

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1): Washington Nuclear Plant - Unit 2  
DOCKET NUMBER (2): 050003971 OF 03  
PAGE (3): 1 OF 03

TITLE (4): Reactor Scram

EVENT DATE (5)				LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEA	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAMES		
01	31	85		007	000	02	25	85			
										DOCKET NUMBER(S)	
										05000	

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR § (Check one or more of the following): (11)

OPERATING MODE (9): 1	<input type="checkbox"/> 20.402(b)	<input type="checkbox"/> 20.406(e)	<input checked="" type="checkbox"/> 50.73(a)(2)(iv)	<input type="checkbox"/> 73.71(b)
POWER LEVEL (10): 1.00	<input type="checkbox"/> 20.406(a)(1)(ii)	<input type="checkbox"/> 50.36(e)(1)	<input type="checkbox"/> 50.73(a)(2)(iv)	<input type="checkbox"/> 73.71(c)
	<input type="checkbox"/> 20.406(a)(1)(iii)	<input type="checkbox"/> 50.36(e)(2)	<input type="checkbox"/> 50.73(a)(2)(iv)	<input checked="" type="checkbox"/> OTHER (Specify in Abstract below and in Text, NRC Form 366A)
	<input type="checkbox"/> 20.406(a)(1)(iv)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(iv)(i)(A)	50.72(b)(2)(ii)
	<input type="checkbox"/> 20.406(a)(1)(v)	<input type="checkbox"/> 50.73(a)(2)(iv)	<input type="checkbox"/> 50.73(a)(2)(iv)(i)(B)	50.72(b)(1)(iv)
	<input type="checkbox"/> 20.406(a)(1)(vi)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(iv)	

LICENSEE CONTACT FOR THIS LER (12): R. L. Koenigs, Compliance Engineer  
TELEPHONE NUMBER: 509377-2501  
AREA CODE: 509  
Ext. 2279

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13):

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRRDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRRDS
X	E	A86	G080	N					

SUPPLEMENTAL REPORT EXPECTED (14):  
YES (if you complete EXPECTED SUBMISSION DATE)  NO   
EXPECTED SUBMISSION DATE (15):  
MONTH: DAY: YEAR:

ABSTRACT (16): (400 characters or approximately 1750 single-space typewritten lines)

At approximately 0757 hours on 31 January 1985, one of the two generator primary protection lockout relays (86XIU) spuriously tripped. The 86XIU relay is used as a slave for the 86XU (master) lockout relay. Together these relays provide the generator primary protection and the offsite power supply fast transfer functions. The spurious tripping of the 86XIU resulted in the following abnormal electrical operations:

- the 500 KV generator output breaker at the Bonneville Power Administration (BPA) ASHE substation tripped
- The offsite source breakers at the 4.16 KV non-class 1E buses closed without initiating a trip of the normal source breakers (i.e. failure of half the fast transfer scheme)
- the turbine/generator remained on line.

This connected the main generator to the Plant 4160V non-class 1E buses through the normal transformers (TN1 and TN2) and then back to the BPA 230 KV grid via the startup transformer (TRS). When protective relaying tripped the 230 KV circuit breakers at Ashe, the class 1E busses' undervoltage logic reenergized Division 1 and 2 from the backup offsite power source and Division 3 was reenergized by its dedicated diesel-generator. The opening of the 500 KV circuit breakers initiated the Digital Electrohydraulic Control System overspeed protection circuit action which closed the turbine control valves which then resulted in a reactor scram. Either a loss of power to the Reactor Protection System (RPS) motor generator (MG) sets or the normal sensed water level transient resulted in a full containment isolation. The subsequent loss of feed-water caused reactor water level to go to Level 2 (-50"). High Pressure Core Spray (HPCS) and Reactor Core Isolation Cooling (RCIC) activated and injected into the vessel to restore reactor water level.

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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)

Plant Conditions

- a) Power Level - 100%
- b) Plant Mode - 1

Event

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- the 500 KV generator output breaker at the Bonneville Power Administration (BPA) ASHE substation tripped
- The offsite source breakers at the 4.16 KV non-class 1E buses closed without initiating a trip of the normal source breakers (i.e. failure of half the fast transfer scheme)
- the turbine/generator remained on line.

The opening of the 500 KV circuit breakers at Ashe initiated the Digital Electro-hydraulic Control System overspeed protection circuit which closed the turbine control valves and limited turbine overspeed to less than 105% overspeed. The turbine control valve fast closure resulted in a reactor scram as designed.

