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10 CFR 50.90

April 28, 2005

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

Peach Bottom Atomic Power Station, Units 2 and 3
Renewed Facility Operating License Nos. DPR-44 and DPR-56
NRC Docket Nos. 50-277 and 50-278

Subject: Request for Amendment to Technical Specifications to Add Requirement to Modify Linear Heat Generation Rate Limit

Pursuant to 10 CFR 50.90, "Application for amendment of license or construction permit," Exelon Generation Company, LLC (EGC) requests an amendment to Appendix A, Technical Specifications (TS), of the Renewed Facility Operating Licenses listed above. The proposed changes modify TS 3.3.4.2 ("End of Cycle Recirculation Pump Trip (EOC-RPT) Instrumentation"), TS 3.4.1 ("Recirculation Loops Operating"), and TS 3.7.6 ("Main Turbine Bypass System") to add a requirement for the linear heat generation rate (LHGR) limits specified in the Core Operating Limits Report (COLR).

TS 3.3.4.2, TS 3.4.1, and TS 3.7.6 for Peach Bottom Atomic Power Station (PBAPS), Units 2 and 3, currently require that the limits for average planar linear heat generation rate (APLHGR) and minimum critical power ratio (MCPR) be modified for an inoperable End of Cycle Recirculation Pump Trip (EOC-RPT) instrument function, single recirculation loop operation, or an inoperable Main Turbine Bypass System. The modified limits for APLHGR and MCPR are specified in the COLR. The proposed changes add a requirement to modify the LHGR limit as specified in the COLR. There is currently no TS requirement to adjust the LHGR limit for an inoperable End of Cycle Recirculation Pump Trip (EOC-RPT) instrument function, single recirculation loop operation, or an inoperable Main Turbine Bypass System. Administrative controls are in place at PBAPS, Units 2 and 3 to ensure that the LHGR limits are appropriately adjusted.

EGC requests approval of these changes by April 22, 2006. Once approved, the amendments shall be implemented within 60 days. The proposed changes have been reviewed by the Plant Operations Review Committee and approved by the Nuclear Safety Review Board.

In accordance with 10 CFR 50.91, "Notice for public comment; State consultation," paragraph (b), EGC is notifying the State of Pennsylvania of this application for changes to the TS by transmitting a copy of this letter and its attachments to the designated State Official.

There are no commitments contained in this letter.

Should you have questions concerning this submittal, please contact Mr. Tom Loomis at (610) 765-5510.

I declare under penalty of perjury that the foregoing is true and correct.

Respectfully,

Executed on 04/28/05

Pamela B. Cowan
Director, Licensing and Regulatory Affairs
Exelon Generation Company, LLC

Attachments: 1: Description of Proposed Changes, Technical Analysis, and Regulatory Analysis
2: Markup of Technical Specification Pages

cc: S. J. Collins, Administrator, Region I, USNRC
F. L. Bower, USNRC Senior Resident Inspector, PBAPS
G. Wunder, Senior Project Manager, USNRC

ATTACHMENT 1

PEACH BOTTOM ATOMIC POWER STATION, UNITS 2 AND 3

FACILITY OPERATING LICENSE NOS. DPR-44 AND DPR-56

REQUEST FOR AMENDMENT TO TECHNICAL SPECIFICATIONS TO ADD REQUIREMENT TO MODIFY LINEAR HEAT GENERATION RATE LIMITS

Description of Proposed Changes, Technical Analysis, and Regulatory Analysis

ATTACHMENT 1
Description of Proposed Changes, Technical Analysis, and Regulatory Analysis

ATTACHMENT 1
Description of Proposed Changes, Technical Analysis, and Regulatory Analysis

1.0 DESCRIPTION

In accordance with 10 CFR 50.90, "Application for amendment of license or construction permit," Exelon Generation Company, LLC (EGC) requests an amendment to Appendix A, Technical Specifications (TS), to Renewed Facility Operating License Nos. DPR-44 and DPR-56 for Peach Bottom Atomic Power Station (PBAPS), Units 2 and 3. The proposed changes modify TS 3.3.4.2 ("End of Cycle Recirculation Pump Trip (EOC-RPT) Instrumentation"), TS 3.4.1 ("Recirculation Loops Operating"), and TS 3.7.6 ("Main Turbine Bypass System") to add a requirement for the linear heat generation rate (LHGR) limits specified in the Core Operating Limits Report (COLR) to be met for an inoperable End of Cycle Recirculation Pump Trip (EOC-RPT) instrument function, single recirculation loop operation, or an inoperable Main Turbine Bypass System, respectively.

