U. S. ATOMIC ENERGY COMMISSION
REGION II
DIVISION OF COMPLIANCE

Report of Inspection

CO Report No. 50-269/71-4

Licensee: Duke Power Company
Oconee 1
License No. CPPR-33
Category B

Dates of Inspection: April 6-9, 1971

Dates of Previous Inspection: February 24-26, 1971

Inspected By: C. E. Murphy, Reactor Inspector (Operations) (In Charge) — 5/13/71 Date

H. L. Whitener, Reactor Inspector (Operations) — 5/13/71 Date

R. F. Warnick, Reactor Inspector (Operations) — 5/13/71 Date

Reviewed By: W. C. Seidle, Senior Reactor Inspector — 5/17/71 Date

Proprietary Information: None

SCOPE

A routine, announced inspection was made of the 2452 Mw(t) pressurized water reactor under construction near Seneca, South Carolina, known as Oconee Station No. 1. Purposes of the inspection were:

1. To determine the construction status and significant changes to schedule dates.

2. To review the outstanding items remaining to be completed at the facility.

3. To review the progress of the test program.

SUMMARY

Safety Items - None

Nonconformance Items -

1. Section 8.2.2.13(h) of the FSAR states in part, "The maximum fill in control and instrumentation cable trays is such that trays will be filled to the top of the tray rails." Contrary to this requirement, cable trays in the spreading room and the electrical equipment room were filled above the level of the tray rails with safety feature cables. (See Management Interview and Section G.)

2. Criterion VIII of 10 CFR 50, Appendix B, requires in part that measures be established for the identification and control of components to assure that identification of the items are maintained. Contrary to this requirement, a review of the data packages for the main coolant pumps revealed that the references to the individual pump positions in the data packages did not correspond to the positions in which the pumps were actually installed. (See Management Interview and Section F.)

3. Criterion XV of 10 CFR 50, Appendix B, requires that measures be established to control materials, parts, or components which do not conform to requirements in order to prevent their inadvertent use or installation. Contrary to this requirement, a review of the data package and the installation of the control rod drive controls, indicated that the d.c. breaker cabinet had been damaged in storage at the site. It had subsequently been installed without being tested for hidden damage and, in addition, had not been tagged or otherwise identified as being discrepant as required by the Electrical Quality Control Manual. (See Management Interview and Section G.)

4. Criterion VIII of 10 CFR 50, Appendix B, requires that measures be established to assure that the identification of material is maintained by heat number, part number or serial number or other appropriate means as required throughout fabrication and use of the materials. Contrary to these requirements, stainless steel welding rods were observed that could not be identified as to heat number. The inspector had also observed unidentified rods during inspections on January 25, 1971, and on February 24 through 26, 1971, and had discussed these occurrences at the Management Interviews. (See Management Interview and Section J.)

5. Section 12.3.1 of the FSAR requires the use of operating procedures during the conduct of plant operations. Operating procedure, OP 1503 02, Checklist C, step 14, provides for recording the fuel

assembly identification number on the storage rack map. Contrary to this requirement, the inspectors observed one fuel element, No. 1C44, in the storage rack but not identified on the map. A review of the records indicated that two members of the operating staff and one member of the Babcock and Wilcox Company (B&W) had signed the data sheet certifying that the entry had been made on the storage rack map. (See Management Interview and Section L.)

Unusual Occurrences - None

Status of Previously Reported Problems - The licensee's response to the CDN relating to the wood chips and the polyethylene in the reactor vessel was received.[1/] The response relative to the polyethylene was considered to be unsatisfactory in that it did not consider the effects of the polyethylene that would result if the material were transported to the core or to other portions of the loop nor was any information presented relative to the actual chemical composition of the material. The response has been referred to Compliance Headquarters for resolution. The response relative to the wood chips was considered to be adequate.

Other Significant Items -

1. The licensee has determined that the fuel handling cranes do not meet performance requirements. (See Section I.)

2. The licensee does not presently plan to test the safety feature systems under conditions which would simulate operating conditions at the time of an accident. (See Section I.)

3. The licensee has experienced additional failures of the ITE time delay relays. (See Section G.)

4. The licensee has found intermittent shorts in some of the electrical penetrations. (See Section G.)

Outstanding Items - See Exhibit A for current status of outstanding items.

Management Interview - The management interview was held on April 9, 1971, and attended by Rogers, Beam, Hunnicutt, Hampton and Canady.

1. The inspector advised Hunnicutt that the licensee appeared to be in violation of 10 CFR 50, Appendix B, relative to the installation of

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1/ CDN to Duke Power Company dated March 8, 1971, and licensee's letter in response dated April 5, 1971, and April 14, 1971.

the control rod drive d.c. breaker cabinet. Information in the QC data package revealed that this equipment had been damaged after receipt at the site. There was no supporting documentation which indicated that this equipment had been tested for hidden damage. In addition, the cabinet had not been tagged or otherwise identified as being discrepant as required by the Electrical Quality Control Manual, Tab 9, "Field Receipt and Inspection." Hunnicutt stated that he would follow up on this item and have the equipment tested and the documentation corrected. (See Section G.)

2. The inspectors advised Hunnicutt that the licensee appeared to be in violation of 10 CFR 50, Appendix B, relative to the QA documentation of the four main coolant pumps. Appendix B requires that measures be established for the identification and control of components to assure that identification of components is maintained. Contrary to this requirement references to the individual pumps in the data packages for the main coolant pumps did not correspond to the positions in which the pumps were actually installed. Hunnicutt stated that the data packages would be corrected. (See Section F.)

3. Hunnicutt was informed by the inspectors that it appeared that the cable installation did not conform to the requirements of the FSAR, Section 8.2.2.13(h). This section requires in part that the maximum fill in control and instrumentation cable trays not exceed the height of the side rails. Contrary to this requirement, trays containing safety-feature cables had been observed that were filled higher than the side rails. Hunnicutt stated that he would follow up on this problem and would see that it was corrected. (See Section G.)

4. The inspector informed Rogers that during a tour of the auxiliary building, he had observed a bundle of welding rods in the high pressure injection pump room that could not be identified as to heat number. This appeared to be contrary to the requirements of 10 CFR 50, Appendix B, which specifies that the identification of materials be maintained by heat number or other appropriate means. Since this type discrepancy had been brought to the licensee's attention at the conclusion of the two previous inspections, the inspector advised Rogers that a CDN would probably be issued. (See Section G.)

