

August 10, 1984

Docket No.: 50-397

Mr. G. C. Sorensen, Manager
Regulatory Programs
Washington Public Power Supply System
P. O. Box 968
3000 George Washington Way
Richland, Washington 99352

Dear Mr. Sorensen:

Subject: Request for Additional Information - Safety Parameter
Display System (SPDS)

The staff has reviewed your submittal concerning the Safety Parameter Display System (SPDS) and conclude that additional information is needed to complete our evaluation. The requested information is detailed in the attached enclosure. Please provide your response within 60 days after receiving this request.

Sincerely,

A. Schwencer, Chief
Licensing Branch No.2
Division of Licensing

Enclosure:
As Stated

cc w/enclosure
See next page

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WNP-2

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REQUEST FOR ADDITIONAL INFORMATION
CONCERNING THE
WNP-2
SAFETY PARAMETER DISPLAY SYSTEM

Each operating reactor shall be provided with a Safety Parameter Display System (SPDS). The Commission approved requirements for an SPDS are defined in NUREG-0737, Supplement 1. In the Regional Workshops on Generic Letter 82-33 held during March 1983, the NRC discussed these requirements and the staff's review of the SPDS.

Prompt implementation of the SPDS in operating reactors is a design goal of prime importance. The staff's review of SPDS documentation for operating reactors called for in NUREG-0737, Supplement 1, is designed to avoid delays resulting from the time required for NRC staff review. The NRC staff will not review operating reactor SPDS designs for compliance with the requirements of Supplement 1 of NUREG-0737 prior to implementation unless a preimplementation review has been specifically requested by licensees. The licensee's Safety Analysis and SPDS Implementation Plan will be reviewed by the NRC staff only to determine if a serious safety question is posed or if the analysis is seriously inadequate. The NRC staff review to accomplish this will be directed at: (a) confirming the adequacy of the parameters selected to be displayed to detect critical safety functions, (b) confirming that means are provided to assure that the data displayed are valid, (c) confirming that the licensee has committed to a human factors program to ensure that the displayed information can be readily perceived and comprehended so as not to mislead the operator, and (d) confirming that SPDS will be suitably isolated from electrical and electronic interference with equipment and sensors that are used in safety systems. If based on this review the staff identifies a serious safety question or seriously inadequate analysis, the Director of IE or the Director of NRR may require or direct the licensee to cease implementation.

The staff reviewed the SPDS safety analysis and implementation plan provided by WNP-2 (Reference 1). The staff was unable to complete its evaluation because of insufficient information. The following additional information is required to complete the SPDS evaluations:

- ISOLATION DEVICES

- a. For each type of device used to accomplish electrical isolation, describe the specific testing performed to demonstrate that the device is acceptable for its application(s). This description should include elementary diagrams when necessary to indicate the test configuration and how the maximum credible faults were applied to the devices.

- b. Data to verify that the maximum credible faults applied during the test were the maximum voltage/current to which the device could be exposed, and define how the maximum voltage/current was determined.
- c. Data to verify that the maximum credible fault was applied to the output of the device in the transverse mode (between signal and return) and other faults were considered (i.e., open and short circuits).
- d. Define the pass/fail acceptance criteria for each type of device.
- e. Provide a commitment that the isolation devices comply with the environmental qualifications (10 CFR 50.49) and with the seismic qualifications which were the basis for plant licensing.
- f. Provide a description of the measures taken to protect the safety systems from electrical interference (i.e., Electrostatic Coupling, EMI, Common Mode and Crosstalk) that may be generated by the SPDS.

- HUMAN FACTORS PROGRAM

Provide a description of the display system, its human factored design, and the methods used and results from a human factors program to ensure that the displayed information can be readily perceived and comprehended so as not to mislead the operator.

- PARAMETER SELECTION

NUREG-0737, Supplement 1 includes Radioactivity Control as a Safety function for which information should be available to assess the safety status of the plant. Expand your safety analysis report to include a discussion of the provisions made for WNP-2 to monitor radioactivity control.

Expand your safety analysis to include discussion of such parameters as hydrogen and oxygen monitors in containment to accommodate expected revisions of the Emergency Procedure Guidelines which address Combustible Gas Control.

Expand your safety analysis to include discussion of Source Range Monitors (SRMs) as an indicator of the Reactivity Critical Safety Function during periods of shutdown and startup.

- UNREVIEWED SAFETY QUESTIONS

Provide conclusions regarding unreviewed safety questions.

REFERENCE

1. Letter to: A. Schwencer, NRC, from: G. D. Bouchey, Manager, Nuclear Safety and Regulatory Programs, Washington Public Power Supply System, subject: Nuclear Project No. 2, Safety Parameter Display System (SPDS), Safety Analysis Report, Submittal of July 1, 1983.