



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION II  
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ATLANTA, GEORGIA 30303-1257

October 15, 2015

MEMORANDUM TO: William M. Dean, Director  
Office of Nuclear Reactor Regulation

FROM: Leonard D. Wert, Jr. /RA/  
Acting Regional Administrator

SUBJECT: READINESS OF WATTS BAR UNIT 2 TO RECEIVE AN  
OPERATING LICENSE

Region II has completed the inspections needed to support issuing an operating license for Watts Bar Unit 2. NRC Inspection Procedure 94302, "Status of Watts Bar Unit 2 Readiness for an Operating License," lists the NRC findings necessary before an operating license can be issued. Those findings as described in Title 10 of the Code of Federal Regulations (10 CFR) Part 50.57 are: "(a)(1) Construction of the facility has been substantially completed, in conformity with the construction permit and the application as amended...;" "(a)(2) the facility will operate in conformity with the application as amended...;" and (a)(3)(ii) there is reasonable assurance that facility will be operated in accordance with the regulations...."

The NRC staff developed a plant-specific construction inspection program for Watts Bar Nuclear Plant (WBN) Unit 2, and specific inspection items were listed in the Inspection Planning and Scheduling (IP&S) data base. Items in IP&S include construction inspection procedures, corrective action programs and special programs Tennessee Valley Authority (TVA) developed to address historical quality assurance problems, generic communications, inspection open items, allegations and refurbishment activities. There were 560 items identified for WBN Unit 2. The NRC staff verified that the items needed for this readiness determination have been sufficiently addressed. Review and closure of the items are documented in 64 inspection reports issued during the past eight years. Those inspection reports are available on the WBN Unit 2 Reactivation website (<http://www.nrc.gov/info-finder/reactor/wb/watts-bar.html>). The twenty-one (21) IP&S items that have not been fully closed are listed in Enclosure 2, Open Items List, along with a description of why the items do not impact the readiness decision.

An overview of the WBN Unit 2 construction inspection program is provided in Enclosure 1. In addition to the IP&S items, the NRC staff has completed all pre-operational test procedure reviews and witnessed mandatory and safety-related system tests needed for the 10 CFR 50.57 findings. The NRC staff will perform additional inspections as TVA's pre-operational testing program is completed. Those testing activities are included in Enclosure 2.

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Region II operational preparedness inspections also verified that TVA has adequate management controls and procedures, including quality assurance programs, security, operations, and radiological controls necessary for an operating reactor.

In 2009, the NRC established the WBN Unit 2 Reactivation Assessment Group (WRAG), led by division level management from the Office of Nuclear Reactor Regulation (NRR) and Region II. The WRAG responsibilities include informing the Region II Regional Administrator when the activities in Inspection Manual Chapter (IMC) 2517, Watts Bar 2 Inspection Program, needed to support an operating license, have been completed.

On August 12, 2015, TVA submitted their substantially complete letter (ADAMS Accession No. ML15224B482) and requested that the NRC issue an operating license for WBN Unit 2. The staff reviewed that letter and briefed the WRAG on the results of the reviews. The staff's review of the letter was also factored into the three 10 CFR 50.57 findings.

Region II inspection activities support that the construction of the WBN Unit 2 facility has been substantially completed in conformity with the construction permit and the application as amended. This conclusion is based on completion of the construction inspections necessary to support this finding.

Region II inspection activities support that WBN Unit 2 facility will operate in conformity with the application as amended. This is based on completion of the pre-operational testing inspections identified in IMC 2513, Appendix A, Light Water Reactor - Preoperational Testing Phase, that are necessary to support this finding. The NRC staff will continue to implement IMC 2517, through WBN Unit 2 commercial operations. This will include completion of IMC 2513, Light Water Reactor Inspection Program - Preoperational Testing and Operational Preparedness Phase, IMC 2514, Light Water Reactor Inspection Program -- Startup Testing Phase, and the implementation of the reactor oversight program including IMC 2515, Light-Water Reactor Inspection Program-Operations Phase, at the issuance of the operating license.

Finally, Region II inspection activities support that there is reasonable assurance that activities authorized by the license will be conducted according to applicable regulations. This is based on completion of operational preparedness inspections items that were necessary to support this finding and conclusions from the Operational Readiness Assessment Team inspection (ORAT). The ORAT inspection (ADAMS Accession No. ML 15226A212) concluded TVA adequately demonstrated the readiness of the facility and staff to safely begin operating the WBN Unit 2 facility.

