PSE&G

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Nuclear Business Unit

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United States Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555

Gentlemen:

SIGNIFICANT PEAK FUEL CLAD TEMPERATURE CHANGES
HOPE CREEK GENERATING STATION
DOCKET NOS. 50-354

Pursuant to the requirements of 10CFR50.46(a) (3)(ii), Public Service Electric & Gas (PSE&G) hereby reports changes of greater than fifty degrees Fahrenheit to the calculated Peak Clad Temperature (PCT) for Hope Creek Generating Station's Design Basis Loss of Coolant Accident. This report includes PCT changes that should have been reported in the past but were missed due to poor communication of requirements between the fuel vendor and PSE&G. These changes are the result of changes to, or corrections of errors in, the emergency core cooling systems (ECCS) evaluation model over a period of 6 years. This report includes the nature of the changes, their estimated effect on the limiting analysis, and a proposed schedule for providing a reanalysis or taking other actions to show compliance with 10CFR50.46 requirements. PSE&G is consulting with the fuel vendor to assure this does not occur in the future.

Sincerely,

David R. Powell

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Manager - Nuclear Licensing and Regulation

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Background

During the week of September 9, 1996, a PSE&G Quality Assessment audit was performed at the General Electric Company (GE) site in Wilmington, NC. During the audit, PSE&G was provided a list of all reports provided to the NRC in support of 10CFR50.46(a)(3)(ii) to compare with the list of reports we were using as the basis for the Hope Creek Generating Station mid-year 1996 annual report evaluation. Upon inspection, it was discovered that there were two reports for which PSE&G did not have a record. PSE&G requested that GE provide copies of these past transmittals for Hope Creek Generating Station specific evaluation. On October 11, 1996, PSE&G received under cover letter dated October 7, 1996, a transmittal of the requested General Electric letter reports to the NRC. A revised evaluation of the Peak Clad Temperature impacts for Hope Creek Generating Station showed the following:

Letter	Date of Letter or Evaluation	Reported PCT Impact	Cumulative PCT Impact (the sum of the absolute magnitudes of the respective temperature changes)
1	6/13/90	N/A	0
2	3/12/91	N/A	0
3	6/26/92	+10/-25	25
4	6/30/93	N/A	25
5	7/1/94	N/A	25
6	6/24/95	N/A	25
7 8	12/15/96 2/20/96	+10	35
9	2/1/96	+25	60
10	3/25/96 (prelim) 6/28/96	N/A	60

GE was contacted to confirm the applicability of some of the Peak Clad Temperature (PCT) impacts on HCGS. After consultation with GE on the PCT impacts, the condition was

determined to require reporting per 10 CFR 50.46(a)(3)(ii). This condition has no safety significance. The current Design Basis Accident Loss of Coolant Accident (DBA LOCA) described in the HCGS UFSAR has a PCT of 2046°F as analyzed by the GE SAFE/REFLOOD methods previously approved by the NRC. The small break LOCA (0.09 ft^2) in the HCGS UFSAR has a PCT of 1694°F. The PCT impact of up to 60°F provided by this notification will not increase the HCGS DBA LOCA or small break LOCA PCT above the 2200°F licensing limit prescribed by 10 CFR Part 50.46(b).

The currently evaluated PCT impacts, as bounded by the 2200°F licensing limit, will not increase the amount of fuel damage postulated to occur during the DBA LOCA beyond that already assumed in the HCGS UFSAR. No increase in the fuel damage will ensure no increase in fission product release to the reactor coolant, containment, or reactor building, and therefore the current HCGS UFSAR evaluated off site dose and control room habitability will not be challenged.

Changes and Effects

The following paragraphs briefly describe the nature of the changes to the evaluation model whose impacts can be seen in the previous table.

As documented in General Electric letter dated June 26, 1992, a change in the computer system for part of the SAFE/REFLOOD package (CHASTE) results in an estimated range of impact of predicted Peak Clad Temperatures of + 10 degrees Fahrenheit and - 25 degrees Fahrenheit.

During the first quarter of 1996, two new Peak Clad Temperature impacts were evaluated by General Electric and provided to PSE&G. The first was due to the failure to include the reactor vessel bottom head drain in the blowdown of coolant from the break location, and was estimated by General Electric to impact Peak Clad Temperature by 10°F. The second was a Hope Creek Generating Station specific evaluation, relative to the assumptions for flow instrumentation accuracy of ECCS injection. A General Electric evaluation for Hope Creek Generating Station determined that the PSE&G estimated instrumentation inaccuracies were not properly contained in the SAFE/REFLOOD analysis for Hope Creek Generating Station and would impact Peak Clad Temperature by less than 25°F.

Corrective Actions

By December 31, 1996, a Hope Creek Generating Station Updated Final Safety Analysis Report change will be prepared to include the new Peak Clad Temperature limit.

In addition, corrective actions to prevent recurrence are being taken in accordance with our corrective action process and involve the fuel vendor.

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