UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
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March 8, 2000

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SUBJECT: NRC INSPECTION REPORT NO. 50-275/99-19; 50-323/99-19

Dear Mr. Rueger:

This refers to the inspection conducted on December 26, 1999, through February 12, 2000, at the Diablo Canyon Nuclear Power Plant, Units 1 and 2, facility. The enclosed report presents the results of this inspection.

During the 6-week period covered by this inspection period, your conduct of activities at the Diablo Canyon Nuclear Power Plant facility was generally characterized by safety-conscious operations, sound engineering and maintenance practices, and good radiation protection support.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response, if requested, 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/

Linda Joy Smith, Chief
Project Branch E
Division of Reactor Projects

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

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NRC Inspection Report No.
50-275/99-19; 50-323/99-19

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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.:	50-275/99-19 50-323/99-19
Licensee:	Pacific Gas and Electric Company
Facility:	Diablo Canyon Nuclear Power Plant, Units 1 and 2
Location:	7 ½ miles NW of Avila Beach Avila Beach, California
Dates:	December 26, 1999, through February 12, 2000
Inspectors:	D. L. Proulx, Senior Resident Inspector D. G. Acker, Resident Inspector
Approved By:	L. J. Smith, Chief, Project Branch E

ATTACHMENT: Supplemental Information

EXECUTIVE SUMMARY

Diablo Canyon Nuclear Power Plant, Units 1 and 2
NRC Inspection Report No. 50-275/99-19; 50-323/99-19

This inspection included aspects of licensee operations, maintenance, engineering, and plant support. The report documents inspection performed during a 7-week period by the resident inspectors.

Operations

- Planning and preparation for the Year 2000 transition were thorough. No significant problems were observed during the transition period (Section O1.2).

- The inspectors concluded that the licensee focused on safety and took conservative action to reduce power in both units to 14 percent in anticipation of an incoming storm with high sea swells (Section O1.3).

- Although the plant design made both Units 1 and 2 susceptible to a loss of inventory event in Mode 4, the inspectors concluded that the corrective actions in response to Generic Letter 98-02 were thorough and minimized the potential for a loss of inventory event in Mode 4. The inspectors considered the upgraded procedures, training, and quality oversight appropriate for maintaining configuration control (Section O8.1).

Maintenance

- The inspectors concluded that corrective maintenance on failed Turbine-driven Auxiliary Feedwater Pump 1-1 was well performed. The inspectors concluded that the licensee focused on safety and prudently took immediate action to test another auxiliary feedwater pump to verify that no common mode failure had resulted (Section M1.2).

Engineering

- The inspectors concluded that Calculation J-54 was nonconservative for determination of worst case refueling water storage tank instrument uncertainty because of failure to consider variations in transmitter tap locations. However, a violation of NRC requirements did not occur because the licensee was not committed to a specific calculation method as part of their licensing basis and because of administrative controls that maintained more water in the tank than required by design analysis. The inspectors concluded that the refueling water storage tank had remained operable and that corrective actions were satisfactory (Section E1.1).

Plant Support

- The inspectors evaluated radiation protection practices during observation of the repacking of Valve CVCS-2-FCV-128. The inspectors determined that personnel donned protective clothing and dosimetry properly, used good radiological practices for draining the nearby piping, worked away from the hot spot in the area, and followed the directions of the radiation protection technician overseeing the work (Section R1.1).

Report Details

Summary of Plant Status

Unit 1 began this inspection period at 100 percent power. On December 31, 1999, operators reduced power to 80 percent for the transition to the Year 2000. Following a successful transition, operators returned the unit to 100 percent power on January 1, 2000. On January 30, 2000, operators reduced Unit 1 power to 14 percent in response to a high swell warning. Unit 1 returned to full power on February 2, 2000. Unit 1 continued to operate at essentially 100 percent power until the end of this inspection period.

Unit 2 began this inspection period at 100 percent power. On December 31, 1999, operators reduced power to 80 percent for the transition to the Year 2000. Following a successful transition, operators returned the unit to 100 percent power on January 1, 2000. On January 30, 2000, operators reduced Unit 2 power to 14 percent in response to a high swell warning. Unit 2 returned to full power on February 1, 2000. Unit 2 continued to operate at essentially 100 percent power until the end of this inspection period.

