

April 8, 2009

Mr. David A. Christian  
President and Chief Nuclear Officer  
Virginia Electric and Power Company  
Innsbrook Technical Center  
5000 Dominion Boulevard  
Glen Allen, VA 23060-6711

SUBJECT: NORTH ANNA POWER STATION, UNIT NOS. 1 AND 2, EVALUATION OF  
PROPOSED EMERGENCY ACTION LEVEL REVISION (TAC NOS. ME0272  
AND ME0273)

Dear Mr. Christian:

By letter dated December 19, 2008, Virginia Electric and Power Company, requested prior Nuclear Regulatory Commission (NRC) approval for changes to an emergency action level (EAL) for North Anna Power Station, Unit Nos. 1 and 2 pursuant to Section 50.54(q) of Title 10 of the *Code of Federal Regulations* (10 CFR). The proposed change is for EAL RU1.2, Table R-1, Auxiliary Feedwater Pump Turbine Gaseous Effluent Monitor setpoint.

The requested change is to increase the setpoint for the monitor to ensure inadvertent EAL declarations do not occur due to normal background and instrumentation noise.

As discussed in the enclosed safety evaluation, the NRC staff finds that the proposed change continues to meet the standards in 10 CFR 50.47(b) and the requirements in Appendix E of 10 CFR Part 50. Therefore, the NRC staff concludes that the proposed changes are acceptable.

If you have any questions, please contact Donna Wright at 301-415-1864.

Sincerely,

***/RA JWiggins for/***

Eric J. Leeds, Director  
Office of Nuclear Reactor Regulation

Docket Nos. 50-338 and 50-339

Enclosure:  
Safety Evaluation

cc w/encl: Distribution via Listserv

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ADAMS Accession No.: ML090130047

\*transmitted by memo dated

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DATE	02/02/09	04/03/09	04/08/09	

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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

PROPOSED REVISION TO AN EMERGENCY ACTION LEVEL

VIRGINIA POWER AND ELECTRIC COMPANY

NORTH ANNA POWER STATION, UNIT NOS. 1 AND 2

DOCKET NOS. 50-338 AND 50-339

1.0 INTRODUCTION

By letter dated December 19, 2008 (ADAMS Accession No. ML083540717), Virginia Electric and Power Company (Dominion), requested prior Nuclear Regulatory Commission (NRC) approval for a change to an emergency action level (EAL) for North Anna Power Station, Unit Nos. 1 and 2 (North Anna 1 and 2). The proposed change is for EAL RU1.2, Table R-1, Auxiliary Feedwater Pump Turbine Gaseous Effluent Monitor setpoint.

The requested change is to increase the setpoint for this monitor in order to ensure inadvertent EAL declarations do not occur due to normal background and instrumentation noise. Separation between emergency classifications, i.e., (Notice of) Unusual Event (NOUE), Alert, Site Area Emergency (SAE), and General Emergency (GE), is maintained by ensuring approximately a factor of 10 between applicable setpoints.

2.0 REGULATORY EVALUATION

The NRC staff reviewed the proposed revision against the following regulations and guidance.

2.1 Regulations

Paragraph (a)(1) to Section 50.47, "Emergency Plans", of Title 10 of the *Code of Federal Regulations* (10 CFR), Part 50 states that no operating license for a nuclear power reactor will be issued unless a finding is made by the NRC that the state of onsite and offsite emergency preparedness provides reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency. Section 50.47 of 10 CFR also establishes standards that must be met by the onsite and offsite emergency response plans for NRC staff to make a positive finding that there is reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency. One of these standards, 50.47(b)(4), stipulates that emergency plans include a standard emergency classification and action level scheme.

Section IV.B to Appendix E, "Emergency Planning and Preparedness for Production and Utilization Facilities," of 10 CFR Part 50 provides that emergency plans are to include EALs, which are to be used as criteria for determining the need for notification and participation of local and

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State agencies and which are to be used for determining when and what type of protective measures should be considered both onsite and offsite to protect health and safety. EALs are to be based on in-plant conditions and instrumentation, and also on onsite and offsite monitoring. Section IV.B of Appendix E provides that initial EALs shall be discussed and agreed on by the applicant and State and local authorities and be approved by the NRC, and reviewed annually thereafter with State and local authorities. In addition, Section IV.B of Appendix E states that an EAL revision must be approved by the NRC before implementation if it involves: (1) the changing from an EAL scheme based on NUREG-0654/FEMA-REP-1 to a scheme based on NUMARC/NESP-007 or NEI 99-01; (2) the licensee is proposing an alternate method for complying with the regulations; or (3) the EAL revision has been evaluated by licensee as constituting a decrease in effectiveness.

