July 14, 2008

Mr. Larry Meyer
Site Vice President
FPL Energy Point Beach, LLC
6610 Nuclear Road
Two Rivers, WI 54241

SUBJECT: POINT BEACH NUCLEAR PLANT, UNITS 1 AND 2 - ISSUANCE OF AMENDMENTS RE: DELETION OF E BAR DEFINITION AND REVISION OF REACTOR COOLANT SYSTEM SPECIFIC ACTIVITY (TAC NOS. MD8423 AND MD8424)

Dear Mr. Meyer:

The U.S. Nuclear Regulatory Commission has issued the enclosed Amendment No. 233 to Renewed Facility Operating License No. DPR-24 and Amendment No. 238 to Renewed Facility Operating License No. DPR-27 for the Point Beach Nuclear Plant, Units 1 and 2, respectively. The amendments consist of changes to the Technical Specifications (TSs) in response to your application dated March 31, 2008.

These amendments to the TS delete the definition of E Bar and replace the current limits on reactor coolant system (RCS) gross specific activity with a new limit on RCS noble gas activity. The noble gas activity is now based on DOSE EQUIVALENT Xe-133 definition and replaces the E Bar definition. The changes are consistent with Nuclear Regulatory Commission-approved Industry/Technical Specification Task Force (TSTF) Standard Technical Specification Change Traveler, TSTF-490, Revision 0.

A copy of our related safety evaluation is also enclosed. The Notice of Issuance will be included in the Commission's biweekly Federal Register notice.

Sincerely,

Peter S. Tam for /RA/

Jack Cushing, Senior Project Manager
Plant Licensing Branch III-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-266 and 50-301

Enclosures:
1. Amendment No. 233 to DPR-24
2. Amendment No. 238 to DPR-27
3. Safety Evaluation

cc w/encls: See next page

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ADAMS Package Accession No.: ML081690532 Amendment ML080950341
TS pages Accession No.: ML081690486

OFFICE	NRR/LPL3-1/PM	NRR/LPL3-1/LA	DIRS/ITSB	DRA/AADR	OGC	NRR/LPL3-1/BC
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July 2008

FPL ENERGY POINT BEACH, LLC

DOCKET NO. 50-266

POINT BEACH NUCLEAR PLANT, UNIT 1

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 233
License No. DPR-24

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

   A. The application for amendment by FPL Energy Point Beach, LLC (the licensee), dated March 31, 2008, 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 the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 4.B of Renewed Facility Operating License No. DPR-24 is hereby amended to read as follows:

   B. Technical Specifications

   The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 233, are hereby incorporated in the renewed operating license. FPLE Point Beach shall operate the facility in accordance with Technical Specifications.

3. This license amendment is effective as of the date of issuance and shall be implemented within 30 days of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

Lois M. James, Chief
Plant Licensing Branch III-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical Specifications
and Facility Operating License

Date of issuance: July 14, 2008

FPL ENERGY POINT BEACH, LLC

DOCKET NO. 50-301

POINT BEACH NUCLEAR PLANT, UNIT 2

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 238
License No. DPR-27

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

   A. The application for amendment by FPL Energy Point Beach, LLC (the licensee), dated March 31, 2008, 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 the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 4.B of Renewed Facility Operating License No. DPR-27 is hereby amended to read as follows:

   B. Technical Specifications

   The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 238, are hereby incorporated in the renewed operating license. FPLE Point Beach shall operate the facility in accordance with Technical Specifications.

