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**Consumers  
Power  
Company**

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

January 29, 1973

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

Re: Docket 50-255  
License No DPR-20

Dear Mr. O'Leary:

This will inform you of a steam generator tube leak that occurred on January 15, 1973 at the Palisades Plant. This tube leak was discussed by telephone with representatives of the Directorate of Regulatory Operations, Region III.

The steam generator blowdown tank monitor alarmed at 1:30 AM on January 15, 1973. Subsequent analyses indicated the presence of small amounts of I-131 and I-133 in the blowdown from the "A" steam generator. The blowdown was immediately secured except for sampling and steps taken to determine magnitude of the leak rate.

The off-gas monitor showed an increase of approximately one decade. The monitor on the blowdown tank vent remained steady (background).

Sampling of the secondary water at four-hour intervals was continued to monitor progression and magnitude of leak. Results indicated a leak rate on the order of 0.3 gpm at 9:00 AM on January 16, 1973, as determined by utilizing the iodine and boron content as tracers.

Later checks that day (January 16) indicated the leak rate was increasing and the decision was made to remove the unit from service. The plant was removed from service at about 6:00 PM on January 16, 1973 and had been cooled to a cold shutdown condition by the following afternoon.

In order to prevent dilution of the primary system through the tube leak with secondary unborated water, the pressure on the primary system was maintained at a point higher than the secondary system pressure until the secondary side of the "A" steam generator was drained. The contaminated secondary water was drained to the liquid radwaste system with this operation completed by 5:30 AM on January 19, 1973. The primary system was then drained until the level reached the

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center line of the "Hot Leg" while core cooling continued via the shutdown cooling system.

The manways were removed from the "A" steam generator and the secondary side refilled with treated condensate to determine location of the leak. Three tube leaks were noted without the use of a pressure test. These leaks were in the sixth and seventh rows from the channel partition or in short radius U-bend tubes. Hand eddy current probing indicated the leaks were in the U-bends.

Nondestructive testing techniques (eddy current and radiography) are being employed in both steam generators in an attempt to discover the cause of the three tube leaks in the "A" steam generator. The data collected to date are being evaluated to determine the extent of repairs required. We will keep both Directorate of Licensing and Directorate of Regulatory Operations personnel informed with respect to our evaluation and repairs.

During this shutdown, further difficulties have been experienced with the start-up channels. The No 2 start-up chamber functioned correctly until January 18, 1973. On January 18, 1973, the count rate increased from 20 cps to 1,000 cps over an eight-hour period. The two wide-range channels, which were still on scale, did not indicate any change. Subsequent check by the instrument technicians disclosed the start-up chamber had failed. As a result, the wide-range channels were the sole neutron monitoring channels operable and on scale. The other start-up chamber was out of service as described in our TWXs of December 11 and 21, 1972.

The defective start-up chambers were removed and new start-up chambers installed. The first was operable by 2:10 PM on January 22, 1973. The new chambers were those that had been borrowed from other facilities while awaiting delivery of replacement chambers purchased for the Palisades Plant.

Yours very truly,

Ralph B. Sewell (Signed)

RBS/dmb

CC: BKGrier

Ralph B. Sewell  
Nuclear Licensing Administrator