I. Operations

O1 Conduct of Operations

O1.1 General Comments (71707)

The inspectors visited the control room and toured the plant on a frequent basis when on site, including periodic backshift inspections. In general, the performance of plant operators reflected a focus on safety.

O1.2 Year 2000 Transition (Units 1 and 2)

a. Inspection Scope (71707)

From December 31, 1999, to January 1, 2000, the inspectors provided continuous coverage during the transition to the Year 2000. This transition was initially of concern because the computer systems relied upon by operators could potentially fail. The inspectors observed operator performance in the control room, walked down safety-related areas, observed security monitoring in the central alarm station, and observed management interactions in the Technical Support Center.

b. Observations and Findings

The licensee had completed in October 1999 a comprehensive review and remediation effort to ensure the reliability of the computer systems during the Year 2000 rollover. As a conservative measure, the licensee staged a significant number of personnel to respond to potential computer problems during the transition period.

As of 8 p.m. (PST), December 31, 1999, the licensee reduced power on both units to 80 percent at the request of the independent system operator in order to support grid stability. In addition, the licensee manned the Technical Support Center to provide management support for any potential problems encountered during the Year 2000 rollover.

At 12 a.m. on January 1, 2000, the licensee completed rollover to the Year 2000. One minor computer problem was noted. The reactor coolant system vibration loose parts monitor rolled over to December 23, 1999, on Unit 1 and January 1, 1900, on Unit 2. These items, though unexpected, displayed only the date; consequently, the vibration loose parts monitor continued to function properly. All other computer controlled systems functioned properly through the Year 2000 transition.

At 3 a.m. on January 1, 2000, the licensee received permission to increase power. Operators increased power such that both units achieved 100 percent power at 4 a.m.

c. Conclusions

Planning and preparation for the Year 2000 transition were thorough. No significant problems were observed during the transition period.

O1.3 High Swell Warnings (Units 1 and 2)

a. Inspection Scope (71707)

The inspectors reviewed the response to weather reports indicating that there would be high ocean swells on January 31, 2000.

b. Observations and Findings

The licensee has had a history of the first winter storms bringing in sufficient kelp to clog the circulating water pump intake, requiring tripping of one or both units. The licensee developed a procedure to evaluate incoming storms, kelp conditions, and the availability of intake equipment to determine if it would be prudent to reduce power or shutdown both units. The licensee issued Operating Order O-28, “Intake Management,” Revision 4A, to provide guidelines for evaluation of each incoming storm.

Prior to the January 31, 2000, storm, the Plant Staff Review Committee reviewed the predicted sea swells and the large amount of kelp in the intake area and, even though all intake equipment remained operable, determined that the storm could potentially foul the circulating water pump screens, causing loss of the reactor heat sink. Operators reduced power on both units to 14 percent during the storm. The inspectors observed that, despite high sea swells, intake screens and intake refuse equipment maintained the circulation water pumps operable.

The inspectors found the operator actions to be in accordance with Operating Order O-28 guidelines and determined that the operators took conservative actions that focused on safety. The inspectors noted that, during a similar storm on November 19, 1999, the licensee had shut down both units.

The inspectors observed the return to full power of both units on February 1 and 2, 2000. The operators increased power slowly and maintained good control of the reactivity effects of large changes in power over the short period of time.

c. Conclusions

The inspectors concluded that the licensee focused on safety and took conservative action to reduce power in both units to 14 percent in anticipation of an incoming storm with high sea swells.

O2 Operational Status of Facilities and Equipment

O2.1 Main Control Board Action Requests (Units 1 and 2)

a. Inspection Scope (71707)

The inspectors reviewed main control board action requests to determine if deficiencies that could affect the information available to operators or operator controls were being repaired in a timely manner.

b. Observations and Findings

The inspectors determined that the licensee has been consistently close to maintaining the number of action requests associated with the main control board to their goal of 40. The inspectors determined that many of the active main control board action requests identified deficiencies with remote equipment and were placed on the control board to keep operators aware of equipment status. The inspectors did not identify any significant action requests that would affect the operators' ability to respond to an event.

