ATTACHMENT 2

PEACH BOTTOM ATOMIC POWER STATION UNIT 3

Docket No. 50-278

License No. DPR-56

TECHNICAL SPECIFICATIONS CHANGES

Attached Pages

Unit 3

TS Page 2.0-1 TS Page 5.0-21

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2.0 SAFETY LIMITS (SLs)

2.1 SLs

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2.1.1 Reactor Core SLs

2.1.1.1 With the reactor steam dome pressure < 785 psig or core flow < 10% rated core flow:</p>

THERMAL POWER shall be ≤ 25% RTP.

2.1.1.2 With the reactor steam dome pressure \geq 785 psig and core flow \geq 10% rated core flow:

MCPR shall be \geq 1.09 for two recirculation loop operation or \geq 1.11 for single recirculation loop operation.

2.1.1.3 Reactor versel water level shall be greater than the top of active irradiated fuel.

2.1.2 Reactor Coolant System Pressure SL

Reactor steam dome pressure shall be ≤ 1325 psig.

2.2 SL Violations

With any SL violation, the following actions shall be completed:

2.2.1 Within 1 hour, notify the NRC Operations Center, in accordance with 10 CFR 50.72.

2.2.2 Within 2 hours:

2.2.2.1 Restore compliance with all SLs; and

2.2.2.2 Insert all insertable control rods.

2.2.3 Within 24 hours, notify the Plant Manager and the Vice President-Peach Bottom Atomic Power Station.

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Amendment No.

SLs 2.0

5.6 Reporting Requirements (continued)

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- 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:
 - The Average Planar Linear Heat Generation Rate for Specification 3.2.1;
 - The Minimum Critical Power Ratio for Specifications 3.2.2 and 3.3.2.1;
 - The Linear Heat Generation Rate for Specification 3.2.3; and
 - The Control Rod Block Instrumentation for Specification 3.3.2.1.
 - 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 the following documents:
 - NEDE-24011-P-A, "General Electric Standard Application for Reactor Fuel" (latest approved version as specified in the COLR);
 - NEDC-32162P, "Maximum Extended Load Line Limit and ARTS Improvement Program Analyses for Peach Bottom Atomic Power Station Units 2 and 3," Revision 2, March, 1995;
 - PECo-FMS-0001-A, "Steady-State Thermal Hydraulic Analysis of Peach Bottom Units 2 and 3 using the FIBWR Computer Code";
 - PECo-FMS-0002-A, "Method for Calculating Transient Critical Power Ratios for Boiling Water Reactors (RETRAN-TCPPECo)";
 - PECo-FMS-0003-A, "Steady-State Fuel Performance Methods Report";
 - PECo-FMS-0004-A, "Methods for Performing BWR Systems Transient Analysis";

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PBAPS UNIT 3

Amendment No.

2.0 SAFETY LIMITS (SLS)

2.: SLs

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2.1.1 Reactor Core SLs

2.1.1.1 With the reactor steam dome pressure < 785 psig or core flow < 10% rated core flow:

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1.11

THERMAL POWER shall be s 25% RTP.

\$2.1.1.2 With the reactor steam dome pressure 2 785 psig and core flow 2 10% rated core flow:

1.09 MCPR shall be 1 11 for two recirculation loop operation or 2 12 for single recirculation loop operation.

2.1.1.3 Reactor vessel water level shall be greater than the top of active irradiated fuel.

2.1.2 Reactor Coolant System Pressure Si

Reactor steam dome pressure shall be s 1325 psig.

2.2 SL Violations

With any SL violation, the following actions shall be completed:

- 2.2.1 Within 1 hour, notify the NRC Operations Center. in accordance with 10 CFR 50.72.
- 2.2.2 Within 2 hours:
 - 2.2.2.1 Restore compliance with all SLs; and
 - 2.2.2.2 Insert all insertable control rods.
- 2.2.3 Within 24 hours, notify the Plant Manager and the Vice President -Peach Bottom Atomic Power Station.

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SLS 2.0 5.6 Reporting Requirements (continued)

- 5.6.5 CORE OPERATING LIMITS REPORT (COLR)
 - Core operating limits shall be established prior to each a. reload cycle, or prior to any remaining portion of a reload cycle, and shall be documented in the COLR for the following:
 - The Average Planar Linear Heat Generation Rate for 1. Specification 3.2.1:
 - The Minimum Critical Power Ratio for Specifications 2. 3.2.2 and 3.3.2.1:
 - The Linear Heat Generation Rate for Specification 3. 3.2.3: and
 - The Control Rod Block Instrumentation for Specification 4. 3.3.2.1.
 - 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 the following documents:
 - NEDE-24011-P-A, "General Electric Standard Application for Reactor Fuel" (latest approved version as specified 1. in the COLR);
 - NEDC-32162P. "Maximum Extended Load Line Limit and ARTS 2. Improvement Program Analyses for Peach Bottom Atomic peiele Power Station Units 2 and 3." Revision 2. February, seieta + 1993)
 - PECo-FMS-0001-A. "Steady-State Thermal Hydraulic 3. Analysis of Peach Bottom Units 2 and 3 using the FIBWR Computer Code";
 - PECo-FHS-0002-A, "Method for Calculating Transient 4. Critical Power Ratios for Boiling Water Reactors (RETRAN-TCPPECo)":
 - PECo-FMS-3003-A. "Steady-State Fuel Performance Methods 5. Report ::
 - PECo-FMS-0004-A. "Methods for Performing BWR Systems 6. Transient Analysis";