2.0 PROPOSED CHANGE

The proposed change adds a requirement for LHGR limits specified in the COLR. Specifically, the proposed change revises:

1. TS 3.3.4.2.b to add the following statement:

   "3. LCO 3.2.3, "LINEAR HEAT GENERATION RATE (LHGR)," limits for an inoperable EOC-RPT as specified in the COLR."

2. TS 3.4.1 to add the following statement:

   "c. LCO 3.2.3, "LINEAR HEAT GENERATION RATE (LHGR)," single loop operation limits specified in the COLR; and"

   The proposed change also re-designates existing Limiting Condition for Operation (LCO) 3.4.1.c as LCO 3.4.1.d to reflect the addition of the new requirement to meet the LHGR limit specified in the COLR during single recirculation loop operation.

3. TS 3.7.6 to add the following statement:

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

A markup of the affected TS pages is provided in Attachment 2. The revised TS pages with the proposed change incorporated will be provided prior to issuance.

3.0 BACKGROUND

PBAPS, Units 2 and 3, has implemented an updated version of the PANACEA computer program. This updated version of the program is referred to as PANAC11. PANAC11 provides improved flexibility when designing and monitoring the reactor core. A similar request was

approved for LaSalle County Station, Units 1 and 2, Dresden Nuclear Power Station, Units 2 and 3, and Quad Cities Nuclear Power Station, Units 1 and 2 (Reference 7).

The need for the proposed TS change is a result of a change in the treatment of both the average planar linear heat generation rate (APLHGR) and the LHGR. The change in the three-dimensional core simulator used for core licensing calculations and core monitoring for PBAPS, Units 2 and 3 from PANAC10 to PANAC11 (versions of the PANACEA computer program) accentuates the difference in the treatment of the APLHGR and LHGR limits. PANACEA is a static, three-dimensional coupled nuclear-thermal-hydraulic computer program representing a boiling water reactor core. The program was approved by the NRC as part of Amendment 26 to General Electric's Standard Application for Reactor Fuel (GESTAR) in Reference 1, and is used by General Electric during the core design process for detailed three-dimensional design and operational calculations of neutron flux, power distributions, and thermal performance as a function of control rod position, refueling pattern, coolant flow, reactor pressure, and other operational and design variables.

LHGR limits are derived based on fuel thermal and mechanical design requirements and are developed to assure that fuel thermal design limits (e.g., centerline melt) and fuel mechanical limits (e.g., 1% plastic strain) are not exceeded during normal operations and anticipated operational occurrences (AOOs). APLHGR limits are derived based on the results of Emergency Core Cooling System (ECCS) analyses and are developed to assure that the Peak Cladding Temperature (PCT) does not exceed 2200°F during limiting accidents.

The ECCS analyses also establish an APLHGR multiplier in order to limit the peak cladding temperature (PCT) increase for single recirculation loop operation. When the multiplier is developed, both the LHGR and MAPLHGR values are reduced in the ECCS analyses until the PCT passes the acceptance criterion.

PANAC10 utilizes APLHGR multipliers for the conditions of an inoperable EOC-RPT instrument function, single recirculation loop operation, or an inoperable Main Turbine Bypass System. An LHGR multiplier is not required when monitoring or designing with PANAC10 because composite ECCS/thermal-mechanical APLHGR limits are used. The composite APLHGR limits are a conservative combination of the APLHGR limits based on ECCS requirements and equivalent APLHGR limits based on LHGR fuel thermal and mechanical design requirements. These limits are developed as a function of fuel exposure. The composite APLHGR limit is derived by taking the more limiting of these two APLHGR limits, as a function of fuel exposure. When using PANAC10, the APLHGR multiplier is sufficient to ensure that the PCT is bounded and that fuel thermal and mechanical design limits are not exceeded during AOOs.

