



A Centenor Energy Company

EDISON PLAZA
300 MADISON AVENUE
TOLEDO, OHIO 43652-0001

AB-92-0059
NP-33-92-010

Docket No. 50-346

License No. NPF-3

December 21, 1992

United States Nuclear Regulatory Commission
Document Control Desk
Washington, D. C. 20555

Gentlemen:

LER 92-009

Davis-Besse Nuclear Power Station, Unit No. 1
Date of Occurrence - September 10, 1992

Enclosed please find Licensee Event Report 92-009, which is being submitted provide information on motor-operated valve testing conducted at Davis-Besse Nuclear Power Station in accordance with NRC Generic Letter 89-10. This LER is being submitted as a Voluntary Report.

Very truly yours,

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

LFS/dlc

Enclosure

cc: Mr. A. Bert Davis
Regional Administrator
USNRC Region III

Mr. Stan Stasek
DB-1 NRC Sr. Resident Inspector

280046

9212280281 921221
PDR ADOCK 05000346
S PDR

JEZ

LICENSEE EVENT REPORT (LER)

(See reverse for required number of digits/characters for each block)

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNB 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20548-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1) Davis-Besse Unit No. 1	DOCKET NUMBER (2) 05000-346	PAGE (3) 1 OF 4
---	--------------------------------	--------------------

TITLE (4)
Voluntary LER Detailing Problems Identified During Generic Letter 89-10 Testing

EVENT DATE (5)			LER NUMBER (6)			REPORT NUMBER (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
09	10	92	92	009	00	12	21	92		05000
									FACILITY NAME	DOCKET NUMBER
										05000

OPERATING MODE (9) 1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR § (Check one or more) (11)	20.402(b)	20.405(c)	50.73(a)(2)(iv)	73.71(b)
POWER LEVEL (10) 100		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)	<input checked="" type="checkbox"/> OTHER
		20.405(a)(1)(iii)	50.73(a)(2)(i)	50.73(a)(2)(viii)(A)	(Specify in Abstract below and in Text, NRC Form 366A)
		20.405(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(viii)(B)	
		20.405(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(k)	

LICENSEE CONTACT FOR THIS LER (12)

NAME Norman K. Peterson, Engineer - Licensing	TELEPHONE NUMBER (include Area Code) (419) 321-8450
--	--

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPROS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPROS

SUPPLEMENTAL REPORT EXPECTED (14)

<input checked="" type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE)	NO	EXPECTED SUBMISSION DATE (15)	MONTH 06	DAY 01	YEAR 93
--	----	-------------------------------	-------------	-----------	------------

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

This LER is a voluntary submittal detailing deficiencies discovered during dynamic testing of motor operated valves in response to NRC Generic Letter (GL) 89-10, "Safety Related Motor-Operated Valve Testing and Surveillance". On September 10, 1992 with the reactor in Mode 1 at 100 percent power, TE began conducting design-basis differential pressure and flow testing of motor-operated valves (MOVs) in accordance with the guidelines given in GL 89-10 and its supplements. Prior to testing, a design basis review was conducted, and revised valve performance and design parameters were calculated for each MOV to meet the GL 89-10 guidance. Based upon the review and testing, TE determined that a number of valves did not meet the new performance criteria established in accordance with GL 89-10. The valves were previously set up and tested under TE's MOV testing program established in response to NRC Bulletin 85-03. Following identification of the valve deficiencies, the valves were modified or repaired and satisfactorily retested to meet the GL 89-10 guidance prior to return to service.

**LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION**

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 500 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNB 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (D150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (4)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Davis-Besse Unit No. 1	05000-346	92	009	00	2 OF 4

TEXT (if more space is required, use additional copies of NRC Form 366A) (17)

Description of Occurrence

On September 10, 1992 with the reactor in Mode 1 at 100 percent power, TE personnel began conducting design basis differential pressure and flow (i.e., dynamic) testing of MOVs in accordance with the guidelines of GL 89-10 and its supplements. Prior to testing, a design basis review was conducted, and revised valve performance and design parameters were calculated for each MOV to meet the GL 89-10 guidance. Based upon the review and testing conducted thus far, TE determined that a number of valves did not meet the new performance criteria established in accordance with GL 89-10. The valves were previously set up and tested under TE's MOV testing program established in response to NRC Bulletin 85-03. Following identification of the valve deficiencies, the valves were modified or repaired and satisfactorily retested to meet GL 89-10 guidance prior to return to service.

