



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
230 PEACHTREE STREET, N.W. SUITE 818
ATLANTA, GEORGIA 30303

NOV 29 1976

In Reply Refer To:
IE:II:VLB
50-390/76-10
50-391/76-10

Tennessee Valley Authority
Attn: Mr. Godwin Williams, Jr.
Manager of Power
830 Power Building
Chattanooga, Tennessee 37401

Gentlemen:

This refers to the inspection conducted by Mr. V. L. Brownlee of this office on October 12-15, 1976, of activities authorized by NRC Construction Permit Nos. CPPR-91 and CPPR-92 for the Watts Bar Nuclear Plant, Units 1 and 2 facilities, and to the discussion of our findings held with Mr. J. C. Killian, Project Manager at the conclusion of the inspection.

Areas examined during the inspection and our findings are discussed in the enclosed inspection report. Within these areas, the inspection consisted of selective examination of procedures and representative records, interviews with personnel, and observations by the inspector.

Within the scope of this inspection, no items of noncompliance were disclosed.

We have also examined actions you have taken with regard to previously identified enforcement matters and unresolved items. The status of these items is identified in Sections II and IV of the summary of the enclosed report.

Four new unresolved items resulted from this inspection and are identified in Section III of the summary of the enclosed report. These items will be examined during subsequent inspections.

In accordance with Section 2.790 of the NRC's "Rules of Practice," Part 2, Title 10, Code of Federal Regulations, a copy of this letter and the enclosed inspection report will be placed in the NRC's Public Document Room. If this report contains any information that you believe to be proprietary, it is necessary that you submit a written application to this office requesting that such information be withheld from public

Tennessee Valley Authority

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disclosure. If no proprietary information is identified, a written statement to that effect should be submitted. If an application is submitted, it must fully identify the bases for which information is claimed to be proprietary. The application should be prepared so that information sought to be withheld is incorporated in a separate paper and referenced in the application since the application will be placed in the Public Document Room. Your application, or written statement, should be submitted to us within 20 days. If we are not contacted as specified, the enclosed report and this letter may then be placed in the Public Document Room.

Should you have any questions concerning this letter, we will be glad to discuss them with you.

Very truly yours,



C. E. Murphy, Chief
Reactor Construction and Engineering
Support Branch

Enclosure:

IE Inspection Report Nos.
50-390/76-10 and 50-391/76-10

cc w/encl: Mr. J. E. Gilleland
Assistant Manager of
Power

Tennessee Valley Authority
Mr. Jere Killian, Project Manager
Watts Bar Nuclear Plant
P. O. Box 2000
Spring City, Tennessee 37381



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
230 PEACHTREE STREET, N.W. SUITE 818
ATLANTA, GEORGIA 30303

IE Inspection Report Nos. 50-390/76-10 and 50-391/76-10

Licensee: Tennessee Valley Authority
830 Power Building
Chattanooga, Tennessee 37401

Facility Name: Watts Bar Nuclear Plant, Units 1 and 2
Docket Nos.: 50-390 and 50-391
License Nos: CPPR-91 and CPPR-92
Category: A2/A2

Location: Spring City, Tennessee

Type of License: W, PWR, 1160 Mwe

Type of Inspection: Routine, Unannounced, Construction

Dates of Inspection: October 12-15, 1976

Dates of Previous Inspection: September 22-24, 1976

Principal Inspector: V. L. Brownlee, Reactor Inspector
Projects Section
Reactor Construction and Engineering
Support Branch

Accompanying Inspectors: W. B. Swan, Reactor Inspector
Engineering Support Section No. 1
Reactor Construction and Engineering
Support Branch

J. J. Blake, Metallurgical Engineer
Engineering Support Section No. 2
Reactor Construction and Engineering
Support Branch

B. R. Crowley, Metallurgical Engineer
Engineering Support Section No. 2
Reactor Construction and Engineering
Support Branch

