UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA STREET, N.W., SUITE 2900
ATLANTA, GEORGIA 30323-0199

Report Nos.: 50-390/95-41 and 50-391/95-41

Applicant: Tennessee Valley Authority
6N 38A Lookout Place
1101 Market Street
Chattanooga, TN 37402-2801

Docket Nos.: 50-390 and 50-391 License Nos.: CPPR-91 and CPPR-92

Facility Name: Watts Bar Units 1 and 2

Inspection Conducted: June 11 through July 8, 1995

Inspector: _____ 8/1/95
for P. K. Van Doorn, Senior Resident Inspector Date Signed

Other Inspectors: S. Cahill and F. Jape

NRC Contractor Inspectors: J. Agles (paragraphs 2.1, 3.1)
J. Cummins (paragraphs 7.1, 7.2, Attachment A)
J. Greene (paragraphs 3.2, 4.1, 4.2, 18.1)
B. Smith (paragraphs 7.1, 7.2, Attachment A)

Approved by: _____ 8/2/95
for C. Julian, Chief Date Signed
TVA Operations Branch
Division of Reactor Projects

SUMMARY

Scope:

This routine resident inspection was conducted in the areas of preoperational test program implementation verification, preoperational test procedure review, preoperational test results evaluation, plant operations, self-assessment activities, operations procedure reviews, system turnover, maintenance observations, surveillance observations, emergency drill, procedure program, master issues list reviews, technical specification review, safety committee activity, warehousing of material, procurement program, and actions taken in response to previous inspection findings.

Enclosure

Results:

Preoperational Test Program: A total of two preoperational test instructions (PTIs) were reviewed during the inspection period. No significant problems were noted with the procedures (paragraph 3). One unresolved item was identified regarding failure to specify post-maintenance testing requirements on a work document (paragraph 3.1).

Preoperational Test Results Evaluation: A total of two test results packages were reviewed. Test results packages were technically adequate; however, one administrative issue was identified (paragraph 4).

Previous Inspection Findings: Actions on previous inspection findings resulted in the closure of three items (paragraph 18.0).

Operations: Generally, operators performed acceptably. Examples of incomplete logging were noted. Control board walkdowns disclosed two instances of out-of-service equipment of which operators were not aware. The assistant unit operators were inappropriately bumping room cooler fans during rounds. This was being corrected. Good operator actions and conservatism were noted during the reactor coolant system draindown.

Self-Assessment: The applicant's TEAM meetings continue to be a viable method of communicating information to personnel. A management review of a chemistry event was conducted properly.

Operating Procedures: Three system operating instructions were reviewed. The procedures were technically viable; however, some weaknesses were found, and comments for improvement were provided. Weaknesses included poor valve checklist location information, inconsistent checklists, and failure to address fully a previous concern regarding caution notes.

System Turnover: One system (Chemical Volume Control System) was reviewed. No problems were identified.

Maintenance: Several maintenance activities were observed. Procedures were appropriately followed. A construction person was observed standing on a 3/4-inch pipe. Maintenance personnel concurrently noted the problem and took immediate control of the situation exhibiting good ownership of plant equipment.

Surveillance: Several surveillances were observed. Personnel appropriately followed procedures. One example involving a lack of ownership for air operated valve throttle valves was noted. Also, a lack of strong technical leadership was noted during a safety injection flow test.

Emergency Drill: The drill was effective, and appropriate comments for improvement were noted.

Procedure Program: The applicant has adequately implemented a procedure system program.

Master Issues List: The applicant has established adequate controls regarding deferred modifications and has not deferred any safety significant modifications.

Technical Specification Review: A review of Technical Specification administrative requirements found no problems.

Safety Committee Activity: The applicant has implemented a satisfactory program regarding safety committees including the Nuclear Safety Review Board, the Independent Safety Engineering Group, and the Plant Operations Review Committee.

Material Storage and Procurement: No problems were identified in this area.

REPORT DETAILS

1.0 Persons Contacted

1.1 Applicant Employees:

*R. Baron, General Manager, Nuclear Assurance and Licensing
*M. Bajestani, Startup Manager
R. Beecken, Maintenance and Modifications Manager
J. Cox, Radiological Control/Chemistry Manager
S. Crowe, Quality Control Manager
W. Elliott, Engineering Manager
D. Herrin, Licensing Engineer
*R. Huston, Rockville Office Manager
D. Kehoe, Site Quality Manager
*D. Koehl, Technical Support Manager
S. Krupski, Instrument Maintenance Manager
D. Kulisek, Operations Support Manager
*D. Malone, Quality Engineering Manager
R. Mende, Operations Manager
B. Obrien, Electrical Maintenance Supervisor
*P. Pace, Compliance Licensing Manager
R. Purcell, Plant Manager
J. Rupert, Engineering and Materials Manager
J. Scalice, Site Vice President
*B. Schofield, Licensing Manager
*W. Skiba, Trending Manager
*S. Spencer, Site Quality Manager
D. Stewart, Site Support Manager
T. Stockdale, Operations Superintendent
*J. Symonds, Construction Compliance Manager
C. Touchstone, Licensing Engineer
D. Voeller, Chemistry Manager
*J. Vorees, Regulatory Licensing Manager
J. Wallace, Human Resources Manager
*O. Zeringue, Senior Vice President, Nuclear Operations

Other applicant employees contacted during this inspection included numerous craftsmen, engineers, operators, and administrative personnel.

1.2 NRC Personnel:

*S. Cahill
*P. Fredrickson
F. Jape
*J. Jaudon
*C. Julian
*P. Van Doorn
*G. Walton

1.3 NRC Contractors:

J. Agles
J. Cummins
R. Gilbert
J. Greene
B. Smith

*Attended exit interview

Acronyms and initialisms used throughout this report are listed in the last paragraph.

2.0 PREOPERATIONAL TEST PROGRAM IMPLEMENTATION VERIFICATION (71302)

The inspector conducted tours of various areas of the facility to assess equipment conditions, plant conditions, and adherence to regulatory requirements. This included observation of equipment for damage or other material condition problems, control of fire hazards, system cleanliness controls, equipment tagging and control of unauthorized work on turned over systems. The inspector verified that the applicant had established and implemented the following:

- a method for verifying that a test procedure is current before its use;
- methods to assure personnel involved in the conduct of a test are knowledgeable of the test procedures;
- methods to change test procedures (both major and minor) during the conduct of testing;
- criteria for interruption of a test and continuation of an interrupted test;
- methods to coordinate the conduct of testing;
- methods for identifying deficiencies, documenting their resolutions, and documenting retesting;
- method for maintaining current test schedule;
- methods to assure that test and measurement equipment is calibrated; and
- methods to assure independent review of procedures and test results such as the JTG.

Specific test procedures reviewed are documented in paragraph 3.

In addition, selected specific activities were observed to assure conformance to administrative and procedural requirements and to assure these activities

were being conducted by knowledgeable and qualified personnel. Specific activities reviewed are described in paragraphs 9 and 10.

2.1 Review of TDNs for Reportability Screening

Utilizing test deficiencies generated during the performance of Procedure PTI-262-01, a review was performed of the effectiveness of the reportability screening process required by Step 2.4.1.4 of Procedure SMP-14, Test Deficiencies. This screening process is intended to evaluate the test deficiency to determine if the reportability criteria of 10 CFR 50.55(e) or 10 CFR 21 could be applicable. Those test deficiencies meeting the screening criteria (Appendix H of Procedure SMP-14) are considered potentially reportable and are then forwarded to the applicant's licensing organization for a formal reportability review. The screen is an essential and important process because those screened out as not being potentially reportable do not get a formal reportability review. Based on review of the approximately 85 TDNs associated with Procedure PTI-262-01, 15 TDNs were identified by the inspector that appeared to have been incorrectly screened. This review was discussed with cognizant SUT personnel and prompt measures were taken to independently repeat the review. The applicant's review concluded that 12 of the TDNs were potentially in error and would require additional review.

PER WBPER950153 was immediately initiated to determine and document the cause and total scope of the problem. Reviews conducted under the PER indicated that the problem TDNs associated with Procedure PTI-262-01 were attributable to a single individual. To establish the extent of the problem, 159 TDNs (written after the PER was initiated) were reviewed, and no screening errors were found. In addition, all TDNs written from the first of the year (in 1995) until the date of PER initiation were reviewed. This population totaled 303 TDNs, and of these three issues were identified that had not been properly screened. These issues were slow charging rate of the EDG air start reservoirs (four TDNs); CCS pumps below vendor's pump curve (two TDNs); and flood mode boration pump below vendor pump curve (one TDN). The improper screening of these issues occurred primarily because the reviewer had anticipated that Engineering would accept these conditions as-is. Although this did actually turn out to be the case, the screen should have been conducted based on the information that was available at the time. The inspector considered these three cases to be relatively minor.

Based on the applicant's review, it was concluded that the inspector's concern was largely confined to Procedure PTI-262-01 TDNs screened by the single individual discussed above. Detailed additional review of the 12 TDNs in question indicated that three were clearly incorrect due to improperly answering the screening questions. One was incorrect because it was initially classified as nonsafety-related by the initiator. One was incorrect because it was based on an assumption about the likely corrective action. Two of the TDNs screened (though initially correct) were invalidated by changes to the TDNs after the screening was performed. Based on this review, the applicant considered the entire remaining population of TDNs screened by this individual to be suspect. Corrective action involved identifying this population (47 TDNs), reperforming the screens and, where necessary (3 TDNs), forwarding the TDNs to Licensing for a formal reportability determination. Based on the

re-performed screens and the reportability reviews conducted by Licensing, none of the TDNs was considered by the applicant to be reportable. Actions taken to preclude recurrence of improper TDN screening included:

- The screening errors identified by PER WBPER950153 have been reviewed with all SUT engineers.

- The engineer involved in improperly classifying a TDN as nonsafety-related was counselled.

- The engineer accounting for the bulk of the problem TDN screening is no longer assigned to SUT, and his certifications to perform reportability screening has been revoked.

- Procedure SMP-14 was changed to emphasize that the final Level III review of completed TDNs must include a review of the original reportability screening to ensure it remains valid when considering the final corrective actions for the TDN.

Based on the review of PER WBPER950153 and the corrective actions taken, the inspector's concerns have been resolved.

No violations or deviations were identified.

3.0 PREOPERATIONAL TEST PROCEDURE REVIEW (70300)

The inspectors utilized the inspection guidance of RG 1.68, Initial Test Programs for Water-Cooled Nuclear Power Plants, Revision 2, which provides criteria for a preoperational test program. It requires that preoperational tests be designed to satisfy the test objectives, contain appropriate acceptance criteria, and require the documentation of sufficient information to permit adequate evaluation of the test results. The inspectors also utilized information contained in such documents as FSAR Chapter 14, Initial Test Program, and other FSAR sections, applicant design drawings and systems descriptions, and engineering output documents.

3.1 PTI-063-06, Safety Injection System Check Valve Test, Revision 0, Supplement 1

This test supplement will be utilized during HFT 2 to verify the leak rate of check valve 1-CKV-63-555, SIS L3 CL INJ CHECK. This valve did not pass the individual valve acceptance criteria (1/2 gpm per nominal inch of valve diameter) during HFT 1, and this was assigned as JTG Action Item 94-45-1. Subsequent to HFT 1, the valve was reworked under WID 94-11431-00 by replacing the internal disc with a new part. Due to the nature of the work performed on this valve, the inspector considered that virtually all of the previous testing conducted under Procedure PTI-063-06, Revision 0, that applied to this valve, was potentially invalidated. This original test had the following objectives:

- verify for the emergency core cooling system check valves (that see higher than ambient temperatures during power operation) that they will function at the higher temperatures;

- verify acceptable leakage rate for RCS pressure isolation valves; leakage is in accordance with TS Surveillance 3.4.14.1;

- verify that RCS operational leakage is limited to 10 gpm identified leakage in accordance with TS LCO 3.4.13.

