



UNITED STATES
ATOMIC ENERGY COMMISSION
DIRECTORATE OF REGULATORY OPERATIONS
REGION II - SUITE 818
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RO Inspection Report No. 50-313/73-3

Licensee: Arkansas Power and Light Company
Sixth and Pine Streets
Pine Bluff, Arkansas 71601

Facility Name: Arkansas Nuclear One, Unit 1
Docket No.: 50-313
License No.: CPPR-57
Category: B1

Location: Russellville, Arkansas

Type of License: B&W, PWR, 880 MWe

Type of Inspection: Routine, Unannounced

Dates of Inspection: February 20-23, 1973

Dates of Previous Inspection: January 2-5, 1973

Principal Inspector: M. S. Kidd, Reactor Inspector
Facilities Test and Startup Branch

Accompanying Inspectors: C. M. Campbell, Radiation Specialist
Radiological and Environmental Protection Branch

K. W. Whitt, Reactor Inspector
Facilities Test and Startup Branch

Other Accompanying Personnel: None

Principal Inspector: *M. S. Kidd*
M. S. Kidd, Reactor Inspector
Facilities Test and Startup Branch

2/21/73
Date

Reviewed by: *C. E. Murphy*
C. E. Murphy, Acting Chief
Facilities Test and Startup Branch

2/21/73
Date

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SUMMARY OF FINDINGS

I. Enforcement Action

A. Violations

The volumes stated on the nameplates of the four waste gas decay tanks and the waste gas surge tank are not in agreement with the values specified in Section 11.1.3.7.2 and Table 11.6 of the FSAR. (Details II, paragraph 3)

B. Safety Items

None

II. Licensee Action on Previously Identified Enforcement Matters

There were no previously identified enforcement matters which had not been resolved prior to this inspection.

III. New Unresolved Items

73-3/1 Completion of the Radiological Waste Disposal Systems

Installation of the radiological waste systems continues but these systems are not yet completed. (Details II, paragraph 4)

IV. Status of Previously Reported Unresolved Items

A. Bechtel Startup Manual

Comments on this document outlined in RO Report No. 50-313/73-1, Details, paragraph 7, have been incorporated in a rewritten version.

This item is resolved. (Details I, paragraph 3)

B. Flushing Procedures

Procedures have been written and are being used to conduct final flushes for the various primary systems.

This item is resolved. (Details I, paragraph 4)

C. Staffing

Two more waste control operators are needed to fulfill

FSAR commitments. (Details I, paragraph 2)

D. Onsite Training Program

The training program described in RO Report No. 50-313/73-1, Details, paragraph 9, was started January 8, 1973, and will run until all subject areas are completed. (Details I, paragraph 5)

E. Incorporation of All Safety Related Equipment in the FSAR Q-List

This subject was not discussed during this inspection.

F. Documentation of the Station Test Coordinator's (STC) Prerequisite Duties in the Conduct of Tests

The licensee's plans for documentation of these duties, described in RO Report No. 50-313/73-1, Details, paragraph 11, have been implemented. The revision of the Plan For Preoperational Testing (Plan) which describes this documentation process has not been approved. (Details I, paragraph 7)

G. Preparation of Test Procedures to Cover Tests in Guide For Planning of Preoperational Test Programs (Guide)

Procedures for all the tests identified in RO Report No. 50-313/72-9, Section IV, paragraph 4, have been identified with the exception of one for a loss of instrument air test. (Details I, paragraph 6)

H. Implementing Procedure For Use of Jumpers and Bypasses, 73-1/1

Licensee personnel plan to write a detailed procedure covering the use of jumpers and bypasses. (Details I, paragraph 8)

I. Comments on Core Flood Functional Test Procedure, 73-1/2

Comments by the inspector documented in RO Report No. 50-313/73-1, Details, paragraph 15.f, have been incorporated into the procedure by use of addenda. The rewriting and approval of the procedure is not yet complete. (Details I, paragraph 9)

V. Unusual Occurrences

None

VI. Other Significant FindingsA. Project Status

Licensee personnel estimate construction of Unit 1 to be 95% complete. Of the 75 plant startup systems, 5 have been completely released from construction, 55 have been partially released, and 15 have no releases. One preoperational test has been fully completed and endorsed. (Details I, paragraph 14)

B. Personnel or Organizational Changes

The Chemistry and Radiation Protection organization has been changed by the creation of a second Chemistry and Radiation Protection Engineer. (See Details II, paragraph 2).