Inspections that have not been completed are listed in Enclosure 2 along with justification that the open items do not impact the determination that construction of the facility has been substantially completed, that the facility will operate in conformity with the application and that activities authorized by the license will be conducted according to the applicable regulations. For those items listed in Enclosure 2, a sufficient amount of inspection has been completed to provide reasonable assurance that associated systems, structures, components, or operational programs will perform as described in the application or applicable regulations.

In addition, Region II found no pending or open enforcement issues or open allegations that would affect a determination of reasonable assurance of the three 10 CFR 50.57 inspection findings. Integrated inspection report (IIR) 05000391/2015607 (ADAMS Accession No. ML15273A452) that was issued on September 29, 2015, contained a Severity Level IV Notice of Violation (NOV), involving deliberate misconduct by a contract employee. The staff conducted

an initial assessment of TVA's corrective actions while determining the appropriate enforcement actions for this matter. Based on this review, Region II determined this issue does not impact the 94302 recommendation. The NRC staff will continue review of the enforcement action in accordance with NRC procedures. Region II has reviewed the one currently open allegation for WBN Unit 2, including technical aspects and corrective actions. Region II determined the allegation does not impact the 94302 recommendation. The NRC staff will continue actions to address the allegation in accordance with our established process.

The NRC staff has assessed the safety culture for WBN Unit 2 with a variety of activities. On a routine bases, the resident inspectors monitored TVA's employee concerns program to review concerns and trends. During the annual problem identification and resolution inspections, the safety conscious work environment was assessed while interviewing the construction staff and reviewing related documents. Allegations for WBN Unit 2 also provided insight on safety culture. Overall, the NRC staff determined that TVA had established an adequate safety culture for WBN Unit 2.

The WRAG has reviewed the inspections completed, the items listed in Enclosure 2, and supports the Region II assessment that the necessary inspections and reviews have been completed to support the 10 CFR 50.57 (a)(1), (a)(2), and (a)(3)(ii) findings.

Enclosures:  
As Stated

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An overview of the WBN Unit 2 construction inspection program is provided in Enclosure 1. In addition to the IP&S items, the NRC staff has completed all pre-operational test procedure reviews and witnessed mandatory and safety-related system tests needed for the 10 CFR 50.57 findings. The NRC staff will perform additional inspections as TVA's pre-operational testing program is completed. Those testing activities are included in Enclosure 2.

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PUBLICLY AVAILABLE       NON-PUBLICLY AVAILABLE       SENSITIVE       NON-SENSITIVE  
ADAMS:  Yes      ACCESSION NUMBER: ML15288A305       SUNSI REVIEW COMPLETE       FORM 665 ATTACHED

OFFICE	RII:DCP	RII:DCP	RII:DCP	NRR	NRR	NRR	RII:ORA	RII:ORA
SIGNATURE	IRA via Email	RCH	WJ	IRA via Email	IRA via Email	IRA via Email	LAD	LW
NAME	E. Patterson	R. Haag	W. Jones	J. Poole	J. Quichocho	J. Trapp	L. Dudes	L. Wert
DATE	10/09/15	10/08/15	10/09/15	10/08/15	10/08/15	10/08/15	10/09/15	10/15/15
E-MAIL COPY?	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO

OFFICIAL RECORD COPY

## **Overview of the Watts Bar Unit 2 Construction and Testing Inspection Programs**

Inspection Manual Chapter (IMC) 2517 was issued to establish policy for implementing the WBN Unit 2 construction, preoperational testing, and startup testing inspection programs that are covered under IMCs 2512, 2513, and 2514. The construction inspection program was expanded to include items specific to WBN Unit 2 such as the refurbishment program and TVA-specific Corrective Action Programs (CAPs) and Special Programs (SPs). Since many of the WBN Unit 2 components had been installed during initial construction, the refurbishment program was implemented to assure the components meet or exceed their original specifications. The CAPs and SPs were implemented to correct historical problems encountered during initial construction. The construction inspection program also factored in both historical and current industry initiatives. Examples include motor operated valve testing and surveillance, potential impact of pressurized water reactor containment sump blockage, Fukushima response actions, and Design Vulnerability in Electrical Power System (Open Phase Condition).

