

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Reports No. 50-454/86037(DRSS); 50-455/86032(DRSS)

Docket Nos. 50-454; 50-455

Licenses No. NPF-37; CPPR-131

Licensee: Commonwealth Edison Company
Post Office Box 767
Chicago, Illinois, 60690

Facility Name: Byron Station, Units 1 and 2

Inspection At: Byron Station, Byron, Illinois

Inspection Conducted: September 23-26, 1986

Inspector: *L. J. Hueter*
L. J. Hueter

10/10/86

Date

Approved By: *M. C. Schumacher*
M. C. Schumacher
Radiological Effluents and
Chemistry Section

10/10/86

Date

Inspection Summary

Inspection on September 23-26, 1986 (Reports No. 50-454/86037(DRSS); and 50-455/86032(DRSS))

Areas Inspected: Routine, unannounced inspection of preoperational gaseous and liquid radwaste program for Unit 2 regarding; status of certain preoperational demonstrations and tests of systems, post test evaluations, and resolution of deficiencies. Also, status of one open item was reviewed.

Results: No violations or deviations were identified.

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DETAILS

1. Persons Contacted

- *W. Burkamper, QA Supervisor of Operations
- R. Campbell, Technical Staff, Electrical Group Leader
- *A. Chernick, Regulatory Assurance Supervisor
- *P. Devine, Unit 2, TRB
- *E. Falb, Unit 2 Testing Supervisor
- J. Gables, Systems Test Engineer, AB System
- *G. Grabins, Unit 2 ATS
- *T. Joyce, Assistant Superintendent, Technical Services
- *J. Langan, Regulatory Assurance Staff
- *J. Pausche, Regulatory Assurance, Group Leader
- *R. Querio, Byron Station Manager
- *J. Snyder, QA Inspector
- R. Ward, Services Superintendent
- L. Wehner, Technical Staff, Radwaste Group Leader
- *M. Whitmore, GSEP Coordinator
- *K. Yates, Nuclear Safety

- *P. Brochman, NRC Resident Inspector
- *J. Hinds, Jr., NRC Senior Resident Inspector
- *M. McCormick-Barger, NRC Region III Inspector

The inspector also contacted other licensee personnel.

*Denotes those present at the exit meeting.

2. Licensee Action on Previous Inspection Findings

(Open) Open Item (454/85051-02; 455/85037-02): Commitment to evaluate cause of occasional readings significantly above background observed on the WGDT effluent line monitor between tank releases. As noted in Inspection Reports No. 454/86020 and No. 455/86012, the licensee's evaluation was continuing because initial corrective measures, including a 15 minute flush following each release and a change in the sequence of valve closure, were not fully successful in eliminating the problem. Further, it was noted that the licensee was planning a temporary modification involving a nitrogen purge of the WGDT release line both upstream and downstream of the flow control/isolation valve and if the latter modification proved successful, a permanent nitrogen purge modification would be installed. The temporary nitrogen purge (a 1/4 inch line installed upstream of the flow control/isolation valve and downstream of the regulating valve) has been installed and tests conducted which showed some improvement. The licensee believes both the location of the nitrogen input and the limited capacity of the temporary system limits its effect in adequately purging the line. Therefore the licensee is planning to go ahead with the permanent nitrogen purge modification which not only has a much larger capacity but will also be introduced into the line at the upstream end and therefore should be much more effective in purging the entire WGDT effluent line.

The licensee believes that the flow control isolation valve is not leaking in that no loss of pressure has been observed on the WGDs and no increase in pressure observed on the low range pressure gauge located between the pressure regulator valve and the flow control/isolation valve in the period between tank releases. However, the licensee intends to verify that the flow control/isolation valve is not leaking by the performance of a helium leak test as soon as the test equipment is available (currently in use for testing condenser air in leakage). The licensee's continued progress in evaluation of this problem will be reviewed during a future inspection.

