ENERGY
NORTHWEST
P.O. Box 968 ■ Richland, Washington 99352-0968

September 3, 2002
GO2-02-138

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D.C. 20555

Subject: **COLUMBIA GENERATING STATION, DOCKET NO. 50-397 REQUEST FOR AMENDMENT TO TECHNICAL SPECIFICATION 4.2.1 AND 5.6.5.b**

Dear Sir or Madam:

In accordance with 10 CFR 50.90, Energy Northwest is submitting a request for amendment to the Technical Specifications (TS) for Columbia Generating Station.

This proposed amendment request is for three changes to the TS. The first would add depleted uranium to the fuel assembly composition described in TS 4.2.1. The second would revise TS 5.6.5.b to incorporate references to the analytical methods to be used to determine core-operating limits and remove those references that will no longer be used. The third would allow the format for those document references to be revised as described in the Staff approved Industry/TSTF Standard Technical Specification Change Traveler, TSTF-363, "Revise Topical Report References in ITS 5.6.5, COLR."

Columbia Generating Station is currently operating in cycle 16. The next refueling outage is scheduled to begin in May 2003 and end in June 2003. This change is required to support operation during cycle 17 which will be the first cycle of operation with a mixed core of ABB/CE/Westinghouse SVEA-96 fuel and Framatome ANP ATRIUM-10 reload fuel. The design and analysis to support the cycle 17 operations will be performed utilizing the methodologies described in the proposed changes herein. Energy Northwest requests approval of this request for amendment by June 1, 2003, so that it may be implemented prior to plant restart subsequent to refueling outage 16.

The proposed amendment has been evaluated in accordance with 10 CFR 50.91(a)(1) using the criteria in 10 CFR 50.92(c) and Energy Northwest has determined that this amendment warrants a no significant hazards consideration. The discussion and justification for this determination are provided in Enclosure 1 to this submittal. Attachment 1 provides the existing TS pages marked up to show the proposed changes. Attachment 2 provides the revised typed TS pages. There are no TS Bases changes associated with the proposed TS changes.

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An additional TS amendment request to revise TS 2.1.1.2, Minimum Critical Power Ratio Safety Limit (MCPRSL) will be transmitted to the Staff in December 2002. The proposed MCPRSL will be determined utilizing the methodology discussed in the above change to TS 5.6.5.b. Energy Northwest will continue to keep your staff informed of the preparation status of this additional submittal via communication with our Project Manager.

In accordance with 10 CFR 50.91, a copy of this application, with attachments, is being provided to the designated Washington State Official.

If you have any questions or require additional information regarding this matter, please contact Ms. CL Perino, Licensing Manager at (509) 377-2075.

Respectfully,

RL Webring
Vice President, Operations Support/PIO
Mail Drop PE08

Enclosures:

1. Notarized affidavit
2. Evaluation: Request for Amendment to Technical Specifications 4.2.1 and 5.6.5.b

Attachments:

1. Markup of current Technical Specifications pages
2. Revised (Typed) TS pages

cc: EW Merschoff - NRC RIV
BJ Benney - NRC NRR
NRC Resident Inspector - 988C
DL Williams - BPA/1399
TC Poindexter - Winston & Strawn
JO Luce - EFSEC

ENCLOSURE 1
REQUEST FOR AMENDMENT TO TECHNICAL SPECIFICATION 4.2.1 AND 5.6.5.b

STATE OF WASHINGTON)
)
COUNTY OF BENTON)

Subject: Amendment to Technical Specification 4.2.1 and 5.6.5.b

I, R.L. WEBRING, being duly sworn, subscribe to and say that I am the Vice President, Operations Support/PIO for ENERGY NORTHWEST, the applicant herein; that I have the full authority to execute this oath; that I have reviewed the foregoing; and that to the best of my knowledge, information, and belief the statements made in it are true.

