NATIONAL BUREAU OF STANDARDS REACTOR

Docket #50-184

Facility License No. TR-5

OPERATIONS REPORT

--- #34 ---

July, 1982 - December, 1982

This report contains a summary of activities connected with the operations of the NBSR. It is submitted in fulfillment of section 7.8d of the NBSR Technical Specifications and covers the period from July 1, 1982 to December 31, 1982.

Section number in this report (such as, 7.8d(1)) correspond to those used in the Technical Specifications.

March 18, 1983

Robert S Carter

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7.8d(1) Summary of Plant Operations

During the period July 1, 1982 through December 31, 1982, the reactor was critical for 2886 hours and the energy generated was 26776 MWH.

During this period, an internal audit revealed that the allowable time interval for two surveillance tests was exceeded. Quarterly tests may be performed at intervals not to exceed four months. However, the long-term schedule is adjusted to account for the extra time, if used, such that the average surveillance frequency comes out quarterly (four times a year). In this specific instance, the two tests (5.5A dealing with exercising the emergency cooling system control valves and 5.5B dealing with checking the starting function of the sump pump) were scheduled for November 1981. Because the reactor was scheduled to operate through the month of November 1981, both tests were performed a month early, in October 1981. The prepared schedule for the following period listed both tests at their normal time of February 1982, not accounting for the fact that they were done early the previous time. Because the reactor operated continuously all of February, the tests were done in March, following the reactor shutdown, taking advantage of what was thought to be the available interval leeway. As a result, the interval between the two schedules for the tests October 1981 to March 1982 was approximately five months. Subsequent tests were scheduled at their normal time of May 1982 and in fact were done in April 1982. All tests passed.

A check of all surveillance tests for the last two years revealed no other instances where frequency intervals were exceeded. In the past in issuing surveillance tests lists for each, special attention was given to assure that all tests schedules are returned to normal time in case some were done late, and as a result the fact that two tests were done early was not accounted for. Future surveillance lists will show both the normal date and when necessary the date by which they must be performed.

During refueling operations on November 26, 1982 while attempting to transfer a fuel element from a pickup tool to a transfer arm of the fuel handling system the element dropped (about 2 feet) from the tool, above the reactor core, to the top of the upper grid. The element was recovered and taken to the fuel storage pool for inspection. No damage was observed and the element was returned to the core for continued operation.

Repairs to the fuel transfer system were done to smooth the operation that resulted in the dropping of the fuel element. A report of this occurrence was made to Region 1, at their request, by letter dated December 6, 1982.

7.8d(3) Unscheduled Shutdowns

7-27-82 Scram due to electrical power dip during a thunderstorm. The reactor was returned to power at once.

9-2-82 2 consecutive Scrams due to electrical power dip during a thunderstorm. The reactor could not be returned to power until several days later because of xenon buildup. One electrical power dip also caused a failure of nuclear instrument power supply which was later repaired.

7.8d(3) Tabulation of Major Items of Plant Maintenance

1. Replaced drain line valve on bulk CO_2 tank.
2. Replaced heater controller on bulk CO_2 tank.
3. Replaced primary system IX prefilters.
4. Installed spare Reg. Rod.
5. Replaced pulley and belts on EF-2 ventilation unit.
6. Replaced bearings on EF-23 ventilation unit.
7. Replaced resin in thermal shield #1 IX and twice in #2 IX.
8. Replaced diaphram on air dryer purge solenoid of the compressed air system.
9. Replaced #1 Shim magnet, clutch plate and gearbox/motor key.
10. Repacked bearings on #1, #2, and #3 Shim gearboxes.
11. Installed additional fuel storage racks in the storage pool.
12. Replaced gaskets on rabbit tube RT-3 receiver.
13. Installed additional decking in the cooling tower basin.
14. Replaced fan hub on #3 cooling tower fan.
15. Balanced fan blades on #2 and #3 cooling tower fans.
16. Installed fire sprinkler system in the cooling tower.
17. Repaired electrical connections on #1 cooling tower fan motor.
18. Replaced electrical connectors on #2 and #3 cooling tower fan motors.
19. Recalibrated #2 Shim position pot.
20. Replaced mV/I Amplifier on TIA-22.
21. Corrected grounding on new Nuclear Power Supply.
22. Recalibrated BTUR system.
23. Replaced oscillator postion indicator in transmitter and purged lines on LIA-13.

24. Calibrated Shim position power supply.

25. Replaced GM tubes and recalibrated the fission product monitor RM3-2.

26. Engineering Changes during this period:

ECN-273 Replaced Nuclear ± 10 Volt power supplies.

ECN-265 Replaced Shim readouts with digital indicators.

27. Instrument Procedures performed:

BTUR	NC-6
FRC-4	NC-9
FIA-12	PC-3
FIA-15	PC-27
FIA-16	SPC-150
FIA-40	SPC-151
LIA-40	RM 3-2
LRC-1	RM 3-5
K-103	RM 4-3
NC-1	TRC-1
NC-2	TRC-2
NC-3	TIA-9
NC-5B	TIA-408

7.8d(4) Tabulation of Major Changes in the Facility and Procedurs, and the Test and Experiments, Carried Out Without Prior Approval by the U. S. AEC (10 CFR 50.59)

None this reporting period.

7.8d(5) Summary of Radioactive Material Released and Results of Environmental Surveys Performed.

375 curies of tritium and 212 curies of Argon-41 were released as gaseous waste, while 776 millicuries of tritium and 58 millicuries of other β-γ emitters were released into the sanitary sewer.

Environmental samples of the streams, wells, vegetation and/or soil, and air showed no significant changes.

7.8d(6) Summary of Significant Exposures Received by Facility Personnel and Visitors

1. No significant exposures were received by any visitors.

2. No facility personnel received any significant exposures for this period.