

Public Service
Electric and Gas
Company

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Vice President - Nuclear Operations

NLR-N92070

JUN 16 1992

Reference: LCR 89-13

U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555

Gentlemen:

SUPPLEMENTAL INFORMATION FOR
REQUEST FOR AMENDMENT
FACILITY OPERATING LICENSE NPF-57
HOPE CREEK GENERATING STATION
DOCKET NO. 50-354

On February 3, 1992, Public Service Electric and Gas Company (PSE&G) transmitted an application to amend Appendix A of Facility Operating License No. NPF-57 in accordance with 10CFR50.90. This amendment request would eliminate the main steam line isolation and automatic reactor shutdown functions of the main steam line radiation monitor in the Technical Specifications.

Our description of the requested amendment, supporting information and analyses for the change, and the basis for a no significant hazards consideration determination, provided with that submittal, are not altered by this supplemental information.

As we stated in our application for amendment, Hope Creek facility is specifically bounded by the assumptions and justifications in General Electric Company Licensing Topical Report, NEDO-31400A, "Safety Evaluation for Eliminating the Boiling Water Reactor Main Steam Line Isolation Valve Closure Function and SCRAM Function of the Main Steam Line Radiation Monitor" and a BWR Owners Group letter (BWROG 89-31) which provided answers to specific NRC questions regarding the topical report. The NRC issued their Safety Evaluation Report dated May 15, 1991 accepting this NEDO document for referencing by licensees in their amendment requests.

However, the NRC has raised several plant specific questions, the State of New Jersey, through its correspondence to the NRC, has requested information, and there is a typographical correction to be made. All of these items are addressed in Attachments 1 and 2.

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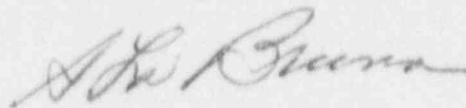
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Additionally, pursuant to the requirements of 10CFR50.91(b)(1), PSE&G is providing a copy of this amendment request supplement to the State of New Jersey.

Should you have any questions regarding this request, we will be pleased to discuss them with you.

Sincerely,



Attachments
Affidavit

C Mr. T. T. Martin, Administrator
USNRC Region I

Mr. S. Dembek
USNRC Licensing Project Manager

Mr. T. P. Johnson
USNRC Senior Resident Inspector

Mr. K. Tosch, Chief,
Bureau of Nuclear Engineering
New Jersey Department of Environmental Protection

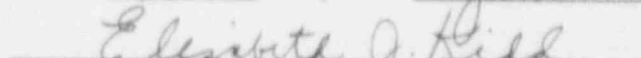
STATE OF NEW JERSEY)
) SS.
COUNTY OF SALEM)

Stanley LaBruna, being duly sworn according to law deposes and says:

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



Subscribed and Sworn to before me
this 16 day of June, 1992


Notary Public of New Jersey

My Commission expires on _____
ELIZABETH J. KIDD
Notary Public of New Jersey
My Commission Expires April 25, 1995

ATTACHMENT 1

RESPONSES TO SPECIFIC QUESTIONS

NRC QUESTIONS ON THE SUBJECT AMENDMENT REQUEST

1. PSE&G requested that the Main Steam Line (MSL) drain valves be included with the MSIVs with regard to removing the MSL High Radiation isolation signal. What is the radiological impact on plant personnel of allowing the drain line pathway to remain open on a high MSL radiation condition?

RESPONSE: The (2") drain lines run parallel to the (26") MSIs through the steam line tunnel to the turbine building, where the MSIs continue on to the Main Stop Valves and the drains go to the main condensers. Throughout their travel, the MSIs and other steam and drain lines are located in areas (the steam line tunnel and condenser bay areas) that are, due to Nitrogen 16 radiation, locked closed "Hi-Radiation Areas". Therefore, there is no appreciable difference in radiological risk to plant personnel over that of normal plant operating conditions whether the drain lines are open or shut on a high radiation condition in the MSIs.

