

# POLICY ISSUE INFORMATION

December 27, 2010

SECY-10-0166

FOR: The Commissioners

FROM: Eric J. Leeds, Director  
Office of Nuclear Reactor Regulation

SUBJECT: THIRD REPORT ON STATUS OF LICENSING FOR THE WATTS BAR  
NUCLEAR PLANT, UNIT 2

## PURPOSE:

This paper is the third annual status report informing the Commission about the U.S. Nuclear Regulatory Commission (NRC) staff's activities, accomplishments, and challenges related to the reactivation of construction, licensing, and inspection for Watts Bar Nuclear Plant (WBN) Unit 2. This paper updates the status information provided in SECY-10-0015, "Second Annual Status of Reactivation of Construction and Licensing for the Watts Bar Nuclear Plant, Unit 2," dated February 1, 2010. This paper does not address any new commitments or resource implications.

## SUMMARY:

The WBN site has two Westinghouse-designed pressurized-water reactors, with Unit 1 in operation. On March 4, 2009, the Tennessee Valley Authority (TVA) submitted an updated operating license (OL) application for the unfinished WBN Unit 2 and expects to complete construction and seek an OL before April 1, 2012. The NRC staff is reviewing the OL application, including the safety, environmental, physical security, emergency preparedness, and antitrust areas. Dedicated resident inspectors, assisted by other regional inspectors, are inspecting and monitoring TVA's construction activities. An Atomic Safety and Licensing Board panel established by the Commission admitted a contention related to environmental issues and is expected to schedule its hearing on it in 2011.

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The Watts Bar Unit 2 Reactivation Assessment Group meets periodically and provides management oversight and direction for the staff's review of the OL application and construction inspection activities.

As discussed in the staff's second annual status report, the Office of Nuclear Reactor Regulation (NRR) staff documented the regulatory framework and reconstitution of the licensing basis for WBN Unit 2 in NUREG-0847, Supplement 21, "Safety Evaluation Report Related to the Operation of Watts Bar Nuclear Plant Unit 2," issued February 2009 (SSER 21). In SSER 21, the staff identified open items for review and resolution, including the Standard Review Plan topics, TVA's corrective action programs (CAPs) and special programs (SPs), TVA's responses to the NRC's generic communications, and other special topics, such as environmental, security, and antitrust issues.

TVA continues to submit amendments to the WBN Unit 2 final safety analysis report (FSAR) and other documents to address the open issues. The staff's review of them is in progress.

The following are some of the staff's major accomplishments during this status period.

The staff completed its review of all CAPs and SPs that TVA developed to address past performance and construction deficiencies at WBN and other TVA facilities. The staff reviewed TVA's Construction Refurbishment Program, which addresses age-related degradation of components. The staff also reviewed TVA's Licensing Basis Preservation Program, which ensures the continued validity of the staff's previous conclusions on Unit 2 when taking into consideration dual-unit operations or licensing- and design-basis changes made to WBN Unit 1 since its OL that will be implemented in Unit 2. The staff will audit and inspect TVA's implementation of these programs at WBN Unit 2.

The staff completed its review of TVA's responses to NRC generic communications (i.e., bulletins, generic letters (GLs), and orders) issued since 1995 (before issuance of the OL for WBN Unit 1) for WBN Unit 2 and found them to be acceptable, except for two GLs. The staff is awaiting TVA's responses to GL 2004-02, "Potential Impact of Debris Blockage on Emergency Recirculation during Design Basis Accidents at Pressurized-Water Reactors," dated September 13, 2004, and GL 2008-01, "Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems," dated January 11, 2008. As part of its review of FSAR topics, the staff will also verify that the applicant has addressed all applicable generic communications issued before 1995. This effort is in progress.

Other accomplishments include completion of the review of the quality assurance program, antitrust provisions, physical security plans, and the radiological emergency preparedness plan.

