



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 64 TO FACILITY OPERATING LICENSE NO. DPR-34
PUBLIC SERVICE COMPANY OF COLORADO
FORT ST. VRAIN NUCLEAR GENERATING STATION
DOCKET NO. 50-267

1.0 INTRODUCTION

By letter dated April 20, 1988, the licensee requested certain changes to the Fort St. Vrain (FSV) Technical Specifications (TS). These technical specifications concern the operation of the plant's DC power system. The changes are motivated by the fact that the licensee intends to replace the plant's batteries with a new type. The manufacturer of the new batteries has specified that up to 5 days may be required to perform an equalizing charge on these batteries. At FSV, the DC loads associated with a particular battery bus must be disconnected during an equalizing charge in order to avoid damaging the equipment with an overvoltage condition.

Additionally, the licensee and the staff have discussed potential improvements to the FSV TS. These improvements include maintaining independence between the DC buses by maintaining the tie breaker in an open condition. The licensee's requested changes reflect these previous discussions.

2.0 EVALUATION

2.1 Operability of the DC Bus

The licensee has proposed to declare a station battery and associated battery charger inoperable when disconnected from its DC bus to perform an equalizing charge. This action is consistent with the Standard Technical Specification (STS) definition of operable. When an equalizing charge is being performed, and the battery is disconnected from its DC bus, it cannot perform in its design function of providing uninterrupted power to the bus. Declaring the battery inoperable and entering a limiting condition for operation (LCO) correctly alerts the operators of the degraded system condition. This minimizes the potential for the operators to further reduce the margin of safety, by taking equipment on the redundant train out of service.

Therefore, the staff concludes that this proposed change is acceptable.

2.2 Disconnection of the Station Battery for an Equalizing Charge

The licensee has proposed that a station battery and its associated battery charger be declared inoperable when disconnected from their load bus for providing an equalizing charge. The battery and the charger may

be disconnected from their DC bus for up to five consecutive days. The current FSV Technical Specifications considers the battery and the charger operable if disconnected to provide the equalizing charge for up to 24 hours.

The staff's principle concern in this matter is the overall time that the plant is in this degraded condition. The use of the five day limit by itself would be acceptable, if it was not used excessively. A second factor that would be a mitigating condition for FSV is the relatively long time scale available to recover from most accident sequences. Therefore, in the event of an accident such as the loss of all ac power during an equalizing charge, the battery can be readily reconnected to its load bus as a few minimally weak cells will not prevent the battery from performing its design function. This assures that DC power is available to perform a safe plant shutdown. Therefore, the staff finds the licensee's proposal is acceptable.

However, the staff requests that the licensee maintain a record of how long and how often equalizing charges are performed on the new battery over its first year of operation. This record should be submitted to the staff within 45 days after the first year of operation is complete. The staff will revisit this issue after the first cycle of operation with this TS change. If the staff concludes based on historical data (see following paragraph) that excessive time is spent in a degraded condition during equalizing charge periods, revocation of this TS change or other TS changes may be necessary.

2.3 DC Bus Independence

The licensee has proposed certain changes to the TS to enhance independence of the DC electrical system. These changes would remove current requirements to maintain an intertie between the DC buses. In normal operation, the DC intertie breakers would be in the open position. This new mode of operation would allow the DC intertie to be used primarily when the back-up battery charger (1D) is being used while a normal charger was inoperable or an equalizing charge was being performed. DC independence would be further enhanced by maintaining the disconnect switch for the PPS battery (1C) in the open position when a station battery and/or battery charger is inoperable. The staff concludes that these changes are acceptable, because they ensure DC bus independence to minimize the possibility of common mode failure.

3.0 ENVIRONMENTAL CONSIDERATION

The amendment involves a change in the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposures. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration and there has been no public

comment on such finding. Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR Section 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

4.0 CONCLUSION

The staff has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (2) such activities will be conducted in compliance with the Commission's regulations, and the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

Date: September 15, 1988

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