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

March 3, 2010

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: NORTH ANNA POWER STATION, UNIT NOS. 1 AND 2, ISSUANCE OF AMENDMENTS TO ADOPT TSTF-490, REVISION 0, REGARDING DELETION OF E BAR DEFINITION AND REVISION TO REACTOR COOLANT SYSTEM SPECIFIC ACTIVITY USING THE CONSOLIDATED LINE ITEM IMPROVEMENT PROCESS (TAC NOS. ME0264 AND ME0265)

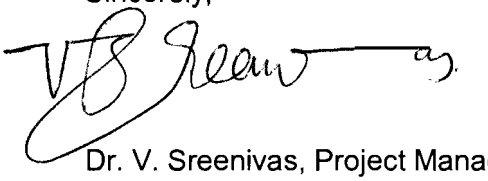
Dear Mr. Heacock:

The U.S. Nuclear Regulatory Commission has issued the enclosed Amendment Nos. 258 and 259 to Renewed Facility Operating License Nos. NPF-4 and NPF-7 for the North Anna Power Station, Unit Nos. 1 and 2. The amendments change the Technical Specifications (TSs) in response to your application dated December 17, 2008, as supplemented by letters dated January 26, May 26, and November 23, 2009.

These amendments revise the license and TSs to reflect changes in the adoption of Technical Specification Task Force (TSTF)-490, Revision 0, "Deletion of E Bar Definition and Revision to RCS Specific Activity Technical Specification," for pressurized water reactor Standard Technical Specifications (STS). By letter dated September 13, 2005, the TSTF submitted TSTF-490 for Nuclear Regulatory Commission review. This TSTF involves changes to NUREG-1430, NUREG-1431, and NUREG-1432 STS Section 3.4.16 regarding reactor coolant system gross specific activity with a new limit on noble gas specific activity. The noble gas specific activity limit would be based on a new dose equivalent Xe-133 (DEX) definition that replaces the current E-Bar average disintegration energy definition. In addition, the current dose equivalent I-131 definition is revised to allow the use of additional thyroid dose conversion factors.

A copy of the Safety Evaluation is also enclosed. The Notice of Issuance will be included in the Commission's biweekly *Federal Register* notice.

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 and 50-339

Enclosures:
1. Amendment No. 258 to NPF-4
2. Amendment No. 259 to NPF-7
3. Safety Evaluation

cc w/encls: Distribution via Listserv

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

VIRGINIA ELECTRIC AND POWER COMPANY

DOCKET NO. 50-338

NORTH ANNA POWER STATION, UNIT NO. 1

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 258
Renewed License No. NPF-4

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Virginia Electric and Power Company et al., (the licensee) dated December 17, 2008, as supplemented by letters dated January 26, May 26, and November 23, 2009, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to paragraph 2.C.(1) of Renewed Facility Operating License No. NPF-4, as indicated in the attachment to this license amendment, and is hereby amended to read as follows:

   (2) Technical Specifications

   The Technical Specifications contained in Appendix A, as revised through Amendment No. 258 , are hereby incorporated in the renewed license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of its date of issuance and shall be implemented within 60 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Gloria Kulesa, Chief
Plant Licensing Branch II-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes to License No. NPF-4
and the Technical Specifications

Date of Issuance: March 3, 2010

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

VIRGINIA ELECTRIC AND POWER COMPANY

DOCKET NO. 50-339

NORTH ANNA POWER STATION, UNIT NO. 2

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 259
Renewed License No. NPF-7

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Virginia Electric and Power Company et al., (the licensee) dated December 17, 2008, as supplemented by letters dated January 26, May 26, and November 23, 2009, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to paragraph 2.C.(1) of Renewed Facility Operating License No. NPF-7, as indicated in the attachment to this license amendment, and is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 259 , are hereby incorporated in the renewed license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of its date of issuance and shall be implemented within 60 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Gloria Kulesa, Chief
Plant Licensing Branch II-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes to License No. NPF-7
and the Technical Specifications

Date of Issuance: March 3, 2010

ATTACHMENT

TO LICENSE AMENDMENT NO. 258

RENEWED FACILITY OPERATING LICENSE NO. NPF-4

DOCKET NO. 50-338

AND

TO LICENSE AMENDMENT NO. 259

RENEWED FACILITY OPERATING LICENSE NO. NPF-7

DOCKET NO. 50-339

Replace the following pages of the Licenses and the Appendix "A" Technical Specifications (TSs) with the enclosed pages as indicated. The revised pages are identified by amendment number and contain vertical lines indicating the areas of change.

Remove Pages	Insert Pages
Licenses	Licenses
License No. NPF-4, page 3	License No. NPF-4, page 3
License No. NPF-7, page 3	License No. NPF-7, page 3
TSs	TSs
1.1-2	1.1-2
1.1-3	1.1-3
1.1-4	1.1-4
1.1-5	1.1-5
1.1-6	1.1-6
3.4.16-1	3.4.16-1
3.4.16-2	3.4.16-2
3.4.16-3	—

(2) Pursuant to the Act and 10 CFR Part 70, VEPCO to receive, possess, and use at any time special nuclear material as reactor fuel, in accordance with the limitations for storage and amounts required for reactor operation, as described in the Updated Final Safety Analysis Report;

(3) Pursuant to the Act and 10 CFR Parts 30, 40, and 70, VEPCO to receive, possess, and use at any time any byproduct, source, and special nuclear material as sealed neutron sources for reactor startup, sealed sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts as required;

(4) Pursuant to the Act and 10 CFR Parts 30, 40, and 70, VEPCO to receive, possess, and use in amounts as required any byproduct, source, or special nuclear material, without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or component; and

(5) Pursuant to the Act and 10 CFR Parts 30 and 70, VEPCO to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility.

C. This renewed operating license shall be deemed to contain and is subject to the conditions specified in the following Commission regulations in 10 CFR Chapter I: Part 20, Section 30.34 of Part 30, Section 40.41 of Part 40, Sections 50.54 and 50.59 of Part 50, and Section 70.32 of Part 70; is subject to all applicable provisions of the Act and to the rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:

(1) Maximum Power Level

VEPCO is authorized to operate the North Anna Power Station, Unit No. 1, at reactor core power levels not in excess of 2940 megawatts (thermal).