Also, on November 12, 2009, TVA submitted an application for a license to receive and store nuclear fuel at WBN Unit 2, under Title 10 of the *Code of Federal Regulations* (10 CFR) Part 70, "Domestic Licensing of Special Nuclear Material." The Office of Nuclear Material Safety and Safeguards is conducting the review, which should be completed in the spring of 2011. On November 5, 2010, TVA submitted an application for licenses for source and byproduct materials under 10 CFR Part 30, "Rules of General Applicability to Domestic Licensing of Byproduct Material," and 10 CFR Part 40, "Domestic Licensing of Source Material." Region I, Division of Nuclear Materials Safety, is conducting this review, which should be completed in early 2011.

As part of its updated OL application, TVA submitted a supplement to the final environmental impact statement for the completion and operation of WBN Unit 2. In response to statements made in Memorandum and Order CLI-10-29, dated November 30, 2010, the staff will address the need for power and alternative sources in its supplement to the final environmental statement for operation of WBN Unit 2.

Region II established and staffed the WBN Unit 2 site with one senior resident inspector and three resident inspectors to perform inspections of construction activities. Region II inspections and oversight of TVA activities according to established policies and requirements are in progress.

As directed by the Commission, the staff published in the *Federal Register* (FR) on May 1, 2009, the "Notice of Receipt of Update to Application for Facility Operating License and Notice of Opportunity for Hearing for the Watts Bar Nuclear Plant, Unit 2 and Order Imposing Procedures for Access to Sensitive Unclassified Non-Safeguards Information and Safeguards Information for Contention Preparation" (74 FR 20350). In response to the FR notice, the NRC received a petition to intervene and a request for hearing filed jointly by five organizations led by the Southern Alliance for Clean Energy (SACE). The request for hearing involved seven contentions. On November 19, 2009, the Atomic Safety and Licensing Board issued its memorandum and order that granted the request for hearing on behalf of SACE (SACE Contentions 1 and 7 were admitted and the others were denied). Contention 1 (on the status of TVA's compliance with Federal and State permits that would be required by 10 CFR 51.53(b) and 10 CFR 51.45(d) for the construction and operation of WBN Unit 2) was recently dismissed by agreement among the parties. A hearing on admitted Contention 7 is expected to be scheduled in 2011.

The staff completed its coordination with the Department of Justice (DOJ) regarding the staff's antitrust review and on December 16, 2010, DOJ informed the staff that no significant changes requiring an antitrust hearing have occurred.

The staff is facing certain technical and schedule challenges. NRR senior management is taking actions to address these challenges and minimize the impacts these challenges will have on the completion of licensing activities.

The [enclosure](#) provides a detailed discussion of the status of activities on the OL review project for WBN Unit 2

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COORDINATION:

The Office of the General Counsel has reviewed this paper and has no legal objection. The Office of the Chief Financial Officer has reviewed this paper for resource implications and has no objections.

***/RA Fred Brown acting for/***

Eric J. Leeds, Director  
Office of Nuclear Reactor Regulation

Enclosure:  
[Status of Reactivation](#)

STATUS OF REACTIVATION OF CONSTRUCTION AND LICENSING  
FOR THE WATTS BAR NUCLEAR PLANT, UNIT 2

BACKGROUND:

By letter dated August 3, 2007, the Tennessee Valley Authority (TVA) informed the U.S. Nuclear Regulatory Commission (NRC) of its plan to reactivate and complete construction activities at Watts Bar Nuclear Plant (WBN) Unit 2, using the existing construction permit issued under Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, "Domestic Licensing of Production and Utilization Facilities." In Staff Requirements Memorandum (SRM) SECY-07-0096, "Staff Requirements—Possible Reactivation of Construction and Licensing Activities for the Watts Bar Nuclear Plant Unit 2," dated July 25, 2007, the Commission provided direction for the licensing and inspection program approach that should be used for WBN Unit 2. On March 4, 2009, TVA provided an update to its original operating license (OL) application (circa 1976). The latest completion date in the construction permit for WBN Unit 2 is March 31, 2013.

The Office of Nuclear Reactor Regulation (NRR) issued Office Instruction LIC-110, "Watts Bar Unit 2 License Application Review," on September 2, 2008, to provide guidance for the review of the WBN Unit 2 OL application. The NRC issued Inspection Manual Chapter (IMC) 2517, "Watts Bar Unit 2 Construction Inspection Program," to provide guidance for the inspection and performance assessment for WBN Unit 2 construction. Region II established and fully staffed the WBN Unit 2 site resident inspector (RI) office with one senior RI (SRI) and three RIs to perform inspections of construction activities.

