



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 119 TO FACILITY OPERATING LICENSE NO. NPF-3
TOLEDO EDISON COMPANY
AND
THE CLEVELAND ELECTRIC ILLUMINATING COMPANY
DAVIS-BESSE NUCLEAR POWER STATION, UNIT NO. 1
DOCKET NO. 50-346

1.0 INTRODUCTION

By letter dated July 27, 1987, Toledo Edison Company (TE) proposed changes to the Technical Specifications (TS's) for Davis-Besse Nuclear Power Station, Unit No. 1. The proposed changes involve Section 3/4.3.2, Table 3.3-5, Safety Features Response Times; Section 3/4.3.2, Table 3.3-13, Steam and Feedwater Rupture Control System Response Times; Section 3/4.6.3, Table 3.6-2, Containment Isolation Valves; and Section 3/4.7.1, Specification 4.7.1.5, Main Steam Line Isolation Valves. The proposed changes are being submitted to make the Main Steam Isolation Valve (MSIV) closure time requirements consistent throughout the Technical Specifications and to remove those requirements on MSIV response time which are not required to satisfy the plant Safety Analysis Report. Toledo Edison Company supplemented the application with a response to a request for additional information by letter dated March 31, 1988.

2.0 EVALUATION

The MSIV's are installed in both main-steam lines between the steam generators (SG's) and the turbine, and provide isolation of the steam generators when required. Automatic closure of these valves is through the Safety Features Actuation System (SFAS) or the Steam and Feedwater Rupture Control System (SFRCS). SFAS will initiate MSIV closure upon a high-high containment signal, and SFRCS will initiate closure upon either low steam pressure, high SG level, or a high pressure differential between the SG and main feedwater line.

Operability and closure time requirements for the MSIV's are specified in four sections of the Technical Specifications; however the closure and response times stated are not consistent between sections because the requirements were developed for certain sections independently of the others. Therefore, the proposed amendment would specify a consistent closure requirement where closure times are necessary to be specified. Where it is not necessary to specify such a requirement for the MSIV's, nonapplicability would be indicated. The proposed changes would be as follows:

Section 3.3.2.1, Table 3.3-5, Safety Features System Response Times. The specified MSIV response time of not greater than 10 seconds would be changed to "not applicable:"

Section 3.6.3.1, Table 3.6-2, Containment Isolation Valves. The required isolation time for the MSIV's would be changed from 5 seconds to "not applicable:"

Section 4.7.1.5 which requires demonstration of MSIV operability by verifying full closure within 5 seconds would be changed to refer to Table 3.3-13 when the valves are tested pursuant to ASME Code Section XI requirements.

Section 3.3.2.2, Table 3.3-13, Steam and Feedwater Rupture Control System Response Times. The specified MSIV response time of not greater than 6 seconds would be changed to not greater than 6.0 seconds for the low Main Steam Line pressure channels of SFRCS and not greater than 6.5 seconds for the Steam Generator/Main Feedwater high reverse differential pressure channels of SFRCS. A footnote would be added to clarify what is included in the response time requirements.

The proposed elimination of the response time requirements from TS Section 3.3.2.1, Table 3.3-5, and from TS Section 3.6.3.1, Table 3.6-2 is consistent with Amendment 114, issued August 2, 1988. By that amendment, the MSIV's were deleted from Tables 3.3-5 and 3.6-2. Therefore, no further action on this proposal is required.

The proposed change to TS Section 4.7.1.5 will refer to Table 3.3-13 which specifies a response time of either 6.0 or 6.5 seconds depending upon the initiating signal. The specified response time includes a 5.0 second closure time (as before) and 1.0 or 1.5 second instrument response time. The change merely clarified the response requirement and is acceptable to the staff.

With regard to the proposed change to TS Section 3.3.2.2, Table 3.3-13, the proposed 6.0 second MSIV response time upon low steam line low pressure remains unchanged from the current requirement which has been accepted by the staff previously.

The SFRCS detects a rupture of the feedwater line by sensing a high reverse differential pressure between the unaffected steam generator and its feedwater line. Toledo Edison Company has assessed the effects of the proposed 6.5 second response time in Table 3.3-13. The calculated increase in containment temperature due to the additional mass and energy release because of the longer closure time is 7°F higher than predicted in previous analyses. Adding this increase directly to the peak temperature for the Main Feedwater line break causes the peak to increase to 250°F. The new calculated peak containment pressure also is greater than that calculated in the previous Main Feedwater Line break analyses (14.1 psig versus 12.9 psig). These new values are bounded by the values presented in the SAR, the loss-of-coolant accident, and a main steam line break and, therefore, the staff finds the proposed change acceptable.