

NRC

D. Acker, Resident Inspector
D. Proulx, Senior Resident Inspector

INSPECTION PROCEDURES USED

IP 82701: Operational Status of the Emergency Preparedness Program
IP 92904: Followup - Plant Support
IP 93702: Prompt Onsite Response to Events at Operating Reactors

ITEMS OPENED AND CLOSED

Opened and Closed

50-275;-323/0002-01 IFI Exercise weakness due to nonconservative implementation of on-line dose assessment program

Opened

50-275;-323/0002-02 URI Use of emergency planning staff member to conduct independent review of emergency preparedness program

Closed

50-275;-323/9722-03 IFI Verify emergency plan corrections (off-hours/unannounced drill and 50.54(t) audit frequency)

50-275;-323/9722-04 IFI Assess corrective actions from October 1997 off-hours drill

LIST OF DOCUMENTS REVIEWED

Emergency Plan and Implementing Procedures

Diablo Canyon Power Plant Emergency Plan, Revision 3, Changes 18 and 19

EP G-1	Emergency Classification and Emergency Plan Activation	Revision 28
EP G-2	Activation and Operation of the Interim Site Emergency Organization (Control Room)	Revision 20
EP G-3	Notification of Off-Site Agencies and Emergency Response Organization Personnel	Revision 31A
EP RB-2	Release of Airborne Radioactive Materials Initial Assessment	Revision 19C
EP RB-10	Protective Action Recommendations	Revision 6

Other Procedures:

OM10.DC1	Emergency Preparedness Drills and Exercises	Revision 1A
OM10.DC3	Emergency Response Facilities, Equipment and Resources Maintenance	Revision 2
OM10.ID3	Emergency Plan Training	Revision 6
OP1.DC11	Conduct of Operations-Abnormal Plant Conditions	Revision 15
EP MT-26	Control Room Equipment Inventory Surveillance	Revision 1A
EP MT-27	Technical Support Center Emergency Equipment Inventory	Revision 1
EP MT-29	Emergency Operations Facility	Revision 1
EP MT-34	Technical Support Center Radiation Monitor Check	Revision 1
	Emergency Preparedness Training Program Description	Revision 7

Nuclear Quality Services Audits:

980130008, dated March 31, 1998
981190052, dated June 30, 1998
981530002, dated September 30, 1998
982530022 "Delta Team Emergency Plan Drill-August 12, 1998"
982720013 "Emergency Plan Dress Rehearsal"
990060010, dated March 31, 1999
991310019, dated November 3, 1999

Non-Conformance Reports:

N0002075 "Unified Dose Assessment Center Performance"

Action Requests:

A0446901
A0489285
A0489286
A0489288
A0489293
A0489295
A0489297
A0489768
A0503003
A0503012
A0503014