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 258 are hereby incorporated in the renewed license. The licensee shall operate the facility in accordance with the Technical Specifications.

(3) Pursuant to the Act and 10 CFR Parts 30, 40, and 70, VEPCO to receive, possess, and use at any time any byproduct, source, and special nuclear material as sealed neutron sources for reactor startup, sealed sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts as required;

(4) Pursuant to the Act and 10 CFR Parts 30, 40, and 70, VEPCO to receive, possess, and use in amounts as required any byproduct, source, or special nuclear material, without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components; and

(5) Pursuant to the Act and 10 CFR Parts 30, 40, and 70, VEPCO to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility.

C. This renewed license shall be deemed to contain and is subject to the conditions specified in the Commission's regulations as set forth in 10 CFR Chapter I and is subject to all applicable provisions of the Act and to the rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:

(1) Maximum Power Level

VEPCO is authorized to operate the facility at steady state reactor core power levels not in excess of 2940 megawatts (thermal).

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No.259are hereby incorporated in the renewed license. The licensee shall operate the facility in accordance with the Technical Specifications.

(3) Additional Conditions

The matters specified in the following conditions shall be completed to the satisfaction of the Commission within the stated time periods following the issuance of the condition or within the operational restrictions indicated. The removal of these conditions shall be made by an amendment to the renewed license supported by a favorable evaluation by the Commission:

a. If VEPCO plans to remove or to make significant changes in the normal operation of equipment that controls the amount of radioactivity in effluents from the North Anna Power Station, the

1.1 Definitions

CHANNEL CHECK	A CHANNEL CHECK shall be the qualitative assessment, by observation, of channel behavior during operation. This determination shall include, where possible, comparison of the channel indication and status to other indications or status derived from independent instrument channels measuring the same parameter.
CHANNEL OPERATIONAL TEST (COT)	A COT shall be the injection of a simulated or actual signal into the channel as close to the sensor as practicable to verify OPERABILITY of all devices in the channel required for channel OPERABILITY. The COT shall include adjustments, as necessary, of the required alarm, interlock, and trip setpoints required for channel OPERABILITY such that the setpoints are within the necessary range and accuracy. The COT may be performed by means of any series of sequential, overlapping, or total channel steps.
CORE ALTERATION	CORE ALTERATION shall be the movement of any fuel, sources, or reactivity control components, within the reactor vessel with the vessel head removed and fuel in the vessel. Suspension of CORE ALTERATIONS shall not preclude completion of movement of a component to a safe position.
CORE OPERATING LIMITS REPORT (COLR)	The COLR is the unit specific document that provides cycle specific parameter limits for the current reload cycle. These cycle specific parameter limits shall be determined for each reload cycle in accordance with Specification 5.6.5. Plant operation within these limits is addressed in individual Specifications.
DOSE EQUIVALENT I-131	DOSE EQUIVALENT I-131 shall be that concentration of I-131 (microcuries per gram) that alone would produce the same dose when inhaled as the combined activities of iodine isotopes I-131, I-132, I-133, I-134, and I-135 actually present. The determination of DOSE EQUIVALENT I-131 shall be performed using the thyroid dose conversion factors listed in Table III of TID-14844, AEC, 1962, "Calculation of Distance Factors for Power and Test Reactor Sites," or in Table E-7 of NRC Regulatory Guide 1.109, Revision 1, October 1977.

1.1 Definitions

DOSE EQUIVALENT XE-133	DOSE EQUIVALENT XE-133 shall be that concentration of Xe-133 (microcuries per gram) that alone would produce the same acute dose to the whole body as the combined activities of noble gas nuclides Kr-85m, Kr-85, Kr-87, Kr-88, Xe-131m, Xe-133m, Xe-133, Xe-135m, Xe-135, and Xe-138 actually present. If a specific noble gas nuclide is not detected, it should be assumed to be present at the minimum detectable activity. The determination of DOSE EQUIVALENT XE-133 shall be performed using effective dose conversion factors for air submersion listed in Table III.1 of EPA Federal Guidance Report No. 12, 1993, "External Exposure to Radionuclides in Air, Water, and Soil."
ENGINEERED SAFETY FEATURE (ESF) RESPONSE TIME	The ESF RESPONSE TIME shall be that time interval from when the monitored parameter exceeds its actuation setpoint at the channel sensor until the ESF equipment is capable of performing its safety function (i.e., the valves travel to their required positions, pump discharge pressures reach their required values, etc.). Times shall include diesel generator starting and sequence loading delays, where applicable. The response time may be measured by means of any series of sequential, overlapping, or total steps so that the entire response time is measured. In lieu of measurement, response time may be verified for selected components provided that the components and methodology for verification have been previously reviewed and approved by the NRC.
LEAKAGE	LEAKAGE shall be: a. <u>Identified LEAKAGE</u> 1. LEAKAGE, such as that from pump seals or valve packing (except reactor coolant pump (RCP) seal water injection or leakoff), that is captured and conducted to collection systems or a sump or collecting tank;

(continued)

