



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
SUPPORTING AMENDMENT NO. 15 TO FACILITY OPERATING LICENSE NO. NPF-3
THE TOLEDO EDISON COMPANY

AND

THE CLEVELAND ELECTRIC ILLUMINATING COMPANY
DAVIS-BESSE NUCLEAR POWER STATION, UNIT NO. 1

DOCKET NO. 50-346

Introduction

By letter dated January 16, 1979, the Toledo Edison Company (TECO or the licensee) submitted information on flow data and total pressure drops relating to the operation of the Davis-Besse Nuclear Power Station, Unit No. 1 (Davis-Besse 1). This information was submitted in response to Condition 2.C.(3)(1) of Facility Operating License No. NPF-3 for Davis-Besse 1.

Background

Our original evaluation of Davis-Besse 1 Loss of Coolant Accident (LOCA) analysis was based on our review of the Babcock & Wilcox (B&W) report BAW-10105. Subsequent to that evaluation, TECO informed the NRC in a telecon on January 19, 1977, that an erroneous input value of the cold leg nozzle friction factor was used in the LOCA analysis. Consequently, by letter dated February 8, 1977, TECO submitted a reanalysis of Davis-Besse 1 LOCA based on the correct cold leg nozzle model and the corresponding revised reactor system pressure distribution. The LOCA reanalysis resulted in lower peak clad temperatures (PCT's) for the worst break accident. The reason for the reduction in PCT's compared to those reported in BAW-10105 was due to the decreased flow resistance (corrected values) and the corresponding enhanced reflooding rate in the core following a LOCA.

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The LOCA reanalysis was found acceptable by the NRC staff in Supplement No. 2 of the Davis-Besse 1 Safety Evaluation Report dated April 1977. However, a condition was added to the license requiring the licensee to provide operating reactor coolant flow data which could be used to verify the reactor coolant system total pressure drops. The licensee provided the required operating reactor flow data. However, at the time the licensee reported the Davis-Besse 1 data, he started removing the Burnable Poison Rod Assemblies (BPRA's) and the Orifice Rod Assemblies (ORA's) from the core as authorized by Amendment No. 11 to the license. Since the BPRA and ORA removal resulted in new core flow characteristics (high core bypass flow), the licensee agreed to provide the reactor coolant flow data again, after BPRA and ORA removal.

Evaluation

We have reviewed the licensee's submittal and find that the total pressure drops determined by the measured reactor coolant flows are less than the system total pressure drops used in the latest LOCA analysis submitted by the licensee and accepted by the NRC staff. Therefore, we conclude that a LOCA analysis using the decreased reactor core flow resistance would result in a calculated increased reflooding rate in the core following a LOCA and thus improved Emergency Core Cooling System performance.

On the basis of the above, we find there has been no decrease in safety margin and, therefore, it is acceptable to remove license Condition 2.C.(3)(1).

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 §51.5(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.

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 accidents previously considered and does not involve a significant decrease in a safety margin, 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: June 5, 1979

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