

## LIMITING CONDITION FOR OPERATION

## SURVEILLANCE REQUIREMENT

B. Operation with Inoperable Components

Whenever the reactor is in Run Mode or Startup Mode with the reactor not in the Cold Condition, the requirements of 3.8.A shall be met except:

## 1. Diesel-Generators

From and after the date that one of the diesel-generators or its associated buses are made or found to be inoperable for any reason and the remaining diesel-generator is operable, the requirements of Specification 3.5.G.1 shall be satisfied.

## 2. Batteries

- a. From and after the date that ventilation is lost in the battery room, portable ventilation equipment shall be provided.

- b. Every three months the measurements shall be made of voltage of each cell to nearest 0.01 Volt, specific gravity of each cell, and temperature of every fifth cell. These measurements shall be logged.
- c. Once each operating cycle, the stated batteries shall be subjected to a Service Discharge Test (load profile). The specific gravity and voltage of each cell shall be determined after the discharge and logged.
- d. Once every five years, the stated batteries shall be subjected to a Performance Discharge Test (capacity). This test will be performed in lieu of the Service Test requirement of 4.8.A.2.c above.

B. Surveillance with Inoperable Components

## 1. Diesel-Generators

When it is determined that one of the diesel-generators is inoperable the requirements of Specification 4.5.G.1 shall be satisfied.

## 2. Batteries

- a. From and after the date that ventilation is lost in the battery room, samples of the battery room atmosphere shall be taken daily for hydrogen concentration determination.

maintained. During the monthly test for quality of the diesel fuel oil, a viscosity test and water and sediment test will be performed as described in ASTM D975-77 (reference LDR-80-111). The quality of the diesel fuel oil will be acceptable if the results of the tests are within the limiting requirements for diesel fuel oils shown on Table 1 of ASTM D975-77.

Although the station batteries will deteriorate with time, utility experience indicates there is almost no possibility of precipitous failure. The type of surveillance described in this specification is that which has been demonstrated over the years to provide an indication of a cell becoming irregular or unserviceable long before it becomes a failure.

The Service Discharge Test provides adequate indication of the batteries' ability to satisfy the design requirements (battery duty cycle) of the associated dc system. This test will be performed using simulated or actual loads at the rates and for the durations specified in the design load profile.

The Performance Discharge Test provides adequate indication and assurance that the batteries have the specified ampere hour capacity. The rate of discharge during this test shall be in accordance with the manufacturer's discharge characteristic curves. The results of these tests will be logged and compared with the manufacturer's recommendations of acceptability.

## SAFETY ASSESSMENT

1. Introduction

By letter dated August 30, 1991, Iowa Electric Light and Power Company (IELP) requested changes to the Duane Arnold Energy Center (DAEC) Technical Specifications (TS) to revise the surveillance requirements (SR) (Section 4.8) for the station batteries. The requested change would require a Service Discharge Test (load profile) each operating cycle (approximately 18 months) for two cycles and then a Performance Discharge Test (capacity) every five years (which usually occurs during every third cycle). This test schedule would replace the existing requirement to perform a "rated load discharge test" on the batteries every operating cycle.

2. Evaluation

The current SR 4.8.A.2.c requires performance of a "rated load discharge test" on the safety related station batteries every operating cycle. The proposed SR 4.8.A.2.c modifies the requirement to perform a Service Discharge Test instead of the "rated load discharge test" once per operating cycle and a new SR 4.8.A.2.d has been added to require a Performance Discharge Test once every 5 years. The Service Discharge Test, as defined in IEEE-450, 1975, is intended to determine whether the battery is capable of meeting the design requirements of the dc system while the Performance Discharge Test confirms the battery capacity. IELP has interpreted the "rated load discharge test" to include only the Performance Discharge Test and not the Service Discharge Test. IELP proposes to perform the Service

Discharge Test once per operating cycle. We reviewed the proposed battery test provisions and find that they represent an improvement in safety because the availability of the batteries will be increased, the capability to detect a degraded cell or battery is retained and the reduction in the frequency of the Performance Discharge Test will effectively increase battery life. We also find that the proposed SRs are consistent with the Standard TS. Therefore, we conclude that the proposed SRs 4.8.A.2.c and 4.8.A.2.d of the TS are acceptable.