Test Objective 1 did not apply because valve 555 is a 2-inch check valve connecting to a 10-inch pipe and is isolated from the primary plant by a 10-inch SI check valve (valve 562). This configuration makes it unlikely that check valve 555 will see higher than ambient temperatures. Test Objective 2 is being reverified by this supplement. The total leakage of Test Objective 3 is not reverified by Supplement 1. Addition of this new leakage for valve 555 to the old leak rates of the other valves would not yield any useful information. In addition, this technical specification will be verified by plant surveillance instructions prior to entering Mode 2.

The inspector confirmed that Supplement 1 will test the valve utilizing the same test method as utilized in Procedure PTI-063-06, Revision 0, and is ready to support HFT 2. However, it was also noted that this method is not being utilized by equivalent SI 1-SI-0-906, Primary Boundary Isolation Valve Leak Test, Revision 2. Since valve 555 is isolated from the primary plant by another check valve, the RCS cannot be utilized as the source of pressure for performing the leak check. Procedure PTI-063-06 utilizes a safety injection pump to pressurize between the check valves to approximately 1400 psig while the SI utilizes cold leg accumulator pressure of approximately 600 psig (both procedures normalize this leakage to normal operating procedure). The use of the safety injection pump requires valve manipulations that would prevent this pump from fulfilling its safety function without operator action (LCO must be entered); therefore, the applicant's technical support group has elected not to use this pressure source. In addition, the SI performs the test in a manner that is even more conservative than the PTI. It is conservative in that the leakage measured for an individual valve may be higher than the actual leakage. The inspector considered this acceptable; however, there was concern on how this leakage is utilized to establish identified leakage as defined by the TS. The concern is related to the limits on identified leakage (10 gpm maximum) and unidentified leakage (1 gpm maximum). These limits make it imperative that identified leakage not be over stated (i.e., actual identified leakage smaller than calculated) since this could potentially mask unidentified leakage and result in continued plant operation with greater than 1 gpm unidentified leakage. This concern will be reviewed during the next inspection period.

An additional concern is that WID 94-11431-00, utilized to rework check valve 555, did not specify a post-maintenance test, and this was concurred in by two members of the SUT organization. This does not appear to be the intent of Procedure SSP-6.02, Maintenance Management System, Revision 15. Procedure SSP-6.02, Maintenance Management System, paragraph 2.2.4.M.2 states, "Refer to Plant Administrative Instruction PAI-10.05, Post-Maintenance Test Program, to

determine PMT requirements. Procedure PAI-10.05, Appendix B, page 69 of 75 specifies a seat leakage test for check valves following disassembly.

WO 94-11431-00 (completed and closed on September 19, 1994) removed and replaced the disc of safety injection check valve WBN-CKV-063-0555-S and did not specify any post-maintenance testing to ensure the valve would perform satisfactorily in service.

When questioned on this matter, the applicant responded that this problem had been previously identified by TVA and documented in PER WBPER940708. NRC became aware of this late in the inspection period and began a review of PER WBPER940708. Revision 2 of PER WBPER940708 included previously existing PER WBPER940474 and identified numerous examples where work was performed by PCG, i.e., construction group, and no PMT was specified or apparently performed. That document is in closed status but consists of 738 pages, is very complex, and does not clearly show that extent of condition and corrective action were adequate to address the numerous cases where adequate post-maintenance testing was not specified. This matter will continue to be reviewed by the NRC during future inspections. The unresolved item is identified as URI 50-390/95-41-01, Failure to Properly Identify Post-Maintenance Testing.

3.2 PTI-999-02, Thermal Expansion, Revision 0, Supplement 1

The objective of Procedure PTI-999-02 was to demonstrate that selected components of the reactor coolant system and feedwater system experience thermal expansion consistent with design when operating temperatures are greater than 200 degrees F. This procedure supplement is designed to recheck those components which were problem areas during HFT 1 performed in mid-1994.

The procedure was reviewed to determine if all the deficiencies identified during the initial performance of Procedure PTI-999-01 were captured by this supplement. The inspector located TDN-94-2166 which documented those deficiencies. The inspector found it extremely difficult to determine the exact scope of Procedure PTI-999-02, Supplement 1. The procedure referred to DCN W-31945 and to DCN Q-33818 in Section 2.0, References. The inspector concluded that although the technical information was available in these documents, it was not conducive to test conduct nor was it included as part of the test procedure. This weakness was presented to the applicant for discussion. The applicant pointed out that data sheets had been prepared from the information contained in the DCNs, and the applicant then agreed to attach those to the procedure as part of a CN. The inspector reviewed the data sheets and concluded the change would provide adequate definition of the procedure scope to resolve his concerns. The inspector is also satisfied that the test will provide adequate retesting to resolve the deficiencies identified during the original testing.

Based on this review and the resolution to comments as noted above, the inspector concluded that Procedure PTI-999-02 was technically adequate and satisfied the test objectives.

Within the areas examined, no violations or deviations were identified.

4.0 PREOPERATIONAL TEST RESULTS EVALUATION (70400)

4.1 PTI-067-01, ERCW System Test, Revision 0

The objective of Procedure PTI-067-01 was to demonstrate the design response of valves and pump breakers to various safety-related signals such as safety injection, loss of offsite power, and containment isolation. In addition, valve stroke times were verified, the ERCW pumps sequential timer operation was verified, and valve control logic and interlocks were functionally demonstrated.

The inspector reviewed the test results package as described below:

- reviewed the test data sheets to assure the actual recorded data substantiated that the acceptance criteria were met;

- reviewed the test logs to verify satisfactory test implementation and to assure all deficiencies identified were properly documented on TDNs;

- reviewed the TDNs and the disposition associated with each to determine if the corrective action was satisfactory and also evaluated the retest evaluations to assure retests were prescribed when necessary; and

- reviewed the procedure retests for proper implementation.

The inspector concluded that the test and retest data contained in the test results package provided adequate documentation to substantiate that the test objectives were met. The TDNs were properly resolved, and the CNs were properly incorporated. The inspector concluded that Procedure PTI-67-01 test results were satisfactory for the areas reviewed.

4.2 PTI-067-03, ERCW Valve Logic Test, Revision 0

The objective of Procedure PTI-067-03 was to demonstrate the capability of each train of the essential raw cooling water system to supply required cooling water flow to assigned loads in all modes of operation. Specifically, the test was designed to verify manual and automatic controls, interlocks, instrumentation, and time response associated with the non-safeguard valves. Additionally, the test verified ERCW pump response time and the function of the screen wash pumps and traveling screens. The inspector's review of the test results focused on the ERCW pump response testing and on the valve stroke testing.

The pump test required each ERCW pump to start and achieve greater than or equal to 10,200 gpm at a total dynamic head of greater than or equal to 235 feet within 20 seconds of breaker closure. The inspector reviewed the strip chart data in detail and concluded that, in most cases, the pumps attained the required flow and head in less than 20 seconds but then failed the criteria within seconds later. For example, ERCW Pump E-B reached 10,300 gpm/234.5 ft TDH at 13.06 seconds but fell to 10,100 gpm/229.9 ft TDH at 14.66 seconds. (Note that the 234.5 ft TDH is less than required; however, this was identified by a TDN and later found acceptable by Engineering.) The inspector

found no technical basis in the test results package to accept this phenomenon, i.e., the cycling above and below the acceptance criteria, as not being detrimental to the pump's ability to function as designed. This matter was brought to the attention of SUT management for resolution.

The applicant responded by committing to provide a technical basis for the acceptance of the test results. This technical basis will be made a permanent part of the test results package as a supplement or other suitable method. The inspector finds this an acceptable resolution to his concern and will review the supplement during a future inspection.

The valve stroke time testing required each of the prescribed ERCW valves to open or close, as appropriate, in accordance with design. The inspector noted that all but two valves passed the acceptance criteria. The two valves which failed, 0-FCV-67-205A and 0-FCV-67-208B, were dispositioned use-as-is by Engineering in DCN 36659-A. The inspector concluded that the test results for this section of the test were satisfactory.

Based on the review of Procedure PTI-67-03 test results package and the information provided by the applicant, the inspector concluded that the test objectives had been achieved. In addition, with the addition of the technical justification for the pump test results into the test package, the documentation will substantiate the design function of the equipment tested.

Within the areas examined, no violations or deviations were identified.

5.0 PLANT OPERATIONS

The inspector reviewed plant operations during the reporting period to verify conformance with applicable requirements which are delineated in Procedure SSP-12.01, Conduct of Operations, Revision 6. This included control room observations and review of operations logs. Operators were professional in that control room access was adequately controlled, communications were generally thorough with good use of repeat backs, and alarm response was good.

The inspector reviewed the Limited Condition for Operation Tracking Log and ensured the applicant was actively maintaining operability status on designated systems in preparation for HFT. The inspector observed several testing and evolution briefings between Operations and plant personnel. The inspector observed the operating crews initiate numerous procedure CNs to correct deficiencies when initially performing system procedures. The inspector reviewed operator logs for consistency and completeness. The inspector identified several instances where significant plant system changes or responses occurred and were not logged. The initiation of evolutions was often logged but not the corresponding termination. The inspector relayed these observations to applicant management for correction.

The inspector observed that the lines of communication between management and the operating crews were sometimes weak regarding schedule priorities. The shift crew was often not aware of system scheduling priorities under their control and significant work activities affecting their system manipulations. One example was the replacement of a valve controller on PCV-62-81, the

letdown backpressure control valve. During the previous day, the crew had erroneously thought that FCV-62-83, the residual heat removal letdown control valve, had valve controller problems. The work on PCV-62-81 valve was not listed on the schedule and was not conveyed in advance to the shift crew. As a result, the crew was delayed in performing a planned evolution to fill the letdown system. These deficiencies were discussed with Operations management, who are working to improve communications with the shift crews.

5.1 Control Board Walkdowns

The inspector continually verified system alignments by performing control board walkdowns. The inspector identified to the control room operators that handswitch 1-67-93A, CRDM CLR C-A OUTLET TCV, did not have any lit position indication lights. The UO verified that the light bulbs were functional and then dispatched an AUO to verify the valve power supply alignment. The AUO discovered that the power supply was de-energized and tagged by a hold order. Although system 67, Emergency Raw Cooling Water, was not turned over to the operations department, the lack of a hold order tag was contrary to the requirements of Section 2.2.H of Procedure SSP-12.03, Equipment Clearance Program, Revision 11, which requires all points of control for a component to be tagged. The inspector verified that the UO added a tag for HS-67-93A on Hold Order 1-95-030-1491. The inspector also identified a malfunctioning flowmeter for #3 thermal barrier component cooling system flow. The UO initiated a work request. The inspector concluded that the shift operators should question and resolve discrepancies on their boards. The large volume of ongoing work apparently distracts the operators from taking complete ownership of the main control boards.

