



**Consumers
Power
Company**

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May 27, 1983

Dennis M Crutchfield, Chief
Operating Reactor Branch No 5
Nuclear Reactor Regulation
US Nuclear Regulatory Commission
Washington, DC 20555

DOCKET 50-255 - LICENSE DPR-20 -
PALISADES PLANT - SEP TOPIC VII-1.A, "ISOLATION OF REACTOR PROTECTION SYSTEM
FROM NONSAFETY SYSTEMS, INCLUDING QUALIFICATIONS OF ISOLATION DEVICES"

Consumers Power Company proposed to provide suitable isolation devices or channel separation which meet the provisions of IEEE 279-1971 to isolate certain Reactor Protection System (RPS) safety electrical signals from the nonsafety electrical signals of the Fischer and Porter plant computer. Consumers Power Company submitted the proposal in a letter dated February 16, 1982. The three specific RPS electrical signals of concern are the Steam Generators A and B pressure (Channel B) and the Reactor Coolant Flow (Channel A).

The purposes of this letter are as follows:

- a. Inform the NRC staff of Consumers Power Company's planned hardware modification resulting from our February 16, 1982 commitment, stated above.
- b. Demonstrate that the planned hardware modification meets the intent of current licensing criteria, i.e., General Design Criterion 24, "Separation of Protective and Control Systems", and IEEE 279-1971, "Criteria for Protection Systems for Nuclear Power Generating Stations".
- c. Confirm that the planned hardware modification will be completed before the end of the 1983 Refueling Outage as previously stated in Consumers Power Company letter dated March 31, 1982.

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Planned Hardware Modification

Consumers Power Company's planned hardware modification, resulting from our February 16, 1982 commitment, is to install isolation resistors (100K-ohm nominal) in series with the voltage inputs to the Fischer and Porter plant computer. These resistors will be considered part of the protective system and will be located as close as practicable to the voltage dropping resistors in the control panel C-12.

Licensing Criteria

The current licensing criteria applicable to the isolation of the Reactor Protection System (RPS) from nonsafety systems are as follows:

- a. 10 CFR 50, Appendix A, General Design Criteria (GDC) 24 states that:

The protection system shall be separated from control systems to the extent that failure of any single control system component or channel, or failure or removal from service of any single protection system component or channel which is common to the control and protection systems leave intact a system that satisfies all reliability, redundancy, and independence requirements of the protection system. Interconnection of the protection and control systems shall be limited so as to assure that safety is not significantly impaired.

- b. IEEE 279-1971 states in Section 4.7.2 that:

The transmission of signals from protection system equipment for control system use shall be through isolation devices which shall be classified as part of the protection system and shall meet all the requirements of this document. No credible failure at the output of an isolation device shall prevent the associated protection system channel from meeting the minimum performance requirements specified in the design bases.

Examples of credible failures include short circuits, open circuits, grounds, and the application of the maximum credible a-c or d-c potential. A failure in an isolation device is evaluated in the same manner as a failure of other equipment in the protection system.

DMCrutchfield, Chief
Palisades Plant
SEP VII.1.A
May 27, 1983

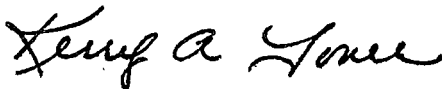
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The attached Consumers Power Company Engineering Analysis EA-83-SRO-005 demonstrates that installation of the resistive isolation devices (described above) meets the intent of both GDC-24 and IEEE 279-1971. The analysis provides justification for using resistive type isolation devices by addressing the possible credible failures as defined in the IEEE Standard and showing the effect to be negligible.

Consumers Power Company Engineering Analysis EA-83-SRO-005 supercedes Consumers Power Company Engineering Calculation TONR 73-81 which was previously submitted as attachment 14 to Consumers Power Company letter dated November 10, 1981.

Hardware Modification Schedule

The planned hardware modification will be completed before the end of the 1983 refueling outage.



Kerry A Toner
Senior Licensing Engineer

CC Administrator, Region III, USNRC
NRC Resident Inspector - Palisades

Attachment