



UNITED STATES  
NUCLEAR REGULATORY COMMISSION

REGION II  
SAM NUNN ATLANTA FEDERAL CENTER  
61 FORSYTH STREET, SW, SUITE 23T85  
ATLANTA, GEORGIA 30303-8931

September 6, 2007

Virginia Electric and Power Company  
ATTN: Mr. David A. Christian  
Senior Vice President and  
Chief Nuclear Officer  
Innsbrook Technical Center  
5000 Dominion Boulevard  
Glen Allen, VA 23060

SUBJECT: NORTH ANNA POWER STATION - NRC EMERGENCY PREPAREDNESS  
INSPECTION REPORT 05000338/2007501 AND 05000339/2007501

Dear Mr. Christian:

On August 10, 2007, the U.S. Nuclear Regulatory Commission (NRC) completed an Emergency Preparedness inspection at your North Anna Power Station. The enclosed inspection report documents the inspection results, which were discussed on August 10, 2007, with Mr. L. Lane, Plant Manager, and other members of your staff.

The inspection examined activities conducted under your licenses as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel. Based on the results of this inspection, no findings of significance were identified.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

**/RA Ruben Hamilton for/**

Brian R. Bonser, Chief  
Plant Support Branch 1  
Division of Reactor Safety

Docket Nos. 50-338, 50-339  
License Nos. NPF-4, NPF-7

Enclosure: NRC Inspection Report No. 05000338/2007501 AND 05000339/2007501  
w/Attachment: Supplemental Information

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cc w/encl:

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DATE	9/ /2007	9/ /2007	9/ /2007	9/ /2007	9/ /2007	9/ /2007	9/ /2007
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Letter to: Mr. David A. Christian

Dated: September 6, 2007

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U. S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket Nos: 50-338, 50-339

License Nos: NPF-4, NPF-7

Report Nos: 05000338/2007501 AND 05000339/2007501

Licensee: Virginia Electric and Power Company

Facility: North Anna Power Station

Location: 1024 Haley Drive  
Mineral, VA 23117

Dates: August 6 - 10, 2007

Inspector: L. Miller, Senior Emergency Preparedness Inspector

Approved by: Brian R. Bonser, Chief  
Plant Support Branch 1  
Division of Reactor Safety

Enclosure

## SUMMARY OF FINDINGS

IR 05000338/2007501 and 05000339/2007501;08/06-10/2007;North Anna Power Station Units 1 and 2; Baseline Inspection.

The report covered an announced inspection by one emergency preparedness inspector. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4, dated December 2006.

A. NRC-Identified and Self-Revealing Findings

Cornerstone: Emergency Preparedness

No findings of significance were identified.

B. Licensee-Identified Violations

None

Enclosure

## REPORT DETAILS

### 1. REACTOR SAFETY

Cornerstone: Emergency Preparedness

#### 1EP2 Alert and Notification System Evaluation

##### a. Inspection Scope

The inspector evaluated the adequacy of licensee methods for testing the alert and notification system in accordance with NRC Inspection Procedure 71114, Attachment 02, "Alert and Notification System (ANS) Evaluation". The applicable planning standard 10 CFR Part 50.47(b)(5) and its related 10 CFR Part 50, Appendix E, Section IV.D requirements were used as reference criteria. The criteria contained in NUREG-0654, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," Revision 1 was also used as a reference.

The inspector reviewed various documents which are listed in the Attachment to this report.

##### b. Findings

No findings of significance were identified.

#### 1EP3 Emergency Response Organization (ERO) Staffing and Augmentation System

##### a. Inspection Scope

The inspector reviewed the ERO augmentation staffing requirements and the process for notifying the ERO to ensure the readiness of key staff for responding to an event and timely facility activation. The inspector reviewed the results of the February 22, 2005, unannounced off-hours augmentation drills and reviewed the backup notification systems. The qualification records of key position ERO personnel was reviewed to ensure all ERO qualifications were current. A sample of problems identified from augmentation drills or system tests performed since the last inspection were reviewed to assess the effectiveness of corrective actions.

The inspection was conducted in accordance with NRC Inspection Procedure 71114, Attachment 03, "Emergency Response Organization Staffing and Augmentation System Testing." The applicable planning standard and 10 CFR 50.47(b)(2) and its related 10 CFR 50, Appendix E requirements were used as reference criteria.

The inspector reviewed various documents which are listed in the Attachment to this report.

Enclosure

b. Findings

No findings of significance were identified.

1EP4 Emergency Action Level (EAL) and Emergency Plan Changes

a. Inspection Scope

The inspector's review of revisions to the emergency plan (EP), implementing procedures and EAL changes was performed to determine that changes had not decreased the effectiveness of the EP. The inspector also evaluated the associated 10 CFR 50.54(q) reviews associated with the non-administrative emergency plan, implementing procedures and EAL changes. The Emergency Plan, revision 33, was reviewed and covered the period from November 2006 to August 2007.