Electrically, the tripping of the 86XIU relay without a trip of the 86XU relay placed the plant in an abnormal electrical line-up. Both the normal auxiliary source and preferred source circuit breakers were closed with the 500 KV circuit breakers open and the generator exciter not tripped. The 500 KV breakers opening resulted in a loss of a substantial portion of the load of the main generator, an overspeed condition and an associated overfrequency condition of the main generator. Thus the main generator went into and out of synchronism with the grid eight times during this event.

Approximately four seconds into the transient, the 230 KV (preferred source) circuit breakers at Ashe tripped due to a backup protective relay at Ashe. This tripped the feeder circuit breakers to the Class 1E 4160 volt busses at WNP-2. Undervoltage logic transferred Division 1 and 2 to the backup offsite power source and the dedicated HPCS diesel-generator reenergized the Division 3 bus.

A total containment isolation was initiated due to either a loss of power to the RPS MG sets or the normal sensed water level transient associated with this event. The subsequent loss of feedwater caused reactor water to drop to Level 2 (-50"). The HPCS and RCIC pump started and injected into the vessel and restored vessel level.

An overexcitation condition of the main generator occurred following the loss of the 230 KV line tripping the balance of the fast transfer logic. This tripped the normal source circuit breakers, the main generator excitation, and the main turbine approximately twenty (20) seconds into the event.

## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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

Immediate Corrective Action

- o Plant operators monitored reactor water level recovery and then controlled reactor water level using RCIC. Reactor pressure was controlled using the safety relief valves. SM-1 had lockout indications and was isolated. The preferred source was energized and the balance of plant auxiliary power restored. RPS power was restored and the isolation logic reset. Plant operators completed the scram recovery procedure. Notification was given to the NRC in accordance with the requirements of 10CFR50.72(b)(2)(ii).
- o Shortly before 1000 it was discovered that the HPCS injection had not been reported. Notification was then given to the NRC in accordance with the requirements of 10CFR50.72(b)(1)(iv).

Further Corrective Action

The 4160 volt bus SM-1 and the loads off this bus were thoroughly inspected for any indication of a fault. The normal auxiliary transformers and the preferred source transformers were inspected for damage. No damage was found and they were later returned to service.

The 86XU and 86XIU were interlocked to preclude partial transfer actuation and thus prevent a similar event.

The basis, and importance of timely recognition and reporting of those events specified in 10CFR50.72 is being re-emphasized to all licensed personnel. A copy of the reporting requirements has been placed in the required reading book. Also, all Shift Technical Advisors (S.T.A's) have been instructed to make an independent evaluation of "Off Normal" situations and to make recommendations to the Shift Manager of possible reportability. In addition a management letter will be issued to the above referenced personnel which emphasizes the importance of timely NRC notification and management's expectations for performance.

Safety Significance

There is no safety significance associated with this event. The HPCS system is provided to maintain reactor water level in order to assure that the reactor core is adequately cooled for small primary system breaks which result in a loss of coolant without rapid depressurization. During this event HPCS operated as designed and the minimum water level recorded was above -49". No core thermal limits were violated.

Reference LER 85-008-00 for additional report of events associated with this scram.

Similar Events

Prior to this event, the Supply System had received notification of one previously reported similar misoperation of a GE HEA relay. We have since inspected the Class 1 GE HEA relays identified by the Operating Experience Report (OER) and have found no installations utilizing relays having the referenced date codes. In addition to the relays identified by the OER, three relays have been identified which still require inspection. These relays will be inspected during the upcoming maintenance outage (currently scheduled for April 15, 1985).

## Washington Public Power Supply System

P.O. Box 968 3000 George Washington Way Richland, Washington 99352 (509) 372-5000

Docket No. 50-397

February 25, 1985

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

Subject: NUCLEAR PLANT NO. 2  
LICENSEE EVENT REPORT NO. 85-007

Dear Sir:

Transmitted herewith is Licensee Event Report No. 85-007 for WNP-2 Plant. This report is submitted in response to the report requirements of 10CFR50.73 and discusses the item of reportability, corrective action taken, and action taken to preclude recurrence.

This is the follow-up report to the verbal notification given at 1010 hours on January 31, 1985.

Very truly yours,

*J. D. Martin for*  
J. D. Martin (M/D 927M)  
WNP-2 Plant Manager

JDM:mm

Enclosure:  
Licensee Event Report No. 85-007

cc: Mr. John B. Martin, NRC - Region V  
Mr. A. D. Toth, NRC - Site (901A)  
Ms. Dottie Sherman, ANI  
INPO Records Center - Atlanta, GA  
Mr. W. Chin - BPA

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