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October 26, 1990

Re: Indian Point Unit No. 2
Docket No. 50-247

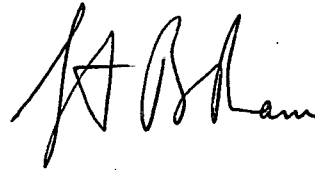
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SUBJECT: EDG Modification Test Plan

At a September 13, 1990 meeting with members of the NRR staff at the White Flint, Bethesda, MD offices, we presented our plans for upgrading the IP2 Emergency Diesel Generators (EDG) during the 1991 refueling outage and our plans for re-qualifying the modified EDGs at their new design ratings. The meeting was requested by Con Edison to present to the NRC staff an overview of our 1) planned electrical modifications to the 480 VAC distribution system, 2) EDG upgrade project and, 3) EDG modification test plan. The purpose of this letter is to provide specific details regarding the modification test plan. Following upgrade, each EDG will be subjected to initial adjustment and normal wear-in tests. The proposed modification test plan will be initiated after completion of the initial adjustment and normal wear-in tests required by Con Edison for acceptance of the upgrade modification.

Should you or your staff have any questions regarding this matter, please contact Mr. Charles W. Jackson, Manager, Nuclear Safety and Licensing.

Very truly yours,



Attachment

cc: Mr. Thomas T. Martin
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Attachment 1

EDG Testing Position

Background

In a letter dated December 11, 1989, Con Edison informed the NRC of its plans to modify the Emergency Diesel Generators to increase their short term rating from the current 1950 kW for 2 hours within any 24 hour period to 2300 kW for 1/2 hour within any 24 hour period. We also committed to providing the NRC with our plans for requalification testing of the upgraded EDGs at the time of our Technical Specification Amendment submittal.

Our proposed EDG modification test plan is patterned after the program approved by the NRC for Crystal River 3. This program is based upon the guidance provided in Regulatory Guides 1.9, 1.108 and IEEE Std. 387-1984 with exceptions as noted below. The staff's comments on the proposed test plan presented at the September 13 meeting have been considered by Con Edison. Specifically with regard to the reliability tests, an attempt has been made to satisfy the NRC position on the performance of 30 starts per EDG. The reliability tests will be completed with the following clarifications.

1. Following modifications, Con Edison intends to demonstrate that an acceptable level of reliability has been achieved by performing a minimum of 30 start and load tests without failure for the first modified EDG. The EDG shall run for a minimum of one hour during each start and load test. Upon successful completion of this test, the first EDG will be OPERABLE to meet Technical Specifications.
2. For the second and third modified EDGs, Con Edison intends to demonstrate that an acceptable level of reliability has been achieved, by performing a minimum of 10 start and load tests without failure. The EDGs shall run for a minimum of one hour during each start and load test. The EDGs shall be declared OPERABLE to meet Technical Specifications after completion of these 10 starts. The remainder of the 30 start tests shall be completed as soon as possible by conducting a minimum of 2 tests per week.

Modification Test Plan

The following proposed tests will be conducted on each upgraded EDG. These tests will be performed after completion of the initial adjustment and normal wear-in tests required by Con Edison for acceptance of the upgrade modification.

MODIFICATION TEST PLAN

DESCRIPTION	TEST OBJECTIVE
1. Start and Load-Run test	To start from standby conditions and load to 1750 KW for 1 hour.
2. Fast-Start Test	Demonstrate each diesel starts from standby condition and reaches rated voltage and frequency within time limits.
3. Combined Safety Injection Actuation Signal and loss of off-site power	Dynamically demonstrate each diesel starts on auto-start signal, that non-essential loads are shed, that emergency loads are sequenced on to the diesels, and that diesels maintain required frequency and voltage during the transients.
4. Single Load Rejection Test	Demonstrate the Diesel Generator capability to reject a load equal to the largest single load (375 KW) and maintain voltage and frequency within limits. (Aux. Feedwater Pump).
5. Full Load Rejection Test	Demonstrate the Diesel Generator capability to reject a load equal to its maximum design load and verify voltage requirements are met and the unit does not trip on overspeed.
6. Endurance and Margin Test	Demonstrate full-load carrying capability for an interval not less than 24 hours, 2 hours at 2100, 1/2 hour at 2300 and the remaining 21 1/2 hours at 1750 KW.
7. Hot Restart Test	Demonstrate the ability to immediately restart after shutdown from running at full load thermal equilibrium (1750 KW).
8. Reliability Test	Demonstrate that modifications have not affected diesel reliability by starting and loading each EDG from standby conditions 30 times without failure.