

**Virginia Electric and Power Company
North Anna Power Station
P. O. Box 402
Mineral, Virginia 23117**

April 1, 2008

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D. C. 20555-0001

Serial No.: 08-0070
NAPS: MPW
Docket No.: 50-339
License No.: NPF-7

Dear Sirs:

Pursuant to 10CFR50.73, Virginia Electric and Power Company hereby submits the following Licensee Event Report applicable to North Anna Power Station Unit 2.

Report No. 50-339/2008-001-00

This report has been reviewed by the Facility Safety Review Committee and will be forwarded to the Management Safety Review Committee for its review.

Sincerely,



Daniel G. Stoddard, P.E.
Site Vice President
North Anna Power Station

Enclosure

Commitments contained in this letter: None

cc: United States Nuclear Regulatory Commission
Region II
Sam Nunn Atlanta Federal Center
61 Forsyth Street, SW, Suite 23T85
Atlanta, Georgia 30303-8931

NRC Senior Resident Inspector
North Anna Power Station

JE22
NRR

LICENSEE EVENT REPORT (LER)

(See reverse for required number of
digits/characters for each block)

Estimated burden per response to comply with this mandatory collection request: 80 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Records and FOIA/Privacy Service Branch (T-5 F52), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollect@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202 (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

1. FACILITY NAME

NORTH ANNA POWER STATION, UNIT 2

2. DOCKET NUMBER

05000 339

3. PAGE

1 OF 4

4. TITLE

Manual Reactor Trip Due to Shutdown Bank "A" Group Step Counter Deviation Greater Than Allowed

5. EVENT DATE

MONTH	DAY	YEAR
02	08	2008

6. LER NUMBER

YEAR	SEQUENTIAL NUMBER	REV NO.
2008	-- 001 --	00

7. REPORT DATE

MONTH	DAY	YEAR
04	01	2008

8. OTHER FACILITIES INVOLVED

FACILITY NAME	DOCUMENT NUMBER
	05000
FACILITY NAME	DOCUMENT NUMBER
	05000

9. OPERATING MODE

3

11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply)

- | | | | |
|---|---|--|---|
| <input type="checkbox"/> 20.2201(b) | <input type="checkbox"/> 20.2203(a)(3)(i) | <input type="checkbox"/> 50.73(a)(2)(i)(C) | <input type="checkbox"/> 50.73(a)(2)(vii) |
| <input type="checkbox"/> 20.2201(d) | <input type="checkbox"/> 20.2203(a)(3)(ii) | <input type="checkbox"/> 50.73(a)(2)(ii)(A) | <input type="checkbox"/> 50.73(a)(2)(viii)(A) |
| <input type="checkbox"/> 20.2203(a)(1) | <input type="checkbox"/> 20.2203(a)(4) | <input type="checkbox"/> 50.73(a)(2)(ii)(B) | <input type="checkbox"/> 50.73(a)(2)(viii)(B) |
| <input type="checkbox"/> 20.2203(a)(2)(i) | <input type="checkbox"/> 50.36(c)(1)(i)(A) | <input type="checkbox"/> 50.73(a)(2)(iii) | <input type="checkbox"/> 50.73(a)(2)(ix)(A) |
| <input type="checkbox"/> 20.2203(a)(2)(ii) | <input type="checkbox"/> 50.36(c)(1)(ii)(A) | <input checked="" type="checkbox"/> 50.73(a)(2)(iv)(A) | <input type="checkbox"/> 50.73(a)(2)(x) |
| <input type="checkbox"/> 20.2203(a)(2)(iii) | <input type="checkbox"/> 50.36(c)(2) | <input type="checkbox"/> 50.73(a)(2)(v)(A) | <input type="checkbox"/> 73.71(a)(4) |
| <input type="checkbox"/> 20.2203(a)(2)(iv) | <input type="checkbox"/> 50.46(a)(3)(ii) | <input type="checkbox"/> 50.73(a)(2)(v)(B) | <input type="checkbox"/> 73.71(a)(5) |
| <input type="checkbox"/> 20.2203(a)(2)(v) | <input type="checkbox"/> 50.73(a)(2)(i)(A) | <input type="checkbox"/> 50.73(a)(2)(v)(C) | <input type="checkbox"/> OTHER |
| <input type="checkbox"/> 20.2203(a)(2)(vi) | <input type="checkbox"/> 50.73(a)(2)(i)(B) | <input type="checkbox"/> 50.73(a)(2)(v)(D) | <input type="checkbox"/> VOLUNTARY LER |