VII. Management Interview

- A. A management interview was held at the conclusion of the inspection on February 23, 1973. The following persons attended:

Arkansas Power and Light Company (AP&L)

J. W. Anderson - Plant Superintendent
D. N. Bennett - Quality Control Engineer
N. A. Moore - Chief Quality Assurance Coordinator
R. R. Culp - Test Administrator
B. A. Terwilliger - Operations Supervisor
C. A. Moore - Procedure Administrator
C. A. Halbert - Technical Support Engineer

B. Bechtel Startup Manual

The inspector stated that he had reviewed the revised manual and found the portion of Section 2 dealing with responsibilities and organization for the preoperational test program to be in agreement with the FSAR. He also stated that this previously identified unresolved item was considered closed. (Details I, paragraph 3)

C. Staffing

The inspector stated that it was his understanding that

an offer had been made which would fill a third waste control operator position and that if this offer were accepted, one waste control operator position would be the only unfilled commitment.

Licensee representatives stated that this was correct. (Details I, paragraph 2)

D. Onsite Training Program

The inspector stated that it was his understanding that the following three areas of training for nonoperations personnel would be covered by the methods listed:

1. Industrial Safety - A monthly safety meeting attended by all personnel.
2. Industrial Security - Lectures on this subject will be part of the general training program.
3. Use of Protective Clothing and Equipment - This will be part of the Health Physics training.

Licensee representatives stated that this information was correct. (Details I, paragraph 5)

E. Preparation of Test Procedures

The inspector acknowledged that a test procedure for the reactor building hydrogen removal system has been identified as TP 370.01 and had been written.

He asked that licensee personnel identify all systems which contain pneumatic devices serviced by the instrument air system and verify that a test is run on those systems under a loss of air condition. Licensee representatives stated that such a study would be made. The inspector stated that the loss of air test would remain as an unresolved item. (Details I, paragraph 6)

F. Documentation of the STC's Prerequisite Test Duties

The inspector inquired as to the status of the revision of

the Plan which describes this documentation. Licensee personnel stated that it was almost through the review and approval process. The inspector stated that this matter would remain open until the Plan is approved. (Details I, paragraph 7)

G. Flushing Procedures

The inspector stated that the procedures, which AP&L is using for final flushes of the primary related systems, had been reviewed and that he had no questions on them. He also stated that this previously identified unresolved item is considered closed. (Detail: I, paragraph 4)

H. Procedure For Use of Jumpers and Bypasses

The inspector stated that it was his understanding that AP&L will write a detailed implementing procedure for use of jumpers and bypasses.

Licensee representatives stated that this was correct.

The inspector stated that this subject would remain open. (Details I, paragraph 8)

I. Core Flood Functional Test Procedure

The inspector asked if any action had been taken on comments given on this procedure during the previous inspection. Licensee representatives stated that the comments had been incorporated, but that final action on this procedure had not been decided. The inspector stated that this subject would remain open. (Details I, paragraph 9)

J. Barton Differential Pressure (D/P) Cells

The inspector stated that it was his understanding that certain models of Barton D/P cells which have proven to be unreliable at other facilities may have been installed in Unit 1. Licensee representatives indicated that some may have been installed and that efforts to determine if any have been will continue.

The inspector asked that he be kept informed of new developments on this subject. Licensee representatives agreed to do this. (Details I, paragraph 10)

K. Emergency Operating Procedure to Cover Malfunction of Safety and Relief Valves

The inspector noted that the need for an emergency operating procedure covering malfunctions of primary system pressure relief and safety valves had been discussed and asked what plans licensee personnel had for developing one. Licensee representatives stated that the need for this procedure will be evaluated and that the inspector would be informed of their plans at a later date. (Details I, paragraph 11)

L. Safety Review Committee (SRC) Charter and Audit Procedures

The inspector stated that he had performed a cursory review of the SRC charter and it's general audit procedure and that the only comment he had on these drafts was that they did not relate specifically to the preop test program. He stated that he would review these documents and other audit procedures after they have been approved by the SRC.

The inspector asked if the SRC intended to audit the preop test program. Licensee representatives stated that the SRC would audit the program after it has progressed more. (Details I, paragraph 15)

M. Station Log

The inspector stated that the Unit 1 station log had been reviewed. He commented that when corrections are made to the log, the date of the change should be entered in addition to initials. Licensee representatives agreed to implement this comment. (Details I, paragraph 12)

N. Preparations For Receipt of Fuel

The inspector noted that this subject had been discussed with licensee personnel. He stated that his review of the punchlist of items remaining to be done before receipt of fuel indicated that AP&L personnel were well aware of the workload involved. (Details I, paragraph 13)

O. Spent Fuel Cooling System Electrical Test

The inspector stated that he had reviewed this completed test procedure package. He asked what mechanism AP&L had

for followup on such items as the inability to check the rotation of one of the pump motors in this test. Licensee representatives indicated that all deficiencies will be resolved prior to endorsement of a test or provisions will be made for covering the deficiency in another test procedure. (Details I, paragraph 14)

P. Comments on Test Procedures

1. TP 120.03, "Fuel Handling System Integrated Functional Test"

- a. The inspector commented that addendum item No. 8, which indicates that the shift supervisor or the STC has the authority to approve bypasses, should be revised to delete the STC from this role.

Licensee representatives agreed to do this.