5.2 RCS Draindown Observations

The inspector observed the crew briefing and preparation for filling the letdown piping and lowering RCS water level below 720 feet to support reactor coolant pump coupling. The inspector questioned the ASOS regarding configuration control of his systems prior to performing the evolution. The ASOS responded that system valve status checklists had been performed several weeks prior as part of system turnover and that the RCS level instrumentation was placed into service by procedure. The inspector verified the noted checklists were present and completed. When attempting to perform the evolution, the crew observed a disparity in RCS level indications and immediately stopped the draindown. They discovered that valves 1-ISV-68-1107 and 1108, the two root isolation valves to level gage 68-399, were closed. This line also supplied the reference legs to the narrow and wide range mid-loop level instrumentation (LT-68-399A and B). The only unaffected level indication the crew had in service was a tygon tube (without a calibrated scale) inside containment, attached at a loop drain. The applicant restored the valves, verified instrument performance, and initiated an incident investigation. The investigation revealed that another source of level discrepancies could be attributed to a differential pressure between the pressurizer and reactor vessel head when the RCS loops were filled. The differential pressure existed because the vessel head volume was vented but the pressurizer was not. The applicant corrected this by venting the pressurizer to atmosphere to ensure equal variable leg pressures for the level

instruments. The applicant has been unable to determine how the root valves were closed. A PER was appropriately initiated.

5.3 Operator Rounds Observations

The inspectors accompanied the auxiliary building and control building AUOs on their rounds to observe daily routines. The inspector observed that the AUOs were being sensitive to borated water leakage and were properly processing their identification per TI-31.23, Evaluation of Corrosion Due to Borated Water Leaks, Revision 0, as primary systems are filled and borated. The inspectors observed the AUO consistently log work requests as required and maintain communications with the unit operator. The inspector noted that the guidance given in 1-PI-OPS-1-AB, Auxiliary Building AUO Work Station Responsibilities and Checksheets, Revision 0, did not describe how to check the status of a safety-related pump room cooler that was in standby. The inspectors observed some AUOs momentarily cause each fan to run to verify the fan had power and freely rotated. This practice would repeatedly cycle the motor through a high starting current cycle, which could result in long term motor degradation. The inspector also noted that the minimum RHR pump suction pressure specification was calculated for a lineup to the refueling water storage tank. The RHR system was aligned to take a suction on the reactor coolant loops and consequently was below the minimum specification. Guidance could be provided to enable the AUO to determine proper operating conditions in alternative, but common lineups. The inspectors also identified other minor logsheet discrepancies which were discussed with applicant procedure writers for correction. The inspectors observed that several pieces of operating equipment did not have acceptance values for the logged parameters. The inspectors discussed this with operations management, who were aware of the deficiency and were pursuing resolution as baseline values are obtained with operating experience. The inspectors also observed that several ice condenser air handling units had plugged drains and were leaking down on the deck, resulting in ice on intermediate deck doors of the ice condenser, impacting their operability. The applicant was aware of these problems and was pursuing resolution to ensure operability.

5.4 Labeling Program

The inspector reviewed the current equipment labeling program. Requirements are contained in Procedure SSP-2.52, Replacement and Upgrade of Plant Component Identification Tagging and Labeling, Revision 5. Personnel are required to be familiar with the site program, plant safety requirements, reading drawings, and precautions to protect plant equipment. The inspector reviewed the program, held discussions with personnel managing the program, and reviewed a labeling instructions and lessons learned document. Seven contract personnel are being used to implement the label program. One is a former design engineer from WBN, one is a former AUO from WBN, and five are from another station, where they were responsible for implementing the labeling program. Label management personnel stated that they required these personnel to study the program, perform on-the-job training including actual installation while being observed, and receive the site general employee training. In addition, the above noted instruction sheet is distributed to personnel. The instructions contain various precautions and highlights of

problems/lessons learned. In addition, our NRC inspections have shown that field labeling continues to be a strength.

Within the areas examined, no violations or deviations were identified.

6.0 EVALUATION OF APPLICANT SELF-ASSESSMENT CAPABILITY (40500)

6.1 TEAM Meeting

The inspector observed one of the fourth series of TEAM meetings. The applicant periodically has conducted these meetings to highlight expectations, provide important information for upcoming milestones and seek feedback from personnel. The fourth series was an interdepartmental meeting to help develop teamwork, highlight HFT 2 expectations, and provide information regarding security and radiation control lockdowns. The meeting was well organized and information was adequately disseminated.

6.2 PERP Review

The inspector attended the PERP for Incident Investigation II-W-95-007, Addition of Tolytriazole to North Main Fuel Oil Storage Tank. This event involved inadvertent addition of the wrong additive to DG fuel oil by chemistry personnel. The review was thorough and appropriate questions were asked. Human error (lack of self-checking) was the root cause. Appropriate corrective actions were planned.

Within the areas examined, no violations or deviations were identified.

7.0 OPERATING PROCEDURES REVIEW (42450)

7.1 Documentation Review

In conjunction with the walkdown and review of the CVCS system which is discussed in paragraph 8.1 of this report, the inspectors reviewed and did a field validation of the SOIs that the applicant had implemented to operate the turned over system. The inspectors reviewed the SOIs to evaluate the applicant's progress in developing and implementing operating procedures which would be used to control safety-related operations.

Requirements are delineated in 10 CFR 50, Appendix B, Criterion V, Instructions, Procedures, and Drawings; ANSI N18.7-1976/ANS-3.2, Administrative Controls and Quality Assurance for the Operational Phase of Nuclear Power Plants, Section 5; RG 1.33, Revision 2, February 1978; TVA NQA Plan, Revision 3; Site Writers Manual, Revision 0; Writers Guide for Technical and Normal Operating Instructions, Revision 0; and selected applicant administrative procedures.

The inspectors interviewed cognizant applicant personnel and also reviewed appropriate applicant administrative procedures, vendor technical manuals, drawings, design basis document system descriptions, the FSAR, and the draft TS.

During the review, the inspectors considered the following procedure attributes:

- the procedures were technically adequate to accomplish their stated purpose;

- applicable operating limits were clearly specified;

- the procedures were consistent with draft technical specifications and regulatory requirements;

- precautions and limitations were included which prescribed activities important to the protection of the health and safety of the public and plant equipment;

- the procedures prescribed detailed steps to ensure safe operation of the systems which support and control reactor operations;

- the procedures were in the appropriate format as specified in the applicant's administrative controls.

The procedures reviewed were:

- SOI-62.01, CVCS, Charging and Letdown, Revision 18

- SOI-62.02, Boron Concentration Control, Revision 13

- SOI-82.02, Diesel Generator 1B-B, Revision 27

7.2 CVCS Procedure Review Findings

The inspectors had previously reviewed Procedure SOI-62.01 and reported their comments in NRC IR 50-390/94-18. The applicant had upgraded the SOI since that review. The applicant had addressed a number of the inspectors' comments in the upgraded SOI; however, a few of the comments had not been incorporated and were presented to the applicant for further review. The inspectors' comments are detailed in Attachment A of this report.

7.2.1 SOI Checklist ALARA Concerns

The inspectors noted ALARA concerns with the valve line up checklist in Procedure SOI-62.01. These concerns included the following:

- valves within an area were not grouped together on the checklist in an operator friendly manner to reduce the time required to be in a radiation area;

- valves within a room were not grouped together which would eliminate the possibility of re-entering the same room several times;

- valves which required special aids to reach (ladders, staging, etc.) were not identified; and,

- valves which would be difficult to locate were not identified with special location instructions.

ALARA concerns with the performance of SOI checklists were first identified in IR 50-390/94-18. Subsequently, the inspectors had noted improvement in addressing ALARA issues in several SOI checklists reviewed as part of the SPOC review process with the exception of the CCS checklist. ALARA problems with the CCS checklist were documented in IR 50-390/95-37. Consequently, as a result of these continuing concerns, the inspectors met with the applicant's Operations support manager to discuss this matter. The applicant agreed with the inspectors' concerns and indicated corrective actions would be taken to ensure the above-listed ALARA concerns were addressed in valve line-up checklist prior to fuel load.

This issue will remain open pending subsequent review of the applicant's actions to address ALARA concerns in all applicable SOI valve checklists.

7.2.2 Charging Pump Oil Sample Valve Observation

The inspectors questioned the applicant as to why valves 1-SMV-62-108B, CCP 1A-A Gear Box Oil Sample, 1-SMV-62-104B, CCP 1B-B Gear Box Oil Sample, and 1-SMV-62-101, PDP Charging Pump Oil Sample, were not on the SOI-62.01 valve checklist. The applicant indicated that these valves were only used during oil sampling operations and were controlled by the PM procedure that performed this function. The inspectors reviewed the following PM procedures:

- PM 1-PMP-062-0108-A, File 02, Inspection and Oil Sampling of CCP 1A-A, Revision 0

- PM 1-PMP-062-0104-B, File 02, Inspection and Oil Sampling of CCP 1B-B, Revision 0

- PM 1-PMP-062-0101, File 02, Cleaning, Inspection and Oil Sampling for Reciprocating Charging Pump, Revision 0

The inspectors determined that PM procedures for the centrifugal charging pumps referred to the sample valves as petcock valves and not by the valves UNID. The PM procedure for the PDP charging pump did not refer to the sample valve but rather referred to opening the drain plug to obtain the oil sample. Further, during PDP oil changing operations, the drain plug was used to remove the oil instead of the installed oil drain valve, 1-DRV-62-101.

The applicant agreed with the inspectors observations and changed the PM procedures to refer to the centrifugal charging pump oil sample valves by UNID. The PDP charging pump PM procedure was revised to use the oil sample valve to obtain the oil sample and to use the oil drain valve to drain the oil during oil changing operations.

The inspectors consider the applicant's actions acceptable and consider this issue closed.

7.2.3 CVCS Drawing Observation

System 68 valves (68-579 and 68-570) and System 81 valves (FCV-81-13, 14, 15, & 16) are depicted on the CVCS flow drawing and also on the RCS flow drawing and Primary Water flow drawing respectively. Flags are used to identify and locate connection points between flow drawings. Duplicating the valves on these flow drawings technically made the flags incorrect.

The applicant initiated DD 95-0322 to remove Systems 68 and 81 valves from the CVCS drawing.

The inspectors agreed with this action. This issue closed.

7.2.4 Handswitch Nomenclature Problem

During the walkdown the inspectors noted that the procedure lists the nomenclature for handswitch 1-HS-62-70A as "RCS Letdown from Loop 3 Outside Containment." The control room label for this handswitch uses the same nomenclature. This handswitch controls valve 1-FCV-62-70 which was located inside containment. The physical location of the valve was in disagreement with the location specified on the handswitch and the SOI.

The applicant will initiate a DCN to correct the labeling in the control room. The labeling change will result in the procedure being changed to agree with the new label.

The inspectors agreed with the applicant's proposed corrective actions and considers this issue closed.