Principal Inspector: *N. L. Browlee*
N. L. Browlee, Reactor Inspector
Projects Section
Reactor Construction and Engineering
Support Branch

11/24/74
Date

Reviewed by: *J. C. Bryant*
J. C. Bryant, Chief
Projects Section
Reactor Construction and Engineering
Support Branch

11/24/76
Date

SUMMARY OF FINDINGS

I. Enforcement Items

None

II. Licensee Action on Previously Identified Enforcement Matters

76-4-A1 (II) QA Program Breakdown - Documentation of Radiographs and Weld History (Units 1 and 2)

IE:II has reviewed the licensee's response and inspected the corrective actions for this item. This item is closed. (Details II, paragraph 6)

III. New Unresolved Items

76-10/1 Intake Channel - Unfavorable Gravel Conditions (10 CFR 50.55(e))(Units 1 and 2)

TVA identified the matter as a reportable item in accordance with 10 CFR 50.55(e). (Details I, paragraph 4.a)

76-10/2 Refueling and Primary Storage Water Tank Piping Tunnels Seismic Criterion (10 CFR 50.55(e)) (Units 1 and 2)

The SAR specified seismic design values were not utilized during design calculations of subject tunnels. TVA identified this matter as a reportable item in accordance with 10 CFR 50.55(e). (Details I, paragraph 4.b)

76-10/3 Weld Repair Requirements

IE:II has noted inconsistencies between contractual and procedural requirements as to what constitutes a weld repair requiring TVA approval prior to welding. (Details II, paragraph 5)

76-10/4 NSSS Supplied Stainless Steel Piping

Pressurizer surge line spool pieces will require cleaning for removal of sand and rust. (Details II, paragraph 7)

IV. Status of Previously Reported Unresolved Items

74-5/1 Valve Wall Thickness Verification Program (Units 1 and 2)

TVA informed IE:II personnel of preliminary plans relative to the valve wall thickness program. TVA will submit a formal valve wall thickness verification program that meets Region II letters of June 30, 1972 and February 16, 1973. This item remains open.

76-2/1 Instrumentation Procedures (Units 1 and 2)

The instrumentation engineering unit is being manned and instrumentation procedure requirements are being generated for incorporation into QC procedures. This item remains open.

76-4/1 QA Program Breakdown - Documentation of Radiographs and Weld History Records (10 CFR 50.55(e) (Units 1 and 2)

IE:II has reviewed the licensee's final report for this item and has inspected the implementation of the corrective actions. This item is closed. (Details II, paragraph 6)

76-6/1 GE HFA Relays - Cracked Coil Spools (10 CFR 50.55(e)) (Units 1 and 2)

Several relay coil spools have been found to be cracked and broken. TVA has identified this item to be reportable under 10 CFR 50.55(e). IE:II has received the first and second interim reports. This item remains open.

76-7/2 Status of CB&I Welding Supervisor Qualifications (Units 1 and 2)

IE:II has reviewed correspondence between CB&I and TVA concerning the qualification and certification of welding supervisors. This item will remain open pending TVA acceptance or rejection of CB&I's position on this matter. (Details II, paragraph 4)

76-8/1 IE Circular 76-01, "Crane Hoist Control - Circuit Modification"

IE:II letter to TVA dated July 29, 1976. TVA's report should be submitted within 90 days. This item remains open.

76-8/2 IE Circular 76-02, "Relay Failures - Westinghouse BF (ac) and BFA (dc) Relays"

IE:II letter to TVA dated August 18, 1976. TVA's report should be submitted within 90 days. This item remains open.

76-9/1 Westinghouse Accident Analysis (10 CFR 50.55(e)) (Units 1 and 2)

TVA identified this matter as a reportable item in accordance with 10 CFR 50.55(e). This item remains open.

76-9/2 Breakdown in Vendor QA Program (Bristol Steel and Iron Works) - Documentation (10 CFR 50.55(e)) (Units 1 and 2)

TVA identified this matter as a reportable item in accordance with 10 CFR 50.55(e). This item remains open.