2. Why are the background levels so low on the Offgas Pre-treatment Radiation Monitor?

RESPONSE: The Offgas Pre-treatment Radiation Monitor is typically located after the main condenser steam jet air ejectors (as per NEDO 31400A). Since the purpose of this monitor is to detect fuel failures, this detector was, by HCGS design, located in a position approximately halfway down the 10-minute holdup line to augmented offgas treatment to eliminate the masking of the measurement of interest by N_{16} levels. While the approximately 5 minute delay time results in the very low background levels, the monitor is very sensitive to fission product release.

3. Explain why, in Table 2a of your amendment request, the NEDO report has two X/Q values for dispersion - for the Control Rod Drop Accident (CRDA) Standard Review Plan (SRP) case and for the CRDA without MSIV closure; but the HCGS UFSAR column of the Table only uses one value.

RESPONSE: The NEDO document CRDA - SRP case assumes release of radioactivity from the condenser through turbine seals, etc. as a ground release and the CRDA without MSIV closure using the Offgas Treatment System as an elevated release. The HCGS UFSAR X/Q value of $1.9E^{-4}$ provided in the Table is the overall 5% value for the site boundary calculated in accordance with Reg. Guide 1.145 (accident conditions). This most conservative HCGS X/Q value is less than either of the two NEDO 31400A bounding values. It is used for both cases because it is the bounding value for our plant and because our offgas treatment system discharge is not an elevated release (all HCGS releases are considered as ground level).

ATTACHMENT 1 (Cont'd)

4. The State of New Jersey's Bureau of Nuclear Engineering (BNE) in their letter to the NRC dated April 6, 1992, reiterated one of the NRC criteria for licensees to be able to reference NEDO 31400A in their amendment requests. That requirement is that reasonable assurance be provided that significantly increased levels of radioactivity in the main steam lines will be controlled expeditiously to limit both occupational and environmental releases. The BNE also stated that our submittal did not give them reasonable assurance that elevated levels of radioactivity will be controlled.

RESPONSE: PSE&G believes that our original response to the subject criteria provided "...sufficient evidence (implemented or proposed operating procedures or equivalent commitments) to provide reasonable assurance..." required to enable the NRC staff to grant our requested amendment. PSE&G's submittal stated that HOGS has, in place, existing (implemented) procedures for responding to high radiation conditions in the steam lines. PSE&G also stated that those procedures have been reviewed for any changes that might be necessary as a result of the requested amendment's being approved and that they would be upgraded (commitment) to address the additional impact of the proposed amendment when it is approved for HOGS.

However, to provide more detailed assurance to the NRC and BNE that our existing procedures (which we currently rely upon for high steam line radiation and other abnormal radiological conditions) along with our committed revisions (upon receipt of the amendment) will continue to expeditiously limit occupational doses and environmental releases, we have expanded our original response, below:

HOGS has, in place, emergency and abnormal procedures that currently ensure that any significant increase in the level of radioactivity in the main steam lines is promptly controlled to limit environmental releases and on-site (occupational) exposures. These procedures, as well as others that PSE&G considered to have any potential to be impacted by the proposed amendment, (listed in Table A) have been reviewed and will be revised, as identified in our review, to reflect the deletion of the scram and MSIV and main steam drain-line isolation functions of the Main Steam Line Radiation Monitor (MSLRM). The review and identified revisions ensure that the procedures continue to be applicable, correct, and that they provide direction for aggressive actions to limit occupational exposures and environmental releases in the event of high radioactivity in the main steam lines.

Additionally, any operator training affected by the proposed change has been evaluated for upgrading. Current operator actions to control environmental releases and on-site exposures due to high radiation in the main steam lines are directed by our Emergency Procedures which are in conformance with the BWROG Emergency Procedure Guidelines (EPGs). EPG operator actions impacted by the proposed change were discussed, to the NRC staff's satisfaction, by the BWROG and GE during the NRC review of NEDO 31400A. It is, essentially, those actions (that were the subject of the discussions) which will be modified in our procedures to reflect the absence of an automatic scram and MSIV and main steam drainline isolation functions on high steam line radiation conditions. We, therefore, are confident that our operators will continue to expeditiously limit environmental releases and on-site exposures during conditions of high radiation in the main steam lines.