7.3 DG Procedure Review Findings

The procedure was technically viable; however, the following deficiencies were noted:

- The inspectors identified that DG starting air receiver alignments differed between the SOI checklist and the as-constructed drawings. One of the two receivers for each of the two 1B-B diesel engines were found to have their output lines isolated by closing valves 1-82-525B1 and 1-82-559B2 in accordance with the SOI-82.02 checklist. Drawing 1-47W839-1A indicated these valves were normally open. The inspectors identified that each engine was required to have both air receivers aligned. Preoperational testing had shown that a single receiver per diesel engine was not capable of providing the five start attempts required in the DG design basis. The corrective action for this was to ensure both receivers on each engine were aligned to supply air to the air start motors. A similar discrepancy was discovered with each engine's second start air receiver. The alternate supply valves, 1-82-506B1 and 1-82-540B2, were open per the SOI but were indicated as normally closed on the drawing. In response to the findings, the applicant initiated PER WBPER950330 in accordance with their corrective action program. Their investigation revealed that a required change to align all starting air receivers to be in service, identified during

pre-operational testing, had not been incorporated in the SOIs for the 1B-B and 2B-B DGs. The inspector verified that the SOIs were correct for the remaining two DGs and that the applicant completed a procedure change to Procedures SOI-82.02, DG 1B-B, Revision 27, and SOI-82.04, DG 2B-B, Revision 26, to reflect the correct drawing alignment. The applicant also identified an additional discrepancy between the four DG procedures in that the normal position for the 1B-B DG air start motor supply manual isolation valves was open in Procedure SOI-82.02 but closed in Procedures SOI-82.01, 03, and 04 for the other three DGs. Procedure SOI-82.02 was corrected to close the valves. The inspector verified that the body of the procedure opened these valves to establish a standby alignment and that the closed position was acceptable for system checklist purposes. The applicant's preliminary investigation identified that incomplete review of the checklist allowed the change to escape processing.

- The inspectors verified that SOI deficiencies identified in NRC Inspection Report 50-390/94-73 were corrected by later revisions. The inspectors identified that the position for the 1B-B DG air dryer purge adjust throttle valves (1-THV-82-210 and 211) had been changed in the SOI-82.02, revision 27, valve checklist to "1 turn open" from previously being adjusted to achieve 175 psig discharge pressure with the compressor running. While this corrected the problem encountered while performing the checklist without the compressor running, section 5.2 of SOI-82.02 for starting air alignment still required adjusting the valves to achieve a 175 psig discharge pressure. The inspectors identified that this valve could potentially be correctly set to achieve a 175 psig discharge pressure and then repositioned at a later time to one turn open per the SOI checklist. The applicant determined the source of the one turn open requirement in the checklist was given as an alignment starting point but could not ensure that one turn open corresponded to 175 psig discharge pressure. The applicant processed a change notice to the SOIs for all four DGs to eliminate the "1 turn open" positioning in the checklist and replace it with a note indicating the valve had been previously set to its desired position. The inspector concluded the applicant's change would correct the deficiency. The change notice (CN) was effective July 6. However, when the inspector verified the implementation of the CN on July 7, he discovered that the cover sheet for CN-6 was correctly filed in the control room SOI-82.02, DG 1B-B, revision 27 copy, but the affected checklist pages were neither attached nor corrected in the SOI as required by SSP-2.03, Administration of Site Procedures, revision 12. The SOIs for the other three DGs were similarly deficient but were eventually corrected. The inspectors have observed previous problems with interim CN implementation in the control room procedures. The inspector verified the applicant performed section 5.2, Starting Air Alignment, for each of the four DG SOIs on July 7 to ensure the throttle valves were all correctly set.

- The inspectors verified that previous deficiencies identified in NRC IR 50-390/95-18 with SOI-82.02 were corrected in later revisions and also corrected in the other three DG SOIs. The inspectors identified that caution statements regarding checking cranckcase lube oil level and

soakback oil pump operation had been added to Sections 8.1.4 and 8.1.5, Shutdown of DG from Main Control Room and Local, respectively, but not to Sections 8.4.1 and 8.4.2, Removing DG from Service after Emergency Start. The inspector verified the applicant processed CNs to add the cautions to these sections in the SOIs for all four DGs.

7.4 Conclusion

The inspectors concluded that the SOIs reviewed provided appropriate detailed instructions for operating the systems. However, deficiencies were noted such as poor CVCS checklist organization for ALARA concerns, inconsistent DG checklists, and failure to address previous concerns fully. Other comments for improvement were also noted.

Within the areas examined, no violations or deviations were identified

8.0 SYSTEM TURNOVER (37301)

8.1 System Walkdown and Review

The inspectors performed a walkdown of the CVCS system which had been turned over from SUT to Operations. The inspectors also reviewed documents and drawings related to the system turnover. The inspectors performed the system walkdown and review to verify that the applicant's system turnover process was effective in ensuring safety-related systems being turned over to Operations were in a reasonable condition of completion to support plant operations.

The applicant had developed and implemented Procedure PAI-5.01, System Pre-Operability Checklist, Revision 7, which delineated a systematic method for ensuring all open work items and outstanding programmatic items which could affect system operability or the operational readiness of a system to support fuel load/startup were completed or dispositioned before the system was turned over to operations. The turnover process was referred to as SPOC at WBN.

The inspectors performed the following activities:

- a field walkdown of the CVCS system which had been turned over;
- reviewed the SPOC turnover package for the CVCS system;
- compared the as-constructed system to the system description in the FSAR; and
- reviewed the applicant's MTS, which documented and tracked open items for the CVCS system.

The inspectors considered the following items during the system walkdown and review:

- discrepancies between the system drawings and the installed equipment/components;

- system components were installed in accordance with the as-constructed drawings and the description in the FSAR;

- deficiencies such as damaged or missing components, trash or foreign material in cabinets, and the quality of workmanship;

- component labeling numbers and nomenclature reasonably matched component identifications provided on the drawings and in the SOIs;

- Unit 1/Unit 2 system interface points had been identified and control had been established;

- ensure that the latest copy of the system field drawing(s) was in agreement with the FSAR system descriptions; and

- open items listed on the MTS that were being turned over that could impact system operability or readiness were being adequately addressed by the applicant.

8.2 Conclusions

Based on the walkdown and review of the CVCS system, the inspectors concluded that the turned over system appeared to be in an acceptable condition to support plant operations. Outstanding items were being adequately tracked on the applicant's MTS, and specific items that affected the TS operability of the system had been identified and were being tracked by the operations staff.

Within the areas examined, no violations or deviations were identified.

9.0 MAINTENANCE (62703)

9.1 Work Control Processes

The inspector reviewed work packages and monitored the activities of the SSS on June 15. The SSS is responsible for reviewing and approving work that does not directly impact plant equipment. This relieves main control room congestion and limits the burden on the operating crew. The inspector concluded the SSS displayed a proper threshold for determining when an activity needed to be processed through the onshift SOS and the main control room. The SSS thoroughly questioned all requests to ensure he understood the scope of the work. The inspector observed that the SSS controlled access to Operations controlled areas by approving access control forms and restricting key issuance. This process was well understood by the workers and appeared to function smoothly. The inspector observed that during the SSS and SOS review of work requests, the SOS was not determining work request priority unless it was an urgent level one or two. This was contrary to the guidelines of Procedure SSP-6.02, Work Control, Revision 15, but was considered acceptable by the inspector due to the construction phase of plant activity. The inspector did observe the SSS carefully evaluate each item he reviewed for any effect on operability as the applicant prepares for to declare systems operable in conjunction with hot functional testing. The inspector observed the SSS fail to verify a foreman was signed on a hold order before approving

the work contrary to Procedure SSP-6.02, Maintenance Management System, Revision 15. The SSS stated he knew that the foreman was already on the hold order from previous experience. The inspector verified the foreman was signed on the applicable clearance. No other discrepancies were noted.

9.2 Check Valve Disassembly/Reassembly

The inspector observed a mechanical maintenance team disassemble, inspect, clean, and reassemble two thermal barrier component cooling supply line check valves to support a required inspection per SIs 1-SI-70-909 and 1-SI-70-910, Disassembly and Inspection of Thermal Barrier Supply Line Check Valves During Refueling Outages, (Outboard) and (Inboard) respectively, Revision 0. The inspector also observed quality control inspection activities. The inspector observed that the identified post-maintenance test in the WOs was to check for no seal weld leakage, although the valve caps were not seal welded. The maintenance foreman had also identified the discrepancy and was processing a change to the WO. The inspector did not identify any other notable problems with the WO. The inspector independently verified the clearance boundaries and the placement of the clearance tags. The inspector verified the WO contents and the mechanics' actions against the applicable valve vendor manual and the applicant's guidance for foreign material exclusion. The inspector observed that the two disassembled valves were in very good condition with no evidence of corrosion buildup that would affect operability. Aside from the lengthy delays to process paperwork and obtain approvals that resulted in this WO taking two days to perform from the signon to the clearance, the inspector did not identify any notable discrepancies with the work performance. The inspector and the mechanics did observe a contract construction worker standing on a 3/4" reactor coolant system loop 1 flow sense line. The maintenance mechanics responded promptly and forcefully directed the worker off of the line. Work Request C249887 was processed by mechanical maintenance to assess any line damage. The inspector concluded the mechanics' actions demonstrated an appropriate level of ownership of plant equipment.

9.3 Instrument Lineup

The inspector observed the maintenance instrumentation group perform a midloop level instrument lineup verification per Procedure IMI-68-399, Calibration of Reactor Coolant System Mid-loop Level Loops, Revision 0. The inspector noted that the IMI only required independent verification for identification of the correct valve before manipulating but did not require independent verification on the actual valve alignment when placing the system in service. The inspector was discussing this problem with applicant maintenance personnel and will resolve it as part of an ongoing configuration control inspection. No discrepancies were identified.

No violations or deviations were identified.

10.0 SURVEILLANCE (61726)

10.1 Valve Surveillances

The inspector observed numerous valve surveillances being performed by the control room crew that did not have approved acceptance criteria. These surveillances were being performed for the first time to establish baseline values for future surveillances. The applicant had experienced previous inconsistencies in determining successful performance and generating test deficiency notices with these initial performance surveillances. In response, the applicant's operations department developed a standard manner to process a deficiency notice for each item without approved acceptance criteria and documented this guidance in a night order issued on June 8. The technical support engineers would then disposition the acceptance criteria and determine if the performance was satisfactory in each instance. The inspector reviewed the standing order and concluded it was satisfactory and within the scope of existing procedural guidance. The inspector reviewed several initial performance surveillance packages and concluded the operators were implementing the standing order guidance. The inspector observed that the technical support group was not completing dispositions in one to two days as described in the night order. Consequently, open surveillance packages began to accrue in the control room. No other deficiencies were identified.

10.2 AOV Throttle Valve Problem

On June 20, the inspector observed the initial performance of Instruction TI-50.026, CVCS Valve Exercising During Cold Shutdown, Revision 0, which stroked the reactor coolant pump #1 seal return valves and measured their stroke times. This TI was similar to that discussed previously in that acceptance criteria were not finalized. The inspector observed that the operators were adjusting a needle throttle valve between the control air regulator and valve actuator to establish valve stroke times at the midpoint of the preliminary acceptance range. The throttle valve handwheels were then removed to prevent inadvertent adjustments after the setting. The inspector identified that the TI did not provide any adjustment guidance and that the operators did not have any other procedural guidance directing the adjustments. The inspector also identified that the throttled position of the valves was not being recorded, the operators were not certain of what to do with the removed handwheels, and that ownership of the valves for configuration control purposes had not been established. The applicant's operations department suspended all stroke time testing and adjustments until they initiated a night order to provide limited guidance on adjusting the valves and accounting for the removed handwheels. They also initiated a design change request to the applicant's NE department to resolve ownership of the valves and incorporate the handwheel removal and stem locking into the system design. The inspectors will evaluate the applicant's resolution when the design change is issued.