The Watts Bar Unit 2 Reactivation Assessment Group (WRAG) provides management oversight and direction for the staff's review of OL and construction inspection activities for WBN Unit 2. The WRAG will maintain its overview of the licensing process until the agency makes a final decision on the issuance of a full-power OL or until such time as mutually agreed upon by the Director of NRR and the Regional Administrator of Region II.

STATUS:

The staff's review of the WBN Unit 2 OL application involves resolution of the topics related to the NRC's Standard Review Plan (NUREG-0800, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants," hereafter referred to as the SRP), TVA's corrective action programs (CAPs) and special programs (SPs) developed as part of its Nuclear Performance Plan, TVA's responses to NRC generic communications, and other special topics, such as environmental, security, emergency preparedness, and antitrust issues. This report discusses the status of the staff's licensing review of these topics and inspection activities associated with completion of the construction of WBN Unit 2. The discussion includes the staff's accomplishments to date, current staff activities, and significant issues and challenges.

1. Status of Hearing on the Operating License Application

On May 1, 2009, the staff published in the *Federal Register* (FR) a notice of additional opportunity for the public to request a hearing on TVA's updated OL application for WBN Unit 2

Enclosure

(74 FR 20350). In response to the notice, the NRC received a petition to intervene and a request for hearing filed jointly by five organizations led by the Southern Alliance for Clean Energy (SACE). The request for hearing involved seven contentions. On November 19, 2009, the Atomic Safety and Licensing Board (the Board) issued a memorandum and order that granted the request for hearing on Contentions 1 and 7 and denied the others. Contention 1 (on the status of TVA's compliance with Federal and State permits that would be required by 10 CFR 51.53(b) and 10 CFR 51.45(d) for the construction and operation of WBN Unit 2) was dismissed by agreement among the parties after TVA provided supplemental information about local permits. Contention 7 involves the accuracy of TVA's characterization of the current aquatic environment in the vicinity of the WBN facility and the adequacy of TVA's analysis of the impact of Unit 2 on the surrounding aquatic environment. The staff is keeping the Board informed of its schedule to complete its safety and environmental reviews so that the Board will be able to establish its hearing schedule on the admitted contention.

In the Commission's Memorandum and Order CLI-10-29, dated November 30, 2010, the Commission informed SACE that it declined SACE's request for interlocutory review of the Board's ruling denying SACE's petition to waive 10 CFR 51.53(b), 10 CFR 51.95(b), and 10 CFR 51.106(c), which preclude further review of the need for power and alternative energy sources once a construction permit has been issued. However, in CLI-10-29, the Commission stated that the purpose of the regulatory provisions at issue was to avoid unnecessary consideration of these issues, recognizing that they are not likely to alter the cost-benefit balance. The Commission also stated that it recognized the NRC's obligation under the National Environmental Protection Act to supplement the environmental review documents if there is new and significant information relevant to these matters. Therefore, the Commission stated that it expects the staff to take the requisite "hard look" at the new information on the need for power and alternative sources of energy. If the staff concludes that the legal threshold for new and significant information has been met, the Commission authorizes the staff to supplement the final environmental statement related to the operation of WBN Unit 2 (FES-OL) in this instance. Therefore, the NRC staff will address the need for power and alternative energy sources in the supplement to the FES-OL and make a determination on its significance.

## 2. Watts Bar 2 Reactivation Assessment Group Oversight Continues

On July 10, 2009, the Director of NRR and the Regional Administrator of Region II established the WRAG to provide oversight and management direction for the staff's review of the OL application for WBN Unit 2 and completion of the construction inspection program.

On September 23, 2010, the WRAG held its fourth meeting and discussed the status of the project, including regulatory issues that must be resolved and challenges facing the project. This meeting took place near the WBN site. WRAG meeting summaries document WRAG action items and track their closure. The next meeting is tentatively scheduled for February 2011 at the NRC's Headquarters. Following its internal meeting, the WRAG will meet with TVA management in a public meeting to assess TVA's overall progress.

