Watts Bar Nuclear Plant
Unit 2 Completion Project

Twelfth Quarterly Update to the Estimate to Complete February - April 2015

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Nuclear Construction

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Section 1 - Executive Summary

The 12th quarterly update of TVA's Estimate to Complete (ETC) for Watts Bar Nuclear Plant (WBN) Unit 2 focuses primarily on the activities between February and April, 2015.

Performance during the quarter continued to be consistent with the ETC, and project targets continued to be met for safety, quality, cost, and schedule.

The project completed cooldown and began loading ice in the ice condenser system, expecting to complete the 1,944 baskets by June. System completion and turnover activity also increased, with 12 more systems released for testing by Startup and 3 more systems released to the plant operating staff. All systems required for the start of Hot Functional Testing (HFT) have been released to the startup group.

Significant progress was made in the licensing process, as the Advisory Committee on Reactor Safeguards (ACRS) completed its reviews and recommended a license be granted to WBN Unit 2 when construction and testing are completed.

Challenges mentioned in the previous quarterly report remain. The project team continues to focus attention and resources to look ahead, to anticipate issues and plan contingencies, and to collaborate with the plant operating staff to continue safely progressing toward unit operations. Primary challenges include:

Quarterly Summary Points

No lost time incidents for the quarter - since July 2010, over 33 million work hours have been achieved

Performed activities in a manner that resulted in a Quality Control acceptance rate of 98.0 percent

Met cost and schedule expectations set forth in the ETC

Released 12 more plant systems for startup testing

Turned three systems over to Operations – Ice Condenser, 6.9 kV Unit Boards, Auxiliary Building Isolation/Control Room Isolation Buses

One new risk, issues with the Fire Protection Report for Dual Unit Operation

- Constructing and testing systems in shared spaces, test failures and repairs, and productivity issues during startup testing;
- Testing Unit 2 systems that share components with Unit 1 without jeopardizing the safe and reliable operations of Unit 1;
- Completing the release of plant systems for pre-operational startup testing during a compressed time period while maintaining safety and quality standards;
- Preparing for and transitioning to dual-unit operations; and
- Addressing regulatory and licensing issues.

Section 2 - Background

In August 2007, TVA's Board of Directors approved resuming construction to complete WBN Unit 2. However, the project did not subsequently meet expectations for schedule or budget.

In August 2011, a new management team performed a root cause analysis of the issues responsible for the schedule and budget problems and developed a revised ETC for the project.

The revised ETC is based on a range of values for both schedule and budget. As part of its effort to develop the ranges, the team considered risks and obstacles that could hinder meeting project expectations.

On April 26, 2012, the TVA Board of Directors approved the budget and schedule shown below to complete Unit 2.

Watts Bar 2	Aggressive	Most Likely	Upper Range
Completion Cost	$4.0 Billion	$4.2 Billion	$4.5 Billion
Commercial Operation	September 2015	December 2015	June 2016

Note: More information and additional details about the cause analysis, as well as the process that was used to develop the revised ETC, can be found in the Executive Final Report on the ETC posted on this link: http://www.tva.com/power/nuclear/pdf/wattsbar2_executive_etc.pdf

Section 3 - Quarterly Performance

The project continued to meet overall targets for safety, quality, cost, and schedule in the three months from February to April 2015.

A significant accomplishment during the quarter was the successful completion of the ice condenser cooldown, releasing that system to operations, and the beginning of the ice loading to ready the system for the Integrated Leak Rate Testing of containment and the eventual operation of Unit 2.

The team also released 12 systems for startup testing, including all the major systems required for HFT. Additional project accomplishments for the quarter included:

Hot functional testing will operate the major plant systems at their design temperatures and pressures to ensure they will operate as intended, including the piping and component supports as the systems grow from the temperature increases and move due to flow dynamics.

- The ACRS completed its review of WBN Unit 2 engineering, construction, and testing and recommended a license be granted once the remaining work has been completed.
- Agreement was reached with the Nuclear Regulatory Commission (NRC) on the scope and tentative schedule of the Operational Readiness Assessment Team (ORAT) inspection.
- Inspections of WBN's FLEX Strategies (Fukushima) and Cyber Security Program were completed with no significant issues identified.
- Numerous briefings and tours were provided to stakeholders such as federal, state, and local officials; TVA customers; and media representatives.