DATE 9/3/, 2002

R. L. Webring
Vice President, Operations Support/PIO

On this date personally appeared before me R. L. Webring, to me known to be the individual who executed the foregoing instrument, and acknowledged that he signed the same as his free act and deed for the uses and purposes herein mentioned.

GIVEN under my hand and seal this 3rd day of September 2002.

Lori A. Walli
Notary Public in and for the
STATE OF WASHINGTON

LORI A. WALLI
COMMISSION EXPIRES
NOTARY
PUBLIC
3-29-05
STATE OF WASHINGTON

Residing at Benton County

My Commission Expires 3-29-05

1.0 DESCRIPTION

This proposed amendment contains changes to the Columbia Generating Station Technical Specifications (TS) required to support cycle 17 operations pursuant to the provision of TS 5.6.5, Core Operating Limits Report (COLR).

2.0 PROPOSED CHANGES

Specifically, three changes have been proposed to the Technical Specifications.

The first change adds depleted uranium to the list of fuel materials in TS 4.2.1.

The second change deletes document references to analytical methods in TS 5.6.5.b no longer used to determine core operating limits and adds references to analytical methods that are desired to be used beginning in cycle 17.

The third change implements the NRC-approved Industry/TSTF Standard Technical Specification Change Traveler, TSTF-363, "Revise Topical Report References in ITS 5.6.5, COLR." To implement this TSTF, two sentences were added to TS 5.6.5.b that describe the format for referencing the documents and indicate that complete descriptions for each of the applicable documents will be included in the COLR. In addition, the description for each of the document references was simplified in the manner described in the TSTF.

3.0 BACKGROUND

A change to the list of NRC-approved documents provided in the TS is required to support operation during cycle 17. Cycle 17 will be the first cycle of operation with a mixed core of ABB/CE/Westinghouse SVEA-96 fuel and Framatome ANP (FRA-ANP) ATRIUM-10 reload fuel. The design and analysis to support the cycle operation will be performed utilizing the methodologies described in the proposed changes to the TS.

4.0 TECHNICAL ANALYSIS

The concentration levels of U_{235} in depleted uranium are within the FRA-ANP experience base. The NRC approved methods proposed for TS 5.6.5.b do not prohibit or restrict the use of depleted uranium in the fuel design. Depleted uranium has been used in operating reactors that were modeled with the NRC-approved CASMO-4/MICROBURN-B2 methodology (EMF-2158(P)(A)) which is reference 7 in the list of methodologies proposed by this amendment. The Traversing In-core Probe (TIP) measurements for these reactors indicate acceptable differences from the calculated TIP signals. These observed differences are consistent with fuel assembly designs that do not include depleted uranium.

Base-line cross-section library information is generally based upon measurements taken when the isotopic concentrations are maximized, thereby reducing the measurement error. Application of the base cross section libraries for significantly reduced concentrations is standard industry practice. Use of depleted uranium is not a significant extension to the existing practice. Depleted uranium segments are typically limited to the edge of the core where power levels are extremely low and thus the sensitivity to cross section uncertainty is also low.

There will be no change to the composition of the fuel pellets (i.e., UO_2) containing the depleted uranium except for a slight decrease in the amount of U_{235}. Therefore the use of depleted uranium in the fuel rods does not affect the mechanical performance of the rods.

The proposed changes to the documents referenced in TS 5.6.5.b are administrative as they define NRC-approved methods that will be used to establish cycle operating limits. The limits determined with the referenced methodologies will ensure that reload design, analysis, and plant operation will remain within the regulations established for fuel assembly and core designs. Energy Northwest has reviewed the changes and determined that the documents referenced are required to completely address the cycle specific reload design and analysis.

The method of referencing documents in TS 5.6.5.b as described in TSTF-363 allows licensees to use current topical reports to support limits in the COLR without having to submit an amendment to the facility operating license whenever the topical report is revised. The COLR would provide specific information identifying the particular NRC-approved topical reports used to determine the core limits for the particular cycle in the COLR report. This will eliminate unnecessary expenditure of NRC and licensee resources and would ease the burden of TS submittal and approval needed to license reload fuel.