1.1 Definitions

LEAKAGE (continued)	2. LEAKAGE into the containment atmosphere from sources that are both specifically located and known either not to interfere with the operation of leakage detection systems or not to be pressure boundary LEAKAGE; or 3. Reactor Coolant System (RCS) LEAKAGE through a steam generator to the Secondary System (primary to secondary LEAKAGE); b. Unidentified LEAKAGE All LEAKAGE (except RCP seal water injection or leakoff) that is not identified LEAKAGE; c. Pressure Boundary LEAKAGE LEAKAGE (except primary to secondary LEAKAGE) through a nonisolable fault in an RCS component body, pipe wall, or vessel wall.
MASTER RELAY TEST	A MASTER RELAY TEST shall consist of energizing all master relays in the channel required for channel OPERABILITY and verifying the OPERABILITY of each required master relay. The MASTER RELAY TEST shall include a continuity check of each associated required slave relay. The MASTER RELAY TEST may be performed by means of any series of sequential, overlapping, or total steps.
MODE	A MODE shall correspond to any one inclusive combination of core reactivity condition, power level, average reactor coolant temperature, and reactor vessel head closure bolt tensioning specified in Table 1.1-1 with fuel in the reactor vessel.
OPERABLE–OPERABILITY	A system, subsystem, train, component, or device shall be OPERABLE or have OPERABILITY when it is capable of performing its specified safety function(s) and when all necessary attendant instrumentation, controls, normal or emergency electrical power, cooling and seal water, lubrication, and other auxiliary equipment that are required for the system, subsystem, train,

(continued)

1.1 Definitions

OPERABLE–OPERABILITY (continued)	component, or device to perform its specified safety function(s) are also capable of performing their related support function(s).
PHYSICS TESTS	PHYSICS TESTS shall be those tests performed to measure the fundamental nuclear characteristics of the reactor core and related instrumentation. These tests are: a. Described in Chapter 14, Initial Tests and Operation, of the UFSAR; b. Authorized under the provisions of 10 CFR 50.59; or c. Otherwise approved by the Nuclear Regulatory Commission.
QUADRANT POWER TILT RATIO (QPTR)	QPTR shall be the ratio of the maximum upper excore detector calibrated output to the average of the upper excore detector calibrated outputs, or the ratio of the maximum lower excore detector calibrated output to the average of the lower excore detector calibrated outputs, whichever is greater.
RATED THERMAL POWER (RTP)	RTP shall be a total reactor core heat transfer rate to the reactor coolant of 2940 MWt.
REACTOR TRIP SYSTEM (RTS) RESPONSE TIME	The RTS RESPONSE TIME shall be that time interval from when the monitored parameter exceeds its RTS trip setpoint at the channel sensor until loss of stationary gripper coil voltage. The response time may be measured by means of any series of sequential, overlapping, or total steps so that the entire response time is measured. In lieu of measurement, response time may be verified for selected components provided that the components and methodology for verification have been previously reviewed and approved by the NRC.
SHUTDOWN MARGIN (SDM)	SDM shall be the instantaneous amount of reactivity by which the reactor is subcritical or would be subcritical from its present condition assuming:

(continued)

1.1 Definitions

SHUTDOWN MARGIN (SDM) (continued)	a. All rod cluster control assemblies (RCCAs) are fully inserted except for the single RCCA of highest reactivity worth, which is assumed to be fully withdrawn. With any RCCA not capable of being fully inserted, the reactivity worth of the RCCA must be accounted for in the determination of SDM; and b. In MODES 1 and 2, the fuel and moderator temperatures are changed to the nominal zero power design level.
SLAVE RELAY TEST	A SLAVE RELAY TEST shall consist of energizing all slave relays in the channel required for channel OPERABILITY and verifying the OPERABILITY of each required slave relay. The SLAVE RELAY TEST shall include a continuity check of associated required testable actuation devices. The SLAVE RELAY TEST may be performed by means of any series of sequential, overlapping, or total steps.
STAGGERED TEST BASIS	A STAGGERED TEST BASIS shall consist of the testing of one of the systems, subsystems, channels, or other designated components during the interval specified by the Surveillance Frequency, so that all systems, subsystems, channels, or other designated components are tested during *n* Surveillance Frequency intervals, where *n* is the total number of systems, subsystems, channels, or other designated components in the associated function.
THERMAL POWER	THERMAL POWER shall be the total reactor core heat transfer rate to the reactor coolant.
TRIP ACTUATING DEVICE OPERATIONAL TEST (TADOT)	A TADOT shall consist of operating the trip actuating device and verifying the OPERABILITY of all devices in the channel required for trip actuating device OPERABILITY. The TADOT shall include adjustment, as necessary, of the trip actuating device so that it actuates at the required setpoint within the necessary accuracy. The TADOT may be performed by means of any series of sequential, overlapping, or total channel steps.

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.16 RCS Specific Activity

LCO 3.4.16 RCS DOSE EQUIVALENT I-131 and DOSE EQUIVALENT XE-133 specific activity shall be within limits.

APPLICABILITY: MODES 1, 2, 3, and 4

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. DOSE EQUIVALENT I-131 not within limit.	----------NOTE---------- LCO 3.0.4.c is applicable. ----------	
	A.1 Verify DOSE EQUIVALENT I-131 $\leq$ 60 μCi/gm.	Once per 4 hours
	AND	
	A.2 Restore DOSE EQUIVALENT I-131 to within limit.	48 hours
B. DOSE EQUIVALENT XE-133 not within limit.	----------NOTE---------- LCO 3.0.4.c is applicable. ----------	
	B.1 Restore DOSE EQUIVALENT XE-133 to within limit.	48 hours
C. Required Action and associated Completion Time of Condition A or B not met. OR DOSE EQUIVALENT I-131 > 60 μCi/gm.	C.1 Be in MODE 3. AND C.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.16.1	Verify reactor coolant DOSE EQUIVALENT XE-133 specific activity ≤ 197 μCi/gm.	7 days
SR 3.4.16.2	Verify reactor coolant DOSE EQUIVALENT I-131 specific activity ≤ 1.0 μCi/gm.	14 days AND Between 2 and 6 hours after a THERMAL POWER change of ≥ 15% RTP within a 1 hour period

UNITED STATES
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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 258

TO RENEWED FACILITY OPERATING LICENSE NO. NPF-4

AND

AMENDMENT NO. 259

TO RENEWED FACILITY OPERATING LICENSE NO. NPF-7

VIRGINIA ELECTRIC AND POWER COMPANY

NORTH ANNA POWER STATION, UNIT NOS. 1 AND 2

DOCKET NOS. 50-338 AND 50-339

1.0 INTRODUCTION

By letter dated December 17, 2008 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML083530982), Virginia Electric and Power Company (the licensee) submitted a request for changes to the North Anna Power Station, Unit Nos. 1 and 2 (NAPS 1 and 2), Technical Specifications (TSs). The requested changes are the adoption of Technical Specification Task Force (TSTF)-490, Revision 0, "Deletion of E-Bar Definition and Revision to Reactor Coolant System (RCS) Specific Activity Technical Specification," to the pressurized water reactor (PWR) Standard Technical Specifications (STSs). Subsequently, the licensee's original license amendment request (LAR) was supplemented by letters dated January 26 (ADAMS Accession No. ML090260528), May 26 (ADAMS Accession No. ML091460589), and November 23, 2009 (ADAMS Accession No. ML093280238). The supplements dated January 26, May 26, and November 23, 2009, provided additional information that clarified the application, did not expand the scope of the application as originally noticed, and did not change the original proposed no significant hazards consideration determination.

