



UNITED STATES
 NUCLEAR REGULATORY COMMISSION
 REGION II
 101 MARIETTA ST., N.W., SUITE 3100
 ATLANTA, GEORGIA 30303

Report Nos. 50-327/79-27 and 50-328/79-14

Licensee: Tennessee Valley Authority
 500A Chestnut Street Tower II
 Chattanooga, Tennessee 37401

Facility Name: Sequoyah Nuclear Plant

Docket Nos. 50-327 and 50-328

License Nos. CPPR-72 and CPPR-73

Inspection at Sequoyah Nuclear Plant near Chattanooga, Tennessee

Inspector: G. R. Jenkins 5/30/79
 for W. J. Millsap Date Signed

Approved by: G. R. Jenkins 5/30/79
 G. R. Jenkins, Acting Section Chief, Date Signed
 FF&MS Branch

SUMMARY

Inspection on May 7-11, 1979.

Areas Inspected

This routine, unannounced inspection involved 40.5 inspector-hours on-site in the areas of liquid and gas monitoring, gaseous filtration systems, resin transfer, HEPA filter storage and tank volume verification.

Results

Of the five areas inspected, no apparent items of noncompliance or deviations were identified.

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DETAILS

1. Persons Contacted

Licensee Employees

- *W. F. Popp, Assistant Plant Superintendent
- *W. E. Andrews, Quality Assurance Supervisor
- *R. L. Kitts, Health Physics Supervisor
- *D. W. Mack, Construction
- *W. H. Kinsey, Jr., Assistant Results Supervisor
- J. T. Dills, Jr., Chemical Engineer
- D. Nix, Chemical Engineer
- J. A. McPherson, Mechanical Engineer
- G. L. Terpstra, Mechanical Engineer
- C. Gridley, Chemical Engineer
- J. M. Hereford, Instrument Engineer

*Attended exit interview.

2. Exit Interview

The inspection scope and findings were summarized on May 11, 1979 with those persons indicated in Paragraph 1 above. The inspector discussed certain findings with members of licensee management and the results of these discussions are noted in the details of this report.

3. Licensee Action on Previous Inspection Findings

Not inspected.

4. Unresolved Items

Unresolved items were not identified during this inspection.

5. Monitors

a. Placement of Monitors

The inspector toured the facility and observed that the following monitors were physically in-place: condenser vacuum pump exhaust monitor (1-RM-90-129, 1-RE-90-119, 1-RE-90-99); Unit 1 shield building vent monitor (1-RE-90-100); auxiliary building vent monitor (0-RE-90-101); waste disposal system condensate monitor (0-RE-90-133, 0-RE-90-140); steam generator blowdown sample monitors (1-RE-90-121, 1-RE-90-120); and the plant liquid discharge monitor (0-RM-90-211).

b. Calibration

The inspector discussed with a licensee representative the method used to calibrate the various effluent and process monitors to be used in the plant. A licensee representative stated that the primary calibration was that performed by the vendor at the plant and that transfer sources provided by the vendor were used to ensure that these calibrations are still valid. The inspector then reviewed the certificates of radioactivity calibration of the radioactive material used at the factory in performing the primary calibrations on the Model RD-32 Offline Beta Detectors and the Model RD-36-01 Particulate Detectors and noted that the calibration of these standard materials were traceable to the National Bureau of Standards.

The inspector then reviewed the licensee's records of his use of the transfer sources in performing the in-plant calibration of the following monitors, paying particular attention to the discriminator and high voltage settings and the counts obtained with the transfer sources: the waste disposal system condensate discharge monitor (0-RM-90-122); the Unit 1 shield building vent monitor (1-RM-90-100) for gases, particulates and iodine; the containment purge air exhaust monitors (1-RM-90-131, 1-RM-90-130); the containment building upper and lower air monitors (1-RM-90-106, 1-RM-90-112) for gases and particulates; and the WDS gas effluent monitor (0-RM-90-118). All of these monitors appeared to be properly calibrated except the WDS gas effluent monitor whose discriminator and high voltage settings were significantly different from those used at the factory. The inspector questioned a licensee representative about this difference and the licensee representative stated that the monitor had apparently been improperly calibrated and that it would be recalibrated. The inspector stated that the results of the licensee's efforts would be reviewed during a subsequent inspection. (50-327/79-27-01; 50-328/79-14-01)

c. Sampling Media

The inspector discussed with a licensee representative the sampling media used by the monitors to collect radioiodine and airborne particulate material and questioned the licensee representative about the efficiency of these media. The inspector was shown the results of a DOP penetration test performed by the vendor on the particulate filter medium and he had personal knowledge of the capabilities of the iodine sampling media to be used. The inspector had no further questions on this matter.