### **A. Construction Phase Inspections**

#### **IMC 2512**

IMC 2512 prescribes all the required NRC construction inspection procedures (IPs). Many of these inspections were completed or partially completed prior to suspension of WBN Unit 2 construction in the mid-1980s. To understand the amount of previously completed WBN Unit 2 construction inspections, the staff performed a reconstitution of the 2512 inspection program. The reconstitution effort involved a computer assisted search of historical inspection reports to identify portions/ samples of 2512 IPs that had already been completed. Unfinished items in the IPs were noted, with the understanding that these items would be inspected following resumption of construction, such that all aspects of the 2512 IPs would be accomplished at the completion of WBN Unit 2 construction. New work (activities performed following resumption of construction in 2008) would also be inspected under the 2512 IPs, even if reconstitution had determined that the applicable section(s) of an IP had been completed.

Additional items were considered when developing a comprehensive construction inspection program for WBN Unit 2. The following items were added to the WBN Unit 2 construction inspection program:

- Old allegations – closed allegations were screened to identify possible WBN Unit 2 unresolved items.
- Generic Issues – The staff reviewed TVA's responses for all applicable issued generic communications including generic letters, bulletins, and Three Mile Island action items. Generic communications that were issued after construction on WBN Unit 2 resumed in 2008 were reviewed on a routine basis and added to the inspection program as applicable. Inspection was performed to address the resolution of each of the issues. Additionally, applicable Temporary Instructions were re-issued and utilized to perform the required inspections of outstanding design, licensing, and regulatory issues for WBN Unit 2.
- Construction Deficiency Reports (CDRs) – CDRs issued during initial construction that were not previously closed were reviewed to determine the current applicability on WBN Unit 2 construction and inspected as required.

- Inspection items identified during the licensing review process – Items identified for inspection follow-up in Appendix HH to NUREG-0847 "Safety Evaluation Report [SER] Related to the Operation of Watts Bar Nuclear Plant Units 1 and 2," and its supplements (SSER).
- Inspection Open Items – Unresolved items and violations identified in inspection reports were tracked and inspected for closure.

### Construction Refurbishment Program

Because plant construction was inactive for a long time and the scope of equipment layout activities was limited, TVA developed and submitted its Construction Refurbishment Program to ensure that the design and licensing basis, including original equipment design specifications, would be met. The Construction Refurbishment Program was intended to refurbish or replace most active components and instruments. For other equipment, the program determines the potential degradation mechanism for each category of components, taking into account the environmental conditions, the acceptance criteria, and the refurbishment or inspection activities necessary to demonstrate compliance with applicable vendor and design specifications or requirements. The NRC staff reviewed TVA's program and on July 2, 2010, issued its evaluation, which concluded that, upon proper implementation, the Construction Refurbishment Program would provide reasonable assurance that the equipment would meet its design criteria and perform its intended functions. A new IP 37002, "Construction Refurbishment Process—Watts Bar Unit 2," was developed to provide guidance for inspection of the refurbishment program. RII conducted several refurbishment inspections throughout the project. The IP was closed in inspection report 05000391/2014605 (ADAMS Accession No. ML14226A049).

### Inspection of Nuclear Performance Plan (NPP) Implementation

To address historical construction quality issues that were identified in 1985, TVA implemented its NPP which included Corrective Action Programs (CAPs) and Special Programs (SPs) to correct the deficient areas. At that time, TVA's NPP efforts were focused on WBN Unit 1. The NRC staff reviewed components of the NPP for WBN Unit 1 and recognized the general approaches of various corrective actions. From 1985 to 1993, the NRC focused on inspecting the CAPs and SPs as they applied to WBN Unit 1 and no conclusions were stated for WBN Unit 2.

To address the quality issue for WBN Unit 2, TVA developed CAPs and SPs that contained many of the same corrective actions performed at WBN Unit 1. TVA submitted its plans in 2008 detailing specific actions for the CAPs and SPs to resolve historical quality issues for WBN Unit 2. The staff reviewed these plans and determined that when implemented thoroughly, the proposed corrective actions should address the identified deficiencies for WBN Unit 2. Region II has inspected all of the CAPs and SPs and has concluded that the programs were adequate. Additional inspections are necessary for one CAP and two SPs to verify the implementation of the programs. These inspection items are listed in Enclosure 2.

### TVA Implementation of Fukushima Actions at WBN, Unit 2

Of the three Orders issued by the NRC related to the implementation of Fukushima actions, two were applicable to WBN based on plant design (spent fuel pool instrumentation and mitigating strategies).