## 3. Operating License Application Review Continues

As discussed in SECY-10-0015, "Second Annual Status of Reactivation of Construction and Licensing for the Watts Bar Nuclear Plant, Unit 2," dated February 1, 2010, the NRR staff

documented the regulatory framework and reconstitution of the licensing basis for WBN Unit 2 in Supplement 21, "Safety Evaluation Report Related the Operation of Watts Bar Nuclear Plant Unit 2" (SSER 21), issued February 2009, to NUREG-0847, "Safety Evaluation Report Related to the Operation of Watts Bar Nuclear Plant, Units 1 and 2" (hereafter referred to as the SER). In SSER 21, the staff also identified open topics that require resolution in order to complete its OL review.

The staff identified other issues in SSER 21 that must be resolved, including generic correspondence (GC) issues since the start of licensing in 1973 and TVA's CAP and SP resolution described in NUREG-1232, Volume 4, "Safety Evaluation Report on Tennessee Valley Authority, Watts Bar Nuclear Performance Plan, Watts Bar Unit 1," issued January 1990. TVA has made most of its submittals to address these issues; their status is discussed below.

a. Review of SRP Topics Continues

TVA completed engineering and design activities that address the majority of SRP topics and submitted updates as amendments to the WBN 2 final safety analysis report (FSAR). The staff's review of these topics is in progress. The staff expects to complete its review by late spring 2011.

b. Review of CAPs and SPs Completed

As part of its Nuclear Performance Plan for addressing certain historical construction and performance deficiencies at WBN and other facilities, TVA developed and implemented 18 CAPs and 11 SPs. In its letters dated January 29, May 29, and September 26, 2008, TVA proposed its implementation approach for these CAPs and SPs at WBN Unit 2. The staff's review determined that, when fully implemented by TVA, the CAPs and SPs approaches should adequately address the historical deficiencies. TVA's implementation of the CAPs and SPs and the staff's inspections of TVA's activities are in progress.

c. Review of Generic Correspondence Continues

The staff's review of TVA's responses to GC issues, involving bulletins, generic letters (GLs), and orders, is divided into two categories:

- (1) GCs issued before 1995 when Unit 1 was licensed. TVA had responded to most of these GCs for both units during the Unit 1 OL review process. As part of its review of FSAR and SRP topics, the staff will ensure that the resolution of these GCs is addressed, as necessary, in the WBN Unit 2 FSAR. This review is ongoing.
- (2) GCs issued after 1995 after Unit 1 was licensed. While Unit 2 was in a deferred status, TVA addressed post-1995 GCs only at WBN Unit 1. TVA is now providing responses to them for WBN Unit 2. The staff has completed its review of post-1995 GCs except for GL 2004-02 ("Potential Impact of Debris Blockage on Emergency Recirculation during Design Basis Accidents at Pressurized-Water Reactors," dated September 13, 2004, on Generic Safety Issue 191, "Assessment of Debris Accumulation on PWR Sump Performance") and GL 2008-01 ("Managing Gas Accumulation in Emergency Core

Cooling, Decay Heat Removal, and Containment Spray Systems,” dated January 11, 2008). The staff will document the results of its review in SSER 22. TVA’s responses to the two remaining GCs are expected by the end of this year.

#### 4. Review of Construction Refurbishment Program Completed

Because plant construction was inactive for a long time and the scope of equipment layup 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. Under this program, TVA intends 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 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. The staff issued Inspection Procedure 37002, “Construction Refurbishment Process—Watts Bar Unit 2,” on February 5, 2010, to provide guidance for inspection of the refurbishment program. Region II’s inspection of TVA’s implementation activities is in progress.

#### 5. Licensing Basis Preservation Program Completed

As part of its OL application for WBN Unit 1, TVA submitted, and the staff reviewed and approved, certain SER topics for WBN Unit 2, but the staff made no final conclusions about the OL for WBN Unit 2. During its current review of the WBN Unit 2 OL, the staff reviewed the SER and SSERs 1 through 20 and identified topics that had been previously resolved for WBN Unit 2. The staff documented this evaluation in SSER 21 as the baseline for resuming the review of the Unit 2 OL application.