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ATTACHMENT 4

A. B. C. A.

PEACH BOTTOM ATOMIC POWER STATION UNIT 3

Docket No. 50-278

License No. DPR-56

LICENSE CHANGE APPLICATION ECR 99-01255

Non-Proprietary Version

Attachment

Additional Information Regarding the Cycle Specific SLMCPR for Peach Bottom 3 Cycle 13

References

- Letter, Frank Akstulewicz (NRC) to Glen A. Watford (GE), "Acceptance for Referencing of Licensing Topical Reports NEDC-32601P, Methodology and Uncertainties for Safety Limit MCPR Evaluations; NEDC-32694P, Power Distribution Uncertainties for Safety Limit MCPR Evaluation; and Amendment 25 to NEDE-24011-P-A on Cycle Specific Safety Limit MCPR," (TAC Nos. M97490, M99069 and M97491), March 11, 1999.
- [2] Letter, Thomas H. Essig (NRC) to Glen A. Watford (GE), "Acceptance for Referencing of Licensing Topical Report NEDC-32505P, Revision 1, R-Factor Calculation Method for GE11, GE12 and GE13 Fuel," (TAC No. M99070 and M95081), January 11, 1999.
- [3] General Electric BWR Thermal Analysis Basis (GETAB): Data, Correlation and Design Application, NEDO-10958-A, January 1977.

Comparison of Peach Bottom 3 Cycle 13 and Cycle 12 SLMCPR Values

Table 1 summarizes the relevant input parameters and results of the SLMCPR determination for the Peach Bottom 3 Cycle 13 and Cycle 12 cores. The SLMCPR evaluations were performed using NRC approved methods and uncertainties⁽¹⁾. These evaluations yield different calculated SLMCPR values because different inputs were used. The quantities that have been shown to have some impact on the determination of the safety limit MCPR (SLMCPR) are provided.

In comparing the Peach Bottom 3 Cycle 13 and Cycle 12 SLMCPR values it is important to note the impact of the differences in the core and bundle design. These differences are summarized in Table 1.

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[[]].

The uncontrolled bundle pin-by-pin power distributions were compared between the Peach Bottom 3 Cycle 13 bundles and the Cycle 12 bundles. Pin-by-pin power distributions are characterized in terms of R-factors using the NRC approved methodology[2]. [[]]

Attachment

Additional Information Regarding the Cycle Specific SLMCPR for Peach Bottom 3 Cycle 13

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[[]] have been used to compare quantities that impact the calculated SLMCPR value. Based on these comparisons, the conclusion is reached that the Peach Bottom 3 Cycle 13 core/cycle has a more peaked core MCPR distribution [[]] and flatter in-bundle power distributions [[]] than what was used to perform the Cycle 12 SLMCPR evaluation.

The calculated 1.09 Monte Carlo SLMCPR for Peach Bottom 3 Cycle 13 is consistent with what one would expect [1] the 1.09 SLMCPR value is appropriate.

Based on all of the facts, observations and arguments presented above, it is concluded that the calculated SLMCPR value of 1.09 for the Plant Cycle n core is appropriate. It is reasonable that this value is 0.02 lower than the 1.11 value calculated for the previous cycle.

For single loop operations (SLO) the calculated safety limit MCPR for the limiting case is 1.11 [[]]

Prepared by:

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S. B. Shelton Technical Project Manager Peach Bottom Project

Verified by:

W.E. Russell Nuclear Fuel Engineering

Additional Information Regarding the Cycle Specific SLMCPR for Peach Bottom 3 Cycle 13

Table 1

Comparison of the Peach Bottom 3 Cycle 13 and Cycle 12 SLMCPR

[[]]

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General Electric Company P. O. Box 780, Willimington, NC 28402

Affidavit

I, Craig P. Kipp, being duly sworn, depose and state as follows:

- (1) I am General Manager, Nuclear Fuel, General Electric Company ("GE") and have been delegated the function of reviewing the information described in paragraph (2) which is sought to be withheld, and have been authorized to apply for its withholding.
- (2) The information sought to be withheld is contained in the letter, G. D. Edwards (PECO Energy Company) to the U. S. Nuclear Regulatory Commission Document Control Desk, *Peach Bottom Atomic Power Station, Unit 3 License Change Application* ECR 99-01255, Docket No. 50-278, License No. DRP-56.
- (3) In making this application for withholding of proprietary information ... which it is the owner, GE relies upon the exemption from disclosure set forth in the Freedom of Information Act ("FOIA"), 5 USC Sec. 552(b)(4), and the Trade Secrets Act, 18 USC Sec. 1905, and NRC regulations 10 CFR 9.17(a)(4) and 2.790(a)(4) for "trade secrets and commercial or financial information obtained from a person and privileged or confidential" (Exemption 4). The material for which exemption from disclosure is here sought is all "confidential commercial information," and some portions also qualify under the narrower definition of "trade secret," within the meanings assigned to those terms for purposes of FOIA Exemption 4 in, respectively, <u>Critical Mass Energy Project v. Nuclear Regulatory Commission</u>, 975F2d871 (DC Cir. 1992), and <u>Public Citizen Health Research Group v. FDA</u>, 704F2d1280 (DC Cir. 1983).
- (4) Some examples of categories of information which fit into the definition of proprietary information are:
 - a. Information that discloses a process, method, or apparatus, including supporting data and analyses, where prevention of its use by General Electric's competitors without license from General Electric constitutes a competitive economic advantage over other companies;
 - Information which, if used by a competitor, would reduce his expenditure of resources or improve his competitive position in the design, manufacture, shipment, installation, assurance of quality, or licensing of a similar product;
 - c. Information which reveals cost or price information, production capacities, budget levels, or commercial strategies of General Electric, its customers, or its suppliers;
 - Information which reveals aspects of past, present, or future General Electric customerfunded development plans and programs, of potential commercial value to General Electric;
 - Information which discloses patentable subject matter for which it may be desirable to
 obtain patent protection.

Affidavit

The information sought to be withheld is considered to be proprietary for the reasons set forth in both paragraphs (4)a. and (4)b., above.

- (5) The information sought to be withheld is being submitted to NRC in confidence. The information is of a sort customarily held in confidence by GE, and is in fact so held. Its initial designation as proprietary information, and the subsequent steps taken to prevent its unauthorized disclosure, are as set forth in (6) and (7) following. The information sought to be withheld has, to the best of my knowledge and belief, consistently been held in confidence by GE, no public disclosure has been made, and it is not available in public sources. All disclosures to third parties including any required transmittals to NRC, have been made, or must be made, pursuant to regulatory provisions or proprietary agreements which provide for maintenance of the information in confidence.
- (6) Initial approval of proprietary treatment of a document is made by the manager of the originating component, the person most likely to be acquainted with the value and sensitivity of the information in relation to industry knowledge. Access to such documents within GE is limited on a "need to know" basis.
- (7) The procedure for approval of external release of such a document typically requires review by the staff manager, project manager, principal scientist or other equivalent authority, by the manager of the cognizant marketing function (or his delegate), and by the Legal Operation, for technical content, competitive effect, and determination of the accuracy of the proprietary designation. Disclosures outside GE are limited to regulatory bodies, customers, and potential customers, and their agents, suppliers, and licensees, and others with a legitimate need for the information, and then only in accordance with appropriate regulatory provisions or proprietary agreements.
- (8) The information identified in paragraph (2) is classified as proprietary because it contains details of GE's Safety Limit MCPR analysis and the corresponding results which GE has applied to this specific plant and cycle's actual core design with GE's fuel.

The development of the methods used in these analysis, along with the testing, development and approval of the supporting critical power correlation was achieved at a significant cost, on the order of several million dollars, to GE.

(9) Public disclosure of the information sought to be withheld is likely to cause substantial harm to GE's competitive position and foreclose or reduce the availability of profit-making opportunities. The stability analysis is part of GE's comprehensive BWR safety and technology base, and its commercial value extends beyond the original development cost. The value of the technology base goes beyond the extensive physical database and analytical methodology and includes development of the expertise to determine and apply the appropriate evaluation process. In addition, the technology base includes the value derived from providing analyses done with NRC-approved methods.

The research, development, engineering, analytical, and NRC review costs comprise a substantial investment of time and money by GE.

The precise value of the expertise to devise an evaluation process and apply the correct analytical methodology is difficult to quantify, but it clearly is substantial.

GE's competitive advantage will be lost if its competitors are able to use the results of the GE experience to normalize or verify their own process or if they are able to claim an equivalent understanding by demonstrating that they can arrive at the same or similar conclusions.

The value of this information to GE would be lost if the information were disclosed to the public. Making such information available to competitors without their having been required to undertake a similar expenditure of resources would unfairly provide competitors with a windfall, and deprive GE of the opportunity to exercise its competitive advantage to seek an adequate return on its large investment in developing these very valuable analytical tools.

State of North Carolina) County of New Hanover) SS:

Craig P. Kipp, being duly sworn, deposes and says:

That he has read the foregoing affidavit and the matters stated therein are true and correct to the best of his knowledge, information, and belief.

Executed at Wilmington, North Carolina, this 8 day of June 1999

General Electric Company

Subscribed and sworn before me this 8 The day of ______ 19 99

team M. Unduron

Notery Public, State of North Carolina

My Compuission Expires 10/08/200/