The Orders state that prior to issuance of an operating license, the holder of a construction permit must state that they fully comply with the Order via letter to the NRC. TVA submitted a final Compliance Letter for the Spent Fuel Pool Order on December 19, 2014 (ADAMS Accession No. ML 15002A202). A Full Compliance Letter for the Mitigating Strategies Order was submitted on March 12, 2015 (ADAMS Accession No. ML15072A116). Since that time, TVA has implemented several of the actions, made modifications to the plant, and acquired new equipment. The NRC inspected a sample of these modifications focused on critical design and structural attributes using Temporary Instruction 2515/191. Additionally, inspections were performed of as-built and completed modifications to verify that specifications, drawings, requirements, and standards were met. The results of this inspection were issued on June 22, 2015, in inspection report 05000391/2015616 (ADAMS Accession No. ML15173A317).

#### Inspection of Design Vulnerability in Electrical Power System (Open Phase Condition)

An inspection was performed to verify actions to address the concerns identified in NRC Bulletin 2012-01, Design Vulnerability in Electrical Power System. The inspectors confirmed the interim actions taken by WBN Unit 2 in response to Bulletin 2012-001 were consistent with SSER 27, their September 3, 2014 and February 3, 2014, RAI responses and the TVA Response to Bulletin 2012-001, dated October 25, 2012.

### **B. Preoperational Testing Inspections**

#### IMC 2513 Appendix A

Region II implemented the preoperational testing inspections specified in Appendix A of IMC 2513. Appendix A contains the procedures applicable to verifying that systems and components important to safety of the plant are fully tested to demonstrate that they satisfy their design requirements. Region II has completed all of the selected IMC 2513 Appendix A procedure review inspections and the majority of the test witnessing inspections. The groupings of preoperational testing inspections are listed as follows:

#### Mandatory Tests

- Reactor Coolant System Hydrostatic Test
- Reactor Protection System Test
- Engineered Safety Features Test
- Loss of Offsite Power Test
- Containment Integrated Leak Rate Test
- Integrated Hot Functional Test

#### Primal System Testing

A minimum selection of five safety-related systems was required to complete the primal system testing inspection requirement. Region II developed an inspection sample based primarily on the risk-significance of systems at WBN Unit 2. The following systems were selected for review: auxiliary feedwater (AFW), chemical and volume control (CVCS), safety injection (SI), essential raw cooling water (ERCW), component cooling water (CCS), containment spray (CS), residual heat removal (RHR), main steam isolation valve (MSIV), main feedwater (MFW), ice condenser, and containment hydrogen mitigation.

## Other Inspections Areas Covered Under IMC 2513, Appendix A

IMC 2513 lists several other IPs that involve inspection of the testing program infrastructure and inspections of related areas that assess the quality of the plant as construction is near completion. Example IPs include “Quality Assurance for Preoperational Testing”, “Comparison of As-Built Plant to FSAR Description”, and “Testing of Pipe Support and Restraint Systems”.

### **C. Operational Preparedness Inspections**

#### IMC 2513 Appendix B

Operational preparedness inspections are specified in Appendix B of IMC 2513 and address functional areas such as operations, maintenance, radiological controls, security, etc. Many of these programs and procedures for WBN Unit 2 will be the same or nearly identical to those already established and in use for WBN Unit 1. The NRC staff reviewed each of the IPs in Appendix B and developed revised requirements for performing these IPs, focusing on aspects of these programs and procedures that are unique to WBN Unit 2 or required substantive changes to address WBN Unit 2. The inspection plan for the Appendix B inspections was issued to TVA by letter dated November 8, 2013 (ADAMS Accession No. ML13312A082).

#### Operational Readiness Assessment Team (ORAT) Inspection

The ORAT inspection was completed at WBN Unit 2 on June 26, 2015. The ORAT team performed an independent assessment of TVA’s readiness to operate and integrate WBN Unit 2 into a currently operating facility, WBN Unit 1. The ORAT inspection team looked at five broad areas: management oversight, control of safety-significant activities, operations training and experience, corrective action program, and maintenance support activities. The ORAT determined that TVA has programs and processes to effectively turnover systems from construction, to testing, and then to operations. Based on this determination and a review of other dual unit transition activities, the ORAT concluded that TVA has demonstrated their readiness to safety startup and conduct power operations on WBN Unit 2. The final inspection report was issued on August 14, 2015 (ADAMS Accession No. ML15226A212).