6. Sampling of the Unit 1 Shield Building Vent

The inspector examined the sampling arrangement on the Unit 1 Shield Building Vent and the pipes used to deliver this aerosol to the monitor and noted several potential deficiencies:

- a. The vent, at the point of sampling, is 7.5 ft. X 2 ft and is being sampled at one sample withdrawal point. The inspector discussed this with a licensee representative and stated that this was probably inadequate to obtain a representative sample of this effluent stream, noting that ANSI 13.1-1969, Guide to Sampling Airborne Radioactive Materials In Nuclear Facilities, Appendix A, Guides for Sampling from Ducts and Stacks, suggested 20 sample withdrawal points for a duct of this cross-sectional area. The inspector also noted that a design change request, DCR No. 231, requesting additional sampling points in this duct in order to obtain a representative sample was signed by the Plant Superintendent on 1/30/78; the inspector also noted a memorandum from the Director of Engineering Design to the Director of Power Production, dated March 13, 1979, stating that the estimated time to implement this design change request was 14 months from the date of this memorandum. At the time of the exit interview, the inspector asked a licensee representative to expedite DCR No. 231; the licensee representative stated that he would look into this situation.
- b. About seven feet below the sampling point in this vent, there is a circular duct, approximately two feet in diameter, feeding the vent. This fact lead the inspector to question the placement of the present sampling probe (located in the center of the duct) since the air flows within the duct might be sufficiently disturbed to prevent this probe from seeing the bulk stream. The inspector discussed this with a licensee representative and stated that a pitot traverse of the duct should be performed to aid in evaluating the present and future sampling arrangements. At the time of the exit interview, a licensee representative stated that performing these traverses would be evaluated.
- c. The inspector noted that between the vent sampling probe and the monitor itself was a horizontal run of pipe approximately 175 feet long. The inspector discussed this with a licensee representative and stated (as discussed in ANSI N13.1-1969, Appendix B, Particle Deposition in Sample Lines) that in this length of pipe there might be significant particle deposition due to gravity and stated that the licensee should evaluate the degree of this deposition. At the time of the exit interview, a licensee representative stated that this evaluation would be performed. The inspector stated that the results of the licensee's efforts concerning the items discussed above would be reviewed during a subsequent inspection (50-327/79-27-02).

7. Filter Housings

The inspector examined the filter housings of the following gas treatment systems for adequacy of construction and the presence of required equipment: the Control Building Emergency Air Cleanup Systems, the Emergency Gas Treatment Systems, and the Auxiliary Building Gas Treatment Systems. The inspector noted the presence of proper seal welds, challenge gas injection and sampling points, provisions for lighting, filter clamps, fire sprays, drain lines and differential pressure gauges. The inspector noted some incomplete drain lines on the Emergency Gas Treatment Systems and was shown a drawing (47W920-38R2) which showed loop seals between each filter bank in this systems. The inspector also noted that the fire spray heads in the Auxiliary Building Gas Treatment System housings were misplaced in that two were aimed at HEPA filters and the other two would have prevented the loading of charcoal trays. The inspector discussed these observations with a licensee representative who stated that the drain lines would be completed and the fire spray heads would be repositioned to their proper location. The inspector stated that the results of the licensee's efforts in these matters would be reviewed during a subsequent inspection (50-327/79-27-03; 50-328/79-14-02).

8. Spent Resin Sluice Line

The inspector walked the spent resin sluice line from the mixed-bed and cation demineralizers to the spent resin storage tank and observed no obstruction which would be likely to cause impaction of the resin during sluicing; also, the demineralizer rooms and the spent resin storage tank room were free of non-essential equipment. However, the inspector noted that the unshielded sluice line ran through the Elevation 690 pipe chase on both the Units 1 and 2 sides, the location of a considerable amount of equipment which will require attention. The inspector discussed this with a licensee representative and stated that this line could be the source of considerable inadvertant human exposure if control over the area during resin transfer failed. At the time of the exit interview, the inspector questioned a licensee representative about the plans to prevent an accidental exposure during the transfer of spent resin; the licensee representative stated that this problem was under active consideration. The inspector stated that the results of the licensee's efforts would be reviewed during a subsequent inspection (50-327/79-27-04; 50-328/79-14-03).

9. Storage of HEPA Filters

The inspector visited Construction Hut #20 to observe the manner in which HEPA filters were being stored. The inspector noticed several Flanders filters, intended for the containment purge air exhaust system, stored with the pleats horizontal which, over a period of time, could result in filter damage; the inspector also noticed a large group of Cambridge filters

stored five and six filters high which is contrary to accepted industry practice of not stacking filters more than three high unless the manufacturer recommends otherwise (ERDA 76-21, Nuclear Air Cleaning Handbook, Appendix C, Care and Handling of HEPA Filters). The licensee promptly corrected these storage deficiencies. At the time of the exit interview, the inspector discussed the need for a written instruction to construction warehousemen on the proper storage of HEPA filters; the licensee representative agreed to provide this instruction. The inspector stated that the results of the licensee's efforts would be reviewed during a subsequent inspection (50-327/79-27-05).

10. Tank Volume Verifications

This item was originally discussed in IE Report No. 50-327/79-9 and 50-328/79-5, paragraph 8.a. A licensee representative showed the inspector the results of physical measurements which verified the design of liquid tanks which were potentially releasable, however the waste gas decay tanks have not been measured. This item remains open.