UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

ENCLOSURE 1

SAFETY EVALUATION RELATED TO
GENERIC LETTER 83-28, ITEM 4.3
AUTOMATIC ACTUATION OF SHUNT TRIP OF REACTOR TRIP BREAKERS
DIABLO CANYON NUCLEAR POWER PLANT, UNITS 1 AND 2
DOCKET NOS. 50-275 AND 50-323

1.0 INTRODUCTION

Generic Letter 83-28, issued by the NRC on July 8, 1983, indicated actions to be taken by licensees based on generic implications of the Salem ATWS events. Item 4.3 of that letter required that modifications be made to improve the reliability of the reactor trip system by implementation of a scheme to automatically initiate the reactor trip breaker (RTB) shunt trip attachment. The Diablo Canyon licensee, Pacific Gas and Electric Company (PG&E), in a letter dated November 7, 1983, committed to install the generic design modifications recommended by the Westinghouse Owner's Group (WOG). On August 10, 1983, the staff issued an SER accepting the proposed WOG design. In this SER, the staff identified thirteen plant-specific concerns that must be addressed by each plant adopting the WOG design, in order to satisfy the requirements of Item 4.3 of Generic Letter 83-28.

In a submittal dated December 20, 1983, the licensee provided information addressing the thirteen concerns. The NRC staff reviewed this information and found it acceptable, with the exception of five plant-specific items. The staff's SER describing this conclusion was issued on May 16, 1984.

The licensee, in a number of telephone conversations and in letters dated May 24, June 6, June 27, and November 7, 1984; December 6, 1985; November 20, 1986; and December 9, 1988 provided additional information addressing the five remaining concerns. The staff review of this information is now complete, and the staff finds it acceptable. This Supplemental SE documents those findings. Specifically, the bases for the staff's finding of acceptability for

each of the five previously unresolved plant-specific issues of Item 4.3 of Generic Letter 83-28 is given below.

2.0 EVALUATION

Issue #1 (Plant Specific Item 4):

Request: Submit test procedures used to independently verify the operability of the undervoltage and shunt trip devices of the reactor trip breakers.

Evaluation: The staff reviewed the licensee's submittals dated June 6, 1984 and June 27, 1984 and found them unacceptable because (a) the use of jumpers was required, and (b) the testing was performed in Modes 5 or 6 at refueling intervals, and could not be performed on-line and at power. The WOG procedure did not use jumpers and could be performed on-line at power.

Response: By letter dated December 9, 1988, PG&E stated that procedure STP I-16F has been replaced by procedure STP I-16C, which does not require the use of jumpers to test the reactor trip breakers, the undervoltage trip device, or the shunt trip device. STP I-16A2, which is the procedure used for on-line testing of the RTBs, will be modified to meet the requirements of Generic Letter 85-09 for monthly staggered testing and will include independent testing of the undervoltage and shunt trip attachments. This testing will be done at power, on-line and will not require the use of jumpers. This will be implemented following NRC approval of a forthcoming licensing amendment request which will be submitted in the near future.

Conclusion: We find this commitment acceptable. Its implementation can be verified as part of the inspection program for Diablo Canyon, Units 1 and 2.

Issue #2 (Plant Specific Item 6):

Request: Confirm that the shunt trip attachment and its associated circuitry are seismically qualified for use at Diablo Canyon.

Evaluation: The staff reviewed the licensee's submittal dated May 24, 1984 and concluded that it was incomplete because it did not present results and conclusions which showed that the Shunt Trip Attachment (STA) was seismically qualified for use at Diablo Canyon.

Response: In telephone discussions, the licensee stated that WCAP 8687 Section ESC-62B covered the testing which included the STA. The licensee stated that the results showed the testing enveloped the conditions at Diablo Canyon. Therefore, the STA and its associated components are seismically qualified for use at Diablo Canyon. The licensee confirmed this by letter dated December 9, 1988.

Conclusion: We find this statement acceptable.

Issue #3 (Plant Specific Item 9):

Request: Submit revised test procedures for the manual reactor trip switches and wiring which do not require the use of jumpers, lifting leads, or pulling fuses to accomplish the testing.

Evaluation: The staff reviewed the licensee's submittals dated June 27, 1984

and November 7, 1984 and found them unacceptable because the identified procedure used for the testing included the use of jumpers and lifted leads to accomplish the testing.

Response: By letter dated December 9, 1988, the licensee stated that procedure STP I-16C, which is the procedure used to test the manual trip switches, is performed only when in modes 5 or 6 (Cold Shutdown or Refueling) at 18 month intervals. In addition, the jumpers and lifted leads are part of a normally performed procedure which is done on entry into modes 5 or 6 to preserve the functioning of certain safety and monitoring functions and to allow for removal from service of equipment for maintenance and repair. The jumpers and lifted leads are not used specifically to perform the testing of the manual trip switches and wiring.

Conclusion: The licensee has presented justification for the use of these jumpers and lifted leads and stated they are not part of the Reactor Trip System Manual Trip Function Test. This is acceptable.

Issue #4 (Plant Specific Item 12):

Request: Submit response confirming that response time of the automatic shunt trip feature will be tested periodically and shown to be less than or equal to that assumed in the FSAR analyses or that specified in the technical specifications.

Evaluation: The staff reviewed the licensee's submittals of May 24, 1984 and June 6, 1984 which initially stated that conclusions would be presented when the life cycle testing was complete. Later, in the June 27, 1984 response, it

was included in proposed Technical Specification change requirements to test the reactor trip function response time at least once per 18 months. The licensee's response of June 27, 1984 included procedure STP-I-33B which has provisions for testing the reactor trip breaker response times for both the UV and shunt trip devices. The life cycle testing is in response to another requirement and does not enter into this concern.

Tel. Response: The licensee stated that the life cycle testing had not been completed as yet, but further stated that procedure STP-I-33B was performed at each refueling outage and that procedure STP-I-33C, which contains similar time response testing provisions, is performed following maintenance to assure that the time response remains within the limits.

Conclusion: This response shows that a program and procedures exist to provide time response testing of the trip features which assure that the time response of the trip breakers will stay within the originally assumed limits. This is acceptable.

Issue #5 (Plant Specific Item 13):

Request: Submit proposed technical specification changes to require periodic testing of undervoltage and shunt trip functions, the manual reactor trip switch contacts and associated wiring.

Evaluation: The staff reviewed the licensee's response to this item contained in its June 6, 1984 submittal and found it unacceptable. Subsequently, the staff issued Generic Letter 85-09, which provided further clarification and guidance on these required technical specification

changes. The response to this generic letter will be reviewed under Multi Plant Action (MPA) B-90. Therefore, this item is closed from the standpoint of MPA B-82, because its review and evaluation will be performed under MPA B-90 as part of the resolution of G.L. 85-09.