



Docket No. 50-346

License No. NPF-3

Serial No. 1-701

January 16, 1987

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Nuclear Regulatory Commission
Document Control Desk
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Gentlemen:

Toledo Edison has received Inspection Report No. 50-346/86019 (Log No. 1-1513) and provides the following response. Based on our discussion with members of your staff on December 19, 1986, and January 7, 1987, the response to Inspection Report No. 86019 was extended to January 16, 1987.

Violation: 10 CFR 50, Appendix B, Criterion III, as implemented by Toledo Edison Company (TED) Nuclear Quality Assurance Manual and Nuclear Quality Assurance Procedure, requires establishment of controls among participating design organizations for review, approval, and revision of design documents.

Contrary to the above, TED did not ensure that design was adequately controlled by engineering contractors in that:
(1) the assumptions used in the purification letdown piping analysis differed from the actual system operating conditions;
(2) the pressurizer relief piping analysis was not reconciled to the as-built conditions, and (3) the pressurizer relief piping analysis included apparent computer modeling errors.

Response: As stated in the Notice of Violation for Inspection Report 86019, "the inspection showed that action had been taken to correct the identified violation and to prevent recurrence. Consequently, no reply to the violation is required

Based on the above Toledo Edison considers this violation closed.

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Violation: 10 CFR 50, Appendix B, Criterion XV, as implemented by Edison Company Nuclear Quality Assurance Manual and Nuclear Quality Assurance Procedure, requires measures be established to identify materials or components which do not conform to requirements for proper review and disposition.

Contrary to the above, TED did not document in nonconformance reports - Potential Condition Adverse to Quality Reports (PCAQRs) the adverse findings identified in an engineering evaluation of the PORV piping system. Three hangers did not meet the FSAR requirements, and one did not meet the IE Bulletin 79-14 interim stress allowables.

Response: Acceptance Or Denial Of The Alleged Violation

Toledo Edison acknowledges the alleged violation.

Reason For The Violation

In conjunction with the Bechtel and MPR re-evaluation of the PORV piping analysis, Toledo Edison (TED) engineers reviewed the PORV pipe supports. This review found the as-built supports adequate with the following exceptions:

Support No. 30-CCA-8-H2, did not meet FSAR commitments and interim stress allowables.

Support No. 30-GCC-8-H16 and 30-CCA-8-H4, did not meet FSAR commitments but were within the interim stress allowables.

On October 27, 1986 Toledo Edison personnel informed the NRC by telephone conference call of these non-conforming conditions. Toledo Edison also notified the NRC that the supports were being modified and that TED was investigating the need of either reporting these deficiencies by revising LER 85-019, "PORV Discharge Line Overstressed Due To Inadequate Heat Trace", or submitting a new LER. TED stated more information would be available when the inspector was on site on October 29, 1986.

On October 29 and 30, 1986, the NRC inspector was on site to review open items along with the noted support deficiencies. The inspector reviewed the support calculations and had no adverse comments. The inspector questioned the history of these supports and asked to review the Potential Condition Adverse to Quality (PCAQ) Report generated on these deficiencies. As of that time a PCAQ Report had not been generated.

The root cause of not initiating a PCAQ Report when the potential condition adverse to quality was identified is personnel error. The error is that the PCAQ Reporting Procedure was not followed in that: 1) a PCAQ Report was not initiated, and 2) the procedural steps for determining reportability were not followed. Presently, the PCAQ reporting process is: 1) identify the PCAQ, 2) initiate a PCAQ Report, 3) reportability evaluation is performed by the Operations Shift Supervisor, and 4) reportability evaluation is reviewed by the Technical Support Department and the PCAQ Review Board.

Personnel engaged in identifying and correcting the support deficiencies were aware of the requirement to identify nonconforming conditions in a PCAQ Report. These personnel were involved in expediting the corrective actions and inadvertently did not generate a PCAQ Report as required by Toledo Edison Procedures. However, as discussed in the October 27, 1986 telephone conference call, reportability was being reviewed.

Corrective Steps Which Have Been Taken and Results Achieved

PCAQ Report 86-0551 was generated to document the support design nonconformances and to determine reportability. Facility Change Request (FCR) 86-0350 and 86-0352 were issued and the affected supports were modified such that they now meet the FSAR allowable stress criteria.

Engineering and Licensing personnel involved have been instructed that the only method for identifying, evaluating, and tracking potential conditions adverse to quality at Davis-Besse is through the PCAQ Reporting process.

Date When Full Compliance Will Be Achieved

Full compliance has been achieved upon the generation of PCAQ Report 86-0551 and with the instructions given to the appropriate personnel. The supplemental report to LER 85-019 will be submitted by January 31, 1987.

Violation: 10 CFR 50, Appendix B, Criterion V, as implemented by Toledo Edison Company Nuclear Quality Assurance Manual and Nuclear Quality Assurance Procedure, requires activities affecting quality be prescribed by documented procedures and accomplished in accordance with documented procedures.

Contrary to the above, Bechtel procedures did not include requirements for combining support design loads, and the Bechtel staff did not follow approved project instructions when performing design calculation verification.

