Jersey Central Power & Light Company

MADISON AVENUE AT PUNCH BOWL ROAD • MORRISTOWN, N.J. 07960 • 539-6111

September 9, 1971

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

Dear Dr. Morris:

Subject: Oyster Creek Station
Docket No. 50-219
Surveillance Testing Failures

The purpose of this letter is to report to you several failures that were observed during surveillance testing at the Oyster Creek Station.

Radwaste Storage Tank Exceeding .7 Curies

On August 12, 1971, at approximately 4:00 p.m., the results of the chemical analysis for the day were completed; and they showed an activity of 1.1 curies in the combined waste surge and waste sample tank "B". The remaining tanks had not been sampled as the 72-hour tank analysis was not due until August 13.

When the activity in the outside tank became known, immediate steps were taken to reduce the inventory by returning water to the condenser hotwells and recycling water back into the radwaste facility as fast as space could be made available.

Samples were taken at approximately 8:30 a.m. on August 13, the results of which were not known until 4:00 p.m. that afternoon, (0.72 curies). In the interim, 2 waste sample tanks were returned to the condenser hotwells and 60% of floor drain sample tank "B" was recycled back into a waste neutralizer tank indicating that the outside tank activity was <.7 curies sometime during the day. Samples taken on August 14 showed the activity to be 0.61 curies.

On August 22, 1971, the 72-hour outside tank activity analysis of samples taken at 8:30 a.m. showed a total outside tank activity of 0.87 curies.

Again, when the activity in the outside tanks became known, immediate steps were taken to recycle the water inventory.

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Water in the floor drain sample tanks was recycled to the waste neutralizer tanks for processing through the waste concentrator. Water from the waste sample tanks was transferred to the hotwells. The volume in the surge tank was processed through the concentrator as fast as space was available.

Samples taken from the outside tanks on August 23 at 8:30 a.m. showed the total outside tank activity to be 0.63 curies.

The safety significance of these events has been analyzed and appears in FDSAR Amendment No. 11.

The cause of these events was the waste concentrator being out of service for maintenance and subsequent difficulties that were encountered in regenerating the waste demineralizer, both of which contributed to a backlog of water in the outside storage tanks, principally the waste surge tank.

In order to reduce the releases to the environment during the period the waste concentrator was out of service, the water normally processed through the concentrator was transferred to the waste surge tank to be processed after the concentrator was returned to service. During the time the concentrator was not available, the regeneration of the condensate demineralizers was postponed to decrease the load on the radwaste facility.

Additional spare parts are being ordered for the waste concentrator; and in addition, consideration is being given to the installation of a second waste concentrator as a part of our overall evaluation of the performance of the radwaste facility.

Generator Load Rejection and Turbine Trip Anticipatory Scram Bypass Switch, PSH-C, Failure

While conducting a surveillance test on August 2, 1971 to check the trip set points of the generator load rejection anticipatory scram and the scram bypass function at low load, the generator load rejection and turbine trip anticipatory scram bypass switch, PSH-C, was found closed (bypass position).

At reactor thermal power less than 45% of rated 1690 MWt, the generator load rejection and turbine stop valve closure anticipatory scrams are bypassed since below that point, the anticipatory scram is not required to limit reactor pressure for a turbine trip transient without bypass valve action. However, at power levels greater than 45% of rated thermal output, both anticipatory scram functions are required to be in service. The 45% set point corresponds to a specific turbine third stage pressure below which it is bypassed.

Upon discovery that the generator load rejection scram, as sensed by PSH-C, was bypassed, closer investigation revealed that a bad packing leak existed on the pressure sensing root valve for PSH-C. A check of the pressure being sensed by that switch was made and found to be approximately 115 psig, which was less than its set point of 200 psig. At 115 psig, PSH-C would be closed, bypassing the anticipatory scram functions provided by PSH-C and the combination of main stop valve 3 and 4 $\leq$ 90% open.

Several attempts were made to stop the packing leak in the root valve and thereby permit PSH-C to sense proper third stage pressure. These attempts proved unsuccessful, and a lead was lifted from PSH-C in order to place the previously bypassed anticipatory scram function in service. Single failure criteria was never violated in that other sensors on protection bus I were operable and that both sets of sensors on protection bus II did not fail.

