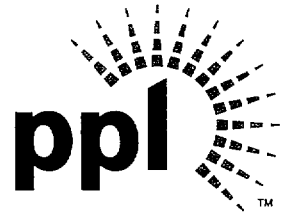


George T. Jones
Vice President
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MAY 3 1 2001

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Mail Station OP1-17
Washington, D.C. 20555

**SUSQUEHANNA STEAM ELECTRIC STATION
PROPOSED AMENDMENT NO. 238 TO
LICENSE NPF-14: MCPR SAFETY LIMITS
PLA-5320**

Docket No. 50-387

The purpose of this letter is to propose changes to the Susquehanna Steam Electric Station Unit 1 Technical Specifications. This proposed change entails the inclusion of Unit 1 Cycle 13 (U1C13) MCPR Safety Limits in Section 2.1.1.2.

Consistent with the previous Unit 1 reload analysis, the analysis methods described in Technical Specification 5.6.5b., as approved by the NRC, are used to generate the Safety Limits and Core Operating Limits for the U1C13 reload.

Attachment 1 to this letter is the "Safety Assessment" supporting this change.

Attachment 2 is the No Significant Hazards Considerations evaluation performed in accordance with the criteria of 10 CFR 50.92 and the Environmental Assessment.

Attachment 3 to this letter contains the applicable page of the Susquehanna SES Unit 1 Technical Specifications, marked to show the proposed change.

Attachment 4 contains the "camera ready" version of the revised Technical Specification page.

The proposed change has been approved by the Susquehanna SES Plant Operations Review Committee and reviewed by the Susquehanna Review Committee.

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To assist in your review, Attachment 5 has been provided. Attachment 5 provides the U1C13 Core Composition.

PPL plans to implement the proposed changes in April 2002 to support the startup of U1C13 operation. Therefore, we request NRC complete its review of this change by January 9, 2002 with the changes effective upon startup following the Unit 1 12th Refueling and Inspection Outage.

Any questions regarding this request should be directed to Mr. M. H. Crowthers at (610) 774-7766.

Sincerely,

A handwritten signature in black ink, appearing to read "G. T. Jones". The signature is written in a cursive style with a large initial "G".

G. T. Jones

Attachments

copy: NRC Region I
Mr. R. G. Schaaf, NRC Sr. Project Manager
Mr. S. Hansell, NRC Sr. Resident Inspector
Mr. W. P. Dornsife, PA DEP

**BEFORE THE
UNITED STATES NUCLEAR REGULATORY COMMISSION**

In the Matter of _____ :

PPL Susquehanna, LLC:

Docket No. 50-387

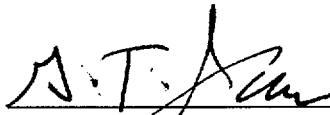
**SUPPLEMENTAL INFORMATION APPLICABLE TO
PROPOSED AMENDMENT NO. 238 TO LICENSE NPF-14:
MCPR SAFETY LIMITS
UNIT NO. 1**

Licensee, PPL Susquehanna, LLC, hereby files supplemental information in support of a revision to its Facility Operating License No. NPF-14 dated July 17, 1982.

This amendment involves a revision to the Susquehanna SES Unit 1 Technical Specifications.

PPL Susquehanna, LLC

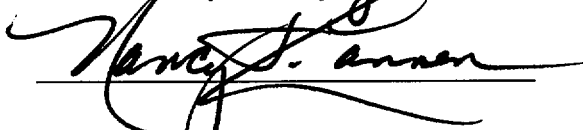
By:



G. T. Jones

Vice-President - Nuclear Engineering & Support

Sworn to and subscribed before me
this 31st day of May, 2001.