10. POWER LEVEL

0%

12. LICENSEE CONTACT FOR THIS LER

FACILITY NAME

F. Mladen, Director Station Safety and Licensing

TELEPHONE NUMBER (Include Area Code)

(540) 894-2108

13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT

CAUSE	SYSTEM	COMPONENT	MANU- FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANU- FACTURER	REPORTABLE TO EPIX
X	AA	CTR	W120	N					

14. SUPPLEMENTAL REPORT EXPECTED

☐ YES (If yes, complete 15. EXPECTED SUBMISSION DATE) ☒ NO15. EXPECTED
SUBMISSION
DATE

MONTH	DAY	YEAR

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)

On February 8, 2008, Unit 2 was in Mode 3, zero percent power, preparing for restart following a planned maintenance outage. At 1759 hours, a rod control urgent failure alarm was received while withdrawing the "A" Shutdown Bank control rods. Rod withdrawal was stopped and it was noted that the Group Step Counters deviated by three steps. As a result, at 1812 hours a manual reactor trip was initiated by opening the reactor trip breakers in accordance with Technical Requirement 3.1.3. This is a valid actuation of the Reactor Protection System. Four suspect cards were replaced in Power Cabinet 2AC. Following card replacement the reactor trip breakers were closed. Shutdown Banks "A" and "B" were fully withdrawn with no concerns. On February 8, 2008, at 1959 hours, a non-emergency 8-hour report was made in accordance with 10 CFR 50.72(b)(3)(iv)(A) due to actuation of the Reactor Protection System. This event is reportable pursuant to 10 CFR 50.73 (a)(2)(iv)(A) for a condition that resulted in manual actuation of the Reactor Protection System. This event posed no significant safety implications because the reactor was subcritical when the reactor trip breakers were opened. Compliance with all Technical Requirements was maintained. Therefore, the health and safety of the public were not affected by this event.

LICENSEE EVENT REPORT (LER)
CONTINUATION SHEET

1. FACILITY NAME NORTH ANNA POWER STATION UNIT 2	2. DOCKET 05000 - 339	6. LER NUMBER			3. PAGE 2 OF 4
		YEAR 2008	SEQUENTIAL NUMBER --001 --	REV NO. 00	

NARRATIVE (If more space is required, use additional copies of NRC Form 366A) (17)

1.0 DESCRIPTION OF THE EVENT

On February 8, 2008, Unit 2 was in Mode 3, zero percent power, preparing for restart following a planned maintenance outage. At 1759 hours, a rod control urgent failure alarm was received while withdrawing the "A" Shutdown Bank control rods (EIS System AA, Component ROD). Rod withdrawal was stopped and it was noted that the "A" Shutdown Bank Group Step Counters (EIS System AA, Component CTR) were three steps apart (61 steps on Group 1 and 58 steps on Group 2). As a result, at 1812 hours a manual reactor trip was initiated by opening the reactor trip breakers (EIS System AA, Component BKR) in accordance with Technical Requirement 3.1.3.

An Urgent Failure in Power Cabinet 2AC (EIS System ED, Component CAB) immediately prevented Shutdown Bank "A" Group 2 rod motion. However, it did not prohibit continued rod withdrawal of Shutdown Bank "A" Group 1 since no Urgent Failure existed in Power Cabinet 1AC. Since the Urgent Failure occurred in Power Cabinet 2AC, four suspect movable cards (Regulation, Phase Control, Firing and Failure Detection) were replaced in Power Cabinet 2AC. Following card replacement the reactor trip breakers were closed. Shutdown Banks "A" and "B" were fully withdrawn with no concerns. On February 9, 2008, at 0136 hours reactor startup commenced and 100 percent power was achieved at 2222 hours.

2.0 SIGNIFICANT SAFETY CONSEQUENCES AND IMPLICATIONS

This event posed no significant safety implications because the reactor was subcritical when the reactor trip breakers were opened. Compliance with all Technical Requirements was maintained. Therefore, the health and safety of the public were not affected by this event.