V. Design Changes

None

VI. Unusual Occurrences

None

VII. Other Significant Findings

None

VIII. Management Interview

The exit interview was held on October 15, 1976, with Mr. J. C. Killian, Project Manager, members of his staff, and QA representatives of DED, DEC and OEDC. They were apprised of the findings of this inspection as noted in this report.

DETAILS I

Prepared by:

V. L. Brownlee
V. L. Brownlee, Reactor Inspector
Projects Section
Reactor Construction and Engineering
Support Branch

11/10/76
Date

Dates of Inspection: October 12-15, 1976

Reviewed by:

J. S. Bryant
J. S. Bryant, Chief
Projects Section
Reactor Construction and Engineering
Support Branch

11/10/76
Date

All information in Details I applies equally to Units 1 and 2 except where identified with a specific reactor.

1. Individuals Contacted

Tennessee Valley Authority (TVA)

Watts Bar Site

J. C. Killian - Project Manager
T. B. Northern, Jr. - Construction Engineer
J. M. Lamb - Mechanical Engineering Unit Supervisor
J. H. Purdue - Electrical Engineering Unit Supervisor
A. W. Rogers - QA Unit Supervisor - DEC
R. L. Moore - QA, Power
J. S. Colley - QA Engineer - ENDES
J. D. Shavlever - Mechanical Engineer
L. D. Bates - Mechanical Engineer
J. R. Inger - QA Engineer
H. S. Sheppard - Civil Engineer Unit Supervisor
R. E. Pearson - Electrical Engineer
L. J. Johnson - Mechanical Engineer

2. Scope

Inspection efforts included determination of status of project, control rod drive mechanism installation and followup of previously identified unresolved matters.

3. Project Status

General

Overall construction is estimated to be 49% complete. Earth excavation for the pumping station intake channel is in progress. Total site personnel number approximately 3,000.

Unit 1

Construction is estimated to be 53% complete. Containment erection is at the sixth course. Installation of the track system for handling the NSSS major components is in progress. Installation of the NSSS major component structures and supports is in progress. TVA anticipates setting of NSSS major components between November 15, and December 15, 1976.

Unit 2

Construction is estimated to be 45% complete. Reactor building crane wall and refueling canal work continues.

4. New Unresolved Items

a. Intake Channel (10 CFR 50.55(e)) (Units 1 and 2)

The intake channel was to be excavated to firm gravel at approximate elevation 665. Unfavorable gravel conditions were encountered at elevation 665. TVA is investigating.

b. Refueling and Primary Storage Water Tank Piping Tunnels - (10 CFR 50.55(e)) (Units 1 and 2)

TVA informed IE:II that seismic loads for the tunnels were not based on the SAR criteria. Reevaluation of structural design has been initiated.

5. Control Rod Drive Mechanisms - Reactor Vessel Heads (Units 1 and 2)

WBNP-QCP 4.12, Rev. 1, dated 5/6/76, "Assembly and Installation of RPV Head and Control Rod Drive Mechanisms" procedure covers the work which will be done on the reactor vessel closure head,

including installation of CRDM's, hydrostatic testing, assembly of coil stacks, installation of rod position indication coils, cooling shroud and removeable dome installation.

Discussions with the responsible engineers and craftsmen assembling the components, observation of the assembly activities, and examination of the installation check sheets and electrical measurements for the coil stack and rod position indicator coil assemblies identified no areas of departure from the QA/QC program procedures and instructions.

6. Installation of NSSS Major Components (Unit 1)

The inspector observed preparations for installation of the reactor vessel, reactor coolant pumps, steam generators, pressurizer and associated supports. The reactor vessel and steam generators have been placed near the containment building. The 600 ton ringer crane was being assembled for load testing. The reactor coolant pump casings for all four loops were set near final locations. Reactor vessel supports were being installed during the inspection.

