Tennessee Valley Authority, Post Office Box 2000, Decatur, Alabama 35609-2000

April 14, 2003

TVA-BFN-TS-425

10 CFR 50.90

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Mail Stop: OWFN P1-35
Washington, D.C. 20555-0001

Gentlemen:

In the Matter of	)	Docket Nos. 50-260
Tennessee Valley Authority	)	50-296

BROWNS FERRY NUCLEAR PLANT (BFN) - UNITS 2 AND 3 - TECHNICAL SPECIFICATIONS (TS) CHANGE 425 - FRAMATOME FUEL - CORE OPERATING LIMITS REPORT (COLR) REFERENCES

Pursuant to 10 CFR 50.90, the Tennessee Valley Authority (TVA) is submitting a request for a TS change (TS-425) to licenses DPR-52 and DPR-68 for BFN Units 2 and 3, respectively. The proposed amendment revises two Limiting Conditions for Operation regarding core thermal limits adjustments for inoperable equipment. Also, TS 5.6.5, COLR, is revised to add references to the Framatome Advanced Nuclear Power (FANP) analytical methods that will be used to determine core operating limits. The subject TS changes are needed to support a transition to the use of FANP fuel, and FANP core design and analysis services.

TVA has determined that there are no significant hazards considerations associated with the proposed change and that the TS change qualifies for a categorical exclusion from environmental review pursuant to the provisions of 10 CFR 51.22(c)(9). Additionally, in accordance with 10 CFR 50.91(b)(1), TVA is sending a copy of this letter and attachments to the Alabama State Department of Public Health.

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TVA is planning to use a reload batch of FANP fuel for the Unit 3 Cycle 12 core, which is scheduled to begin operation in Spring 2004. Therefore, TVA is asking that this TS change be approved by February 1, 2004, and that the implementation of the revised TS be made within 60 days of the completion of the Unit 3 Spring 2004 and Unit 2 Spring 2005 refueling outages.

There are no regulatory commitments associated with this submittal. This letter is being sent in accordance with NRC Regulatory Issue Summary 2001-05, Guidance on Submitting Documents to the NRC by Electronic Information Exchange or on CD-ROM. If you have any questions about this TS change, please contact me at (256)729-2636.

I declare under penalty of perjury that the foregoing is true and correct. Executed on April 14, 2003.

Sincerely,

T. E. Abney
Manager of Licensing
and Industry Affairs

Enclosures:
1. TVA Evaluation of Proposed Change
2. Proposed Technical Specifications Changes (mark-up)

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R. E. Wiggall, PEC 2A-BFN
NSRB Support, LP 5M-C
EDMS-K (with Enclosures)

s:lic/submit/TechSpec/TS-425 Framatome CCLR April 15 2003

Enclosure 1

Technical Specifications (TS) Change 425

Framatome Fuel - Core Operating Limits Report (COLR) References

Units 2 and 3

TVA Evaluation of Proposed Change

1.0 DESCRIPTION

This letter is a request to amend Operating Licenses DPR-52 and DPR-68 for Browns Ferry Nuclear Plant (BFN) Units 2 and 3, respectively. The proposed amendment revises two Limiting Conditions for Operation (LCOs) regarding core thermal operating limits adjustments for equipment out-of-service (EOOS) conditions. In addition, TS 5.6.5, COLR, is revised to add references to the Framatome Advanced Nuclear Power (FANP) analytical methods that will be used to determine core operating limits. The added references are consistent with the format prescribed for the referencing of analytic methods documents described in the NRC-approved Industry/Standard TS (STS) Technical Specification Task Force (TSTF) Traveler, TSTF-363, "Revise Topical Report References in ITS 5.6.5, COLR," (Reference 1).

The proposed TS changes are needed to support the transition to FANP fuel, and to FANP core design and analysis services. TVA is planning to first use FANP fuel for Unit 3 Cycle 12 operation, which begins in Spring 2004.