On February 8, 2008, at 1959 hours a non-emergency 8-hour report was made in accordance with 10 CFR 50.72(b)(3)(iv)(A) due to actuation of the Reactor Protection System. This event is reportable pursuant to 10 CFR 50.73 (a)(2)(iv)(A) for a condition that resulted in manual actuation of the Reactor Protection System.

3.0 CAUSE

No definitive root cause has been identified for the Urgent Failure that caused the Rod Control Group Step Counter deviation. The four cards that were in service during the event were sent to Westinghouse for testing and failure analysis. Westinghouse performed thorough card testing that did not reveal any failed cards or components.

Further investigation has determined that it is possible an intermittent failure in the signal path between the Power Cabinet Movable Regulation Card and the Failure Detection Card could have generated the Movable Regulation Failure alarm. Additionally, two other logic

LICENSEE EVENT REPORT (LER)
CONTINUATION SHEET

1. FACILITY NAME NORTH ANNA POWER STATION UNIT 2	2. DOCKET 05000 - 339	6. LER NUMBER			3. PAGE 3 OF 4
		YEAR 2008	SEQUENTIAL NUMBER --001 --	REV NO. 00	

NARRATIVE (If more space is required, use additional copies of NRC Form 366A) (17)

cabinet cards that were not replaced following this event could have caused the Urgent Failure alarm. An intermittent short in the output of I/O AC amplifier could result in a movable signal being sent to the Movable Firing Card for a period longer than required. This possibility was validated by Westinghouse in their inspection and test for the returned cards. It is possible an intermittent failure in either the Logic Cabinet I/O AC Amplifier Card A805 or Slave Cyclor Movable Decoder Card A503 could have generated the Movable Regulation Failure alarm. Further evaluation is necessary to determine if the failure is an intermittent failure on the I/O AC Amplifier Card A805 or the Slave Cyclor Movable Decoder Card A503 in the Unit 2 Logic Cabinet, or the signal path between the Power Cabinet Movable Regulation Card and the Failure Detection Card.

4.0 IMMEDIATE CORRECTIVE ACTION(S)

Control Room personnel responded to the event in accordance with emergency procedure E-0, Reactor Trip or Safety Injection. The unit remained stable at Mode 3 conditions.

5.0 ADDITIONAL CORRECTIVE ACTIONS

Four suspect moveable cards (Regulation, Phase Control, Firing and Failure Detection) were replaced in Power Cabinet 2AC. Following card replacement the reactor trip breakers were closed. Shutdown Banks "A" and "B" were fully withdrawn with no concerns.

6.0 ACTIONS TO PREVENT RECURRENCE

Further evaluation/testing is necessary both while on-line and while shutdown to determine if the failure is an intermittent failure on the I/O AC Amplifier Card A805 or the Slave Cyclor Movable Decoder Card A503 in the Unit 2 Logic Cabinet, or the signal path between the Power Cabinet Movable Regulation Card and the Failure Detection Card. The I/O AC Amplifier Card A805 and the Slave Cyclor Movable Decoder Card A503 will be replaced, if necessary, during the next unit shutdown of sufficient duration.

If the exact cause is determined following additional evaluation/testing, a supplement to this LER will be submitted.

7.0 SIMILAR EVENTS

The following events were reported via LERs. The cause for items 1 and 2 was equipment failure and Item 3 was caused by an improper position of the demand step counter cover. The cause for item 4 was internal connections noted to be inadequate resulting in intermittent operation.

1. LER 50-339/1998-001-00 dated 04/30/98, Manual Reactor Trip Due To Control Bank "B" Group 2 Step Counter Inoperable.
2. LER 50-339/2001-002-00 dated 04/24/01, Manual Reactor Trip Due To Control Bank

LICENSEE EVENT REPORT (LER)
CONTINUATION SHEET

1. FACILITY NAME NORTH ANNA POWER STATION UNIT 2	2. DOCKET 05000 - 339	6. LER NUMBER			3. PAGE 4 OF 4
		YEAR 2008	SEQUENTIAL NUMBER --001 --	REV NO. 00	

NARRATIVE (If more space is required, use additional copies of NRC Form 366A) (17)

- "B" Group 2 Step Counter Inoperable.
3. LER 50-339/2004-002-00 dated 07/19/04, Manual Reactor Trip Due To Control Bank
"D" Group 2 Step Counter Inoperable.
4. LER 50-339/2006-001-00 dated 05/24/06, Manual Reactor Trip Due To Shutdown Bank
"A" Group 2 Step Counter Inoperable.

