



**PSEG**

Public Service  
Electric and Gas  
Company

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Robert L. Mittl General Manager  
Nuclear Assurance and Regulation

February 28, 1985

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

Attention: Mr. Albert Schwencer, Chief  
Licensing Branch 2  
Division of Licensing

Gentlemen:

RESPONSE TO NRC GENERIC LETTER 83-28  
HOPE CREEK GENERATING STATION  
DOCKET NO. 50-354

Pursuant to our letter of December 17, 1984, from R. L. Mittl to A. Schwencer on the above subject, attached is Revision 2 of Section 2.1, "Equipment Classification and Vendor Interface," of Public Service Electric and Gas Company's response for the Hope Creek Generating Station. This revision provides additional information on the Master Equipment List and supercedes Rev. 1 of Section 2.1 transmitted to you on December 17, 1984. Additional information on the Equipment Classification and Vendor Interface and Post Maintenance Testing will be provided in June 1985.

If you require additional information, do not hesitate to contact us.

Very truly yours,

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Attachment - Hope Creek Generating Station Response to  
Generic Letter 83-28 Section 2.1, Revision 2  
The Energy People

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C D. H. Wagner (w/attach.)  
USNRC Licensing Project Manager

A. R. Blough (w/attach.)  
USNRC Senior Resident Inspector

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## 2.1 EQUIPMENT CLASSIFICATION AND VENDOR INTERFACE (REACTOR TRIP SYSTEM COMPONENTS)

### Position

Licensees and applicants shall confirm that all components whose functioning is required to trip the reactor are identified as safety-related on documents, procedures, and information handling systems used in the plant to control safety-related activities, including maintenance, work orders, and parts replacement. In addition, for these components, licensees and applicants shall establish, implement, and maintain a continuing program to ensure that vendor information is complete, current and controlled throughout the life of the plant, and appropriately referenced or incorporated in plant instructions and procedures. Vendors of these components should be contacted and an interface established. Where vendors cannot be identified, have gone out of business, or will not supply the information, the licensee or applicant shall assure that sufficient attention is paid to equipment maintenance, replacement, and repair, to compensate for the lack of vendor backup, to assure reactor trip system reliability. The vendor interface program shall include periodic communication with vendors to assure that all applicable information has been received. The program should use a system of positive feedback with vendors for mailings containing technical information. This could be accomplished by licensee acknowledgement for receipt of technical mailings. The program shall also define the interface and division of responsibilities among the licensees and the nuclear and non-nuclear divisions of their vendors that provide service on reactor trip system components to assure that requisite control of and applicable instructions for maintenance work are provided.

### Response

As described in Section 3.1.2.5 of NUREG 1000, the G.E. boiling water reactor trip system design differs from the PWR design.

Parameters from several BWR systems are monitored by the Reactor Protection System (RPS) and the Redundant Reactivity Control System (RRCS). Either or both of these systems can effect a reactor trip by communi-

cating a reactor trip signal to the Control Rod Drive (CRD) system which accomplishes rapid control rod insertion.

The RPS is designed to initiate a reactor trip upon sensing specific plant parameters when they exceed predetermined limits or identifying events which require a reactor trip. The RPS receives input via four redundant and independent trip channels from various switches and trip units which identify that a parameter has exceeded its limit or that a trip initiating event has occurred. The RPS logic decides whether or not to trip the reactor by applying a "one-out-of-two-twice" criterion to the four trip channels. A reactor trip is accomplished by deenergizing both solenoids on each control rod drive scram valve which initiates rapid insertion of each control rod into the reactor core. In addition, an RPS trip energizes two redundant backup scram valves, either one of which effects a reactor trip by venting the instrument air header which feeds the control rod drive scram valves.

The RRCS is a backup system to the RPS which independently initiates a reactor trip upon sensing Rx vessel low level, Rx vessel high pressure or a manual initiation signal. The RRCS effects a scram by deenergizing two redundant Alternate Rod Insertion (ARI) valves, either one of which will vent the instrument air header which feeds the control rod drive scram valves.

For all reactor trips, the rapid insertion of all control rods is accomplished hydraulically by the Hydraulic Control Units (HCU's) of the Control Rod Drive System.

Both the RPS and RRCS are designed to deenergize to trip, therefore loss of power will initiate a reactor trip. Similarly, the HCU's are designed such that loss of power or loss of instrument air will initiate a reactor trip.