5.0 REGULATORY SAFETY ANALYSIS

5.1 10 CFR 50.92 Evaluation

Energy Northwest is proposing that the Columbia Generating Station TS be amended to:

1) Add depleted uranium to the list of fuel material described in TS 4.2.1,
2) Modify the references listed in Technical Specification 5.6.5.b, Core Operating Limits Report (COLR),
3) Apply the provisions of TSTF-363 to the format for the references provided in TS 5.6.5.b

The proposed changes will allow the use of depleted uranium in addition to natural and enriched uranium in the fuel, include the NRC-approved Framatome ANP (FRA-ANP) methods to be used in determining the Columbia Generating Station core operating limits for cycle 17, and reflect the recommendations of TSTF-363.

An evaluation of the proposed change has been performed in accordance with 10 CFR 50.91(a)(1) regarding no significant hazards consideration using the standards in 10 CFR 50.92(c). A discussion of these standards as they relate to this amendment request follows:

1. **Do the proposed changes involve a significant increase in the probability or consequences of an accident previously evaluated?**

   Response: No.

   Assembly and core designs employing depleted uranium are employed in other reactors and are within the FRA-ANP fuel design methods and experience base. There will be no change to the composition of the fuel pellets (i.e., UO_2) containing the depleted uranium except for a slight decrease in the amount of U_{235}. Therefore the use of depleted uranium in the fuel rods does not affect the mechanical performance of the rods. Flux profile measurements performed on these core designs correlate with calculated values in a manner consistent with fuel assembly designs that do not include depleted uranium.

   Core operating limits are established to support Technical Specification 3.2, Power Distribution, requirements which ensure that fuel design limits are not exceeded during any conditions of normal operation or in the event of any Anticipated Operational Occurrence (AOO). The methods used to determine the core operating limits for each operating cycle are based on methods previously found acceptable by the NRC and listed in TS section 5.6.5.b. A change to TS section 5.6.5.b is requested to include the FRA-ANP methods in the list of approved methods applicable to Columbia Generating Station. Application of these approved methods will continue to ensure that acceptable operating limits are established to protect the fuel cladding integrity during normal operation and AOOs.

   The requested Technical Specification changes do not involve any plant modifications or operational changes that could affect system reliability, performance, or possibility of operator error. The requested changes do not affect any postulated accident precursors, do not affect any accident mitigation systems, and do not introduce any new accident initiation mechanisms.

Therefore, these changes do not increase the probability or consequences of any accident previously evaluated.

2. **Do the proposed changes create the possibility of a new or different kind of accident from any accident previously evaluated?**

   Response: No.

   Assembly and core designs employing depleted uranium are within the capability of the NRC-approved FRA-ANP fuel design methods. There will be no change to the composition of the fuel pellets (i.e., UO_2) containing the depleted uranium except for a slight decrease in the amount of U_{235}. Therefore the use of depleted uranium in the fuel rods does not affect the mechanical performance of the rods.

   Changes to the methodologies listed in the TS are administrative. The proposed changes do not involve any new modes of operation, any changes to setpoints, or any plant modifications. The core operating limits will continue to be developed using NRC-approved methods that account for the mixed fuel core design. The proposed methods do not result in any new precursors to an accident.

   Therefore, these changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. **Do the proposed changes involve a significant reduction in a margin of safety?**

   Response: No.

   Assembly and core designs employing depleted uranium are within the capability of the NRC-approved FRA-ANP fuel design methods. There will be no change to the composition of the fuel pellets (i.e., UO_2) containing the depleted uranium except for a slight decrease in the amount of U_{235}. Therefore the use of depleted uranium in the fuel rods does not affect the mechanical performance of the rods.

   The core operating limits will continue to be determined using methodologies that have been approved by the NRC.

   On this basis, the implementation of the changes does not involve a significant reduction in margin of safety.