3. This license amendment is effective as of the date of issuance and shall be implemented within 30 days of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

Lois M. James, Chief
Plant Licensing Branch III-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical Specifications
and Facility Operating License

Date of issuance: July 14, 2008

ATTACHMENT TO LICENSE AMENDMENT NO. 233

TO RENEWED FACILITY OPERATING LICENSE NO. DPR-24

AND LICENSE AMENDMENT NO. 238

TO RENEWED FACILITY OPERATING LICENSE NO. DPR-27

DOCKET NOS. 50-266 AND 50-301

Replace the following pages of the Facility Operating Licenses and Appendix A Technical Specifications with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

REMOVE	INSERT
Unit 1 License Page 3	Unit 1 License Page 3
Unit 2 License Page 3	Unit 2 License Page 3
Units 1 and 2 Page 1.1-2	Units 1 and 2 Page 1.1-2
Units 1 and 2 Page 3.4.16-1	Units 1 and 2 Page 3.4.16-1
Units 1 and 2 Page 3.4.16-2	Units 1 and 2 Page 3.4.16-2
Units 1 and 2 Page 3.4.16-3	------
Units 1 and 2 Page 3.4.16-4	-----

D. Pursuant to the Act and 10 CFR Parts 30, 40 and 70, FPLE Point Beach 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

E. Pursuant to the Act and 10 CFR Parts 30 and 70, FPLE Point Beach to possess such byproduct and special nuclear materials as may be produced by the operation of the facility, but not to separate such materials retained within the fuel cladding.

4. This renewed operating license shall be deemed to contain and is subject to the conditions specified in the following Commission regulations: 10 CFR Part 20, Section 30.34 of 10 CFR Part 30, Section 40.41 of 10 CFR Part 40, Sections 50.54 and 50.59 of 10 CFR Part 50, and Section 70.32 of 10 CFR Part 70; 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 below:

A. Maximum Power Levels

FPLE Point Beach is authorized to operate the facility at reactor core power levels not in excess of 1540 megawatts thermal.

B. Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 233, are hereby incorporated in the renewed operating license. FPLE Point Beach shall operate the facility in accordance with Technical Specifications.

C. Spent Fuel Pool Modification

The licensee is authorized to modify the spent fuel storage pool to increase its storage capacity from 351 to 1502 assemblies as described in licensee's application dated March 21, 1978, as supplemented and amended. In the event that the on-site verification check for poison material in the poison assemblies discloses any missing boron plates, the NRC shall be notified and an on-site test on every poison assembly shall be performed.

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

D. Pursuant to the Act and 10 CFR Parts 30, 40 and 70, FPLE Point Beach 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

E. Pursuant to the Act and 10 CFR Parts 30 and 70, FPLE Point Beach to possess such byproduct and special nuclear materials as may be produced by the operation of the facility, but not to separate such materials retained within the fuel cladding.

4. This renewed operating license shall be deemed to contain and is subject to the conditions specified in the following Commission regulations: 10 CFR Part 20, Section 30.34 of 10 CFR Part 30, Section 40.41 of 10 CFR Part 40, Sections 50.54 and 50.59 of 10 CFR Part 50, and Section 70.32 of 10 CFR Part 70; 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 below:

A. Maximum Power Levels

FPLE Point Beach is authorized to operate the facility at reactor core power levels not in excess of 1540 megawatts thermal.

B. Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 238 are hereby incorporated in the renewed operating license. FPLE Point Beach shall operate the facility in accordance with Technical Specifications.

C. Spent Fuel Pool Modification

The licensee is authorized to modify the spent fuel storage pool to increase its storage capacity from 351 to 1502 assemblies as described in licensee's application dated March 21, 1978, as supplemented and amended. In the event that the on-site verification check for poison material in the poison assemblies discloses any missing boron plates, the NRC shall be notified and an on-site test on every poison assembly shall be performed.

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 233 TO RENEWED FACILITY

OPERATING LICENSE NO. DPR-24

AND AMENDMENT NO. 238 TO RENEWED FACILITY

OPERATING LICENSE NO. DPR-27

FPL ENERGY POINT BEACH, LLC

POINT BEACH NUCLEAR PLANT, UNITS 1 AND 2

DOCKET NOS. 50-266 AND 50-301

1.0 INTRODUCTION

By application to the U.S. Nuclear Regulatory Commission (NRC, Commission) dated March 31, 2008, Agencywide Documents Access and Management System (ADAMS) Accession No. ML080930073, FPL Energy Point Beach, LLC (the licensee), requested changes to the Technical Specifications (TSs) for the Point Beach Nuclear Plant (PBNP), Units 1 and 2.

