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

July 30, 1971

Dr. Peter A. Morris, Director
Division of Reactor Licensing
United States Atomic Energy
Commission
Washington, DC 20545

Re: Docket No 50-255
License DPR-20

Dear Dr. Morris:

This letter is written to apprise you of a recent incident which occurred in the instrument air system at the Palisades Plant. While this incident is not considered safety related at this facility, due to the lack of reliance on the system for any safeguard function, it is of sufficient interest to the industry that we consider it worthwhile to bring it to your attention.

At the time this incident occurred, the plant was in a cold shutdown condition with the primary system drained down to the center line of the 42-inch nozzles and with the internals removed from the four primary coolant pumps for modification.

A repairman notified the Control Room at 1345 on June 25, 1971 that he could hear air blowing in the vicinity of the air dryer as if a relief valve had lifted. The Control Room Operator checked the header pressure and found it to be normal. He, therefore, concluded the noise was the result of a normal air dryer tower transfer operation.

Five minutes later, a loud blowing sound was clearly audible in the Control Room followed at once by several alarms. Investigation disclosed that the air header had pulled apart at the discharge of the air dryer afterfilter, which had become red-hot, loosening the silver soldered copper-to-copper joint.

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Minimum air pressure observed was 25 psig with system pressure returned to normal within a few minutes by means of operator action isolating the leaking header and bypassing the air dryer.

CAUSE OF INCIDENT

The prime cause of the incident was determined to be the relatively small (15 - 20 scfm) flow of air through the air dryer unit which was designed for 195 scfm.

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The sequence timer was set for a cycle consisting of three hours heating and one hour cooling. The heater thermostat was set at 650°F. These settings were based on the anticipated 100 - 200 scfm flow of air.

The airflow currently present (15 - 20 scfm) did not deposit enough moisture on the desiccant to utilize the heat input from the dryer heating element with the controls set as outlined in the above paragraph. The resultant temperature buildup was enough to ignite the paper filter media of the afterfilter. This media burned with an intense heat due to the flow of air through the filter and resulted in the failure of the silver soldered joint. The filter case was observed to be "cherry red" in color as the filter burned out.

CORRECTIVE ACTION

To compensate for the observed flow of air through the dryer unit, the controls were reset to create a cycle with two hours heating and two hours cooling. In addition, the heater thermostat setting was reduced from 650°F to 350°F. These two changes substantially reduced the heat input into the dryer tower. Subsequent operation of the system indicates that after a heating cycle the air now leaves the tower at a peak temperature of 130°F.

ADDITIONAL CORRECTIVE ACTION PLANNED

The afterfilter damaged by the fire will be replaced with a new unit and the filter media changed in both units to a material rated at 350°F.

Yours very truly,

Robert L. Haueter (Signed)

RLH/dmb

Robert L. Haueter
Electric Production Superintendent -
Nuclear