



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA STREET, N.W.
ATLANTA, GEORGIA 30303

MAY 16 1984

Report No.: 50-413/84-47

Licensee: Duke Power Company
422 South Church Street
Charlotte, NC 28242

Docket No.: 50-413

License No.: CPPR-116

Facility Name: Catawba 1

Inspection at Catawba site near Rock Hill, South Carolina

Inspector: John R. Wray
J. R. Wray

5/11/84
Date Signed

Approved by: G. R. Jenkins
G. R. Jenkins, Section Chief
Division of Radiation Safety and Safeguards

5/11/84
Date Signed

SUMMARY

Inspection on April 16-20, 1984

Areas Inspected

This routine, unannounced inspection involved 32 inspector-hours on site in the areas of internal exposure controls, radioactive material control, facilities and equipment, ALARA program, and solid radwaste.

Results

No violations or deviations were identified in the five areas inspected.

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REPORT DETAILS

1. Persons Contacted

Licensee Employees

- *J. W. Cox, Technical Services Superintendent
- *R. H. Charest, Station Chemist
- W. P. Deal, Station Health Physicist
- *S. W. Dressler, Project Engineer
- *P. G. LeRoy, Licensing Engineer
- *R. D. Kinard, Health Physics Coordinator
- A. Duckworth, Radwaste Chemistry Coordinator
- G. T. Mode, Health Physics Coordinator
- R. L. Clemmer, Health Physics Coordinator
- G. Vandervelde, Health Physics Supervisor
- L. D. Schlise, Health Physics Supervisor

NRC Resident Inspector

- P. H. Skinner, Senior Resident Inspector (Operations)
- P. K. VanDoorn, Senior Resident Inspector (Construction)

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on April 20, 1984, with those persons indicated in paragraph 1 above.

3. Licensee Action on Previous Enforcement Matters

Not inspected.

4. Unresolved Items

Unresolved items were not identified during this inspection.

5. Internal Exposure Controls

The inspector reviewed the licensee's internal exposure control program as it pertains to engineering controls of airborne radioactivity areas and air sampling programs. Station Directives and Health Physics procedures address and require use of available process and engineering controls prior to and during periods when personnel are exposed to airborne radioactivity greater than one MPC. The inspector reviewed procedure HP/O/B/1000/08, "Temporary Ventilation System," which addresses the use of two portable 500 cfm filter units. The licensee expects to use these units in the Auxiliary Building, Hot Machine Shop, or any place where high local airborne radioactivity may develop. The procedure discusses where the exhaust should be positioned,

radiation, contamination, and airborne surveys to be taken, and reasons to discontinue use (i.e., filter dose rates greater than 100 mr/hr, etc.). The inspector had no further comments or questions concerning the procedure.

The inspector was informed that the two containment auxiliary charcoal filter units in each containment building are being modified with inlet plenum changes, backdraft dampers, fans, and manway adapter plates, so that the prefilters, HEPA filters, and charcoal absorber trays can be used for ventilating steam generator channel heads prior to and during steam generator entries. The inspector observed the operation of the equipment during this inspection and agreed that this system should provide improved worker protection from airborne radioactivity during steam generator entries.

The inspector reviewed the licensee air sampling surveillance program. Procedure HP/O/B/1000/02, "Taking, Counting, Recording Surveys," specifies breathing zone air samples to be taken at maximum concentration levels. Based on discussions with licensee representatives, it appears that the station's program provides a framework for adequate air sampling and management review. The inspector had no further questions.

6. Radioactive Material Control

FSAR Table 12.3.4-1, "Area Radiation Monitoring System," lists the locations, sensitivities, ranges, and accuracies of each area radiation monitor in the plant. Accompanied by a licensee representative, the inspector toured the facility to verify each parameter in the table. The inspector identified no discrepancies except for the location of the Hot Chemistry Laboratory monitor which was installed at the wrong elevation in a corridor outside the laundry room. The inspector stated that the monitor should be relocated inside the Hot Chemistry Laboratory. This will be reviewed during future inspections (84-47-01).

The inspector reviewed the two Containment High Range Radiation Monitors (CHRRM) installed pursuant to NUREG 0737, Item II.F.1(3). The monitors have the required sensitivity and range as specified in Table II.F.1-3 of NUREG 0737. Vendor data indicates a relatively flat energy response over the range 0.1 mev to 3 mev. The licensee plans to in-situ calibrate these monitors to a radiation source up to $1.0E+03$ R/hr and electronically calibrate over the entire range. The inspector had no further questions regarding calibrations of these monitors. However, the inspector observed their location in containment and discovered that they are in different positions, in relation to the four steam generators, than design engineering had originally specified. The licensee agreed to evaluate the adequacy of the existing locations to meet the monitoring intentions for these monitors. This item will be reviewed during future inspections (84-47-02).

The inspector reviewed the licensee's program for placement, calibration, and control of airborne monitors, friskers, and portal monitors. The licensee will use AMS-3 units for local airborne situations in the plant. Furthermore, process monitor EMF-41 in the Auxiliary Building can pull local

area air samples and identify airborne areas within the building prior to the effluent leaving the plant vent. Frisker locations have been specified around the radiation controlled area (RCA). The station will have many entry points into the RCA, each will have a frisker for contamination monitoring. The main egress point from the plant will have portal monitors. The licensee's program for calibrating and response checking these instruments appears to be adequate. The inspector had no further questions.