2.0 PROPOSED CHANGE

LCO 3.3.4.1, End-Of-Cycle (EOC) Recirculation Pump Trip (RPT) Instrumentation, and LCO 3.7.5, Main Turbine Bypass System, are being modified to reference additional core thermal limits adjustment factors for Linear Heat Generation Rate (LHGR) for EOOS conditions. Refer to Enclosure 2 for the specific proposed changes.

This TS change also modifies TS 5.6.5.b by adding document references to FANP analytical methods that will be used in the upcoming fuel cycles to determine core thermal operating limits. The added references are consistent with the format prescribed in TSTF-363, which provides that the title of the

analytic method be included in TS 5.6.5.b and that the complete identification (report number, title, revision, date, and any supplements) be included in the COLR document proper.

Marked-up Units 2 and 3 TS pages are provided in Enclosure 2, which show the specific revisions. The Section 5.0 TS have no corresponding TS Bases sections and TVA will update the Bases for the two LCO sections being modified in accordance with TS Section 5.5.10, Technical Specifications (TS) Bases Control Program. Therefore, no changes to the TS Bases are included in this amendment request.

3.0 BACKGROUND

Chapter 14.5 of the BFN Updated Final Safety Analysis Report contains the descriptions of the various transient analyses performed for BFN. These transient analyses are typically performed assuming all plant systems are operable, however, for selected plant systems, analyses are also performed with the system out-of-service (commonly referred to as EOOS cases or Operating Flexibility Options). For these EOOS cases, the current TS provides requirements for applying adjustment factors to core thermal limits when the TS system is not operable. Two such EOOS cases included in BFN TS are LCOs 3.3.4.1, EOC-RPT Instrumentation, and 3.7.5, Main Turbine Bypass System.

In a meeting with the NRC staff on October 16, 2002, TVA discussed the transition plan and schedule for the use of FANP ATRIUM-10 fuel at BFN. As part of the transition plan, core design analysis, and transient and accident analysis services will be performed by FANP rather than Global Nuclear Fuels (GNF), as is currently the case. The use of FANP analysis methodology prompts a minor revision to the two subject EOOS LCOs to account for differences in applying core limits adjustment factors.

TS 5.6.5.b requires that the methods used to determine core operating limits be referenced. Accordingly, a revision to TS 5.6.5.b is needed to reference the FANP analytical methods that will be used in the upcoming fuel cycles to determine core operating limits. In addition, for consistency with approved STS, in the change to TS 5.6.5.b, TVA is adopting the syntax of TSTF-363. This TSTF was approved by NRC on July 6, 2000 (Reference 2) and provides that the titles of the analytic methods be included in TS 5.6.5.b and that the complete identification (report number, title, revision, date, and any supplements) be included in the COLR. FANP fuel and analytic services are currently

approved for use in several nuclear plants including LaSalle, Susquehanna, River Bend, and Grand Gulf. The proposed BFN changes to TS 5.6.5.b are similar to the TS in place for these plants.

As discussed in the October 16, 2002, meeting with NRC, TVA is planning to use a reload batch of FANP fuel for the Unit 3 Cycle 12 core, which is scheduled to begin operation in Spring 2004. Unit 2 use of FANP fuel will follow in 2005 and possibly Unit 1 at a later date. In support of the Unit 3 schedule, TVA is asking that this TS change be approved by February 1, 2004, and that the implementation of the revised TS be made within 60 days of the completion of the Unit 3 Spring 2004 and the Unit 2 Spring 2005 refueling outages for the respective TS changes. A Unit 1 TS change is not being requested at this time since plant restart is scheduled for 2007.

4.0 TECHNICAL ANALYSIS

LCOs 3.3.4.1, EOC-RPT Instrumentation, and 3.7.5, Main Turbine Bypass System, are TS that contain EOOS provisions for adjusting core operating limits if the subject system is not in service. For example, in TS LCO 3.7.5, if the Main Turbine Bypass System is not OPERABLE, then adjustments to the Average Planar Linear Heat Generation ratio (APLHGR) and Minimum Critical Power Ratio (MCPR) core thermal limits are required to ensure thermal margins are maintained. A similar MCPR adjustment applies for LCO 3.3.4.1, EOC-RPT Instrumentation. As indicated in each of the LCOs, the core thermal limits adjustment factors are documented in the COLR.