- b. The inspector asked why operating procedures were not used to accomplish the functions listed in steps 4 and 5 of page 5, noting that where possible, they should be used for training purposes and to verify the procedures.

Licensee representatives indicated that the possibility of using operating procedures would be studied.

- c. The inspector commented that purpose 1.04, which is to demonstrate the ability to index over submerged assemblies, does not appear to be accomplished in the procedure.

Licensee representatives stated that the procedure would be studied to determine if this function is demonstrated. (Details I, paragraph 16)

2. TP 200.44, "Reactor Coolant System Hydrostatic Test"

- a. The inspector commented that there were several steps in this procedure which should be expanded to provide more details and cited the following examples:

- (1) Step 4.6 does not define where and when the in-core monitor test plugs are installed.

- (2) Instructions are not given as to when the valve lineup referenced in step 7.1.03 is to be completed.
- (3) The normal range of the makeup tank level should be specified in step 7.2.03.
- (4) Step 3.5 of Enclosure III should specify how often data is to be recorded.

Licensee representatives stated that these comments would be studied and acted on if valid.

- b. The inspector noted that step 3.7 of Enclosure III leaves the test connection valve open, stating that it should be closed prior to reactor operation. He asked if this valve were on a checklist to be closed prior to operation.

Licensee representatives stated that it should be and would check to verify that it was. (Details I, paragraph 16)

3. TP 203.03, "Decay Heat Removal System Functional Test"

- a. The inspector indicated that this procedure gives instructions in numerous places to lineup systems or portions of systems without providing valve lineup sheets or specifying the exact valves to be manipulated or verified. He then stated that valve lineup sheets should be provided for all required lineups or the specific valves to be manipulated should be listed in the body of the procedure. It was also explained that this comment would apply to all other procedures having a similar deficiency.

Licensee management representatives agreed to look closer at the procedure lineup requirements and consider the possible necessity for adding valve lineup sheets.

- b. The inspector stated that the practice of providing alternate methods of performing procedure steps should be minimized. When procedures are approved for use, they should clearly state the objectives

and instruct, as exactly as possible, how they are to be accomplished. This comment applies to all preoperational test procedures.

Licensee management representatives stated that it was considered advantageous to provide alternate methods of performing various steps of a procedure so long as all alternatives would do the job. This would provide for flexibility in testing. However, it was agreed that the desirability of alternate methods for procedure steps would be further considered by management personnel. (Details I, paragraph 16)

4. TP 202.01, "Makeup and Purification System Hydrostatic Test"

- a. The inspector stated that signoff spaces had not been provided for prerequisites and individual procedure steps that require specific performance.

Licensee management representatives stated that this condition had been discussed with the inspector previously and that procedures written after July 1972 would be changed to incorporate signoff and date spaces but those written prior to July 1972 would not unless requirement for such change was clearly shown.

- b. The inspector pointed out that prerequisite 6.2.3 and procedure step 7.2.1.2 were redundant.

License management representative stated that the prerequisite would be deleted.

- c. The inspector stated that the instrumentation or components required to be isolated by precaution 5.6 should be specified.

Licensee representative agreed to look into the situation. (Details I, paragraph 16)

Q. Gaseous Radwaste System Tank Volumes

The inspector stated that during inspection of the gaseous waste system it was observed that the capacities stated on the nameplates of the four waste gas decay tanks and the waste gas surge tank were not in agreement with the volumes specified in the FSAR. (Details II, paragraph 3)

R. Spent Resin Transfer Capability

The inspector stated that during the inspection of the solid waste system, it was observed that no capability existed to transfer spent resin from the spent resin storage tank for offsite disposal. Management stated that they are planning to provide this capability. (Details II, paragraph 5)

S. Stack Monitoring for Halogens

Management was informed that it did not appear that halogen collection capability is presently incorporated into the stack process monitor (RE-7400). The inspector stated that his understanding, from discussions with licensee representatives and review of vendor documents describing the system, was that iodine collection capability would be included and asked if that was management's understanding. Management agreed that this was their intent but this capability was not yet installed. (Details II, paragraph 6)

T. Radwaste System Procedures Reviewed

The inspector stated that he had reviewed ten procedures relating to the radiological waste systems. Five of these were test procedures and five were operating procedures. He further stated that he had provided comments to a licensee representative. Since these comments were not of a major nature and were resolved, they were not discussed again. The inspector pointed out that he had not seen procedures for the preoperational testing nor operation of the resin transfer system on any listing of procedures to be written. Management agreed that these procedures will be placed on the list of procedures and tests and will be done after the system is defined and installed. (Details II, paragraph 7)

