



LR-N08-0257
November 21, 2008

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: Clarification to Final Safety Evaluation for Extended Power Uprate,
License Amendment No. 174

Reference: 1) Letter from Christine T. Neely (PSEG Nuclear LLC) to USNRC,
September 24, 2008


On May 14, 2008, the NRC issued Amendment No. 174 to the operating license for the Hope Creek Generating Station (HCGS), increasing the authorized maximum power level by approximately 15 percent, from 3,339 megawatts thermal (MWt) to 3,840 MWt. In Reference 1, PSEG Nuclear (LLC) identified some items requiring clarification in the related safety evaluation.

Attachment 1 to this letter provides an additional clarification to the safety evaluation. A markup of the affected page of the safety evaluation is provided in Attachment 2. The clarification does not invalidate the conclusions documented in the safety evaluation.

There are no regulatory commitments in this letter or attachments.

If you have any questions or require additional information, please contact Mr. Paul Duke at 856-339-1466.

Sincerely,


Jeff Keenan
Manager - Licensing
PSEG Nuclear LLC

A001
NRR

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Attachments (2)

1. Clarification to Final Safety Evaluation for Extended Power Uprate, License Amendment No. 174
2. Marked-up Page

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

ATTACHMENT 1**Hope Creek Generating Station****NRC Docket No. 50-354****Clarifications to Final Safety Evaluation for Extended Power Uprate, License Amendment No. 174**

Item	Location	Existing Text	Recommended Text	Basis
1.	Section A.2.1, Steam Dryer, Acoustic Circuit Model Page A-5	PSEG did not take credit for conservative (negative) bias values in the stress results.	[delete]	The stress results account for all the end-to-end biases and uncertainties in the loads model. Treatment of Acoustic Circuit Model biases and uncertainties is described in: <ul style="list-style-type: none">• Section 2, C.D.I. Technical Note No. 07-29P, Rev. 0 (Attachment 6 to PSEG letter LR-N07-0171, August 3, 2007)• Table 11, C.D.I. Report No. 07-17P, Rev. 4 (Attachment 3 to PSEG letter LR-N08-0033, January 30, 2008)

* Page numbers correspond to Appendix A to the Final Safety Evaluation for Amendment No. 174, Accession No. ML081230648

ATTACHMENT 2

**Hope Creek Generating Station
NRC Docket No. 50-354**

**Clarifications to Final Safety Evaluation for Extended Power Uprate, License
Amendment No. 174**

Marked-up Pages

Page

A-5

Acoustic Circuit Model

PSEG developed a new acoustic circuit model (ACM Rev. 4) to predict full scale steam dryer loads from in-plant measurements, with the inclusion of a low frequency hydrodynamic contribution. The model is described in LR-N07-0171,⁹ Attachment 3, CDI Report 07-09P (Rev. 1), "Methodology to Predict Full Scale Steam Dryer Loads from In-Plant Measurements, with the Inclusion of a Low Frequency Hydrodynamic Contribution" (Proprietary),¹⁰ and is based on the Bounding Pressure Model defined in LR-N06-0286,¹¹ Attachment 20, CDI Report 05-28P, "Bounding Methodology to Predict Full Scale Steam Dryer Loads from In-Plant Measurements (C.D.I. Proprietary)."¹² The new model improves the prediction of the steam dryer loads at low frequencies up to 60 Hz. [[

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The parameters of the new ACM Rev. 4 are "tuned" by means of QC2 in-plant measurements at OLTP (790 megawatts electric [MWe]) because the corresponding Mach number ($M=0.105$) in QC2 MSLs would be similar to that for Hope Creek at EPU conditions. The MSL strain gage measurements are used to estimate the [[

]]. The predictions of the new version are compared with the pressure measurements on the steam dryer in QC2. The low frequency (≤ 60 Hz) prediction appears to envelop the QC2 measurements at low frequencies. In addition, the new model seems to reduce the bias and uncertainty errors in the frequency range of 40 to 60 Hz (bias from 14 to 0.4 percent and uncertainty from 15 to 7 percent).

In LR-N07-0171, Attachment 3, CDI Report 07-09P (Rev. 1), "Methodology to Predict Full Scale Steam Dryer Loads from In-Plant Measurements, with the Inclusion of a Low Frequency Hydrodynamic Contribution," PSEG compared the direct measurements and 'blind' simulations of the surface pressures on the QC2 dryer (prior to the installation of acoustic side branches (ASBs) at QC) and established the bias errors and uncertainties associated with ACM-generated loads on the dryer. The bias errors and uncertainties of the analysis were found to be frequency-dependent. For example, the bias errors were negative (conservative), or less than [[]] percent, for all evaluated frequency ranges with the exception of a positive [[]] percent bias error between 116 and 120 Hz. The uncertainty values extended from [[]] percent within specific intervals over the evaluated frequency range. PSEG did not take credit for conservative (negative) bias values in the stress results. The large bias error ([[]] percent) for frequencies between 116 and 120 Hz is based on the ACM's underestimation of the dryer loads caused by flow-induced acoustic resonances in the SRVs of the QC2 plant at 156 Hz. Because similar errors may occur for other SRV resonances in other plants, PSEG will apply the [[]] percent bias and [[]] percent uncertainty to any SRV resonance that may appear in the MSL signals during Hope Creek power ascension.

⁹ PSEG Letter (LR-N07-0171) to NRC dated August 3, 2007, "Response to Request for Additional Information, Request For License Amendment, Extended Power Uprate" ADAMS Accession No. ML072250369

¹⁰ CDI Report 07-09P (Rev. 1), "Methodology to Predict Full Scale Steam Dryer Loads from In-Plant Measurements, with the Inclusion of a Low Frequency Hydrodynamic Contribution" (Proprietary) ADAMS Accession No. ML072250371

¹¹ PSEG Letter (LR-N06-0286) to NRC dated September 18, 2006, "Request for License Amendment Extended Power Uprate, Hope Creek Generating Station Facility, Operating License NPF-57, Docket No. 50-354" ADAMS Accession No. ML062680451

¹² ADAMS Accession No. ML061300484 (Proprietary)