DETAILS II

Prepared by:

S. J. Skott
J. J. Blake, Metallurgical Engineer
Engineering Support Section No. 2
Reactor Construction and Engineering
Support Branch

11/17/76
Date

B. R. Crowley
B. R. Crowley, Metallurgical Engineer
Engineering Support Section No. 2
Reactor Construction and Engineering
Support Branch

11/24/76
Date

Dates of Inspection: October 12-15, 1976

Reviewed by:

Nick Economou
A. R. Herdt, Section Chief *for*
Engineering Support Section No. 2
Reactor Construction and Engineering
Support Branch

11/24/76
Date

All information in these details applies equally to Watts Bar Units 1 and 2 except where information is identified with a specific reactor.

I. Persons Contacted

a. Tennessee Valley Authority (TVA)

J. C. Killian - Project Manager
T. B. Northern, Jr. - Construction Engineer
S. Johnson - Assistant Construction Engineer
A. W. Rogers - Site QA Construction Supervisor
J. R. Inger - Site QA Engineer
S. J. Boney - Mechanical Engineer, Welding
B. L. Majors - Construction Engineering Associate, Welding
J. D. Shanlever - Mechanical Engineer

b. Constructor Organization

Chicago Bridge and Iron (CB&I)

L. D. Wade - Welding and QA Supervisor
G. E. Rowe - QA Engineer
J. J. Chappell - Welding Supervisor

2. Scope

The primary purpose of this phase of the inspection was to observe the welding operations on the Unit 1 steel containment structure and to evaluate the status of the implementation of the corrective actions resulting from the CB&I QA breakdown which affected the welding of both containments.

The steel containments at Watts Bar are being assembled by CB&I in accordance with TVA Specification No. 1440 which requires that the fabrication, erection and testing be in accordance with ASME B&PV Code, Section III, Subsection NE, Class MC, 1971 Edition with Winter 1971 Addenda.

3. Containment (Structural Steel Welding) - Observation of Work and Work Activities (Unit 1)

During inspection of the Unit 1 containment vessel, the inspectors observed the following welding activities:

- a. Two seams ("5-6 Girth 180° - 270°" and "5-6 Girth 90° - 180°" between seams 6D and 6E) were observed at fitup. Weld location, joint preparation and alignment, and evidence of inspection verification were checked and found to be satisfactory.
- b. Two seams were observed during in-process welding. The root pass was being welded on seam "5-6 Girth 180° - 270°" and the capping layers (inside and outside) were being welded on seam "4-5 Girth 0° - 90°." Weld location, use of specified weld procedures, qualification of welders, use of specified weld material, and welding variables were checked and found to be satisfactory.
- c. The storage, issue, and control of filler materials were checked and found to be satisfactory. No uncontrolled filler materials were noted in welding areas.
- d. The inspectors observed two CB&I QC personnel (welding supervisors) inspecting containment welding full time. One inspector was assigned to the vessel seams and the other was assigned to miscellaneous supports and attachments. The QC coverage appeared to be adequate for the work in progress.

No items of noncompliance were noted in the areas inspected.

4. Containment (Structural Steel Welding) - Review of Quality Records (Unit 1)

During inspection of the Unit 1 containment vessel, the inspectors reviewed the following quality records:

- a. Records of visual and dimensional inspection, weld history, heat treatment, weld repair, and welder qualification were reviewed for seams 5A, 5E, and 5F. Welding material control records were reviewed for seams "5-6 Girth 180° - 270°" and "4-5 Girth 0° - 90°." All records checked appeared to be in conformance with applicable requirements.
- b. TVA audit No. WB-S-76-04 of CB&I was reviewed. Finding number 4 (TVA inspections of CB&I welds were not being properly documented) was selected by the inspectors for further review of corrective action. This finding appears to have been adequately corrected.
- c. CB&I nonconformance reports 70 and 96 were reviewed. The records were complete, legible, retrievable, and properly closed out.

No items of noncompliance were noted in the areas inspected. There are, however, two items which require further resolution and are considered to be unresolved as discussed below and in paragraph 5.