5. The inspector advised Hampton that during a tour of the temporary fuel storage building, the inspectors had observed a fuel element, No. 1C44, in the fuel storage rack which had not been logged on the fuel storage rack map. Operating Procedure OP 1503 02 describes the steps to be followed in storing fuel in the temporary building and step 14 requires the logging of the fuel on the map. The inspector stated that a CDN would probably be issued to the licensee for failure to follow approved procedures. Testing of the cranes used in handling the fuel was also discussed. (See Section L.)

6. The inspector advised Rogers that Region II would be interested in the resolution of the problems associated with the fuel handling cranes and the inspector would like to review any in-house reports relating to the problems. Rogers stated that the inspector would be kept advised of the progress made and any reports that were generated would be available for review. (See Section I.)

7. In response to the inspector's question, Canady stated that the licensee still planned to load fuel during July 1971.

8. The inspector briefly discussed the reactor building No. 1 Completion Items List prepared by Hunnicutt. He advised Hampton that the Operations group should consider preparing a similar consolidated list of the discrepancies and incomplete items found during their testing program. Hampton stated that consideration would be given to the preparation of such a list. The inspector further stated that a real effort should be made to complete all items on the licensee's list as well as on the Compliance inspector's Outstanding Items List as rapidly as possible so as not to have an extensive list at the time that core loading became imminent. Hunnicutt stated that a determined effort would be made to complete these items as soon as possible. (See Section K.)

9. The inspector stated that he had observed a memorandum on the bulletin board in the reactor building prohibiting the use of teflon tape as a sealant on high temperature threaded pipe. This tape will release fluorine at elevated temperatures. Since the tape had previously been used to seal threaded connections in stainless steel instrumentation sensor lines, the inspector advised Hunnicutt that when this tape was removed, the licensee should verify that there was no residue remaining. Particular emphasis should be placed on checking the female threads since it would be easy to overlook tape on the inside of these small diameter openings. Hunnicutt stated that he would instruct the licensee's inspectors to ensure that all the joints were properly cleaned.

10. The inspector asked if consideration had been given to the security of the safety-feature switchgear in the turbine building mezzanine. He pointed out that construction work would still be in progress in the Unit 2 and 3 areas after Unit 1 was placed in service. Rogers and Beam stated that the security requirements would be reviewed and adequate protection would be installed.

11. The inspector advised Hunnicutt that the shorting of the Viking electrical penetrations connectors could possibly be a generic-type failure. He stated that Region II would be interested in reviewing any in-house report that was generated as a result of the

failures He also stated that he would want to review the problems associated with the control rod drive cable connectors. Hunnicutt stated that the licensee would be kept advised of the progress made in resolving these problems. (See Section G.)

12. In response to the inspector's questions, Hampton stated that the licensee did not presently plan to test the safety injection systems at design conditions. He also stated that the licensee did not plan to conduct vibration tests on the pressure vessel internals after core loading nor had plans been made to conduct any of the following tests.

    a. Pressurizer effectiveness tests.
    b. Vibration measurements on vessel internals after core loading.
    c. Pressure reactivity coefficient measurements.
    d. Shutdown from outside the control room at 100% power.
    e. Loss of offsite power at 100% reactor power.
    f. Loss of coolant flow at 50 and 100% reactor power.
    g. Generator trip at 50 and 100% reactor power.
    h. Dropped rod test at power.
    i. Ejected rod test (withdrawal of one rod at approximately 75% power).

    The inspector urged that the licensee reconsider his position on these tests but Hampton did not make any commitments. The inspector stated that the licensee's position on these tests would be relayed to Compliance Headquarters for information. (See Section I.)

13. The inspector briefly reviewed the discussions held with Smith and Hampton regarding the functional tests of the high pressure and low pressure injection systems. Hampton confirmed the inspector's understanding that the licensee did not plan to test these systems under conditions that would simulate plant conditions that would exist at the time of an accident. The inspector stated that the licensee's position would be relayed to Compliance Headquarters. (See Section I.)

14. The inspector reviewed the discussions held with Smith and Hampton concerning the adequacy of the Oconee test procedures. He stated that it was his understanding that as a result of these discussions, the licensee would review all his procedures and upgrade them to reflect the inspectors comments. Hampton stated that the inspector's understanding was correct. (See Section I.)

15. The inspector advised Hampton that the accuracy of the reactor coolant pump flow measurements was dependent upon the accuracy of the calibration of the flow meters installed in the reactor coolant loop. He

asked Hampton if the results of the calibration tests of these flow meters were available. Hampton stated that he would determine if the data were available and if so, would try to have it at the site in time for the next inspection.

DETAILS

A. Persons Contacted

Duke Power Company (Duke)

R. L. Dick - Manager of Construction
J. C. Rogers - Project Engineer, Oconee and McGuire
D. G. Beam - Assistant Project Engineer, Oconee
G. L. Hunnicutt - Principal Field Engineer
C. B. Aycock - Field Engineer, Electrical
J. P. Geraghty - Mechanical Engineer
J. E. Smith - Plant Superintendent
J. W. Hampton - Assistant Plant Superintendent
K. S. Canady - Steam Production Department
E. M. Geddie - Assistant Operating Engineer
C. L. Thames - Health Physics Supervisor
C. J. Wylie - Principal Electrical Engineer, Design

B. Organization and Administration

There have been no significant changes to the licensee's organization since the previous inspection.

C. Quality Assurance

1. Acceptance Criteria for System Cleanliness

Test Procedure TP 200 16 states in paragraph 11.3 with regards to flush water: "The sample of flush water run through a 45 micron filter shall leave no discoloration on the filter when it is compared with an unused filter."

The B&W Guide Specification CS-5-95 requires in Section 5.11 that a cloth filter collect no particulate matter greater than 40 microns.

During a previous inspection,[1/] the inspector had requested justification for the use of the 45 micron filter by the licensee. During

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[1/] CO Report No. 50-269/70-11, Section G.

this inspection, Hampton showed the inspector a letter from B&W dated March 10, 1971, which stated that the 45 micron particle size was acceptable to B&W. The inspector plans no further action on this item at this time.

D. Construction Progress

1. All major components except the core and plenum chamber have been installed.

2. The turbine-generator oil system flushing is in progress. Installation of turbine insulation has been started.

3. Coating of the reactor building dome is approximately 50% complete.

4. The 230 kv switchyard has been energized and testing of the Keowee hydro units is underway.

5. Balancing the containment air cooling system is in progress.

E. Construction Schedule

The following dates were given the inspectors as the best information available to the licensee at the time of the inspection.