7. Facilities and Equipment

The station maintains separate changing facilities for women and men. The rooms appear to be adequate for routine operations but may be less than adequate during outages. The inspector observed an adequate supply of protective clothing on shelves ready for issue in both change rooms. Poster displays were in plain view illustrating proper dress out procedures. The inspector was informed that floor drains and shower drains run to the radwaste system and observed hot-air hand dryers (to reduce radwaste from towel use). Each change room contained toilets which flush to the sanitary sewage system. The inspector discussed the possibility of contaminated material passing through and concentrating in this radioactively clean system. The licensee will maintain control of these toilet through signs in the area specifying no radioactive material to be flushed down these toilets. The inspector observed adequate facilities for decontamination showers and sinks.

The laundry facility was observed and appears adequate. A licensee representative explained the flow path of protective clothing through the facility and the monitoring requirements. The administrative controls and number of washers/dryers appears to be adequate. The inspector was informed that the station plans to purchase some dry cleaning units in the future to reduce liquid radwaste.

The inspector toured the shipment area and radwaste storage areas. An LSA box compactor is located in this area. The health physics department had not completed functional tests on the compactor at the time of the inspection. A licensee representative stated that the station expects to purchase a shredder in the future to reduce compactable solid waste. The station appears to have adequate storage space for boxes and drums of solid wastes. Containers of high level wastes (compacted trash, resins, equipment, etc.) are stored behind a shield wall waiting for shipment. Spent filters are stored in shielded bunkers near the shipping bay. The inspector observed the filter cask transport vehicle. This vehicle provides remote handling of spent filters from their locations in auxiliary building pits to the storage bunkers. The inspector had no further questions.

The licensee has a separate room for tool and equipment decontamination. This room was previously inspected in report number 50-413/83-38. During this inspection, the inspector verified that ultrasonic sinks and room ventilation has been installed. This review closes follow-up item (50-413/83-38-01).

The inspector toured the contaminated equipment warehouse. The building is on the Unit 2 side of the plant and appears adequate to handle storage of contaminated tools and equipment from both units. Procedure HP/O/B/1004/23, defines the appropriate method for storing radioactive material in the contaminated equipment warehouse as well as the container and drum storage area, filter bunker area, low level waste storage area, contaminated tool storage and issue areas, and the contaminated waste oil storage area. The inspector identified no problems with the procedure.

The inspector observed the contaminated waste oil storage area next to the contaminated equipment warehouse. The area is a locked and fenced concrete pad with a separate drain and sump system. Even though the area is open, permitting rain water to accumulate in the sump, the licensee appears to maintain adequate controls to prevent the sump pump from discharging potentially radioactive water to the storm drains without proper monitoring.

The licensee possess a fully equipped first aid room. The area appears to be adequate to handle contaminated personnel who may become injured. The inspector identified no discrepancies.

The inspector inventoried the licensee's supply of portable, temporary shielding. Different size lead blankets, lead bricks, and moldable lead sheets were observed. The licensee monitors procedural controls over the issuance of each lead shield. The inspector had no further questions.

The inspector observed two 300 cfm (100 psi) breathing air compressors in the Service Building. The licensee is in the process of installing and functionally testing the units. The inspector stated that these units should be adequate to supply breathing air to the station in fulfillment of FSAR commitments. The licensee will maintain the two 100 cfm (35 psi) compressors removed from service for use elsewhere in the plant if warranted. The inspector observed the Control Room Habitability System. This system is a portable supply of bottled breathing air for six workers for up to six hours per man (the maximum number of workers necessary in the control room after an accident). The inspector had no further questions.

8. ALARA

Station Directive 3.8.1 describes the licensee's ALARA program. Station personnel responsibilities and organization is defined. The Station ALARA Manual is approved by upper licensee management. An ALARA committee is described with representation from all plant departments. Station goals and objectives are established by committee. The program appears to have adequate management support. The station exposure objective for the first year of operation (based on a license date of May 1, 1984) is ten person-rem. The ALARA group will review RWP/SRWP and conduct pre- and post-job critiques where warranted. The inspector had no further questions.

9. Solid Radwaste System

The inspector toured the Waste Solidification Facility (WSF) and observed ongoing activities. The licensee was conducting solidification tests of waste streams using a contractor's cement system. No violations or deviations from FSAR commitments were identified.

The inspector reviewed the licensee's program for obtaining representative samples of waste streams. The licensee has installed a remote, inline, automatic sampler system which can collect samples from the Resin Batch Tank and the Evaporator Condensate Tank prior to release to the WSF for solidification.

The inspector reviewed preoperational test, procedure TP/0/B/1500/02, "Radioactive Waste Solidification System Functional Test." The results of the test indicates that resin can be successfully sluiced from the mixed bed demineralizers, waste monitor tanks, waste evaporator condensate system, laundry/hot shower tank, thermal regenerative system, and the spent resin tank to appropriate places. The inspector discussed the capability to handle potentially contaminated powdex resin from the full flow condensate polishing demineralizers. FSAR Section 10.4.6.2 states that the resin will be sluiced to a vendor supplied dewatering skid. A licensee representative stated that it will not be sent to the radwaste system because it would be too difficult to sluice powdex resin that distance. A vendor skid will be brought in to dewater the resin and arrangements made to transfer the casks to the WSF for final dewatering or solidification as appropriate. System modifications in the turbine building are not complete to handle the vendor skid. Preoperational Test Procedures do not appear to include this arrangement. Sluice lines have not been modified to provide five diameter bends. This item will be reviewed during future inspections (84-47-03).

The Solid Waste System preoperational test results indicated that the system will function as described in the licensee application. The inspector had no further questions.