The purpose of this LER is to provide information on deficiencies identified during MOV testing at the Davis-Besse Nuclear Power Station to date.

Analysis of Occurrence

Thus far, the review and test program for MOVs has produced the following results and deficiencies:

1. Motor-Operated Valves HP-31 and HP-32 are rising, rotating stem, stop check valves in the High Pressure Injection (HPI) system. These valves function as HPI pump minimum flow recirculation line isolation valves. HP-31 and HP-32 were tested under both static and dynamic conditions. No maintenance was performed on these valves prior to static testing. The torque switch setting for HP-31 was increased and the torque switch was replaced in HP-32 prior to dynamic testing. These changes were necessary to ensure the measured thrust values could meet the newly calculated thrust values. Test data analysis revealed that HP-31 exhibited a higher than expected degree of load sensitive behavior (approximately 26%) while HP-32 exhibited load sensitive behavior of approximately 8%. When considering the load sensitive behavior of these valves with the low, as-found static test thrust measurements, HP-31 may not have been able to develop adequate thrust to close in the as-found condition. However, HP-32 would have developed sufficient thrust to operate properly.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST 30.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (INBB 7714) U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (3)			PAGE (4)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Davis-Besse Unit No. 1	05000-346	92	009	00	3 OF 4

TEXT (if more space is required, use additional copies of NRC Form 366A) (17)

Analysis of Occurrence (Continued)

2. Motor-operated valve RC-240B is a gate valve that functions as a containment isolation valve for the pressurizer sample line. RC-240B was tested under both static and dynamic conditions. Prior to testing, the spring pack was replaced in order to allow for a larger thrust to be developed and the torque switch setting was increased to meet the newly-calculated thrust values. Dynamic testing data analysis showed that this valve may not have been able to develop adequate thrust to close in the as-found condition due to a high degree of load sensitive behavior (approximately 24%).

The deficiencies described above were of minimal safety significance. Redundant components or redundant trains of safety systems were not effected by similar deficiencies. In addition, the valves were satisfactorily tested under the previous MOV testing program as described below.

Apparent Cause of the Occurrence

The original selection of MOV characteristics (i.e., spring pack size, gear ratios, motor sizes, and torque switch settings) was accomplished under established engineering practices and MOV technology available during initial plant design. In 1986, a program to review and re-establish the design and performance requirements for safety-related MOVs was formulated in response to the event of June 9, 1985 at Davis-Besse and NRC Bulletin 85-03. This program used the most-current MOV diagnostic equipment and technology available at that time, and was approved by the NRC in Section 3.2.1.7 of NUREG-1177, "Safety Evaluation Report Related to the Restart of Davis-Besse Nuclear Power Station, Unit 1, Following the Event of June 9, 1985".

Industry operating experience and further advances in MOV diagnostic equipment and technology have resulted in more precise evaluations of the operating characteristics of MOVs. Each of the valves met the acceptance criteria established by the plant's previously approved MOV testing program.

Corrective Action:

The deficient MOVs were modified or repaired to satisfy the requirements of the Davis-Besse MOV program, which is based upon the guidelines of GL 89-10. Upon completion of the modifications or repairs, the valves were satisfactorily tested prior to return to service.

LICENSEE EVENT REPORT (LER)
 TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (INBB 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20545-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Davis-Besse Unit No. 1	05000-346	92	009	00	4 OF 4

*EXT (if more space is required, use additional copies of NRC Form 366A) (17)

Corrective Action: (Continued)

Additional valves are scheduled to be tested between now and the completion of the eighth refueling outage, currently scheduled for the Spring of 1993. Toledo Edison will document the results of future MOV testing. A revision to this report will be submitted upon completion of the refueling outage describing significant deficiencies discovered during the testing.

Failure Data:

There have been no previous reports involving MOV failures in the last three years.

NP 33-92-010

PCAQ No. 92-0026, 92-0384