1.	Reactor Coolant System Hydrostatic Test	May 4, 1971
2.	Reactor Building Leak Rate Test	May 23, 1971
3.	Hot Functional Test - Start	May 29, 1971
4.	Keowee Functional Test	May 21, 1971
5.	Fuel Loading	July 1971
6.	Start Power Ascension	September 20, 1971
7.	Achieve 100% Power	November 14, 1971

F. Reactor Coolant System

1. Reactor Coolant Pumps

The inspector reviewed the quality assurance data package for each of the four reactor coolant pumps. While attempting to relate the reactor coolant pump receiving and inspection report to the individual QA data package, the inspector observed that the reactor coolant pump 1A1 (RC-P1A1) pump casing heat numbers on the receiving and inspection report did not agree with the pump casing heat numbers in the QA data package. The inspector personally inspected the reactor coolant pump casing and verified that the heat numbers on the pump casings agreed with the heat numbers on the receiving and inspection report. Further investigation revealed that the QA data packages for all four reactor coolant pumps were incorrectly

identified. Each page of the QA data package for RC-P1A1 was incorrectly labeled RC-P1A2; each page of the QA data package for RC-P1A2 was incorrectly identified RC-P1B2; each page of the QA data package for RC-P1B2 was incorrectly identified RC-P1B1; and each page of the QA data package for RC-P1B1 was incorrectly identified RC-P1A1. This was discussed in the Management Interview and Hunnicutt was advised that it appeared that the licensee was in violation of Appendix B of 10 CFR 50 which requires in part that the identification of the items be maintained. Hunnicutt stated that the QA data packages will be corrected to properly identify the pumps. No other deficiencies were noted by the inspector.

2. Reactor Coolant System Piping - Attachment F

The inspector reviewed the licensee's Form NP-1, Data Report for Nuclear Piping (as required by the provisions of the USAS B31.7 code rules). The form indicated that the piping had not received a shop hydrostatic test. All other entries relating to the design and fabrication of the pipe had been completed and certified by B&W. The Certificate of Shop Inspection had been executed by the Hartford Insurance Company inspector. In discussions with Hunnicutt, the Compliance inspector was advised that the piping will be hydrostatically tested after installation is complete but prior to the installation of the mirror insulation. The piping will be given a 100% UT and the welds will be MT inspected after the hydro as a part of the inservice baseline inspection. The inspector was shown a copy of the licensee's Form QA-6, Nuclear Steam Supply System Quality Assurance Records, Final Certification. This form indicated that the licensee had audited the B&W QA records at Mt. Vernon, Indiana, and had not noted any deficiencies. The inspector plans to witness the hydrostatic test but does not plan any further action on this item at this time.

3. Pressurizer - Attachment L

The inspector reviewed the pressurizer vessel fabrication report. The report contained heat treating records, material certifications and the nondestructive test reports. The inspector compared heat treat records with the vessel heat treat orientation sketch. No deficiencies were noted. The records contained a memorandum indicating that the B&W Quality Control Engineering Section had audited all process sheets, weld control records and data sheets. The memorandum indicated that no discrepancies had been noted.

The fabrication report also contained such information as copies of the weld procedure qualifications, weldor qualifications and

contract variation notices as well as a set of as-built drawings. No deficiencies were noted in these records by the inspector and no further action is planned on this item at this time.

G. Electrical and Instrumentation

1. Uninterrupted A.C. Power System - Attachment I (5105.05 and 5205.05)

The inspector audited the QA data package for the static inverters. The package contained copies of the equipment specifications, manufacturer's QA information, the licensee's surveillance reports, test reports, the manufacturer's and licensee's certifications of Class IE electrical equipment, and the Receiving Inspection Reports, Form QC-31. Seismic proof tests conducted by the manufacturer indicated that the equipment would withstand the accelerations up to 0.15 g at frequencies from 0.7 to 18 cps as specified in the FSAR. The inspector also reviewed the QC records for the cables from the uninterrupted a.c. power supply diode cabinets to the inverters. No deficiencies were noted and the inspector plans no further action on these items at this time.

2. Pressurizer Level Control Instrumentation - Attachment H (5105.05, 06 and 5205.05)

The inspector audited the QA data package for the pressurizer level transmitters. This data package contained the same type information as did the data package for the static inverters discussed in Section G.1. The Report of Receiving Inspection indicated that the transmitters had been visually inspected for damage. No deficiencies had been noted in the report. The manufacturer's test records indicated that the transmitters had been hydrostatically tested at 4500 psig at ambient temperature. The transmitters had also been calibrated prior to shipment.

Duke Drawing 0-422AA2 shows the mounting locations of the transmitters. The licensee used a standard mounting assembly for wall mounted transducers and meters which has been designed to withstand the specified seismic forces. A discrepancy work sheet dated February 22, 1971, stated that transmitter 1LT4P3 had been installed in the 1LT4P1 position. The inspector reviewed the installation and except for the above item, the installation appeared to have been made in accordance with approved drawings. The transmitters were physically isolated from each other and did not appear to be susceptible to a common mode of failure type accident. QC documentation for the level instrumentation cable between the instrumentation and the reactor building electrical penetrations was reviewed. No deficiencies were noted and the inspector plans no further action on these items at this time.

3. Nuclear Instrumentation Cable - Attachment H

The original extension leads for the nuclear instrumentation excore detectors had expansion bellows at the detector connector. Wylie advised the inspector that during the installation of the cable, the bellows were inadvertently stretched on some of the cables and the internal conductor was pinched. The failures were found during high potential testing. During this testing, the licensee also found that one connector had been incorrectly installed at the factory. These cables were a special type with mineral insulation that had been manufactured specifically for Duke. All of the cables were returned to the factory for removal of the bellows and retermination of the connectors. Wylie stated that the cables will be retested after installation. The inspector plans no further action on this item at this time.

The inspector reviewed the QC records for the nuclear instrumentation cable between the reactor building penetrations and the nuclear instrumentation cabinets. The cable pulling sheets and the field daily cable installation reports were found to be properly completed and signed. The inspector plans no further action on this item at this time.