3. Unit 2 Preoperational Systems Demonstrations and Tests

a. Status of Previously Reviewed Demonstrations and Tests

(1) OG 2.55.70 Offgas

One significant deficiency remained open during the last inspection. This deficiency, Deficiency 61435, involved the need to calibrate the flow indicating loops for the SJAЕ owing to a new transmitter with new scales (0-30 SCFM) which was to be obtained and used per planned Design Change DC-OG025. The calibration was not performed during Integrated Hot Functional (IHF) as originally planned because the design change package was not issued until July 1986, after completion of IHF. Following calibration in the shop, the new transmitter has been installed. The licensee plans an insitu calibration verification during low power testing. Deficiency 61435 was closed to CWR-OG-6001. The inspector verified that this CWR in turn has been closed to AIR No. 6-86-2141 by the licensee for tracking the insitu calibration verification. The inspector's review/followup of this preoperational test is considered complete.

(2) AB 2.01.60 Boric Acid (Pumps and Tank Level Alarms)

Of the four significant deficiencies remaining open during the last inspection, scheduled at that time for completion by fuel load, none have been closed. Deficiency 61209, closed to AIR No. 6-86-2036 for tracking purposes, involved the need to recalibrate a density transmitter at indication 2DIAB006 for indication of boric acid concentration. Calibration has been completed, however, the licensee plans to verify the calibration under dynamic conditions before closure of the AIR. The licensee foresees no difficulty in completion of calibration verification and AIR closure before fuel load. Deficiency 61997, closed to AIR No. 6-86-2037 for tracking purposes, involved recalibration of two level transmitters both of which were slightly out of specification in the conservative direction at the upper end of the scale. The recalibration of the level transmitters was completed in conjunction with Retest 2024 which is in the process of Project Engineering Department (PED) review/approval before closure of the AIR. Closure of this AIR is still planned before fuel load.

Deficiency 61197, closed to AIR No. 6-86-2038 for tracking purposes, involves the capability of the Unit 2 boric acid filter to handle the capacity from a simultaneous two pump operation which is an FSAR design criteria (FSAR Section 9.3.4) corresponding to 150 ± 5 gpm, per the licensee. The maximum flow obtained through the filter with two pump operation has been about 126 gpm and appears to be limited not by filter dp but by limitations of the pumps and piping system to deliver the required flow rate to the filter. The other deficiency, Deficiency 61199, has also been closed to AIR No. 6-86-2038 for tracking purposes, and involves slightly excessive vibration of boric acid pump 2AB03P. The licensee believes this is due to the motor mount design. The recently completed Retest 2023 was intended to demonstrate that the latter two deficiencies (AIR No. 6-86-2038) had been corrected but it failed to do so. The Retest 2023 package is currently in review by PED. The inspector intends to continue review of AIR No. 6-86-2038, schedules for completion by fuel load, in light of the inability to demonstrate the FSAR design criteria for the Unit 2 boric acid filter.

(3) AB 2.01.70 Boric Acid (Evaporator)

All seven deficiencies described for this evaporator in Inspection Reports No. 454/86020 and 455/86012 remain open. All installations/modifications have been completed and are ready for component demonstrations or functional testing, as applicable, which can not be accomplished until a new pump arrives. The pump manufacturer is not currently tooled up for this pump. Although the pump manufacturer had initially indicated delivery would be in the Fall of 1986, they now say the pump can not be provided until March 1987. The licensee notes that the Unit 1 boric acid evaporator should provide ample capacity for both units in the interim and that a radwaste evaporator could be used, with limitations, if needed. The seven deficiencies have been closed to three AIRs for tracking purposes by the licensee. Deficiencies 61074, 61203 and 61324 have been closed to AIR No. 6-86-2001. Deficiencies 61081 and 61082 have been closed to AIR No. 6-86-2003 and Deficiencies 61138 and 61139 have been closed to AIR No. 6-86-2000. The inspectors review/followup of this preoperational test is considered complete.

(4) PR 2.60.61 Process Monitors (Loop 1)

Loop 1 preop test involved one monitor, the containment purge effluent radiation monitor (PR001). The process monitor tests included such functions as alarms, interlocks, (as applicable) communications, battery capability, flow, loss of counts, and check source. The test was completed, reviewed, and approved. The four deficiencies identified during the testing were all resolved. The inspector's review/followup of this preoperational test is considered complete.