U. Responsibilities of Chemistry and Radiation Protection Engineers

The inspector commented that he had seen Amendment 34 to the FSAR, dated February 9, 1973, reflecting the addition of a second Chemistry and Radiation Protection Engineer. He stated that discussions with licensee representatives indicated that the planned assignment of responsibilities was not in total agreement with the FSAR. The inspector asked if his understanding was correct in that the licensee

was in process of submitting a proposed FSAR change to bring the FSAR in agreement with the planned assignment of responsibilities. Management stated that they were in the process of proposing an FSAR change to their headquarters which would redefine the responsibilities of these two positions. (Details II, paragraph 10)

V. Completion Status of Radiological Waste Systems

The inspector commented that, in general, it was too early to conduct a complete inspection of the radwaste systems since many areas have not progressed to the point where they have been turned over to AP&L and are not complete enough to inspect. (Details II, paragraph 4)

DETAILS I

Prepared by: C. E. Murphy 5/18/73
M. S. Kidd Date
Reactor Inspector
Facilities Test and
Startup Branch

K. W. Whitt 3/19/73
K. W. Whitt Date
Reactor Inspector
Facilities Test and
Startup Branch

Dates of Inspection: February 20-23, 1973

Reviewed by: C. E. Murphy 3/19/73
C. E. Murphy Date
Acting Chief
Facilities Test and
Startup Branch

1. Individuals Contacteda. Arkansas Power and Light Company (AP&L)

J. W. Anderson - Plant Superintendent
D. N. Bennett - Quality Control Engineer
R. R. Culp - Test Administrator
C. A. Moore - Procedure Administrator
B. A. Terwilliger - Operations Supervisor
C. A. Halbert - Technical Support Engineer
P. Almond - Reactor Technician

b. Bechtel Corporation (Bechtel)

R. G. Glover - Supervising Startup Engineer

2. Staffing and Personnel Changes

Licensee personnel informed the inspector that an offer has been made to an individual for one of the vacant waste control operator positions. If this offer is accepted, one more waste control operator would be needed to fulfill FSAR staffing requirements.

T. H. Cogburn has been promoted to site Nuclear Engineer and is training at an operating nuclear power station. His previous position of Procedure Administrator was filled by the addition of C. A. Moore to the plant staff. She graduated from Texas A&M

with a master of science degree in biophysics with a health physics speciality. Plans are for her to be assigned as Assistant Chemical and Radiation Protection Engineer as soon as a replacement can be found to take over her present duties.

3. Bechtel Startup Manual

The inspector was informed that the manual had been revised to incorporate his comments which were listed in RO Report No. 50-313/73-1, Details, paragraph 7. Review of the manual revealed that the portion of Section 2.1 dealing with overall responsibility for the preoperational test program had been rewritten to agree with the FSAR. Also, Figure 2.1 of the manual had been revised to agree with Figure 13.1 of the FSAR.

This subject was discussed during the management interview, at which time the inspector stated that this matter was considered resolved.

4. Flushing Procedures

The inspectors reviewed flushing procedures for several plant systems which AP&L is using to make final or proof flushes. The procedures were written by Babcock and Wilcox Company (B&W) personnel at the site. The format of the procedures is as follows:

- Purpose
- References
- Prerequisites
- Test Equipment
- Limits and Precautions
- Required Plant Status
- Prerequisite System Conditions
- Test Method
- Data Required
- Acceptance Criteria
- Procedure

A chronological log was being used with each flush procedure to record significant events. Marked up drawings are used to indicate the various flow paths to be flushed. Procedures for the condensate, chemical addition, decay heat, makeup and purification, reactor building spray, and spent fuel cooling systems were given the inspectors for review. Some of those were flushed in parts, such that there were eight procedures in all. The inspectors reviewed four of them.

The procedures provided for an analysis of the supply water to be used for filling and flushing. The limits on contaminants are consistent with B&W Specification No. 2050, "Water Chemistry Requirements For Initial Fill and Testing of Reactor Coolant System, Steam Generator and Preboiler Cycle."

Installed pumps are used to provide flow, with all available pumps running to provide maximum velocity. In addition, where parallel flow paths exist, only one is open at a time. While a given flow path is being flushed, each valve on that path is cycled twice. Operating procedures are used to operate permanent plant equipment used in flushing.

Acceptance criteria include a verification that no foreign material exists in the flush water and that the water meets certain limits on pH and conductivity and that maximum limits are met on chlorine, fluorides, and suspended solids. These limits are also consistent with the B&W specification referenced above.

These procedures were discussed during the management interview, at which time the inspector stated that he had no further questions.

5. Onsite Training Program

The inspector was informed that the training program described in RO Report No. 50-313/73-1, Details, paragraph 9, was started January 8, 1973. The inspector asked how the subjects of industrial safety, industrial security, and use of protective clothing and equipment listed in ANSI N18.1, "Selection and Training of Nuclear Power Plant Personnel," would be covered for nonoperations personnel. He was informed that a regular monthly safety meeting is held for all personnel, a lecture session will be held on the security plan for the station, and the use of protective clothing and equipment will be part of the health physics training given.

Licensee representatives verified the accuracy of the information on training during the management interview.

