UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

February 10, 2011

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

SUBJECT: CORRECTION TO AMENDMENT NOS. 261 AND 242 FOR NORTH ANNA POWER STATION, UNIT NOS. 1 AND 2, AND AMENDMENT NOS. 272 AND 271 FOR SURRY POWER STATION, UNIT NOS. 1 AND 2, ISSUANCE OF AMENDMENTS FOR CHANGES TO THE EMERGENCY PLAN (TAC NOS. ME3383, ME3384, ME3385, AND ME3386)

Dear Mr. Heacock:

On January 26, 2011, the U.S. Nuclear Regulatory Commission (NRC) had issued Amendment Nos. 261 and 242 to Renewed Facility Operating License Nos. NPF-4 and NPF-7 for the North Anna Power Station, Unit Nos. 1 and 2, and Amendment Nos. 272 and 271 to Renewed Facility Operating License Nos. DPR-32 and DPR-37 for the Surry Power Station, Unit Nos. 1 and 2, respectively. These amendments were in response to your application dated January 29, 2010, for the proposed changes to the Emergency Plan.

The amendments provided authorization to upgrade selected Emergency Action Levels based on Nuclear Energy Institute (NEI) 99-01, "Methodology for Development of Emergency Action Levels," Revision 5, dated February 2008 using the guidance of NRC Regulatory Issue Summary 2003-18, Supplement 2, "Use of Nuclear Energy Institute (NEI) 99-01, Methodology for Development of Emergency Action Levels."

The NRC staff has corrected the Safety Evaluation (SE) on pages 1, 3, and 4. On page 1, paragraph 2, the last sentence was changed from " NUMARC/NESP-007" to " NEI 99-01," and in the third paragraph, second line, " Notice of Unusual Event" was changed to " Notification of Unusual Event". On page 3, Table R-1, in the column titled, NOUE (Proposed), third line, " 2.60E+05 μCi/sec" was changed to " 2.80E+05 μCi/sec". On page 4, in the first paragraph, the first line was changed from " the Process Vent is 10% or 0.1, and for Vent A and Vent B is 100% or 1.0." to " the Process Vent for NAPS is 10% or 0.1, and for Surry is 4% or 0.04, and Vent Stack A and Vent Stack B for NAPS, and Vent #2 for Surry is 100% or 1.0."

The NRC regrets any inconvenience this may have caused. The revisions are identified by lines in the margin.

Sincerely,

Dr. V. Sreenivas, Project Manager
Plant Licensing Branch II-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-338, 50-339, 50-280, and 50-281

Enclosure:
SE pages 1, 3, and 4

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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO

AMENDMENT NO. 261 TO RENEWED FACILITY OPERATING LICENSE NO. NPF-4

AMENDMENT NO. 242 TO RENEWED FACILITY OPERATING LICENSE NO. NPF-7

AMENDMENT NO. 272 TO RENEWED FACILITY OPERATING LICENSE NO. DPR-32

AMENDMENT NO. 271 TO RENEWED FACILITY OPERATING LICENSE NO. DPR-37

VIRGINIA ELECTRIC AND POWER COMPANY

NORTH ANNA POWER STATION, UNIT NOS. 1 AND 2, AND

SURRY POWER STATION, UNIT NOS. 1 AND 2

DOCKET NOS. 50-338, 50-339, 50-280, AND 50-281

1.0 INTRODUCTION

By application dated January 29, 2010 (Agencywide Documents Access and Management System (ADAMS), Accession No. ML100500566), Virginia Electric and Power Company (the licensee), submitted a license amendment request (LAR) to the Nuclear Regulatory Commission (NRC) for approval of changes to several emergency action levels (EALs) for North Anna Power Station (NAPS), Unit Nos. 1 and 2, and Surry Power Station (Surry), Unit Nos. 1 and 2.

The licensee requested authorization to upgrade selected Emergency Action Levels based on Nuclear Energy Institute (NEI) 99-01, "Methodology for Development of Emergency Action Levels," Revision 5, dated February 2008 (ADAMS Accession No. ML080450149) using the guidance of NRC Regulatory Issue Summary (RIS) 2003-18, Supplement 1 & 2, " Use of Nuclear Energy Institute (NEI) 99-01, Methodology for Development of Emergency Action Levels" (ADAMS Accession Nos. ML032580518, ML041550395, and ML051450482). The licensee currently uses an EAL scheme based on NEI 99-01, " Methodology for Development of Emergency Action Levels."