By letter dated September 13, 2005 (ADAMS Accession No. ML052630462), the TSTF submitted TSTF-490 for Nuclear Regulatory Commission (NRC) staff review. The TSTF with proposed changes for incorporation into the STS as TSTF-490, Revision 0, was referenced in the *Federal Register* Notice (FRN) (71 FR 67170) of November 20, 2006, for public comments. By FRN (72 FR 12217) dated March 15, 2007 (ADAMS Accession No. ML070250176), the NRC published a "Notice of Availability Model Application Concerning Technical Specification Improvement Regarding Deletion of E Bar Definition and Revision to Reactor Coolant System Specific Activity Technical Specification Using the Consolidated Line Item Improvement Process." This TSTF involves changes to NUREG-1430, NUREG-1431, and NUREG-1432 STS Section 3.4.16

regarding RCS gross specific activity limits with the addition of a new limit for noble gas specific activity. The noble gas specific activity limit would be based on a new dose equivalent Xe-133 (DEX) definition that replaces the current E-Bar ($\bar{E}$) average disintegration energy definition. In addition, the current dose equivalent I-131 (DEI) definition would be revised to allow the use of additional thyroid dose conversion factors (DCFs).

2.0 REGULATORY EVALUATION

The NRC staff evaluated the impact of the proposed changes as they relate to the radiological consequences of affected design basis accidents (DBAs) that use the RCS inventory as the source term. The source term assumed in radiological analyses should be based on the activity associated with the projected fuel damage or the maximum RCS technical specifications (TS) values, whichever maximizes the radiological consequences. The limits on RCS specific activity ensure that the offsite doses are appropriately limited for accidents that are based on releases from the RCS with no significant amount of fuel damage.

The steam generator tube rupture (SGTR) accident and the main steam line break (MSLB) accident typically do not result in fuel damage and therefore the radiological consequence analyses are based on the release of primary coolant activity at maximum TS limits. For accidents that result in fuel damage, the additional dose contribution from the initial activity in the RCS is not normally evaluated and is considered to be insignificant in relation to the dose resulting from the release of fission products from the damaged fuel.

The licensee used the alternative source term (AST) in its dose consequence analyses. As a result, the NRC staff used the regulatory guidance provided in NUREG-0800, SRP Section 15.0.1, "Radiological Consequence Analyses Using Alternative Source Terms," Revision 0, July 2000, and the methodology and assumptions stated in Regulatory Guide (RG) 1.183, "Alternative Radiological Source Terms for Evaluating Design Basis Accidents at Nuclear Power Reactors," July 2000. Specifically, the off-site dose criteria are 25 rem total effective dose equivalent (TEDE) at the exclusion area boundary (EAB) for any 2-hour period following the onset of the postulated fission product release and 25 rem TEDE at the outer boundary of the low population zone (LPZ) for the duration of the postulated fission product release. In addition, 10 CFR Part 50.67(b)(2)(iii) requires that adequate radiation protection be provided to permit access and occupancy of the control room under accident conditions without personnel receiving radiation exposures in excess of 5 rem TEDE for the duration of the accident.

3.0 TECHNICAL EVALUATION

3.1 Technical Evaluation of TSTF-490 TS Changes

3.1.1 Revision to the definition of DEI

The list of acceptable DCFs for use in the determination of DEI include the following:

- Table III of TID-14844, AEC, 1962, "Calculation of Distance Factors for Power and Test Reactor Sites."
- Table E-7 of Regulatory Guide 1.109, Revision 1, NRC, 1977.
- ICRP 30, 1979, page 192-212, Table titled "Committed Dose Equivalent in Target Organs or Tissues per Intake of Unit Activity."

• Committed Dose Equivalent (CDE) or Committed Effective Dose Equivalent (CEDE) dose conversion factors from Table 2.1 of U.S. Environmental Protection Agency (EPA) Federal Guidance Report No. 11."
• Table 2.1 of EPA Federal Guidance Report No. 11, 1988, "Limiting Values of Radionuclide Intake and Air Concentration and Dose Conversion Factors for Inhalation, Submersion, and Ingestion."

NOTE: IT IS INCUMBENT ON THE LICENSEE TO ENSURE THAT THE DCFs USED IN THE DETERMINATION OF DEI ARE CONSISTENT WITH THE APPLICABLE DOSE CONSEQUENCE ANALYSES

The licensee is proposing to maintain their current dose conversion factors (DCFs) in the definition of dose equivalent I-131 (DEI). The current definition allows DEI to be calculated using either Technical Information Document (TID) -14844 or RG 1.109 DCFs. The licensee's current definition of DEI has been previously reviewed with their September 12, 2003, LAR for full-scope implementation of AST methodology (ML032670821), and approved by the NRC staff in Amendments 240/221, dated June 15, 2005 (ML051590510). Specifically, in Section 3.3, "TS Definition of Dose Equivalent I-131", the NRC staff wrote:

> The licensee has proposed changes to the TS definition of Dose Equivalent I-131 so that RG 1.109 DCFs can be used in the calculation of the coolant activity for TS surveillance. The purpose of calculating the DEI-131 is to help in determining the overall iodine concentration in the coolant for purposes of limiting the activity concentration. The use of RG 1.109 DCFs has been accepted in the past for other plants and is in the current standard Westinghouse TS. For consistency's sake, the NRC staff prefers the licensee use the same DCFs in the TS definition as are used in the licensee's DBA offsite and control room dose analyses (in this case, from FGR-11). However, since the licensee has shown that the DBA releases from coolant with a mix and concentration of isotopes based on the RG 1.109 DCFs are acceptable with respect to the dose criteria in 10 CFR 50.67 and the SRP 15.0.1 dose acceptance criteria, the staff has no technical objections and the proposed change in the TS definition of DOSE EQUIVALENT I-131 is acceptable.