6. Preparation of Test Procedures to Cover Tests in Guide

Procedures for those tests which are part of this previously identified unresolved item were listed in RO Report No. 50-313/73-1, Details, paragraph 12, with the exception of an evacuation signal test, a hydrogen removal system test, a loss of instrument air test, and a test on containment and auxiliary ventilation and filter systems.

During this inspection, the inspector was informed that the reactor

building hydrogen removal system would be tested by TP 370.01, which has been written and is currently being reviewed. No additional information was available on procedures to test the ventilation and filter systems.

The inspector noted that a check of the evacuation alarm signal audibility is included in a radiation monitoring system calibration procedure which was still in draft form.

The inspector informed licensee personnel that a minimum level of testing for loss of instrument air would be a test under loss of air conditions for each system utilizing pneumatic devices supplied by the instrument air system. He stated that each system which uses instrument air should be identified and the determination made that a loss of air test is run for each one. Licensee personnel agreed to make such a study and discuss their findings at a later date. This subject was discussed during the management interview, with the same agreements being reached.

7. Documentation of the STC's Prerequisite Test Duties

The inspector observed that Form A-31 of OP 1004.09, "Plan For Preoperational Testing (Plan)," was being used to document the completion of certain prerequisite duties to the conduct of tests. He was informed that the latest revision of the Plan which describes this process had not yet been approved. This item will remain open.

8. Procedure for Use of Jumpers and Bypasses

This unresolved item was initially discussed in RO Report No. 50-313/73-1, Details, paragraph 6. The inspector was informed during the current inspection that a detailed implementing procedure for use of jumpers and bypasses will be written. This plan was reiterated during the management interview by licensee representatives. This subject will remain open.

9. Comments on Core Flood Functional Test Procedure

Licensee personnel informed the inspector that his comments on this procedure have been incorporated by using the addendum method described in the Plan. Also, this procedure has not received a detailed review by the STC. The decision to rewrite the procedure or go with the addenda will be made after the STC's review. The inspector stated that the subject would remain open.

10. Barton D/P Cells

In discussing this matter, the inspector was informed that there was a possibility that such cells had been purchased as part of

packaged components or systems, but that none had been purchased directly by AP&L. Licensee personnel stated that the study will continue to determine if any of the particular models which have given problems at other facilities have been installed at Arkansas Nuclear One (ANO), Unit 1.

11. Emergency Operating Procedures

An initial review of AP&L's emergency operating procedures was discussed in RO Report No. 50-313/72-10, Details I, paragraph 9. During this inspection, the inspector stated that AP&L should add a procedure to cover malfunctions of pressure relief and safety valves in the primary system in view of the experiences with such valves at other facilities.

Licensee representatives stated that this matter would be studied and that their decision as to whether they thought one was needed would be discussed at a later date. This position was reiterated during the management interview.

12. Station Log

A station log is maintained by the ANO, Unit 1 operating staff in the site training center. When the Unit 1 control room is completed, the log will be kept there. The shift supervisors are responsible for making entries in the log and signing it at the end of each shift.

The inspectors reviewed the entire log (October 3, 1972, through February 22, 1973) and made the observations discussed below.

The log identifies personnel on duty each shift and is used to record various activities undertaken, such as testing and maintenance. Problems encountered and their resolutions were identified.

Entries are brief but as the testing program progresses, more information is expected to be entered.

The inspectors noted that changes to log entries had been initialed but not dated. Licensee representatives agreed to enter the date along with initials for changes in the future. This agreement was confirmed during the management interview.

13. Preparations For Initial Receipt of Fuel

The inspector informed licensee personnel that he would like

to discuss their preparations for receipt of fuel in general and discuss in detail their measures for physical protection of the fuel once it is onsite. Licensee personnel indicated that fuel would probably not be received until after May 1, 1973, and that the doors enclosing the fuel storage area had not been fully prepared to give the protection planned.

Licensee personnel have prepared a punchlist of items which must be completed including completion of construction and testing of equipment, development and checkout of procedures, training, etc. The punchlist was in considerable detail and of such length that it appeared that AP&L was well aware of all items which needed to be completed.

14. Completed Preop Test Review

Licensee personnel informed the inspector that one preop test, TP 220.02, "Spent Fuel Cooling System Electrical Test," had been completed and endorsed by the Test Working Group (TWG) and the plant superintendent. Review of the completed test package revealed that the test had been completed and the data package assembled in accordance with the test program Plan.

The inspector noted that the rotation of one of the pumps in the system was not checked because it is a submersible type. He asked what mechanism AP&L had for followup of such items to assure completion of all testing. Licensee representatives stated during the management interview that all deficiencies will be resolved prior to endorsement of a test or provisions will be made for accomplishing the deficient activity during a later test.