O8 Miscellaneous Operations Issues

O8.1 Review of Potential for Draindown During Shutdown (Units 1 and 2)

a. Inspection Scope (TI2515/142)

The inspectors verified that the licensee had searched for potential draindown paths that could be created by operator error or equipment failures and that could lead to a common-cause failure of residual heat removal (RHR) and emergency core cooling system pumps. The inspectors evaluated whether the licensee had taken adequate measures to reduce the likelihood of a draindown event in Mode 4, hot shutdown.

b. Observations and Findings

Background

On September 17, 1994, personnel at Wolf Creek opened an eight-inch flow path to the refueling water storage tank (RWST) from the reactor coolant system with the plant in hot shutdown. Although operators responded promptly to the loss of reactor coolant system inventory, considerable inventory was lost. The event resulted from inadequate control of system configuration during concurrent test activities. One of two valves that isolated the unpressurized RWST from the reactor coolant system was opened for testing while the second isolation valve was opened at the same time for boron equalization. While in hot shutdown reactor coolant is pressurized and above the boiling point; therefore, when this water was introduced into the unpressurized RWST outlet piping, the water could flash to steam. Since the RWST outlet piping provided the common suction source for all RHR and emergency core cooling pumps, the resultant air pockets could have caused failure of all RHR and emergency core cooling system pumps, a safety significant event.

The NRC issued Generic Letter 98-02, "Draindown During Shutdown and Common-Mode Failure," to request all licensees to review the issue and take any necessary corrective actions.

The NRC issued Temporary Instruction 2515/142 for NRC review of licensee actions.

Design Review

The RHR and emergency core cooling systems at Diablo Canyon Units 1 and 2 are similar in design to these systems at Wolf Creek. Diablo Canyon has a single 8-inch line from the RHR pump discharge piping back to the RWST. The line is connected to a crossover line between the two RHR trains. There is a motor-operated valve between each RHR loop and the common line to the RWST, Valves 8716A and B, and a manual isolation valve in the common line, Valve 8741.

There was, however, one germane design difference between Diablo Canyon and Wolf Creek. At Wolf Creek one RHR train could be lined up to take suction from the RWST while the second RHR train took suction from the reactor coolant system. At Wolf Creek each RHR train has a separate RWST suction supply isolation valve while at Diablo Canyon the design has only a common supply line. Thus, at Diablo Canyon operators could not operate an idle RHR loop using the RWST as the suction supply while the other RHR train was being used for shutdown cooling.

Licensee Response to Generic Letter 98-02

The licensee concluded that their design was susceptible to the type of errors made at Wolf Creek. The licensee reviewed the design, operating procedures, and quality assurance program information associated with control of testing evolutions while in hot shutdown. The following paragraphs summarize the licensee findings and actions:

- If Valve 8741 were opened in Mode 4, the control room would immediately receive an RWST high level alarm because the RWST is maintained almost full. In addition, the licensee noted that their procedures required stopping RHR pumps if pressurizer level dropped below 12 percent, which would slow the inventory loss. The licensee concluded this procedure was adequate.

- Operating procedures only allowed Valve 8741 to be opened in Mode 5 for draining the refueling cavity.

- Valve 8741 was a sealed valve and is controlled by a checklist.

- One maintenance procedure required opening Valve 8741 once each refueling to verify operability. The licensee stated that they would modify this procedure.

- Several procedures were used to operate the RHR system in Mode 4. The licensee stated they would add cautions to these procedures concerning operation of Valve 8741.

- The licensee stated that they would add a caution label plate to Valve 8741 concerning operation in Mode 4.

Inspector Review

The inspectors reviewed the procedures associated with boron control using the RHR system in Mode 4. The inspectors determined that during plant cooldown Procedure OP B-2:V, “RHR - Place in Service During Plant Cooldown,” Unit 1, Revision 18, required that any boron equalization be accomplished before reactor coolant system suction valves were opened. Procedure OP B-2:V had operators equalize boron by sending the existing inventory to the volume control tank at a much lower flow rate than recirculation through the 8-inch line to the RWST. The inspectors concluded that this procedure for boron equalization minimized potential draindowns associated with boron control.