The inspector also identified that several of these throttle valves did not have any identification or labeling. The letdown orifice isolation valves, FCV-62-72, 74, and 76, were examples of valves with unlabeled control air throttle valves. The aforementioned design change request also addressed the

assignment of unique identification numbers for the throttle valves. The inspector noted that Instruction TI-50.026 was not on the daily team meeting surveillance schedule for June 20. The inspector has observed several other similar schedule omissions as well as several scheduled surveillances that could not be located or were not being performed. The inspector concluded the existing surveillance schedule did not accurately reflect actual work. However, the inspector did observe that the applicant was addressing this problem and had revised their scheduling process several times. The applicant implemented a continuous, 12-week rolling schedule to establish all surveillances in their required periodicity. The inspectors are evaluating the applicant's corrections as part of ongoing operations observations.

10.3 Check Valve Surveillance

The inspector observed the system engineer's performance of 1-SI-70-909 and 910, Disassembly and Inspection of Thermal Barrier Supply Line Check Valves During Refueling Outages, (Outboard) and (Inboard) respectively, Revision 0, on RCP 1. The inspector observed that the valves moved freely and were in very good condition. The surveillance package was complete. No notable deficiencies were identified.

10.4 Check Valve Flow Test

The applicant had previously found safety injection throttle valve locking cables loose and had committed to reverify flow balance during a check valve flow test (see IR 50-390,391/95-25, paragraph 11.1). This was accomplished through implementation of 1-SI-63-906, Safety Injection Check Valve Flow Test During Refueling Outages, Revision 1. The inspector observed conduct of this test on two occasions. The first attempt was not successful due to inadequate instrumentation. The inspector noted that a strong technical leadership was not exhibited during the first attempt. Technical support personnel were present and responding to questions; however, an RO was in charge of the test. An example of poor support was the fact that AUOs who were taking data were given no guidance as to the expected readings so that significant instrument problems could readily be identified. This was an important consideration since the test involved at least eight personnel in six different locations inside containment. Reperformance of this test due to an inadvertent instrument problem could result in increased radiation dose to personnel. The applicant's management agreed with the inspector's comment, and improved support was noted during the second attempt. The second attempt appeared to be successful; however, final data review was still in progress at the end of this inspection period.

No violations or deviations were identified.

11.0 EMERGENCY PLAN DRILL (71750)

The inspector observed the applicant conduct a site-wide, radiological emergency plan drill on June 19, 1995. The drill was initiated with a crew of operators in the training simulator and was gradually expanded to include a TSC activation. Portions of the drill were observed by local print and television media in conjunction with the applicant's annual media day. The

inspector observed that the TSC was quickly manned following the activation request and that all participants were enthusiastic and approached the drill seriously. The resident NRC inspector pagers failed to actuate during the TSC activation. The inspector discussed this with the Emergency Preparedness director who added the NRC numbers to all TSC callout lists after discovering they had been inadvertently omitted during resident inspector personnel changes. The inspector verified the applicant's emergency procedures designated specific personnel to staff the Emergency Notification System and Health Physics Network communication systems with the NRC. The inspector observed that turnover of site emergency director responsibilities from the SOS was thorough and timely. Periodic team briefings were effective and concise and established clear priorities. Required event reclassifications and notifications were correct and timely. The inspector concluded the site emergency director effectively controlled the emergency response.

The inspector observed the team experience difficulty in assembling and dispatching response teams. Coordination with the radiological controls group in the TSC lapsed periodically and delayed the dispatch of teams. Simple tasks that could have been done by a single operator were delayed while teams were assembled. The site emergency director had to prompt the maintenance coordinator frequently to ensure that teams were being assembled and reflected on the status boards. The response team had to be prompted several times to establish a pressurizer level trend after the site emergency director had requested it. The trend plot did not begin until 10 minutes after the site emergency director's initial request. The inspector also observed that a drill sheet was given to many of the participants that summarized the initiating plant conditions. Although it did not disclose any upcoming events, the inspector concluded that it was a slightly unrealistic presentation of information to the drill participants that they would be expected to obtain and assemble on their own during an actual event. The inspector did observe that information regarding plant developments was received by the separate response teams simultaneously in the TSC. The plant ERFDS computer displays were tied to the simulator and conveyed real-time data regarding simulated plant conditions and reflected operator manipulations. The various teams were quickly able to assess and respond to emerging issues. The inspector concluded this significantly enhanced the realism of the drill and was a strength.

The inspector observed that the requirements of Procedure EPIP-8, Personnel Accountability and Evacuation, were not effectively exercised during the drill. At one point the site emergency director ordered the security director to perform an auxiliary building evacuation. Due to the unavailability of the personnel accountability and security card reader systems, the security director could not verify this activity was complete. The applicant does exercise the TSC staff by collecting badges to simulate an accountability verification. The applicant is aware of the inability to exercise these features and plans to conduct specific drills when the systems are available. The inspector will monitor these activities when they are available.

The applicant allowed the drill to run for approximately 2.5 hours after the initial TSC activation. This allowed the scenario to progress realistically and the response team to be fully exercised. The inspector concluded that the

length of the drill was appropriate and beneficial in developing the team's emergency response capabilities.

The inspector attended the post-exercise debriefing. All parties were encouraged to voice their input, and briefings were given on each location's response activities. Several participants commented on the difficulty of hearing site public address announcements in the Operations Support Center area. The inspector verified that the applicant was taking corrective action to adjust the volume for the Operations Support Center speakers. The inspector concluded the debriefing was effective but observed that some drill monitors were reluctant to provide critical comments during the verbal critique.

Overall, the inspector concluded the drill was effective and satisfactory. Minor coordination problems were observed, but the applicant generally responded appropriately and effectively mitigated the conditions presented in the drill scenario.

No violations or deviations were identified.

12.0 PLANT PROCEDURES (42400)

The applicant's procedure program was previously reviewed and documented in IRs 50-390,391/93-70, paragraph 7, and 50-390,391/94-11, paragraph 3. Several aspects of the applicant's program were not reviewed during the previous inspections. These included the temporary procedure approval process, 10 CFR 50.59 implementation, review of night orders and standing orders, and administrative controls for operator logs and shift turnover. The inspector reviewed these aspects of the applicant's program.

The temporary procedure change approval process has been established and implemented through Procedure SSP-2.03, Administration of Site Procedures, Revision 13. Procedure SSP-2.03 also includes an appropriate reference to performance of 10 CFR 50.59 reviews. This program is being inspected separately and will be documented in NRC IR 50-390,391/95-52. Logkeeping requirements are contained in Procedure SSP-12.01, Conduct of Operations, Revision 6. Procedure SSP-12.56, Tracking of Tech Spec Equipment Out of Service, Revision 3, has been established to track TS equipment. The applicant was in progress of fine tuning this program through practice implementation. The applicant's shift turnover program has been established through Procedure PAI-2.11, Shift Relief and Turnover, Revision 0. Generally, this procedure covers appropriate attributes for turnover; however, the inspector noted inconsistencies between procedure verbiage and checklists. The applicant indicated that these problems had been noted and a procedure change was forthcoming. Further NRC review of TS logging was planned and further review was planned regarding the shift turnover process. Turnover reviews will be documented against TMI Item I.C.2. The inspector also reviewed the current night orders and standing orders (see paragraph 18.2). Inspections are considered complete for inspection procedure 42400. The applicant has implemented an adequate procedure system program.

No violations or deviations were identified.

13.0 MASTER ISSUES LIST REVIEW (37550)

The applicant has established the Master Issues List of planned future modifications. The MIL is controlled through Procedure BP-312, WBN Project Scope Control Process, Revision 1. The inspector had previously identified that the data base for deferred modifications was inaccurate (see IR 50-390,391/95-11, paragraph 13.2). This inspection was conducted to verify that an adequate data base was established, that adequate controls were in place to control and assess proposed modifications, and to verify that modifications significant to plant safety had not been deferred.

The inspector reviewed Procedure BP-312, the latest data base for open MIL issues, and results of the applicant's assessment in this area. The inspector also confirmed closure of previous MIL issues on a sample basis.

Results: The procedure provides adequate controls for assuring safety significant issues are evaluated and addressed in a timely fashion. The sample review of issues disclosed that issues deleted from the MIL data base had been completed, that no significant safety issues had been deferred, and that the current data base appears accurate.

No violations or deviations were identified.

14.0 TECHNICAL SPECIFICATION REVIEW (71301)

A review of Section 5, Administrative Controls, of the draft TS, dated January 18, 1995, was completed. The administrative control section of the January 18, 1995, version of WBN TS is identical to the administrative controls of Section 5 of the June 13, 1995 version. The review did not reveal any reductions in controls or commitments as compared to the May 1985 version of TS. Many of the controls, previously contained in Section 5 of the TS, have been relocated to other controlled documents. NRC concurrence to relocate the controls are described in the following NRC correspondence:

- Letter, Content of Standard Technical Specification, Section 5, Administrative Controls, dated October 25, 1993.

- GL 93-07, Modification of the Technical Specification Administrative Control Requirements for Emergency and Security Plans, dated December 28, 1993.

- Letter, Special Consideration for the Relocation of Audit Functions to the Quality Assurance Program, dated January 17, 1995.

The relocation and content review was done by comparing the relocated item with the content before it was moved and with applicable ANSI/ANS standards. The items relocated are contained in one or more of the following documents:

- TVA-NQA-PLN89-A, Revision 5

- TVA-NPOD-89-A, Revision 5

- FSAR Amendment 89, Chapter 13

Within the area inspected, no deviations or violations were identified.

15.0 SAFETY COMMITTEE ACTIVITY (40301)

The objective of this inspection procedure is to verify that the onsite (Plant Operations Review Committee (PORC) and offsite Nuclear Safety Review Board (NSRB) safety review committees have been established and are functioning in agreement with the commitments in the FSAR. In addition, the Independent Safety Engineering (ISE) functions were included within this review. The applicant has committed to ANSI-N18.7-1976/ANS3.2, Quality Assurance for the Operation Phase of Nuclear Power Plants, in Appendix B of the TVA-NQA-PLN89-A, Revision 5. ANSIN18.7-1976/ANS 3.2 presents the conditions and requirements for the onsite and offsite organizations. FSAR 13.4.2, Independent Review and Audits, commits to NUREG 0737, Item 1.B.1.2. These references were used to evaluate the PORC, NSRB, and ISE.

15.1 Onsite Review Committee, PORC

The applicant has established a PORC, which is functioning as described in FSAR 13.4.1, Amendment 89. A charter has been issued as Procedure SSP-12.54, Plant Operations Review Committee Charter, Revision 7, which is in compliance with ANSI N18.7-1976/ANS3.2. The charter was reviewed to verify that the following attributes were specified:

- responsibility and authority for conducting independent reviews;
- review committee membership;
- method and responsibility for designating alternate members.
- requirements for a committee quorum;
- meeting frequency;
- requirements for maintaining and distributing minutes of the committee's activities;
- lines of communication and interface with the NSRB; and
- provisions for follow-up action to resolve identified deficiencies.

Each of the above items was satisfactorily presented in the charter. In addition, the charter specified the items that require PORC review and how such items are to be submitted to be placed on the PORC meeting agenda.

The minutes for recent PORC meetings were reviewed to verify implementation of the program. The minutes reviewed were as follows:

Meeting Number	Meeting Date	Number of Members	Number of Alternates
3271	3/30/95	2 + Chairman	2
3280	5/2/95	2 + Chairman	2
3291	5/25/95	5 + Chairman	0

The minutes were sufficiently detailed for each meeting and contained the following information:

- meeting date and number;
- names of attendees and alternates;
- reference to the memorandum that approved alternate members;
- identification of each item that was considered;
- presenter of the item;
- description or justification of each item change;
- PORC action taken; and
- approval of previous minutes by the committee.