With the current GNF core thermal limits methodology for transient analyses, core operating limits power- and flow-dependent corrections are applied to the APLHGR limits and no corrections are applied to the LHGR limits. The converse applies for the FANP methodology. For FANP fuel, power- and flow-dependent corrections are applied as necessary to the LHGR limits, and no corrections are applied to the APLHGR (referred to as the maximum APLHGR or MAPLHGR). For this reason, for the subject LCOs when using FANP analysis methods, it may be necessary to apply an LHGR adjustment if the EOC-RPT system instrumentation or Main Turbine Bypass system is not OPERABLE. Accordingly, LCO 3.3.4.1 and LCO 3.7.5 need to be revised as shown in Enclosure 2 to prescribe that an LHGR penalty be applied when necessary. The LHGR correction factor will be maintained in the COLR in the same manner as is currently

the case for APLHGR and MCPR core thermal limits adjustment factors.

This proposed TS change adds explicit TS provisions (new LCO 3.3.4.1.c and 3.7.5.c) to apply an LHGR adjustment when EOC-RPT is not OPERABLE and the Main Turbine Bypass System is not OPERABLE. This TS change simply adds provisions that ensure LHGR core thermal limits adjustment factors are applied for equipment out-of-service conditions associated with the use of FANP methods for transient analyses. Any needed LHGR adjustments will be calculated in accordance with the NRC-approved methods listed in the COLR, which ensures that acceptable operating limits are established and applied for protection of fuel cladding integrity during transients.

TS 5.6.5.b requires that the NRC-approved topical reports used to determine core thermal limits be referenced in the COLR. The proposed TS 5.6.5.b change adds the specific FANP topical reports that will be used to determine core operating limits for BFN. The existing TS 5.6.5.b reference to the GNF fuels topical, NEDE-24011-P-A, will be retained pending the complete replacement of GNF fuel with FANP fuel, since some GNF-derived core limits will continue to be applicable for co-resident GNF fuel. As noted in the Background, in the proposed change to TS 5.6.5.b, TVA is also adopting the syntax of TSTF-363, "Revise Topical Report References in ITS 5.6.5, COLR",(Reference 1). This change is being made to keep BFN TS current with the latest approved version of NUREG-1433 Revision 2, "STS for BWR/4s".

In summary, the proposed changes to LCOs 3.3.4.1 and 3.7.5 are being made to ensure that appropriate adjustments to core operating limits are made for the two EOOS TS. In addition, the COLR TS is being updated to include the FANP topical reports that will be used to determine core operating limits.

5.0 REGULATORY SAFETY ANALYSIS

The Tennessee Valley Authority (TVA) is submitting an amendment request to licenses DPR-52 and DPR-68 for Browns Ferry Nuclear Plant (BFN) Units 2 and 3 Technical Specifications (TS). The proposed amendment revises TS 3.3.4.1, End-Of-Cycle (EOC) Recirculation Pump Trip (RPT) Instrumentation and TS 3.7.5, Main Turbine Bypass System, to provide additional core thermal limits adjustment factors for equipment out-of-service. Also, TS 5.6.5, Core Operating Limits Report (COLR), is being revised to add references to the Framatome Advanced Nuclear Power (FANP)

analytical methods that will be used to determine core operating limits.

5.1 No Significant Hazards Consideration

TVA has evaluated whether or not a significant hazards consideration is involved with the proposed amendment by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of Amendment," as discussed below:

1. Does the proposed amendment involve a significant increase in the probability or consequences of an accident previously evaluated?

