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SUBJECT: LER 93-022-00: on 930524 & 25, control rods withdrawn w/scram accumulators inoperable. Caused by plant procedures failing to provide guidance to assure inoperable control rods disarmed. Procedures will be revised. W/930625 ltr.

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WASHINGTON PUBLIC POWER SUPPLY SYSTEM

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June 25, 1993
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Docket No. 50-397

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

Subject: **NUCLEAR PLANT WNP-2, OPERATING LICENSE NPF-21
LICENSEE EVENT REPORT NO. 93-022**

Transmitted herewith is Licensee Event Report No. 93-022 for the WNP-2 Plant. This report is submitted in response to the report requirements of 10CFR50.73 and discusses the items of reportability, corrective action taken, and action taken to preclude recurrence.

Sincerely,



J. V. Parrish (Mail Drop 1023)
Assistant Managing Director, Operations

JVP/CDM/cgeh
Enclosure

cc: Mr. B. H. Faulkenberry, NRC - Region V
Mr. R. Barr, NRC Resident Inspector (Mail Drop 901A, 2 Copies)
INPO Records Center - Atlanta, GA
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LICENSEE EVENT REPORT (LER)

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TITLE (4)
TWO CONTROL RODS WERE WITHDRAWN WITH THEIR SCRAM ACCUMULATORS INOPERABLE

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 NUMBERS(S)																
0	5	2	4	9	3	9	3	--	0	2	2	--	0	0	0	6	2	5	9	3		0	5	0	0	0

OPERATING MODE (9) **5** THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)

POWER LEVEL (10) 0 0 0	<input type="checkbox"/> 20.402(b) <input type="checkbox"/> 20.405(a)(1)(i) <input type="checkbox"/> 20.405(a)(1)(ii) <input type="checkbox"/> 20.405(a)(1)(iii) <input type="checkbox"/> 20.405(a)(1)(iv) <input type="checkbox"/> 20.405(a)(1)(v)	<input type="checkbox"/> 20.405(C) <input type="checkbox"/> 50.36(c)(1) <input type="checkbox"/> 50.36(c)(2) <input checked="" type="checkbox"/> 50.73(a)(2)(i) <input type="checkbox"/> 50.73(a)(2)(ii) <input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(iv) <input type="checkbox"/> 50.73(a)(2)(v) <input type="checkbox"/> 50.73(a)(2)(vii) <input type="checkbox"/> 50.73(a)(2)(viii)(A) <input type="checkbox"/> 50.73(a)(2)(viii)(B) <input type="checkbox"/> 50.73(a)(2)(x)	<input type="checkbox"/> 77.71(b) <input type="checkbox"/> 73.73(c) <input type="checkbox"/> OTHER (Specify in Abstract below and in Text, NRC Form 366A)
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LICENSEE CONTACT FOR THIS LER (12)	
NAME C. D. Mackaman, Licensing Engineer	TELEPHONE NUMBER 5 0 9 3 7 7 - 4 4 5 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

SUPPLEMENTAL REPORT EXPECTED (14) <input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE) <input checked="" type="checkbox"/> NO	EXPECTED SUBMISSION DATE (15)
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ABSTRACT (16)

On May 26, 1993, two control rod withdrawal events were identified as having violated Technical Specifications. Previously, on May 24 and 25, 1993, during the annual Maintenance and Refueling Outage, Control Rods "10-11" and "26-35," respectively, were withdrawn with their scram accumulators inoperable. The scram accumulators were inoperable because their associated level switches had failed Surveillance Procedure PPM 7.4.1.3.5.2, "Scram Accumulator Pressure Detection CC/Level Detection - CFT/CC." Withdrawing a control rod with its scram accumulator inoperable is contrary to WNP-2 Technical Specification 3.1.3.5.

Immediate corrective action by Plant Operators was to disarm Hydraulic Control Units (HCUs) "10-11" and "26-35" hydraulically.

The root causes of this event were: (1) Plant procedures did not provide guidance to assure that inoperable control rods were disarmed, and (2) faulty scram accumulator level switches were not repaired in a timely manner. Further corrective actions will revise applicable procedures to provide direction to disarm an inoperable control rod and repair a faulty scram accumulator level switch on a high priority basis.

This event posed no threat to the health and safety of either the public or plant personnel.

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TITLE (4) TWO CONTROL RODS WERE WITHDRAWN WITH THEIR SCRAM ACCUMULATORS INOPERABLE																

Plant Conditions

Power Level - 0%

Plant Mode - 5 (Refueling)

Event Description

On May 26, 1993, two control rod withdrawal events were identified as having violated Technical Specifications. Previously, on May 24 and 25, 1993, during the annual Maintenance and Refueling Outage, Control Rods "10-11" and "26-35," respectively, were withdrawn with their scram accumulators inoperable. The scram accumulators were inoperable because their associated level switches had failed Surveillance Procedure PPM 7.4.1.3.5.2, "Scram Accumulator Pressure Detection CC/Level Detection - CFT/CC." Withdrawing a control rod with its scram accumulator inoperable is contrary to WNP-2 Technical Specification 3.1.3.5.

The Hydraulic Control Units (HCUs) for Control Rods "26-35" and "10-11" were declared inoperable on May 16 and 18, 1993, respectively, for faulty scram accumulator level switches found during PPM 7.4.1.3.5.2. The HCUs were declared inoperable because the scram accumulators and level switches are HCU components required for unit operability. The level switches provide a trouble alarm and Full Core Display trouble indication of scram accumulator water leakage. The inoperable HCUs were listed in the Control Room Inoperable Equipment Log and Maintenance Work Requests (MWRs) were written for both failed scram accumulator level switches.