## OPEN INSPECTION ITEMS

Inspection Item	Basis to Remain Open After IP 94302 Issuance
<b>IMC 2512 - Construction Inspection (IP&amp;S Items)</b>	
<b>Fire Protection Corrective Action Program (CAP)</b>	NRC verified TVA's CAP has adequate corrective actions for the fire protection deficiencies. NRC verified a sample of fire protection deficiencies were adequately resolved. Additional NRC inspections of TVA's implementation of the fire protection program corrective actions will be conducted to close this item.
<b>Mechanical Equipment Qualification Special Program (SP)</b>	NRC inspection activities verified that applicable equipment is included in the mechanical equipment qualification SP. This was documented in inspection report 05000391/2012603. NRC also inspected implementation of the program for the containment spray system, including specific preventive maintenance plans for this system. This was documented in inspection report 05000391/2015605. The NRC will inspect additional samples to complete this item.
<b>Radiation Monitoring System SP</b>	NRC inspection verified that formal design criteria had been adequately established for the Unit 2 radiation monitoring system. Previous inspections of this SP were documented in inspection reports 05000391/2010603, 05000391/2010605, and 05000391/2011607. Further inspection will evaluate the implementation of this SP by verifying the installed equipment and its design.
<b>Inspection Procedure (IP) 63050, Containment Structural Integrity Test</b>	This IP consists of the procedure review, test witness, and results review for the containment structural integrity test. NRC reviewed the test procedure and determined that it was adequate and that the acceptance criteria met the design requirements. NRC also witnessed the successful completion of the test. NRC will review the results of the test to complete the inspection procedure.
<b>Bulletin 80-06, Emergency safety feature reset controls</b>	This item has been inspected as part of the emergency safety features (ESF) preoperational test. NRC verified by inspection that the reset feature meets its design requirements. The ESF test consists of three preoperational test instructions (PTIs), two of which have been witnessed by NRC inspectors and were determined to be adequate. NRC will inspect the remaining portion of the ESF test to complete this item.

Inspection Item	Basis to Remain Open After IP 94302 Issuance
<p><b>Three Mile Island (TMI) II.D.1, relief and safety valve test requirements</b></p>	<p>During hot functional testing (HFT), NRC witnessed the power operated relief valve (PORV) stroke time test. TVA is addressing PORV test deficiencies that were identified during the HFT. This includes testing the valve at a testing facility at normal operating conditions. NRC determined that the test plan is adequate and will review PORV stroke testing following re-installation.</p>
<p><b>Generic Letter (GL) 88-14, Instrument air supply system problems affecting safety-related equipment</b></p>	<p>Previous NRC inspection of this item verified that implementation of design changes and installation of equipment were consistent with TVA's approach documented in the NRC regulatory framework letter (ADAMS Accession No. ML 080320443). This was documented in inspection report 05000391/2013605. Additional inspection will be performed to verify that the test results meet the design requirements of the system.</p>
<p><b>GL 89-04, Guidelines on developing acceptable in-service testing (IST) programs</b></p>	<p>NRC verified through inspection that WBN Unit 2's IST program is the same as WBN Unit 1's program. Unit 1's program is in compliance with regulatory requirements. This initial IST program inspection for Unit 2 was completed and documented in inspection report 05000391/2014614. NRC will review additional IST baseline testing to complete the inspection of GL 89-04.</p>
<p><b>GL 04-02, Potential impact of debris blockage on emergency recirculation during design basis accidents at pressurized water reactors (PWRs)</b></p>	<p>Previous NRC inspection of the emergency recirculation system verified the adequacy of work associated with the containment sump and coatings inside containment that could impact containment sump performance. This inspection was documented in inspection report 05000391/2015604. NRC will review the final results of the containment latent debris walkdown to complete inspection of this generic letter.</p>
<p><b>Temporary Instruction (TI) 2500/19, USI A-26: Licensee's actions taken to implement USI A-26: Transient protection</b></p>	<p>NRC inspected WBN Unit 2's mitigation system for low-temperature overpressure transient conditions, and concluded that it was adequate. Inspections of the system implementation verified the design, administrative controls, procedures, modifications, training, and surveillances. The inspection results were documented in inspection reports 05000391/2013607 and 2015605. NRC will review the remaining PORV stroke time testing to complete this item.</p>
<p><b>TI 2500/20, ATWS Rule, GL 83-28 &amp; 85-06</b></p>	<p>Previous NRC inspections verified that the current design and sampled installation were in accordance with the approved design. These inspections were documented in inspection reports 05000391/2011603, 2014602, and 2014615. Additional inspections will review system testing to complete this item.</p>