As a part of this inspection, the inspectors reviewed the status of unresolved item No. 76-7/2 concerning CB&I welding supervisor qualifications. The inspectors were shown a CB&I memo to the effect that all welding supervisors were trained by CB&I but that the CB&I training plan does not require formal documentation of the training nor certification of the welding supervisor's capability to conduct fit-up inspections, in process welding checks or final visual inspection of welds. In that TVA had not formally commented on the CB&I response, this item will remain open.

5. Requirements for Repair Welding Documentation

During a review of containment welding requirements as detailed in TVA Specification No. 1440 for the containment vessel and CB&I's QA Manual, the inspector noted some apparent inconsistencies in the area of repair welding. The items noted were as follows:

- a. TVA Specification 1440, Paragraph 15.5.2 provides a definition of major repairs which require the approval of TVA, Knoxville prior to repair welding. By this definition major repairs in welds are:
 - (1) The repair of any crack other than crater cracks.
 - (2) The repair of defects which are indicative of either a fundamental materials problem or of a process out of control.
- b. CB&I QA Manual, Division 4, Paragraph 14.4.4.1.A.1 provides definition of Category I - nonconformities in Types A and B material ("A" material being pressure retaining material and "B" material being major or specifically tested attachments) and welds to type A material. The first definition in this category is that all cracks, except crater cracks or cracks in root layer metal.
- c. CB&I QA Manual, Division 4, Paragraph 14.4.1.2 provides the following exception to the requirements for dispositioning repair activities: "Corrections made to welds or to weld overlays during the course of deposition (except those indicating a fundamental materials or process out of control) need not be reported as a nonconformity provided the completed examination document indicates conformance. Deposition is defined as: welding performed prior to initial QA acceptance signoff on the traveler or check list."
- d. CB&I QA Manual, Division 4, Paragraph 7.5.7(1)(F) supports the position of item c. above in defining the documentation of repairs to radiographed seams as follows: "Repairs to radiographed seams are documented as follows: The location and identification of unacceptable defects are on the original radiograph"
- e. CB&I QA Manual, Supplement I, Paragraph 2.4. This supplement issued in June 1976 reemphasizes requirements from TVA Specification 1440. Paragraph 2.4 repeats the requirements of Paragraph 15.5.2 of the specification.

The review of the requirements shows that while TVA seems to require categorization of root cracks or cracking in intermediate layers to be considered as major repairs as shown in item a. above, CB&I shows three separate positions in its QA Manual.

- a. The supplement paragraph listed in item 3. above parallels the TVA specification.
- b. The definition of Category I nonconformities provides a slightly relaxed position on cracks in that it lists, as exceptions, root cracks as well as crater cracks, see item b. above.
- c. The QA Manual description of exceptions to nonconformance reporting requirements as shown in item c. above appears to eliminate any type of cracks from reporting requirements provided they are discovered prior to QA acceptance of the weld. This position is supported by item d. above where the mechanism for documentation of repairs is the original radiograph.

After a discussion of these requirements with CB&I QA personnel, CB&I elected to document the problem via nonconformance report No. 122 requesting clarification of the paragraphs listed above as well as paragraph 1.1.3 of their General Repair Procedure No. 10B for these containment contracts.

The inspector informed the licensee that the conflicts within the reporting and documentation requirements for repair welding would be considered an unresolved item until TVA and CB&I reach an agreement and provide clarification to the CB&I QA Manual.

6. CB&I QA BREAKDOWN

This item has been the subject of a construction deficiency (50.55(e), unresolved item No. 76-4/1, which dealt primarily with the contractor's (CB&I) QA problems and an enforcement item, No. 76-4-A1(II), which dealt primarily with the fact that the licensee's surveillance program failed to detect the QA breakdown.

The inspectors reviewed the licensee's final report concerning the investigation into the causes and the scope of the problem as well as discussing the immediate and long term corrective actions of both the licensee and his contractor.