Notary Public

Notarial Seal Nancy J. Lannen, Notary Public Allentown, Lehigh County My Commission Expires June 14, 2004
--

Attachment 1 to PLA-5320

Safety Assessment

SAFETY ASSESSMENT

MCPR SAFETY LIMITS

Section I: Summary of Proposed Change

This proposed Unit 1 Technical Specification change consists of a revision to Section 2.1.1.2 to reflect the Unit 1 Cycle 13 (U1C13) MCPR Safety limits. This change is necessary because, as a result of U1C13 cycle specific calculations, the two-loop operation MCPR Safety Limit is increased by 0.01 from the U1C12 value. The transition from the Unit 1 Cycle 12 core (mixed core containing 9x9-2 and ATRIUM™-10 fuel) to the Unit 1 Cycle 13 core (all ATRIUM™-10 fuel) did not affect the calculated MCPR Safety Limit because the 9x9-2 assemblies were high-exposure / low-power assemblies that did not contribute to the number of pins calculated to be in boiling transition. The increase in core power between Unit 1 Cycle 12 and Cycle 13 used in the MCPR Safety Limit analyses had a minor effect, because an increase in core power tends to flatten the core radial power distribution due to void feedback, and a flatter distribution will increase the number of pins calculated to be in boiling transition. The change in MCPR Safety Limit from U1C12 to U1C13 is also partly due to the specific U1C13 core design. Past reload analyses in which no change in rated core power occurred have shown that increases in the MCPR Safety Limit can occur solely as a result of the core design.

The MCPR Safety Limit analysis is performed on a cycle specific basis since the core design changes from cycle to cycle. The U1C13 MCPR Safety Limits were calculated by Framatome-ANP (FRA-ANP: formerly Siemens Power Corporation) using the NRC approved methods described in Technical Specification 5.6.5.b.

The MCPR Safety Limits for U1C13 support Rated Core Thermal Powers up to 3493 MWt, which is a 1.5% increase over U1C12 (3441 MWt). The analysis was performed at the 3493 MWt power level to support proposed license amendments for an increase in the Rated Thermal Power level for SSES Unit 1.

The requested approval date (January 9, 2002) will allow time for the Core Operating Limits Report to be prepared and reviewed by PORC prior to the outage.

Section II: Description and Basis (both Licensing and Design) of the Current Requirements

Excessive thermal overheating of the fuel rod cladding can result in cladding damage and the release of fission products. In order to protect the cladding against thermal overheating due to boiling transition, the Thermal Power, High Pressure and High Flow Safety Limits (Section 2.1.1.2 of the Susquehanna SES Unit 1 Technical Specifications) were established. The change to Section 2.1.1.2 reflects the change from the U1C12 MCPR Safety Limits to the U1C13 MCPR Safety Limits for two-loop operation.

NUREG-0800, Standard Review Plan Section 4.4, specifies an acceptable, conservative approach to define this Safety Limit. Specifically, a Minimum Critical Power Ratio (MCPR) value is specified such that at least 99.9% of the fuel rods are expected to avoid boiling transition during normal operation or Anticipated Operational Occurrences (AOOs). Boiling transition is predicted using a correlation based on test data (i.e., a Critical Power Correlation). The Safety Limit MCPR calculation accounts for various uncertainties such as feedwater flow, feedwater temperature, pressure, power distribution uncertainties, and uncertainty in the Critical Power Correlation.

The proposed Safety Limit MCPR values (two-loop and single-loop) were calculated using Framatome-ANP (FRA-ANP) NRC approved licensing methods with the ANFB-10 critical power correlation for ATRIUM™-10 fuel. Input to the U1C13 MCPR Safety Limit analysis, provided by PPL, covered plant operation up to a rated core thermal power of 3493 MWt. Therefore, the analysis bounds U1C13 operation up to this Core Thermal Power, which is a 1.5% increase in power over U1C12 (3441 MWt).

The proposed Safety Limit MCPRs (two-loop and single-loop) assure that at least 99.9% of the fuel rods are expected to avoid boiling transition during normal operation or anticipated operational occurrences.