When designing or monitoring with PANAC11, LHGR is treated independently from APLHGR, providing more flexibility and improved accuracy. PANAC11 also utilizes an APLHGR multiplier. However, the APLHGR limit used with PANAC11 is based on the ECCS PCT limit only. The fuel thermal-mechanical limits are addressed separately using an exposure dependent LHGR limit. Since ECCS and thermal-mechanical limits are analyzed and monitored separately, an LHGR multiplier is also required to ensure that fuel thermal and mechanical design limits are not exceeded during normal operations and AOOs.

ATTACHMENT 1
Description of Proposed Changes, Technical Analysis, and Regulatory Analysis

TS 3.3.4.2, 3.4.1, and 3.7.6 currently list the core thermal limits that must be adjusted for an inoperable EOC-RPT instrument function, single recirculation loop operation, or an inoperable Main Turbine Bypass System. A revision to these TS is needed to ensure that the LHGR limit is also adjusted, since a LHGR multiplier is required to be consistent with the fuel thermal and mechanical design limits.

Although there is currently no TS requirement to adjust the LHGR limit during inoperable End of Cycle Recirculation Pump Trip (EOC-RPT) instrument function, single recirculation loop operation or an inoperable Main Turbine Bypass System, in accordance with Reference 1, administrative controls are in place at PBAPS, Units 2 and 3, to ensure that the LHGR limits are appropriately adjusted. In addition, PANAC11 will be used for future core reload designs.

4.0 TECHNICAL ANALYSIS

The LHGR is a measure of the heat generation rate of a fuel rod in a fuel assembly at any axial location. Limits on the LHGR are specified to ensure that fuel design limits are not exceeded anywhere in the core during normal operation, including anticipated operational occurrences (AOOs), and to ensure that the PCT during a postulated design basis LOCA does not exceed the limits specified in 10 CFR 50.46. Exceeding the LHGR limit could potentially result in fuel damage and subsequent release of radioactive materials. Fuel design limits are specified to ensure that fuel system damage, fuel rod failure, or inability to cool the fuel does not occur during normal operations and anticipated operating conditions.

The LHGR is a basic assumption in the fuel design analysis. Reference 3 defines a value of 1% plastic strain of the fuel cladding as the limit below which fuel damage caused by overstraining of the fuel cladding is not expected to occur. The fuel has been designed to operate at rated core power with a specified LHGR limit to ensure that 1% plastic strain of the fuel cladding is not exceeded, and that fuel centerline melt does not occur during normal operation, including AOOs.

LHGR multipliers may be required for operation at off-rated or other operating conditions (i.e., inoperable End of Cycle Recirculation Pump Trip (EOC-RPT) instrument function, single recirculation loop operation (SLO), or an inoperable Main Turbine Bypass System) to ensure that fuel design limits are not exceeded anywhere in the core during normal operation, including anticipated operational occurrences. These multipliers are calculated in accordance with the methodologies described in GESTAR (Reference 6). The GESTAR methodology requires that the LHGR design limits are met for all operating conditions.

In addition, LOCA-based LHGR limits, including the SLO LHGR multiplier, are calculated in accordance with SAFER/GESTR methodology (i.e., Reference 4), which was approved by the NRC in Reference 3. The SAFER/GESTR methodology requires the following limits to be met when performing LOCA analyses:

1. 10 CFR 50 Appendix K licensing basis PCT less than 2200°F
2. Upper bound PCT (UBPCT) less than licensing basis PCT

The criteria for conservatism of the calculation with 10 CFR 50 Appendix K assumptions relative to UBPCT is assured by determining a LHGR and MAPLHGR multiplier that maintains the SLO PCT below the two-loop PCT. The fuel LHGR is significant in determining the PCT during LOCA analyses. At lower core flow conditions, such as during SLO, operation with the rated LHGR value could drive the PCT above the two-loop PCT. In order to prevent the SLO point from being the limiting operating point, the LHGR and MAPLHGR are reduced. The application of these LHGR and MAPLHGR limits at SLO conditions prevent the SLO point from being more limiting than the limiting power/flow point during normal two-loop plant operation.