The root valve for PSH-C will be repacked at the first outage, and the pressure switch returned to service. An investigation is being conducted to determine if the root valves should be replaced with ones of a different design.

Standby Gas Treatment System Train No. 1, Minimum Flow Valve, Failure to Open

While conducting a surveillance test on July 6, 1971 to check the trip set point of various area radiation monitors in the plant which initiate the standby gas treatment system and to check for proper operation of that system, the minimum flow valve for the selected train (no. 1), (V 28-24), failed to open on the initial start.

The solenoid valve which ports air to and from the valve operating cylinder was disassembled, and the plunger which is fitted with a rubber disc was found to be jammed on its metal seat. The cause appears to be a combination of heat generated by the solenoid, the number of cycles of the valve, and the force exerted on the plunger during operation. The solenoid plunger was replaced and the valve was cycled satisfactorily.

Reactor building ventilation isolation and standby gas treatment system initiation occurs whenever one of four selected area radiation monitors reaches its upscale trip set point. Under normal conditions, the minimum flow valves open upon initiation of the standby gas treatment system trains and reclose when the nonselected train is automatically secured. If the selected train should fail in operation, the nonselected train would start, the minimum flow valve in the failed train opens, and the suction cross connect valve opens so that cooling air could be drawn through the filters of the failed train. During this test, the minimum flow

valve for the selected train failed to open upon initiation of the standby gas treatment system. If this system had been called upon to operate, it would have performed its intended function. It would require a second failure with the train in operation to have cause to use the minimum flow valve. Although train no. 2 was not the selected system, its valves operated satisfactorily during the test.

The plungers in each of the solenoid operators will be inspected and replaced if warranted. Consideration is being given to replacing these solenoids with those of a different manufacturer.

Failure of Scram Dump Volume Level Switch, RD08-B

While conducting a surveillance test on August 17, 1971 to check the trip set points and protection system response to high level in the scram dump volume, level switch RD08-B failed to function properly at the predetermined trip set point of 37 gallons.

The scram discharge volume is used to limit the loss of and contain the reactor primary vessel water from all the drives during a scram. During normal plant operation, the discharge volume is empty and both its vent valves and drain valve are open. Upon a scram signal, all three valves close. During a scram, the discharge volume partly fills with water from over the drive pistons. After a scram, the control rod drive seal leakage continues to flow to the discharge volume until the pressure in the discharge volume equals reactor vessel pressure.

Level switches RD08-A through F connected to the discharge volume guard against the volume being inadvertently full when a scram is required. Level switch RD08-F sounds an alarm at three gallons in the volume. RD08-E sounds an alarm and initiates a rod block at 18 gallons, and RD08-A through D result in a reactor scram at 37 gallons in the volume.

During this surveillance test, level switch RD08-B was isolated and filled to the predetermined trip level; and although the scram was initiated, switch operation appeared to be sluggish. The level switch was drained so that the operation could again be checked. However, it was discovered at this time that the scram signal could be reset from the reactor protection system; but the alarm did not clear indicating an additional problem with the alarm contact on relay 1K8.

The second time the level switch was filled, no protection system trip signal was initiated. The switch was drained and refilled several more times, but a trip signal was not initiated. The level switch was manually actuated several times causing a trip signal to be initiated, substantiating the fact that the relay contacts associated with the protection system were satisfactory. The alarm function, however, was not satisfactory in that at times it would "clear" and at other times it would remain annunciated.

The level switch pivot shaft was cleaned and lubricated since it appeared to be binding and switch actuation checked satisfactorily three times. The alarm contacts on relay 1K8 appeared to be oxidized and were burnished. Subsequent operation of the alarm proved satisfactory.

All other switches performed satisfactorily during the test including alarm, rod block, and scram functions.

We are enclosing twenty-five copies of this report.

Very truly yours,

Ivan R. Finfrock Jr

Ivan R. Finfrock, Jr.
Manager, Nuclear Generating Stations

IRF/pk

cc: Mr. J. P. O'Reilly, Regional Director
Division of Compliance, Region 1