

LICENSEE EVENT REPORT

CONTROL BLOCK:

(PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59
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		LICENSEE CODE														LICENSE NUMBER											LICENSE TYPE											CAT																					

REPORT SOURCE L 6 5 3 4 6 7 1 2 1 8 3 8 5 9 8 4 9

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)

0 2 (NP-33-83-99) At 0845 hours on 12/10/83, a routine analysis of the Reactor Coolant Sys-

0 3 tem (RCS) sample indicated 0.20 ppm chloride (Cl) which exceeds Technical Specifica-

0 4 tion (T.S.) 3.4.7 limit of 0.15 ppm Cl. The maximum measured value was 0.26 ppm Cl at

0 5 1430 hours. The chlorides exceeded T.S. limits for only approximately 22 hours and was

0 6 below transient limits. There was no danger to the public or station personnel due to

0 7 the fact that operation above steady state but below transient limits for less than 24

0 8 hours will not significantly affect the structural integrity of the RCS.

0 9		SYSTEM CODE		CAUSE CODE		CAUSE SUBCODE		COMPONENT CODE						COMP. SUBCODE		VALVE SUBCODE	
7	8	C	B	E	X	D	E	M	I	N	X	Z	Z				
		9	10	11	12	12	13	13	14	18	19	20					
LER/RO REPORT NUMBER		EVENT YEAR		SEQUENTIAL REPORT NO.		OCCURRENCE CODE		REPORT TYPE		REVISION NO.							
17	8 3	—		0 7 0		/		0 3		X		—		1			
21	22	23	24	25	26	27	28	29	30	31	32						
ACTION TAKEN		FUTURE ACTION		EFFECT ON PLANT		SHUTDOWN METHOD		HOURS		ATTACHMENT SUBMITTED		NPRD-4 FORM SUB.		PRIME COMP. SUPPLIER		COMPONENT MANUFACTURER	
X	Z	Z		Z		0 0 0 0		Y		N		Z		Z 9 9 9			
33	34	35	36	37	38	39	40	41	42	43	44	45	46	47			

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)

1 0 Purification Demineralizer 1-1 was exhausted on chlorides. The type of resin that

1 1 exhausted was ARM-9390. With a weak-base resin such as this, demineralized water

1 2 hydrolyzes the chloride, and the chloride comes off as a weak-acid. Purification

1 3 Demineralizer 1-2 was placed in service to remove the chlorides. The RCS was within

1 4 limits by 0700 hours on 12/11/83. Resin in Purification Demineralizer 1-1 was replaced.

7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50

FACILITY STATUS (28) 1 5 E

% POWER 0 9 9 (29) NA

OTHER STATUS (30)

METHOD OF DISCOVERY (31) B

DISCOVERY DESCRIPTION (32) Routine sampling

ACTIVITY CONTENT
RELEASED OF RELEASE

1	6	Z	33	Z	34	NA
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AMOUNT OF ACTIVITY (35)

LOCATION OF RELEASE (36)

NA

PERSONNEL EXPOSURES									
NUMBER			TYPE	DESCRIPTION					
1	7	0 0 0	(37) Z	(38) NA					

PERSONNEL INJURIES		NUMBER		DESCRIPTION	
1	H	0	0	0	NA

LOSS OF OR DAMAGE TO FACILITY (43)
TYPE DESCRIPTION
Z (42) NA
8405220411 840509
PDR ADOCK 05000346
S

PUBLICATION		PDR		NRC USE ONLY	
ISSUED	DESCRIPTION				
2 0	NA				

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NRC USE ONLY

TOLEDO EDISON COMPANY
DAVIS-BESSE NUCLEAR POWER STATION UNIT ONE
SUPPLEMENTAL INFORMATION FOR LER NP-33-83-99

DATE OF EVENT: December 10, 1983

FACILITY: Davis-Besse Unit 1

IDENTIFICATION OF OCCURRENCE: Chlorides exceeded Technical Specification limit

Conditions Prior to Occurrence: The unit was in Mode 1, with Power (MWt) = 2769 and Load (Gross MWe) = 919.

Description of Occurrence: At 0845 hours on December 10, 1983, a routine analysis of the Reactor Coolant System sample indicated 0.20 ppm chloride which exceeds Technical Specification 3.4.7 limit of 0.15 ppm chlorine. After the routine chloride analysis indicated 0.20 ppm, the analysis required verification since Purification Demineralizer 1-1 had only been in service since November 8, 1983. Further analysis at 0930 hours, 1030 hours, 1230 hours, and 1430 hours confirmed the results. The maximum measured value in the reactor coolant was 0.26 ppm chloride at 1430 hours, while the maximum at the Purification Demineralizer 1-1 effluent was 0.28 ppm chloride.

Designation of Apparent Cause of Occurrence: Purification Demineralizer 1-1 was exhausted on chlorides. The breakthrough on chlorides was premature since it had only been in service about a month; the expected life should be a full fuel cycle.

The type of resin that exhausted was Diamond Shamrock Mixed Bed H/OH Resin ARM-9390 which is a strong-acid, weak-base resin. A weak-base resin does not hold chlorides as well as strong-base resins. With weak-base resin, demineralized water hydrolyzes the chloride, and the chloride comes off as a weak acid. A failure to recognize that ARM-9390 contained a weak base resin was made at the time that it was selected as the replacement resin for the demineralizer.

Analysis of Occurrence: There was no danger to the health and safety of the public or station personnel. The chlorides exceeded the Technical Specifications steady state limit for only approximately 22 hours and was well below the transient limit. Corrosion studies show that operation may continue with concentration levels in excess of the steady state limits, up to transient limits, for the specified limited time intervals (24 hours) without having a significant effect on the structural integrity of the Reactor Coolant System.

Corrective Action: The immediate corrective action was to place Purification Demineralizer 1-2 in service to remove chloride. The Reactor Coolant System was within the Technical Specification limit of 0.15 ppm chloride by 0700 hours on December 11, 1983. Further corrective steps were to replace the resin in Purification Demineralizer 1-1 with Rohm & Haas Resin

TOLEDO EDISON COMPANY
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SUPPLEMENTAL INFORMATION FOR LER NP-33-83-99
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IRN-150LC. To prevent the weak-base resin from being purchased, personnel selecting resin have been instructed by the Chemist and Health Physicist to ensure it meets the criteria given in LI 4782.00, Laboratory Instrument and Reagent Calibration.

Failure Data: This is the first time that ARM-9390 resin was loaded into purification demineralizers. Previous mixed bed resins have been strong-acid/strong-base resin which provides a longer period of operation prior to exhaustion.

LER #83-070



May 9, 1984

Log No. K84-561
File: RR 2 (NP-33-83-99)

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

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

Gentlemen:

Enclosed is a copy of Revision 1 to Licensee Event Report 83-070. The revisions to the report are indicated by a "1" in the left margin of each page.

Please replace your previous copies of this report with the attached revision.

Yours truly,

Terry D. Murray lsmq

Terry D. Murray
Station Superintendent
Davis-Besse Nuclear Power Station

TDM/ljk

Enclosure

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

Mr. Walt Rogers
DB-1 NRC Resident Inspector

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