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PALISADES PLANT CHANGES, TESTS AND EXPERIMENTS

The following report is submitted in accordance with 10 CFR 50.59(b) and describes Palisades Plant facility changes, tests and experiments that were completed during the period from July 1, 1975 through June 30, 1976. These items were related to safe operation of the facility, but did not require NRC authorization.

I. Facility Changes

1. FC-260 - Shorten "In Tilt Machine Zone" for Refueling Machine

The zone in which the refueling machine could only be run in the "creep speed" mode was shortened by one foot.

This was completed due to the excessive amount of time the refueling machine is run at this speed, which lengthened the refueling time unnecessarily.

Safety Evaluation Summary: The microswitch supplying control to this system has three interlock functions: (1) Prevents operation of the tilting mechanism on the tilt machine when the refueling machine is over the tilting machine; (2) prevents the refueling machine from entering over the tilt machine unless the tilt machine is vertical; (3) when the refueling machine is in the tilt machine zone, the bridge and trolley can only be operated in the "creep speed" mode. All of these functions remain fully operative.

2. FC-283 - Spent Fuel Pool Exhaust Vent Filters, Ductwork and Dampers

Ductwork was installed on the suction side of the filters and dampers, were added to permit isolation of the charcoal adsorbers in the spent fuel pool exhaust ventilation system.

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Safety Evaluation Summary: The addition of this change does not affect system function; therefore, safety was not compromised.

3. FC-306 - Recycled Boric Acid Tank Vent Modification

The Recycled Boric Acid Tank vent, which formerly vented to the gas collection header, was changed to vent to atmosphere.

The vent path was changed because the Recycled Boric Acid Tank vent line to gas collection header was believed to be the source of impurities in the Recycled Boric Acid Tank.

Safety Evaluation Summary: Venting the Recycled Boric Acid Tank to atmosphere will not cause an airborne release because the recycled boric acid has been passed through an evaporator (where volatile gases are removed) prior to entering the tank.

4. FC-326 - Install New Primary Coolant Pump Vibration Monitoring System

The previous Primary Coolant Pump (PCP) vibration monitoring system was replaced with a system which provides: (1) Visual readouts of vibration levels; (2) analog output proportional to vibration level; (3) contact closure on high voltage.

The previous system produced many spurious alarms and provided no indication of actual vibration levels.

Safety Evaluation Summary: Plant safety was not affected in that the PCP vibration monitoring system serves a monitoring function only and does not affect PCP operation.

5. FC-330 - CRDM Ventilation

A shroud was installed around the CRDMs to improve ventilation.

This was completed to better direct cooling air in the control rod drive package area.

Safety Evaluation Summary: Plant safety was not affected with this change in that the operation of the CRDMs is not affected when operating with more efficient air circulation.

6. FC-339 - Modification of IWT Demineralizer for Use on Steam Generator Blowdown

The No 3 demineralizer was modified to serve as a demineralizer for steam generator blowdown.

This change resulted in a makeup water savings, better chemistry control, and made available the miscellaneous waste demineralizers for radwaste processing.

Safety Evaluation Summary: This change did not involve a safety question in that the new demineralizer will serve the same function and specifications as the previous system.

II. Tests and Experiments

1. T-60 - Noise Analysis

Purpose: In compliance with Section 4.13 of the Technical Specifications, nuclear noise surveillance is continuously conducted on the reactor vessel core. Measurements of amplitude probability distributions (APD), power spectral densities (PSD), coherence and phase angle relationships of excore neutron flux detectors were recorded.

Results: The results of this monitoring program are reported on a semi-annual basis. The last report was dated June 17, 1976.

Safety Evaluation Summary: This is only a monitoring setup and, therefore, has no effect on plant operation.

2. T-61 - Coolant Flow, Core AP

Purpose: This test was conducted to measure primary coolant flows through each cold leg and steam generator to provide information on any flow imbalance between the steam generators due to tube plugging. A second purpose was to provide information on the condition of the reactor core by monitoring the ΔP across the core.

Results: The reactor vessel measured flow was 126.9×10^6 lbm/h corrected to 532°F. Core differential pressure (measured from the "D" cold leg to reactor head vent) was 19.8 psid at 530.5°F and 1800 psia.

Safety Evaluation Summary: The test had no adverse effects on plant safety as it was performed per an approved procedure during hot shutdown and no safety limits were exceeded.

3. T-69 - Low Flow Trip Calibration

Purpose: To obtain the summed ΔP_{sg} (across the steam generator) voltages (flow indicators) required to calibrate the low flow trip units for all expected primary coolant pump configurations.

Results: The required data was obtained and calculations completed.

Safety Evaluation Summary: This test was performed during hot shutdown using an approved procedure which required no abnormal valving or switching.

4. T-79 - End of Core Testing - Core I

Purpose: The purpose of this testing was to acquire measurements of reference Core I conditions and thus to provide information to make predictions on Core II.

Results: All measurements and needed data were obtained.

Safety Evaluation Summary: End of core testing was done using approved procedures.

5. T-84 - Zero Power Test Program - Palisades Core II

Purpose: To provide or verify values to demonstrate that the Technical Specifications requirements are met concerning moderator temperature coefficients, shutdown margins, rod net worths, and differential boron worth whenever the reactor core is modified with new fuel.

Results: The results of this test program will be the subject of a special report. This report will be submitted during the first part of September 1976.

Safety Evaluation Summary: This test had no adverse safety effects in that it was performed per an approved test procedure.

6. T-87 - CRDM Clutch Coil Current Test

Purpose: Determine the minimum CRDM clutch coil currents required for proper control rod operation. Minimum clutch coil current is required to: (1) Engage the CRDM clutch for subsequent rod withdrawal; (2) hold clutch engaged during withdrawal or insertion operations; (3) hold clutch engaged to maintain rod position.

Results: The test was completed when CRDM drop current and clutch re-engagement currents fell within required specifications.

Safety Evaluation Summary: The test was completed at shutdown boron concentration per an approved procedure and caused no adverse safety effects on the plant.

7. T-93 - Power Escalation Testing for Palisades Core II

Purpose: To obtain measurements of reactor core parameters relevant to Technical Specifications requirements to assure safe operation within design/calculated limits.

Results: The results of this test program will be the subject of a special report. This report will be submitted during the first part of September 1976.

Safety Evaluation Summary: This test had no adverse safety effects in that it was performed per an approved test procedure.

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