4. Defective Electrical Penetrations

During routine electrical testing at Oconee, it was found that two low-voltage, power-type containment penetrations were grounded internally. Two spare units were tested and also found to have internal grounds. The results of the tests were as follows:

Serial No.	Pin No.	Resistance to Ground (ohms)
C1-16	1	2
C1-18	21	Variable, 5 to 10.5
C1-12	37	4
C1-27	12	Variable, 5 to 10

At the time of the inspection, the penetrations had been returned to the factory for disassembly and repair. Wylie postulated that the shorts could have been caused by metal shavings falling into the area between the two seals. Since this could be a generic-type failure, the inspector requested that he be advised when the cause of the shorts is determined. Wylie agreed that this would be done. In response to the inspector's questions, Wylie stated that no decision would be made regarding the remaining penetrations until the exact cause of the failures of the four penetrations had been determined. The inspector will follow up on this item during the next inspection.

5. Control Rod Cable Connectors

Wylie advised the inspector that the licensee has experienced three failures of molded connectors on the control rod drive position indicator cable. From the preliminary information available, the licensee considers it probable that the polyurethane compound in the connectors had not cured properly. Because this could possibly be a generic-type failure, the inspector advised Wylie that he would want to review any available information relating to the problem during the next inspection.

6. Control Rod Drive Controls

The inspector audited the QA data package for the control rod drive control system. The receiving inspection report dated November 17, 1970, for the control rod drive system d.c. breaker cabinet indicated that the cabinet had fallen from a forklift truck while being moved into the warehouse. The report indicated that the extent of the damage was not known. There was no further documentation to indicate that tests had been made to determine if the equipment had been damaged internally or that repairs had been made. The Electrical Quality Control Manual requires in part that damaged equipment be tagged as discrepant until it has been repaired and tested. The inspector found upon inspecting the installed cabinet that it did not have the required tag. The inspector observed that the upper corner of the cabinet front had been severely bent but had been repaired. There was no visible damage to the molded case circuit breakers which were mounted in the door of the cabinet. The inspector advised the licensee that he appeared to be in violation of the requirements of Appendix B of 10 CFR 50 in that he had not followed his approved procedures when he failed to tag the cabinet. The inspector discussed this item during the Management Interview and stated that a CDN would probably be issued.

7. Cable Installation

During an inspection of the cable spreading room and the electrical equipment room, the inspector observed that in some cases the cable tray fill appeared to exceed the limits specified in the FSAR. The FSAR, Section 8, limits the fill of tray with safety feature instrumentation and control cable to the height of the side rails. Several trays were observed to exceed this fill and one was observed that was filled to almost double the permissible limit. The inspector discussed this item in the Management Interview and stated that a CDN would probably be issued.

8. ITE Relay Failures

During discussions with Aycock and Wylie, the inspector asked if the report relating to the failures of the ITE time delay relays had been issued.[1/] The inspector was advised that additional failures had occurred which were not related to the initial failures. The licensee is now planning to replace all relays of this type. For this reason he has not as yet completed the report relating to the problems. Because of the concern expressed by the inspector, Wylie stated that he would expedite the work on the report. The inspector will review this item during the next inspection.

9. Electrical and Instrumentation QA Record Deficiencies

During a previous inspection the inspector had found numerous deficiencies in the licensee's QA data packages for electrical and instrumentation items.[2/] As a result of the CDN, the licensee had reviewed all the data packages at the site and had corrected the deficiencies which had been noted. Since the records for the electrical and instrumentation items reviewed during this inspection were not found to contain deficiencies, the inspector now considers the licensee's audits to be adequate. The inspector, therefore, does not plan any further action on this item at this time.

10. Cable Protection and Support

During a previous inspection, the inspector had observed cables which were not adequately supported and protected.[3/] Other cables had been observed that were routed into cable troughs which had sharp edges. The licensee has now installed additional cable trays in the cable shaft and at the chemical control panels. He has also modified the cable troughs to eliminate the sharp edges. The inspector now considers these three items resolved but will review the progress made on the other items during future inspections.

H. Control Rod Drive Mechanisms - Attachment L (5105.05)

The inspector audited the QA data packages relating to the control rod drive mechanisms. The data package contained the purchase order

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1/ CO Report No. 50-269/70-12.

2/ Item 49, Outstanding Items List.

3/ CO Report No. 50-269/71-1.

and change orders, the vendor technical data, the B&W quality assurance data sheet, material certification deviation notices, inspection point documentation and B&W acceptance documentation. No discrepancies were noted in this documentation and the inspector does not plan any further action on this item.

I. Test and Operations

1. Test Procedure Deficiencies

The inspector advised Smith and Hampton that Region II was concerned with the quality of the procedures that had been reviewed to date. He pointed out that the fuel loading procedure and the reactor cooling system cleaning procedure had required rewriting based upon the Compliance inspector's comments. The inspector had also offered major comments on most of the procedures reviewed to date. He then gave comments on TP 1A 200 12, RCP Flow Test.1/ This procedure had been selected at random from a group of pre-operational test procedures. Based upon the deficiencies noted by the inspector, this procedure was also considered to be inadequate. The inspector advised Smith that the purpose of the Compliance review of the procedures was to assure the AEC that the licensee's tests would demonstrate the performance of the systems and that the plant would be safely operated. It was not the purpose of Compliance to approve the licensee's procedures and that comments were offered only to point up deficiencies. Based upon the results of procedures reviewed to date, the general comment could be offered that the procedures appeared to be inadequately thought out and had received insufficient review. Compliance was not confident that the plant would be adequately tested. The inspector stated that the licensee should review all the test procedures that had been prepared to date in the light of the comments that had been made to ensure that they would accomplish the intended purpose. The operators that were preparing the procedures should also be instructed to use more care in their preparation. Smith stated that the inspector's comments would be passed on to the men preparing the procedures and all procedures would be reviewed to ensure their adequacy. The inspector stated that he would follow up to determine the effectiveness of the steps taken to improve the procedures.

2. Vent Valve Replacement Test

In a meeting with DRL, the licensee had stated that the test program would include a demonstration of the replacement of a reactor

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1/See Exhibit B.

internals vent valve in the upper plenem.[1] The inspector in his review of TP 1A 200 1, Reactor Internals Vent Valve Inspection Test, had commented that this procedure did not include the replacement test.[2] During this inspection, Hampton advised the inspector that the valve replacement would be demonstrated. The inspector was advised by telephone on April 23, 1971, that the valve replacement test had been satisfactorily completed. The inspector plans no further action on this item at this time.