Based on the above evaluation, Energy Northwest concludes that the proposed amendment(s) present no significant hazards under the standards set forth in 10 CFR 50.92(c), and accordingly, a finding of "no significant hazards consideration" is justified.

5.2 Applicable Regulatory Criteria

The proposed changes will ensure that the fuel design and core operating limits determined for the operating cycles will be developed using NRC-approved methods which are based on applicable regulatory criteria. The NRC approved methods proposed for TS 5.6.5.b do not prohibit or restrict the use of depleted uranium in the fuel design.

In conclusion, (1) there is reasonable assurance that the health and safety of the public will not be endangered by the 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.

6.0 ENVIRONMENTAL CONSIDERATION

Energy Northwest has evaluated the proposed amendment against the criteria for identification of license and regulatory actions requiring environmental assessment in accordance with 10 CFR 51.21. It has been determined that the proposed amendment does not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluent that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed amendment meets the eligibility criterion for categorical exclusion set forth in CFR 51.22(c)(9). Therefore pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed amendment.

ATTACHMENT 1

REQUEST FOR AMENDMENT TO TECHNICAL SPECIFICATION 4.2.1 AND 5.6.5.b

Markup of Current Technical Specifications

4.0 DESIGN FEATURES

4.1 Site Location

4.1.1 Site and Exclusion Area Boundaries

The site area shall include the area enclosed by the exclusion area plus the plant property lines that fall outside the exclusion area, as shown in Figure 4.1-1. The exclusion area boundary is a circle with its center at the reactor and a radius of 1950 meters.

4.1.2 Low Population Zone

The low population zone is all the land within a circle with its center at the reactor and a radius of 4827 meters.

4.2 Reactor Core

4.2.1 Fuel Assemblies

The reactor shall contain 764 fuel assemblies. Each assembly shall consist of a matrix of Zircaloy clad fuel rods with an initial composition of depleted, natural, or slightly enriched uranium dioxide (UO_2) as fuel material and water rods or channels. Limited substitutions of zirconium alloy or stainless steel filler rods for fuel rods, in accordance with approved applications of fuel rod configurations, may be used. Fuel assemblies shall be limited to those fuel designs that have been analyzed with applicable NRC staff approved codes and methods and shown by tests or analyses to comply with all safety design bases. A limited number of lead fuel assemblies that have not completed representative testing may be placed in nonlimiting core regions.

4.2.2 Control Rod Assemblies

The reactor core shall contain 185 cruciform shaped control rod assemblies. The control material shall be boron carbide and hafnium metal as approved by the NRC.

(continued)

5.6 Reporting Requirements

5.6.5 CORE OPERATING LIMITS REPORT (COLR) (continued)

b. The analytical methods used to determine the core operating limits shall be those previously reviewed and approved by the NRC, specifically those described in the following documents:

Insert 1

~~1. ANF-1125(P)(A), and Supplements 1 and 2, "ANFB Critical Power Correlation," April 1990.~~

Insert 2

10 ~~2~~. ANF-NF-524(P)(A), ~~Revision 2 and Supplements 1 and 2,~~ ANF "Advanced Nuclear Fuels Corporation Critical Power Methodology for Boiling Water Reactors," ~~November 1990;~~

Insert 3

~~3. ANF-89-014(P)(A), Revision 1 and Supplements 1 and 2, "Advanced Nuclear Fuels Corporation Generic Mechanical Design for Advanced Nuclear Fuels Corporation 9x9-IX and 9x9-9X BWR Reload Fuel," October 1991;~~

~~4. XN-NF-81-22(P)(A), "Generic Statistical Uncertainty Analysis Methodology," November 1983;~~

~~5. NEDE-23785-1-PA, Revision 1, "The GESTR-LOCA and SAFER Models for the Evaluation of the Loss-of-Coolant Accident, Volume III, SAFER/GESTR Application Methodology," October 1984;~~

