Vepco

VIRGINIA ELECTRIC AND POWER COMPANY
NORTH ANNA POWER STATION
P. O. BOX 402
MINERAL, VIRGINIA 23117

10 CFR 50.73

July 3, 1992

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

Serial No. N-92-22
NAPS:WCH
Docket Nos. 50-338
50-339
License Nos. NPF-4
NPF-7

Dear Sirs:

The Virginia Electric and Power Company hereby submits the following Licensee Event Report applicable to North Anna Units 1 and 2.

Report No. 50-338,339/92-014-00

This Report has been reviewed by the Station Nuclear Safety and Operating Committee and will be forwarded to the Corporate Management Safety Review Committee for its review.

Very Truly Yours,

G. E. Kane
Station Manager

Enclosure:

cc: U.S. Nuclear Regulatory Commission
101 Marietta Street, N.W.
Suite 2900
Atlanta, Georgia 30323

Mr. M. S. Lesser
NRC Senior Resident Inspector
North Anna Power Station

IE22
1/1

NRC FORM 366 (6-89) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104
EXPIRES: 4/30/92

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
North Anna Power Station Units 1 and 2	0 5 0 0 0 3 3 8	1 OF 0 6

TITLE (4)
MISSED SURVEILLANCES DUE TO PERSONNEL ERRORS DURING INITIAL PROCEDURE DEVELOPMENT

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 5	0 8	9 2	9 2	- 0 1 4	- 0 0	0 7	0 3	9 2	North Anna Unit 2	0 5 0 0 0 3 3 9
										DOCKET NUMBER(S) 0 5 0 0 0

OPERATING MODE (9)	1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)			
POWER LEVEL (10)	0 9 5	20.402(b)	20.405(c)	50.73(a)(2)(iv)	73.71(b)
		20.405(a)(1)(i)	50.36(c)(1)	50.73(a)(2)(v)	73.71(c)
		20.405(a)(1)(ii)	50.36(c)(2)	50.73(a)(2)(vii)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)
		20.405(a)(1)(iii)	X 50.73(a)(2)(i)	50.73(a)(2)(viii)(A)	
		20.405(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(viii)(B)	
		20.405(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
G. E. Kane, Station Manager	AREA CODE 7 0 3 8 9 4 - 2 1 0 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)

		EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
YES (If yes, complete EXPECTED SUBMISSION DATE)	X NO				

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

On June 8, 1992, with Units 1 and 2 in Mode 1, a continuing evaluation of Technical Specification (TS) surveillance requirements was being performed as a corrective action for previous missed surveillances. While reviewing test procedures for the undervoltage/degraded voltage (UV/DV) trip circuitry for the Emergency Diesel Generator (EDG) load shedding scheme, it was noted that the EDG response time test procedures did not include the circuit between the 27W relay (or K602 relay) and the EDG CO2 trouble alarm. Further review revealed that portions of the UV/DV trip circuitry were not being properly tested for two Circulating Water Screen Wash pumps, the Service Water Valve House exhaust fans and unit heaters, the Auxiliary Service Water Pumps and the Boric Acid Storage Tank Heaters. In addition, the Reactor Coolant Pump Bus undervoltage and underfrequency sensors were not properly response time tested. These events are reportable pursuant to 10 CFR 50.73 (a)(2)(i)(B) as missed surveillances.

The causes of these events are personnel errors resulting in failure to initially develop appropriate procedures to ensure all active and passive circuit devices are tested.

These events posed no significant safety implications because subsequent testing of the subject circuits demonstrated that they were capable of performing their intended functions. Therefore, the health and safety of the general public were not affected at any time due to these events.

1.0 Description of the Event

On June 8, 1992, with Units 1 and 2 in Mode 1, a continuing evaluation of Technical Specification (TS) surveillance requirements was being performed as a corrective action for missed surveillances reported under LER 50-338,339/92-007-00. While reviewing the procedures that perform the surveillances of the undervoltage/degraded voltage (UV/DV) trip circuitry for the Emergency Diesel Generator (EDG)(EIIS System Identifier EK, Component Identifier DG) load shedding scheme, it was noted that the "start" signal used for TS Surveillance Requirements 4.8.1.1.2.c, 4.8.1.1.2.d.4.b and 4.8.1.1.2.d.6.b was incorrect. Specifically, the indication that the EDG start signal has been initiated should be the energization of the 27W relay (or K602 relay) and not actuation of the EDG CO2 trouble alarm (Component Identifier ALM). The 27W relay energizes prior to the EDG CO2 trouble alarm, which was being used to initiate the test time interval. Therefore, the test procedures did not include the response time of the circuit between the 27W relay and the EDG CO2 trouble alarm.

