ATTACHMENT 1

Proposed Technical Specification Change
Emergency Diesel Generator Testing
Surry Power Station

b. Automatic start of each diesel generator, load shedding, and restoration to operation of particular vital equipment, initiated by a simulated loss of off-site power together with a simulated safety injection signal. Testing will demonstrate load shedding and load sequencing initiated by a simulated loss of off-site power following a simulated engineered safety features signal. Testing will also demonstrate that the loss of voltage and degraded voltage protection is defeated whenever the emergency diesel is the sole source of power to an emergency bus and that this protection is automatically reinstated when the diesel output breaker is opened. This test will be conducted during reactor shutdown for refueling to assure that the diesel generator will start within 10 sec and assume load in less than 30 sec after the engine starting signal.

c. Availability of the fuel oil transfer system shall be verified by operating the system in conjunction with the monthly test.

d. Each diesel generator shall be given a thorough inspection during each refueling interval utilizing the manufacturer's recommendations for this class of stand-by service.

2. Acceptance Criteria

The above tests will be considered satisfactory if all applicable equipment operates as designed.

B. <u>Fuel Oil Storage Tanks for Diesel Generators</u>

1. A minimum fuel oil storage of 35,000 gal shall be maintained on-site to assure full power operation of one diesel generator for seven days.

ATTACHMENT 2

Discussion of Changes
and
Significant Hazards Consideration Determination
Emergency Diesel Generator Testing
Surry Power Station

DISCUSSION

The original design of the emergency power system at Surry Power Station considered the design basis nuclear accident to be the worst case loading condition for the diesel generators. Therefore, a Consequence Limiting Safeguards (CLS) Hi-Hi signal with a simultaneous loss of offsite power (LOOP) was used as the design basis for the emergency diesel generators.

Engineering analysis has shown that Surry Power Station was subject to the loss of both EDGs in the accident unit due to a single event if the loss of offsite power occurs some time after a LOCA. Under this circumstance, the potential was created to overload both EDGs at the same time by exceeding the maximum EDG load limits. Based on this analysis, load sequencing modifications were performed.

To eliminate the potential overloading of the EDGs, modifications to the logic schemes for the emergency buses were made to shed and restart loads when a LOOP occurs. The sequence used to restart the safety-related loads depends on the particular accident event in progress. The worst case load application, which bounds the loads experienced upon a simultaneous CLS and LOOP condition and for various LOOP after CLS scenarios, is within the EDGs' capability to assume load.

To ensure operability of the load sequencing logic modifications, testing of the system has been included in the existing emergency diesel generator testing requirements of Section 4.6. The periodic tests check the logic of the controls to ensure that the controls operate as designed from emergency bus undervoltage initiation to load breaker operation. These periodic tests are performed as a normal part of the refueling outage.

SIGNIFICANT HAZARDS CONSIDERATION

Virginia Electric and Power Company has performed a 10 CFR 50.92 evaluation to examine the impact of the addition of an EDG load sequencing scheme during a transient which has a subsequent LOOP. This modification has improved the ability of the emergency diesel generator to provide the necessary power following a LOOP by sequencing the loads onto the emergency buses in acceptable loading blocks. Previously there was no EDG load sequencing for a LOOP condition occurring after the transient began. The Technical Specification change adds the appropriate refueling surveillance requirements to determine operability. The results of the evaluation are:

a) The implementation of this modification does not significantly increase the probability of occurrence or the consequences of an accident or malfunction of equipment important to safety and previously evaluated in the Final Safety Analysis.

The addition of an emergency diesel generator load sequencing scheme to each unit, which interfaces with safety-related equipment and safety-related systems, was installed while each unit (1 and 2) was in cold shutdown or refueling mode. The design change modified the operation of the auxiliary feedwater pumps, recirculating spray pumps (inside and outside), emergency bus pressurizer heaters, and the filter exhaust fans. It provides sequencing of these loads onto the EDGs to ensure that the maximum EDG load capabilities will not be exceeded under the worst case load applications, and ensure the availability of the systems necessary to mitigate the consequences of a design basis event. With the most limiting restart equipment delays, the results of the applicable accident analyses will still meet their acceptance criteria.

The probability of an accident occurrence is not increased by this modification. Providing EDG load sequencing to address a subsequent LOOP during a DBA event does not increase the probability of either event. Likewise, the consequences of this accident are not increased by the modification. In fact, the change addresses an accident scenario not previously identified and thereby limits accident consequences to within

existing assumptions used in the accident analysis. As identified previously, offsite dose consequences remain unchanged.

b) The implementation of this modification does not create a possibility for an accident or a malfunction of a different type than any evaluated previously in the Final Safety Analysis Report.

This design change does not produce any new accident precursors nor the possibility for a malfunction of a different type than those previously evaluated in the Updated Final Safety Analysis Report (UFSAR). The operation of safety-related equipment or systems, or the availability of safety-related power sources, are not adversely affected. This modification ensures the ability of the emergency diesel generators to provide the necessary power following a LOOP subsequent to a design basis accident, by sequencing the loads onto the emergency buses in acceptable loading blocks. Performing the refueling surveillance establishes operability.

c) The implementation of this modification does not reduce the margin of safety as defined in the basis for any Technical Specification.

The addition of an emergency diesel generator load sequencing scheme ensures the availability of the EDGs to mitigate the consequences of a LOOP subsequent to a design basis event. As such, the modification ensures that the containment design assumptions are maintained (i.e., 45 psig peak pressure and containment depressurization to subatmospheric within 3600 seconds). Therefore, no margin of safety or Technical Specification basis is reduced by this modification. The results of the design basis accident analyses are not impacted. Therefore, there are no significant reductions in safety margins.