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ATTACHMENT 1

PROPOSED TECHNICAL SPECIFICATION CHANGE

REQUEST FOR LICENSE AMENDMENT SALEM GENERATING STATION UNITS 1 AND 2 FACILITY OPERATING LICENSE NOS. DPR-70 AND DPR-75 DOCKET NOS. 50-272 AND 50-311

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BASIS FOR CHANGE REQUEST

Requested Change

This submittal changes the required amperage for battery charger Technical Specification (TS) surveillance 4.8.2.3.2.e from "at least 200 amps" to "at least 170 amps."

Based on the inability to obtain spare parts for the existing 125V battery chargers, new chargers have been ordered as replacements. These chargers are similar to 125V battery chargers at the Hope Creek station and will improve spare parts availability for all three units in the future.

The new chargers have a different power factor than the existing units and require higher input current (for the same output current) than the existing battery chargers. Input current to the new battery chargers is calculated to exceed the ampacity rating of the existing input AC cables if the charger output current is maintained at least 200 amps, as required in the existing TS. Replacement of existing cable (to support a 200 amp TS surveillance requirement) is cost prohibitive and does not improve safety or plant reliability.

<u>Basis</u>

PSE&G calculation for battery charger loading includes a worst case loading of 161 amps. This calculation includes restoration of the worst-case battery charge condition. The worst-case battery charger loading condition is to charge from the design minimum charge to the fully charged state while supplying normal steady-state loads as specified in IEEE 308-1971 "Criteria for Class 1E Electric Systems for Nuclear Power Generating Stations." Conformance to IEEE 308-1971 is specified in UFSAR Section 3A regarding Salem's position on Regulatory Guide 1.32.

This worst-case loading is enveloped by the proposed TS of "at least 170 amps." This TS value also ensures an AC input current less than the ampacity rating of the battery charger supply cabling.

The current limiter will increase the recharge time following periodic battery service tests, but this is not considered significant since these tests are done during refueling outages while the batteries are considered inoperable.

In addition, the calculation substantiates the capability of the chargers to restore the battery from the design minimum charge to the fully charged state while supplying normal steady-state loads following a Station Blackout (SBO) Event.

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<u>Conclusion</u>

The revised amperage in the surveillance requirement provides a capacity demonstration greater than the maximum required calculated battery charger current. This is consistent with the basis for the existing surveillance requirement.

SIGNIFICANT HAZARDS CONSIDERATION

PSE&G has, pursuant to 10CFR50.92, reviewed the proposed changes to determine whether this request involves a significant hazards consideration. It has been determined that operation of Salem Units 1 and 2 in accordance with the proposed change:

1. Will not involve a significant increase in the probability or consequences of an accident previously evaluated.

The proposed amendment will permit replacement of aging battery chargers while ensuring these replacement battery chargers will restore the battery from the design minimum charge to its fully charged state while supplying normal steady-state loads. This meets the design basis for the 125V DC system and is consistent with Salem Unit 1 and 2 commitment to IEEE 308-1971 in UFSAR Section 3A.

The 125V DC battery chargers are not addressed as a contributor to any accident analyzed in the UFSAR, therefore, changes to the battery charger output current will not increase the probability of an accident occurring.

The limiting analyzed accident considered in this proposed TS amendment is the Loss of Offsite Power coincident with a Loss of Coolant Accident. This is currently the limiting design duty cycle for the batteries. The 125V batteries are sized to maintain all emergency loads for a period of 2 hours without battery chargers. This is demonstrated by performing the surveillance specified in TS 4.8.2.3.2.f, which is not being changed. Since the chargers are not required to be available during this 2 hour period, and since the proposed charging rate will supply the necessary loads following restoration of AC power, the proposed amendment will have no effect on the consequences of this accident.

The current limiter is calculated to extend the recharging time from 20 hours to 30 hours, but this is not considered significant since two, sequential battery discharge events are not considered plausible.

PSE&G calculation substantiates the capability of the chargers to restore the battery from the design minimum charge to its fully charged state while supplying normal

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steady-state loads following a Station Blackout (SBO) Event which exceeds the current design duty cycle.

In addition, a review of 125V DC Battery System load profiles indicated that the battery chargers are capable of supplying expected loads when restoring the battery from a design minimum charge state to a fully charged state irrespective of the status of the plant.

Therefore, the proposed amendment does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. Will not create the possibility of a new or different kind of accident from any previously evaluated.

