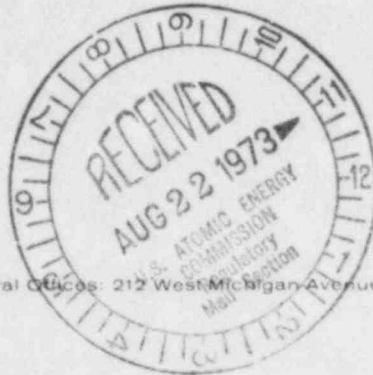


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General Offices: 212 West Michigan Avenue, Jackson, Michigan 49201 • Area Code 517 788-0550



**Consumers
Power
Company**

August 20, 1973

Mr. John F. O'Leary
Directorate of Licensing
US Atomic Energy Commission
Washington, DC 20545

Re: Docket 50-255
License DPR-20
AO-09,10-73

Dear Mr. O'Leary:

This letter is written to report two abnormal occurrences which occurred at the Palisades Plant on August 8, 1973. One involved the failure of the clutch coil of Control Rod Drive Mechanism (CRDM) No 9; the other involved control valve No 0704 which controls flow from the blowdown tank to the circulating water discharge canal.

At 9:19 PM on August 8 a control rod drop alarm was received and turbine load was automatically reduced to 69% of rated power. All rod position indicators showed control rod No 9 to be fully inserted. Prior to 9:19 PM, control rod No 9, one of the shutdown group control rods, had been in a fully withdrawn position.

Following the turbine runback, channel "E" flux display indicated 52% power while the other three channels settled at 70% power. Prior to the dropping of control rod No 9, the plant was operating at 100% of rated power.

An unsuccessful attempt was made to retrieve the dropped rod and plant load was further reduced to 50% while obtaining data to ensure that power distribution limits of the Technical Specifications were being met. After power distribution data were obtained and analyzed, power was subsequently increased to 68%. The plant continued to operate at about 68% power until shut down early the morning of August 11, 1973. No operating limits were exceeded during operation with control rod No 9 fully inserted.

Immediate troubleshooting of the CRDM control circuit revealed a short in the clutch control circuit. Further troubleshooting following plant shutdown showed that the short was located in the clutch coil.

The clutch coil will be replaced during the present outage.

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Failure of a clutch coil does not jeopardize the safe operation of the Palisades Plant. Clutch coil failure initiates an identical control rod response as a trip signal. Automatic controls are provided to ensure plant operating limits are not exceeded subsequent to a control rod drop.

It was determined on August 8 that valve CV-0704, which controls flow from the steam generator blowdown tank to the circulating water discharge canal, had been improperly removed from service in that plant procedures had not been completely followed. This valve, as well as four valves that control inlet flow to the steam generator blowdown tank, is designed to be shut automatically by signal from a radiation detector which monitors the effluent from steam generator blowdown tank. The valve was removed from service in the open position several weeks prior to August 8 so that repairs could be made to the air regulator. If radioactivity levels had become abnormally high in the steam generator blowdown tank, the contents of the tank would not have been automatically prevented from draining to the discharge canal even though further input to the tank would have been automatically halted.

Plant procedures were violated in this instance in that, prior to removing any component from service, plant procedures require that the effect on the operation of the plant be analyzed. Such an analysis was not properly performed as the correct conclusion would have dictated further action such as the closure of all inlet valves to the steam generator blowdown tank prior to removal of the discharge valve from service. Although no limits were exceeded in this instance, this action would have eliminated any possibility of exceeding Technical Specifications radioactivity concentration limits in the discharge canal due to steam generator blowdown.

Although there have been many instances where the plant procedures have been demonstrated to be adequate in similar situations, this failure may be indicative of a possible weakness in the procedures. A review is being conducted to determine whether the requirements for analysis of the effect of removing from service a portion of a plant system on plant operability are adequate and/or whether plant staff's interpretation and implementation of procedural requirements are adequate.

During the review of this abnormal occurrence, a possible plant design deficiency was discovered. The valve operator for CV-0704 is designed to fail open on loss of power which would allow discharge of the contents of the steam generator blowdown tank to the circulating water discharge canal. Steps are being taken to change the valve operator such that it will fail shut on loss of power. These steps include

Mr. John F. O'Deaary
Docket 50-255
August 20, 1973

3

a review of the original design philosophy to ensure that such a modification will not violate any design objectives.

Yours very truly,

Ralph B. Sewell (Signed)

RBS/mel

Ralph B. Sewell
Nuclear Licensing Administrator

CC: BHGrier, USAEC