Public Service
Electric and Gas
Company

Steven E. Miltenberger

Public Service Electric and Gas Company P.O. Box 236, Hancocks Bridge, NJ 08038 609-339-1100

Vice President and Chief Nuclear Officer

NOV 10 1993

NLR-N93169
LCR 93-05 RAI

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

Gentlemen:

RESPONSE TO SEPTEMBER 30, 1993 RAI
LICENSE CHANGE REQUEST 93-05
HOPE CREEK GENERATING STATION
FACILITY OPERATING LICENSE NPF-57
DOCKET NO. 50-354

The purpose of this letter is to respond to the September 30, 1993 request for additional information (RAI). This RAI required that PSE&G provide an analysis or other suitable justification demonstrating that a transient increase in river temperature for a 6-hour period above the proposed maximum allowable value is acceptable. PSE&G would like to take this opportunity to support the probabilistic justification for the proposed revision by re-evaluating unique features of the Hope Creek Generating Station in order to permit continued operation for a 6-hour period with river water temperatures in excess of the proposed 88.6°F.

Attachment 1 to this letter contains the details relative to this licensing position and is being provided in addition to the probabilistic risk justification utilized in the Significant Hazards Consideration Evaluation required by 10CFR50.92. Please note, however, that this submittal does not change nor modify any of the conclusions stated in the Significant Hazards Consideration Evaluation previously submitted for License Change Request (LCR) 93-05. However, this re-evaluation did result in a change to the marked-up Technical Specification pages previously transmitted via the LCR 93-05 submittal. Attachment 2 to this letter contains the revised marked-up Technical Specification page which provides additional clarification on the Ultimate Heat Sink operation.

A copy of the this response to the RAI has been sent to the State of New Jersey. Pursuant to our conversation with Steve Dembek, the submittal date of this letter was extended.

A001
1/1

Should you have any questions or comments on this transmittal, do not hesitate to contact us.

Sincerely,

Affidavit
Attachments (2)

C Mr. T. T. Martin, Administrator - Region I
U. S. Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, PA 19406

Mr. S. Dembek, Licensing Project Manager
U. S. Nuclear Regulatory Commission
One White Flint North
11555 Rockville Pike
Rockville, MD 20852

Mr. C. S. Marschall (S09)
USNRC Senior Resident Inspector

Mr. K. Tosch, Manager IV
NJ Department of Environmental Protection
Division of Environmental Quality
Bureau of Nuclear Engineering
CN 415
Trenton, NJ 08625

REF: NLR-N93169
LCR 93-05 RAI

STATE OF NEW JERSEY)
) SS.
COUNTY OF SALEM)

S. E. Miltenberger, being duly sworn according to law deposes and says:

I am Vice President and Chief Nuclear Officer of Public Service Electric and Gas Company, and as such, I find the matters set forth in the above referenced letter, concerning the Hope Creek Generating Station, are true to the best of my knowledge, information and belief.

S. E. Miltenberger

Subscribed and Sworn to before me
this 10th day of November, 1993

Kimberly Jo Brown
Notary Public of New Jersey

My Commission expires on

KIMBERLY JO BROWN
NOTARY PUBLIC OF NEW JERSEY
My Commission Expires April 21, 1998

ATTACHMENT 1

INFORMATION CONCERNING OPERATION OF THE
HOPE CREEK GENERATING STATION WITH RIVER
WATER TEMPERATURES IN EXCESS OF 88.6°F

HOPE CREEK GENERATING STATION — NLR-N93169
FACILITY OPERATING LICENSE NPF-57 — DOCKET NO. 50-354

INTRODUCTION

The request for additional information required that PSE&G provide an analysis or other suitable justification demonstrating that a transient increase in river temperature for a 6-hour period above the proposed maximum allowable value of 88.6°F is acceptable. The following analysis of the Station Service Water System (SSWS) and Safety Auxiliaries Cooling System (SACS) unique features demonstrates that credit can be taken for additional SSWS and SACS flow equivalent to having an additional SSWS and SACS pump in operation (50% capacity flow), thereby enabling the Ultimate Heat Sink temperature to rise to 89.9°F in this 6-hour period before initiation of shutdown procedures is required.