Inspection Item	Basis to Remain Open After IP 94302 Issuance
<b>TI 2515/110, Performance of Safety-Related Check Valves,</b>	NRC has verified through inspection that WBN Unit 2's IST program which covers check valves is the same as WBN Unit 1's program. Unit 1's program is in compliance with regulatory requirements. An initial IST program inspection for Unit 2 was completed and documented in inspection report 05000391/2014614. NRC will review additional IST baseline testing to complete the inspection of this item.
<b>TI 2515/114, In-Service Testing, GL 89-04</b>	NRC has verified through inspection that WBN Unit 2's IST program is the same as Unit 1's program. Unit 1's program is in compliance with regulatory requirements. An initial IST program inspection for Unit 2 was completed and documented in inspection report 05000391/2014614. NRC will review additional IST baseline testing to complete the inspection requirements of this item.
<b>TI 2515/166, Containment sump blockage</b>	A previous NRC inspection of the emergency recirculation system verified the adequacy of work associated with the containment sump and coatings inside containment that could impact containment sump performance. This inspection was documented in inspection report 05000391/2015604. NRC will inspect the final results of the containment latent debris walkdown to complete inspection of this item.
<b>Inspector Follow-up Item 86-10-03, U2 Instrument Air Preoperational Test</b>	Previous NRC inspection of this item verified that implementation of design changes and installation of equipment were consistent with TVA's approach documented in the NRC regulatory framework letter (ADAMS Accession No. ML 080320443), and was documented in inspection report 05000391/2013605. Additional inspection will verify that the system test results meet the design requirements.
<b>Construction Deficiency Report (CDR) 83-61, Failure to provide self-contained lights as committed to NRC</b>	NRC verified through inspection that TVA's emergency lighting system modification methodology is adequate. The NRC will review additional samples when they are available to verify that the implementation of the program meets applicable regulatory requirements.
<b>CDR 86-11, Lack of thermal qualification for Systems 43 &amp; 90 piping</b>	This item required inspection of two systems, the radiation sampling system (system 43) and the radiation monitoring system (system 90). Previous NRC inspections of the radiation sampling system determined that the design, analysis, and implementation were adequate. This was documented in inspection report 05000391/2015607. Additional inspections of the radiation monitoring system implementation will be performed to complete this item.

Inspection Item	<b>Basis to Remain Open After IP 94302 Issuance</b>
<b>CDR 89-09, Significant trend associated with damaged, loose, or missing hardware</b>	NRC verified through inspection that the damaged, loose, and missing hardware program and associated procedures were adequate. This was documented in inspection report 05000391/2013605. NRC has performed several subsequent inspections of safety systems and determined that the program is being implemented appropriately. These inspections included hand-over-hand walkdowns of the systems as well as area walkdowns. NRC will walkdown additional systems and areas of the plant to complete this item.
<b>CDR 93-02, Loose flexible conduit fittings</b>	NRC has reviewed TVA's corrective actions and concluded that the program was adequate. This was documented in inspection report 05000391/2014604. NRC has performed several subsequent inspections of safety systems and determined that the program is being implemented appropriately. These inspections included system and area walkdowns. NRC will walkdown additional systems and areas of the plant to complete this item.
<b>Final CAP/SP Inspection - This item is to satisfy Section 03.02 of CAP/SP related TI's</b>	The TI for each CAP/SP requires a final inspection be performed after TVA certifies that the CAP/SP has been completed. All CAP/SPs have been inspected for technical adequacy to verify that the corrective actions that TVA developed to address the issues were acceptable. A sample of 20 certified CAP/SPs were inspected and documented in inspection report 05000391/2015607. NRC will perform additional inspection once TVA has certified the remaining CAPs/SPs are completed.
<b>Enforcement Action, EA-15-112; inspection report 05000391/2015607</b>	This severity level (SL) IV notice of violation (NOV) was the result of the enforcement process for NRC Office of Investigations Report 2-2013-017. The staff reviewed the initial corrective actions as part of the enforcement process and verified that the anchor bolt in question was acceptable and will not affect the ability of the reactor coolant drain tank pump 6 to perform its function. Further inspection of this issue will be performed after receipt of TVA's written response to the NOV.

