PSE&G Public Service Electric and Gas Company

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Robert L. Mittl General Manager
Nuclear Assurance and Regulation

May 14, 1985

Director of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
7920 Norfolk Avenue
Bethesda, MD 20814

Attention: Mr. Walter Butler, Chief
Licensing Branch 2
Division of Licensing

Gentlemen:

SER OPEN ITEM 6 - ADDITIONAL INFORMATION,
POST-ACCIDENT MONITORING INSTRUMENTATION
HOPE CREEK GENERATING STATION
DOCKET NO. 50-354

Pursuant to Hope Creek Generating Station Safety Evaluation Report (SER) Outstanding Issue No. 6 and in response to the NRC request for additional information regarding conformance to Regulatory Guide 1.97 (letter from A. Schwencer, NRC, to R. L. Mittl, PSE&G, dated March 26, 1985), Public Service Electric and Gas Company hereby submits the attached additional information for review.

The enclosed responses correspond to the four items listed in Section 4; Conclusions, to the EG&G Idaho report, "Conformance to Regulatory Guide 1.97 (March 1985)," submitted with the March 26, 1985, letter.

The typographical error correction on FSAR Table 7.5-1, discussed in the response to the core spray flow variable (i.e. Item 3), and the proposed revision to FSAR Section 1.8.1.97.4.9, discussed in the response to the reactor building or secondary containment area radiation variable (i.e. Item 4), will be included in Amendment 11 to the HCGS FSAR.

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Should you have any questions in this regard, please contact us.

Very truly yours,

R.L. Mittl

Enclosure

C D. H. Wagner
USNRC Licensing Project Manager

A. R. Blough
USNRC Senior Resident Inspector

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ENCLOSURE

HOPE CREEK GENERATING STATION

RESPONSE TO NRC REQUEST FOR ADDITIONAL INFORMATION (RAI) - CONFORMANCE TO REGULATORY GUIDE 1.97 (SER OPEN ITEM 6)

ITEM 1 - Neutron Flux (Variable B1): Hope Creek Generating Station will follow industry development of this equipment.

ITEM 2 - High Pressure Coolant Injection (HPCI) Flow (Variable D14): Per GE design specification data sheet 22A6237AB, rated HPCI flow is 5600 GPM, not 6350 GPM. The installed flow monitoring instrumentation provides 0-6000 GPM indication which corresponds to 0-107% of rated flow. The Regulatory Guide 1.97 requirement is 0-110% of rated flow.

ITEM 3 - Core Spray Flow (Variable D15): Core spray flow monitoring instrumentation provides an indication of 0-10,000 GPM which fully complies with the Regulatory Guide 1.97 requirement. The 0-1000 GPM referenced by the RAI was a typographical error on FSAR Table 7.5-1 and has been corrected. This correction will be included in Amendment 11 to the HCGS FSAR.

ITEM 4 - Reactor Building or Secondary Containment Area Radiation (Variable E2): Further justification for not implementing Variable E2 has been provided by a proposed revision to FSAR Section 1.8 1.97.4.9 (see Attachment 1). This revision will be included in Amendment 11 to the HCGS FSAR.

No attempt has been made to correlate the monitoring ranges provided by the noble gas monitors of the south plant vent and filtration, recirculation and ventilation system vent radiation monitoring systems to the range specified in Regulatory Guide 1.97 for area radiation monitors. A comparison of this type would not be feasible. The area radiation monitors are not sensitive to beta radiation because of their design and construction. Furthermore, the generic gamma efficiency of the fission product noble gases is much lower than the beta efficiency and the isotope mix changes rapidly due to decay.

The revision to FSAR Section 1.8.1.97.4.9 specifically identifies that the noble gas monitoring instrumentation provided (with the ranges listed in FSAR Table 11.5-1) is a much more reliable means of obtaining the information required by Variable E2 of Regulatory Guide 1.97.

ATTACHMENT 1

Note that HCGS has implemented variable D29 (condenser cooling water flow) by monitoring the circulating water temperature rise across the condenser as a positive ΔT across the condenser coupled with no decrease in condenser vacuum is an adequate indication of condenser cooling water flow.

1.8.1.97.4.9 ISSUE 9 - VARIABLE E2

Regulatory Guide 1.97 specifies that "Reactor building or secondary containment area radiation" (variable E2) should be monitored over the range of 10^{-1} to 10^{4} R/h for Mark I and II containments, and over the range of 1 to 10^{7} R/hr for Mark III containments. The classification for Hope Creek is Category 2; for Mark III, the classification is Category 1.

As discussed in the variable C14 position statement (Issue 6), reactor building area radiation is an inappropriate parameter to use to detect or assess primary containment leakage.

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Therefore, it is the position of HCGS that the specified reactor building area radiation monitors are not required for HCGS.

1.8.1.97.4.10 ISSUE 10 - VARIABLE E3

Regulatory Guide 1.97 specifies in Table 1, variable E3, that radiation exposure rate (inside buildings or areas where access is required to service equipment important to safety) be monitored over the range of 10^{-1} to 10^{4} R/hr for detection of significant releases, for release assessment, and for long-term surveillance.

In general, access is not required to any area of the reactor building in order to service safety-related equipment in a post-accident situation. When accessibility is reestablished in the long term, it will be done by a combination of portable radiation survey instruments and post-accident sampling of the reactor building atmosphere. The existing lower-range (typically 3 decades lower than the Regulatory Guide 1.97 range) area radiation monitors would be used only in those instances in which anticipated radiation levels were within measurable instrument ranges.

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The reactor building exhaust and refueling floor area exhaust are continuously monitored by their respective radiation monitoring system as described in Sections 11.5.2.1.3 and 11.5.2.1.2. Any concentration of airborne radioactivity in excess of preset limits as detected by either of these systems (possibly indicating a leak from the primary containment) will initiate the Filtration, Recirculation, and Ventilation System (FRVS) and the FRVS Vent (FRSV) System and will also provide signals to the primary containment isolation system to initiate primary containment isolation to the extent described in Section 7.3.1.1.5.

The reactor building exhaust and refueling floor area exhaust are normally routed to the south plant vent where the effluent air flow is monitored by the south plant vent radiation monitoring system as described in Section 11.5.2.2.2. The south plant vent radiation monitoring system instrumentation ranges and sensitivities are listed in Table 11.5-1.

If the FRVS and FRVSV system are initiated (either manually or automatically by the reactor building exhaust or refueling floor area exhaust radiation monitoring systems), the reactor building exhaust and refueling floor area exhausts are automatically shifted to the FRVSV system. The FRVSV effluent air is monitored by the FRVSV radiation monitoring system as described in Section 11.5.2.2.3. The FRVSV radiation monitoring system instrumentation ranges and minimum sensitivities are listed in Table 11.5-1.

It is the Hope Creek position that the monitoring functions performed by the south plant vent radiation monitoring system and the FRVSV radiation monitoring system with the ranges and sensitivities listed in Table 11.5-1 provide a much more reliable means of detection of significant releases, release assessment, and long term surveillance than could be provided by reactor building area radiation monitors.

RSC:vw

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