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U. S. Nuclear Regulatory Commission  
Attn: Document Control Desk  
Mail Stop OP1-17  
Washington, DC 20555-0001

**SUSQUEHANNA STEAM ELECTRIC STATION  
PROPOSED AMENDMENT NO. 283 TO  
UNIT 1 LICENSE NPF-14: MCPR SAFETY LIMITS AND  
REFERENCE CHANGES SUPPLEMENTAL INFORMATION  
PLA-6017**

**Docket No. 50-387**

*Reference: 1) PLA-5990, B. T. McKinney (PPL), "Proposed Amendment No. 283 to Unit 1 License NPF-14: MCPR Safety Limits and Reference Changes," dated December 1, 2005.*

The purpose of this letter is to supplement the referenced proposed amendment request, which proposed changes to the SSES Unit 1 Technical Specification 2.1.1.2 and 5.6.5b. The supplemental information provided herein provides the information requested during the February 13, 2006 teleconference held between Richard Guzman (NRC) and Michael Crowthers (PPL Susquehanna LLC).

Reference 1 provided in Attachment 4 a "Preliminary Unit 1 Cycle 15 Core Composition" and in Attachment 5 a "Preliminary Unit 1 Cycle 15 Core Loading Pattern." The final core loading pattern is provided in the Attachment to this letter. The Unit 1 Cycle 15 preliminary core loading provided in PLA-5990 was revised to mitigate the potential for excessive friction in peripheral control cells. No changes were made to the loading of interior control cells. The design maximizes the use of SQA-12 assemblies that were re-channeled during the November 2005 Unit 1 maintenance outage to improve clearances within the cell. The figure shows the locations of assemblies that received a new fuel channel during the November 2005 Unit 1 maintenance outage.

The changes to the Unit 1 Cycle 15 core loading do not change the proposed 2-loop and single loop MCPR Safety Limits previously submitted in PLA-5990. In addition, the core composition provided in PLA-5990, Attachment 4, remains unchanged.

Also, note that the ANF-524(P)(A) methodology explicitly accounts for the effect of channel bow on the MCPR Safety Limit and thus remains applicable to the MCPR Safety

A001

Limit calculation for U1C15. ANF-524(P)(A), Supplement 1, Rev. 2, describes the way in which channel bow is analyzed and included in the Safety Limit methodology. This methodology was used for the proposed U1C15 MCPR Safety Limit analysis.

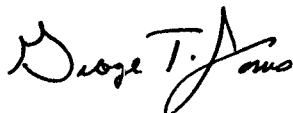
The neutronics effects of bow (increase in fuel pin local peaking vs. channel bow) are computed using the CASMO4 lattice physics code. Results of this calculation and the uncertainty in channel bow are then used to generate an uncertainty in local peaking, which is included in the Safety Limit analysis. This bow related uncertainty is entered into the statistical (Monte Carlo) Safety Limit analysis along with the other uncertainties as described in ANF-524(P)(A), Rev. 2. The result is a value of the MCPR Safety Limit, which explicitly accounts for the effects of channel bow.

PPL has reviewed the No Significant Hazards Consideration and the Environmental Consideration submitted with Reference 1 relative to this supplemental information. We have determined that there are no changes required to either of these documents.

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

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

Executed on: 2/17/2006



George T. Jones

Attachment: Supplemental Information

cc: NRC Region I  
Mr. A. J. Blamey, NRC Sr. Resident Inspector  
Mr. R. V. Guzman, NRC Project Manager  
Mr. R. Janati, DEP/BRP