8.0 ADDITIONAL INFORMATION

At the time of this event, North Anna Unit 1 was operating at 100 percent power and was not affected by this event.

bc (hard copy distribution):

Mr. D. A. Christian
Mr. W. R. Matthews
Mr. G. T. Bischof
Ms. L. N. Hartz
Ms. L. F. Barnett
Mr. M.C. Murph
Mr. J. E. Reasor Jr.
Mr. C. A. Tarantino
Ms. M. Bennett
Station Records
Licensing File

IN/2SW, President, Chief Nuclear Officer
IN/2SE, Sr. Vice President Nuclear Operations
IN/2SE, Vice President, Nuclear Engineering
IN/2SE, Vice President, Nuclear Support Services
OJRP/20, Director Risk Services
OJRP/20
ODEC
IN/2SE, MSRC Coordinator
IN/2SE, Licensing
NAPS (VOA package)
NAPS, Licensing

bc (electronic distribution):

Mr. D. G. Stoddard
Mr. D. E. Jernigan
Mr. J. A. Price
Mr. S. E. Scace
Mr. N. L. Lane
Mr. F. Mladen
Mr. T. R. Huber
Mr. C. L. Funderburk
Mr. M. D. Sartain
Mr. R. M. Berryman
Mr. N. K. Martin
Mr. S. P. Hughes
Mr. J. E. Kirkpatrick
Mr. C. A. McClain
Mr. R. J. Scanlan
Mr. R. B. Evans
Mr. R. M. Garver
Mr. M. F. Walker
Mr. B. E. Standley
Mr. P. A. Kemp
Ms. R. S. Klearman
Mr. J. H. Leberstien
Mr. D. A. Sommers
Mr. E. T. Shaub
Mr. J. M. Surface
Mr. R. E. Fuller
Mr. C. B. LaRoe
Mr. R. L. Ridder
Mr. B. A. Garber
Mr. J. E. Goerge
Mr. B. C. Bryant
Ms. M. Calderone
Mr. S. D. Hills
INPO Records Center

NAPS, Site Vice President
SPS, Site Vice President
MPS, Site Vice President
KPS, Site Vice President
NAPS, Plant Manager
NAPS, Director Station Safety and Licensing
NAPS, Director Engineering
IN/2SE, Director NL & OS
IN/3NW, Director Nuclear Engineering
IN/2NW, Director Nuclear Oversight
IN/2SE, Director Protection Services & EP
NAPS, Manager Operations
NAPS, Manager Maintenance
NAPS, Manager Nuclear Training
NAPS, Manager Nuclear Oversight
NAPS, Manager RP & Chemistry
NAPS, Manager Design Engineering
NAPS, Manager Engineering Programs
NAPS, Manager System & Component Engineering
NAPS, Supv. Licensing
NAPS, Supv. Station Nuclear Safety
NAPS, Licensing
IN/2SE, Supv. Licensing
IN/2SE, Licensing
IN/2SE, OE
IN/2SE, Nuclear Finance & Bus. Services
IN/3SW, Supv. Nuclear Safety Analysis
IN/3SW, Supv. Fuel Performance Analysis
SPS, Supervisor Licensing
NAPS, SNS/OE
SPS, SNS/OE
MPS, SNS/OE
KPS, SNS/OE
lerevents@inpo.org

Verification of Accuracy

1. CR 090778 dated February 8, 2008.
2. RCE000220 Unit 2 Rod Control Urgent Failure Alarm (Interim Report).
3. Event Notification Worksheet, EN #43972 dated February 8, 2008.
4. Control Room Narrative Logs dated February 8 & 9, 2008.

Commitments

None

Action Plan

1. Complete RCE000220 following the 2008 Unit 2 RFO.

Changes to the UFSAR or QA Topical Report

None