Section III: Evaluation of Proposed Change and Basis

The MCPR Safety Limit analysis is the first in a series of analyses that assure the new core loading for U1C13 is operated in a safe manner. Prior to the startup of U1C13, other licensing analyses are performed (using NRC approved methodology referenced in Technical Specification Section 5.6.5.b) to determine changes in the critical power ratio as a result of anticipated operational occurrences. These results are combined with the MCPR Safety limit values proposed here to generate the MCPR operating limits in the U1C13 COLR. The COLR operating limits thus assure that the MCPR Safety Limit will not be exceeded during normal operation or anticipated operational occurrences.

The MCPR Safety Limit analysis and the U1C13 core loading which it supports do not directly or indirectly affect any plant system, equipment, or component (other than the core itself) and therefore do not affect the failure modes of any of these. Thus, the proposed change does not create the possibility of a previously unevaluated operator error or a new single failure. Therefore, the proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

As discussed above, since the proposed change does not affect any plant system, equipment, or component, the proposed change will not jeopardize or degrade the function or operation of any plant system or component governed by Technical Specifications. The proposed MCPR Safety Limits do not involve a significant reduction in the margin of safety as currently defined in the Bases of the applicable Technical Specification sections, because the MCPR Safety Limits calculated for U1C13 preserve the required margin of safety.

Operator performance and procedures are unaffected by these proposed changes since the changes are essentially transparent to the operators and plant procedures, and do not change the way in which the plant is operated. The MCPR Operating Limits to be incorporated in the Core Operating Limits Report (determined from the MCPR Safety Limits and U1C13 Transient Analysis Results) may be different from the U1C12 limits. Following use of the methodology to analyze the Unit 1 Cycle 13 core design and future Unit 1 reloads, the reload cycle specific results are incorporated into the FSAR via an FSAR change notice. There are no other impacts on licensing documents and/or commitments.

Section IV: Conclusion

The proposed change to the MCPR Safety Limit does not affect any plant system, equipment, or component. Therefore, the proposed change will not jeopardize or degrade the function or operation of any plant system or component governed by Technical Specifications. The proposed MCPR Safety Limits do not involve a significant reduction in the margin of safety as currently defined in the Bases of the applicable Technical Specification sections, because the MCPR Safety Limits calculated for U1C13 preserve the required margin of safety.

Licensing analyses will be performed (using methodology referenced in Technical Specification Section 5.6.5.b) to determine changes in the critical power ratio as a result of anticipated operational occurrences. These results are added to the MCPR Safety

Limit values proposed herein to generate the MCPR operating limits in the U1C13 COLR. Thus, the COLR operating limits assure that the MCPR Safety Limits will not be exceeded during normal operation or anticipated operational occurrences.

Therefore, the proposed action does not involve an increase in the probability or an increase in the consequences of an accident previously evaluated in the SAR.

Thus, the proposed changes are in compliance with applicable regulations. The health and safety of the public is not adversely impacted by operation of SSES as proposed.

Attachment 2 to PLA-5320

**No Significant Hazards Considerations
and Environmental Assessment**

**NO SIGNIFICANT HAZARDS CONSIDERATIONS
AND ENVIRONMENTAL ASSESSMENT**

PPL Susquehanna, LLC has evaluated the proposed amendment and determined that it involves no significant hazards consideration. According to 10CFR50.92 (c) a proposed amendment to an operating license involves no significant hazards consideration if operation of the facility with the proposed amendment would not:

- Involve a significant increase in the probability of occurrence or consequences of an accident previously evaluated;
- Create the possibility of a new or different kind of accident from any previously analyzed; or
- Involve a significant reduction in a margin of safety.

The proposed Unit 1 Technical Specification change consists of a revision of Section 2.1.1.2 to reflect the U1C13 MCPR Safety Limits. This change is necessary because, as a result of U1C13 cycle specific calculations, the two-loop operation MCPR Safety Limit is increased by 0.01 from the current value.

The determination that the criteria set forth in 10CFR50.92 are met for this amendment is indicated below:

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

No. The proposed change to the MCPR Safety Limit does not directly or indirectly affect any plant system, equipment, component, or change the way in which the plant is operated. Thus, this proposed amendment does not involve a significant increase in the probability of occurrence of an accident previously evaluated.

