NRC Form 366
(9-83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/85

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Davis-Besse Unit 1	0 5 0 0 0 3 4 6	1 OF 0 3

TITLE (4)

Small Break LOCA Analysis Assumptions Potentially Non-Conservative

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAMES	DOCKET NUMBER(S)
										0 5 0 0 0
0 7	1 0	8 6	8 6	0 2 8	0 1	1 2	1 0	8 6		0 5 0 0 0

OPERATING MODE (9): 5

POWER LEVEL (10): 0 1 0 0

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)

20.402(b)	20.405(c)	50.73(a)(2)(iv)	73.71(b)
20.405(a)(1)(i)	50.36(c)(1)	50.73(a)(2)(v)	73.71(c)
20.405(a)(1)(ii)	50.36(c)(2)	50.73(a)(2)(vii)	X OTHER (Specify in Abstract below and in Text, NRC Form 366A)
20.405(a)(1)(iii)	50.73(a)(2)(i)	50.73(a)(2)(viii)(A)	
20.405(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(viii)(B)	Special Report
20.405(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER	
	AREA CODE	
Alan Easly	4 1 9	2 4 9 - 5 0 0 0

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS

SUPPLEMENTAL REPORT EXPECTED (14)		EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
YES (If yes, complete EXPECTED SUBMISSION DATE)	X NO				

ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

A review of the B&W small break Loss of Coolant Accident (SBLOCA) licensing analyses performed for Davis-Besse has identified input assumptions which are potentially non-conservative.

The finding was reported to the NRC via the red phone at 1218 on July 10, 1986.

Investigations have been completed by B&W to determine whether the overall analyses remain conservative based on the fact that other input assumptions are overly conservative.

Toledo Edison has completed an engineering review of the SBLOCA assumptions and reached the conclusion that although the assumptions produce a slightly non-conservative result for some break sizes, the overall impact on the analyses results is small and the results continue to satisfy the criteria of 10CFR50 Appendix K and 10CFR50.46.

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☆U.S.GPO:1984-0-454-481/18759

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6) YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	PAGE (3)
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TEXT (If more space is required, use additional NRC Form 366A's) (17)

Description of Occurrence:

During the Toledo Edison review of the input assumptions used for the small break Loss of Coolant Accident (LOCA) analysis to address Item II.K.3.31 of NUREG-0737, discrepancies were identified for some input assumptions which are potentially non-conservative when compared to the present plant configuration and operational parameters.

This finding led to a review of the original B&W small break LOCA licensing analyses as presented in B&W Topical Report BAW10075A, Rev. 1. The following potentially
1 non-conservative assumptions, compared to the present plant configuration and operational parameters, were identified:

1) Analyses used a Reactor Protection System low pressure
1 trip setpoint of 2065 psia whereas a trip setpoint of 1900 psia was used for the FSAR analysis.

2) Analyses used a steam generator water level of 32 feet
1 whereas the actual plant water level is controlled to 10 feet following an SFAS incident level 2 signal.

3) Analyses assumed availability of two steam generators whereas the loss of a diesel generator due to the single
1 failure criteria limits the delivery of AFW to one steam generator.

4) Analyses used a main feedwater flow coastdown time of
1 43.5 seconds whereas the minimum actual time is approximately 7 seconds.

Designation of Apparent Cause of Occurrence:

During the time frame when the original B&W analysis was performed, early 1970's, the assumptions may have been valid however, it appears that by the time Davis-Besse received its operating license, these parameters had changed. If justification for the applicability of the analysis for use with the new parameters exists, no record to that
1 effect has been discovered. The appropriate justification should have been documented during the licensing process. Lack of communication between B&W and Toledo Edison is the cause for these discrepancies not being identified during the licensing process. B&W was deficient for not confirming the parameters prior to doing additional analyses and Toledo Edison was deficient for not performing a proper review of these analyses.

Analysis of Occurrence:

Following reevaluation it was determined the plant design complies with NRC design requirements. The event reported here was an administrative control problem between B&W and Toledo Edison.

Corrective Action:

In response to the immediate safety concern, B&W reviewed all small break LOCA analyses performed by them for the Davis-Besse plant. No additional potential non-conservative assumptions were found and not all of the assumptions identified in BAW-10075 were used in all of the analyses. Therefore, analyses contained in BAW-10075 represent the worst case scenario.

B&W performed a qualitative evaluation to determine the impact of the assumptions which demonstrates that with no further plant modifications, the acceptance criteria of 10CFR50 Appendix K and 10CFR50.46 are not violated. B&W has also performed a detailed LOCA analysis for the 0.04 square foot break in response to Item II.K.3.31 of NUREG-0737. This was compared with the existing analysis in BAW-10075A for its impact. Toledo Edison has performed an engineering review of the results of the investigations. The conclusion reached is that although some of the assumptions are non-conservative, the results still meet 10CFR50 Appendix K and 10CFR50.46.

In response to the more general concern of avoiding recurrence, as a common practice, Toledo Edison now requires B&W to supply Toledo Edison with a document called an Analytical Input Summary (AIS) in which B&W summarizes the major analytical assumptions to be used in an analysis. No work is performed by B&W until Toledo Edison reviews and approves the assumptions. This LER provides an example of the system effectiveness in that this review process for new analyses to support NUREG-0737, Item II.K.3.31 identified the problem initially. For other external interfaces, Toledo Edison Engineering Procedure NFES-100 "Design Interface Control" applies.

In addition, Toledo Edison has performed a preliminary review of B&W topical reports which were taken credit for in the Davis-Besse licensing process. Typically, the topical reports reviewed pertained to large break LOCA, fuel/core, and reactor vessel internals/LOCA loads. Toledo Edison also intends to undertake a detailed review of these topical reports and their inherent assumptions. The Toledo Edison Independent Safety Engineering Group has initiated the process for a detailed review. This review is expected to be completed prior to startup from the next refueling outage for Cycle 6.

Failure Data:

This is the first report of these discrepancies.

REPORT NO: NP-33-86-38 PCAQ NO: 86-0131

December 10, 1986

TOLEDO EDISON

Log No: KA86-0463
File: (NP-33-86-38 Rev. 1)

Docket No. 50-346
License No. NPF-3

U. S. Nuclear Regulatory Commission
Document Control Desk
Washington, D. C. 20555

Gentlemen:

Enclosed is Revision 1 to Licensee Event Report 86-028. The revisions to the report are indicated by a "1" in the left margin of each page.

Please destroy or mark superseded your previous copy of this report and replace with the attached revision.

Yours truly,

Louis F. Storz

Louis F. Storz
Plant Manager
Davis-Besse Nuclear Power Station

LFS/ed

Enclosure

cc: Mr. James G. Keppler
Regional Administrator,
USNRC Region III

Mr. Paul Byron
DB-1 NRC Resident Inspector

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