

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Davis-Besse Unit 1	DOCKET NUMBER (2) 0 5 0 0 0 3 4 1 6	PAGE (3) 1 OF 0 3
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TITLE (4)  
Inadequacies in Raychem Installations

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 9	8 6	8 6	0 2 1	0 0	0 5	2 3	8 6			0 5 0 0 0
											0 5 0 0 0

OPERATING MODE (9) 5

POWER LEVEL (10) 0 1 0 1 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)	50.38(c)(1)	50.73(a)(2)(v)	73.71(c)
20.405(a)(1)(ii)	50.38(c)(2)	50.73(a)(2)(vi)	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)	
20.405(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
T. Shaikh	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 NPRDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE)       NO

EXPECTED SUBMISSION DATE (15)      MONTH 0 6      DAY 3      YEAR 0 8 6

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

The Davis-Besse plant is in Mode 5 Cold Shutdown. During training sessions on Raychem terminations/splicing it was discovered that past practices may have resulted in improper terminations/splices existing in the field which may provide inadequate insulating properties during design basis event conditions.

This condition has not previously resulted in any failures. Design drawings and the Plant Maintenance Procedure are currently being revised. Training on the design and installation of Raychem terminations/splices is being given to the station personnel.

This is a preliminary report which resulted from procedural inadequacies.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		8 6	- 0 2 1	- 0 0	0 2	OF	0 3

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

Description of Occurrence:

During a recent training session on proper Raychem termination/splicing it was discovered that past practices may have resulted in improper field installations.

A selected sample of 71 wire splices was inspected and it was determined that 67 of these splices did not conform with acceptance criteria provided by the manufacturer (Raychem). The nonconformities included:

- Improper Raychem heat shrink cover size selection.
- Improper finished diameters on Raychem heat shrink cover.
- Inadequate overlap of heat shrink cover onto wire insulation.
- Improper use of heat shrink cover directly on fabric cover on the wire.
- Improper bending of heat shrink covers to accommodate installation in junction box.

These heat shrink covers could have been installed during construction or during subsequent plant maintenance. As a result of these conditions, equipment and instruments could have become inoperable during design basis event conditions.

Engineering judgement, based on "as built" Raychem installations at Davis-Besse performing for years in plant conditions equal to or exceeding those during Mode 5, indicates the systems would be expected to perform properly in the plant's current cold shutdown Mode. These previous conditions include a blowdown inside containment in 1977 which pressurized the containment to approximately 2.5 psig..

Designation of Apparent Cause of Occurrence:

This condition resulted from the fact the the manufacturer's installation and material requirements were not adequately incorporated into the station procedure and the design drawings. During recent training sessions with the manufacturer (Raychem) it was confirmed that the Raychem heat shrink covers which do not meet the manufacturer's installation instructions may provide inadequate insulating properties due to local environmental conditions during a design basis event.

There has been no malfunction of equipment or accident related to improper Raychem termination/splice installations.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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

Analysis of Occurrence:

Raychem materials were found to have been improperly installed with regard to the manufacturer's installation instructions based on inspection of a selected sample of wire splices. Although exact locations are still being developed it is possible that Raychem may have been used in all plant systems.

The effect of this condition on the DBNPS EQ program cannot be determined at this time. Investigation of Raychem installation locations is still being conducted at this time.

Corrective Action:

Drawings E302A and Plant Maintenance Procedure MP 1410.24 will be revised to include the manufacturer's material and installation instruction to ensure the operability during accident conditions.

A team of Raychem trained engineers and designers has been assigned to inspect each Raychem termination/splice installed during the current outage and to provide specific instruction to the craft to assure all Raychem material and installation requirements are satisfied.

An inspection/repair program is being developed to assure that past Raychem installations are either already adequate or repaired. An update of the results of the inspection and a schedule for completion of the repair program will be submitted in a revision by June 30, 1986.

Failure Data:

This is the first report of the termination/splice concerns.

REPORT NO: NP-33-86-33

DVR NO(s): 86-100



May 21, 1986

Log No: KA86-146  
File: (NP-33-86-33)

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

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

Gentlemen:

LER No. 86-021  
Davis-Besse Nuclear Power Station Unit No. 1  
Date of Occurrence May 9, 1986

Enclosed is preliminary Licensee Event Report 86-021 which is being submitted as a problem which may be outside the design basis.

Yours truly,

A handwritten signature in cursive script that reads '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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