Specifically, the requested license amendment proposes changes to Table R-1, Gaseous Effluent Monitor Classification Thresholds for the Notification of Unusual Event (NOUE) classification (EAL RU1.2), deletes EAL RA2.4 for both NAPS and Surry, and revises the Reactor Coolant System (RCS) Letdown Thresholds for EALs SU5.2 and Fuel Clad Loss #5 for NAPS.

Enclosure

Corrected by letter dated February 10, 2011

NEI 99-01, " Methodology for Development of Emergency Action Levels," Revision 5 (ADAMS Accession No. ML080450149) has been determined to be acceptable to the NRC via letter dated February 22, 2008 (ADAMS Accession No. ML080430535).

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 the LAR, a Safety Evaluation Report (SER) dated February 4, 2008 (ADAMS Accession No. ML080310195) and NAPS Updated Final Safety Analysis Report (UFSAR) Chapter 11.

The licensee proposed two changes in common for NAPS and Surry. These are evaluated as Change No. 1 and 2. In addition, licensee has proposed to revise RCS Letdown Thresholds for EALs SU5.2 and Fuel Clad Loss #5 for NAPS. This is evaluated as Change No. 3.

NAPS/Surry Change #1:
The licensee' s proposed changes would raise the thresholds activity levels for NOUE for NAPS at Vent Stack A, Vent Stack B and Process vent, and for Surry at Vent #2 and Process Vent. The licensee has also proposed to eliminate the threshold activity levels for NAPS at main Steam (Steam Safety) and the Auxiliary Feed Water Pump Turbine (AFWPT) Exhaust and for Surry at the Steam safety. The affected portions of Table R-1, " Gaseous Effluent Monitor Classification Thresholds" are reproduced below to show both the existing and proposed thresholds.

Table R-1 Gaseous Effluent Monitor Classification Thresholds (NAPS – Existing and Proposed)

Release Point	Monitor	GE	SAE	Alert	NOUE (Existing)	NOUE (Proposed)
Vent Stack A	VG-RI-179-1 or 2	4.00E+08 µCi/sec	4.00E+07 µCi/sec	4.56E+06 µCi/sec	4.56E+04 µCi/sec	3.60E+05 µCi/sec
Vent Stack B	VG-RI-180-1 or 2	3.57E+08 µCi/sec	3.57E+07 µCi/sec	4.07E+06 µCi/sec	4.07E+04 µCi/sec	3.60E+05 µCi/sec
Process Vent	GW-RI-178-1 or 2	3.70E+08 µCi/sec	3.70E+07 µCi/sec	4.22E+06 µCi/sec	4.22E+04 µCi/sec	2.80E+05 µCi/sec
Main Steam (Steam Safety)(Note 8)	MS-RM-170 (270) MS-RM-171 (271) MS-RM-172 (272)	8.62E+02 mR/hr	8.62E+01 mR/hr	9.81E+00 mR/hr	9.81E-02 mR/hr	N/A
AFWPT Exhaust (Note 8)	MS-RM-176 (276)	2.84E+02 mR/hr	2.84E+01 mR/hr	3.24E+00 mR/hr	3.24E-01 mR/hr	N/A

Table R-1 Gaseous Effluent Monitor Classification Thresholds (Surry – Existing and Proposed)

Release Point	Monitor	GE	SAE	Alert	NOUE (Existing)	NOUE (Proposed)
Vent #2	1-VG-RI-131 B or C	8.00E+07 µCi/sec	8.00E+06 µCi/sec	9.12E+05 µCi/sec	9.12E+03 µCi/sec	5.67E+04 µCi/sec
Process Vent	1-GW-RI-130 B or C	2.74E+08 µCi/sec	2.74E+07 µCi/sec	3.12E+06 µCi/sec	3.12E+04 µCi/sec	3.68E+05 µCi/sec
Steam Safety (Note 7)	()MS-RM-()24, ()25, ()26	6.27E+02 mR/hr	6.27E+01 mR/hr	7.15E+00 mR/hr	7.15E-02 mR/hr	N/A
AFW Steam Exhaust (Note 7)	()MS-RM-()29	2.63E+01 mR/hr	2.63E+00 mR/hr	3.00E-01 mR/hr	N/A	N/A