Therefore, the licensee is consistent with their currently approved licensing bases for North Anna. In addition, the licensee also stated in their December 17, 2008, LAR submittal that:

> ...the use of either the RG 1.109 or TID-14844 dose conversion factors to perform the Technical Specification surveillance for dose equivalent I-131 will restrict plant operations to a lower total allowable iodine inventory in the RCS than would be attainable using FGR-11 dose conversion factors.

The NRC staff conducted a confirmatory analysis, using various sources of dose conversion factors and the RCS concentration values from the licensee's AST submittal. Analysis confirmed that for a given RCS concentration, use of the DCFs from either TID-14844 or RG 1.109 will yield a higher DEI value than would be attained using Federal Guidance Report 11 (FGR-11) DCFs. In addition, maintaining the DEI value to the TS limit of 1 μCi/gm will be conservative relative to the coolant concentrations used in the design basis dose consequence analyses for NAPS, 1 and 2. Hence, for a given RCS concentration, the use of either RG 1.109 DCFs or TID-14844 DCFs for

the calculation of DEI will result in a more restrictive operational limit on RCS activity, when compared to the DEI as calculated using DCFs from FGR-11.

3.1.2 Deletion of the Definition of E-Bar and the Addition of a New Definition for DE Xe-133

The new definition for dose equivalent Xe-133 (DEX) is similar to the definition for DEI. The determination of DEX will be performed in a similar manner to that currently used in determining DEI, except that the calculation of DEX is based on the acute dose to the whole body and considers the noble gases (Kr-85m, Kr-85, Kr-87, Kr-88, Xe-131m, Xe-133m, Xe-133, Xe-135m, Xe-135, and Xe-138) which are significant in terms of contribution to whole body dose. Some noble gas isotopes are not included due to low concentration, short half life, or small dose conversion factor. The calculation of DEX will use the effective dose conversion factors from Table III.1 of EPA Federal Guidance Report No. 12 (FGR-12). Using this approach, the limit on the amount of noble gas activity in the primary coolant would not fluctuate with variations in the calculated values of E-Bar. If a specified noble gas nuclide is not detected, the new definition states that it should be assumed the nuclide is present at the minimum detectable activity. This will result in a conservative calculation of DEX.

When E-Bar is determined using a design basis approach in which it is assumed that 1.0% of the power is being generated by fuel rods having cladding defects and it is also assumed that there is no removal of fission gases from the letdown flow, the value of E-Bar is dominated by Xe-133. The other nuclides have relatively small contributions. However, during normal plant operation there are typically only a small amount of fuel clad defects and the radioactive nuclide inventory can become dominated by tritium and corrosion and/or activation products, resulting in the determination of a value of E-Bar that is very different than would be calculated using the design basis approach. Because of this difference, the accident dose analyses become disconnected from plant operation and the limiting condition for operation (LCO) becomes essentially meaningless. It also results in a TS limit that can vary during operation as different values for E-Bar are determined.

This change will implement a LCO that is consistent with the whole body radiological consequence analyses. The current surveillance requirement (SR) 3.4.16.1 for LCO 3.4.16 specifies the limit for primary coolant gross specific activity as 100/E-Bar μCi/gm. The current E-Bar definition includes radioisotopes that decay by the emission of both gamma and beta radiation. The current Condition B of LCO 3.4.16 would rarely, if ever, be entered for exceeding 100/E-Bar μCi/gm since the calculated value is very high (the denominator is very low) because if beta emitters such as tritium (H-3) are included in the determination, as required by the E-Bar definition.

The LAR proposed that TS Section 1.1 definition for E - AVERAGE DISINTEGRATION ENERGY (E-Bar) is deleted and replaced with a new definition for DEX which states:

> DOSE EQUIVALENT XE-133 shall be that concentration of Xe-133 (microcuries per gram) that alone would produce the same acute dose to the whole body as the combined activities of noble gas nuclides Kr-85m, Kr-85, Kr-87, Kr-88, Xe-131m, Xe-133m, Xe-133, Xe-135m, Xe-135, and Xe-138 actually present. If a specific noble gas nuclide is not detected, it should be assumed to be present at the minimum detectable activity. The determination of DOSE EQUIVALENT XE-133 shall be performed using effective dose conversion factors for air submersion listed in Table III.1 of EPA Federal

> Guidance Report No. 12, 1993, "External Exposure to Radionuclides in Air, Water, and Soil".
>
> NOTE: IT IS INCUMBENT ON THE LICENSEE TO ENSURE THAT THE DCFs USED IN THE DETERMINATION OF DEI AND THE NEWLY DEFINED DEX ARE CONSISTENT WITH THE DCFs USED IN THE APPLICABLE DOSE CONSEQUENCE ANALYSIS.

The change incorporating the newly defined quantity DEX is acceptable from a radiological dose perspective since it will result in an LCO that more closely relates the non-iodine RCS activity limits to the dose consequence analyses which form their bases. The licensee has proposed to use the TSTF-490 recommended DCFs of FGR-12 for the calculation of DEX values. The NRC staff verified that use of FGR-12 DCFs yields a higher DEX value than would be attained using RG 1.109 DCFs. The staff also confirmed that the licensee's proposed value of 197 µCi/gm DEI, accurately reflects the mix of nuclides used in the dose consequence analysis.

