Docket No. 50-255

FEB 16 1973

Consumers Power Company
ATTN: Mr. R. C. Youngdahl
Senior Vice President
212 West Michigan Avenue
Jackson, Michigan 49201

Change No. 3
License No. DPR-20

Gentlemen:

Your letter dated December 21, 1972, proposed a change in the Technical Specifications of Provisional Operating License No. DPR-20 (Amendment 4) for the Palisades Plant. This change would permit the plant to start up with only one start-up channel in service, provided both log-range channels are operable and neutron power levels are visible on all three channels. This proposal has been designated Change No. 3.

We have concluded that plant safety would not be degraded by permitting this mode of operation since there are no reactor protective system functions associated with the startup channels and redundant indication of neutron power level would still be available. In addition, this method of operation will not be used frequently and the plant availability should be increased.

Recent operations of Palisades have verified that the log-range channels have about two decades further visibility of neutrons at low power levels than predicted in the FSAR. You have also found that the neutron level several days after a shutdown is still high enough to be detected by the log-range channels and that the response of these channels to neutron changes parallels the response of the startup instrumentation.

During startups with only one start-up channel in service, we will require that neutron visibility be confirmed by (1) monitoring the inverse count rate during reactivity changes, (2) comparing readings with those for similar previous startups, and (3) comparing the response of each of the

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operable channels (one startup and two log range) with the other channels. With neutron visibility so verified, the startup will be monitored by three channels of instrumentation, which is more than was anticipated in the FSAR for a startup.

We conclude that the approved change does not involve significant hazard considerations not described or implicit in the Final Safety Analysis Report and that there is reasonable assurance that the health and safety of the public will not be endangered. Accordingly, pursuant to Section 50.59 of 10 CFR Part 50, the Technical Specifications of Facility Operating License No. DPR-20 are hereby changed as set forth in revised pages 3-77 and 3-81, Change No. 3, February 14, 1973, copies of which are enclosed.

Sincerely,

Original Signed by
R. C. DeYoung

R. C. DeYoung, Assistant Director
for Pressurized Water Reactors
Directorate of Licensing

Enclosure:
Tech Spec Change

cc w/encl:
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3.17 INSTRUMENTATION AND CONTROL SYSTEMS (Contd)

If the bypass is not effected, the out-of-service channel (Power Removed) assumes a tripped condition (except high rate-of-change of 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 3 in order to provide adequate flux tilt detection. If only 2 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 and from exceeding dropped rod peaking factors in the event that a turbine runback signal is required from the power range channels.

The engineered safeguards system provides a 2 of 4 logic on the signal used to actuate the equipment connected to each of the 2 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 startup can be performed in accordance with footnote (d) of Table 3.17.4. 3

References

(1) FSAR, Section 7.2.7.

(2) FSAR, Section 7.2.2.

Change No. 3
February 14, 1973

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	SIRW Low-Level Switches	2[b]	1	None
2	ΔT - Power Comparator	3[c]	1	None
3	High-Pressure Safety Injection Flow Instruments	4	None	None
4	Air Cooler Service Water Flow Instr	1	None	None
5	Primary and Secondary Rod Insertion and Out-of-Sequence Monitors	1	None	NA
6	Fuel Pool Bldg Crane Interlocks	1	None	As Requested Under Administrative Control[a]
7	Start-Up Channels	2	1[d]	Not Required Above $10^{-4}\%$ of Rated Power 3

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

(b) One of the inoperable channels must be in the tripped condition.

(c) If only 2 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 3 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 startup) and comparing the observed changes to the changes noted on previous similar startups. Instrumentation operability will also be verified by comparison among the three operable channels to ensure their individual responses are in agreement. 3