However, the NRC staff recognized that there may be circumstances that may affect the staff’s previous conclusions for WBN Unit 2. Examples include WBN Unit 1 design- and licensing-basis changes made after the issuance of the OL that will be implemented for Unit 2, or dual-unit operation considerations. Changes include items approved by amendments under 10 CFR 50.90, “Application for Amendment of License, Construction Permit, or Early Site Permit,” changes implemented in accordance with 10 CFR 50.59, “Changes, Tests and Experiments,” and improvements that are being implemented at Unit 2. TVA needs to review these changes and plant modifications to determine whether the previous conclusions made in the NUREG-0847 topics are affected. Also, consistent with the Commission’s SRM dated July 25, 2007, TVA should assess the effect of any exemptions, reliefs, and other actions that were specifically granted for Unit 1 to determine if the same allowance is appropriate for Unit 2. Therefore, the NRC staff required and TVA submitted the Licensing Basis Preservation Program to confirm the validity of previously completed NRC safety evaluations to the final WBN Unit 2 design, or to identify topics that require supplemental review. The NRC staff reviewed TVA’s program to preserve the licensing basis for Units 1 and 2 and found it to be acceptable. The staff will audit and inspect TVA’s implementation of the program.

## 6. Review of the Applications for Materials Licenses Continue

Separate from the OL application, on November 12, 2009, TVA submitted an application for a license to receive and store nuclear fuel at WBN Unit 2 under 10 CFR Part 70, "Domestic Licensing of Special Nuclear Material." The Office of Nuclear Material Safety and Safeguards is conducting the review. The staff expects to complete this review in spring 2011.

On November 5, 2010, TVA submitted an application for licenses for source and byproduct materials (such as needed to manage fission detectors and irradiated reactor vessel surveillance capsules) under 10 CFR Part 30, "Rules of General Applicability to Domestic Licensing of Byproduct Material," and 10 CFR Part 40, "Domestic Licensing of Source Material." Region I, Division of Nuclear Materials Safety, is conducting this review. The staff expects to complete this review in early 2011.

## 7. Environmental Scoping and Supplement to Environmental Statement Continue

As part of its updated application, TVA submitted a supplement to the final environmental impact statement for the completion and operation of WBN Unit 2 (SFEIS). TVA also provided additional information on the supplemental condenser cooling system and severe accident mitigation alternatives (SAMA). TVA had addressed the severe accident mitigation design alternative for Unit 1 in its previous final environmental impact statement (FEIS). As part of its review for WBN Unit 2, the staff issued a notice of intent to prepare a supplement to its final environmental statement for the operating license (FES-OL) and to conduct a scoping process. The staff held a two-session meeting in Sweetwater, TN, on October 6, 2009, to inform the public that a supplement to the FES-OL would be prepared in accordance with 10 CFR 51.92, "Supplement to the Final Environmental Impact Statement." The staff also provided the public with an opportunity to participate in the environmental scoping process, as defined in 10 CFR 51.29, "Scoping—Environmental Impact Statement and Supplement to Environmental Impact Statement." The staff received public comments at the meeting and in writing. The staff will address these comments in the draft supplement to the FES-OL that it is scheduled to issue in early 2011.

The staff has raised questions and requested additional information on the SFEIS, including SAMA. TVA prepared its SAMA based on the prior probabilistic risk assessment (PRA) methodology. Subsequently, TVA developed a new PRA in accordance with Regulatory Guide 1.200, "An Approach for Determining the Technical Adequacy of Probabilistic Risk Assessment Results for Risk-Informed Activities." Because the new PRA results showed differences in core damage frequencies, large early release frequencies, and initiator distribution, the staff questioned the possible impact to the SAMA results. On October 14, 2010, TVA responded to the staff and provided its SAMA analysis report for WBN Unit 2, which used the latest Computer Aided Fault Tree Analysis (CAFTA) model to evaluate Unit 2 severe accidents.