## 2.2 Guidance

Revision 4 to Regulatory Guide 1.101, issued in July 2003, endorses the guidance contained in NEI 99-01, "Methodology for Development of Emergency Action Levels," Revision 4, January 2003 (ADAMS Accession No. ML041470143), as acceptable to the NRC staff as an alternative method to that described in the following guidance for developing EALs required in Section IV of Appendix E to 10 CFR Part 50 and 10 CFR 50.47(b)(4):

- Appendix 1 to NUREG-0654/FEMA-REP-1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants" (November 1980), and
- Nuclear Utility Management and Resources Council (NUMARC) document, entitled NESP-007, "Methodology for Development of Emergency Action Levels," (Revision 2, January 1992).

Regulatory Issue Summary (RIS) 2003-18, with Supplements 1 & 2, "Use of NEI 99-01, Methodology for Development of Emergency Action Levels," (ADAMS Accession Nos. ML032580518, ML041550395, and ML051450482), provides guidance for developing or changing a standard emergency classification and action level scheme. In addition, this RIS provides recommendations to assist licensees, consistent with Section IV.B to Appendix E of Part 50, in determining whether to seek prior NRC approval of deviations from the guidance.

## 3.0 TECHNICAL EVALUATION

The proposed change was submitted to the NRC for a technical and regulatory review prior to implementation by the licensee, as required under 10 CFR 50.54(q).

This evaluation is based on a revision to the EAL as provided in the application letter as well as the NRC safety evaluation dated February 4, 2008 (Reference 2), approving a conversion to an EAL scheme based on NEI 99-01, "Methodology for Development of Emergency Action Levels," (Revision 4, January 2003) for North Anna 1 and 2.

The approved Table R-1 NOUE setpoint for the Auxiliary Feedwater Pump Turbine Gaseous Effluent Monitor was 3.24E-2 mR/hr (Reference 2). The licensee has determined that this value is too low and may be exceeded due to normal background (instrument noise) and could lead to inadvertent EAL classifications and unnecessary operator actions. The licensee stated that this

determination was made based upon an examination of historical plant data. The licensee proposed to increase this setpoint to 3.24E-1 mR/hr. This value would remove the potential for inadvertent EAL classifications and unnecessary operator actions. The range of setpoints for this monitor would be nearly linear and the separation between the emergency classification levels would be approximately a factor of 10. Specifically, the range of setpoints for this monitor, as reflected in Table R-1, would be the following:

NOUE: 3.24E-1 mR/hr (as proposed)  
Alert: 3.24 mR/hr (as approved by Reference 2)  
SAE: 2.84E+1 mR/hr (as approved by Reference 2)  
GE: 2.84E+2 mR/hr (as approved by Reference 2)

#### 4.0 CONCLUSION

The NRC staff performed a technical and regulatory review of the proposed changes to the North Anna 1 and 2 EALs. The NRC staff finds that incorporation of the proposed change continues to meet the standards of Section 50.47(b) and the requirements of Appendix E to 10 CFR Part 50. Therefore, the NRC staff concludes that the licensee's proposed EAL change for North Anna 1 and 2 in its application dated December 19, 2008, is acceptable.

#### 5.0 REFERENCES

1. Letter from Virginia Electric and Power Company, to the NRC dated December 19, 2008, "Virginia Electric and Power Company: North Anna Power Station Units 1 and 2. Proposed Emergency Action Level Revision." ADAMS Accession No. ML083540717.
2. NRC Safety Evaluation dated February 4, 2008. ADAMS Accession No. ML080310195.
3. NEI 99-01 "Methodology for Development of Emergency Action Levels" (Revision 4, January 2003). ADAMS Accession No. ML041470143.
4. Regulatory Issue Summary 2003-18, with Supplements 1 & 2, "Use of NEI 99-01, Methodology for Development of Emergency Action Levels." ADAMS Accession Nos. ML032580518, ML041550395, and ML051450482.
5. "Emergency Planning and Preparedness for Nuclear Power Reactors," Regulatory Guide 1.101, Revision 4. ADAMS Accession No. ML032020276.
6. NUREG-0654 "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants." ADAMS Accession No. ML040420012.

Principal Contributor: Don Johnson, NSIR

Date: April 8, 2009