Docket No. 50-245
B13682

Attachment 1

Millstone Nuclear Power Station, Unit No. 1

Proposed Revision to Technical Specifications
Emergency Power Source Surveillance Requirements

November 1990

4.9 AUXILIARY ELECTRICAL SYSTEM

Specification:

A. Emergency Power Sources

1. Diesel Generator

a. The diesel generator shall be started and run at its continuous rated load output for at least 60 minutes once a month. During this test, the diesel starting air compressor will be checked for operation and its ability to recharge air receivers.

b. During each refueling outage, the conditions under which the diesel generator is required will be simulated and a test conducted to demonstrate that it will start and be ready to accept load within 13 seconds.

c. During the monthly generator test, the diesel fuel oil transfer pumps shall be operated.

2. Gas Turbine Generator

a. The gas turbine generator shall be fast started and the output breaker closed within 48 seconds once a month to demonstrate operational readiness. The gas turbine generator is to be loaded at greater than or equal to post accident load requirement for at least 60 minutes.

b. During each refueling outage, the conditions under which the gas turbine generator is required will be simulated and a test conducted to verify that it will start and be able to accept emergency loads within 48 seconds.

BASES

A. The monthly test of the diesel generator and gas turbine generator is conducted to check for equipment failures and deterioration. The post accident load requirement for the gas turbine is 10,610 kW. For the diesel generator, testing is performed at the continuous rated load of 2665 kW, which is greater than the post accident load requirements. Testing for at least 60 minutes at the post accident load requirement demonstrates proper long-term operation. The units will be manually started, synchronized to the bus, and load picked up. Generator experience at other generating stations indicates that the testing frequency is adequate to assure a high reliability of operation should the system be required. In addition, during the test when the generator is synchronized to the bus it is also synchronized to the off-site power source and thus not completely independent of this source. To maintain the maximum amount of independence, a thirty day testing interval is also desirable.

Both the diesel generator and the gas turbine-generator have air compressors and air receiver tanks for starting. It is expected that the air compressors will run only infrequently. During the monthly check of the units, the receivers will be drawn down below the point at which the compressor automatically starts to check operation and the ability of the compressors to recharge the receivers. Pressure indicators are provided on each of the receivers.

Following the tests or peaking operation, of the unit and at least weekly, the fuel volume remaining will be checked. At the end of the monthly load test of the diesel generator, the fuel oil transfer pump will be operated to refill the day tank and to check the operation of this pump. Peaking operation shall be controlled so that major maintenance operations on the gas turbine will not be scheduled during an operating cycle.

The test of the diesel and gas turbine generators during the refueling outage will be more comprehensive in that it will functionally test the system; i.e., it will check starting and closure of breakers and sequencing of loads. The units will be started by simulation of a loss of coolant accident. In addition, a loss of normal power condition will be imposed to stimulate a loss of off-site power. The timing sequence will be checked to assure proper loading in the time required. Periodic tests between refueling outages check the capability of the units to run at full load. Periodic testing of the various components plus a functional test at a refueling interval are sufficient to maintain adequate reliability.

B. Although the station batteries will gradually deteriorate with time, the surveillance specified is that which will provide an indication of all degradation long before the battery would have insufficient capacity to meet the design load which could be placed upon it. Battery cell replacements will be made in accordance with Section 6 of IEEE Standard 450-1972, "Battery Replacement Criteria."

C. Logging the diesel and gas turbine generator fuel supply weekly and after each operation, assures that the minimum fuel supply requirements will be maintained.