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 Specific Activity Technical Specification" for pressurized-water reactor (PWR) Standard Technical Specifications (STS). By letter dated September 13, 2005, the TSTF submitted TSTF-490 for NRC staff review. This TSTF involves changes to NUREG-1430, NUREG-1431, and NUREG-1432 STS Section 3.4.16 reactor coolant system (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 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

Section 182(a) of the Atomic Energy Act (the "Act") requires applicants for nuclear power plant operating licenses to include TS as part of the license. The TS ensure the operational capability of structures, systems and components that are required to protect the health and safety of the public. The Commission's regulatory requirements related to the content of the TS are contained in 10 CFR Section 50.36. That regulation requires that the TS include items in the following specific categories: (1) Safety limits, limiting safety systems settings, and limiting control settings; (2) Limiting conditions for operation (LCO); (3) Surveillance requirements (SR); (4) Design features; and (5) Administrative controls. The proposed changes to the TS definition and TS 3.4.16 are within the second and third categories.

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 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 Steamline 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.

For licensees, such as FPL Energy Point Beach, that incorporate the source term as defined in Technical Information Document (TID) 14844, AEC, 1962, “Calculation of Distance Factors for Power and Test Reactors Sites,” in their dose consequence analyses, the NRC staff uses the regulatory guidance provided in NUREG-0800, “Standard Review Plan (SRP) for the Review of Safety Analysis Reports for Nuclear Power Plants,” Section 15.1.5, "Steam System Piping Failures Inside and Outside of Containment (PWR)," Appendix A, "Radiological Consequences of Main Steamline Failures Outside Containment," Revision 2, for the evaluation of MSLB accident analyses and NUREG-0800, SRP Section 15.6.3, "Radiological Consequences of Steam Generator Tube Failure (PWR)," Revision 2, for evaluating SGTR accidents analyses. In addition, the NRC staff uses the guidance from Regulatory Guide (RG) 1.195, “Methods and Assumptions for Evaluating Radiological Consequences of Design Basis Accidents at Light Water Nuclear Power Reactors,” May 2003, for those licensees that chose to use its guidance for dose consequence analyses using the TID 14844 source term.

For licensees using the TID 14844 source term, the maximum dose criteria to the whole body and the thyroid that an individual at the exclusion area boundary (EAB) can receive for the first 2 hours following an accident, and at the low population zone (LPZ) outer boundary for the duration of the radiological release, are specified in Title 10 of the *Code of Federal Regulations* (10 CFR) Part 100.11. These criteria are 25 roentgen equivalent man (rem) total whole body dose and 300 rem thyroid dose from iodine exposure. The accident dose criteria in 10 CFR 100.11 are supplemented by accident specific dose acceptance criteria in SRP 15.1.5, Appendix A, SRP 15.6.3 or Table 4 of RG 1.195.

For control room dose consequence analyses that use the TID 14844 source term, the regulatory requirement for which the NRC staff bases its acceptance is General Design Criterion (GDC) 19 of Appendix A to 10 CFR Part 50, “Control Room.” GDC 19 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 whole body, or its equivalent to any part of the body, for the duration of the accident. PBNP was licensed to operate prior to Appendix A being incorporated into 10 CFR 50 in 1971. The Point Beach GDCs documented in its Final Safety Analysis Report (FSAR) are similar in content to the Atomic Industrial Forum version of the Proposed 1967 GDCs.

