



Public Service Electric and Gas Company P.O. Box 236 Hancocks Bridge, New Jersey 08038-0236

Nuclear Business Unit

**JUN 17 1999**

LR-N99116

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

**COMMITMENT CHANGE FOR THE  
NEW FUEL VAULT  
HOPE CREEK GENERATING STATION  
FACILITY OPERATING LICENSE NPF-57  
DOCKET NO. 50-354**

Gentlemen:

Public Service Electric & Gas (PSE&G) has made a change to a commitment stated in NRC Safety Evaluation Report (SER) Supplement 5. This commitment change was processed in accordance with plant procedures and the Nuclear Energy Institute Guideline for Managing Commitments. The commitment that has been changed is item number 1 of the first paragraph on page 9-3 of SER Supplement 5. This paragraph states:

"As the SNM license did not authorize the storage of fresh fuel assemblies in the new fuel storage vault because the applicant did not supply sufficient data for the staff to perform an independent nuclear safety analysis to confirm the safety of this operation, the applicant has committed to the following to establish the basis for safety for storing such assemblies in the new fuel storage vault:

- (1) All sources of water shall be removed from the area during loading or unloading of assemblies in the new fuel storage vault.
- (2) No more than one cover shall be removed from the array of assemblies during loading or unloading of assemblies in the new fuel storage vault.
- (3) All fuel vault covers shall be over the array of assemblies when the vault is unattended."

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The power is in your hands.

JUN 17 1999

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-2-

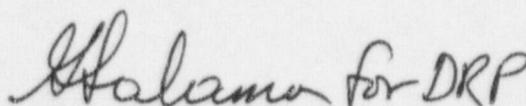
The commitment change is to revise item 1 to read:

- (1) Sources of water capable of providing a spray or mist shall be removed from the area during loading or unloading of assemblies in the new fuel vault.

The purpose, background and justification for the change are contained in Attachment 1 to this letter.

Should you have any questions regarding this request, please contact Dennis V. Hassler at 609-339-1989.

Sincerely,

A handwritten signature in cursive script that reads "D. R. Powell for DRP".

D. R. Powell  
Director -  
Licensing/Regulation and Fuels

Attachments (1)

JUN 17 1990

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LR-N99116

-3-

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

Mr. R. Ennis  
Licensing Project Manager - Hope Creek  
U. S. Nuclear Regulatory Commission  
One White Flint North  
Mail Stop O-8-B-1  
11555 Rockville Pike  
Rockville, MD 20852

USNRC Senior Resident Inspector - HC (X24)

Mr. K. Tosch, Manager IV  
Bureau of Nuclear Engineering  
P. O. Box 415  
Trenton, NJ 08625

HOPE CREEK GENERATING STATION  
FACILITY OPERATING LICENSE NPF-57  
DOCKET NO. 50-354  
COMMITMENT CHANGE FOR THE NEW FUEL VAULT

PURPOSE AND BACKGROUND:

The commitment change is to revise the reference in NRC SER Supplement 5 to the removal of all sources of water in the area of the new fuel storage vault.

The SER Supplement 5 in section 9.1 (page 9-3) states:

"As the SNM license did not authorize the storage of fresh fuel assemblies in the new fuel storage vault because the applicant did not supply sufficient data for the staff to perform an independent nuclear safety analysis to confirm the safety of this operation, the applicant has committed to the following to establish the basis for safety for storing such assemblies in the new fuel storage vault:

- (1) All sources of water shall be removed from the area during loading or unloading
- (2) No more than one cover shall be removed from the array of assemblies during loading or unloading of assemblies in the new fuel storage vault.
- (3) All fuel vault covers shall be over the array of assemblies when the vault is unattended."

The commitment change is to revise the statement in (1) above that states that all sources of water shall be removed from the area. The commitment referred to in the SER Supplement 5 originates from a PSE&G response to a NRC question concerning Revision 0 of the Hope Creek FSAR. Question 410.36 addressed FSAR section 9.1.1.2, New Fuel Storage Facility Description, and stated:

"The implication in this section is that the presence of low density water (mist) will be provided in the new fuel storage area. Please confirm or provide analyses which show that the  $k$  effective of the racks is less than 0.98 assuming the presence of the most reactive mist environment."

PSE&G responded to question 410.36 in Amendment 2 of the FSAR. The PSE&G response added the following paragraph.

"The configuration described also serves to prevent optimum moderation even though this is not specifically claimed. Since the new fuel storage racks will exceed the  $k$  effective criterion of 0.98 in the moderator density range of 0.1-0.6 g/cc, procedural requirements are necessary to prevent optimum moderation. The requirement to cover the fuel with a fireproof material and to remove moderator sources from the vicinity of the new fuel storage vault is contained in GE design Document 22A6551, Fuel Storage Handling Procedural Requirements."

GE design Document 22A6551 states in 3.14:

"Fuel shall not be stored in the new fuel vault when there are construction activities on the refuel floor or construction debris in the vicinity of the new fuel vault unless a solid cover is placed over the vault which would preclude criticality due to inundation by low density water such as water fog or spray from a fire hose."

#### JUSTIFICATION OF REQUESTED CHANGES:

The nuclear safety issue is the presence of low-density moderators that are defined as sources of water that can produce a mist, spray or fog. PSE&G in the response to NRC question 410.36 of the FSAR revision 0 refers to GE design document 22A6551. As noted above, the GE design document addresses the presence of water sources such as a water fog or spray from a hose.

NRC Regulatory Guide 3.15, Standard Format and Content of License Applications for Storage Only of Unirradiated Power Reactor Fuel and Associated Radioactive Material, addresses the presence of water in Chapter 2.2, section 7. Section 7 requires:

"If nuclear safety is based on moderation control, sources of water that go into dry storage (e.g., sprinkler systems) and the probability of flooding the storage area should be taken into account in the analysis. The nuclear safety analysis should demonstrate that fuel will be stored in such a manner that if the fuel were flooded and then drained, water could not be retained around or within an assembly; however, if water retention is possible, its results should be evaluated. The analysis should also evaluate the effects of low-density moderators (e.g. mist) or show that such densities are not credible."

The fuel vendor, ABB, has reviewed the configuration of the fuel channel assemblies and determined that there will be no impact on the criticality analysis of the new fuel vault due to water retention. The revised commitment of removing sources of water that are capable of providing a spray or mist restores the SER wording to the original commitment by PSE&G.

PSE&G has revised the commitment in SER Supplement 5 to read as follows:

- (1) Sources of water capable of providing a spray or mist shall be removed from the area during loading or unloading of assemblies in the new fuel vault.