3. Safety Injection Systems Tests

The inspector advised Smith and Hampton that the proposed functional tests for the high pressure injection system and the low pressure injection system had been discussed with the Compliance Headquarters staff. Based on these discussions, it was the inspector's understanding that the licensee would be expected to demonstrate that these systems would perform under the conditions that would simulate plant operating conditions at the time of an accident. This would include the operation of both injection systems at appropriate temperature and pressure and the operation of the low pressure system taking suction from the emergency sump. Smith stated that they did not presently plan to test these systems under these conditions but that he would discuss this matter with the Design Department and advise the inspector of their decision.

4. Operating Deficiency Log

The inspector asked Smith and Hampton if a consolidated list of deficiencies had been developed. He stated that if such a list was available, that he would want to review it periodically. Smith stated that they did not have a consolidated list. When tests reveal deficiencies that are not immediately corrected, the deficiencies are listed on a cover sheet attached to the master copy of the test procedure. Smith agreed that only by going through the master file could a determination be made of the outstanding deficiencies. The inspector pointed out that by not having a master list, it would be very difficult for the licensee to determine his day-to-day status. In addition, this procedure did not provide for logging deficiencies noted by members of the staff that were not related to a test being conducted at the time. The inspector strongly urged that a master list be developed and advised Smith that he would want to review the deficiencies during the next inspection. Smith stated that he would give consideration to developing a consolidated list.

1/ Item 35, Outstanding Items List.

2/ CO Report No. 50-269/71-2.

5. Applicability of Technical Specifications Prior to Core Loading

During a previous inspection[1/], the inspector had commented on Test Procedure TP 1A 202 5, High Pressure Injection System Engineered Safeguards Test, and TP 1A 203 6, Low Pressure Injection Systems Safeguards Test. These procedures specified temperatures and pressures that would result in the reactor pressure vessel NDTT limitations being exceeded. These limitations of pressure versus temperature are given in the Technical Specification section of the FSAR. During this inspection, Smith asked the inspector if the licensee would be required to observe the NDTT limitations and other limitations stated in the Technical Specifications. The inspector pointed out that the Technical Specification limitations are based on the technical information contained in the FSAR and if the licensee wished to use less conservative limits than those in the Technical Specifications during the preoperational testing, then he should be prepared to prove that the tests were not damaging to the equipment.

6. Startup and Power Ascension Tests

The inspector discussed with the licensee the scope of their startup and power ascension tests using as a guide the program outlined in PI 6000, "Startup and Power Ascension Tests." As a result of this discussion, it was determined that the licensee does not presently plan to conduct the following tests.

a. Pressurizer Effectiveness Test
b. Vibration Measurements on Vessel Internals After Core Loading
c. Measurement of Pressure Coefficient of Reactivity
d. Shutdown from Outside the Control Room at 100% Power
e. Loss of Offsite Power
f. Loss of Flow at Power
g. Generator Trip at 100% Power
h. Dropped Rod Tests
i. Rod Ejection Test at Power

Smith stated that the vessel internals vibration tests would be performed during the hot functional tests and the sensors for these measurements would be removed prior to core loading. Hampton advised the inspector that the pressure coefficient of reactivity was calculated to be so small that meaningful measurements probably could not be made. After considerable discussion of these tests, Smith stated that he would discuss them with the Duke design people but he was not convinced of the need to perform the tests. The inspector advised Smith and Hampton that he would

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1/ CO Report No. 50-269/71-2.

strongly urge that the licensee reconsider their position on these tests and that he would review their decision during the next inspection. In the meantime, he would relay the licensee's position on these tests to Compliance Headquarters for their information.

7. Fuel Handling Equipment Problems

The inspector was advised by Dick that during checkout and test of the fuel handling equipment, the licensee determined that the performance of the cranes did not meet specifications. This equipment was manufactured by Stearns-Rogers Corporation as a part of the B&W contract for the nuclear steam supply system. The specifications require that in the travel of the bridge along the fuel canal, the lateral (or east-west) movement of the bridge not exceed 1/32-inch. In the travel of the trolly across the bridge, the lateral or north-south movement may not exceed 0.030 inch. In raising and lowering the fuel elements, there should be no rotation of the element. It was found during the tests that the lateral motion of the bridge exceeded 1/16 inch, the motion of the trolley is as much as 0.065 inch and the rotation of a dummy fuel element in the fuel handling tube was approximately 3/8 inch as measured at the corner of the fuel element. These motions were random and prevented the accurate indexing of the crane. The licensee, B&W, and Stearns-Rogers Corporation determined that the problems appeared to be associated with the cranes and not the rails or other installed components in the fueling canal. The crane was returned to the factory during the week of the inspection. Hunnicutt advised the inspector that an in-house report would be issued relative to the equipment and the inspector would be able to review the report as soon as it is issued. The inspector plans to follow up on this item during future inspections.

8. Instrumentation Protection

Hampton stated that the licensee was now including the instrumentation valve numbers on the checklists for the hydro tests in order to prevent the instrumentation from being damaged during hydro testing of piping systems.[1/] This item is now considered resolved by the inspector and no further action is planned at this time.

J. Miscellaneous

1. Tendon Grease Leaks

The inspector had observed the seepage of what appeared to be tendon grease from a construction joint in the concrete above the

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[1/] Item 31, Outstanding Items List.

equipment hatch during a previous inspection.1/ Beam and Wells at that time had stated that they had not completed their evaluation of the problem but would advise the inspector of a resolution. During this inspection, Hunnicutt advised the inspector that Duke did not consider the grease a problem except as a matter of appearance. He stated that the grease seepage had been stopped by chipping the concrete from the joint and then coating the joint with a thin layer of Colma-Dur Gel. A one-inch layer of antihydro cement was then placed in the joint followed by filling the joint with a 2:1 sand-cement grout. No further leakage has been observed from any of the joints so repaired.

2. Welding Rod Control

During an inspection of the high pressure injection pump room, the inspector observed a bundle of stainless steel welding rods with no identification. During the Management Interview, this matter was brought to the attention of Hunnicutt. Since unidentified rods had been observed on the two previous occasions, Hunnicutt was advised that a CDN would probably be issued.

K. Outstanding Construction Items

1. The inspector reviewed the Outstanding Items List maintained by Region II relative to Oconee 1 with Hunnicutt. The inspector discussed the importance of completing these items in a timely manner.