Response: Acceptance Or Denial Of The Alleged Violation

Toledo Edison acknowledges the alleged violation.

(a): Bechtel procedures did not include requirements for combining support design loads....

Reason For The Violation

On a majority of piping systems, the loads imposed by the piping on the supports are due to weight (unidirectional), thermal (mainly unidirectional), and seismic/seismic anchor movement (bi-directional). The evaluation of the maximum support loads in the two directions is then accomplished by simple addition/subtraction.

The Bechtel engineers are made aware of this during initial indoctrination, and, on assignment to the Davis-Besse Project, the methodology is once again emphasized. It should be noted that on certain projects (mostly BWRs) where the loading combinations are more complex, written procedures for load combination do exist. However, for the Davis-Besse Project, the combination of support loads was thought to be very straight forward and, therefore, no written procedure was found to be necessary. It should be noted that as stated in Inspection Report 86019, "Although there was no procedure to perform the work, the mathematics were verified to be correct."

Corrective Actions Taken And Results Achieved

Bechtel has developed the "Design Guide for Davis-Besse Pipe Support Design Load Combinations," DBSGN01, Revision 0, dated October 27, 1986.

The Design Guide has also been distributed to all of the Bechtel Davis-Besse stress engineering personnel for their use. This instruction provides written guidance for combining the different stress loads generated in a piping system. The stress engineers on the Davis-Besse Project have been directed to calculate design load combinations as set forth in the Design Guide.

Corrective Actions To Be Taken To Avoid Further Violation

In addition to the corrective actions taken, Toledo Edison will be performing an audit of the Bechtel Davis-Besse Project to check for compliance with the applicable regulations, codes and standards. The audit team will consist of Toledo Edison Quality Assurance and Design Engineering personnel.

Date When Full Compliance Will Be Achieved

Full compliance has been achieved with the issuance of the Bechtel design guide for pipe support load combinations. The Toledo Edison audit of the Bechtel Davis-Besse project is scheduled for the first quarter of 1987.

- (b) ... the Bechtel staff did not follow approved project instructions when performing design calculation verification.

Response: During the initial construction of the Davis-Besse Nuclear Power Station, Unit No. 1, small bore piping systems were designed by the field engineers using standard "cookbook" methodology. The work was subsequently reviewed by the Bechtel home office engineering staff to verify that the systems were adequately designed. The method used to verify the initial design need not have been the same method used by the field engineer. In some cases, the system design was verified by a computer analysis. This computer analysis was an alternate method used by the reviewer in the design verification process. Subsequently, there was no need to have this verification computer analysis checked.

The non-standard small bore pipe support effort was initiated as a result of concerns discussed in Inspection Report No. 83017 and closed in Inspection Report No. 85035. Toledo Edison identified 806 non-standard small bore pipe supports among which 724 required calculations to determine support adequacy. Some of these support loads were extracted from the existing unchecked verification computer analysis by the Bechtel stress group and given

to the pipe support group to evaluate the supports. For those supports using the loads from the stress group, the loads generated from the original unchecked system verification analysis were used in the modification of 38 of the 51 pipe supports modified via FCR 85-0176. These loads were not verified as required by Bechtel Engineering Department Instruction EDPI-4.37.11, Design Calculations.

Corrective Actions Taken And Results Achieved

It is felt that the use of unchecked stress loads to modify supports is isolated to the small bore pipe review. EDPI-4.37-11, Design Calculations, has been in force since the design engineering phase of the Davis-Besse Project. The Bechtel Quality Assurance Department and the Toledo Edison Quality Assurance Department perform periodic audits of Bechtel Engineering to verify compliance with approved procedures.

A sampling of stress calculations from this group of 38 support calculations which used unchecked support loads was performed. The sample calculations were thoroughly checked and no discrepancies were found.

Bechtel Davis-Besse Project Engineering personnel have been issued instructions discussing the importance of following approved procedures.

Actions To Be Taken To Avoid Further Violation

As discussed in Part (a) of the violation response, Toledo Edison will be performing an audit of the Bechtel Davis-Besse Project to verify compliance with approved procedures. This audit team will consist of Toledo Edison Quality Assurance with technical assistance from Design Engineering.

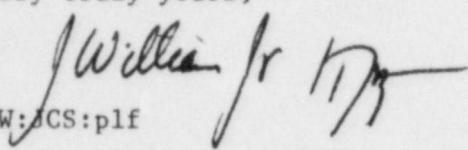
Those support calculations which utilized unverified computer generated loads will be revised to provide this verification. These calculations are expected to be revised by February 28, 1987.

Docket No. 50-346
License No. NPF-3
Serial No. 1-701
Page 7

Date When Full Compliance Will Be Achieved

The previous audits combined with the Toledo Edison audit of the Bechtel Davis-Besse project scheduled for the first quarter of 1987 will provide further assurance that failure to use verified loads is an isolated case and that procedural compliance has improved.

Very truly yours,


JW:JCS:plf

cc: DB-1 NRC Resident Inspector
J. G. Keppler, Region III