During this inspection of the welding of the Unit 1 containment, the inspectors reviewed the implementation of the long term corrective actions in the surveillance activities of the licensee and the QA/QC activities of the contractor. The inspectors were satisfied that the program was being implemented and that problems were being brought to the attention of the proper levels of management by the QA/QC personnel involved.

As a result of this review and inspection the unresolved item and the enforcement item are considered to be closed.

7. Independent Inspection Effort (Units 1 and 2)

During discussion with personnel at the site, the inspectors learned that a problem had been identified concerning the NSSS supplied stainless steel piping. The reported problem involved the pressurizer surge line assemblies for both units, and consisted of the discovery of a considerable amount of sand left over from the hot forming process and extensive surface contamination in the form of red rust.

A review of the documentation for the piping showed that the spool pieces involved had been fabricated for Westinghouse by Southwest Fabricating and Welding Company, Inc., in accordance with ASME B&PV Code, Section III, 1971 Edition with Winter 1971 Addenda. This documentation consisted of NPP-1 Data Reports dated June 26, 1975.

Documentation of the rusting problem included both Westinghouse and TVA nonconformance reports describing the conditions, with the final resolution being to clean the pipe at the site and restore it to an acceptable condition. In addition to this restoration cleaning, the TVA nonconformance report, recommended disposition, requires an investigation of the shop pickling and hot bending to determine possible ramifications.

After inspecting the pipe spool pieces involved and reviewing the documentation discussed above, the inspectors discussed the problem with the licensee. The inspectors informed the licensee that the disposition of the nonconforming piping spools was considered to be an unresolved item which would be inspected during a future IE:II inspection in that the problem they had experienced was similar in nature to problems involving stainless steel pipe at other sites.

DETAILS III

Prepared by:

W. B. Swan
W. B. Swan, Reactor Inspector
Engineering Support Section No. 1
Reactor Construction and Engineering
Support Branch

11/13/76
Date

Dates of Inspection: October 12-15, 1976

Reviewed by:

T. E. Conlon
T. E. Conlon, Chief
Engineering Support Section No. 1
Reactor Construction and Engineering
Support Branch

11/17/76
Date

All information in Details III applies equally to Units 1 and 2 except where information is identified with a specific reactor.

1. Individuals Contacted

a. Tennessee Valley Authority (TVA)

J. C. Killian - Project Manager
T. B. Northern, Jr. - Construction Engineer
A. R. White - General Construction Superintendent
R. L. Heatherly - Supervisor, QC and Records Unit
A. W. Rogers - Supervisor, Site QA Unit, DEC QA Staff
J. D. Shanlever - Mechanical Engineer
J. M. Lamb - Supervisor, Mechanical Engineering Unit
H. S. Sheppard - Supervisor, Civil Engineering Unit

2. Scope of Inspection

The principal effort of the inspection was directed toward determining the adequacy of QC procedures for installing major supports and NSSS equipment. Progress of concrete work was inspected in the reactor building, the diesel generator building, auxiliary building and control building. Excavation and backfill operations on the intake channel for the intake pumping station were observed.

3. Containment (Steel Structures and Supports) Review of Quality Assurance Implementing Procedures

Installation of Supports For Pressurizer

The details of installation and acceptance criteria for the pressurizer supports were found in the following documents:

- a. WBNP Field Instruction M-11
- b. TVA - DED Drawing 48N419 - Pressurizer Supports
- c. W Pressurizer Manual TM-1440-C255
- d. Bristol Steel and Iron Works, Drawings:
E.419, Upper Pressurizer Supports
E.419, Sheet 15, Lower Pressurizer Supports
- e. TVA-WBNP Drawing 108K10316 Pressurizer Installation Procedure

Work Status: No installation work had been performed in Unit 2. In Unit 1 the bolt circle assembly had been embedded in the concrete of the pressurizer support haunch. Placement of the upper support ring over the bolts was awaiting an engineering decision as to precise orientation.

Installation and quality control procedures appeared to be adequate. The inspection findings are clear.