The inspection was conducted in accordance with NRC Inspection Procedure 71114, Attachment 04, "Emergency Action Level and Emergency Plan Changes." The applicable planning standard and 10 CFR 50.47(b)(4) and its related 10 CFR 50, Appendix E requirements were used as reference criteria. The criteria contained in NUREG-0654, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Regulatory Guide 1.101 were also used as references. This inspection activity represents one sample on an annual basis.

The inspector reviewed various documents which are listed in the Attachment to this report.

b. Findings

No findings of significance were identified.

1EP5 Correction of Emergency Preparedness Weaknesses and Deficiencies

a. Inspection Scope

The inspector reviewed the corrective actions identified through the EP program to determine the significance of the issues and to determine if repeat problems were occurring. The facility's self-assessments and audits were reviewed to assess the licensee's ability to be self-critical, thus avoiding complacency and degradation of their EP program. In addition, the inspector reviewed licensee's self-assessments and audits to assess the completeness and effectiveness of all EP-related corrective actions.

The inspection was conducted in accordance with NRC Inspection Procedure 71114, Attachment 05, "Correction of Emergency Preparedness Weaknesses." The applicable planning standard and 10 CFR 50.47(b)(14) and its related 10 CFR 50, Appendix E requirements were used as reference criteria.



The inspector reviewed various documents which are listed in the Attachment to this report.

Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator (PI) Verification

a. Inspection Scope

The inspector reviewed the licensee's procedure for developing the data for the Emergency Preparedness PIs which are: (1) Drill/Exercise Performance (DEP); (2) ERO Drill Participation; and (3) Alert and Notification System (ANS) Reliability. The inspector examined data reported to the NRC for the period October 1, 2006 to June 30, 2007. Procedural guidance for reporting PI information and records used by the licensee to identify potential PI occurrences were also reviewed. The inspector verified the accuracy of the PI for ERO DEP through review of a sample of drill and event records. The inspector reviewed selected training records to verify the accuracy of the PI for ERO drill participation for personnel assigned to key positions in the ERO. The inspector verified the accuracy of the PI for ANS reliability through review of a sample of the licensee's records of periodic system tests.

The inspection was conducted in accordance with NRC Inspection Procedure 71151, "Performance Indicator Verification." The applicable PI, 10 CFR 50.9 and Nuclear Energy Institute (NEI) 99-02, Revision 4, "Regulatory Assessment Performance Indicator Guidelines," were used as reference criteria. This inspection activity represents three samples on an annual basis.

The inspector reviewed various documents which are listed in the Attachment to this report.

b. Findings

No findings of significance were identified.

4OA6 Meetings, including Exit

On August 10, 2007, the inspector presented the inspection results to Mr. L. Lane, Plant Manager, and other members of his staff. The inspector confirmed that proprietary information was not provided or taken during the inspection.

ATTACHMENT: SUPPLEMENTAL INFORMATION

Enclosure

## SUPPLEMENTAL INFORMATION

### KEY POINTS OF CONTACT

#### Licensee personnel

L. Lane, Plant Manager  
P. Kemp, Director Station Safety & Licensing (Acting)  
P. Serra, Manager Emergency Preparedness  
J. Costello, Supervisor Emergency Preparedness  
J. Rayman, Emergency Preparedness  
J. Leberstien, Technical Consultant - Licensing

### LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

#### Opened

None

#### Closed

None

#### Discussed

None

### LIST OF DOCUMENTS REVIEWED

#### Section 1EP2: Alert and Notification System Evaluation

##### Procedures

0-EPM-0501-01, Early Warning System Preventive Maintenance, Rev. 16  
0-PT-172.2, Early Warning System Sirens Activation Monitoring, Rev. 3  
0-PT-172.3, Early Warning System Polling Function Test, Rev. 1  
Telecommunications Operability Testing Emergency Warning System (EWS), Rev. G  
VPAP-2601, Maintaining Emergency Preparedness, Rev. 15

##### Records and Data

CR016702, Recordkeeping practices for Telecommunications EWS PMs  
O-EPM-0501-01, Siren Preventive Maintenance 10/31/2005  
O-EPM-0501-01, Siren Preventive Maintenance 08/02/2005  
O-EPM-0501-01, Siren Preventive Maintenance 11/22/2006  
O-EPM-0501-01, Siren Preventive Maintenance 08/06/2006  
O-EPM-0501-01, Siren Preventive Maintenance 04/29/2006  
O-EPM-0501-01, Siren Preventive Maintenance 01/30/2006  
O-EPM-0501-01, Siren Preventive Maintenance 01/24/2006  
Quarterly Data packages from 08/05/05 to 05/17/2007 for 0-PT-172.2, Early Warning System Sirens Activation Monitoring

Attachment

Bi-weekly Data packages from 08/05/05 to 06/20/2007 for 0-PT-172.3, Early Warning System Polling Functional Test