On June 10, 1992, the TS surveillance review determined that a portion of the UV/DV trip circuits for two Circulating Water (CW) Screen Wash pumps (EIIS System Identifier NN, Component Identifier P) that provide CW screen wash and inventory makeup to the Service Water System (EIIS System Identifier BS) were not being tested in accordance with TS 4.8.1.1.2.d.4.a and TS 4.8.1.1.2.d.6.a. The test procedures did not verify that the pumps tripped upon an emergency bus UV/DV signal as required for the load shedding scheme.

On June 15, 1992, the TS surveillance review determined that the UV/DV trip circuits for the Service Water Valve House (SWVH) exhaust fans (Component Identifier FAN) and unit heaters (Component Identifier EHTR) were not being tested in accordance with TS 4.8.1.1.2.d.4.a and 4.8.1.1.2.d.6.a. The test procedures reset this function, but they did not specifically verify that the fans and unit heaters tripped upon an emergency bus UV/DV signal.

On June 17, 1992, the TS surveillance review determined that the Auxiliary Service Water Pumps (ASWP)(Component Identifier P) were not being tested in accordance with TS 4.8.1.1.2.d.4.a and 4.8.1.1.2.d.6.a. Test procedures did not ensure the pumps tripped upon an emergency bus UV/DV signal and cycled back on the emergency bus with a 10 second time delay.

On June 22, 1992, the TS surveillance review determined that the Boric Acid Storage Tank (BAST)(EIIS System Identifier CB, Component Identifier TK) heaters (Component Identifier EHTR) were not being tested in accordance with TS 4.8.1.1.2.d.4.a and 4.8.1.1.2.d.6.a. Test procedures did not ensure the heaters tripped upon an emergency bus UV/DV signal.

On June 22, 1992, the TS surveillance review determined that the Reactor Coolant Pump (RCP)(EIIS System Identifier AB, Component Identifier P) bus undervoltage and underfrequency sensors (EIIS System Identifier EA) were not being tested in accordance with TS 4.3.1.1.3. Test procedures did not individually time response test these sensors.

1.0 Description of the Event (continued)

These events are reportable pursuant to 10 CFR 50.73 (a)(2)(i)(B) as missed surveillances.

2.0 Significant Safety Consequences and Implications

The EDGs are provided to ensure sufficient power will be available to supply safety related equipment required for safe shutdown and mitigation of accident conditions. Failures to response time test the entire start circuit posed no significant safety implications because the sum of response time testing of the omitted EDG start circuitry and the results of previous tests demonstrated that all circuitry was still capable of performing its intended function within the required time limit.

The emergency bus load shedding scheme is provided to protect the EDGs from overloading during station blackout conditions. The failure to properly test the load shedding scheme posed no significant safety implications because subsequent testing of the subject circuitry demonstrated that the EDGs were capable of performing their intended function. Also, previous testing had demonstrated that the overall load shedding scheme was fully functional.

The RCP bus UV and UF reactor trip are provided to protect against a Departure from Nucleate Boiling in the event of a loss-of-coolant flow situation which can result from a loss of voltage or frequency to more than one RCP (e.g., from station blackout). This is an anticipatory trip to the loss of flow trip. The failure to response time test the sensors posed no significant safety implications because subsequent testing demonstrated that the sensors were capable of performing their intended function.

The testing non-compliances reported by this LER are a result of our continuing review of complex instrumentation and electrical surveillance requirements that is being performed in accordance with the Action Plan of LER 50-338,339-92-007-00. In each case, the overall safety function had been tested and was capable of providing reactor safety. These testing non-compliances represent only a diminutive portion of the overall circuit. Therefore, the health and safety of the general public were not affected at any time due to these events.

3.0 Cause of the Event

The causes of these events are personnel errors resulting in failure to initially develop appropriate procedures to ensure all active and passive circuit devices are tested.

4.0 Immediate Corrective Actions

The Operations Shift Supervisor was immediately notified when it was identified that portions of the circuitry had not been tested, and the appropriate Action Statements were entered.

