



10 CFR 50.90

LR-N07-0034
LCR H05-01, Rev. 1

FEB 28 2007

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

Hope Creek Generating Station
Facility Operating License No. NPF-57
NRC Docket No. 50-354

Subject: Supplement to License Amendment Request for Extended Power Uprate

Reference: 1) PSEG letter LR-N06-0286, Request for License Amendment: Extended Power Uprate, September 18, 2006
2) PSEG letter LR-N06-0413, Supplement to License Amendment Request for Extended Power Uprate, October 10, 2006
3) PSEG letter LR-N06-0418, Supplement to License Amendment Request for Extended Power Uprate, October 20, 2006

In Reference 1, PSEG Nuclear LLC (PSEG) requested an amendment to Facility Operating License NPF-57 and the Technical Specifications (TS) for the Hope Creek Generating Station (HCGS) to increase the maximum authorized power level to 3840 megawatts thermal (MWt). References 2 and 3 provided additional information to support PSEG's request.

Attachment 1 to Reference 2 provided an evaluation of conservatisms that were included in the loads inputted into the HCGS steam dryer finite element model (FEM). The evaluation concluded that when conservatisms introduced in the load assumptions are considered and estimated, the calculated alternating stress ratios remain above 1.0.

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To further demonstrate the conservatism in the application, and to facilitate staff review, PSEG evaluated the margin in the current application. This submittal transmits the results of the evaluation for the following areas:

- Additional benchmarking to establish scale model test (SMT) flow rates more representative of main steam flow speeds at current licensed thermal power (CLTP) and EPU conditions.
- Modeling additional steam dryer weld reinforcements that were made before initial plant operation but were not previously included in the finite element model used to predict stress levels for EPU operation.
- Monitoring reactor pressure vessel (RPV) steam dome to confirm the absence of a significant pressure pulsation frequency peak at 80 Hz.

Attachment 1 to this letter reports the results of the steam dryer stress analysis using predicted EPU loads from the additional SMT benchmarking, which confirmed that the original SMT results were overly conservative at CLTP and EPU conditions. With the excess conservatism removed, the SMT loads previously used for CLTP conditions are actually representative of EPU conditions. In the attached report, the structural analysis results for the predicted nominal frequency EPU condition are unchanged from those provided previously for CLTP conditions in Attachment 21 to Reference 1. Predicted stresses at all locations on the steam dryer remain within allowable values, for both the nominal loading and for shifts in frequency up to $\pm 10\%$. In addition to providing the structural analysis results, the attached report summarizes the results of the additional SMT benchmarking and discusses the modeling of the additional steam dryer weld reinforcements and their effect on adjacent structural elements.

Attachment 2 to this letter updates the comparison of predicted differential pressure load on the Hope Creek and Quad Cities Unit 2 steam dryers at EPU conditions. The original comparison was provided in Reference 3. Attachment 2 contains information which Continuum Dynamics, Inc. (CDI) considers to be proprietary. CDI requests that the proprietary information be withheld from public disclosure in accordance with 10 CFR 2.390(a)(4). An affidavit supporting this request is provided in Attachment 2. A non-proprietary version of CDI Technical Memorandum 06-23P is provided in Attachment 3.

Attachment 7 to Reference 1 described a significant 80 Hz peak in the loads generated by the Acoustic Circuit Model. Based on an evaluation of strain gage data, industry experience, and testing performed by CDI, PSEG concluded that the 80 Hz peak was not a valid load. PSEG recently completed collecting and analyzing RPV steam dome dynamic pressure data. The analysis demonstrated that the detected frequencies were small in magnitude and relatively broad (indicating no acoustic sources). The 80 Hz frequency was small in comparison with other detected frequencies.

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Another element of the margin recovery effort is the comparison of loads determined from in-plant strain gage data with those determined from SMT data at CLTP conditions. PSEG recently completed a maintenance outage during which failed main steam line strain gage channels were restored to service. PSEG is currently analyzing the in-plant strain gage data obtained at CLTP, and will provide the results to the NRC in March 2007.

PSEG has determined that the information contained in this letter and attachments does not alter the conclusions reached in the 10CFR50.92 no significant hazards analysis previously submitted.

Should you have any questions regarding this submittal, please contact Mr. Paul Duke at 856-339-1466.

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

Executed on 2/28/07
(date)

Sincerely,



Thomas P. Joyce
Site Vice President
Salem Generating Station

Attachments (3)

1. "Stress Analysis of the Hope Creek Unit 1 Steam Dryer at EPU Conditions Using 1/8th scale Model Pressure Measurement Data," CDI Report No. 06-27, Revision 2, February 2007
2. CDI Technical Memorandum 06-23P, "Comparison of the Hope Creek and Quad Cities Steam Dryer Loads at EPU Conditions," Revision 1, January 2007 (Proprietary)
3. CDI Technical Memorandum 06-23NP, "Comparison of the Hope Creek and Quad Cities Steam Dryer Loads at EPU Conditions," Revision 1, January 2007

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cc: S. Collins, Regional Administrator – NRC Region I
J. Shea, Project Manager - USNRC
NRC Senior Resident Inspector - Hope Creek
K. Tosch, Manager IV, NJBNE

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Stress Analysis of the Hope Creek Unit 1 Steam Dryer
at EPU Conditions
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