

December 10, 1999

MEMORANDUM TO: File Center

Original signed by:

FROM: Victor Nerses, Project Manager, Section 1  
Project Directorate I  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

SUBJECT: SUSQUEHANNA STEAM ELECTRIC STATION (SSES), UNIT 1 AND 2,  
DRAFT REQUEST FOR ADDITIONAL INFORMATION, GENERIC  
LETTER(GL) 96-06 (TAC NOS. M96875 AND M96876)

The attached request for additional information (RAI) pertaining to SSES, Units 1 and 2 was transmitted by facsimile on December 10, 1999, to Mr. R. Kichline of PP&L, Inc. (licensee). Review of the RAI would allow the licensee to determine and agree upon a schedule to respond to the RAI. This memorandum and the attachment do not convey a formal request for information or represent an NRC staff position.

Docket Nos. 50-387 and 50-388

Attachment: Draft RAIs to PP&L, Inc.'s GL 96-06 Response

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UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

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*Victor Nerses*

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## DRAFT RAIS TO PP&L, INC.'S GL 96-06 RESPONSE

1. Provide further justification for P[3] - containment heating causes heating and expansion of the water trapped between the isolation valves overpressurizing the pipe until rupture. At a minimum, please, address additional failure modes such as station blackout and human reliability.
2. Page 16 of the submittal states, "Penetration failure is a concern when a large radioactive source term is available for release in the drywell." Please quantify the probability of a large radioactive source term in the drywell at the time of penetration failure.
3. During the resolution of Generic Safety Issue 150, "Overpressurization of Containment Penetrations," the staff estimated a value of 0.1 for the probability that the penetration fails in a manner that results in a leakage path from the containment atmosphere to the environment. Although the staff believes that 0.1 is very conservative, barring further justification from PP&L, the staff believes that a value of 0.1 is more appropriate than PP&L's estimate of between  $10^{-5}$  and  $10^{-2}$  with a point estimate of  $3 \times 10^{-4}$ . The staff's concern in supporting a less conservative value is based on PP&L's application of Branch Technical Position MEB 3-1, failure to address the effects of non-uniform strain, failure to identify the more likely failure points given overpressurization, and a lack of relevant data.
4. Section 5.0 of the submittal discusses two mitigating measures that provide protection to primary containment integrity for the overpressurization failure mode as well as other threats. The submittal goes on to say that these measures have been implemented in the plant's Emergency Operating Procedures via safety evaluations per 10 CFR 50.59. Please provide a copy and reference these safety evaluations in your submittal. What controls exist to assure that these improvements to the Emergency Operating Procedures will not be modified without the consideration of the issues raised in GL 96-06?
5. Considering the safety importance of the drywell spray valves to open as described in Section 4.2.1 of the submittal what monitoring program will be implemented to support the modeling assumptions of the drywell spray isolation valves? Have insights from the engineering evaluation in Section 4.2.1 been incorporated into the drywell spray isolation valves' maintenance program? Have these valves been classified as having high safety significance? If so, will possible future changes to their classification consider their role in the disposition of GL 96-06?
6. Page 16 of the submittal states that, "Estimating the probability that the containment will reach a sustained temperature sufficient to rupture requires an evaluation of ... the containment temperature for a spectrum of accidents," and, "It is assumed that penetration failure will occur if cooling to the drywell is not restored." Please provide the evaluation of containment temperature for a spectrum of accidents described above. Have you quantified the impact of drywell sprays on containment temperature? If not, what is the basis for the assumption that the penetration will not fail given restoration of cooling to the drywell?

7. For those penetrations that are susceptible to thermally-induced overpressure, provide the maximum-calculated temperature and pressure for the piping run. Describe in detail the method used to calculate these pressure and temperature values. This should include a discussion of the heat transfer model, and the basis for the heat transfer coefficients used in the analysis. Discuss any source of uncertainty associated with the calculated pressure and temperature.
8. Provide the results of piping and valve analysis based on the criteria contained in the ASME Code, Section III, Appendix F. For each component, provide a summary of the maximum faulted pressure, design load combination, calculated stress for design load combination including faulted pressure, and allowable stress based on the criteria contained in Appendix F. Also, you should include a reference to the specific provisions of Appendix F used as a basis in calculating the allowable stress (e.g., F-1331, F-1430, F-1420).