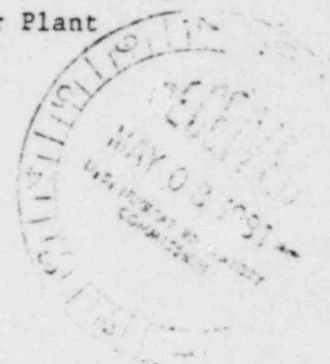




Portland General Electric Company

May 1, 1981

Trojan Nuclear Plant
Docket 50-344
License NPF-1



Director of Nuclear Reactor Regulation
ATTN: Mr. Robert A. Clark, Chief
Operating Reactors Branch No. 3
Division of Licensing
U. S. Nuclear Regulatory Commission
Washington, DC 20555

Dear Sir:

Your letter dated March 30, 1981 requested additional information regarding Auxiliary Feedwater (AFW) Automatic Initiation and Flow Indication for the Trojan Nuclear Plant. Most of the requested information has already been submitted to the NRC. References and copies of tables have been included in the attached response for your convenience.

Sincerely,

Bart D. Withers
Vice President
Nuclear

Attachments

c: Mr. Lynn Frank, Director
State of Oregon
Department of Energy

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ATTACHMENT

TROJAN NUCLEAR PLANT

PGE Response to the March 30, 1981
NRC Request for Additional Information -
Trojan Auxiliary Feedwater (AFW)
Automatic Initiation and Flow Indication

NRC Item 1

Elementary wiring diagrams for:

- a) AFW System initiation circuits.
- b) AFW System annunciation circuits.
- c) AFW pump control circuits.
- d) AFW valve control circuits.

PGE Response

The requested drawings were submitted to the NRC as part of the PGE-to-NRC letters dated December 14, 1980 (C. Goodwin, Jr. to A. Schwencer) and January 2, 1981 (B. Withers to D. Eisenhut). Some of these drawings are currently undergoing revision to incorporate recent changes to the Auxiliary Feedwater System in response to previous NRC questions and positions. A significant portion of the drawing revisions are scheduled to be completed next month and be submitted at that time.

NRC Item 2

Describe the steam generator level instrumentation at the Trojan facility. This description should include:

- a) Type and number of level channels per steam generator, including the range of each channel.
- b) The specific source (vital bus) from which each of these channels is powered.
- c) Capability for testing and calibration, including interval between tests.
- d) The type of indication available in the control room for each channel (indicator, recorder, etc.).

PGE Response

The answers to Items 2a and 2d can be found in Trojan FSAR Table 7.5-2, "Main Control Board Indicators and/or Recorders Available to the Operator, Condition IV Events", a copy of which is attached. The information requested by Item 2b can be found in Table I of the PGE-to-NRC letter

dated April 15, 1980 (C. Goodwin, Jr. to A. Schwencer), a copy of which is also attached. With regard to Item 2c, channel calibration is performed at least once every 18 months, and channel functional testing is performed at least once every 31 days during Modes 1 and 2 for the narrow-range channels in accordance with Technical Specification 4.3.1.1.1. The wide-range channels are calibrated every 2 years. Available indicated accuracies and required accuracies are given in FSAR Tables 7.5-1 (copy attached) and 7.5-2, respectively. Alarm functions and trip setpoint settings of the narrow-range steam generator water-level channels are checked during the channel functional tests in accordance with Trojan Nuclear Plant Periodic Instrument and Control Test (PIGT) procedures 5-1, 5-2, 5-3, and 5-4.

MAIN CONTROL ROOM INDICATORS AND/OR RECORDERS AVAILABLE TO THE OPERATOR

CONDITION IV EVENTS

Parameter	No. of Channels		Range	Accuracy Required	Indicator/Recorder	Purpose
	Avail.	Req.				
1. Containment Pressure	4	1	0-115% of design pressure	$\pm 10\%$ of span	All 4 are indicated	Monitor Post-LOCA Containment conditions.
2. Refueling Water Storage Tank Water Level	4	2	0-100% (3 channels) 75-100% (1 channel)	$\pm 3\%$ of level span	All 4 are indicated and alarmed	Ensure that water is flowing to the safety injection system after a LOCA and determine when to shift from injection to recirculation mode.
3. Steam Generator Water Level (narrow range)	3/Steam Generator	[b]	+7 to -5 feet from nominal full load level	$\pm 10\%$ of level span ^[a]	All channels indicated; the channels used for control are recorded	Detect steam generator tube rupture; monitor steam generator water level following a steam line break.
4. Steam Generator Water Level (wide range)	1/Steam Generator	[b]	+7 to -41 feet from nominal full load level	$\pm 10\%$ of level span ^[a]	All channels are recorded	Detect steam generator tube rupture; monitor steam generator water level following a steam line break.

[a] For the steam break, when the water level channel is exposed to a hostile environment, the accuracy required can be relaxed. The indication need only convey to the operator that water level in the steam generator is somewhere between the narrow range steam generator water level taps.

[b] Minimum Requirements

One level channel per steam generator (either wide or narrow range).

(23)

POOR ORIGINAL

TABLE I

Power Supply Matrix for
Auxiliary Feedwater Flow and
Steam Generator Level Indications

<u>Title</u>	<u>Steam Generator A</u>	<u>Steam Generator B</u>	<u>Steam Generator C</u>	<u>Steam Generator D</u>
Auxiliary Feedwater Flow at Panel C05				
Indicator	FI 3043A2	FI 3043B2	FI 3043C2	FI 3043D2
Power Supply	Y13	Y13	Y13	Y13
Steam Generator Level (Wide Range) at Panel C05				
Recorder	LR 501	LR 501	LR 503	LR 503
Power Supply	Y24	Y24	Y24	Y24
Steam Generator Level (Narrow Range) at Panel C14				
Indicator	LI 517	LI 527	LI 537	LI 547
Power Supply	Y24	Y24	Y24	Y24
Steam Generator Level (Narrow Range) at Panel C14				
Indicator	LI 518	LI 528	LI 538	LI 548
Power Supply	Y13	Y13	Y13	Y13
Steam Generator Level (Narrow Range) at Panel C14				
Indicator	LI 519	LI 529	LI 539	LI 549
Power Supply	Y22	Y11	Y11	Y22

MAIN CONTROL BOARD INDICATORS AND/OR RECORDERS AVAILABLE TO THE OPERATOR
CONDITION II AND III EVENTS

Parameter	No. of Channels Avail. Req.	Range	Available Indicated Accuracy	Indicator/Recorder	Purpose
6. Steam Generator Water Level (wide range)	1/Steam Generator [a]	+7 to -41 feet from nominal full load water level	+ 5% of level span (cold)	All channels recorded	Ensure maintenance of reactor heat sink.
7. Steam Generator Water Level (narrow range)	3/Steam Generator [a]	+7 to -5 feet from nominal full load water level	+ 3% of level span (hot)	All channels indicated; the channels used for control are recorded.	Ensure maintenance of reactor heat sink

[a]

Minimum Requirements:

one level channel per steam generator (either wide or narrow range) with at least two wide range channels.

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