15. SRC Charter and Audit Procedures

During discussions concerning procedures which the SRC would use to audit activities of the preop test program, there appeared to be some doubt among licensee personnel as to whether the SRC would perform audits of the test program at all. The inspector pointed out that Section 13.1.2 of the FSAR states that the SRC will perform such audits. Licensee representatives confirmed the inspector's understanding that the SRC would audit in the management interview.

A cursory review of the drafts of the SRC charter and general plant audit procedure revealed that neither of these spoke directly to the preop test program. Station personnel were not sure what other procedures might be developed, if any, but did state the SRC would audit the test program after more testing is underway.

16. Comments on Approved Test Procedures

The following comments were given to licensee personnel during the inspection. Most of them were also discussed during the management interview.

a. TP 120.03, "Fuel Handling System Integrated Functional Test"

- (1) The inspector commented that addendum item No. 8, which indicates that the shift supervisor or the STC has the authority to approve bypasses, should be revised to delete the STC from this role.

Licensee representatives agreed to do this.

- (2) The inspector asked why operating procedures were not used to accomplish the functions listed in steps 4 and 5 of page 5, noting that where possible, they should be used for training purposes and to verify the procedures.

Licensee representatives indicated that the possibility of using operating procedures would be studied.

- (3) The inspector commented that purpose 1.04, which is to demonstrate the ability to index over submerged assemblies, does not appear to be accomplished in the procedure.

Licensee representatives stated that the procedure would be studied to determine if this function is demonstrated.

- (4) The inspector commented that section 5 should be expanded to provide more control over foreign objects to prevent them from falling into the reactor vessel, spent fuel pool, or transfer canal.

Licensee personnel stated that they thought the controls provided for were sufficient for test purposes.

- (5) The inspector noted that Enclosure I of the procedure needed a space for entry of the date of testing.

Licensee personnel agreed to make such provisions.

b. TP 200.04, "Reactor Coolant System Hydrostatic Test"

The inspector stated that this procedure lacked detail in several steps and cited the following examples:

- (1) Step 4.6 does not define where and when the in-core monitor test plugs are installed.
- (2) Instructions are not given as to when the valve lineup referenced in step 7.1.03 is to be completed.
- (3) The normal range of the makeup tank level should be specified in step 7.2.03.
- (4) Step 3.5 of Enclosure III should specify how often data is to be recorded.
- (5) Step 7.2.10 refers to an "NDTT" relief valve. The location of this valve and its function during the test are not clear.

Licensee personnel stated that these comments would be considered and acted upon if they feel that they are valid.

The inspector noted that step 3.7 of Enclosure III leaves the test connection valve open, stating that it should be closed prior to reactor operation. He asked if this valve were on a checklist to be closed prior to operation.

Licensee personnel stated that they were sure that it was on a checklist but that the matter would be checked.

c. TP 202.01, "Makeup and Purification System Hydrostatic Test"

- (1) The inspector stated that signoff spaces had not been provided for prerequisites and individual procedure steps that require specific performance and requested that this situation be corrected for this and all other procedures containing similar deficiencies.

Licensee personnel stated that this had been previously discussed with the inspector and they understood that the inspector had agreed that all procedures written after July 1972 would require signoff and date spaces, but those written prior to the July inspection would not require the spaces. It was further stated that management did not intend to provide signoff spaces for the procedures written prior to July 1972 unless the requirement for such action was clearly shown.

- (2) The inspector stated that the notes of section 4.1 should be expanded to require the test equipment calibration be performed within a specified time period.

Licensee personnel stated that test equipment was always calibrated just before use in the performance of a test even if the calibration due date indicated that the calibration was still good. However, they agreed to investigate the feasibility of expanding the notes.

- (3) Prerequisite 6.2.3 requires test equipment to be installed, as required, before starting the test. Procedure step 7.2.1.2 gives instruction to install test equipment. These two requirements are redundant. The body of the procedure provides instructions for installing and removing the test equipment for each part of the test. The inspector stated that prerequisite 6.2.3 should specify exactly what equipment was required to be installed before beginning the test or it should be deleted.

Management personnel stated that prerequisite 6.2.3 would be deleted.

d. TP 203.03, "Deczy Heat Removal System Functional Test"

- (1) Throughout this procedure, instructions are given to lineup systems or portions of systems without specifying the valves to be positioned. The inspector stated that all valves to be positioned should be specified. This might be done by listing the valves and specifying the positioning or by another method of providing valve lineup verification which would become an approved part of the procedure.

Licensee personnel agreed to look closer at the procedure lineup requirements and consider the need for specifying the valves to be manipulated.

- (2) Alternate methods are provided in this procedure for performing various steps. The inspector stated that the number of alternate methods provided in an approved procedure should be minimized. The test objectives should be clearly stated and attempts should be made in the step-by-step procedure to provide exact instructions for accomplishing the objectives. Where practical, the decision concerning the method to be used should be made before the procedure is approved for use.

Management personnel stated that they felt alternatives for performing various test steps were desirable since they provided for flexibility in testing. However, they agreed to take a closer look at this practice.