4. Major NSSS Equipment Installation, Review of Quality Assurance Implementing Procedures

Procedures for installation and quality control were sampled for the reactor vessel, reactor vessel internals, reactor coolant pump casings, steam generators and pressurizer.

No equipment had been installed. Preparations are underway for a planned mid-December installation of the reactor vessel in Unit 1. The lighter equipment items will then be installed utilizing the cranes and facilities load tested for the reactor vessel installation. The reactor coolant pump casings had already been moved into Unit 1 and stored in their transport structures near their points of installation.

The basic procedure for these installations was reviewed. It is Watts Bar Field Instruction M-11 "Installation of Nuclear Steam Supply System Major Components, Rev. 2" dated October 6, 1976. It references and incorporates TVA procedure manuals and drawings, Westinghouse drawings and equipment manuals, Bristol Steel and Iron Works drawings of supports and anchors, Paul Monroe Hydraulics, Inc. drawings of shock suppressor assembly and installation, and Franklin Machine Works, Inc. drawings of the construction polar crane and trucks system and the construction gantry.

This procedure is applicable to the installation of the following: (a) material furnished by Westinghouse on TVA Contract 71C60-54114-1, reactor vessel, steam generators, pressurizer, reactor coolant pump casings, reactor vessel head, and reactor internals; (b) support and restraint systems for the above equipment procured from Bristol Steel and Iron Works, TVA Contract 74C54-85879, and (c) steam generator hydraulic shock suppressors procured from Paul Monroe Hydraulic, Inc., Contract 75K35-83194.

Note: Reactor internals are to be placed only inside refueling cavity. Final placement of reactor internals will be covered under later procedures. Installation of imbedded anchors and bolts is not included in this procedure. Installation of reactor coolant pump internals and motors are not within the scope of this procedure. They will be installed by a Westinghouse procedure and under the supervision of a Westinghouse representative.

Several of the referenced TVA-WBNP drawings had not received final approval:

108K10312, Reactor Vessel Installation Procedure, Sheets 1 to 4

108K10311, Steam Generator Installation Procedure, Sheets 1-3

MIQP 1-68-F-1 Equipment Installation Operations Sheets had not been completely detailed.

Drawings for the steam generator upending arrangement and the upending frame details had not been prepared by the office engineering group.

Acceptance criteria for the handling and installation of each equipment item are called out in F.I. M-11 and the referenced documents.

The inspection status is clear for the status of the work, facilities and documents inspected.

5. Independent Inspection Effort

The inspector observed preparations for concrete placements in the second level of the diesel generator building and in the shield wall and polar crane wall in Unit 2. Recently placed concrete in the diesel generator building and in the operations level floor of Unit 1 reactor building was inspected.

At the intake channel for the intake pumping station excavation operations were observed. It was noted that an area under the easterly wall slope had been over excavated to remove material judged by the engineers to not meet design requirements. TVA gave verbal notice that this condition would be reported as a possible 50.55(e) item. The over excavated area was being backfilled with compacted crushed rock.

The civil drawings for the intake channel were inspected. It was determined that WBNP-QCPS-2.0, 2.2 and 2.6 were being used for control of backfill. These procedures had been reviewed during previous inspections.

The findings were clear of the work observed and the drawings inspected.

6. TVA Inquiry on Use of Support Items With Documentation Deficiencies

At the exit interview, the program manager stated that the support columns for the Unit 1 steam generators had not been released from the Bristol shop because of documentation deficiencies. No material or dimensional deficiency was known. He stated that unavailability of these and certain other Bristol hardware had caused long delays and expensive workaroud measures for the project. He asked if NRC would consent to the use of the steam generator support columns for equipment installation before the documentation deficiencies were cleared.

The inspector stated that he was unaware of a prohibition against use of the hardware to expedite placement and positioning of equipment as long as traceability was maintained, the discrepant pieces tagged and assurance was provided that the pieces could be removed and replaced if the documentation deficiencies could not be resolved.