

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Fort St. Vrain, Unit No. 1	DOCKET NUMBER (2) 0 5 0 0 0 2 1 6 7	PAGE(S) 1 OF 0 1 3
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TITLE (4)  
Neutron Flux Rate Of Change High Scram

EVENT DATE (8)			LER NUMBER (8)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)		
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAMES		
0	1	26	8	5	8	5	8	5	N/A		
									DOCKET NUMBER(S)		
									0 5 0 0 0		
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THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR § (Check one or more of the following) (11)

OPERATING MODE (8) N	20.402(b)	20.408(a)	<input checked="" type="checkbox"/>	90.73(a)(2)(iv)	73.71(b)
POWER LEVEL (10) 0 1 0 1 0	20.408(a)(1)(i)	90.38(a)(1)	<input type="checkbox"/>	90.73(a)(2)(v)	73.71(a)
	20.408(a)(1)(ii)	90.38(a)(2)	<input type="checkbox"/>	90.73(a)(2)(vi)	OTHER (Specify in Abstract below and in Text, NRC Form 308A)
	20.408(a)(1)(iii)	90.73(a)(2)(i)	<input type="checkbox"/>	90.73(a)(2)(vii)(A)	
	20.408(a)(1)(iv)	90.73(a)(2)(ii)	<input type="checkbox"/>	90.73(a)(2)(vii)(B)	
	20.408(a)(1)(v)	90.73(a)(2)(iii)	<input type="checkbox"/>	90.73(a)(2)(viii)	
20.408(a)(1)(vi)	90.73(a)(2)(iv)	<input type="checkbox"/>	90.73(a)(2)(ix)		

LICENSEE CONTACT FOR THIS LER (12)

NAME Jim Eggebroten, Technical Services Engineering Supervisor	TELEPHONE NUMBER
	AREA CODE: 3 1 0 3   7 1 8 5 1 - 1 2 1 2 1 4

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 type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE)	<input checked="" type="checkbox"/> NO	EXPECTED SUBMISSION DATE (15)	MONTH   DAY   YEAR
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ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

On January 26, 1985, with the reactor shutdown for maintenance activities, an automatic Plant Protective System (PPS) reactor scram was initiated by a two out of three logic trip on Neutron Flux Rate of Change High. The scram resulted from a welding machine operating at an uncommonly high frequency near the flux detectors. The welding machine was turned off, and the erratic indication stopped.

The automatic actuation of the PPS scram circuitry is being reported per 10 CFR 50.73(a)(2)(iv).

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		8   5	-   0   0   1	-   0   0	0   2	OF	0   3

TEXT (If more space is required, use additional NRC Form 388A's) (17)

EVENT DESCRIPTION:

The neutron flux increases approximately eleven decades from source level to full power operation. The neutron detector channels are arranged into three groups of instruments to monitor neutron flux over this wide range. These are a) two source range detectors (startup channels), b) three dual range detectors (wide range logarithmic channels and linear power range channels), and c) three power range detectors (linear power range).

The startup and wide range logarithmic instruments are used primarily to bring the reactor into the power range. One of the parameters displayed on the Reactor Control Board for the startup and wide range logarithmic channels is rate of change of neutron flux. On January 26, 1985, at approximately 1455 hours, a scram occurred on scram channels "A" and "C" neutron flux rate of change high from the wide range channels. There was deviation and fluctuation on the analog indication for the startup channels and wide range logarithmic channels. The neutron recorder measured a large transient.

Readings from the recorder, NR-1131/1131-1, indicated that the reactor was scrambled by the Plant Protective System (PPS) due to a neutron flux rate of change greater than five decades per minute as measured by the wide range nuclear channels.

The cause of the transient was immediately found to be a welding machine in close proximity to the flux detectors. At the time of the scram, the welding machine was started using the high frequency start normally used to initiate gas tungsten arc welding. The high frequency (400 Hz) created an electromagnetic field that affected the flux detector wires nearby.

ANALYSIS OF EVENT:

The reactor has been shutdown for control rod drive testing and refurbishment. All thirty-seven of the control rods in the reactor core were fully inserted.

Although the automatic actuation of the PPS scram circuitry was not a result of a change in core reactivity, the PPS action was conservative and functioned as designed.

CAUSE DESCRIPTION:

The scram occurred as a result of a welding machine being started using the high frequency start normally used in gas tungsten arc welding. The welding machine was in close proximity to the neutron flux detectors. An electromagnetic field was created which affected the flux detector wires nearby, resulting in a reading of greater than five decades per minute.

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TEXT (If more space is required, use additional NRC Form 306A's) (17)

CORRECTIVE ACTION:

The welding machine was turned off, and the erratic indication stopped.

All welding machines used in the plant have had the high frequency start disarmed.

Procedure revisions will be implemented to ensure that the high frequency start will be disarmed prior to use in the Reactor Building during reactor startup or power operation.

No further corrective action is anticipated or required.

*Laurie S. McKittrick*

Laurie S. McKittrick  
Technical Services Technician

*Roger A. Heller for*

Jim Eggebrotten  
Technical Services Engineering Supervisor

Licensing Review By:

*Duane L. Frye for*

Jim Gramling  
Nuclear Licensing-Operations Supervisor

*C. H. Fuller*

C. H. Fuller  
Station Manager

*J. W. Gahm*

J. W. Gahm  
Manager, Nuclear Production

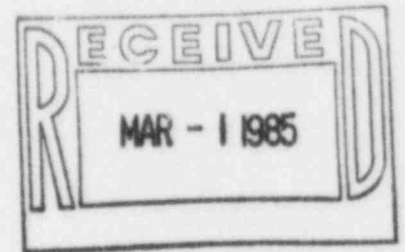


Public Service Company of Colorado

16805 WCR 19 1/2, Platteville, Colorado 80651

February 25, 1985  
Fort St. Vrain  
Unit #1  
P-85062

Mr. Robert Martin, Regional Administrator  
Reactor Project Branch 1  
Region IV  
Nuclear Regulatory Commission  
611 Ryan Plaza Drive, Suite 1000  
Arlington, Texas 76011



ATTN: Mr. E. H. Johnson

Docket Number 50-267

REFERENCE: Facility Operating License  
Number DPR-34

Dear Mr. Martin:

Enclosed please find a copy of Licensee Event Report Number 50-267/85-001, Final, submitted per the requirements of 10 CFR 50.73(a)(2)(iv).

Sincerely,

J. W. Gahm  
Manager, Nuclear Production

JWG:dr

Enclosure

cc: Director, MIPC

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