3.1.3 LCO 3.4.16, "RCS Specific Activity"

LCO 3.4.16 is modified to specify that iodine specific activity in terms of DEI and noble gas specific activity in terms of DEX shall be within limits. Currently, the limiting indicators are not explicitly identified in the LCO, but are instead defined in current Condition B and SR 3.4.16.1 for gross non-iodine specific activity and in current Condition A and SR 3.4.16.2 for iodine specific activity. The change states, "RCS DOSE EQUIVALENT I-131 and DOSE EQUIVALENT XE-133 specific activity shall be within limits."

> NOTE: IT IS INCUMBENT ON THE LICENSEE TO ENSURE THAT THE SITE-SPECIFIC LIMITS FOR BOTH DEI AND DEX ARE CONSISTENT WITH THE CURRENT SGTR AND MSLB RADIOLOGICAL CONSEQUENCE ANALYSES.

3.1.4 LCO 3.4.16 APPLICABILITY

The applicability requirement of LCO 3.4.16 is modified to be applicable in operation MODES 1, 2, 3, and 4 for NAPS 1 and 2. Currently, Surveillance Requirements (SRs) 3.4.16.1 and 3.4.16.2 do not require the SR to be performed in MODES 2, 3, and 4. However, these SRs are still required to be met during all MODES of Applicability (MODES 1, 2, 3, and 4) in accordance with SR 3.0.1, which states:

> SRs shall be met during the MODES or other specified conditions in the Applicability for individual LCOs, unless otherwise stated in the SR. Failure to meet Surveillance, whether such failure is experience during the performance of the Surveillance or between performances of the Surveillance, shall be failure to meet the LCO. Failure to perform Surveillance within the specified Frequency shall be failure to meet the LCO except as provided in SR 3.0.3.

Therefore, as stated in North Anna's response to Request for Additional Information (RAI) dated November 23, 2009, at any time during MODES 1 through 4, "if there is information or plant indication that SR 3.4.16.1 or SR 3.4.16.2 may not be met, they are required to be performed to ensure there is not a failure to meet the LCO." Hence, the surveillance will be required to be performed during all MODES of Applicability (MODES 1, 2, 3, and 4), which will ensure that the

potential consequences of a steam line break or steam generator tube rupture are bounded by the approved accident analysis, from which the LCO limits are derived.

3.1.5 TS 3.4.16 Condition A

TS 3.4.16 Condition A is revised by replacing the DEI site-specific limit "> 1.0 µCi/gm" with the words "not within limit" to be consistent with the revised TS 3.4.16 LCO format. The site-specific DEI limit of ≤ 1.0 µCi/gm is contained in SR 3.4.16.2. This proposed format change will not alter current North Anna STS requirements and is acceptable from a radiological dose perspective.

TS 3.4.16 Required Action A.1 is revised to remove the reference to Figure 3.4.16-1 "Reactor Coolant DOSE EQUIVALENT I-131 Specific Activity Limit versus Percent of RATED THERMAL POWER" and insert a limit of less than or equal to the site-specific DEI spiking limit of 60 µCi/gm. The curve contained in Figure 3.4.16-1 was provided by the Atomic Energy Commission (AEC) in a June 12, 1974, letter from the AEC on the subject, "Proposed Standard Technical Specifications for Primary Coolant Activity." Radiological dose consequence analyses for SGTR and MSLB accidents that take into account the pre-accident iodine spike do not consider the elevated RCS iodine specific activities permitted by Figure 3.4.16-1 for operation at power levels below 80% RATED THERMAL POWER (RTP). Instead, the pre-accident iodine spike analyses assume a DEI concentration 60 times higher than the corresponding long-term equilibrium value, which corresponds to the specific activity limit associated with 100% RTP operation. It is acceptable that TS 3.4.16 Required Action A.1 should be based on the short-term site-specific DEI spiking limit to be consistent with the assumptions contained in the radiological consequence analyses.

3.1.6 TS 3.4.16 Condition B Revision to include Action for DEX Limit

TS 3.4.16 Condition B is replaced with a new Condition B for DEX not within limits. This change is made to be consistent with the change to the TS 3.4.16 LCO which requires the DEX specific activity to be within limits as discussed above in Section 3.1.3. The DEX limit is site-specific and the numerical value in units of µCi/gm is contained in revised SR 3.4.16.1. The site-specific limit of DEX in µCi/gm is established based on the maximum accident analysis RCS activity corresponding to 1% fuel clad defects with sufficient margin to accommodate the exclusion of those isotopes based on low concentration, short half life, or small dose conversion factors. The primary purpose of the TS 3.4.16 LCO on RCS specific activity and its associated Conditions is to support the dose analyses for DBAs. The whole body dose is primarily dependent on the noble gas activity, not the non-gaseous activity currently captured in the E-Bar definition.

The Completion Time for revised TS 3.4.16 Required Action B.1 will require restoration of DEX to within limit in 48 hours. This is consistent with the Completion Time for current Required Action A.2 for DEI. The radiological consequences for the SGTR and the MSLB accidents demonstrate that the calculated thyroid doses are generally a greater percentage of the applicable acceptance criteria than the calculated whole body doses. It then follows that the Completion Time for noble gas activity being out of specification in the revised Required Action B.1 should be at least as great as the Completion Time for iodine specific activity being out of specification in current Required Action A.2. Therefore the Completion Time of 48 hours for revised Required Action B.1 is acceptable from a radiological dose perspective. A NOTE is also added to the revised Required Action B.1 that states LCO 3.0.4.c is applicable. This NOTE would allow entry into a MODE or other specified condition in the LCO Applicability when LCO 3.4.16 is not being met and is the same NOTE that is currently stated for Required Actions A.1 and A.2. The proposed NOTE would

allow entry into the applicable MODES from MODE 4 to MODE 1 (power operation) while the DEX limit is exceeded and the DEX is being restored to within its limit. This MODE change is acceptable due to the significant conservatism incorporated into the DEX specific activity limit, the low probability of an event occurring which is limiting due to exceeding the DEX specific activity limit, and the ability to restore transient specific excursions while the plant remains at, or proceeds to power operation.