The inspectors reviewed the procedures that covered operation of the RHR system in Mode 4. The licensee had two procedures for RHR operation in Mode 4: (1) Procedure OP L-1, “Plant Heatup From Cold Shutdown to Hot Standby,” Unit 1, Revision 53, and (2) Procedure OP L-5, “Plant Cooldown From Minimum Load to Cold Shutdown,” Unit 1, Revision 49. The licensee had added precautions to both procedures to maintain Valve 8741 closed when the unit was in Mode 4 with RHR reactor coolant suction valves open. In addition, Procedure OP B-2:2:I, “RHR System Alignment Verification for Plant Startup,” Unit 1, Revision 14, required Valve 8741 be both verified and independently verified closed. The inspectors reviewed associated licensee procedures and did not identify any additional procedures that operated the RHR system in Mode 4. The inspectors concluded that the procedures minimized potential draindowns associated with RHR system operation in Mode 4.

The inspectors verified that Valve 8741 had been independently verified closed prior to the last startup of Unit 1. The inspectors verified that Valve 8741 was in the sealed valve program and that the valve was sealed closed in both units. (Valve 8741 was a containment isolation valve and subject to the requirements for containment valves.) The inspectors verified that both valves were labeled with caution plates stating not to operate in Mode 4 with reactor coolant to RHR suction valves open. The inspectors concluded the licensee adequately controlled the position of Valve 8741.

The inspectors reviewed Procedure OP K-15, “Important Manual Valves Requiring Lubrication and/or Exercising,” Unit 1, Revision 10, and determined that the licensee had changed this procedure to preclude opening Valve 8741 in Mode 4 with reactor coolant to RHR suction valves open. The inspectors reviewed licensee procedures associated with maintenance and surveillances and did not identify any additional procedures that required or allowed opening Valve 8741. The inspectors verified Procedure AP-24, “Shutdown LOCA,” Unit 1, Revision 5, contained a continuous action step for stopping both RHR pumps when pressurizer level reached 12 percent.

The inspectors reviewed past licensee problems with maintaining configuration control of valves and with simultaneous performance of maintenance and testing activities during shutdown conditions. In the most recent Unit 2 outage, the licensee had drained the refueling cavity without a required pressurizer vent because of inadequate control of required valve positions. The inspectors reviewed the corrective actions for these problems. The inspectors determined that the corrective actions taken for configuration control problems had significantly reduced the number of errors during the last outage in both units. The inspectors reviewed the planned actions for failing to properly control pressurizer vent path valves during the last outage and considered the actions appropriate. The inspectors also discussed configuration control errors with quality assurance personnel and reviewed quality assurance audits performed during the last outage in both units. The inspectors determined that the problem identification and resolution of deficiencies associated with configuration control during outages was satisfactory.

The inspectors discussed draining of the reactor coolant system in Mode 4 with a number of operators on several crews. The operators were still familiar with the Wolf Creek event and could identify the correct abnormal operation procedure for response to a loss of coolant event in Mode 4. Upon review of the procedure, all operators identified that stopping the RHR pumps was a continuous action step. The operators were familiar with the function and location of Valve 8741. The inspectors considered the knowledge of the operations staff appropriate for minimizing the potential for and effects of a loss of reactor coolant system inventory.

The inspectors reviewed drawings for the RHR and emergency core cooling systems and did not identify any additional paths that could create a similar draindown of the reactor coolant to the RWST in Mode 4.

c. <u>Conclusions</u>

Although the plant design made both Units 1 and 2 susceptible to a loss of inventory event in Mode 4, the inspectors concluded that the corrective actions in response to Generic Letter 98-02 were thorough and minimized the potential for a loss of inventory event in Mode 4. The inspectors considered the procedures, training, and quality oversight appropriate for maintaining configuration control.

O8.2 <u>(Closed) Licensee Event Report (LER) 275;323/99-009-00</u>: manual reactor trips because of heavy debris loading of traveling screens during a Pacific Ocean storm.

This issue was discussed in NRC Inspection Report 50-275; 323/99-14, except for the starting of two emergency diesel generators.