	Inspection Item	Basis to Remain Open After IP 94302 Issuance
<b>IMC 2513 Appendix A – Pre-Operational Testing Inspection</b>		
	<b>IP 70329, Preoperational Test Results Evaluation</b>	Previous NRC inspections of preoperational test results have included the inspection requirements and guidance of IP 70329 into the scope of those reviews. These inspections concluded that the test results were adequate. Additional inspections of final test result evaluations will be performed to complete this inspection procedure.
	<b>IP 71302, Preoperational Test Program Implementation Verification</b>	Previous NRC inspections concluded that TVA's implementation of the preoperational test program was adequate. These inspections were documented in integrated inspection report 05000391/2014607. Additional inspections of the preoperational test program implementation will be conducted to complete this inspection procedure.
	<b>IP 70370, Testing Piping Support and Restraint Systems</b>	NRC has completed all aspects of the inspection procedure that were required during preoperational testing (IMC 2513). Additional inspections during plant operations will be conducted to complete this inspection procedure.
ESF	<b>IP 70315, Engineering Safety Features Test Witnessing</b>	This mandatory test consists of three PTIs. NRC has determined the PTIs were adequate and that the acceptance criteria met the design requirements. Also, NRC witnessed the acceptability of two of the PTIs. TVA stated in their substantially complete letter that this mandatory test would be completed prior to fuel load. NRC will witness the remaining PTI to complete the inspection procedure.
ESF	<b>IP 70322, Engineering Safety Features Test Results Evaluation</b>	Previous NRC inspections verified that the test procedures' acceptance criteria met the design requirements, that during the test the acceptance criteria was met, and that test deficiencies were properly identified for correction in accordance with TVA procedures. NRC will review the final test results to complete the inspection procedure.
RPS	<b>IP 70317, Reactor Protection System (RPS) Test Witnessing</b>	This mandatory test consists of seven PTIs. NRC has determined the PTIs were adequate and that the acceptance criteria met the design requirements. Also, NRC witnessed the acceptability of five of the PTIs. TVA stated in their substantially complete letter that this mandatory test would be completed prior to fuel load. NRC will witness the remaining two PTIs to complete the inspection procedure.
RPS	<b>IP 70325, Reactor Protection System Test Results Evaluation</b>	Previous NRC inspections verified that the test procedures' acceptance criteria met the design requirements, that during the test the acceptance criteria was met, and that test deficiencies were properly identified for correction in accordance with TVA procedures. NRC will review the final test results to complete the inspection procedure.

	Inspection Item	Basis to Remain Open After IP 94302 Issuance
		IMC 2513 Appendix A – Pre-Operational Testing Inspection
LOOP	<b>IP 70326, Loss of Offsite Power Test Results Evaluation</b>	Previous NRC inspections for the Loss of Offsite Power (LOOP) pre-operational tests verified that the test procedures' acceptance criteria met the design requirements, that during the test the acceptance criteria was met, and that test deficiencies were properly identified for correction in accordance with TVA procedures. NRC will review the results of the LOOP tests to complete the inspection procedure.
CILRT	<b>IP 70323, Containment System: Integrated Leak Rate Test Results Evaluation</b>	Previous inspections of this mandatory test verified that the acceptance criteria in the test procedures met design requirements, that during the test the acceptance criteria was met, and that test deficiencies were properly identified for correction in accordance with TVA procedures. NRC will review the final results of the test to complete the inspection procedure.
MFW	<b>IP 70400, Preoperational Test Results Evaluation</b>	NRC inspections for the primal preoperational test of the main feedwater (MFW) system verified that the acceptance criteria in the test procedure met design requirements, that during the test the acceptance criteria was met, and that test deficiencies were properly identified for correction in accordance with TVA procedures. NRC will review the final results of the test to complete the inspection procedure.
AFW	<b>IP 70438, Auxiliary Feedwater System (AFW) Test Witnessing</b>	This primal test consists of three PTIs. NRC has verified through inspection that the acceptance criteria in the test procedures met the design requirements, and witnessed the acceptability of the test for two of these PTIs. NRC will witness the remaining PTI to complete the inspection procedure.
AFW	<b>IP 70400, Preoperational Test Results Evaluation</b>	NRC conducted previous inspections of the AFW preoperational tests by verifying that the acceptance criteria in the test procedures met design requirements, that during the test the acceptance criteria was met, and that test deficiencies were properly identified for correction in accordance with TVA procedures. NRC will review the final results of the tests to complete the inspection procedure.
CVCS	<b>IP 70400, Preoperational Test Results Evaluation</b>	This primal test consisted of three PTIs. NRC conducted previous inspections of the chemical and volume control system (CVCS) preoperational tests, including verification that the acceptance criteria in the test procedures met design requirements, that during the test the acceptance criteria was met, and that test deficiencies were properly identified for correction in accordance with TVA procedures. NRC will review the final results of the tests to complete the inspection procedure.