At the present time, PORC meets each week at a preset time. The inspector attended a meeting to observe the committee's activities. The meeting was conducted in agreement with the procedure. The conduct was professional and was not hurried. Sufficient time was permitted for each member to comment and discuss all issues. The Chairman polled each member on each item being considered and assigned action as appropriate or approved the item if no action was needed. The meeting lasted two and one-half hours and covered eight items. Overall, there was good dialogue between members and presenters. The meeting was accomplishing the intention of ANSI N18.7.

15.2 Nuclear Safety Review Board

TVA nuclear standard STD-4.8 establishes the TVA nuclear requirements program for offsite nuclear safety oversight. This standard presents the functions for the NSRB for all TVA nuclear sites. At WBN this standard is implemented through Procedure SSP-4.08, Nuclear Safety Oversight, Revision 0. The procedure presents the structure and functions of the NSRB.

The NSRB reviews nuclear safety-related activities, programs, and events. The commitment to have a NSRB is stated in FSAR 13.4.2, Independent Review and Audit, Amendment 89. The board independently evaluates the safety of TVA nuclear plants. Audits and assessments of activities are performed under the cognizance of the NSRB. The NSRB advises TVA management on the safety

significance of these reviews and on the adequacy and implementation of TVA nuclear safety policies and programs. The reviews conducted by NSRB are conducted by teams consisting of at least three reviewers with expert consultants used as determined by the board chairman. Audits and activities encompass:

- the conformance of unit operations to provisions contained within the TS and applicable license conditions;
- the performance, training, and qualifications of the entire staff;
- the results of actions taken to correct deficiencies occurring in equipment, structures, systems or method of operations that affect nuclear safety;
- the performance of the operational quality assurance program;
- the fire protection program and equipment;
- the radiological environmental monitoring program;
- the offsite dose calculation manual and implementing procedures; and
- the radioactive waste control program implementation.

The inspector concluded that the NSRB complies with the requirements of: 1) ANSI N18.7-1976/ANS 3.2, Administrative Controls and Quality Assurance for the Operational Phase of Nuclear Power Plants, as endorsed by NRC RG 1.33, Revision 2; and 2) ANSI/ANS-3.1-1980, Selections, Qualification and Training of Personnel for Nuclear Power Plants, as endorsed by NRC RG 1.8, Revision 2. This conclusion was verified through review of the NSRB Charter, Management and Directive MD-3.1, Revision 1, NSRB program, as described by Procedure SSP-4.08, Nuclear Safety Oversight, Revision 0, and review of NSRB minutes for the following meetings:

Meeting Number	Date of Meeting
28	May 18 - 19, 1995
27	February 8 - 9, 1995
26	November 1 -2, 1994
25	July 11 - 12, 1994

The inspector also reviewed the qualifications of the members currently serving on the board.

15.3 Independent Safety Engineering

The provisions for an ISE group are specified in NUREG-0660 and NUREG-0737, Item I.B.1.2. Both Amendment 89 of the WBN FSAR, Section 13.4.2, and Revision 5 of the TVA-NQA-PLN-89-A, Section 4.1.3.c.7., commit to establishment of an ISE group. The ISE performs independent reviews of plant operations. Implementation details of this requirement are contained in STD 4.8 and SSP 4.08, Nuclear Safety Oversight.

The WBN ISE is composed of dedicated, full-time, qualified personnel located on site and are supplemented by other qualified personnel to achieve the equivalent staffing of five full-time engineers. The ISE reports to the IRA manager who is independent of site management chain for power production. The IRA manager reports to the general manager of Nuclear Assurance and Licensing, who is offsite.

The performance of the ISE was verified by:

- reviewing Procedure SSP-4.08;
- interviewing the personnel assigned to the group;
- reviewing ISE assessment reviews and reports; and
- examining the qualification levels of the persons performing this function.

It was concluded that the ISE program is acceptable and is in agreement with the requirements of NUREG-0660 and NUREG-0737. Procedure SSP-4.08 establishes the functions and structure of the ISE. Review topics are presented and the process for obtaining corrective action is described. Several recent reports issued by ISE were reviewed. These were:

Report No.	Date	Topic
ISE-AS-94-01	November 14, 1994	Work request and work order process
ISE-AS-95-002	May 25, 1995	Effectiveness of Plant Operations Review Committee
ISE-SR-95-004	May 30, 1995	NRC Bulletin 93-02, Debris Plugging of ECG Suction Strainers

These reports were thorough and comprehensive. The first two presented recommendations and required a response. A response was received within the requested time, and the items were satisfactorily dispositioned. This was acknowledged during the personnel interviews as well as documented results.

The independent reviews and assessments of plant activities by the ISE is functioning as described by Procedure SSP-4.08. The provisions for these reviews in respect to organizational structure and qualification requirements

of those performing the reviews provide the necessary separation, independence, and level of expertise to be acceptable.

Within the areas inspected, no violations or deviations were identified.

16.0 WAREHOUSING OF MATERIALS (38702)

The inspector toured the warehouses at WBN to observe the condition of the buildings, fire protection, and housekeeping. The buildings were observed from outside and inside and were found to be in good condition. The warehouse space is large, and the material is arranged in an orderly fashion. Housekeeping was excellent. No excess material was observed, and the buildings were physically clean inside and outside.

The applicant has committed to ANSI N45.2.2 in the QA Plan, TVA-NQA-PLN-89-A. Paragraph 6.2.3 of ANSI N45.2.2 states, "Fire protection commensurate with the type of storage area and the material involved shall be provided and maintained." Procedure SSP-10.03, Revision 18, paragraph 2.2.4.E, restates the same requirements.

Materials and Procurement has a sprinkler system in its main warehouses, A, B, D and the in-plant storage area. These areas comprise the bulk of the materials stored at WBN. The material storage huts have fire extinguisher since the nature and volume of the material does not warrant a sprinkler system.

The fire protection system was installed in February 1992 in Warehouses A, B, and D and was made operable in June 1994. DCN M17668 was required to complete the connection to the appropriate fire protection feedline.

The inspector concluded that the material warehouses at WBN have been in compliance with the ANSI N45.2.2 commitment. The sprinkler system currently is an enhancement of the code requirement. Another area examined during the tour and by discussion with warehouse personnel was monitoring of humidity. ANSI N45.2.2, paragraph 2.7.1, states the requirements, and Procedure SSP-10.03 provides guidance to implement this requirement.

ANSI N45.2.2 requires environmental control for level A storage facilities. Basically the requirement is to maintain the humidity below the dewpoint.

This is accomplished by monitoring temperature and humidity levels. Dewpoint is then calculated by a formula. A review of recorder charts for the past year was examined, and dewpoint was within allowable. The current methodology in use is satisfactory to meet the ANSI N45.2.2 requirement.

No violations or deviations were identified.

17.0 Procurement Program (38701)

A review of selected portions of the applicants procurement activities was performed to ensure that these parts of the program were in conformance with regulatory requirements, commitments and industry guidance. The applicant has

committed to ANSI N45.2.2-1992, Packing, Shipping, Receiving, Storage, and Handling of Items for Nuclear Power Plants. This document was used as the basis for this inspection. Implementation of this commitment at WBN is through Procedure SSP-10.01 through SSP-10.05. The portions of the procurement activities reviewed are discussed below:

17.1 Commercial Grade Purchases

Since 1985, NE has been on site and has required that materials have an engineering evaluation prior to procurement. Procedure SSP-10.05, Technical Evaluation for Procurement of Materials and Services, Revision 12, governs the engineering practices for technical evaluation of procurement. Material procured prior to this date required an evaluation by NE before it was upgraded. PEG has the responsibility of defining the technical and quality assurance requirements for procurement of materials. PEG is also responsible for performing an engineering evaluation of material for upgrade before the material can be used.

The NRC has issued GL 91-05, Licensee Commercial Grade Procurement and Dedication Program, which endorse EPRI-5652 for commercial grade items. The NRC has cautioned licensees that some complex items may be difficult to dedicate unless some pre-planning is done before the item is purchased. In other words, any procured item may be upgraded provided the proper dedication process was used. Some items may require additional planning before purchase such as source inspection and audit of manufacturing techniques. The practice at WBN is to have an engineering evaluation before any purchase and if upgrading is required, the dedication process is determined by PEG. This program is satisfactory and there is no evidence that anyone bypasses engineering's review up front to procure material for use at WBN.

17.2 Contract Controls

Controls have been established through Procedure SSP-10.1, Procurement of Materials and Services, Revision 10, Section 2.5, to prohibit personnel, outside of PEG, to make any technical contract changes for quality or safety-related items. Review of past purchases indicated compliance with this control.

17.3 Materials Data Base

The MAMS data base, which is not a quality-related data base, has been established as a management tool. It does contain classification and inventory information on quality and safety-related material. However, all procurement, receipt, storage, and issue information is based on design output document. The MAMS data base is a tool used to access this information. Access is controlled by password and authorization to edit technical description information is restricted to PE and inventory control personnel only. The use of the MAMS data base is acceptable.

17.4 Post Installation Test Process

Procedure SSP-10.05 defines the process for evaluating material for safety-related use by PEG. Whenever possible, TVA procures material designated for safety-related use from approved Appendix B suppliers. NE reviews and approves the vendor documentation. QC inspectors complete the acceptance step by inspecting the hardware and verifying that all documentation is as specified and approved. This dedication process provides reasonable assurance that the plant components and replacement parts will perform their intended function. In those cases when PEG determines that the item cannot be purchased from an Appendix B supplier, PEG specifies the critical characteristics and a post-maintenance or modification test is specified to complete the dedication process. If a safety-related, dedicated item fails after installation, a root cause study is performed to ascertain the cause of failure. If an item fails in a nonsafety-related application, no failure analysis is required.

The actions related to post-installation testing are acceptable.

17.5 Identification Markings

During a review of PERs WBPER920134 and WBPER920142, it was noted that the stamping and punchmarks used to identify material may have violated the material thickness requirement of Specification G-29. Follow-up on this problem revealed that the problem was associated with Bergen Patterson hanger material procured from Hartsville. Hard stenciling or stamping of some of these items may have resulted in exceeding TVA's Specification G-29, Section 4.M.1.3. Disposition and resolution was to surplus the items with excessive stamping depth. In addition, reviews were made of material engineering evaluations and nonconformance reports which identified formal engineering evaluations of the die stamping issue. Tests were conducted at TVA's Central Laboratories in Chattanooga, Tennessee, to assess the safety significance of the issue. Results of the tests indicated that the use of high stress stamps have a detrimental effect upon the strength of the material.

The high stress stencils located at the warehouse were removed from service and destroyed. A search in the warehouse area was performed to locate any other high stress stencils; none were found. The items marked with high stress stencils were surplused. Modification and purchasing personnel were retrained on Procedure SSP-10.04, Material Issue, Control, and Return, to emphasize the lessons from this issue.

Based on the review of the technical evaluation and the disposition of the items, it is concluded that this issue has been adequately resolved.

17.6 Production Pressure

During an interview with QE and QC inspectors, a remark was made that, in the past, pressure was placed on SWEC QC people to maintain high production standards. To resolve this issue, the question was asked of the construction QC manager. The response was that he was not aware of any stress placed on QC or QE inspectors. SWEC management personnel have always placed emphasis on

quality first. It was also noted that the SWEC employee concerns group had not received this type of comment during exit interviews of employees. The inspector could not identify any clear examples or results of excessive pressure placed on quality inspectors.