TS 5.6.5, "CORE OPERATING LIMITS REPORT (COLR)," requires core operating limits to be established prior to each reload cycle, or prior to any remaining portion of a reload cycle, and documented in the COLR to ensure that all applicable limits of the safety analysis are met. Therefore, calculation of the LHGR limit for an inoperable EOC-RPT instrument function, single recirculation loop operation, or an inoperable Main Turbine Bypass System is required on a cycle-specific basis.

5.0 REGULATORY ANALYSIS

5.1 No Significant Hazards Consideration

EGC 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

   The probability of an evaluated accident is derived from the probabilities of the individual precursors to that accident. The consequences of an evaluated accident are determined by the operability of plant systems designed to mitigate those consequences. The LHGR is a measure of the heat generation rate of a fuel rod in a fuel assembly at any axial location. Limits on the LHGR are specified to ensure that fuel design limits are not exceeded anywhere in the core during normal operation, including anticipated operational occurrences, and to ensure that the peak cladding temperature (PCT) during a postulated design basis Loss-of-Coolant Accident (LOCA) does not exceed the limits specified in 10 CFR 50.46.

   LHGR limits have been established consistent with the NRC-approved GESTAR methodology to ensure that fuel performance during normal, transient, and accident conditions is acceptable. The proposed changes establish a requirement for LHGR limits to be modified, as specified in the COLR, such that the fuel is protected for the conditions of an inoperable EOC-RPT instrument function, single recirculation loop operation, or an inoperable Main Turbine Bypass System and during any plant transients or anticipated operational occurrences that may occur while in these conditions.

Modifying the LHGR limits for the above three (3) conditions does not increase the probability of an evaluated accident. The proposed change does not require any physical plant modifications, physically affect any plant components, or entail changes in plant operation. Therefore, no individual precursors of an accident are affected.

Limits on the LHGR are specified to ensure that fuel design limits are not exceeded anywhere in the core during normal operation, including anticipated operational occurrences, and to ensure that the PCT during a postulated design basis LOCA does not exceed the limits specified in 10 CFR 50.46. This will ensure that the fuel design safety criteria (i.e., less than 1% plastic strain of the fuel cladding and no fuel centerline melting) are met and that the core remains in a coolable geometry following a postulated design basis LOCA or any anticipated operational occurrence. Since the operability of plant systems designed to mitigate any consequences of accidents has not changed and all fuel design limits continue to be met, the consequences of an accident previously evaluated are not expected to increase.

Therefore, the proposed changes do not involve a significant 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

   Creation of the possibility of a new or different kind of accident would require the creation of one or more new precursors of that accident. New accident precursors may be created by modifications of the plant configuration, including changes in allowable modes of operation. The proposed changes do not involve any modifications of the plant configuration or allowable modes of operation. Requiring the LHGR limits to be modified for the conditions of inoperable EOC-RPT instrument function, single recirculation loop operation, or an inoperable Main Turbine Bypass System ensures that fuel design limits are not exceeded anywhere in the core during normal operation, including anticipated operational occurrences and that the assumptions of the LOCA analyses are met.

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

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

   Response: No

   The margin of safety is established through equipment design, operating parameters, and the setpoints at which automatic actions are initiated. The proposed change will not adversely affect operation of plant equipment. The change will not result in a change to the setpoints at which protective actions are initiated. LHGR limits for the conditions of an inoperable EOC-RPT instrument function, single recirculation loop operation, or an

inoperable Main Turbine Bypass System are established to ensure that fuel design limits are not exceeded anywhere in the core during normal operation, including anticipated operational occurrences and that the PCT during a postulated design basis LOCA does not exceed the limits specified in 10 CFR 50.46. This will ensure that the core remains in a coolable geometry following a postulated design basis LOCA. The proposed change will ensure the appropriate level of fuel protection.

