ATTACHMENT

Consumers Power Company
Palisades Plant
Docket 50-255

PROPOSED TECHNICAL SPECIFICATION PAGE CHANGES

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3 Pages

TSP0287-0001-NL02

1.2 PROTECTIVE SYSTEMS

Instrument Channels

One of four independent measurement channels, complete with the sensors, sensor power supply units, amplifiers and bistable modules provided for each safety parameter.

Reactor Trip

The de-energizing of the control rod drive mechanisms (CRDM) magnetic clutch holding coils which releases the control rods and allows them to drop into the core.

Reactor Protective System Logic

This system utilizes relay contact outputs from individual instrument channels to provide the reactor trip signal for de-energizing the magnetic clutch power supplies. The logic system is wired to provide a reactor trip on 2-of-4 or 2-of-3 basis for any given input parameter.

Degree of Redundancy

The difference between the number of operable channels and the number of channels which, when tripped, will cause an automatic system trip. This definition does not apply to the 1 out of 2 taken twice logic scheme used to initiate the Recirculation Actuation System.

Engineered Safety Features System Logic

This system utilizes relay contact outputs from individual instrument channels to provide a dual channel (right and left) signal to initiate independently the actuation of engineered safety feature equipment connected to diesel generator 1-2 (right channel) and diesel generator 1-1 (left channel). The logic system is wired to provide appropriate signal for the actuation of the engineered safety feature equipment on a 2-of 4 basis for any given input parameter. The Recirculation Actuation System is initiated by a 1 out of 2 taken twice logic.

1.3 INSTRUMENTATION SURVEILLANCE

Channel Check

A qualitative determination of acceptable operability by observation of channel behavior during normal plant operation. This determination shall, where feasible, include comparison of the channel with other independent channels measuring the same variable.

Channel Functional Test

Injection of a simulated signal into the channel to verify that it is operable, including any alarm and/or trip initiating system.

Channel Calibration

Adjustment of channel output such that it responds with acceptable range and accuracy, to known values of the parameter which the channel measures. Calibration shall encompass the entire channel, including equipment action, alarm, interlocks or trip and shall be deemed to include the channel functional test.

If the bypass is not affected, the out of service channel (Power Removed) assumes a tripped condition (except high rate of change power, high power level and high pressurizer pressure), [1] which results in a one-out-of three channel logic. If, in the 2 of 4 logic system of either the reactor protective system or the engineered safeguards system, one channel is bypassed and a second channel manually placed in a tripped condition, the resulting logic is 1-of-2. At rated power, the minimum operable high power level channels is three, in order to provide adequate flux tilt detection. If only two channels are operable, the reactor power level is reduced to 70% rated power, which protects the reactor from possibly exceeding design peaking factors due to undetected flux tilts.

The engineered safeguards system provides a 2-of-4 logic on the signal used to actuate the equipment connected to each of the two emergency diesel generator units.

Two start-up channels are available any time reactivity changes are deliberately being introduced into the reactor and the neutron power is not visible on the log-range nuclear instrumentation or above 10^{-4}% of rated power. This ensures that redundant start-up instrumentation is available to operators to monitor effects of reactivity changes when neutron power levels are only visible on the start-up channels. In the event only one start-up range channel is available and the neutron power level is sufficiently high that it is being monitored by both channels of log-range instrumentation, a start-up can be performed in accordance with footnote (d) of Table 3.17.4.

The Recirculation Actuation System (RAS) initiates on a 1 out of 2 taken twice logic scheme. Any one channel declared inoperable shall be placed in a bypass condition to ensure protection from an inadvertent RAS actuation. Since the bypassing of a channel introduces the possibility for a failure to receive an automatic RAS actuation signal, the time period in the bypassed condition is limited.

References

(1) FSAR, Section 7.2.7
(2) FSAR, Section 7.22.2

Table 3.17.4

Instrumentation Operating Requirements for Other Safety Feature Functions

No	Functional Unit	Minimum Operable Channels	Minimum Degree of Redundancy	Permissible Bypass Conditions
1	SIRWT Low-Level Switches	4	NA[b]	One channel may be inoperable for a period of 7 days[b]
2	ΔT - Power Comparator	3[c]	1	None
3	High-Pressure Safety Injection Flow Instruments	4	None	None
4	Air Cooler Service Water Flow Instruments	1	None	None
5	Primary and Secondary Rod Insertion and Out-of-Sequence Monitors	1	None	NA
6	Fuel Pool Building Crane Interlocks	1	None	As Requested Under Administrative Controls[a]
7	Start-Up Channels	2	1[d]	Not Required Above 10^{-4}% of Rated Power

(a) Crane shall not be used to move material past the fuel storage pool unless the interlocks are available.

(b) If a channel is declared inoperable, it shall be placed in a bypass condition. Minimum degree of redundancy is not applicable to the SIRWT low-level switches.

(c) If only two channels are operable, load shall be reduced to 70% or less of rated power.

(d) Minimum operable channels shall be one (1) and minimum degree of redundancy is zero (0) if shutdown neutron power levels indicated on the log range channels are greater than three times the lowest decade in which neutron visibility can be confirmed. Neutron visibility will be confirmed through observation of reactivity changes on neutron power level (including a 1/M plot during reactor start-up) and comparing the observed changes to the changes noted on previous similar start-ups. Instrumentation operability will also be verified by comparison among the three operable channels to ensure their individual responses are in agreement.