- (3) Throughout this procedure, appendices are referenced that do

not exist within the procedure. The inspector stated that this should be corrected.

Licensee personnel agreed to make necessary corrections.

17. Procedure Approval Status

The following information was provided the inspector regarding the status of testing and operating procedures:

	<u>No.</u> <u>Identified</u>	<u>No.</u> <u>Written</u>	<u>No.</u> <u>Approved</u>
Preop and Initial Startup Tests	141	105	71
Quality Control	13	12	5
Administrative	3	3	1
Operating	75	60	35
Emergency	39	18	1
Calibration and Surveillance Tests	32	29	29
Maintenance	9	6	0
Refueling	18	9	4
Chemistry and Radiation Protection	23	10	8
	—	—	—
Totals	353	252	154

DETAILS II

Prepared By: C. M. Campbell

C. M. Campbell, Radiation
Specialist, Radiological
and Environmental Protection
Branch

3/19/73
Date

Dates of Inspection: February 20-23, 1973

Reviewed By: J. T. Sutherland

J. T. Sutherland, Acting Chief
Radiological and Environmental
Protection Branch

3/19/73
Date

1. Individuals Contacted (All Arkansas Power and Light Company)

J. Anderson - Plant Superintendent
C. Halbert - Technical Support Engineer
D. Bennett - Quality Control Engineer
T. Baker - Chemistry and Radiation Protection Engineer
R. Carroll - Chemistry and Radiation Protection Engineer
R. Terwilliger - Operations Supervisor

2. Organizational Changes

Discussions with licensee representatives and review of FSAR Amendment 34, dated February 9, 1973, revealed the addition of a second Chemistry and Radiation Protection Engineer. The FSAR reflects the division of responsibilities between these two positions. One engineer will essentially be responsible for chemistry and radiochemistry, surveillance of all radiological waste disposal operations, and conducting the Environmental Monitoring program. The second engineer will be primarily responsible for the health physics program.

3. Gaseous Rad Waste System Tank Volumes

Section 11.1.3.7.2 of the FSAR states that each of the Waste Gas Decay Tanks has a capacity of 325 feet³ and Table 11.6 of the FSAR states that the volume of the Waste Gas Surge Tank has to be 29 ft.³/216 gal. Contrary to this, the name plate data specifies the volumes for each Waste Gas Decay Tank to be 2025 gal., which would be equivalent to 270 ft.³, and for the Waste Gas Surge Tank the nameplate specified a volume of 197 gal. In response to the inspector's question a licensee representative stated they were not previously aware of these volume

discrepancies. During subsequent discussions a licensee representative informed the inspector that the matter had been discussed with their Little Rock headquarters who then referred the matter to Bechtel in San Francisco for an evaluation. A management representative stated that they will do a total evaluation and advise us as to the findings.

4. Completion Status of Radiological Waste Systems

Installation of major components and associated piping and hardware for both the liquid and gaseous systems appears essentially complete but the systems have not yet been turned over to AP&L. In general, it was too early to conduct an inspection of several areas of the radiological waste systems. Areas that have not yet progressed to the point where they are complete enough to inspect include:

- a. Installation and calibration of process monitors.
- b. Plant vent system.
- c. Plans and methods to be used to assure representative sampling.
- d. Counting room not yet operational.
- e. Completion of procedures for radiological sample preparation and analyses.
- f. Completion of solid waste handling system.
- g. Spent resin transfer and disposal capability.
- h. Completion of procedures for the calibration of radiation monitors, sample collectors and flow meters.
- i. Completion of ventilation filter banks.

5. Spent Resin Transfer Capability

Inspection of the rad waste system revealed that currently no capability exists to transfer spent resin from the spent resin storage tank for offsite disposal. Licensee representatives told the inspector that it is most likely that arrangements will be made to utilize a vendor disposal service for the off-site disposal of spent resin. The inspector pointed out that some type of system will need to be installed to provide

the capability to transfer the resin to the vendor's disposal system as well as providing dewatering capability to include a means of water disposal. At present a line exists from the spent resin storage tank to the railroad spur area where it terminates in a blind flange. Licensee representatives stated that they will install this capability. It was also agreed that preoperational testing and operational procedures will be written as soon as the system design is finalized.

6. Stack Monitoring for Halogens

Inspection of the gaseous radwaste system process monitors revealed the absence of the capability to collect halogen samples in the stack process monitor (RE-7400). Review of vendor documents describing the completed monitoring system showed iodine detection capability to be incorporated into the unit. Licensee representatives stated that their understanding was that this capability would exist in the completed system. Management agreed that their intent was to have this capability in the completed system. Inspection of the monitoring unit showed that adequate space was available to incorporate an iodine collection filter downstream of the existing particulate filter.