Therefore, the proposed changes do not involve a significant reduction in a margin of safety.

Based upon the above, EGC concludes that the proposed amendment presents no significant hazards consideration under the standards set forth in 10 CFR 50.92(c), accordingly, a finding of "no significant hazards consideration" is justified.

5.2 Applicable Regulatory Requirements/Criteria

10 CFR 50.36, "Technical specifications," provides the regulatory requirements for the content required in a licensee's TS. Criterion 2 of 10 CFR 50.36(c)(2)(ii) requires a limiting condition for operation to be established for a process variable, design feature, or operating restriction that is an initial condition of a design basis accident or transient analysis that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.

10 CFR 50.46, "Acceptance criteria for emergency core cooling systems for light-water nuclear power reactors," establishes the acceptance criteria for the design basis LOCA. Specifically, paragraph (b)(1) requires the calculated maximum fuel element cladding temperature (i.e., PCT) to not exceed 2200°F.

The specific LHGR limits to be applied during single recirculation loop operation are evaluated each fuel cycle and documented in the COLR. The limits are established to ensure that the PCT during a design basis LOCA does not exceed 2200°F, thus the requirements of 10 CFR 50.46(b)(1) are satisfied.

The proposed change to TS ensures that the LHGR limit is adjusted for the conditions of an inoperable EOC-RPT instrument function, single recirculation loop operation, or an inoperable Main Turbine Bypass System. In addition, the LHGR limit satisfies Criterion 2 of 10 CFR 50.36(c)(2)(ii) for the reasons described above.

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 to the health and safety of the public.

ATTACHMENT 1
Description of Proposed Changes, Technical Analysis, and Regulatory Analysis

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, "Standards for Protection Against Radiation," 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, "Criterion for categorical exclusion; identification of licensing and regulatory actions eligible for categorical exclusion or otherwise not requiring environmental review," paragraph (c)(9). Therefore, pursuant to 10 CFR 51.22, paragraph (b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed amendment.

7.0 REFERENCES

1. Letter from S. A. Richards (U. S. NRC) to G. A. Watford (GE Nuclear Energy), "Amendment 26 to GE Licensing Topical Report NEDE-24011-P-A, 'GESTAR II' Implementing Improved GE Steady-State Methods (TAC No. MA6481)," dated November 10, 1999

2. NRC Administrative Letter 98-10, "Dispositioning of Technical Specifications that Are Insufficient to Assure Plant Safety," dated December 29, 1998

3. NUREG-0800, Section 4.2, Subsection II.A.2(g), Revision 2, July 1981

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

5. Letter from C. O. Thomas (U. S. NRC) to J. F. Quirk (General Electric), "Acceptance for Referencing of Licensing Topical Report NEDE-23785, Revision 1, Volume III (P), 'The GESTR-LOCA and SAFER Models for the Evaluation of the Loss-of-Coolant Accident,'" dated June 1, 1984

6. NEDE-24011-P-A-14, "GESTAR II – General Electric Standard Application for Reactor Fuel," June 2000

7. Letter from D. V. Pickett (U. S. NRC) to C. M. Crane (Exelon Generation Company, LLC), "LaSalle County Station, Units 1 and 2 (TAC NOS. MC1293 and MC1294), Dresden Nuclear Power Station, Units 2 and 3 (TAC NOS. MC1291 and MC1292), Quad Cities Nuclear Power Station, Units 1 and 2 (TAC NOS. MC1295 and MC1296) – Issuance of Amendments", dated October 4, 2004.