3.1.7 TS 3.4.16 Condition C

TS 3.4.16 Condition C is revised to include Condition B (DEX not within limit) if the Required Action and associated Completion Time of Condition B is not met. This is consistent with the changes made to Condition B which now provide the same completion time for both components of RCS specific activity as discussed in the revision to Condition B. The revision to Condition C also replaces the limit on DEI from the deleted Figure 3.4.16-1, with a site-specific value of > 60 µCi/gm. This change makes Condition C consistent with the changes made to TS 3.4.16 Required Action A.1.

The change to TS 3.4.16 Required Action C.1 requires the plant to be in MODE 3 within 6 hours and adds a new Required Action C.2 which requires the plant to be in MODE 5 within 36 hours. These changes are consistent with the changes made to the TS 3.4.16 Applicability. The revised LCO is applicable throughout all of MODES 1 through 4 to limit the potential radiological consequences of an SGTR or MSLB that may occur during these MODES. In MODE 5 with the RCS loops filled, the steam generators are specified as a backup means of decay heat removal via natural circulation. In this mode, however, due to the reduced temperature of the RCS, the probability of a DBA involving the release of significant quantities of RCS inventory is greatly reduced. Therefore, monitoring of RCS specific activity is not required. In MODE 5 with the RCS loops not filled and MODE 6, the steam generators are not used for decay heat removal, the RCS and steam generators are depressurized, and primary to secondary leakage is minimal. Therefore, the monitoring of RCS specific activity is not required.

A new TS 3.4.16 Required Action C.2 Completion Time of 36 hours is added for the plant to reach MODE 5. This Completion Time is reasonable, based on operating experience, to reach MODE 5 from full power conditions in an orderly manner and without challenging plant systems and the value of 36 hours is consistent with other TS which have a Completion Time to reach MODE 5.

3.1.8 SR 3.4.16.1 DEX Surveillance

The change replaces the current SR 3.4.16.1 surveillance for RCS gross specific activity with a surveillance to verify that the site-specific reactor coolant DEX specific activity is ≤197 µCi/gm. This change provides surveillance for the new LCO limit added to TS 3.4.16 for DEX. The revised SR 3.4.16.1 surveillance requires performing a gamma isotopic analysis as a measure of the noble gas specific activity of the reactor coolant at least once every 7 days, which is the same frequency required under the current SR 3.4.16.1 surveillance for RCS gross non-iodine specific activity. This measurement is the sum of the degassed gamma activities and the gaseous gamma activities in the sample taken. The surveillance provides an indication of any increase in the noble gas specific activity.

The previous surveillance required the licensee to verify reactor primary coolant gross specific activity to ≤100/$\bar{E}$ µCi/gm. In the proposed LAR, the licensee is deleting the definition and

reference to $\bar{E}$, the average disintegration energy, and adding a limit for primary coolant noble gas activity based on DOSE EQUIVALENT XE-133, and would take into account only the noble gas activity in the primary coolant. The change states, "Verify reactor coolant DOSE EQUIVALENT XE-133 specific activity ≤ 197 µCi/gm." The results of the surveillance on DEX allow proper remedial action to be taken before reaching the LCO limit under normal operating conditions.

SR 3.4.16.1 is modified by inclusion of a NOTE which permits the use of the provisions of LCO 3.0.4.c. This allowance permits entry into the applicable MODE(S) while relying on the ACTIONS. This allowance is acceptable due to the significant conservatism incorporated into the specific activity limit, the low probability of an event which is limiting due to exceeding this limit, and the ability to restore transient specific activity excursions while the plant remains at, or proceeds to power operation. This allows entry into MODE 4, MODE 3, and MODE 2 prior to performing the surveillance. This allows the surveillance to be performed in any of those MODES, prior to entering MODE 1, similar to the current surveillance SR 3.4.16.2 for DEI.

3.1.9 SR 3.4.16.2 DEI Surveillance

As described in Section 3.1.4 above, and in accordance with SR 3.0.1, the APPLICABILITY requirement of LCO 3.4.16 is applicable in operation MODES 1, 2, 3, and 4 for North Anna Power Station Units 1 and 2. Currently, a NOTE exists in SR 3.4.16.2 which reads, "Only required to be performed in MODE 1." This NOTE is not in accordance with SR 3.0.1, and is subsequently being deleted from the DEI Surveillance of SR 3.4.16.2. Hence, the DEI Surveillance is required to be met during all MODES of Applicability (MODES 1, 2, 3, and 4).

3.1.10 Consistency of Site-Specific Limits and DCFs for DEX and DEI Surveillances

The licensee analyzed the consistency of their proposed, current, and/or revised definitions for both DEX and DEI, and their limits, and the DCFs used for the determination of DEI and DEX surveillances. The NRC staff verified, that the site-specific limits for both DEI and DEX, the DCFs, and the RCS radioisotopic concentrations, are consistent with the current design basis dose analyses (SGTR and MSLB) of NAPS 1 and 2. Although NAPS 1 and 2 are licensed to 10 CFR 50.67, the station is maintaining the current conversion factors in the definition of dose equivalent I-131 (DEI). The current definition of dose equivalent I-131 allows DEI to be calculated using either TID-14844 or RG 1.109 dose conversion factors (DCFs) and is based upon information presented in their LAR application to incorporate full-scope implementation of alternative source term (AST) methodology dated September 12, 2003 (ML032670821), as supplemented by response to requests of additional information dated May 7, 2004 (ML041310247), and approved in Amendments 240/241, dated June 15, 2005 (ML051590510 / ML051470347).

