



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

ENCLOSURE

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO.200 TO FACILITY OPERATING LICENSE NO. DPR-33
AMENDMENT NO.218 TO FACILITY OPERATING LICENSE NO. DPR-52
AMENDMENT NO.173 TO FACILITY OPERATING LICENSE NO. DPR-68

TENNESSEE VALLEY AUTHORITY

BROWNS FERRY NUCLEAR PLANT, UNITS 1, 2, AND 3

DOCKET NOS. 50-259, 50-260 AND 50-296

1.0 INTRODUCTION

By letter dated March 19, 1993, as supplemented on September 2, 1993, the Tennessee Valley Authority (the licensee) submitted a request for changes to the Browns Ferry Nuclear Plant (BFN), Units 1, 2, and 3 Technical Specifications (TS) and associated Bases. The requested changes (1) extend the periodicity of surveillance requirement (SR) 4.9.A.1.d for emergency diesel generator (EDG) inspections from the current once per 12 months to once per 24 months and (2) provide a conforming change to the Bases section concerning SR 4.9.A.1.d by substituting the words "maintenance inspection" in place of "annual inspection". SR 4.9.A.1.d currently requires that each EDG be inspected annually in accordance with instructions based on the manufacturer's recommendations. Since the current inspection program requires each EDG to be removed annually from service for a period of 4 days to 7 days, the proposed amendment reduces the outage time for each EDG, thus improving EDG availability. The licensee contends that the EDG vendor has concurred in a recommendation for a longer maintenance inspection interval.

The staff's proposed finding of no significant hazards considerations is unaffected by the licensee's September 2, 1993, supplement.

2.0 DISCUSSION

The eight EDGs at BFN are shared among the three units and are manufactured by the Electro-Motive Division (EMD) of General Motors. Each consists of a single EMD model 20-645-E4 engine driving a EMD A20 generator.

The maintenance currently performed on the EDGs is based on two vendor maintenance instructions. These instructions specify the maintenance to be performed on both calendar and running-time bases. Due to the very limited run-times on BFN EDGs (each EDG averages about 50 hours of run-time per year), the maintenance at BFN has been performed on the calendar basis rather than run-time.

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Recently, the EMD Owners Group (EMDOG), including the licensee and 22 additional nuclear utilities, reviewed the maintenance programs performed at member facilities. This effort was, in part, to identify practices that penalize EDG availability. The EMDOG then developed a maintenance program which is more appropriate to the operating requirements of EDGs at nuclear power plants. The newly developed EMDOG maintenance program recommended that the interval between the maintenance inspections be extended from once per 12 months to once per refueling cycle (18-24 months). MKW Power Systems (MKW), the licensee's supplier of EMD parts and services, reviewed the EMDOG developed maintenance program.

3.0 EVALUATION

The licensee provided a description of its plans to implement the EMDOG maintenance program. The licensee adopted all the elements of the EMDOG program with the exception of monitoring the intake aftercooler differential pressure (DP). That parameter cannot be monitored due to lack of the installed instrumentation.

MKW has approved the EMDOG maintenance program with two exceptions, regarding the lengthening of replacement intervals (from 12 months to 24 months) for the fuel filter and two lube oil filters. To satisfy the MKW concerns, the licensee will replace those filters (i.e., fuel transfer, main lube oil, and turbocharger lube oil) on an annual basis. With regard to intake aftercooler DP, the licensee has been monitoring the internal condition of the intake aftercoolers, and the facility's maintenance records (from 1983 to present) indicate that no deficiencies that would cause a high aftercooler DP condition have been identified.

Although the purpose of the current annual inspection is to detect premature wear of EDG components, the licensee has concluded that EDG wear is not likely to significantly increase over an extended surveillance interval of 24 months. The licensee bases this conclusion on the following facts:

(1) Past inspections (annual, two-year, three-year, and six-year) performed on the BFN EDGs have revealed no significant wear on any of the EDG parts required to be inspected.

(2) The licensee has already reduced the frequency of fast cold starts, which were highlighted by Generic Letter 84-15 as significant contributors to engine wear.

(3) Under the licensee's proposal, the EDG average run time between inspections would only be increased from approximately 50 hours to 100 hours, which is still below the 500 hours of operation originally recommended by the vendor for EDG inspection under the run-time based maintenance instruction.

(4) Because lube oil analysis can provide early warning of engine distress, the licensee has proposed to increase the frequency of EDG lube oil analysis to once per month, and this frequency exceeds that recommended by the EMDOG program of once per quarter.



(5) The licensee has an established program for monitoring EDG reliability (which could be adversely affected by component wear), and the overall EDG reliability has been 99.5%.

The staff has reviewed the proposed amendment to SR 4.9.A.1.d and its associated Bases. The staff finds that the proposed increase in the surveillance interval to 24 months would not adversely affect the reliability of the BFN EDGs and offers the potential for improved EDG availability. Therefore, the staff concludes that the proposed amendment to SR 4.9.A.1.d and its Bases, which increases the EDG surveillance interval from once per 12 months to once per 24 months, is acceptable. Additionally, the staff notes that the improved Standard Technical Specifications for General Electric Plants (NUREG-1433, September 1992) no longer require the performance of EDG inspections on a regular interval and that a similar request for EDG inspection interval extension has been approved by the NRC for the Davis-Besse facility.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Alabama State official was notified of the proposed issuance of the amendment. The State official had no comments.

5.0 ENVIRONMENTAL CONSIDERATION

The amendments change requirements with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and change the Surveillance Requirements and Bases. The NRC 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 issued a proposed finding that the amendments involve no significant hazards consideration, and there has been no public comment on such finding (58 FR 34095). 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.

6.0 CONCLUSION

The Commission 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, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

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Date: October 25, 1993