The report identified additional SAMA candidates based on the contributors to risk. After performing a revised cost-benefit analysis of all candidates, TVA determined that two previous SAMA candidates were not cost beneficial and identified four new procedural enhancements that are potentially cost beneficial. The NRC staff's review is in progress.

This process has impacted the originally planned completion of the staff's draft supplement to the FES-OL. The staff expects to complete its review and issue its FES-OL by the summer of 2011. The staff is assessing the impact on the overall project schedule.

#### 8. Review of Radiological Emergency Response Plan Continues

The NRC staff has interfaced with the Federal Emergency Management Agency (FEMA) on respective agency responsibilities associated with the onsite and offsite emergency preparedness review for WBN Unit 2. FEMA has transmitted its "Interim Finding Report for Reasonable Assurance for the Adequacy of Offsite Radiological Emergency Response Planning for the Watts Bar Nuclear Plant," dated October 6, 2009. FEMA determined that the plans are adequate and that there is reasonable assurance that the plans can be implemented with no corrections needed. Therefore, there are no open items on the offsite plans. The interim findings report forms the basis of the offsite preparedness discussion for the staff's SER. In its letter of August 20, 2010, FEMA informed the staff that a qualifying exercise was not necessary for Unit 2. Based on the results of the June 10, 2009, exercise for Unit 1 and its review of the State of Tennessee's annual letters of certification for 2008 and 2009, FEMA found the offsite radiological emergency response plans and preparedness can be implemented and are adequate. The NRC staff completed its review of the changes made to the onsite radiological emergency plans and the updated evacuation time estimates.

The staff will document its conclusions about the adequacy of the planning basis for an acceptable state of emergency preparedness for WBN Units 1 and 2, compliance with the planning standards in the regulations, and implementation of the WBN Radiological Emergency Plan in the next supplement to the SER. It will also document FEMA's findings and determinations on the adequacy of offsite emergency planning and preparedness in this supplement.

#### 9. Review of Security Program Plans Continues

The staff reviewed the changes made by TVA to the WBN site security plan (physical security plan, training and qualification plan, and safeguards contingency plan) after it was last formally approved by the NRC. In particular, the staff reviewed the changes made in Revision 10 to the security plan and identified some areas requiring clarification. TVA submitted Revision 11 to the plan in July 2010, which addressed the items. The NRC staff will document its determination in the next SER supplement about whether these plans contain the necessary programmatic elements and, when effectively implemented, will provide the required level of security. Effective implementation depends on the procedures and practices that TVA develops to satisfy the programmatic elements of its plans. In this regard, the target set analysis, site protective strategy, and facility implementing procedures will be subject to future NRC inspection and review.

In a letter dated July 23, 2010, TVA provided a revised cyber security plan and implementation schedule for Watts Bar Units 1 and 2. In developing the revised plan, TVA used the template in Nuclear Energy Institute (NEI) 08-09, "Cyber Security Plan Template," Revision 6, issued April 2010. TVA submitted a new implementation schedule for Unit 2, stating that it expects to complete the implementation of the cyber security program before licensing. Sufficient design

and implementation activities should be completed to support an NRC audit or inspection of the Unit 2 cyber security program in April 2011. On this basis, the NRC staff will be able to support an audit or pilot inspection of the program in 2011.

#### 10. Antitrust Review

In 2005, Congress amended the Atomic Energy Act of 1954, eliminating the need for antitrust reviews of OL applications for future applications occurring after the date of the amendment. However, the NRC received and docketed the OL application for WBN Unit 2 in 1976, predating this amendment to the Atomic Energy Act. Therefore, the staff will perform an antitrust review of WBN Unit 2. The staff is working with a contractor to complete the effort.

In its letter of May 13, 2010, TVA submitted updated antitrust information in conjunction with its updated application for an OL for Unit 2. This information will help the staff to determine whether any significant changes have occurred since the completion of the antitrust review conducted for Watts Bar in 1979. The staff published a notice in the *Federal Register* on July 8, 2010, acknowledging receipt of the updated antitrust information, describing the procedures the NRC staff will use to conduct its evaluation, and providing a 30-day period for submission of public comments. The agency did not receive any comments.