2. Hunnicutt advised the inspector that double metal doors have been ordered for the penetration room elevator openings. He stated that design drawings had been issued and the doors would be installed as soon as they were received. He also stated that a study had shown that it was not feasible to install drip pans on the fuel handling cranes that would hold all the oil in the gear boxes. The licensee is instituting a maintenance program to periodically check the gear boxes for leakage. The inspector was advised that the discrepant section of feedwater pipe had been replaced and all NDT tests completed satisfactorily. The inspector considers these items to be complete for the present time.2/

1/ CO Report No. 50-269/70-9.

2/ Items 59, 63 and 65, Outstanding Items List.

3. Hunnicutt gave the inspector a list of items that construction considers to be outstanding at the present time (Exhibit C). Hunnicutt stated that the list was not to be considered to represent all the work that remained to be done but was the more significant items. He further stated he planned to update the list each week and as construction neared completion, items of less significance would be added.

L. Temporary Storage Building for New Fuel Assemblies

The inspectors visited the temporary storage building where new fuel assemblies are received, inspected, and stored. Fuel assemblies for Oconee Station 1 were observed by the inspectors to be stored in polyethylene bags. There was an opening in each bag near the bottom of the fuel assembly and a second opening near the top of the assembly to prevent the accumulation of water in the bags. Filter paper had been taped over each hole to prevent entry of dust and particulate matter.

The inspectors observed that fuel assembly No. IC-44 had not been logged on the fuel assembly status board as required by step 14 of Part C of Operating Procedure OP 1503 02, New Fuel Inspection and Storage. Two members of the Duke operations staff and one member of the B&W organization had signed off checklist C for this procedure certifying that the procedure had been followed and that the entry had been made on the fuel assembly status board. The FSAR, Section 12.3.1, requires the use of operating procedures during the conduct of plant operations. The inspector pointed out to Geddie that the operating staff had not followed an approved procedure and that a CDN would probably be issued. This incident was discussed in the Management Interview and the importance of following the approved procedures and properly completing the required checklists was emphasized by the inspectors.

The fuel handling cranes were reviewed with the licensee. The importance of periodically load testing the building cranes and inspecting the fuel handling equipment was emphasized. Since mobile cranes are normally used to convey the loaded fuel assembly shipping containers from the transport truck to the building crane pickup zone, the inspector also stressed the importance of requiring a load test of any portable crane to be used for fuel handling after it had been previously used for other purposes. These items were discussed in the Management Interview.

The general dusty condition of the floor of the new fuel temporary storage building was brought to the attention of the licensee during

the inspection. In particular, the inspectors pointed out an accumulation of debris in the bottom of the pit where the bags are removed from the fuel during the receipt inspection. Geddie assured the inspectors that the area would be cleaned prior to the inspection of any fuel.

Attachments:
Exhibit A, B and C

LICENSEE Duke Power Company

FACILITY Oconee Station No. 1

DOCKET & LICENSE NOS. 50-269, CPPR-33

REACTOR OUTSTANDING ITEMS

	IDENTIFIED	ITEM	CLOSED
1.	68-2, 3/5/68, NC	Concrete test cylinder breaks below specs	68-3, D.5., 6/19/68
2.	68-3, 6/19/68, NC	Unauthor zed revision to Cadweld specifications	68-4, Summary, 9/25/69
3.	68-3, 6/19/68, NC	Failure to provide concrete inspector	68-4, Summary, 9/25/69
4.	68-4, 9/25/68 NC	Failure to properly test Cadweld splices	69-1, Summary, 1/6/69
5.	69-8, 9/9/69, NC	Failure to properly qualify weld procedures	69-9, G, 11/3/69
6.	69-8, 9/9/69, NC	Failure to properly qualify weldors	69-9, G, 11/3/69
7.	IEB, 4/11/69	Procedure for repair of arc strikes not available	70-5, Summary, 4/27/70
	CDN, 1/8/70	NDT of core flooding valves	Memo, WCS to HQ 2/2/70
9.	70-1, 1/6/70, NC	Welding and NDT deficiencies, CDN issued	Memo, WCS to HQ 3/26/70
10.	Bingham 69-1, 12/9/69, NC	Main coolant pump discrepancies	Memo, WCS to HQ 4/21/70
11.	70-4, 4/27/70, NC	Low strength concrete	Memo, WCS to HQ 8/7/70
12.	IEB, 5/1/70	Pressure vessel safe ends	Memo, WCS to HQ 8/5/70
13.	70-6, 5/25/70, NC	Tendon stressing discrepancies	Memo, WCS to HQ 8/7/70
14.	70-8, 8/3/70, NC	Tendons and stress gages	Memo, WCS to HQ 10/8/70
15.	70-8, 9/1/70, UN	Fissures in primary coolant pipe cladding	FSAR, Amend.24, 12/17/70
16.	IEB, 9/11/70, UN	a. Determination of safety system response to axial power imbalances b. Availability of in-core detectors	

For IDENTIFIED Column: S - safety item; NC - noncompliance or nonconformance item; UN - unresolved item; IN - inquiry item; IEB - Reactor Inspection and Enforcement Branch request; O - other source of identification (briefly specify)

LICENSEE Duke Power Company

FACILITY Oconee Station No. 1

DOCKET & LICENSE NOS. 50-269, CPPR-33

REACTOR OUTSTANDING ITEMS

IDENTIFIED	ITEM	CLOSED
	c. Measurements of flow and temperature during initial operation	
	d. Verification of bypass flow	
	e. Verification of axial peak effects on DNBR	
	f. Data during startup for single loop, two pump operations	
	g. Inspection of reactor internals after completion of preoperational tests	
	h. Field test of steam generator	
	i. Low strength concrete and omitted tendons	Memo, WCS to HQ 10/8/70
	j. Penetration room valves	70-12, Summary 12/1/70
	k. Strain gauge failures	Memo, WCS to HQ 10/8/70
	l. HP and LP injection system startup times	
	m. Core flooding tank MO valve	
	n. Reactor building spray pump performance	
	o. Condenser cooling water crossover header valve	
	p. Spent fuel accident filters	
	q. Administrative control of MCP startup	
	r. Flow tests per 200/12 and 200/13	
	s. Flow distribution chart	

For IDENTIFIED Column: S - safety item; NC - noncompliance or nonconformance item; UN - unresolved item; IN - inquiry item; IEB - Reactor Inspection and Enforcement Branch request; O - other source of identification (briefly specify)

