

U.S. NUCLEAR REGULATORY COMMISSION
REGION I

Report No. 50-219/89-30

Docket No. 50-219

License No. DPR-16

Licensee: GPU Nuclear Corporation
Oyster Creek Nuclear Generating Station
P. O. Box 388
Forked River, New Jersey 08731

Facility Name: Oyster Creek Nuclear Generating Station

Inspection At: Forked River, New Jersey

Inspection Conducted: December 14-15, 1989

Inspectors: Robert A. McBrearty Jan. 17, 1990
R. A. McBrearty, Reactor Engineer date

Approved by: Jack Strosnider 1/19/90
J. R. Strosnider, Chief, Materials and date
Processes Section, EB, DRS

Inspection Summary: Inspection on December 14-15, 1989 (Report No. 50-219/89-30)

Areas Inspected: A routine, unannounced inspection was conducted to assess the condition of facility storage tanks and to find out what inspection and maintenance activities are conducted by the licensee to assure continued storage tank integrity. Licensee event reports related to storage tanks and the licensee's corrective actions were reviewed. Additionally, the inspection was conducted to assess licensee actions on previous inspection findings, to review the results of the water chemistry program and licensee actions regarding control of occupational exposure to radiation.

Results: No violations were identified. None of the LERs related to degraded storage tanks; however, the inspector determined that no routine inspection/maintenance program currently exists for storage tanks. Unresolved items 88-24-01 and 89-01-01 were closed.

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DETAILS

1.0 Persons Contacted

GPU Nuclear Corporation

- * J. Barton, Deputy Director
- R. Hillman, Manager - Plant Chemistry
- * J. Rogers, Licensing Engineer
- * A. Rone, Plant Engineering Director

U. S. Nuclear Regulatory Commission

- * D. Lew, Resident Inspector

* indicates those present at the exit meeting.

2.0 Licensee Action on Previous Inspection Findings (92701)

(Closed) UNR 88-24-01: Licensee to establish a maintenance and surveillance program to ensure MSIV stem reliability. The licensee has committed to perform ultrasonic examination or liquid penetrant examination of 2 MSIV stems each refueling outage so that all 4 MSIVs will be tested in two outages. The ultrasonic examination method does not require complete valve disassembly and will be used when there is access to top of the MSIV stem. The liquid penetrant examination method will be used anytime valve maintenance requires removal of the stem.

The licensee has committed to perform an internal inspection whenever an MSIV is disassembled for maintenance. The scope of the inspection will include as much as the disassembly will permit. Additionally, the licensee has performed a modification of one of the four MSIVs which required valve stem replacement. The NRC requested that the licensee provide a schedule for performing the modification on the remaining three valves, and the licensee committed to modify the remaining three valves when these valves are disassembled.

Based on the above the item is closed.

(Closed) UNR 89-01-01: Drywell wall thinning. The item related to two isolated points where measured thickness values were below the minimum specified wall thickness of 0.591". The licensee has established a program to ultrasonically monitor the drywell wall thickness at outages of opportunity and at refueling outages. Data obtained periodically show that in the area above the sand entrenchment region corrosion has either ceased or is occurring at an extremely low rate. The rate of corrosion in the sand entrenchment region is within previous calculations. In addition to the ultrasonic thickness measurement program, the licensee has installed an impressed current cathodic protection system on selected areas of the drywell wall to stop or minimize the corrosion that is taking place in those areas.

A safety evaluation was prepared by the licensee which addresses the drywell wall thinning problem including the below minimum measurements. The licensee's evaluation concluded that the projected corrosion rates provide assurance that the drywell wall thickness will be acceptable and will maintain adequate structural integrity through June 1992. NRR reviewed licensee submittals regarding the matter and addressed the issue in a letter dated October 26, 1988 to the licensee.

Based on the above, the item is closed.

3.0 Review of Licensee Event Reports Related to Storage Tanks (92700)

A search of the NRC Licensee Event Report (LER) data base revealed one LER, regarding a storage tank related problem was issued by the licensee during the period from 1987 to present. The LER, No. 87-007, involved incorrect analysis of processed water released to the environment from High Purity Tank HP-T-2A.

The corrective actions associated with the LER were reviewed and determined to be acceptable.

The licensee routinely monitors and chemically analyzes the contents of various storage tanks and perform inspections following system maintenance. However, storage tanks are generally not included in inspection/maintenance programs.

Conclusion

Although no tank deficiencies were identified, the inspector noted that storage tanks generally are not included in licensee maintenance and inspection programs. This was discussed with the licensee and the inspector was advised that the licensee is considering adding selected tanks to its maintenance and inspection program. The event identified by the LER was not directly related to tank integrity.

4.0 Water Chemistry (84750)

Water chemistry data were reviewed as part of this inspection. The methods of collecting and verifying the accuracy of these data were not included in the scope of this inspection.

The inspector reviewed the reactor water chemistry data for the period of July 1989 through November 1989, and discussed these data with responsible individuals in the licensee's chemistry department.

The licensee follows a combination of BWR Owners Group, INPO and EPRI water chemistry guidelines. The plant's Technical Specifications place limits on conductivity and chloride concentration. In addition to conductivity and chloride concentration the licensee controls and tracks the concentration of various other reactor water constituents including sulfate, nitrate and the water pH value.

The monthly average conductivity of the reactor water during the period reviewed ranged from 0.076 $\mu\text{s}/\text{cm}$ to 0.084 $\mu\text{s}/\text{cm}$ which is within the guideline limit of 0.2 $\mu\text{s}/\text{cm}$ and the Technical Specification limits of 10 $\mu\text{s}/\text{cm}$. The monthly average chloride concentration ranged from 0.3 parts per billion (ppb) to 1.8 ppb, and the monthly average sulfate concentration for the period ranged from 1.4 ppb to 2.4 ppb, each of which was within the guideline limit of 20 ppb and for chloride, well within the T.S. limit of 0.5 parts per million (ppm). Instances when the limits were exceeded were attributed to reactor shutdowns and the inspector confirmed that the values were brought to acceptable levels within a short period of time.

Conclusion

The licensee is operating the plant equipment to obtain the optimum results for reactor water chemistry. The controlled water constituents were routinely maintained at values much lower than guidelines and Technical Specification limits allowed and, when the limits were exceeded due to reactor shutdowns, the values were quickly returned to acceptable limits.

5.0 Occupational Exposure (83750)

The licensee's program for minimizing personnel exposure to radiation includes an aggressive resin bed cleaning program to limit the level of iron and cobalt and the transport of crud through the plant, a program to control organic chemicals within the plant, and an educational program to make licensee and contractor personnel aware of the acceptable disposal methods for waste materials. Additionally, the licensee considers methods to eliminate or minimize cobalt transport throughout plant piping systems.

Conclusion

The licensee has taken positive steps to make personnel aware of proper disposal methods of materials that could spread radioactive contamination to control personnel exposure to radiation. The licensee also has in place a program to limit amounts of iron and cobalt that are transported through plant systems and minimize the recontamination of systems, such as the recirculation system, which have been chemically decontaminated.

6.0 Exit Meeting

The inspector met with licensee representatives, denoted in paragraph 1, at the conclusion of the inspection on December 15, 1989. The inspector summarized the scope and findings of the inspection.

At no time during the inspection was written material provided by the inspector to the licensee. The licensee did not indicate that proprietary information was involved in the scope of this inspection.