Therefore, the applicable PBNP GDC for the control room at the time of initial plant licensing was GDC 11, not GDC 19. PBNP conforms to Appendix A GDC 19, however, via full compliance with NUREG-0737, Item lll D.3.4.NUREG-0800, SRP Section 6.4, “Control Room Habitability System,” Revision 2, July 1981, which provides guidelines defining the dose equivalency of 5 rem whole body as 30 rem for both the thyroid and skin dose. For licensees adopting the guidance from RG 1.196, “Control Room Habitability at Light- Water Nuclear Power Reactors,” May 2003, Section C.4.5 of RG 1.195, May 2003, states that in lieu of the dose equivalency guidelines from Section 6.4 of NUREG-0800, the 10 CFR 20.1201 annual organ dose limit of 50 rem can be used for both the thyroid and skin dose equivalent of 5 rem whole body.

3.0 TECHNICAL EVALUATION

3. 1 Technical Evaluation of TSTF-490 TS Changes

3.1.1 Revision to the Definition of DEI

Table 2.1 of the Environmental Protection Agency (EPA) Federal Guidance Report (FGR) No. 11, 1988, "Limiting Values of Radionuclide Intake and Air Concentration and Dose Conversion Factors for Inhalation, Submersion, and Ingestion," is acceptable DCF for use in the determination of DEI.

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 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 would use either the average gamma disintegration energies for the nuclides as provided in International Commission on Radiological Protection (ICRP) Publication 38, “Radionuclide Transformations,” or the effective dose conversion factors from Table III.1 of EPA FGR No. 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 percent 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 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 which are sensitive to the noble gas activity in the primary coolant, but not to other non-gaseous activity currently captured in the E Bar definition. 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 since the calculated value is very high (the denominator is very low) if beta emitters such as tritium (H-3) are included in the determination, as required by the E Bar definition.

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" or the average gamma disintegration energies as provided in ICRP Publication 38, "Radionuclide Transformations" or similar source."

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.

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 C 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."

3.1.4 TS 3.4.16 Applicability

TS 3.4.16 Applicability is modified to include all of MODE 3 and MODE 4. It is necessary for the LCO to apply during 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 in 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. The change to modify the TS 3.4.16 Applicability to include all of MODE 3 and MODE 4 is necessary to limit the potential radiological consequences of an SGTR or MSLB that may occur during these MODES and is therefore acceptable from a radiological dose perspective.

3.1.5 TS 3.4.16 Condition A

TS 3.4.16 Condition A is revised by replacing the DEI site specific limit "> .8 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 ≤ .8 µCi/gm is contained in SR 3.4.16.2. This proposed format change will not alter current 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. The curve contained in Figure 3.4.16-1 was provided by the AEC in a June 12, 1974, letter, from the Atomic Energy Commission (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 percent rated thermal power (RTP). Instead, the pre-accident iodine spike analyses assume a DEI concentration approximately 62 times higher than the corresponding long-term equilibrium value, which corresponds to the specific activity limit associated with 100 percent 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 C 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 percent 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 > 50 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.

The new TS 3.4.16 Required Action C.2 Completion Time of 36 hours is reasonable, based on operating experience, to reach MODE 5 from full power conditions in an orderly manner and without challenging plant systems. The value of 36 hours is consistent with other TSs 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 ≤ 520 µCi/gm. This change provides a 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. The surveillance provides an indication of any increase in the noble gas specific activity. 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 states that the surveillance is only required to be performed in MODE 1. This allowance permits entry into the applicable MODE 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 3.4.16.3 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.

4.0 STATE CONSULTATION

In accordance with the Commission’s regulations, the Wisconsin State official was notified of the proposed issuance of the amendment. The State official had no comments.

5.0 ENVIRONMENTAL CONSIDERATION

The amendments change a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and surveillance requirements. The NRC staff has determined that the amendment involves 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 amendment involves no significant hazards consideration and there has been no public comment on such finding published May 6, 2008 (73 FR 25041). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

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 amendment will not be inimical to the common defense and security or to the health and safety of the public.

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