On June 8, 1992, Units 1 and 2 entered the twenty-four hour Action Statement of TS 4.0.3 to allow testing of the portion of the EDG start circuits between the 27W relays and the EDG CO2 trouble alarms. After summing the times recorded with the results of previous response time tests, the circuit was verified capable of performing its intended function within the required time limit. The testing was satisfactorily completed on all four EDGs, and the Action Statement was cleared on June 8, 1992.

On June 10, 1992, Units 1 and 2 entered the seventy-two hour Action Statement of TS 3.8.1.1 to allow testing of the CW screen wash pump trip logic. After verifying the operability of alternate AC sources, the testing was satisfactorily completed, and the Action Statement was cleared on June 10, 1992.

On June 15, 1992, Unit 2 entered the twenty-four hour Action Statement of TS 4.0.3 to allow testing of the SWVH exhaust fan and unit heater trip logic. No Action Statement was entered for Unit 1 because the breakers were administratively controlled open. During testing, one of the fans (2-HV-UH-70B) did not trip upon receiving the Unit 2 "J" Bus UV/DV signal. The heater elements immediately tripped, but the fan continued to operate for approximately two minutes to remove the sensible heat of the unit. This delay is a design feature of the unit heater. Subsequently, the breaker for the subject heater was opened until the problem could be resolved. (See Section 5.0) After completion of the testing, the Action Statement was cleared on June 15, 1992.

On June 17, 1992, Units 1 and 2 entered the seventy-two hour Action Statement of TS 3.8.1.1 to allow testing of the Auxiliary SW pump trip logic. After verifying the operability of alternate AC sources, the testing was satisfactorily completed, and the Action Statement was cleared on June 17, 1992.

On June 22, 1992, Units 1 and 2 entered the 24 hour Action Statement of TS 4.0.3 to allow testing of the BAST heaters and the RCP bus UV and UF sensors. After satisfactory completion of the testing, the Action Statement was cleared on June 22, 1992.

5.0 Additional Corrective Actions

The Electrical Engineering Department reviewed the impact of having the SWVH unit heater's fan in service after a UV/DV condition and determined that the EDG loading is not impaired. Even considering the full load of the heaters, the EDG loading is within the bounds of the EDG analysis.

6.0 Actions to Prevent Recurrence

In accordance with the Action Plan of LER 50-338,339/92-007-00 an additional review of other complex instrumentation and electrical surveillance requirements is being performed to verify TS surveillance requirements are fully met.

Response time testing of the entire EDG start circuits will be incorporated into the appropriate periodic test procedures prior to their next scheduled performance.

Verification that the CW screen wash pumps trip on UV/DV signals will be incorporated into the appropriate periodic test procedures prior to their next scheduled performance.

Verification that the SWPH exhaust fans and unit heaters trip on UV/DV signals will be incorporated into the appropriate periodic test procedures prior to their next scheduled performance.

Verification that the ASWPs trip on UV/DV signals will be incorporated into the appropriate periodic test procedures prior to their next scheduled performance.

Verification that the BAST heaters trip on UV/DV signals will be incorporated into the appropriate periodic test procedures prior to their next scheduled performance.

Response time testing of the RCP bus UV and UF sensors will be incorporated into the appropriate periodic test procedures prior to their next scheduled performance.

7.0 Similar Events

LER 50-338,339/90-009-03 described an event where full response time testing of the Source Range Neutron Flux Reactor Trip preamplifiers, the Power Range Neutron Detector isolation amplifiers and the Overtemperature Delta Temperature Reactor Trip lag and lead/lag cards was not performed due to incorrect TS interpretation.

LER 50-339/91-001-00 documents an event where a set of contacts and associated wiring on the control room bench board switch for the Train A power operated relief valve (PORV) over pressure control circuitry had not been tested as required by TS surveillance requirement 4.4.3.2.1.b. The cause of the event was the incorrect interpretation of TS 4.4.3.2.1.b. Previous interpretations did not require testing of the contacts and associated wiring for the PORV control circuitry.

LER 50-338,339/92-007-00 documents missed surveillance of RCP bus undervoltage/underfrequency circuitry and SI input to reactor trip.

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

7.0 Similar Events (continued)

LER 50-338,339/92-009-01 documents missed surveillances of Containment Purge and Exhaust isolation circuitry and portions of the Pressurizer Power Operated Relief Valve position indication channel.

8.0 Additional Information

None.