Response: No

Core operating limits are established to support requirements, which in turn ensure that fuel design limits are not exceeded during any conditions of operating transients or accidents. The methods used to determine the limits for each operating cycle are based on methods previously found acceptable by the NRC and are required to be listed in COLR TS Section 5.6.5.b. Accordingly, a change to TS Section 5.6.5.b is requested to include FANP methods in the list of NRC-approved methods applicable to BFN. This TS change also adds provisions that ensure core thermal limits adjustment factors are applied for equipment out-of-service conditions associated with the use of FANP methods for transient analyses. The application of these NRC-approved methods will continue to ensure that acceptable operating limits are established and applied for protection of fuel cladding integrity during transient and accidents.

The requested TS 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, the proposed TS change does not involve an increase in the probability or consequences of an accident previously evaluated.

2. Does the proposed amendment create the possibility of a new or different kind of accident from any accident previously evaluated?

Response: No

The core operating limits and required limits adjustments for equipment out-of-service conditions will continue to be determined using methodologies that have been approved by the NRC. The limits derived from approved methodologies will provide adequate margins of safety. The proposed changes do not involve any new modes of operation, any changes to setpoints, or any plant modifications, and do not result in any new precursors to an accident.

Therefore, the proposed TS change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Does the proposed amendment involve a significant reduction in a margin of safety.

Response: No

The core operating limits and required limits adjustments for equipment out-of-service 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, TVA concludes that the proposed amendment presents no significant hazards consideration 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 Requirements/Criteria

10 CFR 50.36(c)(2)(ii) Criterion 2 requires that TS LCOs include process variables, design features, and operating restrictions that are initial conditions of design basis accident analyses. In BFN TS, LCOs 3.3.4.1, EOC-RPT Instrumentation, and 3.7.5, Main Turbine Bypass System, fit Criterion 2 and provide core thermal limits adjustment factors for equipment out-of-service. The proposed TS changes will serve to ensure that core thermal limits are appropriately adjusted when TS equipment is out-of-service when appropriate.

The proposed change to TS 5.6.5.b lists the NRC-approved methods that will be used for determining core limits. This change is being made to comply with existing TS 5.6.5.b requirements to reference these methods.

In conclusion, based on the considerations discussed above, (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 the health and safety of the public.

6.0 ENVIRONMENTAL CONSIDERATION

A review has determined that the proposed amendment would change a requirement with respect to installation or use of a facility component located within the restricted area, as defined in 10 CFR 20, or would change an inspection or surveillance requirement. However, 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 10 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.

7.0 REFERENCES

1. Technical Specification Task Force (TSTF) Change Traveler 363, "Revise Topical Report References in ITS 5.6.5, COLR."
2. July 6, 2000, Letter from William D. Beckner, NRC, to James Davis, NEI.

Enclosure 2

Technical Specifications (TS) Change 425

Framatome Fuel - Core Operating Limits Report (COLR) References

Units 2 and 3

Proposed Technical Specifications Changes (mark-up)

3.3 INSTRUMENTATION

3.3.4.1 End of Cycle Recirculation Pump Trip (EOC-RPT) Instrumentation

LCO 3.3.4.1

a. Two channels per trip system for each EOC-RPT instrumentation Function listed below shall be OPERABLE:

   1. Turbine Stop Valve (TSV) - Closure; and

   2. Turbine Control Valve (TCV) Fast Closure, Trip Oil Pressure - Low.

<u>OR</u>

b. LCO 3.2.2, "MINIMUM CRITICAL POWER RATIO (MCPR)," limits for inoperable EOC-RPT as specified in the COLR are made applicable; and

APPLICABILITY: THERMAL POWER ≥ 30% RTP.

c. LCO 3.2.3, "LINEAR HEAT GENERATION RATE (LHGR)," limits for inoperable EOC-RPT as specified in the COLR are made operable.

ACTIONS

NOTE
Separate Condition entry is allowed for each channel.

