



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
SUPPORTING AMENDMENT NO. 48 TO FACILITY OPERATING LICENSE NO. NPF-3

TOLEDO EDISON COMPANY

AND

CLEVELAND ELECTRIC ILLUMINATING COMPANY

DAVIS-BESSE NUCLEAR POWER STATION, UNIT 1

DOCKET NO. 50-346

1.0 Introduction

By letter dated May 5, 1982 (No. 003), The Toledo Edison Company requested amendment to Facility Operating License No. NPF-3 for the Davis-Besse Nuclear Power Station, Unit No. 1. The amendment would modify the Technical Specifications (TSs) to allow a change in the calculational method for determining the maximum allowable high flux trip setpoint when one or more safety valves on any steam generator are inoperable. The amendment would revise Table 3.7-1 and Bases 3/4.7.1.1 of Appendix A to License No. NPF-3.

2.0 Discussion and Evaluation

Overpressure protection for the steam generator secondary side is provided by 18 safety valves - 9 per steam generator. The specified valve lift settings and relieving capacities are in accordance with the requirements of Section III of the ASME Boiler and Pressure Vessel Code, 1971 edition. This Code requires that valve lift settings and relief capacities be such that the steam system pressure will not exceed 110% of system design pressure of 1050 psig in the event of the most severe anticipated operational transient.

The most severe anticipated operational transient from the viewpoint of determining relief capacity is a turbine trip from maximum permissible power coincident with a loss of condenser heat sink. Under these conditions, the entire steam generation must be relieved through the safety valves.

The ASME Boiler and Pressure Vessel Code requires that the required relieving capacity be obtained by the use of at least two pressure-relief valves. Thus, it is permissible to operate with one or more of the installed safety valves inoperable as long as: 1) at least two safety valves per steam generator are operable and 2) the reactor high flux trip-point is reset to provide a corresponding reduction in the required relieving capacity.

The total installed relieving capacity for the 18 safety valves is 14,174,922 lb/hr or about 7,087,500 lb/hr per steam generator at 1155 psig. This is equivalent to 120% of the steam flow at 100% rated thermal power. The current TSs allow for operation with inoperable safety valves but uses the total installed relieving capacity as the normalizing basis for determining the required high flux trip setpoint. Thus, the TSs do not give full credit for the excess installed relieving capacity. Toledo Edison Company proposes to revise the method for determining the high flux trip setpoint. The proposed method would use the required relieving capacity, 6,585,000 lb/hr per steam generator, as the normalizing basis. This change would allow credit for excess installed flow relieving capacity permitting operation at higher power than currently allowed in the event of one or more inoperable safety valves.

Toledo Edison Company also proposes changes to Table 3.7-1 of the TSs consistent with the proposed revised method described above. This table specifies the thermal power restriction as a function of the number of inoperable safety valves on any steam generator and ensures that a minimum of two safety valves per steam generator will be operable as required by the ASME Boiler and Pressure Vessel Code.

We have reviewed the licensee's proposed change to the equation for determining the high flux trip setpoint as a function of the number of inoperable safety valves and the proposed changes to Table 3.7-1 of the TSs. We conclude that these changes are acceptable. The changes will permit operation with a higher trip setpoint but will maintain adequate relieving capacity.

3.0 Environmental Consideration

We have determined that the amendment does not authorize a change in effluent types or total amounts nor an increase in power level and will not result in any significant environmental impact. Having made this determination, we have further concluded that the amendment involves an action which is insignificant from the standpoint of environmental impact and, pursuant to 10 CFR §1.5(d)(4), that an environmental impact statement, or negative declaration and environmental impact appraisal need not be prepared in connection with the issuance of this amendment.

4.0 Conclusion

We have concluded, based on the considerations discussed above, that: (1) because the amendment does not involve a significant increase in the probability or consequences of an accident previously evaluated, does not create the possibility of an accident of a type different from any evaluated previously, and does not involve a significant reduction in a margin of safety, the amendment does not involve a significant hazards consideration, (2) there is reasonable assurance

that the health and safety of the public will not be endangered by operation in the proposed manner, and (3) such activities will be conducted in compliance with the Commission's regulations and the issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.

Dated: October 20, 1982

The following NRC personnel have contributed to this Safety Evaluation:
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