Two emergency diesel generators had started when electrical power was transferred from unit auxiliary power to startup power following the reactor trips. The licensee had a dead bus transfer scheme for the safety-related busses and, because of relay sequencing, emergency diesel generators sometimes started. Although the licensee had previously concluded that starting of the emergency diesel generators was not reportable, the start was not necessary. In order to preclude these unnecessary starts, the licensee had submitted a license amendment request to eliminate the relay sequencing problems. However, the licensee withdrew this request when the manufacturer of the new relays stopped making the relay. The inspectors discussed the unnecessary start conditions with the licensee. The licensee stated that a different relay had been identified and was going to be seismically tested in the near future. The licensee stated that, if the relay passed the seismic test, they planned to install the relays in the next outage for each unit. The licensee stated that the new relay design would preclude emergency diesel generator starts during successful transfer of power from one source to another.

II. Maintenance

M1 Conduct of Maintenance

M1.1 General Comments on Maintenance Activities

a. Inspection Scope (62707)

The inspectors observed portions of work activities covered by the following work orders:

C0163595	Verify Casing and Gland Bolting Torques (Containment Spray Pump 2-2)
C0149640	Component Cooling Water Pump 2-2 Replace Inboard/Outboard Mechanical Seals, Repair Oil Leaks
C0165025	Charger 12 Output Voltage Erratic
C0165811	CVCS-2-FCV-128 Repack Valve
C0157658	First Cycle Inspection of New Lube Oil Pump Coupling (for Coolant Charging Pump 2-1)
C0165424	CVCS-2-484A Replace Valve
C0165489	Auxiliary Feedwater Pump 1-1 Suction Line Flow Restriction
C0165505	Auxiliary Feedwater Pump 1-1 Suction Line Flow Restriction

b. Observations and Findings

The inspectors considered that the maintenance work was properly performed. See Sections M1.2 and M1.3 for additional discussion.

M1.2 Failure of Turbine-Driven Auxiliary Feedwater (AFW) Pump 1-1 (Unit 1)

a. Inspection Scope (62707)

On January 11, 2000, operators secured AFW Pump 1-1 because of high vibration and no apparent flow. The inspectors observed the licensee actions to identify and correct the cause of this problem, as documented on Action Request A0500671.

b. Observations and Findings

The licensee had removed AFW Pump 1-1 from service to obtain an oil sample and perform routine inspections. After maintenance was completed, the licensee performed a test to verify pump operability on recirculation flow. The turbine was cold started and speed increased normally. However, the operators observed no cooling water flow and abnormally low recirculation flow. After approximately 5 minutes of operation, the operators heard a bang, which they attributed to a water hammer, and noticed increased pump vibration. The operators secured the pump approximately 6 minutes after the start.

The licensee reviewed the data associated with the pump run and noted that pump discharge pressure remained normal for approximately 5 minutes then dropped rapidly. The licensee determined that bearing temperatures remained constant and casing temperatures had increased but had not exceeded the upper limit of 200°F. The licensee concluded that the problem was loss of a flow path and not a pump failure. Because the orifices in the recirculation line were much smaller than the suction supply piping, the licensee attributed the failure to blockage of the recirculation line. Further, since a valve and piping in the suction supply were common to all three AFW pumps, the licensee verified proper flow through AFW Pump 1-2, which ruled out a common mode failure of the AFW system associated with the suction supply from the RWST.

After disassembly of suction and recirculation piping, the licensee determined that a piece of the rubber liner for an 8-inch manual isolation butterfly valve had broken off. The rubber had gone through the pump and numerous small pieces had blocked the recirculation line orifices. The licensee determined that the rubber liner had been improperly installed in 1988 because of insufficient clearance to properly install the valve. A piece of the liner was in the stroke path for the disk and eventually tore loose and entered the pump.

The inspectors observed maintenance personnel performing disassembly and reassembly of mechanical piping connections, installation of valves, and boroscope inspections of lines and the pump. The inspectors determined that maintenance personnel were following the requirements of the associated work orders and exhibited good craft skills in reassembly of components.

After boroscope inspection of the first stage of the pump, discussions with the pump vendor, and flushing and cleaning of the lines, the licensee successfully tested the pump on recirculation flow and full flow to the steam generators. The licensee recovered most of the rubber and determined that it would not cause a steam generator chemistry problem if any of the rubber did get to the steam generators. The licensee initiated Nonconformance Report N0002110 to investigate the potential that there were other valves with rubber liners that may not have been correctly installed.

c Conclusions

The inspectors concluded that corrective maintenance on failed Turbine-driven AFW Pump 1-1 was well performed. The inspectors concluded that the licensee focused on safety and prudently took immediate action to test another AFW pump to verify that no common mode failure had resulted.