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One or more channels inoperable.	A.1	Restore channel to OPERABLE status.	72 hours
	OR		
	A.2	NOTE Not applicable if inoperable channel is the result of an inoperable breaker. Place channel in trip.	72 hours
B. One or more Functions with EOC-RPT trip capability not maintained. AND MCPR limit for inoperable EOC-RPT not made applicable.	B.1	Restore EOC-RPT trip capability.	2 hours
	OR	and LHGR	
	B.2	Apply the MCPR limit for inoperable EOC-RPT as specified in the COLR.	2 hours
C. Required Action and associated Completion Time not met.	C.1	Reduce THERMAL POWER to < 30% RTP.	4 hours

3.7 PLANT SYSTEMS

3.7.5 Main Turbine Bypass System

LCO 3.7.5 The Main Turbine Bypass System shall be OPERABLE.

OR

The following limits are made applicable:

a. LCO 3.2.1, "AVERAGE PLANAR LINEAR HEAT GENERATION RATE (APLHGR)," limits for an inoperable Main Turbine Bypass System, as specified in the COLR; and

b. LCO 3.2.2, "MINIMUM CRITICAL POWER RATIO (MCPR)," limits for an inoperable Main Turbine Bypass System, as specified in the COLR; and

c. LCO 3.2.3, "LINEAR HEAT GENERATION RATE (LHGR)," limits for an inoperable Main Turbine Bypass System, as specified in the COLR.

APPLICABILITY: THERMAL POWER ≥ 25% RTP.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. Requirements of the LCO not met.	A.1	Satisfy the requirements of the LCO.	2 hours
B. Required Action and associated Completion Time not met.	B.1	Reduce THERMAL POWER to < 25% RTP.	4 hours

5.6 Reporting Requirements (continued)

5.6.4 Monthly Operating Reports

Routine reports of operating statistics and shutdown experience shall be submitted on a monthly basis no later than the 15th of each month following the calendar month covered by the report.

5.6.5 CORE OPERATING LIMITS REPORT (COLR)

a. Core operating limits shall be established prior to each reload cycle, or prior to any remaining portion of a reload cycle, and shall be documented in the COLR for the following:

(1) The APLHGRs for Specification 3.2.1;

(2) The LHGR for Specification 3.2.3;

(3) The MCPR Operating Limits for Specification 3.2.2; and

(4) The RBM setpoints and applicable reactor thermal power ranges for each of the setpoints for Specification 3.3.2.1, Table 3.3.2.1-1.

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 NEDE-24011-P-A, "General Electric Standard Application for Reactor Fuel," ~~(latest approved version for BFN)~~.

the following documents:

1.

COLR References Insert

(continued)

COLR References Insert

2. XN-NF-81-58(P)(A), RODEX2 Fuel Rod Thermal-Mechanical Response Evaluation Model.

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

4. EMF-85-74(P)(A), RODEX2A (BWR) Fuel Rod Thermal-Mechanical Evaluation Model.

5. ANF-89-98(P)(A), Generic Mechanical Design Criteria for BWR Fuel Designs.

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

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

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

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

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

11. ANF-524(P)(A), ANF Critical Power Methodology for Boiling Water Reactors.

12. ANF-913(P)(A) Volume 1, COTRANSA2: A Computer Program for Boiling Water Reactor Transient Analyses.

13. ANF-1358(P)(A), The Loss of Feedwater Heating Transient in Boiling Water Reactors.

14. EMF-2209(P)(A), SPCB Critical Power Correlation.

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

16. EMF-2361(P)(A), EXEM BWR-2000 ECCS Evaluation Model.

17. EMF-2292(P)(A), ATRIUM™-10: Appendix K Spray Heat Transfer Coefficients.

3.3 INSTRUMENTATION

3.3.4.1 End of Cycle Recirculation Pump Trip (EOC-RPT) Instrumentation

LCO 3.3.4.1

a. Two channels per trip system for each EOC-RPT instrumentation Function listed below shall be OPERABLE:

   1. Turbine Stop Valve (TSV) - Closure; and

   2. Turbine Control Valve (TCV) Fast Closure, Trip Oil Pressure - Low.

OR

b. LCO 3.2.2, "MINIMUM CRITICAL POWER RATIO (MCPR)," limits for inoperable EOC-RPT as specified in the COLR are made applicable; and

APPLICABILITY: THERMAL POWER ≥ 30% RTP.

c. LCO 3.2.3, "LINEAR HEAT GENERATION RATE (LHGR)," limits for inoperable EOC-RPT as specified in the COLR are made operable.