17.7 Material Tagging

The MIP project was instituted several years ago to verify the technical and quality requirements associated with the materials procured, received, and stored prior to June 5, 1991. Procedure SSP-10.B, Materials Improvement, Project, Revision 0, dated December 16, 1991, was issued as part of this project. Since the original issuance of Procedure SSP-10.B, there have been five revisions, including changes in regard to tagging of the material after reinspection or verification. Revision 0 and Revision 1 stated that the sanitized material will be inspected for appropriate tagging by QC. On April 9, 1992, Revision 2 was issued which allowed the affixing of tags by Nuclear Stores personnel. Revision 3 did not change this practice. On May 29, 1992, Revision 4 changed the practice to require QC to affix or oversee the affixing of the material tags. Changes to SSPs are required to be explained to all affected employees. This changed practice of authorizing QC to oversee the tagging of material may have led some employees to believe that they were violating procedures. The tagging process changes are considered acceptable to ensure compliance with the technical and quality requirements.

17.8 Supervisor Designee

A review was conducted of the work practice regarding a supervisor's designee. It was thought, by some SWEC QC inspectors, that the use of a designee supervisor was loosely controlled. Review of this issue revealed that a memorandum, dated January 18, 1993, was issued by the SWEC construction QC manager to identify SWEC's practice regarding supervisor designee for inspection record review and closure. The memo stated that in the past and currently SWEC designates Level II and Level III inspectors as supervisor designees to implement review and closure of inspection records. This memo did not represent a change in practice but did provide documentation of the practice. Further, the memo stated that the supervisors were not relieved of their responsibility of physical implementation of action required and treats the supervisor's review as an overcheck or enhancement. Prime responsibility on accuracy and correctness of the IR is placed on the certified inspector.

With the areas inspected, no violations or deviations were identified.

18.0 ACTIONS ON PREVIOUS INSPECTION FINDINGS (92701)

18.1 (Closed) IFI 50-390/93-88-01, Review ATI-55-01, Validation of System 55 Alarms for PTI-200-01 and PTI-211-01

During the NRC review of test results for Procedures PTI-200-01, Preferred Offsite Power System, and PTI-211-01, 6.9 kV Shutdown Boards, the inspectors noted that, because of field work in progress at the time of the test, portions of these tests were concluded at the system interface boundary with the annunciator system and not carried through to the individual annunciators.

During discussions between the inspectors and SUT personnel, the applicant committed to perform overlap testing as part of Procedure ATI-55-01, Operations Recording and Annunciation System, to verify continuity from the systems through to the annunciators. The inspectors opened IFI 50-390/93-88-01 to track this matter.

Procedure ATI-55-01, Revision 0, and Supplement 1 are now field complete, and the test data were made available for NRC review. The inspector has confirmed that this test and the supplement does perform the overlap testing from the systems through to the annunciators. The inspector reviewed a sample of 20 annunciators which had not been verified in Procedures PTI-200-01 and PTI-211-01 to assure they were properly verified in Procedure ATI-55-01. All 20 were satisfactorily tested. The inspector is satisfied that this matter has been adequately resolved. IFI 50-390/93-88-01 is considered closed.

18.2 (Closed) VIO 50-390/94-58-03, Failure to Follow Procedure Concerning the Implementation of Standing Orders and Night Orders

The applicant responded to this item in a letter dated November 9, 1994. Corrective actions included procedure clarification, correction of the logbook, personnel training, and scheduling of logbook reviews. The inspector verified completion of the corrective actions and reviewed all the current night orders and standing orders in the logbook. No problems were identified.

18.3 (Open) VIO 50-390/94-73-02, Failure to Follow Clearance Procedures

The VIO addressed two examples of a failure to adhere to the requirements of the equipment clearance program. The first example involved releasing a clearance for removal without the work complete. The second involved incorrectly adding an A-train equipment WO to a pre-existing B-train clearance. The applicant responded to the violation in correspondence dated January 1, 1995, and concluded the violations occurred. The applicant had generated two PERs in response to the examples. These PERs were incorporated into SCAR WBSCA93217 which had been generated to coordinate the response to several clearance problems. The inspector verified the corrective actions of the violation response and the SCAR as discussed below.

- A requirement in Procedure SSP-7.01, Work Control, Revision 14, to perform an operability impact evaluation had been waived until 30 days prior to fuel load. One of the SCAR corrective actions was to delete the waiver. The inspector observed that SSSs and SOSs were unaware of the change in the requirement and were not formally performing impact evaluations although they were evaluating items for operability. The inspector observed that the requirement change was briefly mentioned in Procedure SSP-7.01 and was not referenced in the work approval form from Procedure SSP-6.02, Maintenance Management System, Revision 15. The inspector concluded that the change in Procedure SSP-7.01 was not promulgated to the people required to implement it and that there were not any items on their forms to alert them of the requirement's existence.

- The applicant revised Sections 2.3 and 2.4.c of Procedure SSP-12.03, Equipment Clearance Program, Revision 11, to add a second licensed operator verification of clearance boundary adequacy, complete sequence, and necessary approvals. However, the applicant did not revise the clearance form as described in the SCAR to add a space to document this second verification. Per Procedure SSP-12.03, the second review was documented by placing initials next to the original reviewer for the original issue of the clearance. The inspector identified one existing clearance that did not have initials recording a second verification. The inspector verified the tagging SOS reverified the clearance and documented his second review to correct the omission. The applicant did not issue guidance on how to document the second verification when a clearance request would add a work order to an already existing clearance, similar to the second violation example. The inspector identified that some licensed operators documented this type of verification by initialling next to the SOS/SOS Representative signature on the clearance request sheet while others documented the review by initialling in the Work to Be Done or Work Document blocks on the clearance cover sheet. The inspector concluded that the tagging personnel were aware of the requirement for a second verification, but the failure to revise the clearance form and issue clear documentation guidance resulted in inconsistent implementation and would not effectively preclude a recurrence of the second violation example.

- The applicant revised Procedure SSP-12.03 to add a work tracking log to all clearances which would list all outstanding work orders against a clearance. The inspector observed that the work items tracked on the log were redundant with recording of the items on the clearance cover sheet. The inspector concluded the log added little value except for listing multiple work items on infrequently performed outage-type master system clearances.

- The applicant revised Procedure SSP-6.02, Maintenance Management System, Revision 15, to require the SOS signer for Operations work authorization to verify the work foreman was signed on the clearance and the work order was referenced on the clearance. The inspector identified that this requirement was not universally understood by the SSSs who approve operations work. Some still think the foreman's verbal statement constitutes verification. The inspector observed one example where work was approved without being physically verified against the clearance. However, most workers generally bring a copy of clearance sheet when requesting work approval to facilitate the SSS review.

- The applicant revised Procedure SSP-12.03, Section 2.7.D, to require the SOS and SSSs to verify that all work orders were complete before releasing a clearance. The inspector observed consistent implementation of this requirement and did not identify any discrepancies.

- The applicant conducted counselling sessions with the involved individuals and reviewed the problems in briefings and memorandums to appropriate personnel. No discrepancies were identified.

The inspector observed that the clearance office forms were computer generated and differed from the forms of the current revision of Procedure SSP-12.03. The differences were minor format discrepancies which were communicated to the applicants staff for correction. Based on the inconsistent implementation of the corrective actions, this VIO will remain open.

18.4 (Closed) VIO 50-390/95-18-02, Failure to Follow Procedures During SI DCN Implementation

This VIO cited three examples of a failure to follow procedures during the implementation of a design change associated with the method of preventing pressure locking of hot leg safety injection valve FCV-63-172.

The applicant issued PERs WBPER950186 and WBPER950210 to address the violation examples and initiated the following corrective actions.

- Procedure SOI-63.01 was updated to properly address the valves added by the design change.

- The function code for valves 1-RFV-63-172 and 1-DRV-63-518 were changed to ISV by DCN W-34956-A.

- The involved individuals in NE and Operations were counselled.

- A memorandum was issued to NE personnel, emphasizing the need to clearly understand and completely identify required changes and reference documents when initiating DCNs to support DCN type determination process.

- Applicable NE personnel and non-NE personnel who were authorized to approve AA DCNs have performed reading training on the specifics of the corrective actions documented in PER WBPER950210.

- A sample of twenty currently issued AA F-DCNs (10 electrical and 10 mechanical) were reviewed to determine if additional cases of inappropriate AA F-DCNs had occurred. None were found.

- A sample of twenty currently issued W-DCNs (10 electrical and 10 mechanical) were reviewed to determine if additional cases of inappropriate use of a W-DCN had occurred. None were found.

The applicant implemented the following steps to prevent recurrence.

- Operations issued a memorandum to the operations procedure group that no procedures will be issued until all work is completed, design changes fully implemented and primary drawing issued unless those changes are specifically identified, acknowledged, and tracked as open items.

- Operations issued a memorandum to the operations procedures group that no SPOC validation and verification walk-down process was to be initiated prior to field work completion of all design changes unless

those changes are specifically identified, acknowledged, and tracked as open items.

- Procedure EAI-3.05, Section 5.5, was revised to indicate that restrictions on AA F-DCNs also apply to changes in component function/operation.

- Procedure EAI-3.05, Appendix K, Item 5, was revised to indicate that only type S (specification change) and type M (major modification) DCNs can change the DBDs.

- Procedure SSP-2.54, Component Identification and Implementation, was revised to add "self actuating" to the description for relief valves and indicate in Section 2.8.3, Item 2, that the relief valve function should only be used for self-actuating relief valves.

The inspectors reviewed the applicant's corrective actions and verified the changes to the procedures. The inspectors concluded that the corrective actions and recurrence controls should be adequate to prevent recurrence. This violation is closed.

18.5 (Closed) Observation Related to ECCS Valve Alignment in Mode 4

In NRC IR 50-390,391/95-52 the inspector documented an observation related to TS 3.5.3 not requiring an ECCS valve alignment in Mode 4 even though the TS bases for 3.5.3 indicated that an ECCS valve alignment should be performed in Mode 4.

Information provided to the inspector by the applicant showed that this item had been discussed during the Westinghouse Owners Group technical specification proof and review process and it was determined that this surveillance should not be listed for the shutdown modes. This determination was based on:

- the technical specification instrumentation section did not require the automatic logic and initiating channels to be operable in Mode 4, and

- the only systems typically required in Mode 4 were the RHR and the charging systems. The charging system was typically always in operation when the RCS was pressurized, and in this mode manual realignment was considered acceptable for the RHR system.

The NRC resident inspectors discussed this item with the NRC technical specification reviewer, and the reviewer stated that it would be evaluated, as necessary, during the review of the final draft of the WBN technical specifications. The final draft version of the WBN technical specifications was issued to WBN on June 13, 1995. The requirement to perform an ECCS valve

alignment in Mode 4 (TS Section 3.5.3) had not been added to the final draft version of the technical specifications. This item is considered closed.

Within the areas examined, no violations or deviations were identified.d

19.0 EXIT INTERVIEW

The inspection scope and findings were summarized on July 7, 1995, with those persons indicated in paragraph 1. The inspector described the areas inspected and discussed in detail the inspection results. At the exit interview, the inspector stated that review was not complete of all information available to determine if the item 50-390/95-41-01 was a violation. Dissenting comments were not received from the applicant. Proprietary information is not contained in this report.