M1.3 Replacement of Component Cooling Water Pump 2-2 Mechanical Seals (Unit 2)

a. Inspection Scope (62707)

The inspectors observed work activities associated with seal replacement.

b. Observations and Findings

The inspectors observed that the work was performed in accordance with procedure requirements. During the work the inspector observed that the seal bolting arrangement was different than on Component Cooling Water Pump 2-3. Large flat washers were missing on Component Cooling Water Pump 2-3. Since the seal nuts provided compression against a slotted housing, the contact surface area was lower without the washers. After the inspectors identified this difference, the licensee initiated Action Request A0501585 to evaluate the condition. The inspectors agreed with the licensee that the different bolting arrangement was not an immediate operability issue.

M1.4 Surveillance Observations

a. Inspection Scope (61726)

The inspectors observed performance of all or portions of the following surveillance test procedures:

STP V-3S6 Exercising Phase A Containment Isolation Valve FCV-361, Revision 3 (Unit 2)

STP R-1A Exercising Full Length Control Rods, Revision 15 (Unit 1)

STP M-12B Battery Charger Performance Test, Revision 12 (Unit 1)

b. Observations and Findings

The inspectors found that the surveillance tests were conducted properly.

M8 Miscellaneous Maintenance Issues (92700)

M8.1 (Closed) LER 275/99-008-00: Auxiliary Feedwater Pump 1-1 started on 12 kV undervoltage.

This issue was discussed and dispositioned in NRC Inspection Report 50-275; 323/99-14. No new information was provided in the LER.

III. Engineering

E1 Conduct of Engineering

E1.1 RWST Calculations (Units 1 and 2)

a. Inspection Scope (37551)

The inspectors reviewed uncertainty calculations that supported the usable volume of the RWST in support of design basis accidents.

b. Observations and Findings

The inspectors observed that Calculation J-54, "Nominal Setpoint Calculation for Selected PLS Setpoints," Revision 15, included the three RWST level transmitters in each unit. The inspectors observed that the licensee had used industry accepted methodology for calculating the uncertainty of the individual RWST level transmitter loops. The licensee had then combined the results of the individual loops by using a computer Monte Carlo analysis. This analysis ran thousands of combinations of uncertainty for the three level detectors and identified the case values that provided a 95 percent confidence that the worst case combinations had been used. The worst case values from the Monte Carlo analysis were then used to support calculations that demonstrated adequate water in the tank for design basis accidents. The inspectors considered this general method, which required use of all three transmitters, to be acceptable because the RWST was considered inoperable with only two level transmitters available.

During review of the details of Calculation J-54, the inspectors observed that the licensee had not included any uncertainty for variations in the level transmitter tap locations. Because any uncertainty in tap locations is a fixed error, this uncertainty is treated in calculations as a bias and must be added directly to random uncertainty calculations. The inspectors asked the licensee why tap location uncertainty had not been included in Calculation J-54. The licensee researched design drawings for the RWST and was unable to establish an uncertainty for tap location variations. The licensee initiated Action Request A0487833 to measure the tap location using lasers.

The licensee determined that the worst case variation between the actual tap locations and design locations was +3.4 inches to -1.2 inches. The licensee evaluated these differences and concluded that the error was bounded by the existing RWST analysis because the licensee maintained more water in the RWST than required by worst case analysis. In addition, the licensee noted that they had recently installed many new transmitters that had a greater accuracy. The licensee observed that the improvement in transmitter accuracy bounded the tap location error without crediting the increased RWST level. The licensee stated that they were currently updating Calculation J-54 to include the new data. The licensee issued instructions to recalibrate the individual level transmitters to the exact locations of their associated taps. The inspectors agreed that the improvement in accuracy from the newly installed transmitters bounded the tap location errors. In addition, the inspectors agreed that the administrative controls on RWST level provided sufficient margin to have maintained the RWST operable prior to transmitter replacement.