(5) PR 2.60.62 Process Monitors (Loop 2)

Loop 2 preop test involved two monitors, the steam generator blowdown liquid radiation monitor (PR008) and the pipe tunnel gaseous monitor (PR021). The test was completed, reviewed, and approved. No deficiencies were identified during the testing. The inspectors review/followup of this preoperational test is considered closed.

b. Status of Demonstrations and Tests Not Previously Reviewed by Inspector

(1) PR 2.60.63 Process Monitors (Loop 3)

Loop 3 preop test involved three monitors, steam jet air ejector/Gland Steam Exhaust (PR027) and service water outlet liquid radiation monitors (PR02 and PR03). The test was completed, reviewed, and approved. Of the 14 deficiencies identified, all have been resolved except two which were closed by the licensee to AIR Nos. 6-86-2039 and 6-86-2040 for tracking purposes. These AIRs involved planned improvements with procurement of new flow switch mechanism and new pump respectively for both service water monitors. This new equipment is designed to operate with less frequent maintenance in its environment of relatively high levels of suspended solids. The inspector's review/followup of this preoperational test is considered complete.

(2) PR 2.60.64 Process Monitors (Loop 4)

Loop 4 preop test involved three monitors, gross failed fuel liquid monitor (PR006) and RHR cubicle gas monitors (PR015 and PR016). The test was completed, reviewed, and approved. The three deficiencies identified during the testing were all resolved. The inspector's review/followup of this preoperational test is considered complete.

(3) PR 2.60.65 Process Monitors (Loop 5)

Loop 5 preop test involved seven monitors, boron thermal regeneration surge tank return liquid monitor (PR007), component cooling service water monitor (PR009), containment atmosphere monitor (PR011), RHR containment spray pump cubicle gas monitors (PR013 and PR014), and centrifugal charging pump cubicle gas monitors (PR017 and PR018). The test was completed, reviewed, and approved. Twenty one deficiencies were identified all of which have been resolved except Deficiency 68558 (AIR No. not yet designated) involving an identified software problem with the background channel of monitor PR011, regarding failure to recover from a loss of counts conditions, a condition which is very seldom entered. (The monitor can be made to recover by manual initiation of a special procedure.) The monitor vendor has been contacted to develop a software modification to eliminate the problem. The inspectors review/followup of this preoperational test is considered complete.

c. Summary

Preoperational test items to be completed include review/followup of the resolution of AIR No. 6-86-2038 involving inability to demonstrate the FSAR design criteria for Unit 2 boric acid filter. Licensee resolution of this fuel load item will be reviewed during a subsequent inspection. (Open Item 455/86005-01 remains open.)

4. Licensee Verification That Sample Probes Directed into Air Flow for Unit 2 Gas Monitors

In the interest of assuring that Unit 2 gas monitors can obtain isokinetic samples, the licensee did an inspection of the flange plate of each probe assembly, as installed, for observation of the stamped arrow which corresponds to the direction of the probe. The arrows showed that all probes were directed facing upstream except one, PRO27, which was directed downstream. The flange plate of this probe assembly was unbolted and partially removed to observe the direction the probe was facing. The inspector witnessed this activity and observed that the arrow correctly indicated that this probe was directed downstream which would not be conducive to isokinetic sampling. The licensee promptly wrote a work request to reverse the direction the probe faces. However, after the inspector's discussion of the apparent function of monitor PRO27 (stream jet air ejector/gland steam gas monitor) to measure noble gas with a beta scintillation detector, the licensee plans a further evaluation before deciding whether to reverse the direction of the probe. This monitor has no iodine or particulate detectors nor charcoal adsorber for iodine collection. It does have a filter upstream of the gas chamber, but according to the licensee the filter's function is only to keep the gas chamber free of dirt. If the monitor's function is to monitor gas only, it may be that no useful purpose would be served in changing the direction of the probe provided that an adequate sample can be taken in its present orientation. Certain advantages might be gained by leaving the probe directed downstream including minimizing collection of particulates and water droplets that may interfere with sample flow and/or damage the detector. This matter is considered an open item. (Open Item 50-455/86032-01)

5. Open Items

Open items are matters which have been discussed with the licensee, which will be reviewed further by the inspector, and which involve some action on the part of the NRC or licensee or both. Open items disclosed during the inspection are discussed in Section 4.

6. Exit Interview

The inspector summarized the scope and findings of the inspection with licensee representatives (Section 1) at the conclusion of the inspection on September 26, 1986. The inspector discussed the likely informational content of the inspection report with regard to documents or processes reviewed by the inspector during the inspection. The licensee did not identify such documents or processes as proprietary.