### Section 1EP3: Emergency Response Organization (ERO) Staffing and Augmentation System

#### Procedures

EPIP-3.05, Augmentation of Emergency Response Organization, Rev. 2

#### Records and Data

Medical Emergency and Loss of Feedwater/Auxiliary Feedwater Training Exercise, 06/07/2005

Rad Monitoring Drill, 11/15/2005

Earthquake/LOCA Training Exercise, 02/21/2006

Earthquake/RWST Drain to Containment Training Exercise, 5/23/2006

Earthquake/RWST Drain to Containment Training Exercise, 10/12/2006

Minor Earthquake/Loss of Feedwater/Auxiliary Feedwater Functional Exercise, 10/25/2006

ATWS/Loose Parts/SGTR Emergency Exercise, 12/05/2006

Loss of Grid Training Exercise, 05/01/2007

VPAP-2601, Attachment 3, Augmentation Capability Assessment of Emergency Response Organization, 05/29/2005 at 1900

VPAP-2601, Attachment 3, Augmentation Capability Assessment of Emergency Response Organization, 02/27/2007 at 1800

VPAP-2601, Attachment 3, Augmentation Capability Assessment of Emergency Response Organization, 11/08/2006 at 1900

VPAP-2601, Attachment 3, Augmentation Capability Assessment of Emergency Response Organization, 09/13/2006 at 1900

VPAP-2601, Attachment 3, Augmentation Capability Assessment of Emergency Response Organization, 06/07/2006 at 1900

VPAP-2601, Attachment 3, Augmentation Capability Assessment of Emergency Response Organization, 03/07/2006 at 1800

VPAP-2601, Attachment 3, Augmentation Capability Assessment of Emergency Response Organization, 11/22/2005 at 1800

VPAP-2601, Attachment 3, Augmentation Capability Assessment of Emergency Response Organization, 08/23/2005 at 2000

### Section 1EP4: Emergency Action Level (EAL) and Emergency Plan Changes

#### E-Plan Changes

Change packages for the following:

North Anna Power Station Emergency Plan, Rev. 33

EPIP-1.01, Emergency Manager Controlling Procedure, Rev. 43

EPIP-1.04, Response to Site Area Emergency, Rev. 16

EPIP-1.06, Protective Action Recommendations, Rev. 7

EPIP-2.01, Notification of State and Local Governments, Rev. 29, 30, and 31

EPIP-2.02, Notification of NRC, Rev. 18  
 EPIP-4.04, Emergency Personnel Radiation Exposure, Rev. 10  
 EPIP-5.03, Personnel Accountability, Rev. 19

#### Section 1EP5: Correction of Emergency Preparedness Weaknesses

##### Records and Data

Nuclear Oversight Audit 06-02, April 13, 2006  
 Nuclear Oversight Audit 07-02, April 26, 2007

##### Corrective Actions

Plant Issue-N-2006-0834, Equipment concerns identified in 02/21/2006 EP training exercise  
 CR017344, Records of Security Officer training for ERO callout  
 CR017451, ERDS experienced intermittent connections during testing.  
 CR017024, EAL review required based on OE VC Summer review.  
 CR016702, Record keeping practices for Telecommunications EWS Pms  
 CR011420, Identification of ERDS activation workstations and ERDS activation during LOOP  
 CR011403, 5/1/2007 North Anna Training Exercise Critique CA tracking  
 CR011298, Administrative error allowed EPIP-2.01 Step 18 RNO to reference deleted procedure.  
 CR009306, 1-PT-172.3 Early Warning Poll test identified antenna failure.  
 CR007368, Failure to determine PAR after GE during simulator requal exam  
 CR006346, Incorrect emergency classification during exam/JPM  
 CR005311, Third review of Drill/Exercise Performance opportunity identified concern  
 CR003198, EP Functional Exercise 10/25/06 EAL classification determination question

#### Section 4AO1: Performance Indicator (PI) Verification

##### Procedures

DNAP-2605, Emergency Preparedness Performance Indicators, Rev. 6  
 LIAP-0005, Reactor Oversight Process (ROP) Performance Indicator Collection and Submittal Guideline, Rev. 3

##### Records and Data

Performance Indicator Monthly Data from October, 2006 thru June, 2007  
 Records of Drill and Exercise opportunities from October, 2006 to June, 2007  
 Records of drill participation by 15 selected ERO personnel from October, 2006 to June, 2007  
 Records of ERO training drills/exercises conducted between October, 2006 - June, 2007  
 (including drill scenario, critique report, offsite notification messages, PI evaluations)

## LIST OF ACRONYMS

ANS	Alert and Notification System
DEP	Drill/Exercise Performance
EAL	Emergency Action Level
EM	Emergency Preparedness
ERO	Emergency Response Organization
NEI	Nuclear Energy Institute
PI	Performance Indicator