Item Number	Status	Description and Reference
390/93-88-01	Closed	IFI - Review ATI-55-01, Validation of System 55 Alarms for PTI-200-01 and PTI-211-01 (paragraph 18.1)
390/94-58-03	Closed	VIO - Failure to Follow Procedure Concerning the Implementation of Standing Orders and Night Orders (paragraph 18.2)
390/94-73-02	Open	VIO - Failure to Follow Clearance Procedures (paragraph 18.3)
390/95-18-02	Closed	VIO - Failure to Follow Procedures During SI DCN Implementation (paragraph 18.4)
Open Item	Closed	Observation Related to ECCS Valve Alignment in Mode 4 (paragraph 18.5)
390/95-41-01	Open	URI - Failure to Properly Identify Post-Maintenance Testing (paragraph 3.1)

20.0 LIST OF ACRONYMS AND INITIALISMS

ALARA	As Low as Reasonably Achievable
ANSI	American National Standards Institute
AOV	Air Operated Valve
ASOS	Assistant Shift Operations Supervisor
ATI	Acceptance Test Instruction

AUO	Assistant Unit Operator
CCP	Centrifugal Charging Pump
CCS	Component Cooling (Water) System
CFR	Code of Federal Regulations
CN	Change Notice
CVCS	Chemical Volume Control Systems
DBD	Design Basis Document
DCN	Design Change Notice
DD	Drawing Deficiency
DG	Diesel Generator
EAI	Engineering Administrative Instruction
ECCS	Emergency Core Cooling System
EPIP	Emergency Plan Implementing Procedures
EPRI	Electrical Power Research Institute
ERCW	Essential Raw Cooling Water
ERFDS	Emergency Response Facility Data System
FSAR	Final Safety Analysis Report
GL	Generic Letter
gpm	gallons per minute
HFT2	Hot Functional Testing Two
IFI	Inspector Follow-up Item
IMI	Instrument Maintenance Instruction
IR	Inspection Report
IRA	Independent Review and Analysis
ISE	Independent Safety Engineering
ISV	Isolation Valve
JTG	Joint Test Group
kV	kilovolt
LCO	Limiting Condition for Operation
MAMS	Material Access Management System
MIP	Materials Improvement Project
MTS	Master Tracking System
NQA	Nuclear Quality Assurance
NRC	Nuclear Regulatory Commission
NSRB	Nuclear Safety Review Board
NUREG	(NRC) technical report designation
PAI	Plant Administrative Instruction
PCG	Plant Completion Group
PDP	Positive Displacement Pump
PEG	Procurement Engineering Group
PER	Problem Evaluation Report
PERP	Plant Event Review Panel
PORC	Plant Operations Review Committee
PM	Preventive Maintenance
psig	pounds per square inch gauge
PTI	Preoperational Test Instruction
RCP	Reactor Coolant Pump
RCS	Reactor Coolant System
RHR	Residual Heat Removal
RO	Reactor Operator
SCAR	Significant Corrective Action Report
SI	Surveillance Instruction

SIS	Safety Injection System
SMP	Startup Manual Procedure
SOI	System Operating Instruction
SOS	Shift Operations Supervisor
SPOC	System Preoperation Checklist
SSP	Site Standard Practice
SSS	Shift Support Supervisor
STD	Standard
SWEC	Stone and Webster Engineering Corporation
TDH	Total Developed Head
TDN	Test Deficiency Notice
TEAM	Together Everyone Accomplishes Move
TI	Temporary Instruction
TMI	Three Mile Island
TS	Technical Specifications
TSC	Technical Support Center
TVA	Tennessee Valley Authority
UNID	Unique Identifier
UO	Unit Operator
VCT	Volume Control Tank
WID	Work Implementing Document
WO	Work Order

ATTACHMENT

SOI-62.01, CVCS Letdown and Charging, Revision 18

1. Comment: SOI-62.01, checklist sheet 8 of 17. Valve 1-TV-62-663 has Note 3 referenced which indicated to check for CAPS/FLANGE installed. This valve was the first of two isolation valves in the line which makes the note not applicable.

   Resolution: The procedure will be changed to delete Note 3 referenced to valve 1-TV-62-663.

2. Comment: The SOI checklist does not take into account ALARA considerations. Examples are:

   a) valves within an area were not grouped together on the checklist in an operator friendly manner to reduce the time required to perform the checklist;

   b) valves within a room were not grouped together which would eliminate the possibility of reentering the same room several times;

   c) valves which required special aids to reach (ladders, staging, etc.) were not identified; and,

   d) valves which would be difficult to locate were not identified with special location instructions.

   Resolution: The checklist will be corrected to reflect ALARA considerations such as those identified above.

3. Comment: Valves FCV-62-53, FCV-62-59, FCV-62-1228, FCV-62-1229, and the associated control air isolation valves for the operators of these valves are not included on the valve checklist.

   Resolution: This comment will be evaluated for incorporation.

4. Comment: The following DBD precautions, limitations, and setpoints are either not included in the SOI or are partially incorporated.

   DBD 3.4.1.1, Step 4 states: Explosive mixtures of hydrogen and oxygen in the VCT and the HUTs must be avoided at all times. The oxygen content in the tanks must not exceed 5% by volume. Nitrogen gas may be used for purging.

   DBD 3.4.1.1, Step 9 states: Concurrent closure of 1-ISV-62-953 and 2-ISV-62-953 is prohibited. This precaution is to assure a discharge path will always exist for the volume control tank and boron injection tank relief valves.

DBD 3.4.1.2, Step 4 states: When operating at a minimum charging flow rate, verify that the letdown flow is being cooled below 380 F. If not, increase both the charging flow and letdown flow by opening an additional letdown orifice flow path.

DBD 3.4.1.2, Step 6 states: The temperature of the liquid entering the demineralizer must not exceed 145 F.

Resolution: The above DBD precautions, limitations, and setpoints will be evaluated for inclusion into the SOI.

5. Comment: Valves 1-ISV-62-548 and 549 (Charging Line Isolation) are lined up closed in the checklist. Step 5.1.19 again lines these valves up closed. This appears unnecessary and could result in additional exposure to the operators by requiring this operation.

   Resolution: This comment will be incorporated.

6. Comment: CCP checks, including venting operations, are verified before starting the selected CCP during the establishment of letdown and charging per Section 5.1, Step 24. Section 6.2 swaps from one CCP to the other without verification of the same CCP checks as required for the initial starting of a CCP. The same checks should be made at this time per Section 5.1, Step 24. Same comment for Section 8.7 switching from PDP to CCP.

   Response: It was intended that Step 24 would be completed for both CCPs during the initial establishment of charging and letdown flow. The wording will be changed slightly and additional signoffs will be added to indicate both CCPS are to be prepared for operation during Step 24.

7. Comment: Section 8.2, Reestablishing Charging and Letdown contains a note that indicates that FCV-62-85 is preferred for use during odd numbered fuel cycles, and FCV-62-86 is preferred for use during even numbered fuel cycles. This note was an attempt to comply with the DBD 3.4.1.2, Step 3 requirement concerning alternating the normal and alternate charging lines such that neither path will be exposed to more than 60% of the design transients involving complete stoppage of letdown and/or charging flow. As Section 8.2 would be the procedure followed for reestablishing charging and letdown in the event they were lost, it would seem appropriate to swap over to the other charging line at this time and not base the swap over on fuel cycles. This would ensure compliance with the DBD requirement.

   Resolution: This comment will be evaluated for incorporation.

8. Comment: Control air valve 0-ISV-32-4960, Control Air El 713' AB Branch Isolation, supplies air to valves 1-TCV-62-79 and LCV-62-118 through their respective control air isolation valves. These are the only components this branch isolation valve supplies. All of these valves are located inside the filter doghouse which will be a potentially high radiation area. For ALARA considerations, the branch isolation valve

should be removed from the system 32 checklist and included in the system 62 checklist to avoid having to reenter the filter doghouse during the system 32 checklist performance.

Resolution: This comment will be evaluated for incorporation.

SOI-62.02, Boron Concentration Control, Revision 13

1. Comment: Step 3.0.C stated that, "Control rods will remain in maneuvering band limits during boron changes." The wording implied that the control rods would automatically remain in the maneuvering band limits during boron changes. However, during boron changes the rods may not automatically stay within specified limits.

   In addition, the term "maneuvering band limits was not clearly defined."

   Response: The applicant will revise the step to state that 'control rods should be maintained in Target Band limits during boron changes.' The term Target Band was defined in the WBN Nuclear Operating Book (Sheet A-1).

   The inspector agreed with the applicant's response and did not have any further questions related to this item.

2. Comment: Step 3.0.F stated that blender output should be periodically sampled to detect any deviation from desired concentration. It was not clear what periodically meant.

   Response: The applicant stated that a specific time or frequency was not specified so that based on observation of the effects of boron addition to the RCS the operator could determine when a sample was needed.

   The inspector agreed with the applicant's response and did not have any further questions related to this item.

3. Comment: DBD Precaution, 3.4.1.3 stated that, "Changes in reactor coolant chemistry should be anticipated whenever the boron is altered. During long term dilution, the reactor coolant should be checked to ensure compliance with the chemistry specifications." The inspector questioned if a similar precaution should be added to the SOI to check reactor coolant chemistry.

   Response: The applicant stated that RCS chemistry would be checked daily and more frequently on an as requested basis. Therefore, it was not necessary to include this precaution in SOI-62.02.

   The inspector agreed with the applicant's response and did not have any further questions related to this item.

4. Comment: DBD Precaution 3.4.1.3 states, When operating at a reduced load, it is preferable to adjust boron so that the control rods are

maintained in a position that facilitates responses to load increases within the restraints of constant axial operation offset control."

The inspector questioned whether this precaution should be included in SOI-62.02.

Response: The applicant stated that a more appropriate place for this precaution would be in one of the general operating instructions rather than in SOI-62.02 and that similar words were in the draft copy of GO-3. The inspector agreed with the applicant's response and did not have any further questions related to this item.

5. Comment: Step 3.0.L was under the Precautions and Limitation section and stated to, "Notify Instrument Maintenance (MIG) to ensure required instruments are placed in service as necessary to support system operation." The way the step was worded it was an action statement rather than a precaution or a limitation. In addition, the step did not specify what instructions MIG should use to ensure the required instruments were placed in service.

Response: The applicant stated that Plant Administrative Instruction PAI-2.01, Plant Operating Instructions, Revision 2, Step 2.2.K, required SOIs to contain a precaution stating that instrument maintenance department should be notified to ensure required instrumentation will be placed in service, as necessary, to support system operation. The applicant reworded Step 3.0.L to read, "Instrument maintenance (MIG) should be notified to ensure required instrumentation is placed in service to support system operation," so that it did not read like an action statement. In addition instructions were being developed, which would identify the specific instruments required for each system. These instructions would be referenced in appropriate SOIs when they were issued.

The inspector agreed with the applicant's response and did not have any further questions related to this item.

6. Comment: Step 6.5 [3] required the performer to adjust the Boron Batch Counter, 1-FQ-62-139, for the desired quantity but the instructions did not direct the performer to determine the required quantity.

Response: The applicant changed Step 6.5 [2] to direct the performer to determine the required quantity of boron acid to achieve RCS boron per TI-59 or computer program REACT.

The inspector agreed with the applicant's response and did not have any further questions related to this item.

7. Comment: In checklist 2 the nomenclature description for valves 1-RTV-62-445A and 446A was incorrectly given as 1-FI-62-137A/1-FI-62-137C. The component labels installed on these valves in the plant were

also incorrectly identified in the same way. The nomenclature description should have been 1-FI-62-137/1-FI-62-137C.

Response: The applicant stated that the information in SOI Checklist 2 and on the component labels would be corrected.

The inspector agreed with the applicant's response and did not have any further questions related to this item.