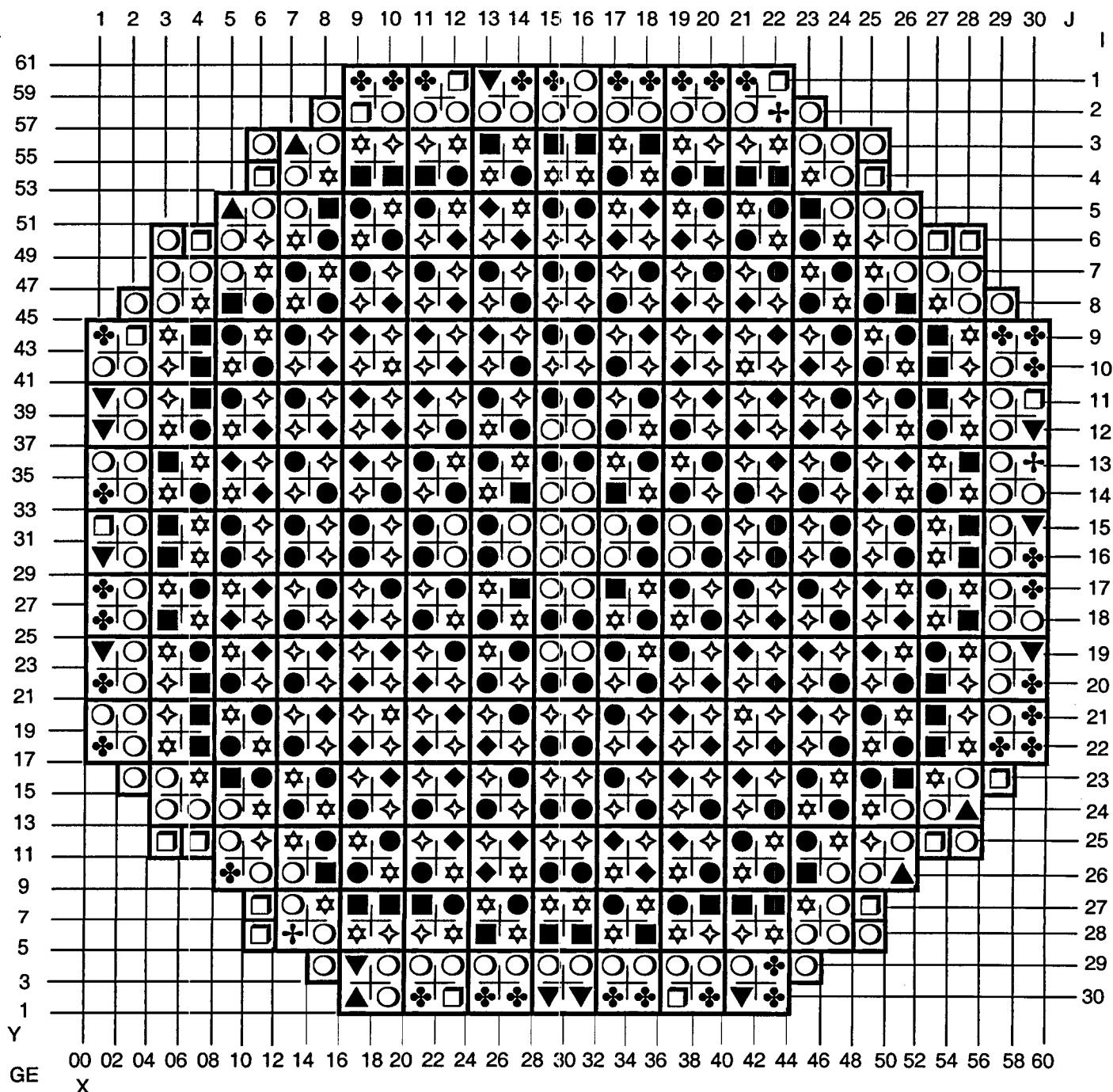
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**Attachment to PLA-6017**

**Supplemental Information**

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# SUSQUEHANNA UNIT 1 CYCLE 15 REFERENCE CORE LOADING PATTERN



○ SQA-12 12GdZ/1Gd7 TWICE BURNED (3.97)

◻ SQA-12 13Gd6/12GdZ TWICE BURNED (3.75)

☆ SQA-13 14GdZ ONCE BURNED (4.12)

◇ SQA-13 14GdZ ONCE BURNED (3.90)

▲ SQA-12 12GdZ/1Gd7 Twice Burned (3.97) New 80-mil Channel (Fall 2005)

▼ SQA-12 13Gd6/12GdZ Twice Burned (3.75) New 80-mil Channel (Fall 2005)

⊕ SQA-12 12GdZ/1Gd7 Twice Burned (3.97) New 100-mil Channel (Fall 2005)

♣ SQA-12 13Gd6/12GdZ Twice Burned (3.75) New 100-mil Channel (Fall 2005)

● SUS1-15 15GdZ FRESH (4.11)

■ SUS1-15 14GdZ FRESH (3.91)

◆ SUS1-15 16GdZ FRESH (4.09)