The licensee observed that, although the calculation omitted a known uncertainty, the use of specific uncertainty calculation methods for setpoints not in the reactor protection system was not a part of the Diablo Canyon licensing basis.

c. Conclusions

The inspectors concluded that Calculation J-54 was nonconservative for determination of worst case RWST instrument uncertainty because of failure to consider variations in transmitter tap locations. However, a violation of NRC requirements did not occur because the licensee was not committed to a specific calculation method as part of their licensing basis and because of administrative controls that maintained more water in the tank than required by design analysis. The inspectors concluded that the RWST had remained operable and that corrective actions were satisfactory.

E8 Miscellaneous Engineering Issues (92700)

E8.1 (Closed) LER 323/99-003-00: entry into Technical Specification 3.0.3 because of voiding in the emergency core cooling system caused by inadequate administrative controls.

This issue was discussed and dispositioned as a noncited violation in NRC Inspection Report 50-275; 323/99-18. No new information was provided in the LER.

E8.2 (Closed) Licensee Event Report 275;323/1998-009-00: turbine building siding structural supports did not meet design requirements for wind load resistance (voluntary).

In January 1998, the licensee determined that the original turbine wall design would not support outward forces from a low pressure condition caused by a 200 mile per hour tornado. The licensee added additional bolting to existing supports to ensure that the wall would not separate from the building in areas adjacent to safety-related equipment. The licensee noted that there had never been a tornado reported in the area of the site. The inspectors verified that the added support was installed in accordance with the design change package.

IV. Plant Support

R1 Radiological Protection and Chemistry Controls

R1.1 General Comments (71750)

The inspectors evaluated radiation protection practices during observation of the repacking of Valve CVCS-2-FCV-128. The inspectors determined that personnel donned protective clothing and dosimetry properly, used good radiological practices for draining the nearby piping, worked away from the hot spot in the area, and followed the directions of the radiation protection technician overseeing the work.

S1 Conduct of Security and Safeguards Activities

S1.1 General Comments (71750)

During routine tours, the inspectors noted that the security officers were alert at their posts, security boundaries were being maintained properly, and screening processes at the Primary Access Point were performed well. During backshift inspections, the inspectors noted that the protected area was properly illuminated, especially in areas where temporary equipment was brought in.

V. Management Meetings

X1 Exit Meeting Summary

The inspectors 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.

The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

<u>ATTACHMENT</u>

<u>SUPPLEMENTAL INFORMATION</u>

PARTIAL LIST OF PERSONS CONTACTED

<u>Licensee</u>

J. R. Becker, Manager, Operations Services
W. G. Crockett, Manager, Nuclear Quality Services
R. D. Gray, Director, Radiation Protection
T. L. Grebel, Director, Regulatory Services
D. B. Miklush, Manager, Engineering Services
D. H. Oatley, Vice President and Plant Manager
R. A. Waltos, Manager, Maintenance Services
L. F. Womack, Vice President, Nuclear Technical Services

INSPECTION PROCEDURES (IP) USED

IP 37551	Onsite Engineering
IP 61726	Surveillance Observations
IP 62707	Maintenance Observation
IP 71707	Plant Operations
IP 71750	Plant Support Activities
IP 92700	Onsite Followup of Written Reports of Nonroutine Events at Power Reactor Facilities

ITEMS OPENED AND CLOSED

<u>Opened</u>

None.

<u>Closed</u>

275;323/99-009-00	LER	Manual reactor trips because of heavy debris loading of traveling screens during a Pacific Ocean storm (Section O8.2)
275/99-008-00	LER	Auxiliary Feedwater Pump 1-1 started on 12 kV undervoltage (Section M8.1)
323/99-003-00	LER	Entry into Technical Specification 3.0.3 because of voiding in the emergency core cooling system caused by inadequate administrative controls (Section E8.1)

275;323/98-009-00	LER	Turbine building siding structural supports did not meet design criteria (Section E8.2)

LIST OF ACRONYMS USED

AFW	auxiliary feedwater
IP	inspection procedure
LER	licensee event report
NRC	Nuclear Regulatory Commission
PDR	Public Document Room
RHR	residual heat removal
RWST	refueling water storage tank