Historically, the NRC has consulted with the U.S. Attorney General on these antitrust determinations. On September 3, 2010, the staff requested consultation about TVA's antitrust information supporting the Watts Bar Unit 2 OL application from the U.S. Department of Justice Antitrust Division. On December 16, 2010, the Department of Justice notified the staff that it had completed its examination and concluded that no significant changes requiring an antitrust hearing have occurred. The staff will publish the finding in the *Federal Register* and offer parties a 30-day period to request re-evaluation.

#### 11. Fire Protection Program

In 1995, TVA provided Revision 5 of the WBN fire protection report to address open issues and to update information based on the completion of fire protection activities in support of licensing WBN Unit 1. When the NRC granted the OL for Unit 1, it placed a condition in the license stating that the licensee may make changes to the approved fire protection program without prior approval of the NRC only if those changes would not adversely affect the ability to achieve and maintain safe shutdown in the event of a fire.

In support of its review of the OL application for WBN Unit 2, the NRC staff will assess the current fire protection program (Revision 41) to confirm that prior staff conclusions about program acceptability remain valid, including those related to safe-shutdown capability and treatment of multiple spurious operations and operator manual actions. In particular, the staff will review the changes made by TVA since the last NRC formal review of the program. Because these changes were completed during a period of single-unit operation, the staff will assess the impacts of shared fire protection system operation during dual-unit operation.

## 12. Construction Inspection Activities

### a. Resident Inspector Office Activities

With the increase of safety-related construction activities at WBN Unit 2, Region II has increased the number of inspections performed by resident staff and regional inspectors. To accomplish this, the Region has added one additional RI. The RI office is staffed with one SRI and three RIs to perform the inspections of construction activities at WBN Unit 2. The RIs will be involved with system preoperational and startup testing and the transition of WBN Unit 2 from construction to operations. One of the RIs will eventually become an operational RI.

Also, with the increase in Unit 2 construction activities, Region II recognized the increased possibility that construction activities could adversely impact Unit 1 operations. The Region issued specific inspection guidance that expanded and better defined expectations for both units' resident staff to monitor TVA's controls to ensure that Unit 2 construction activities do not adversely impact Unit 1.

### b. Inspection of Corrective Action Programs and Special Programs Continues

TVA developed the CAPs and SPs to resolve concerns with the quality of construction at WBN in the 1970s and early 1980s. For the majority of CAPs and SPs, TVA plans to implement the same actions for WBN Unit 2 that it successfully implemented for Unit 1. Region II continues to inspect CAPs and SPs and has completed inspections and closed approximately 10 percent of the CAPs and SPs.

### c. Construction Inspection Activities Continue

The RIs and regional inspectors continue to inspect construction activities. Their focus has been on inspection procedures not fully completed during initial construction inspections, CAPs and SPs, generic communication items (e.g., bulletins, Three Mile Island action items, and GLs), and "new" work. Approximately 465 inspection items have been entered in Region II's Inspection Planning and Scheduling (IP&S) database. Items in IP&S will be inspected and closed before completion of the inspection program. Items that cannot be closed prior to startup will be assessed for impact on plant startup and an alternate closure schedule will be developed.

A problem identification and resolution (PI&R) team inspection was completed in August 2010. This was the second PI&R inspection of the corrective action program for WBN Unit 2. The staff performed a vendor inspection in July 2010 to assess the oversight of vendors supplying services for WBN Unit 2. NRR led the vendor team, which consisted of NRR staff and a regional inspector experienced in quality assurance and procurement activities.

In coordination with NRR staff, Region II developed IP 37002 to establish an approach to and detailed guidance for inspection of TVA's implementation of its refurbishment program. The Region performed a team inspection of the refurbishment program in June 2010. This inspection focused on the scope of the refurbishment program and on verification that the required components, structures, and commodities were included in the program. The Region is continuing to inspect TVA's implementation of various refurbishment activities.

d. Independent Design Verification Program Scheduled

The NRC staff determined that an IDVP inspection will be conducted to verify that key aspects of the plant have been designed properly. TVA has also completed its IDVP and has documented the results in a report that it will be reviewed by the NRC staff.