~~6. NEDO-20566A, "General Electric Company Analytical Model for Loss-of-Coolant Analysis in Accordance with 10 CFR 50, Appendix K," September 1986;~~

18 ~~7~~. CENPD-300-P-A, "Reference Safety Report for Boiling Water Reactor Reload Fuel," ABB Combustion Engineering Nuclear Operations ~~July 1996;~~

~~8. WPPSS-FTS-131(A), Revision 1, "Applications Topical Report for BWR Design and Analysis," March 1996;~~

~~9. ANFB Critical Power Correlation Uncertainty for Limited Data Sets, ANF-1125(P)(A), Supplement 1, Appendix D, Siemens Power Corporation - Nuclear Division, July 1998; and~~

19 ~~10~~. NEDO-32465-A, "BWR Owners' Group Reactor Stability Detect and Suppress Solutions Licensing Basis Methodology and Reload Applications," ~~August 1996.~~

(continued)

TS 5.6.5(b)

INSERT 1

Identify the Topical Reports(s) by number and title or identify the staff Safety Evaluation Report for a plant specific methodology by NRC letter and date. The COLR will contain the complete identification for each of the TS referenced topical reports used to prepare the COLR (i.e., report number, title, revision, date and any supplements.

INSERT 2

1. XN-NF-81-58(P)(A), "RODEX2 Fuel Rod Thermal-Mechanical Response Evaluation Model", Exxon Nuclear Company
2. XN-NF-85-67(P)(A), "Generic Mechanical Design for Exxon Nuclear Jet Pump BWR Reload Fuel", Exxon Nuclear Company
3. EMF-85-74(P) Supplement 1(P)(A) and Supplement 2(P)(A), "RODEX2A (BWR) Fuel Rod Thermal-Mechanical Evaluation Model", Siemens Power Corporation
4. ANF-89-98(P)(A), "Generic Mechanical Design Criteria for BWR Fuel Designs", Advanced Nuclear Fuels Corporation
5. XN-NF-80-19(P)(A) Volume 1, "Exxon Nuclear Methodology for Boiling Water Reactors - Neutronic Methods for Design and Analysis", Exxon Nuclear Company
6. XN-NF-80-19(P)(A) Volume 4, "Exxon Nuclear Methodology for Boiling Water Reactors: Application of the ENC Methodology to BWR Reloads", Exxon Nuclear Company
7. EMF-2158(P)(A), "Siemens Power Corporation Methodology for Boiling Water Reactors: Evaluation and Validation of CASMO-4/MICROBURN-B2", Siemens Power Corporation
8. XN-NF-80-19(P)(A) Volume 3, "Exxon Nuclear Methodology for Boiling Water Reactors, THERMEX: Thermal Limits Methodology Summary Description", Exxon Nuclear Company
9. XN-NF-84-105(P)(A) Volume 1, "XCOBRA-T: A Computer Code for BWR Transient Thermal-Hydraulic Core Analysis", Exxon Nuclear Company

INSERT 3

11. ANF-913(P)(A) Volume 1 "COTRANSA2: A Computer Program for Boiling Water Reactor Transient Analysis", Advanced Nuclear Fuels Corporation, August 1990
12. ANF-1358(P)(A) "The Loss of Feedwater Heating Transient in Boiling Water Reactors", Advanced Nuclear Fuels Corporation
13. EMF-2209(P)(A), "SPCB Critical Power Correlation", Siemens Power Corporation
14. EMF-2245(P)(A), "Application of Siemens Power Corporation's Critical Power Correlations to Co-Resident Fuel", Siemens Power Corporation
15. EMF-2361(P)(A), "EXEM BWR-2000 ECCS Evaluation Model", Framatome ANP Richland

16. EMF-2292(P)(A), "ATRIUM^{TM} –10: Appendix K Spray Heat Transfer Coefficients", Siemens Power Corporation

17. EMF-CC-074(P)(A) Volume 4, "BWR Stability Analysis-Assessment of STAIF with Input from MICROBURN-B2", Siemens Power Corporation