On May 24, 1993, at 0244 hours, control rod timing testing commenced in accordance with Nuclear Performance Procedure PPM 9.3.8, "Control Rod Insert and Withdrawal Timing." At 0900 hours, control rod friction testing commenced in accordance with Maintenance Procedure PPM 10.24.17, "CRD Oscilloscope dp Testing." Although the control rod timing and friction tests require rod withdrawal, Control Rods "10-11" and "26-35" remained out of service. Repair of their scram accumulator level switches had not been completed. In addition, several other control rods were out of service for PPM 7.4.1.3.5.2 accumulator surveillance testing, which was still in progress.

Due to simultaneous control rod maintenance, accumulator surveillance testing, and timing and friction testing, Operations personnel returned Control Rods "10-11" and "26-35" to service without their scram accumulator level switches having been repaired. Furthermore, the faulty scram accumulator level switches were left in a condition that failed to actuate the accumulator trouble alarm or the respective Full Core Display accumulator trouble light. Thus, Operations personnel at the HCUs were not alerted of their error and had no reason to suspect the two control rods were inoperable. Consequently, the Control Room Inoperable Equipment Log was not consulted and the control rods were mistakenly verified as operable. The two control rods were subsequently each withdrawn twice with their scram accumulator level switches inoperable, once for rod timing and once for friction testing.

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The two control rod withdrawal events were evaluated by the responsible System Engineer and Licensing. It was determined that the plant had violated Technical Specification 3.1.3.5. The failed scram accumulator level switches caused the associated scram accumulators to be inoperable. By Technical Specification Action Statement (TSAS) 3.1.3.5.b.1, the control rods with inoperable scram accumulators should have remained inserted. As a result, Problem Evaluation Request (PER) 293-709 was initiated on May 26, 1993.

Immediate Corrective Actions

On May 25, 1993, at 2230 hours, Plant Operators disarmed HCUs "10-11" and "26-35" hydraulically.

Further Evaluation and Corrective Action

A. Further Evaluation

1. This event is reportable pursuant to 10CFR50.73(a)(2)(i)(B) as "Any operation or condition prohibited by the plant's Technical Specifications. . . ."
2. HCUs are declared inoperable on a routine basis during refueling outages as a result of control rod surveillances and maintenance. However, none of the associated procedures caution the user not to withdraw an inoperable control rod or a control rod with an inoperable scram accumulator. Furthermore, there are no procedural controls to ensure that an inoperable control rod or scram accumulator is disarmed.
3. As stated above, HCUs "10-11" and "26-35" were declared inoperable when their scram accumulators became technically inoperable for failed limit switches. They were listed in the Control Room Inoperable Equipment Log, but were not disarmed. Control Room Operations personnel were aware that TSAS 3.1.3.5 applied, but did not recognize that they should enter Action b.1. Since the control rods with inoperable scram accumulators were fully inserted, the action statement "With one withdrawn control rod with its associated scram accumulator inoperable . . ." was interpreted such that the specified condition was not thought to have been met. Consequently, the action statement was not entered and no action was taken to "disarm the associated directional control valves within one hour. . . ." If the action had been taken, this event most likely would have been prevented.

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B. Root Cause

There were two root cases of this event:

1. Plant procedures did not provide guidance to assure that inoperable control rods are disarmed.
2. The faulty scram accumulator level switches were not repaired in a timely manner.

C. Further Corrective Action

1. Revise PPMs selected by Reactor Engineering on the basis of potentially causing or identifying an inoperable control rod by August 31, 1993. The selected procedures will be revised to reference the applicable TSAS and provide direction to disarm an inoperable control rod in accordance with PPM 2.1.1, "Control Rod Drive System."
2. Revise PPM 7.4.1.3.5.2 by August 31, 1993, to provide direction for the procedure user to immediately notify the Shift Manager to initiate a Priority 1 MWR if a faulty scram accumulator level switch is identified.
3. This LER will be required reading for Operations personnel, and the reading is to be completed by September 30, 1993.
4. This event will be included in the Annual Refueling Outage industry events training for Operations personnel.

Safety Significance

During this event, the plant was in the Refueling Mode with the Reactor Mode Switch in the "Refuel" position. In this condition, plant design limits control rod movement to one rod at a time. The withdrawal of one control rod will not reduce shutdown margin below the Technical Specification 3.1.1 limits. This ensures that a sufficient shutdown margin exists for the reactor to be maintained sufficiently subcritical to preclude inadvertent criticality in the shutdown condition. Since minimum shutdown margin was maintained, this event was determined to have had no safety significance, and posed no threat to the health and safety of either the public or plant personnel.

Similar Events

LER 92-011 reported an event where the procedural method of disarming an inoperable control rod did not meet TSAS requirements. The root cause of this event was a less than adequate plant procedure. The corrective actions consisted of correction of the procedural deficiency and Quality Action Team recommendations for improvements in Technical Specification compliance.

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IIIS Information

Text Reference

IIIS Reference

System Component

Control Rod Drive System
Control Rod
Scram Accumulator
Scram Accumulator Level Switch
Hydraulic Control Unit (HCU)

AA ---
AA ROD
AA ACC
AA LS
AA HCU