Prior to the startup of U1C13, licensing analyses are performed (using NRC approved methodology referenced in Technical Specification Section 5.6.5.b) to determine changes in the critical power ratio as a result of anticipated operational occurrences. These results are added to the MCPR Safety Limit values proposed herein to generate the MCPR operating limits in the U1C13 COLR. These limits could be different from those specified for the U1C12 COLR. The COLR operating limits thus assure that the MCPR Safety Limit will not be exceeded during normal operation or anticipated operational occurrences.

Therefore, this proposed amendment does not involve a significant increase in the probability of occurrence or consequences of an accident previously evaluated.

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

No. The change to the MCPR Safety Limits and the U1C13 core loading which it supports does not directly or indirectly affect any plant system, equipment, or component (other than the core itself) and therefore does not affect the failure modes of any of these. Thus, the proposed changes do not create the possibility of a previously unevaluated operator error or a new single failure.

Therefore, this proposed amendment does not involve a possibility of a new or different kind of accident from any previously analyzed.

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

No. Since the proposed changes do not affect any plant system, equipment, or component, the proposed change will not jeopardize or degrade the function or operation of any plant system or component governed by Technical Specifications. The proposed MCPR Safety Limits do not involve a significant reduction in the margin of safety as currently defined in the Bases of the applicable Technical Specification sections, because the MCPR Safety Limits calculated for U1C13 preserve the required margin of safety.

Therefore these changes do not involve a significant reduction in margin of safety.

Based upon the above, the proposed amendment does not involve a significant hazards consideration.

ENVIRONMENTAL CONSEQUENCES

An environmental assessment is not required for the proposed change because the requested change conforms to the criteria for actions eligible for categorical exclusion as specified in 10 CFR 51.22(c)(9). The requested change will have no impact on the environment. The proposed change does not involve a significant hazards consideration as discussed above. The proposed change does not involve a significant change in the types or significant increase in the amounts of any effluents that may be released offsite. In addition, the proposed change does not involve a significant increase in individual or cumulative occupational radiation exposure.

Attachment 3 to PLA-5320

Technical Specification Mark-Ups

2.0 SAFETY LIMITS (SLs)

2.1 SLs

2.1.1 Reactor Core SLs

2.1.1.1 With the reactor steam dome pressure < 785 psig or core flow < 10 million lbm/hr:

THERMAL POWER shall be \leq 25% RTP.

2.1.1.2 With the reactor steam dome pressure \geq 785 psig and core flow \geq 10 million lbm/hr:

M CPR shall be \geq ~~1.11~~ ^{1.12} for two recirculation loop operation or \geq 1.13 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 SL

Reactor steam dome pressure shall be \leq 1325 psig.

2.2 SL Violations

With any SL violation, the following actions shall be completed within 2 hours:

2.2.1 - Restore compliance with all SLs; and

2.2.2 Insert all insertable control rods.

Attachment 4 to PLA-5320

“Camera-Ready” Technical Specification Pages

2.0 SAFETY LIMITS (SLs)

2.1 SLs

2.1.1 Reactor Core SLs

2.1.1.1 With the reactor steam dome pressure < 785 psig or core flow < 10 million lbm/hr:

THERMAL POWER shall be \leq 25% RTP.

2.1.1.2 With the reactor steam dome pressure \geq 785 psig and core flow \geq 10 million lbm/hr:

MCPR shall be \geq 1.12 for two recirculation loop operation
or \geq 1.13 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 SL

Reactor steam dome pressure shall be \leq 1325 psig.

2.2 SL Violations

With any SL violation, the following actions shall be completed within 2 hours:

2.2.1 Restore compliance with all SLs; and

2.2.2 Insert all insertable control rods.

Attachment 5 to PLA-5320

Unit 1 Cycle 13 Core Composition

Unit 1 Cycle 13 Core Composition

Assembly Type	Previous Cycle Operational History	Number of Assemblies
FRA-ANP ATRIUM™-10	Fresh	316
FRA-ANP ATRIUM™-10	Once-burned	256
FRA-ANP ATRIUM™-10	Twice-burned	192