LICENSING AND DESIGN BASES

The SSWS and SACS were designed, in part, to meet the requirements of General Design Criterion (GDC) 44 which states that suitable redundancy in equipment and components, leak detection, and isolation capabilities be provided in the design of the SSWS and SACS to assure that the safety function can be accomplished concurrent with a single failure and loss of offsite power (assuming onsite power available), or loss of onsite power (assuming offsite power available) under normal operating and accident conditions. The SSWS design, with two independent 100% capacity SSWS and SACS loops, each with redundant 50% capacity pumps, meets the requirements of GDC 44.

Furthermore, the attendant risk of plant operation with redundancy less than that required by GDC 44, has been incorporated into the Action Statement completion times in the Hope Creek Technical Specifications. These Action Statement completion times (be in at least HOT SHUTDOWN in 12 hours and in COLD SHUTDOWN within the next 24 hours if the LCO can not be met) were derived from the General Electric BWR/4 Standard Technical Specifications (GE STS), and were established using a probabilistic risk justification approved by the NRC.

PSE&G'S PROPOSED CHANGES AND JUSTIFICATION

PSE&G's original proposal permitted continued plant operation with river water temperatures above 88.6°F provided that this period does not exceed six hours. In addition, PSE&G is now placing further restrictions on this 6-hour operation by implementing a 89.9°F maximum temperature limit and by requiring verification that the entire SSWS and SACS are operable. Since the RAI states that probabilistic justification for these proposed revisions is not acceptable, PSE&G has re-evaluated the original proposal and has made several changes to deterministically support retention of the 6-hour period of continued operation.

As indicated on the marked-up Technical Specification page in Attachment 2 of this letter, a revised Action Statement for LCO 3.7.1.3 will now state that the Ultimate Heat Sink temperature can exceed 88.6°F for a period of six hours up to a maximum of 89.9°F provided that the entire SSWS and SACS are verified to be operable. To support this proposed change, PSE&G provides the following justification:

1) By ensuring that the entire SSWS and SACS are operable prior to operating with the Ultimate Heat Sink temperature above 88.6°F, the plant can continue safe operation with river water temperatures at or below 89.9°F. The 89.9°F temperature results from having SSWS flow equivalent to 50% capacity in the redundant loop assumed to be available for the entire 6-hour period. The basis for this assumption is that credible single failures (i.e., single diesel failure, single SSWS pump failure or SACS pump failure will not result in having less than 50% capacity flow in the additional SSWS loop for this six hour period. With this additional SSWS flow, the plant can safely complete normal shutdown procedures provided that the river water temperature is at or below 89.9°F. If prior to exceeding the 88.6°F limit the entire SSWS and SACS are not verified to be OPERABLE, the 88.6°F limit will be in effect and the existing LCO Action Statements for the SSWS will be followed.

2) As mentioned previously, the existing Action Statement completion times for the Hope Creek Technical Specifications were taken from the GE STS and were derived using a probabilistic risk justification. The GE STS, however were based upon a plant that had four SSWS pumps, but only two diesels and two trains of onsite Class-1E AC power, while Hope Creek has four SSWS pumps and four diesels and four trains of onsite Class-1E AC power. The Hope Creek design is much more resistant to a single failure that would disable the entire loop of SSWS. Therefore, it can be

reasoned that the attendant risk of continued operation of Hope Creek with river water temperatures above 88.6°F (but below 89.9°F) with the entire SSWS and SACS determined to be OPERABLE is justified since one 100% capacity loop and one 50% capacity loop of SSWS and SACS can be reasonably assumed to be available.

CONCLUSIONS

As indicated in the marked-up Technical Specification page in Attachment 2, a revised Action Statement for LCO 3.7.1.3 will now state that the Ultimate Heat Sink temperature can exceed 88.6°F for a period of six hours up to a maximum of 89.9°F provided that the entire SSWS and SACS are operable. By verifying that the entire SSWS and SACS are operable prior to operating with the Ultimate Heat Sink temperature above 88.6°F, at least 50% capacity flow in the additional SSWS loop can be assumed to be available (based upon the justification given above) and continued safe operation of the plant, with no significant additional attendant risk, can occur with river water temperatures at or below 89.9°F. If the entire SSWS and SACS are not available, the 88.6°F limit will be in effect and the LCO Action Statements for those systems will be followed.