ATTACHMENT 2

REQUEST FOR AMENDMENT TO TECHNICAL SPECIFICATION
4.2.1 AND 5.6.5.b

Revised (Typed) TS pages

4.0 DESIGN FEATURES

4.1 Site Location

4.1.1 Site and Exclusion Area Boundaries

The site area shall include the area enclosed by the exclusion area plus the plant property lines that fall outside the exclusion area, as shown in Figure 4.1-1. The exclusion area boundary is a circle with its center at the reactor and a radius of 1950 meters.

4.1.2 Low Population Zone

The low population zone is all the land within a circle with its center at the reactor and a radius of 4827 meters.

4.2 Reactor Core

4.2.1 Fuel Assemblies

The reactor shall contain 764 fuel assemblies. Each assembly shall consist of a matrix of Zircaloy clad fuel rods with an initial composition of depleted, natural, or slightly enriched uranium dioxide (UO_2) as fuel material and water rods or channels. Limited substitutions of zirconium alloy or stainless steel filler rods for fuel rods, in accordance with approved applications of fuel rod configurations, may be used. Fuel assemblies shall be limited to those fuel designs that have been analyzed with applicable NRC staff approved codes and methods and shown by tests or analyses to comply with all safety design bases. A limited number of lead fuel assemblies that have not completed representative testing may be placed in nonlimiting core regions.

4.2.2 Control Rod Assemblies

The reactor core shall contain 185 cruciform shaped control rod assemblies. The control material shall be boron carbide and hafnium metal as approved by the NRC.

(continued)

4.0 DESIGN FEATURES (continued)

4.3 Fuel Storage

4.3.1 Criticality

4.3.1.1 The spent fuel storage racks are designed and shall be maintained with:

a. $k_{eff} \leq 0.95$ if fully flooded with unborated water, which includes an allowance for uncertainties as described in Section 9.1.2 of the FSAR; and

b. A nominal 6.5 inch center to center distance between fuel assemblies placed in the storage racks.

4.3.1.2 The new fuel storage racks are designed and, with fuel assemblies inserted, shall be maintained with:

a. $k_{eff} \leq 0.95$ if fully flooded with unborated water, which includes an allowance for uncertainties as described in Section 9.1.1 of the FSAR; and

b. A maximum of 60 new fuel assemblies stored in the new fuel storage racks, arranged in 6 spatially separated zones. Within a storage zone, the nominal center-to-center distance between cells for storing fuel assemblies is 14 inches. The nominal center-to-center distance between cells for storing fuel assemblies in adjacent zones is 37 inches. Design features relied upon to spatially limit the placement of fuel bundles within the new fuel vault are required to be installed prior to placement of new fuel bundles in the vault.

4.3.2 Drainage

The spent fuel storage pool is designed and shall be maintained to prevent inadvertent draining of the pool below elevation 583 ft 1.25 inches.

4.3.3 Capacity

The spent fuel storage pool is designed and shall be maintained with a storage capacity limited to no more than 2658 fuel assemblies.

5.6 Reporting Requirements

5.6.5 CORE OPERATING LIMITS REPORT (COLR) (continued)

b. The analytical methods used to determine the core operating limits shall be those previously reviewed and approved by the NRC, specifically those described in the following documents:

Identify the Topical Reports(s) by number and title or identify the staff Safety Evaluation Report for a plant specific methodology by NRC letter and date. The COLR will contain the complete identification for each of the TS referenced topical reports used to prepare the COLR (i.e., report number, title, revision, date and any supplements.

