

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Wolf Creek Generating Station	DOCKET NUMBER (2) 0 5 0 0 0 4 8 2	PAGE (3) 1 OF 0 5
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TITLE (4) Engineered Safety Features Actuation - Control Room Ventilation Isolation Signal Caused By Spurious Spike Of A Chlorine Monitor

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 4	2 2	8 8	8 8	0 0	6	0 0	0 5	0 9			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) 1	20.402(b)	70.406(c)	<input checked="" type="checkbox"/>	90.73(a)(2)(iv)	73.71(b)
POWER LEVEL (10) 1 0 0	20.406(a)(1)(i)	90.38(a)(1)		90.73(a)(2)(v)	73.71(c)
	20.406(a)(1)(ii)	90.38(a)(2)		90.73(a)(2)(vi)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)
	20.406(a)(1)(iii)	90.73(a)(2)(i)		90.73(a)(2)(vii)(A)	
	20.406(a)(1)(iv)	90.73(a)(2)(ii)		90.73(a)(2)(viii)(B)	
	20.406(a)(1)(v)	90.73(a)(2)(iii)		90.73(a)(2)(ix)	

LICENSEE CONTACT FOR THIS LER (12)

NAME Merlin G. Williams - Superintendent of Regulatory, Quality and Administrative Services	TELEPHONE NUMBER
	AREA CODE: 3 1 6 3 6 4 - 8 8 3 1 1

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										
B	V	I	A	I	T		X	9	9	9	N								

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE) NO

EXPECTED SUBMISSION DATE (15)

MONTH	DAY	YEAR

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

On April 22, 1988, at 2324 CST, a Control Room Ventilation Isolation Signal (CRVIS) occurred due to chlorine monitor GK-AITS-2 indicating high chlorine level in the outside air makeup to the Control Building Heating, Ventilating and Air Conditioning System. No chlorine was present as evidenced by normal readings on the redundant chlorine monitor.

Control Room personnel confirmed that the signal was the result of a spurious spike and not the result of an actual high chlorine condition. During subsequent troubleshooting by Instrumentation and Controls personnel, a root cause for the spurious spike could not be positively determined, however, it is believed that this spike was caused by a radio transmission in the immediate vicinity of the monitor. A similar spike caused by radio transmission was recreated during testing in the Instrumentation and Controls shop. To prevent future actuations caused by radio transmissions, signs were placed in the area preventing radio transmission. A letter was placed in Security required reading to ensure that Security personnel will not use their radios in this area.

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

DESCRIPTION OF EVENT

On April 22, 1988, at 2324 CST, a Control Room Ventilation Isolation Signal (CRVIS) occurred due to chlorine monitor GK-AITS-2 [VI-AIT] indicating high chlorine level in the outside air makeup to the Control Building Heating, Ventilating and Air Conditioning System [VI]. Upon receipt of the CRVIS, the control room ventilation aligned to isolate and pressurize the control room in the recirculation mode. All Engineered Safety Features (ESF) equipment [JE] required to operate responded properly. This event is being reported pursuant 10CFR 50.73(a)(2)(iv).

During this event, the plant was in Mode 1, Power Operation, at approximately 100 percent power. No chlorine was present as evidenced by normal readings on redundant chlorine monitor GK-AITS-3. The chlorine monitor (GK-AITS-2) was placed in bypass for troubleshooting at 0001 CST on April 23. The Control Building Heating, Ventilating and Air Conditioning System was secured from the CRVIS and returned to a normal configuration in accordance with plant procedures at 0001 CST on April 23.

The chlorine monitor is manufactured by MDA Scientific, Inc., model 7040 FAN. The paper tape is an MDA Scientific, Inc., chlorine sensitive tape, part number 744002. The chlorine monitor senses chlorine by passing a measured amount of air through the chemically treated paper tape. The presence of chlorine in the air causes the paper tape to change opacity proportional to the chlorine concentration. The amount of light passing through the paper tape is measured to determine the opacity. The tape is supplied on a spool (termed "cassette" by the manufacturer). The tape passes from the spool through a guide, the photo head (opacity reading), a drive wheel, and onto a take-up spool.

ROOT CAUSE AND CORRECTIVE ACTIONS

Control Room personnel confirmed that the signal was the result of a spurious spike and not the result of an actual high chlorine condition. During subsequent troubleshooting by Instrumentation and Controls personnel, a root cause for the spurious spike could not be positively determined, however, it is believed that this spike was caused by a radio transmission in the immediate vicinity of the monitor. A similar spike caused by radio transmission was recreated during testing in the Instrumentation and Controls shop. To prevent future actuations caused by radio transmissions, signs were placed in the area preventing radio transmission. Since Security personnel use radios most frequently, a letter was placed in Security required reading to ensure that Security personnel will not use their radios in this area. It was not previously known that these monitors were sensitive to radio transmission.