The acceptability for the pre-accident and concurrent iodine spike source terms to be based on RG 1.109 DCFs, and the doses to be calculated using Federal Guidance Report No. 11 (FGR-11), was also submitted and approved in the precedent documents stated above. In addition, RG 1.183 requires that the pre-accident and concurrent iodine spikes used in DBAs be based on the maximum value permitted by the TSs, which is 60 µCi/gm for NAPS 1 and 2. The NAPS 1 and 2, MSLB and SGTR accidents are analyzed using the maximum reactor coolant system activity. Dose conversion factors from FGR-11 are used to calculate the TEDE consequences described using the guidance from RG 1.183, while the 1 µCi/gm DEI inventory is calculated using RG 1.109 dose conversion factors. RG 1.109 DCFs result in a lower total allowable iodine inventory in the RCS than would be attainable using FGR-11 DCFs. As discussed above, the licensee's use of

DCFs from either RG 1.109 or TID-14844 to perform the TS surveillance for DEI, was approved by NRC staff in Amendments 240 and 241. The station DEI surveillance uses TID-14844 DCFs and the definition of DEI allows the flexibility, approved in Amendments 240/241, to upgrade to RG 1.109 DCFs.

The DCFs used to determine dose from noble gases and the calculation of dose equivalent Xe-133 (DEX) are from Federal Guidance Report No. 12 (FGR-12). DEX is that concentration of Xe-133 (microcuries per gram) that alone would produce the same acute dose to the whole body as the combined activities of noble gas nuclides Kr-8Sm, Kr-85, Kr-87, Kr-88, Xe-131m, Xe-133m, Xe-133, Xe-135m, Xe-135, and Xe-138 actually present. If a specific noble gas nuclide is not detected, it will be assumed to be present at the minimum detectable activity. Thus, Xe-131m is not present in the current design basis accident analysis source term. Its exclusion in the calculation of DEX is conservative since the limit will be lower and the actual surveillance will include either the actual concentration detected or the minimum detectable activity.

The NRC staff evaluated the licensee's response to RAIs regarding the RCS concentrations for noble gas isotopes, the calculation of the site-specific limits on DEI and DEX, and how NAPS Units 1 and 2 is maintaining consistency in regard to its current AST analyses. In its analyses, the licensee used primary coolant concentration values equivalent to the more limiting LCO of 1 µCi/gm DEI. The NRC staff confirmed that these values were equivalent to the indicated radionuclide's primary coolant concentration from Column B, of Table 3.3.1, "Primary Coolant and Secondary Side Liquid Nuclide Inventories for 1% Failed Fuel," from the licensee's AST submittal. The licensee's calculations yield a concentration value that is conservatively below the TS limit of 1 µCi/gm DEI, and the DEX limit of 197 µCi/gm was verified by NRC staff.

3.1.11 SR 3.4.16.3 Deletion

The current SR 3.4.16.3 which required the determination of E-Bar is deleted. TS 3.4.16 LCO on RCS specific activity supports the dose analyses for DBAs, in which the whole body dose is primarily dependent on the noble gas concentration, not the non-gaseous activity currently captured in the E-Bar definition. With the elimination of the limit for RCS gross specific activity and the addition of the new LCO limit for noble gas specific activity, this SR to determine E-Bar is no longer required.

3.2 Precedent

The TSs developed for the Westinghouse AP600 and AP1000 advanced reactor designs incorporate an LCO for RCS DEX activity in place of the LCO on non-iodine gross specific activity based on E-Bar. This approach was approved by the NRC staff for the AP600 in NUREG-1512, "Final Safety Evaluation Report Related to the Certification of the AP600 Standard Design, Docket No. 52-003," dated August 1998 and for the AP1000 in the NRC letter to Westinghouse Electric Company dated September 13, 2004. In addition, the curve describing the maximum allowable iodine concentration during the 48-hour period of elevated activity as a function of power level was not included in the TS approved for the AP600 and API000 advanced reactor designs.

The staff has reviewed the licensee's proposed changes in accordance with TSTF-490 to revise the definition of DEI, delete the definition of E-bar, add a new definition for DEX, revise TS 3.4.16 to specify an LCO limit on both DEI, add a new LCO limit to TS 3.4.16 for DEX, and revise the TS 3.4.16 Conditions and Required Actions accordingly. In addition, the staff has reviewed the

change in the Applicability of LCO 3.4.16 to reflect the MODES during which the SGTR and MSLB accidents could be postulated to occur, the revision of SR 3.4.16.1 to verify DEX is within the prescribed limit, the revision of SR 3.4.16.2 to delete the existing NOTE, the consistency of site-specific limits and DCFs for DEI and DEX surveillances, and the deletion of SR 3.4.16.3.

As described above, the staff reviewed the licensee's assumptions, inputs, and methods to assess the impact of the proposed changes to the RCS TS. As a result, the licensee will continue to meet the applicable dose acceptance criteria, as identified in Section 2.0 of this evaluation, following implementation of these changes. The proposed changes will not impact the dose consequences of the applicable DBAs because the proposed changes will limit the RCS noble gas specific activity to ensure consistency with the values assumed in the site-specific DBA radiological consequence analyses. The changes will also limit the potential RCS iodine concentration excursion to the value currently associated with full power operation, which is more restrictive on plant operation than the existing allowable RCS iodine-specific activity at lower power levels.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Virginia State official was notified of the proposed issuance of the amendments. The State official had no comments.

5.0 ENVIRONMENTAL CONSIDERATION

The amendments change requirements with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and change surveillance requirements. The NRC staff has determined that the amendments involve no significant increase in the amounts and no significant change in the types of any effluents that may be released offsite and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendments involve no significant hazards consideration, and there has been no public comment on such finding (74 FR 6669). The amendments also relate to changes in recordkeeping, reporting or administrative procedures or requirements. Accordingly, the amendments meet the eligibility criteria for categorical exclusions set forth in 10 CFR 51.22(c)(9) and (c)(10). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendments.

6.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendments will not be inimical to the common defense and security or to the health and safety of the public.

Principle Contributor: LaRay J. Benton, NRR/DRA/AADB

Date: March 3, 2010

A copy of the Safety Evaluation is also enclosed. The Notice of Issuance will be included in the Commission's biweekly *Federal Register* notice.

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 and 50-339

Enclosures:
1. Amendment No. 258 to NPF-4
2. Amendment No. 259 to NPF-7
3. Safety Evaluation

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