



Consumers
Power
Company

REGULATORY DOCKET FILE COPY

General Offices: 212 West Michigan Avenue, Jackson, Michigan 49201 • Area Code 517 788-0550

July 7, 1978

US NRC
DISTRIBUTION SERVICES
BRANCH

1978 JUL 14 AM 10 28

RECEIVED DISTRIBUTION
SERVICES UNIT

Director, Nuclear Reactor Regulation
Att: Mr Dennis L Ziemann, Chief
Operating Reactors Branch No 2
US Nuclear Regulatory Commission
Washington, DC 20555

DOCKET 50-255 - LICENSE DPR-20 -
PALISADES PLANT - DIESEL GENERATORS
CONTROL CIRCUITRY AND ALARMS

In the NRC review of previous Consumers Power submittals, dated May 16, 1977 and July 12, 1977 related to diesel generators control circuitry at the Palisades Plant additional information was requested. The information requested and responses are as follows:

Item 1

"determine if the diesel generators are provided with a manual shutdown lockout relay..."

Response

A manual shutdown relay does not exist in the Palisades Plant diesel generator control circuitry

Item 2

"verify that an alarm is provided which clearly indicates when the diesel generator control switch is not in the automatic position..."

Response

The diesel generator control switch is always in the automatic position, except during testing. An indicator light on the control panel indicates when the switch is in the automatic position.

Item 3

"verify that all shared annunciators for disabling conditions cannot be cleared... until all abnormal conditions are corrected."

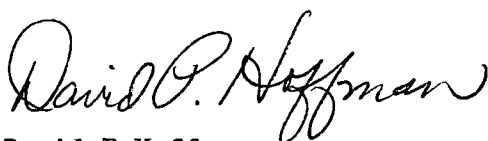
781980147

Aug 5 11/10*

Response

Shared annunciators cannot be cleared until all abnormal conditions are cleared.

To assist NRC staff in completing their review of this subject all previous responses are attached for clarity. Also, reference Consumers Power responses dated January 20, 1978 and February 2, 1978 (Diesel Generator Questionnaire) for additional information.



David P Hoffman
Assistant Nuclear Licensing Administrator

CC: JGKeppler, USNRC

ATTACHMENT

Diesel Generators Control Circuitry and Alarms

The following information is provided in response to your March 29, 1977 letter relating to alarm and diesel generator control circuitry for the Palisades Plant diesel generators.

Item (a)

"All conditions that render the diesel generator incapable of responding to an automatic emergency start signal...."

Response (a)

The following condition relays operate the shutdown relay which renders the unit incapable of automatic start:

1. Generator differential relay.
2. Overcrank relay.
3. Jacket water temperature relay.
4. Overspeed relay.
5. Oil pressure relay
6. Loss of direct current control relay.

Item (b)

"The wording on the annunciator window in the control room that is alarmed for each of the conditions identified in (a)."

Response (b)

The control room annunciator windows and the condition in (a) above which operates them:

1. Diesel Generator Breaker Trip
Generator differential relay.
2. Diesel Generator Fail To Start
Overcrank relay.
3. Diesel Generator Trouble
 - a. Jacket water temperature relay.
 - b. Overspeed relay.
 - c. Oil pressure relay.
 - d. Loss of d-c control power.

Item (c)

"Any other alarm signals that also cause the same annunciator to alarm."

Response (c)

Other alarm signals which share the annunciators listed in (b) above:

1. Diesel Generator Breaker Trip

Breaker contact position switch.

2. Diesel Generator Fail To Start

None.

3. Diesel Generator Trouble

- a. High lube oil differential pressure.
- b. Low lube oil temperature.
- c. High lube oil temperature.
- d. Air supply tanks low pressure.
- e. Jacket water level low.
- f. Low lube oil level
- g. Raw water pressure low.
- h. Prelube pressure low.

Item (d)

"Any condition that renders the diesel generator incapable of responding to an automatic emergency start signal which is not alarmed in the control room."

Item (d) Response

Jacket water pressure low will not prevent auto start. This is the normal condition when the engine is not running. A high jacket water pressure will prevent the engine from starting. (The cranking relay will be isolated.) The reason for this is that a high jacket water pressure indicates that the engine is running. This is the signal that turns off the starting motor after an engine start signal. Jacket water pressure is supplied only by the engine-driven water circulating pump.

Item (e)

"Any proposed modifications resulting from this evaluation."

Item (e) Response

The jacket water pressure will not be alarmed. A low pressure is normal while the engine is shut down. A high pressure is normal while the engine is running. A high jacket water pressure is an impossible condition if the engine is not running for the following reasons:

- 1. Jacket water pressure is supplied only by the engine-driven water pump.
- 2. The cooling system is vented to atmosphere at the cooling water expansion tank.