LICENSEE Duke Power Company

FACILITY Oconee Station No. 1

DOCKET & LICENSE NOS. 50-269, CPPR-33

REACTOR OUTSTANDING ITEMS

	IDENTIFIED	ITEM	CLOSED
17.	70-2, 2/19/70, UN	Vendor NDT records for safeguards systems cables	70-11, F, 10/26/70
18.	70-4, 3/23/70, UN	Verification of separation of transducer tubing	
19.	70-8, 8/3/70, UN	Control rod drive guide bushings and torque tubes	71-3I, 2/24/71
20.	70-8, 8/3/70, UN	Completion of HP facilities	
21.	70-8, 8/3/70, UN	Completion of HP procedures	
22.	70-8, 8/3/70, UN	Completion of HP personnel training	70-12, Summary 12/1/70
23.	70-8, 8/3/70, UN	Crane load test	71-1, 1/4/71
24.	70-8, 8/3/70, UN	Verify that test procedures are properly revised and approved when changes are required	
25.	70-8, 8/3/70, UN	Verify that analysis of containment is made	FSAR, Amend. 24
26.	70-8, 8/3/70, UN	Adequate fuel handling procedures	
27.	70-8, 8/3/70, UN	Main steam pipe hangers	
28.	70-9, 9/1/70, UN	Steam generator skirt adapter indications	
29.	70-9, 9/1/70, UN	HP injection pump QC records	70-11, C, 10/26/70
30.	70-9, 9/1/70, UN	Basis for particle size in flushing procedures	70-11, G, 71-4, G 10/26/70 and 4/6/71
31.	70-9, 9/1/70, UN	Protection of instrumentation during hydro test	71-4, G, 4/6/71
32.	70-10, 9/28/70, UN	Fuel transfer tube expansion joint replacement	71-3L, 2/24/71
33.	70-10, 9/28/70, UN	Routing of cables exterior to cable trays	Memo, WCS to HQ 1/18/71

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EXHIBIT A

LICENSEE Duke Power Company

FACILITY Oconee Station No. 1

DOCKET & LICENSE NOS. 50-269, CPPR-33

REACTOR OUTSTANDING ITEMS

	IDENTIFIED	ITEM	CLOSED
34.	DRL Rpt. No. 1, 7/24/70, UN	Installation of additional environmental monitoring equipment	
35.	DRL Rpt. No. 1, 7/24/70, UN	Vent valve replacement test	71-4, I, 4/6/71
36.	DRL Rpt. No. 1, 7/24/70, UN	Strong motion accelerometer installation	
37.	DRL Rpt. No. 1, 7/24/70, UN	Penetration room flow indication and adjustment	
38.	DRL Rpt. No. 1, 7/24/70, UN	Instrumentation bypass keys	Tech Specs Chang 12/70
39.	DRL Rpt. No. 3, 9/15/70, UN	Internals vibration test	
40.	DRL Rpt. No. 3, 9/15/70, UN	Core flooding tank valves	
41.	70-10, 9/28/70, UN	Hydrostatic test pressures	71-1, 1/4/71
42.	70-11, 10/26/70, UN	Cleaning reactor coolant system piping and equipment	71-2, 1/25/71
43.	70-11, 10/26/70, UN	Sensitized stainless steel in reactor coolant pump discharge piping	71-1, 1/4/71
44.	IEB, 12/22/70	Reactor coolant pump tests	
45.	IEB, 10/30/70	Safety injection system testing	
46.	70-12, 12/1/70 UN	Vibration testing - equipment and piping	
47.	70-12, 12/1/70 NC	Location of station batteries (air piping and floor drains)	
48.	70-12, 12/1/70 NC	Nuclear instrumentation vendor tests	
49.	70-12, 12/1/70 NC	Electrical QC data packages	71-4, G, 4/6/71

For IDENTIFIED Column: S - safety item; NC - noncompliance or nonconformance item: UN - unresolved item: IN - inquiry item; IEB - Reactor Inspection and Enforcement Branch request; O - other source of identification (briefly specify)

LICENSEE Duke Power Company

FACILITY Oconee Station No. 1

DOCKET & LICENSE NOS. 50-269, CPPR-33

REACTOR OUTSTANDING ITEMS

	IDENTIFIED	ITEM	CLOSED
50.	70-12, 12/1/70 UN	ITE relays	
51.	70-12, 12/1/70 UN	Heater and heat tracing tests	
52.	70-12, 12/1/70 UN	Control rod drive cooling system tests	
53.	70-12, 12/1/70	Containment and auxiliary building vent system filters	
54.	FSAR, Amend 25 UN 12/30/70	Installation of strain gages	
55.	71-2, 1/25/71 UN	Keowee battery room ventilation	
56.	71-2, 1/25/71 UN	Switchyard battery blocking diode tests	
57.	71-2, 1/25/71 UN	Remove temporary steam line at 4 kv switchgear	
58.	71-2, 1/25/71 UN	Controlled leak rate tests	
59.	71-2, 1/25/71 UN	Penetration room elevator opening	71-4, K, 4/6/71
60.	71-2, 1/25/71 UN	Verification of separation of redundant circuits	
61.	71-2, 1/25/71 UN	Cleanup of cable trenches	
62.	71-2, 1/25/71 UN	Adequacy of leak rate tests	Telecon, 3/2/71 Duke to CO:II
63.	71-2, 1/25/71	Replacement of feedwater pipe	71-4, K, 4/6/71
64.	71-3, 2/24/71 NC	Cleanliness of reactor vessel and internals	

For IDENTIFIED Column: S - safety item; NC - noncompliance or nonconformance item; UN - unresolved item; IN - inquiry item; IEB - Reactor Inspection and Enforcement Branch request; O - other source of identification (briefly specify)

LICENSEE Duke Power Company

FACILITY Oconee Station NO. 1

DOCKET & LICENSE NOS. 50-269, CPPR-33

REACTOR OUTSTANDING ITEMS

	IDENTIFIED	ITEM	CLOSED
65.	71-3, 2/24/71 UN	Drip pans on fuel handling cranes	71-4, K, 4/6/71
66.	71-3, 2/24/71 UN	Containment leak rate tests	Telecon, 3/2/71 Duke to CO:II
67.	71-4, 4/6/71 NC	Cable tray fill	
68.	71-4, 4/6/71 NC	Reactor coolant pump QA documentation	
69.	71-4, 4/6/71 NC	Control rod drive system d.c. breaker cabinet	
70.	71-4, 4/6/71 NC	Welding rod control	
71.	71-4, 4/6/71 NC	Fuel storage records	
72.	IN, 5/3/71	Possible damage to vessel internals	
73.	IN, 5/3 /71	Damage to safety feature switchgear bus	
74.	IN, 4, 4/6/71 UN	Fuel Handling Cranes	
75.	71-4, 4/6/71 UN	Testing Safety feature systems	
76.	71-4, 4/6/71 UN	Power ascension test program	
77.	71-4, 4/6/71	Protection of safety feature switchgear	
78.	71-4, 4/6/71 UN	Viking penetrations	
79.	71-4, 4/6/71 UN	Procedure for coolant pump flows	

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Exhibit B
RCP Flow Test
TP 1A 200 12
Comments

1. Section 2 - This section should reference the calibration tests of the flowmeters. Region II must review the flowmeter test data.