1. XN-NF-81-58(P)(A), "RODEX2 Fuel Rod Thermal-Mechanical Response Evaluation Model", Exxon Nuclear Company

2. XN-NF-85-67(P)(A), "Generic Mechanical Design for Exxon Nuclear Jet Pump BWR Reload Fuel", Exxon Nuclear Company

3. EMF-85-74(P) Supplement 1(P)(A) and Supplement 2(P)(A), "RODEX2A (BWR) Fuel Rod Thermal-Mechanical Evaluation Model", Siemens Power Corporation

4. ANF-89-98(P)(A), "Generic Mechanical Design Criteria for BWR Fuel Designs", Advanced Nuclear Fuels Corporation

5. XN-NF-80-19(P)(A) Volume 1, "Exxon Nuclear Methodology for Boiling Water Reactors - Neutronic Methods for Design and Analysis", Exxon Nuclear Company

6. XN-NF-80-19(P)(A) Volume 4, "Exxon Nuclear Methodology for Boiling Water Reactors: Application of the ENC Methodology to BWR Reloads", Exxon Nuclear Company

7. EMF-2158(P)(A), "Siemens Power Corporation Methodology for Boiling Water Reactors: Evaluation and Validation of CASMO-4/MICROBURN-B2", Siemens Power Corporation

8. XN-NF-80-19(P)(A) Volume 3, "Exxon Nuclear Methodology for Boiling Water Reactors, THERMEX: Thermal Limits Methodology Summary Description", Exxon Nuclear Company

(continued)

5.6 Reporting Requirements

5.6.5 CORE OPERATING LIMITS REPORT (COLR) (continued)

9. XN-NF-84-105(P)(A) Volume 1, "XCOBRA-T: A Computer Code for BWR Transient Thermal-Hydraulic Core Analysis", Exxon Nuclear Company

10. ANF-NF-524(P)(A), Revision 2 and Supplements 1 and 2, "Advanced Nuclear Fuels Corporation Critical Power Methodology for Boiling Water Reactors," November 1990;

11. ANF-913(P)(A) Volume 1 "COTRANSA2: A Computer Program for Boiling Water Reactor Transient Analysis", Advanced Nuclear Fuels Corporation, August 1990

12. ANF-1358(P)(A) "The Loss of Feedwater Heating Transient in Boiling Water Reactors", Advanced Nuclear Fuels Corporation

13. EMF-2209(P)(A), "SPCB Critical Power Correlation", Siemens Power Corporation

14. EMF-2245(P)(A), "Application of Siemens Power Corporation's Critical Power Correlations to Co-Resident Fuel", Siemens Power Corporation

15. EMF-2361(P)(A), "EXEM BWR-2000 ECCS Evaluation Model", Framatome ANP Richland

16. EMF-2292(P)(A), "ATRIUM™ -10: Appendix K Spray Heat Transfer Coefficients", Siemens Power Corporation

17. EMF-CC-074(P)(A) Volume 4, "BWR Stability Analysis-Assessment of STAIF with Input from MICROBURN-B2", Siemens Power Corporation

18. CENPD-300-P-A, "Reference Safety Report for Boiling Water Reactor Reload Fuel," July 1996;

19. NEDO-32465-A, "BWR Owners' Group Reactor Stability Detect and Suppress Solutions Licensing Basis Methodology and Reload Applications," August 1996.

(continued)

5.6 Reporting Requirements

5.6.5 CORE OPERATING LIMITS REPORT (COLR) (continued)

c. The core operating limits shall be determined such that all applicable limits (e.g., fuel thermal mechanical limits, core thermal hydraulic limits, Emergency Core Cooling Systems (ECCS) limits, nuclear limits such as SDM, transient analysis limits, and accident analysis limits) of the safety analysis are met.

d. The COLR, including any midcycle revisions or supplements, shall be provided upon issuance for each reload cycle to the NRC.

5.6.6 Post Accident Monitoring (PAM) Instrumentation Report

When a report is required by Condition B or F of LCO 3.3.3.1, "Post Accident Monitoring (PAM) Instrumentation," a report shall be submitted within the following 14 days. The report shall outline the preplanned alternate method of monitoring, the cause of the inoperability, and the plans and schedule for restoring the instrumentation channels of the Function to OPERABLE status.