Limiting Conditions for Operation

Surveillance Requirement

"11.4.5.3 EMERGENCY POWER SOURCES (Contd)

2. Monthly -

   (a) Test start diesel generator and operate at least the fire pump as a load to 480 V Bus 2B for at least 20 minutes.

   (b) Verify that the cell voltage is ≥ 2.0 volts and specific gravity is ≥ 1.2 of each cell of the station battery.

   (c) Test operate the rod position motor generator set.

   (d) Verify that the RDS battery cell voltage is ≥ 6.0 volts and that the specific gravity of each cell is ≥ 1.15.

3. Weekly - The electrolyte level of each pilot cell is between the minimum and maximum level indication marks.

   The pilot cell specific gravity, corrected to (77)°F, is ≥ 1.2 on the station battery and ≥ 1.15 on the RDS battery.

   The pilot cell voltage is ≥ 2.0 volts on the station battery and ≥ 6.0 volts on RDS battery.

   The overall battery voltage is ≥ 125 volts on both the station battery and the RDS battery.

   Test start the diesel generator and run for warm-up period.

4. Sixty Months - At least once per 60 months during shutdown, verify that the battery capacity is at least 80% of the manufacturer's rating when subjected to a performance discharge test. This performance discharge test shall be performed subsequent to the satisfactory completion of the required battery service test. See Note below."

B. Change Section 11.3.5.3 BASES to read as follows:

Note: These surveillance items shall become effective prior to start-up following the 1977 refueling outage.

Bases:

Normal station power can be provided by the station turbine generator, the 138 kV transmission line or the 46 kV line. These sources are adequate to provide emergency a-c power. When none of these sources is available, a single emergency diesel generator rated at 200 kW starts automatically to provide emergency a-c power to 480 V Bus 2B. The weekly starting test is based on Manufacturer's Bulletin 33743-1 for relubrication protection of moving parts. Diesel generator initiation and output circuit breaker closure is accomplished by two voltage sensors; one to detect loss of normal power on Bus 2B and the other to provide assurance of generator output prior to automatic closure of the generator output breaker. Additional breaker interlocks are provided to assure that the normal Buses 1A and 2A are isolated prior to closing the generator output breaker. This prevents overloading of the generator at the switching period.

The diesel fuel oil tank is sized for two-day full load operation. One-day supply is considered adequate to provide fuel makeup.

A single station battery supplies power for normal station services and is sized for emergency uses including valves and controls for Loss of Coolant Accidents. The battery can be charged from the emergency diesel generator output if normal station power sources are not available.

The primary core spray valves and the primary containment spray valve are operated and controlled by power from the station battery. The backup core spray valves and backup containment spray valves are operated by power from normal station power sources or the emergency diesel generator.

RDS uninterruptible power supplies (UPS) A, B, C, and D, each consisting of a battery, battery charger and an inverter, supply each division (except division 5) with electrical power. Each UPS has outputs of 120 VAC, 60 Hz, and 125 VDC. One of these batteries supplies control power for the emergency diesel generator output breaker. Divisions 1 and 2 and 3 and 4 normally receive power from 480 VAC Buses 1A and 2A, respectively. In the event of loss of power to either or both buses, provision is included for supplying input power from 480 VAC Bus 2B which is tied to the emergency diesel generator. If all 480 VAC power is lost, the RDS UPS is capable of sustaining its outputs for one hour. The station battery has adequate capacity to carry normal loads plus an assumed failure (locked rotor current) of the DC lube oil pump for 54 minutes without the battery charger and still provide sufficient power for equipment required to operate during a LOCA. If steps are taken to reduce nonessential loads during a loss of off-site power (such as part of the emergency lights) additional time (up to five hours) can be gained from the time of the loss of the charger until the battery would no longer have sufficient power for equipment required to operate during a LOCA. The station battery and the four (4) RDS batteries will be considered operable if they are essentially fully charged and the battery charger is in service. Additionally prior to the start-up following the 1977 refueling outage, successful completion of service testing and performance discharge testing within each operating cycle and each sixty months, respectively, will further establish battery reliability.

Amendment No 10
June 3, 1976

II. DISCUSSION

Since June 1976, there have been several Licensee Event Reports issued from the Big Rock Point Plant relating to low specific gravities on several Reactor Depressurization System (RDS) battery cells found during surveillance testing. The Technical Specifications limit stipulates each RDS battery cell to have a specific gravity of 1.2 or greater, a limitation based upon manufacturer's nameplate data. In order to determine the cause and correction for the problem of low cell specific gravities, Consumers Power Company contracted Exide Power Systems Division to develop a solution. The results of the vendor's study indicated that a minimum battery specific gravity of 1.15 would be acceptable in that the battery load rating at an 8-hour discharge rate with an initial specific gravity of 1.15 would be 40 ampere-hours. This implies that each RDS battery has more than 2.6 times the capacity required by its respective duty cycle with a battery specific gravity of 1.15. Further, by changing the minimum specific gravity of any RDS battery cell to 1.15 vice 1.2, the number of equalizing charges would be substantially lowered and, therefore, battery life enhanced. Thus, Consumers Power Company submits change proposal A. to reflect this. Change proposal B. corrects certain typographical and usage deficiencies in the BASES section of this Technical Specification and makes no changes or modification to plant design or operation.

III. CONCLUSIONS

Based on the foregoing, the Big Rock Point Plant Review Committee has concluded that this change does not involve an unreviewed safety question.

CONSUMERS POWER COMPANY

By C R Bilby

C R Bilby, Vice President
Production & Transmission

Sworn and subscribed to before me this 4th day of March 1977.

Sylvia B Ball

Sylvia B Ball, Notary Public
Jackson County, Michigan
My commission expires April 13, 1980.