	<b>Inspection Item</b>	<b>Basis to Remain Open After IP 94302 Issuance</b>
ERCW	<b>IP 70400, Preoperational Test Results Evaluation</b>	This primal test consisted of four PTIs. NRC conducted previous inspections for the essential raw cooling system (ERCW) preoperational tests, including verification that the acceptance criteria in the test procedures met design requirements, that during the test the acceptance criteria was met, that test deficiencies were properly identified for correction in accordance with TVA procedures, and that the final results of three of the PTIs were adequate. NRC will review the final results for the remaining PTI to complete the inspection procedure.
RHR	<b>IP 70400 Preoperational Test Results Evaluation</b>	This primal test consisted of three PTIs. NRC conducted previous inspections for the residual heat removal (RHR) system preoperational tests, including verification that the acceptance criteria in the test procedures met design requirements, that during the test the acceptance criteria was met, that test deficiencies were properly identified for correction in accordance with TVA procedures, and that the final results of two of the PTIs were adequate. NRC will review the final results for the remaining PTI to complete the inspection procedure.
H2	<b>IP 70442, Containment Combustible Gas (H2) Control System Test Witnessing</b>	This primal test consists of one PTI. NRC has reviewed the acceptance criteria in the test procedure to ensure that they met design requirements, and documented this in inspection report 05000391/2015605. Other NRC inspections have determined the design and constructability of the system were adequate. These inspections were documented in inspection reports 05000391/2011602, 2011604, 2011605, 2012603, 2013605, 2014604, and 2015602. NRC will witness the test to complete this inspection procedure.
H2	<b>IP 70400, Preoperational Test Results Evaluation</b>	NRC has reviewed the acceptance criteria in the hydrogen mitigation test procedure to ensure that they met design requirements, and documented this in inspection report 05000391/2015605. Other NRC inspections have determined the design and constructability of the system were adequate. These inspections were documented in inspection reports 05000391/2011602, 2011604, 2011605, 2012603, 2013605, 2014604, and 2015602. NRC will review the final test results to complete this inspection procedure.

Inspection Item	Basis to Remain Open After IP 94302 Issuance
<b>IMC 2513 Appendix B – Operational Preparedness Inspections</b>	
<b>IP 35744, Quality Assurance (QA) Program - Design Changes and Modifications</b>	An inspection of the design change and modification program has been performed and documented in inspection report 05000391/2013607. This inspection concluded that the program was in compliance with applicable regulatory requirements. Further NRC inspection is planned if temporary modifications are initiated during the first six months of operation.
<b>IP 35749, QA Program – Tests and Experiments</b>	An inspection of the 10 CFR 50.59 program procedures was performed and documented in inspection report 05000391/2014607. This inspection concluded that the program was in compliance with applicable regulatory requirements. The 50.59 program would not apply to Unit 2 until an operating license is issued. NRC will review TVA's implementation of this program to complete the inspection procedure.
<b>IP 64704, Fire Protection Program</b>	NRC has verified through inspection that the TVA's new dual unit fire protection program is in compliance with the as-constructed fire protection report. SSER 29 will document the final fire protection report and licensing basis. NRC will review additional samples of TVA's ongoing implementation of in-plant modifications that are credited in the fire protection program.
<b>IP 83526, Control of Radioactive Materials and Contamination, Surveys, and Monitoring</b>	A previous inspection of the radiation protection survey and monitoring program concluded that WBN Unit 1 capabilities currently in place for portable surveys, protective clothing, contamination control, and exit-point monitoring are adequate to support dual-unit operation. For the in-place radiation monitoring components unique to WBN Unit 2, the components have been installed. Additional inspections will review the results of the preoperational testing for these components.
<b>IP 84523, Liquids and Liquid Wastes</b>	A previous inspection reviewed the liquid radwaste system and liquid effluent monitors and determined that the processing, sampling, and discharge protocols and methodologies used for the liquid radwaste system in Unit 2 were the same as those used in WBN Unit 1. The inspection also determined that the installation and testing of the liquid effluent monitor was adequate. NRC will review additional testing results of the liquid radwaste system to complete this inspection procedure.
<b>IP 84524, Gaseous Waste System</b>	A previous inspection of the gaseous radwaste system and gaseous effluent monitors determined that the components unique to WBN Unit 2 had been adequately installed. NRC will review additional testing results of the gaseous radwaste system and gaseous effluent monitors to complete this inspection procedure.