The proposed amendment does not result in any design or physical configuration changes to the 125V DC system. This change supports the installation of the replacement chargers and ensures the chargers are surveilled within the bounds of limiting input amperage. No changes are being made to the function, design basis, or operation of the 125V DC system by this proposed change. Therefore, the proposed amendment will not create the possibility of a new or different kind of accident from any previously evaluated.

3. Will not involve a significant reduction in a margin of safety.

The proposed amendment to TS 4.8.2.3.2.e ensures that the replacement battery chargers have sufficient capacity to restore each 125V battery from the design minimum charge to its fully charged state while supplying normal steady-state loads. A margin of safety is maintained on both the AC input and DC output of the chargers since the specified current is above that required to support the 125V DC system and will result in AC current below the ampacity rating of the battery charger input cables.

Testing to a charger output current of at least 170 amps will maintain a margin of safety to the current required during actual worst case normal loading on the 125V DC buses.

Therefore, the proposed amendment will not involve a significant reduction in a margin of safety.

Conclusion

Based upon the above, PSE&G has determined that the proposed amendment does not involve a Significant Hazards Consideration.

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ATTACHMENT 2

INSERTS AND MARKED-UP PAGES

REQUEST FOR LICENSE AMENDMENT SALEM GENERATING STATION UNITS 1 AND 2 FACILITY OPERATING LICENSE NOS. DPR-70 AND DPR-75 DOCKET NOS. 50-272 AND 50-311

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TECHNICAL SPECIFICATION PAGES WITH PEN AND INK CHANGES

The following Technical Specifications are affected by this requested amendment:

Facility Operating License No. DPR-70 (Unit 1)

Technical Specification Page

4.8.2.3.2.e 3/4 8-9

Facility Operating License No. DPR-75 (Unit 2)

Technical Specification Page

4.8.2.3.2.e 3/4 8-9a

For each of the specifications, "greater than 200 amps" is replaced with "greater than 170 amps."

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

3. The connection resistance is:

≤150 micro ohms for inter-cell connections, ≤350 micro ohms for inter-rack connections, ≤350 micro ohms for inter-tier connections, ≤70 micro ohms for field cable terminal connections, and ≤2500 micro ohms for the total battery connection

resistance which includes all inter-cell connections (including bus bars), all inter-rack connections (including cable resistance) all inter-tier connections (including cable resistance) and all field terminal connections at the battery.

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e. At least once per 18 months by verifying that:

- The battery charger will supply at least 200 amperes at 125 volts for at least 4 hours.
- f. At least once per 18 months, during shutdown, by verifying that the battery capacity is adequate to supply and maintain in OPERABLE status all of the actual or simulated emergency loads for the design duty cycle when the battery is subjected to a battery service test.
- g. At least once per 60 months, during shutdown, by verifying that the battery capacity is at least 80% of the manufacturer's rating when subjected to a performance discharge test. Satisfactory completion of this performance discharge test shall also satisfy the requirements of Specification 4.8.2.3.2.f if the performance discharge test is conducted during a shutdown where that test and the battery service test would both be required.
- h. At least once per 12 months, during shutdown, if the battery shows signs of degradation OR has reached 85% of the service life with a capacity less than 100% of manufacturers rating, by verifying that the battery capacity is at least 80% of the manufacturer's rating when subjected to a performance discharge test. Degradation is indicated when the battery capacity drops more than 10% of rated capacity from its capacity on the previous performance test, or is below 90% of the manufacturer's rating.
- i. At least once per 24 months, during shutdown, if the battery has reached 85% of the service life with capacity greater than or equal to 100% of manufacturers rating, by verifying that the battery capacity is at least 80% of the manufacturer's rating when subjected to a performance discharge test.

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

3. The connection resistance is:

≤150 micro ohms for inter-cell connections, ≤350 micro ohms for inter-rack connections, ≤350 micro ohms for inter-tier connections, ≤70 micro ohms for field cable terminal connections, and ≤2500 micro ohms for the total battery connection

resistance which includes all inter-cell connections (including bus bars), all inter-rack connections (including cable resistance) all inter-tier connections (including cable resistance) and all field terminal connections at the battery.

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- i. At least once per 24 months, during shutdown, if the battery has reached 85% of the service life with capacity greater than or equal to 100% of manufacturers rating, by verifying that the battery capacity is at least 80% of the manufacturer's rating when subjected to a performance discharge test.