7. Rad Waste System Procedures Reviewed

The inspector reviewed ten test and operational procedures relating to the radiological waste systems and provided comments, of a minor nature, to a licensee representative.

a. Test Procedures

- (1) T.P. 233.73 Solid Waste Baler System
- (2) T.P. 232.72 Gaseous Radwaste System
- (3) T.P. 231.69 Dirty Radwaste System
- (4) T.P. 230.69 Clean Radwaste System
- (5) T.P. 360.79 Radiation Monitoring System

b. Operational Procedures

- (1) 1104.14 Dirty Liquid Waste and Drain Processing
- (2) 1104.15 Laundry Waste Processing
- (3) 1104.19 Clean Resin Transfer
- (4) 1104.22 Gaseous Radwaste Systems
- (5) 1104.20 Clean Radwaste Operation

8. Radwaste Procedures Not Yet Written

The inspector pointed out that several procedures relating to the radwaste system were not yet written. These include procedures for the testing and operation of the spent resin transfer system; shipment of radioactive materials; preparation and analysis of effluent samples; solid waste collection; handling and storage and both calibration and operating procedures for the analytical equipment in the counting room. Licensee representatives acknowledged this and agreed that procedures will be written.

9. Sample Collection Procedures for the Environmental Monitoring

At the conclusion of the previous health physics inspection October 1972, no sample collection procedures for the Environmental Monitoring Program had been finalized or approved. These procedures have since been finalized and approved and were reviewed by the inspector during this inspection. The individual procedures have been combined into a single composite procedure for the collection of environmental samples (Environmental Radiological Monitoring Program 1602.23).

10. Responsibilities of Chemistry and Radiation Protection Engineers

Discussions with licensee representatives revealed that the tentative assignment of responsibilities between the two Chemistry and Radiation Protection (C and RP) Engineers was not wholly in accordance with Amendment 34 to the FSAR which described the responsibilities to these two C&PR Engineers. During further discussions a licensee representative stated that a request has been initiated to revise the FSAR so it will be in agreement with the planned assignment of responsibilities. An example of this difference is in the area of responsibility for radiological waste disposal responsibility for surveillance of all waste disposal operations to one engineer whereas the tentative planning is to assign the gaseous and liquid waste systems to one engineer and the solid waste system to the other.

11. Process Monitors

Discussions with licensee representatives and observation of the process monitors showed the status of these to be:

- a. Calibration and full operational check are to be performed later.
- b. Thirteen of the seventeen units have been received onsite. Four of these have been mechanically and electrically connected.

c. Five units were included in the licensee's listing of process monitors over and above those included in Table 11.7 of the FSAR. These units are:

- (1) Penetration Rooms Ventilation System Monitors (RE-2120 and RE-2130).
- (2) Reactor Building Hydrogen Purge System Monitors (RE-7441 and RE-7442).
- (3) Reactor Coolant Leak Detector (RE-2400) located at the 424 foot elevation in the containment.

12. Counting Room

Most of the counting room equipment has been installed and is to be calibrated. A licensee representative stated that the laboratory was just turned over to AP&L two or three weeks ago. Analytical capability includes: an Ortec (GeLi) gamma spectrometry system; a Packard automatic, ambient temperature, Tricarb liquid scintillation system; Nuclear Measurements Corporation, proportional counter; low background beta detector and on Eberline Instrument Corp. Miniscaler connected to a GM tube detector. A whole body counter has been ordered but has not yet been received.

13. Solid Waste Compactor (Baler)

A compactor for compacting low level solid waste in 55 gallon drums has been received and is to be installed.

14. Laundry Dryer Exhaust

Observation of the laundry facility showed that both washer and dryer were installed. The dryer was installed so that it exhausted directly into the room. This was pointed out to a licensee representative who agreed to check into this and see what the plans are for hooking this into the ventilation system.

15. Analysis of Environmental Monitoring Program Samples

In view of the Arkansas State Radiological Health Division plans to terminate the analyses of Arkansas Nuclear One environmental samples by May 1973, the inspector asked how AP&L was planning to get the analyses done. A licensee representative stated that the samples would be analyzed at an AP&L (Little Rock) laboratory.

16. Liquid Waste Systems

Physical inspection of the liquid waste system discussion with licensee representatives, and review of licensee drawings indicate that the liquid waste system is essentially as described in the FSAR. The process monitors in the liquid waste system are located in agreement with the FSAR. Provisions to terminate discharge are provided through the use of a Radwaste Liquid Discharge Monitor and an automatic flow control valve. When the monitor senses a radioactivity level greater than a preset level a signal from the monitor closes the discharge valve. A circuit failure alarm is provided to indicate monitor malfunction.

Ltr to Arkansas Power and Light Company

dtd MAR 21 1973

cc w/encl:

J. B. Henderson, RO

J. G. Keppler, RO

RO:HQ (4)

Directorate of Licensing (4)

DR Central Files

*PDR

*Local PDR

*NSIC

*DTIE, OR

*State

*To be dispatched with licensee response.