ACTIONS

NOTE
Separate Condition entry is allowed for each channel.

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One or more channels inoperable.	A.1	Restore channel to OPERABLE status.	72 hours
	OR		
	A.2	NOTE Not applicable if inoperable channel is the result of an inoperable breaker.	
		Place channel in trip.	72 hours
B. One or more Functions with EOC-RPT trip capability not maintained. AND MCPR limit for inoperable EOC-RPT not made applicable.	B.1	Restore EOC-RPT trip capability.	2 hours
	OR	and LHGR	
	B.2	Apply the MCPR limit for inoperable EOC-RPT as specified in the COLR.	2 hours
C. Required Action and associated Completion Time not met.	C.1	Reduce THERMAL POWER to < 30% RTP.	4 hours

3.7 PLANT SYSTEMS

3.7.5 Main Turbine Bypass System

LCO 3.7.5 The Main Turbine Bypass System shall be OPERABLE.

OR

The following limits are made applicable:

a. LCO 3.2.1, "AVERAGE PLANAR LINEAR HEAT GENERATION RATE (APLHGR)," limits for an inoperable Main Turbine Bypass System, as specified in the COLR; and

b. LCO 3.2.2, "MINIMUM CRITICAL POWER RATIO (MCPR)," limits for an inoperable Main Turbine Bypass System, as specified in the COLR; a ~ d

APPLICABILITY: THERMAL POWER ≥ 25% RTP.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. Requirements of the LCO not met.	A.1	Satisfy the requirements of the LCO.	2 hours
B. Required Action and associated Completion Time not met.	B.1	Reduce THERMAL POWER to < 25% RTP.	4 hours

c. LCO 3.2.3, "LINEAR HEAT GENERATION RATE (LHGR)," limits for an inoperable Main Turbine Bypass System, as specified in the COLR.

5.6 Reporting Requirements (continued)

5.6.4 Monthly Operating Reports

Routine reports of operating statistics and shutdown experience shall be submitted on a monthly basis no later than the 15th of each month following the calendar month covered by the report.

5.6.5 CORE OPERATING LIMITS REPORT (COLR)

a. Core operating limits shall be established prior to each reload cycle, or prior to any remaining portion of a reload cycle, and shall be documented in the COLR for the following:

(1) The APLHGRs for Specification 3.2.1;

(2) The LHGR for Specification 3.2.3;

(3) The MCPR Operating Limits for Specification 3.2.2; and

(4) The RBM setpoints and applicable reactor thermal power ranges for each of the setpoints for Specification 3.3.2.1, Table 3.3.2.1-1.

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 NEDE-24011-P-A, "General Electric Standard Application for Reactor Fuel," ~~(latest approved version for BFN)~~.

1. the following documents:

COLR References Insert

(continued)

COLR References Insert

2. XN-NF-81-58(P)(A), RODEX2 Fuel Rod Thermal-Mechanical Response Evaluation Model.

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

4. EMF-85-74(P)(A), RODEX2A (BWR) Fuel Rod Thermal-Mechanical Evaluation Model.

5. ANF-89-98(P)(A), Generic Mechanical Design Criteria for BWR Fuel Designs.

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

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

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

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

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

11. ANF-524(P)(A), ANF Critical Power Methodology for Boiling Water Reactors.

12. ANF-913(P)(A) Volume 1, COTRANSA2: A Computer Program for Boiling Water Reactor Transient Analyses.

13. ANF-1358(P)(A), The Loss of Feedwater Heating Transient in Boiling Water Reactors.

14. EMF-2209(P)(A), SPCB Critical Power Correlation.

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

16. EMF-2361(P)(A), EXEM BWR-2000 ECCS Evaluation Model.

17. EMF-2292(P)(A), ATRIUM™-10: Appendix K Spray Heat Transfer Coefficients.