2. Section 4 - This section should reference the Zero Power Physics Test, TP 1A 710 1 as a concurrent test for Sections 12.2.3 and 12.2.4. The Unit Heatup Test, TP 1A 600 1 listed in Section 4.3 should be identified as a concurrent test for Sections 12.2.1 and 12.2.2.

3. Section 5.1 - The dp units should be more accurately identified as to type, range, accuracy, etc. Details of connections should be included as a part of Section 8.0.

4. Section 5.2 - The oscillographic recorders should be more accurately identified.

5. Section 5.3 - The changes to be made to the pump control circuits to provide the capability for simultaneously stopping the pumps should be described or the applicable procedure should be referenced. If circuit changes are not required then the method for stopping the pumps should be described.

6. Section 5.4 - The tachometers to be used should be more accurately identified.

7. Section 6.3 - Reference the procedure for accomplishing this step.

8. Section 6.4 - This section should be rephrased to clarify that only the simultaneous operation of the four pumps is prohibited.

9. Section 6.5 - Limitations should be given in the procedure or the applicable document should be referenced that states the limitations.

10. Section 6.7 - Give details for accomplishing this step.

11. Section 6.9 - This step should be combined with Step 6.5.

12. Section 6 - Restrictions on water chemistry; i.e., boron concentrations should be specified and periodic analysis required when performing tests with core installed.

13. Section 7.0 - Reference the procedures that establish these conditions. Provide necessary check lists.

14. Section 8.0 - This section should contain details of test instrument connections.

15. Section 8.4 - Clarify this statement.

16. Section 8.5 - Reference applicable procedure.

17. Section 8.6 - Reference applicable procedure. The allowable variation in coolant system temperature during each test

run should be specified.

18. Section 9 - Core pressure drop test procedure should be included in the references.

19. Section 10 - A brief description of the required data should be given.

20. Section 11 - The acceptance criteria for hot flow without core is not specified.

21. Section 12.1 - Specify procedure for obtaining condition and check lists to be completed.

22. Section 12 - There should be procedural steps to place recorders into operation prior to Step 12.2.

23. Section 12.2 - The step should be more descriptive of the actual performance of the test. The procedure should specify if the flow is to be permitted to stabilize after the start of each pump prior to the start of the next pump in each run.

Procedure does not indicate whether or not the pumps are to be stopped after each run or if only the switching necessary to obtain the conditions specified in the next run is done between runs. It would seem that instructions would be given in the detail necessary to minimize starting and stopping the pumps.

Procedure does not require a correlation between the dp recorders and the installed plant flow instruments. It would appear that this correlation would be helpful in order to verify the proper operation of the installed instruments.

The lack of a system of identification of the test runs could lead to confusion.

24. Data Sheets

    a. Data sheets should be provided for each of the four sets of runs.

    b. The power required by each reactor coolant pump should be recorded for each run.

25. The procedure does not require the restoration of the temperature interlock and the removal of the test instruments.

26. The data sheets should identify the instruments to be read for each entry.

27. The method of converting from dp to flow should be given.

28. At higher temperatures, is the secondary system required to dump steam? If so, the prerequisite should so state and the conditions should be given.

April 8, 1971

REACTOR BUILDING #1 COMPLETION ITEMS

Painting:

1. Polar crane (need to protect canal with clean room).
2. Dome or clean grease free.
3. Liner plate from 861' and up (final coat).
4. Paint and touch-up structural steel.
5. Finish floor (vacuum blast and paint).
6. Equipment Hatch
   Personnel Hatch
   Escape Lock
7. Vent stack.
8. Reactor coolant pumps motors.
9. Final GE coating on dome.
10. Touch-up everything.

Coolant Loop:

1. Install heater bundles in pressurizer.
2. Attach insulation clips on steam generators, pressurizer, and pumps.
3. Attach rods to indicate main coolant pipe movement.
4. Hydro coolant loop.
5. Vacuum blast all welds on coolant loop.
6. PT and MT all joints field and shop.
7. Repaint welds.
8. UT all welds.
9. Insulate loop piping and vessels.
10. Erection of concrete shields.

Gamewell:

1. Balance air for cooling system.

Restraints:

1. Install hanger rods to support restraint for pressurizer and 28" diameter pipe.

Refueling Canal:

1. Install six lights at 853'.
2. Install specimen holder tube assembly and tube (not designed for fabrication).
3. Complete cranes.
   (1) Indexing
   (2) Testing
4. Dry fuel handling test.
5. Wet functional fuel handling test.

Other items:

1. Install two water tight doors to annulus after hydro.
2. Place closure concrete around instrumentation tubes after hydro. (attach "U"-bolts brackets).
3. Brackets for removal platform to be installed on service structure.
4. Erect bridge through equipment hatch.
5. Erect outside shield door for equipment hatch.
6. Install grating and handrails at 861' + 6".
7. Set removable shields over reactor vessel.
8. Erect miscellaneous racks and storage locations for miscellaneous tools and equipment (no detailed drawings).
9. Check and complete miscellaneous structural steel.
10. Erect reference vessels for leak rate test (must complete all piping and tubing to these vessels).
11. Lead blocks must be placed in front of water tight door.
12. Lead shield to be placed over hatch down to pipe chase under south end of canal.
13. Place reactor closure head and torque bolts.
14. Make final adjustments to reactor coolant pump motors.
15. Make final adjustments on lubrite pads on steam generator during hot functional test.
16. Install spray headers in head storage stand.
17. Completely clean entire Reactor Building interior.
18. Install hoists on monorails in Reactor Building.
19. Install removable slab over basement stairway.
20. Install seismic steel on main steam line @ 861' + 6" level.

April 8, 1971

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