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TEXT (if more space is required, use additional NRC Form 305A's) (17)

ADDITIONAL INFORMATION

There have been numerous previous Licensee Event Reports (LERs) that report problems with the chlorine monitors. These LERs are shown along with the root cause, in Table I. Seven of these events (LER 85-011-00, 86-063-00, 87-008-00, 87-012-00, 87-035-00, 88-003-00 and 88-005-00) are considered similar because they involve spurious spikes. Because numerous CRVIS's have been initiated by various malfunctions of these monitors, a design change will be implemented to minimize the potential for spurious CRVIS's caused by false indication of chlorine level.

There was no damage to plant equipment or release of radioactivity as a result of this event, and at no time did conditions develop that may have posed a threat to the public health or safety.

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

TABLE I

PREVIOUS CRVIS'S CAUSED BY CHLORINE MONITORS

<u>DATE OF OCCURRENCE</u>	<u>LER #</u>	<u>ROOT CAUSE</u>
04/12/85	85-011	Spurious Spike on Chlorine Monitor
04/21/85	85-014	Paper Tape Ran Out on Chlorine Monitor
05/23/85	85-033	Manual Actuation Following Partial CRVIS's due to Electrical Spike
07/12/85 07/22/85	85-052	Paper Tape Broken on Chlorine Monitor - 2 Events
07/28/85	85-056	Discoloration of Paper Tape on Chlorine Monitor
09/02/85	85-062	Lamp Failure on Chlorine Monitor
09/14/85 10/03/85	85-061	Paper Tape Broken on Chlorine Monitor - 2 Events
11/26/85 12/09/85 12/09/85 12/10/85 12/13/85	85-081	Paper Tape Broken on Chlorine Monitor - 5 Events
12/18/85	85-085	Bunched-Up Paper Tape on Chlorine Monitor
01/04/86	86-001	Power Failure on Chlorine Monitor
01/18/86	86-002	Paper Tape Broken on Chlorine Monitor
03/26/86	86-015	Pinched Power Lead Caused Blown Fuse which Caused Loss of Power to Chlorine Monitor
04/13/86	86-022	Loss of Inverter Caused Blown Fuse which Caused Power Loss to Chlorine Monitor
07/23/86	86-041	Paper Tape Ran Out on Chlorine Monitor
11/14/86	86-063	Spurious Spike on Chlorine Monitor

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TEXT (If more space is required, use additional NRC Form 385A's) (17)

TABLE I (Continued)

PREVIOUS CRVIS'S CAUSED BY CHLORINE MONITOR MALFUNCTIONS

<u>DATE OF OCCURRENCE</u>	<u>LER #</u>	<u>ROOT CAUSE</u>
12/05/86	86-065	Broken Tape on Chlorine Monitor TABLE I (Continued)
12/25/86	86-071	Faulty Optics Bulb on Chlorine Monitor
02/08/87	87-008	Spurious Spike on Chlorine Monitor
03/09/87 03/13/87	87-012	Spurious Spike on Chlorine Monitor - 2 Events
04/12/87	87-015	Bunched-Up Paper Tape on Chlorine Monitor
05/06/87	87-020	Broken Paper Tape on Chlorine Monitor
06/15/87	87-024	Loss of Power to Chlorine Monitor
07/24/87	87-032	Broken Paper Tape on Chlorine Monitor
09/03/87 09/20/87	87-035	Spurious Spike on Chlorine Monitor Broken Paper Tape on Chlorine Monitor
11/23/87	87-053	Bunched-Up Paper Tape on Chlorine Monitor
02/15/88	88-003	Spurious Spike on Chlorine Monitor
03/26/88 04/02/88	88-005	Broken Paper Tape on Chlorine Monitor Spurious Spike on Chlorine Monitor

SUMMARY OF LER'S BY ROOT CAUSE

Paper Tape Problems - 14
Electrical Problems - 7
Spurious Spikes - 6

WOLF CREEK

NUCLEAR OPERATING CORPORATION

Bart D. Withers
President and
Chief Executive Officer

May 9, 1988

WM 88-0122

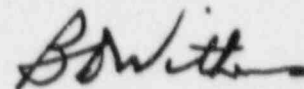
U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D. C. 20555

Subject: Docket No. 50-482: Licensee Event Report 88-006-00

Gentlemen:

The attached Licensee Event Report (LER) is submitted pursuant to 10 CFR 50.73 (a) (2) (iv) concerning an Engineered Safety Features actuation.

Very truly yours,



B. D. Withers
President and
Chief Executive Officer

BDW/jad

Attachment

cc: B. L. Bartlett (NRC), w/a
R. D. Martin (NRC), w/a
P. W. O'Connor (NRC), w/a (2)

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