PSE&G complies with Section 2.1 of Generic Letter 83-28 by insuring that all components whose functioning is required to trip the reactor are identified as safety related. PSE&G has:

- (a) Identify all safety-related trip events and verify that all components whose functioning is required to sense the occurrence of a trip event and relay the information to either the RPS or the RRCS are identified as safety related.
- (b) Verify that the RPS and RRCS have been designed and implemented as safety related systems and all active components which have been identified by design as required to initiate a reactor trip are identified and maintained as safety related components.
- (c) Verify that the HCU's and other active components of the CRD system which have been identified by design as required to accomplish the rapid insertion of the control rods are identified and maintained as safety related components.

The addition of these components to the Hope Creek Generating Station Master Equipment List (MEL), will be completed in June 1985. The MEL is a computerized list of plant components. It contains information such as: equipment identification, general equipment information, applicable system information, quality assurance requirements including safety classification, general location information, drawing information, purchase order references, and applicable vendor technical manual numbers. Vendor technical manuals are required to be submitted by purchase order with the procured equipment. Vendor technical manuals contain information concerning operations and maintenance of supplied components. The technical manuals, in addition to other vendor supplied documentation, are tracked and controlled through a computerized document control system which also lists the current revision received. This document control system is being further enhanced to cross-reference vendor technical manuals and other applicable vendor information to plant instructions and procedures.

The purpose of the vendor interface program is to ensure that current information and data will be made available to those personnel responsible for developing and maintaining plant instructions and procedures. These information systems and programs currently exist and are capable of identifying the industry precursors that could lead to a Salem-type event. It should be noted that the vendor interface

program is industry controlled and is mainly hardware oriented program that does not rely on vendor action, other than the NSSS vendor to provide information directly to utilities. Instead, the vendor interface program relies on information developed by industry experience through the INPO Significant Event Evaluation and Information Network (SEE-IN) and the Nuclear Plant Reliability Data System (NPRDS).

The following is supplied by G.E. to ensure vendor information to PSE&G.

(a) Safety Concerns

10CFR21 Reporting - The General Electric Company has established a reporting system to handle safety concerns that complies with the requirements of 10CFR21.

Urgent Communications - In addition to the 10CFR21 reports, a procedure for handling urgent communications to BWR owner/operators has been established for use in providing fast notification of safety concerns. These communications are usually in the form of a short letter which provides a brief explanation and advice or precautionary measures to be observed to avoid potential operational hazards. Due to their urgent nature, these communications are processed to operating plants by the most effective method (i.e., telex, telecopy, cable, special mail handling, etc.)

(b) Several other information systems exist to provide channels of communication for various types of information:

Service Information Letters (SILS) - These documents are usually brief, providing recommendations for equipment modification, plant design improvements, or changes to procedures to improve plant performance.  
Service Advice Letters - These documents are issued by GE Product Departments other than the San Jose based Nuclear Energy Product Departments and are used to provide notification of product problems and/or service information on a broad range of GE consumer and industrial products. Those Service Advice Letters that are recognized by the issuing product department as applying to devices used in nuclear plants are specially identified and are flagged for distribution to all nuclear plants.



Turbine Information Letters (TILs) - TILs are issued by GE's Large Steam Turbine Generator Department to provide descriptions of product problems/improvements and to recommend modifications that will mitigate problems or improve product performance.

Operation and Maintenance Manuals - These documents are issued by all GE product departments to provide instructions for installation, operation, and maintenance of GE designed repairable equipment and systems. Final revisions to the manuals provided for the NSSS scope of supply are delivered as contractually required, but usually are shipped at about the time of plant commercial operation.

Application Information Documents - are white papers that describe potential operating problems and provide design change or operating recommendations to mitigate or avoid them. These documents are primarily aimed at requisition plants, but are also forwarded to operating plants when they have any applicability to those plants.

Other documents are available and are as follows:

- . INPO Operations and Maintenance Reports
- . INPO Significant Operating Experience Reports
- . INPO Significant Event Report
- . NRC Generic Letters
- . NRC Bulletins
- . NRC Information Notices

PSE&G has established a Response Coordinating Team (RCT) for HCGS which evaluates and processes the above information notices and correspondence.

The RCT is a multi-departmental organization comprised of Engineering, Operations, Quality Assurance, and Licensing personnel. The RCT reviews the documents listed above, transmits them to affected organizations/departments within PSE&G for action or incorporation and maintains the applicable records to document the disposition of said documents.

The program described above ensures that reactor trip system and other safety related system vendor information is reviewed and controlled, and will be continued throughout the life of the plant. Furthermore, it will be appropriately referenced or incorporated in plant instructions and procedures. No changes in this method are planned.