



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NOS. 97 AND 34 TO

FACILITY OPERATING LICENSE NO. NPF-4 AND NPF-7

VIRGINIA ELECTRIC AND POWER COMPANY

OLD DOMINION ELECTRIC COOPERATIVE

NORTH ANNA POWER STATION, UNITS NO. 1 AND NO. 2

DOCKET NOS. 50-338 AND 50-339

BACKGROUND

By letter dated September 22, 1987, Virginia Electric and Power Company (the licensee) proposed changes to the Technical Specifications (TS) for the North Anna Power Station, Units 1 and 2. The proposed changes would revise the surveillance requirements of the 125 volt DC emergency diesel generator (EDG) batteries (TS Section 4.8.1.1.3) and station batteries (TS Section 4.8.2.3.2). The modifications would bring the station TS into closer conformance with the Standard Technical Specifications (STS) for Westinghouse Pressurized Water Reactors.

DISCUSSION

The proposed changes to the North Anna Technical Specification Sections 4.8.1.1.3 and 4.8.2.3.2 of Unit 1 are identical to those of Unit 2. The proposed changes will result in surveillance requirements that are consistent with IEEE 450-1980, "Recommended Practice for Maintenance, Testing, and Replacement of Large Lead Storage Batteries for Generating Stations and Substations," USNRC Regulatory Guide 1.129, "Maintenance, Testing, and Replacement of Large Lead Storage Batteries for Nuclear Power Plants," and NUREG-0452, Revision 4, "Standard Technical Specifications for Westinghouse Pressurized Water Reactors." In addition, these modifications are consistent with the manufacturer's recommendations for operating station batteries.

The proposed changes make the specific sections of the surveillance requirements of the TS essentially identical with corresponding sections of the surveillance requirements of the NRC-approved Westinghouse STS, with plant-specific or manufacturer's recommended parameters inserted, except for the following:

- a. The proposed changes will allow substitution of battery charging or float current as indicative of an operable battery, for station batteries only, when pilot cell specific gravity has decreased below the expected value or the average specific gravity of all connected cells has decreased below

allowable limit. Since the charging current is a function of electrolyte temperature and will double every 15 degrees above 77 degrees F and will be halved for every 15 degrees below 77 degrees F, the charging current is not used for the EDG batteries due to the wide band of temperatures that are encountered in the EDG rooms. The staff finds this acceptable.

- b. The surveillance requirement for the 18 month station battery service test is being revised to allow the use of simulated loads instead of the actual emergency loads. This is in agreement with the Westinghouse STS and acceptable to the staff.

A similar requirement for the EDG batteries was not included, since the licensee informed the NRC staff through a telephone conversation that plant procedures require that, for the 18 month "simulated loss of offsite power" test required by TS Section 4.8.1.1.2, the EDG batteries are to be used to start the diesel generator. The staff finds this acceptable.

- c. The proposed changes will allow the once per 60 month discharge performance test to be performed in lieu of the battery service test in the same year for the station batteries. However, the licensee does not take this once per 60 month relief from the battery service test for the EDG batteries, since the battery service test is automatically done every 18 months as part of the simulated loss of offsite power test. The staff finds this acceptable.
- d. With regard to the quarterly tests to verify battery operability, the licensee did not take advantage of the relief offered in the STS which allows for a resistance test of terminals or connectors should visible corrosion be evident, before making a determination on operability. Specifically, during a telephone conversation between the licensee and the NRC staff, the licensee chose to revise their change to TS Sections 4.8.1.1.3.b.2 and 4.8.2.3.2.b.2 of both Units 1 and 2 to read as follows: "There is no visible corrosion at either terminals or connectors, or the connection resistance of these items is less than 150×10 to the minus 6 ohms" which is identical with the Westinghouse STS and acceptable to the staff.
- e. Per the STS, quarterly measurements are made to verify that the average electrolyte temperature is above 60 degrees F for the station batteries. During a telephone conversation with the licensee, the NRC staff was informed that according to plant procedures, temperatures in at least 10 connected cells, i.e., approximately every fifth cell, are used to calculate the average. At the request of the NRC staff, the licensee agreed to revise their change to the TS Section 4.8.2.3.2.b.3 of both Units 1 and 2 to read as follows: "Average electrolyte temperature of at least 10 connected cells is above 60°F," which is identical with the Westinghouse STS and acceptable to the staff.

Electrolyte temperature measurements are not made for the EDG batteries; winter temperatures in the EDG rooms frequently drop below 60 degrees F. It is the licensee's position that satisfying the total battery terminal voltage requirement and the requirements of Table 4.8-3 are sufficient to demonstrate operability of EDG batteries, as verified by their experience. The staff finds this acceptable.

- f. The licensee proposed doing the discharge test of battery capacity once per 18 months, during shutdown, rather than annually as proposed in the STS. This is considered acceptable by the staff because of the safety advantage of doing the test during shutdown and the relatively long service life of the batteries.

EVALUATION

Based on all of the items stated above, the staff finds the changes to the surveillance requirements for EDG batteries and station batteries to be acceptable.

ENVIRONMENTAL CONSIDERATION

These amendments involve a change in the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 or changes to surveillance requirements. The staff has determined that the amendments involve 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 exposure. The Commission has previously published a proposed finding that the amendments involve no significant hazards consideration and there has been no public comment on such finding. Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 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 amendments.

CONCLUSION

We have 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 amendments will not be inimical to the common defense and security or to the health and safety of the public.

Date: March 25, 1988

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