

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Davis-Besse Unit 1										DOCKET NUMBER (2) 0 5 0 0 0				PAGE (3) 1 OF 0 4									
TITLE (4) Inoperable Seismic Monitoring System Due to Deficient Surveillance Test Procedures																							
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	8	1	3	8	6	8	6	0	3	5	0	0	0	9	1	2	8	6	0	5	0	0	0
THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)																							
OPERATING MODE (9)		5		20.402(b)				20.405(c)				50.73(a)(2)(iv)				73.71(b)							
POWER LEVEL (10)		0 0 0		20.405(a)(1)(i)				50.38(c)(1)				50.73(a)(2)(v)				73.71(c)							
				20.405(a)(1)(ii)				50.38(c)(2)				50.73(a)(2)(vii)				OTHER (Specify in Abstract below and in Text, NRC Form 365A)							
				20.405(a)(1)(iii)				X 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)											
				20.405(a)(1)(v)				50.73(a)(2)(iii)				50.73(a)(2)(x)											
LICENSEE CONTACT FOR THIS LER (12)																							
NAME Randolph Androsik, Senior Nuclear Engineer										TELEPHONE NUMBER AREA CODE 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 NPDOS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPDOS													
SUPPLEMENTAL REPORT EXPECTED (14)												EXPECTED SUBMISSION DATE (15)		MONTH	DAY	YEAR							
X YES (If yes, complete EXPECTED SUBMISSION DATE)												NO		1	2	1	5	8	6				

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

On August 13, 1986, with the Plant shutdown for an extended maintenance outage, it was determined that the Strong Motion Accelerometer Functional Test ST 5034.02 and the Strong Motion Accelerometer Channel Calibration Test ST 5034.03 did not adequately meet Technical Specification requirements. The functional test only checked the Trigger and the calibration test functionally checked the Strong Motion Accelerometers.

The Strong Motion Accelerometers are being removed for calibration and the Surveillance Test procedures are being revised to meet Technical Specifications requirements.

This finding is being reported per 10CFR50.73(a)(2)(i)(B).

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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TEXT (If more space is required, use additional NRC Form 366A's) (17)

Description of Occurrence:

On August 13, 1986, with the Plant shutdown for an extended maintenance outage, the Seismic Monitoring System (IN) was being evaluated for future improvements. While performing the review of the Strong Motion Accelerometer Functional Test (ST 5034.02) and the Strong Motion Accelerometer Channel Calibration Test (ST 5034.03), it was determined that these tests did not meet the Technical Specifications (T.S 4.3.3.3.1) requirements. As presently written, ST 5034.02 includes a functional test of the seismic trigger, ZT 2957 (VT), and the instructions for the 18 month Peak Recording Accelerometer ZT 2954, ZT 2955, ZT 2956 (VT) Test. The Functional Test of ZT 2957 is effected through manipulation of a test switch which connects a 12 VDC test signal to ZT 2957. This 12 VDC signal causes displacement of the sensor mass and subsequent actuation of Seismic Monitoring System. This actuation gates the inputs from the Strong Motion Accelerometers, ZT 2950, ZT 2951, ZT 2952, ZT 2953 (VT), which are at rest if there is no ground acceleration. At no time in the test are the Strong Motion Accelerometers functionally tested similar to the Trigger Test as required by Technical Specifications. This discrepancy originated in January 1985 when the original Teledyne Geotech Control and Indication System was replaced by a Kinometrics Control and Indication System. The Teledyne Geotech System included a a test feature which performed the channel functional test by applying a simulated input signal to the sensor in the "TEST" mode which satisfied Technical Specification requirements. This test feature has not been included, however, with the new system; and the test procedure still reflects the original system. This functional test of the Strong Motion Accelerometers is included in the ST 5034.03.

As presently written, ST 5034.03 encompasses a calibration of the Electronic Processing and Indication System and a functional test of the Strong Motion Accelerometers. The functional test is accomplished by connecting a DC voltage to the accelerometer test circuit and varying the voltage from -5 VDC to +5 VDC in 1 volt increments which simulates the range of measurement for the instrument.

The Strong Motion Sensors were subjected to a primary calibration by the manufacturer when they were shipped to the plant, and in 1978 when they were returned for calibration.

Subsequently, due to inherent deficiencies and numerous component failures, the system was inoperable until Facility Change Request (FCR) 78-467 was installed in late 1984 which replaced the Control and Indication System. However, when the system was declared operable in January of 1985, only two of the Strong Motion Accelerometers had been returned to the manufacturer for recalibration; ZT 2950 and ZT 2951 had not. The Seismic Trigger was returned with the two Strong Motion Accelerometers; ZT 2952 and ZT 2953 in late 1984, and was recalibrated again in February 1986.

During the period of inoperability, it was also decided that the application of a test voltage to the accelerometer test circuit would constitute an acceptable calibration of the device.

The occurrence is reportable under 10CFR50.73(a)(2)(i)(B).

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104

EXPIRES: 8/31/85

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Designation of Apparent Cause of Occurrence:

The apparent cause for the omission of the functional testing was a deficient procedure. The deficient ST 5034.02 procedure was due to the lack of an adequate review of the capabilities of the Kinematics Control and Indication System which replaced the Teledyne Geotech System in January 1985. The original system included a functional self test capability; the new system did not. ST 5034.02 was not modified to include the the channel functional test for the Strong Motion Accelerometers.

The apparent cause for the failure to perform primary calibration on the Strong Motion Accelerometers was due to two decisions. First failure to follow through with the original plans to return the accelerometers to the manufacturer for calibration when required by T.S. 4.3.3.3.1, second a determination that applying a test voltage to the accelerometer covering the range of measurement would be an acceptable calibration of the device.

Analysis of Occurrence:

There are no real safety consequences or implications from this occurrence since it has been determined, from outside independent sources, that no earthquakes have occurred at the plant of sufficient intensity to necessitate activation of the system. However, the accelerometers are being removed for calibration and an analysis of the postulated effect of any error will be provided in a supplemental report.

Corrective Action:

The Strong Motion Accelerometers are being removed for calibration and the required testing will be followed in the future. To preclude a recurrence of this event the procedures ST 5034.02 and ST 5034.03 will be revised by December 1986.

Procedures are now prepared and reviewed under AD 1805.00, Procedure Preparation, Review, Approval and Revision. In this procedure specific guidance is given for performance of reviews and validation of procedures. Use of this program should eliminate this type of occurrence.

As stated LER 86-023, a review of Technical Specification required testing is being performed to find if any acceptance criteria has been omitted. This review will be completed prior to entering Mode 4 from the present outage.

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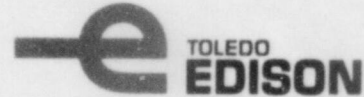
0 5 0 0 0 3 4 6 8 6 - 0 3 5 - 0 0 0 4 OF 0 4

TEXT (If more space is required, use additional NRC Form 366A's) (17)

Failure Data:

The System Review and Test Program has identified eleven instances of inadequate Technical Specification Surveillances: LERs 85-18, 85-21, 85-22, 86-04, 86-12, 86-14, 86-19, 86-23, 86-24, 86-25, and 86-35.

REPORT NO: NP-33-86-43PCAQ NO(s): 86-161



September 12, 1986

Log No: KA86-0248
File: (NP-33-86-43)

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

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

Gentlemen:

LER No. 86-035
Davis-Besse Nuclear Power Station Unit No. 1
Date of Occurrence August 13, 1986

Enclosed is Licensee Event Report 86-035 which is being submitted in accordance with 10CFR50.73, to provide 30 day written notification of the subject occurrence.

Yours truly,

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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