Enclosure 2

SAFETY EVALUATION

DIABLO CANYON UNITS 1 AND 2

GENERIC LETTER 83-28

ITEM 4.5.1 - REACTOR TRIP SYSTEM FUNCTIONAL TESTING

1. INTRODUCTION

On February 25, 1983, during startup of the Salem Unit 1 plant, both circuit breakers in the Reactor Trip System failed to open automatically upon receipt of a valid trip signal. As a result of that event, the NRC Office of Inspection and Enforcement issued IE Bulletin 83-01 which described the event and requested specified prompt corrective and preventive actions by licensees. As the cause and ramifications of the event were more clearly developed, the NRC Office of Nuclear Reactor Regulation issued on July 8, 1983, Generic Letter 83-28, "Required Actions Based on Generic Implications of Salem ATWS Events." This letter addressed issues related to reactor trip system reliability and general management capability. The letter was sent to all licensees of operating reactors, applicants for operating licenses and holders of construction permits.

One of the areas of reactor trip system reliability considered in Generic Letter 83-28 (GL 83-28), is that of system functional testing. This is identified as Item 4.5.1 - Reactor Trip System Functional Testing, in GL 83-28. This evaluation addresses the acceptability of the response to this item provided by the Pacific Gas and Electric Company (PG&E, the licensee) for Diablo Canyon Units 1 and 2.

2. EVALUATION

Item 4.5.1 of GL 83-28 states as follows:

> "On-line functional testing of the reactor trip system, including independent testing of the diverse trip features, shall be performed on all plants.
>
> 1. The diverse trip features to be tested include the breaker undervoltage and shunt trip features on Westinghouse...plants...."

In addition, Item 4.5.1 states that licensees and applicants should submit a statement confirming that this action has been completed.

By letter dated November 7, 1983, PG&E responded to a number of GL 83-28 items, including Item 4.5.1. Regarding Item 4.5.1, PG&E stated they planned to perform on-line functional testing of undervoltage and shunt trip features by May 1, 1984 for Units 1 and 2. By letter dated June 27, 1984, PG&E stated they had successfully performed functional testing of undervoltage and shunt trip features for Units 1 and 2. This response, however, was not clear as to whether such testing had been performed on-line, as specified by Item 4.5.1, or as part of some other test activity.

In response to inquiry by the NRC staff, PG&E stated in a letter dated January 24, 1985, that "...on-line, independent, functional testing of the undervoltage and shunt trip features is performed in Modes 1 through 4, after maintenance, in accordance with STP I-33C." In addition, PG&E submitted a copy of Surveillance Test Procedure STP I-33C, Revision 0. In the paragraph, titled "Frequency", the procedure states this breaker

testing must be performed after reactor trip breaker maintenance which according to the maintenance schedule is performed every six months. Because a six month interval is significantly shorter than the typical plant operating cycle of 12 to 18 months, the staff concludes that there is reasonable assurance that the breakers will be tested during plant operation and thus satisfy the requirement for on-line functional testing.

To obtain a direct commitment from PG&E (rather than by reference to a plant procedure), however, PG&E was requested to state the minimum frequency of breaker maintenance. PG&E's response was transmitted by letter dated April 18, 1985, and stated the frequency of breaker maintenance is six months. PG&E added, however, that this frequency was subject to change based on the results of PG&E's trending program.

Regarding the frequency for performing on-line functional testing of breakers, the staff notes that this matter is addressed by Item 4.5.3 of GL 83-28. Review of this item indicates it will ultimately result in the issuance of technical specifications setting forth formal requirements for on-line breaker testing with test frequencies established to achieve high reliability of the reactor trip system. Item 4.5.1, which is the subject of this evaluation, however, only addresses the PG&E commitment to perform on-line functional testing of the diverse trip features; it does not address formal frequency requirements. Accordingly, this evaluation

addresses only PG&E's commitment to perform on-line functional testing of the diverse trip features.

3. CONCLUSION

Based on the licensee's current commitment to perform on-line functional testing of the diverse trip features of the reactor trip breakers at least each six months and based on the action to be taken pursuant to Item 4.5.3 of GL 83-28 relative to establishment of formal requirements for on-line testing, the staff concludes that PG&E has satisfied the requirements of Item 4.5.1 of Generic Letter 83-28 for Diablo Canyon Units 1 and 2.