The Region is preparing to conduct the IDVP inspection in February 2011. Contractor support personnel with specific design experience along with regional inspectors will make up the IDVP inspection team. The team will review TVA's IDVP assessments results and factor that into the scope of the NRC inspection.

e. Annual Assessment and Meeting

On March 2, 2010, the Region provided TVA with the 2009 Annual Assessment Letter summarizing CY 2009 inspection results and planned inspection efforts for CY 2010. On April 20, 2010, the staff held a public meeting and shared the results with TVA personnel and the members of the public who were in attendance.

13. Current Challenges and Other Issues

a. Hydrology

During a combined OL application review for Bellefonte Units 3 and 4 by the Office of New Reactors (NRO), the staff found some design input data and other issues with the hydrology code, Simulated Open Channel Hydraulics (SOCH), that do not accurately reflect the existing configuration and operation of the Tennessee River. TVA did not provide sufficient information to demonstrate that it has properly maintained the design basis for the maximum predicted flood level at its nuclear facilities. TVA continues its effort to identify all errors in the SOCH code and to confirm that existing flood mitigating measures are adequate to bound any errors identified to date with the current design-basis data inputs and the SOCH code for each operating facility. The staff is monitoring TVA's actions for their potential to affect the OL review for WBN Unit 2.

The NRO staff is assisting NRR with the review of this issue. The NRR and NRO management teams are working to ensure that adequate staff resources will be available and that the necessary inspections will occur to minimize the potential for this issue to become a constraint to completion of the WBN Unit 2 licensing reviews.

b. Schedule Extended for Environmental Reviews

TVA's delay in providing additional information about the impact of the new WBN PRA on the results of its SAMA analysis, along with delays in responding to other staff questions, has impacted the staff's completion of the draft supplement to the FES-OL. The staff now expects to issue the draft supplement for public comment in mid 2011. The staff will also hold a public meeting near the plant site during the 45-day comment period to facilitate the receipt of comments. The staff will address any comments on the draft supplement in its final

supplement. Upon issuance of the final supplement, the Board will be able to schedule the hearing and the Advisory Committee on Reactor Safeguards (ACRS) will be able to complete its deliberations.

c. Fire Protection Program Review Delayed

Because TVA did not submit its final fire protection report until December 2010, the staff may not be able to complete its review until May 2011. To minimize the impact of the delay, TVA had provided some information before submitting the report. The information and the fire protection report will need to be assessed upon completion of the as-built design and the final development of the safe-shutdown procedures.

d. Technical Review Staff Resources for Digital Instrumentation Review

The staff is facing challenges to complete its review of instrumentation and controls issues at WBN Unit 2 because of unanticipated technical complexities with digital instrumentation systems and delays in obtaining responses to the staff's request for additional information. NRR management has reviewed the resources spent in recent digital upgrades at Oconee Nuclear Station to get a better understanding of the scope of the review effort and of staff resources needed to complete its WBN Unit 2 review of this area. The staff continues to focus its resources and review effort to address issues as they emerge to minimize the potential impact on the project completion schedule.

14. Advisory Committee on Reactor Safeguards Review

As part of its statutory responsibilities, ACRS reviews and reports on applications for construction permits and facility OLs and advises the Commission on the hazards of proposed reactor facilities. Toward this end, the staff has met periodically with the ARCS Subcommittee on Plant Operations and Fire Protection to discuss significant topics associated with the Watts Bar Unit 2 OL review. In particular, the staff and TVA met with the subcommittee in March and October 2010 to discuss issues related to the TVA Construction Refurbishment Program, overall licensing and inspection status, and staff oversight and project management. TVA and the staff addressed a number of the subcommittee's concerns about plant aging and underground pipe and cable. The staff plans to meet with the subcommittee in February 2011 to discuss the staff's findings that will be documented in SSER 22. The staff expects to discuss a major portion of the review topics, except for those longer term review areas and challenges as described earlier. These areas will be addressed in a future subcommittee meeting.