TABLE A

HOPE CREEK EMERGENCY (EO), ABNORMAL (AB), ANNUNCIATOR RESPONSE (AR)
AND SYSTEM OPERATION (SO) PROCEDURES

<u>PROCEDURE NUMBER</u>	<u>TITLE</u>
OP-EO.ZZ-101(Q)	REACTOR PRESSURE VESSEL CONTROL
OP-EO.ZZ-103(Q)	REACTOR BUILDING CONTROL
OP-EO.ZZ-104(Q)	RADIOACTIVE RELEASE CONTROL
OP-EO.ZZ-202(Q)	EMERGENCY DEPRESSURIZATION
OP-EO.ZZ-207(Q)	LEVEL/POWER CONTROL
OP-AB.ZZ-100(Q)	HIGH REACTOR COOLANT ACTIVITY
OP-AB.ZZ-102(Q)	DROPPED CONTROL ROD
OP-AB.ZZ-127(Q)	OFFGAS SYSTEM - HIGH RADIATION
OP-AB.ZZ-203(Q)	MAIN STEAM LINE - HIGH RADIATION
OP-AB.ZZ-208(Q)	MAIN CONDENSER - LOW VACUUM
OP-AR.ZZ-010(Q)	OVERHEAD ANNUNCIATOR WINDOW BOX C5
OP-AR.ZZ-011(Q)	OVERHEAD ANNUNCIATOR WINDOW BOX C6
OP-SO.SM-001(Q)	ISOLATION SYSTEMS OPERATION

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ATTACHMENT 2

CORRECTION TO ORIGINAL ATTACHMENT 3

ATTACHMENT 3

CONDITIONS

The NRC staff concluded that the removal of the MSIRM trips that automatically shut down the reactor and close the MSIVs is acceptable and that the Licensing Topical Report, NEDO 31400A, could be referenced in support of our amendment request provided that:

1. The assumptions with regard to input values made in the generic analysis of the LTR are bounding for the plant...

Table 1 of this attachment provides a comparison of key input parameters and Tables 2a, and 2b compare dose assessment between the Hope Creek Generating Station (HCGS) UFSAR and NEDO 31400A analysis assumptions.

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2. Reasonable assurance is provided that significantly increased levels of radioactivity in the main steam lines will be controlled expeditiously to limit both occupational and environmental releases...

HCGS has, in place, procedures that ensure that any significant increase in the levels of radioactivity in the main steam lines is promptly controlled to limit environmental releases and on-site (occupational) exposures. Those procedures have been reviewed and will be upgraded, as necessary, upon receipt of the requested amendment, to ensure their continued applicability and correctness.

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3. The MSIRM and offgas radiation monitor setpoints are standardized at 1.5 times the nitrogen-16 background dose rate at the monitor locations and should either or both exceed their alarm setpoint, the reactor coolant will be promptly sampled to determine activity levels and the possible need for additional corrective actions...

The MSIRM setpoint is 1.5 times the N^{16} background at the monitor location. That alarm would trigger entry into the abnormal procedure, OP-AB.ZZ-203, which requires a reactor coolant sample be obtained and analyzed. The Offgas Radiation Monitor alarm is set to satisfy HCGS TS 4.11.2.7.2-b by alarming at 50% increase (1.5 times)* the nominal steady-state fission gas release from the reactor coolant, after factoring out any increases due to changes in thermal power level. This TS then requires isotopic analysis of a representative gas sample taken from near the discharge of the main condenser air ejector and would trigger entry into one or more abnormal procedures - which, in turn, prescribe further additional corrective actions.

- * The offgas pre-treatment radiation monitor alarm is set at 1.5 times background or 10 mr/hr, whichever is greater. This 10 mr/hr caveat has been found necessary to eliminate numerous spurious alarms (with their attendant distractions of the control room operators) due to current background levels so low (4 to 5 mr/hr) that circuit noise or minor changes in offgas flowrate

can initiate an alarm. The 10 mr/hr alarm setpoint corresponds to .05% of the limit of 330 millicuries/second specified in TS 3.11.2.7. It is in accordance with this TS that the offgas radiation monitor alarm is set. Historically, as a point of reference, one leaking fuel pin has produced several thousand mr/hr levels on the offgas radiation monitor at HOGS. Therefore, the current alarm set point of 10 mr/hr provides conservative indication. As background levels increase with plant age, the 10 mr/hr alarm will eventually be supplanted by the 1.5 times background alarm setpoint.