The current NOUE thresholds are based on meeting 2 x Radiological Effluent Technical Specification limit (500 mrem) using expected meteorological dispersion. The proposed change would adjust that basis for these NOUE values to correspond to 2 x the allocated Offsite Dose Calculation Manual (ODCM) limit which is determined using annual average meteorological dispersion. The ODCM limit is applicable to total releases from the site at any point in time (i.e., "instantaneous release rate limit"). This limit is used to calculate the release rate (µCi/sec) for each release pathway which would yield 500 mrem in a year. An allocation factor is applied to each pathway to determine the allocated ODCM limit for that pathway. The allocation factor applied for

the Process Vent for NAPS is 10% or 0.1, and for Surry is 4% or 0.04, and Vent Stack A and Vent Stack B for NAPS, and Vent #2 for Surry is 100% or 1.0. The EAL values for the NOUE were calculated as 2 X the allocated ODCM limit for each gaseous pathway. This method follows the guidance from NEI 99-01 and provides a justifiable basis for increased NOUE thresholds based on established methods and setpoints provided in the facility ODCM.

The ODCM has no limits applicable to the steam safeties or auxiliary feedwater exhausts, therefore the NOUE classification thresholds for the steam safeties and auxiliary feedwater exhaust are being labeled N/A (not applicable). In addition, the current NOUE thresholds for the steam safeties and auxiliary feedwater exhaust are in the range of normal background radiation for these systems, and provide little value in protecting the public through early indications of escalating events.

The NRC staff finds this acceptable as the proposed increase in NOUE values for the vent stacks and the process vent will continue to classify events based on degradation in the level of safety of the plant and the new values will maintain a near linear escalation between all four classification levels (i.e., NOUE, Alert, Site Area Emergency (SAE) and General Emergency (GE)). The separation between each level is being maintained at approximately a factor of 10 or greater.

NAPS/Surry Change #2:
The licensee proposed to delete EAL RA2.4, " Valid Abnormal Radiation Readings > 2,000 mR/hr in Table R-2 Areas Requiring Infrequent Access to Maintain Plant Safety Functions, and the Associated Table R-2, Infrequent Access Areas. The licensee proposes that radiation control protocols will be implemented to control access to any area, where administrative exposure limits will be exceeded.

The NRC staff finds this acceptable as the proposed changes are based upon NRC approved developmental guidance and are bounded by EAL RU2.2, " Unplanned Valid Direct Area Radiation Monitor Reading Increase by a Factor of 1000 Over Normal Levels," and the Fission Barrier matrix criteria for EAL classification and determination. This allowed for the removal of this EAL as it is difficult to implement consistently throughout the various reactor designs licensed by the NRC, and is bounded by other indications that are more indicative of an out of control radiation exposure event.

NAPS Change #3:
Since the current EAL scheme for NAPS was approved in a SER dated February 4, 2008 (ADAMS Accession No. ML080310195), the RCS letdown monitoring system has been replaced. Because of the replacement of the letdown monitoring system, the EAL SU5.2 and Fission Barrier Matrix Criteria " Fuel Clad-Loss#5" need to be revised. The proposed revision accounts for the new system, new detector geometry, dose modeling, improved source term estimation, NAPS has proposed to change EAL SU5.2 is 2.2E+04 mR/hr to 1.5E+04 mR/hr. The proposed change to " Fuel Clad – Loss #5" is 1.1E+05 mR/hr to 7.5E+04 mR/hr.

The NRC staff reviewed the current UFSAR Chapter 11 for NAPS and proposed changes to EAL SU5.2 and Fuel Clad – Loss #5. Based on the review, the NRC staff confirmed that the requested revisions are consistent with the regulations and the new RCS letdown monitoring system implementation. Therefore the NRC staff finds this acceptable.

The NRC regrets any inconvenience this may have caused. The revisions are identified by lines in the margin.

Sincerely,

/RA/

Dr. V. Sreenivas, Project Manager
Plant Licensing Branch II-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-338, 50-339, 50-280, and 50-281

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SE pages 1, 3, and 4

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