ATTACHMENT 2

PEACH BOTTOM ATOMIC POWER STATION, UNITS 2 AND 3

FACILITY OPERATING LICENSE NOS. DPR-44 AND DPR-56

REQUEST FOR AMENDMENT TO TECHNICAL SPECIFICATIONS TO ADD REQUIREMENT TO MODIFY LINEAR HEAT GENERATION RATE LIMITS

Markup Of Technical Specifications Pages

3.3-31a
3.4-1
3.7-12

3.3 INSTRUMENTATION

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

LCO 3.3.4.2 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. The following limits are made applicable:

1. LCO 3.2.1, "AVERAGE PLANAR LINEAR HEAT GENERATION RATE (APLHGR)," limits for inoperable EOC-RPT as specified in the COLR; ~~and~~

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

3. LCO 3.2.3, "LINEAR HEAT GENERATION RATE (~~LHGR~~)," limits for inoperable EOC-RPT as specified in the COLR.

APPLICABILITY: THERMAL POWER ≥ 29.5% RTP.

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. OR	72 hours
	A.2 ---NOTE--- Not applicable if inoperable channel is the result of an inoperable breaker. --- Place channel in trip.	72 hours

(continued)

3.3 INSTRUMENTATION

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

LCO 3.3.4.2 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. The following limits are made applicable:

1. LCO 3.2.1, "AVERAGE PLANAR LINEAR HEAT GENERATION RATE (APLHGR)," limits for inoperable EOC-RPT as specified in the COLR; ~~and~~

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

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

APPLICABILITY: THERMAL POWER ≥ 29.5% RTP.

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

(continued)

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.1 Recirculation Loops Operating

LCO 3.4.1 Two recirculation loops with matched flows shall be in operation with core flow as a function of THERMAL POWER in the "Unrestricted" Region of Figure 3.4.1-1.

OR

One recirculation loop shall be in operation with core flow as a function of THERMAL POWER in the "Unrestricted" Region of Figure 3.4.1-1 and with the following limits applied when the associated LCO is applicable:

a. LCO 3.2.1, "AVERAGE PLANAR LINEAR HEAT GENERATION RATE (APLHGR)," single loop operation limits specific in the COLR;

b. LCO 3.2.2, "MINIMUM CRITICAL POWER RATIO (MCPR)," single loop operation limits specified in the COLR; ~~and~~

c. LCO 3.3.1.1, "Reactor Protection System (RPS) Instrumentation," Function 2.b (Average Power Range Monitors Simulated Thermal Power-High), Allowable Value of Table 3.3.1.1-1 is reset for single loop operation.

---NOTE---
Required limit modifications for single recirculation loop operation may be delayed for up to 12 hours after transition from two recirculation loop operation to single recirculation loop operation.

APPLICABILITY: MODES 1 and 2.

C. LCO 3.2.3, "LINEAR HEAT GENERATION RATE (LHGR)," single loop operation limits specified in the COLR; and

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.1 Recirculation Loops Operating

LCO 3.4.1 Two recirculation loops with matched flows shall be in operation with core flow as a function of THERMAL POWER in the "Unrestricted" Region of Figure 3.4.1-1.

OR

One recirculation loop shall be in operation with core flow as a function of THERMAL POWER in the "Unrestricted" Region of Figure 3.4.1-1 and with the following limits applied when the associated LCO is applicable:

a. LCO 3.2.1, "AVERAGE PLANAR LINEAR HEAT GENERATION RATE (APLHGR)," single loop operation limits specific in the COLR;

b. LCO 3.2.2, "MINIMUM CRITICAL POWER RATIO (MCPR)," single loop operation limits specified in the COLR; ~~and~~

c. LCO 3.3.1.1, "Reactor Protection System (RPS) Instrumentation," Function 2.b (Average Power Range Monitors Simulated Thermal Power-High), Allowable Value of Table 3.3.1.1-1 is reset for single loop operation.

---NOTE---
Required limit modifications for single recirculation loop operation may be delayed for up to 12 hours after transition from two recirculation loop operation to single recirculation loop operation.

APPLICABILITY: MODES 1 and 2.

c. LCO 3.2.3, "LINEAR HEAT GENERATION RATE (LHGR)," single loop operation limits specified in the COLR; and

3.7 PLANT SYSTEMS

3.7.6 Main Turbine Bypass System

LCO 3.7.6 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

ADD → 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

3.7 PLANT SYSTEMS

3.7.6 Main Turbine Bypass System

LCO 3.7.6 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,

ADD → 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