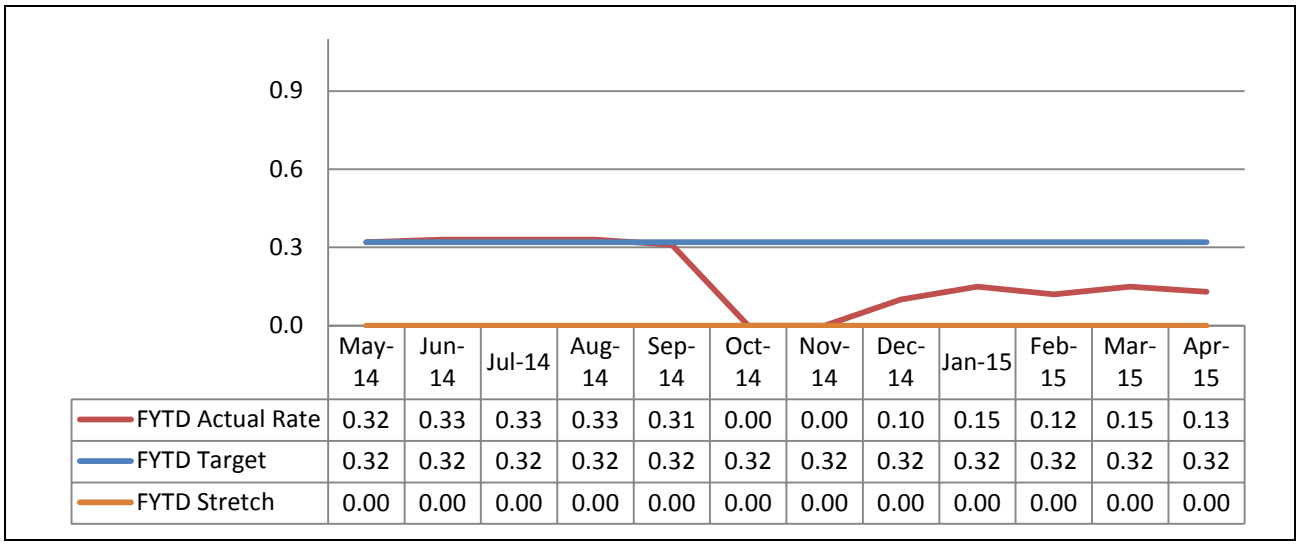
Through the use of structured daily review meetings, and in close coordination with a dedicated response team, new issues are being assessed promptly and corrective actions are being planned and executed.

More information illustrating project performance is provided in the following sections.

Safety

Safety is the highest value and the overriding priority for TVA and WBN. During the quarter, Unit 2 personnel continued to work safely. Since July 2010, Unit 2 employees have exceeded over 33 million work hours without a lost-time incident, a significant accomplishment. As the chart below shows, the current Recordable Injury Rate is lower than target.

Watts Bar Unit 2 Recordable Injury Rate



	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15
FYTD Actual Rate	0.32	0.33	0.33	0.33	0.31	0.00	0.00	0.10	0.15	0.12	0.15	0.13
FYTD Target	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32
FYTD Stretch	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Unit 2 workers continue to identify potential risks and stay safe by:

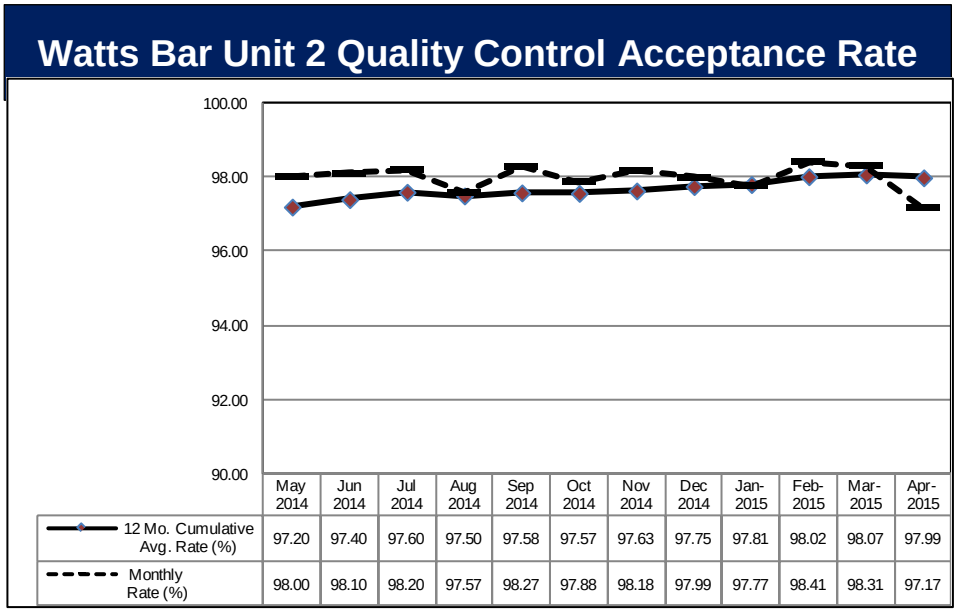
- Maintaining awareness of changing plant conditions as systems are turned over to the operating unit;
- Using the Tri-lateral Safety Alliance intervention process when necessary to prevent teammates from engaging in behaviors that put themselves and others at risk; and
- Closely monitoring low-level safety incidents and communicating those among project personnel, along with safety experiences from across TVA and the industry.

Between February 2015 - April 2015

- Over 1,200 interventions were performed by craft safety teams and the Tri-lateral Safety Alliance which is made up of TVA, represented crafts and contract partners.
- Over 4,000 management observations were documented, of which over 2,000 focused on error prevention tools and their use by the employees.

Quality

The quality of WBN Unit 2 work remains above goal as measured by the Quality Control (QC) acceptance rate (shown on the chart at right). Each month, this rate measures the percentage of work that passes the QC inspection process on the first inspection.



	May 2014	Jun 2014	Jul 2014	Aug 2014	Sep 2014	Oct 2014	Nov 2014	Dec 2014	Jan-2015	Feb-2015	Mar-2015	Apr-2015
12 Mo. Cumulative Avg. Rate (%)	97.20	97.40	97.60	97.50	97.58	97.57	97.63	97.75	97.81	98.02	98.07	97.99
Monthly Rate (%)	98.00	98.10	98.20	97.57	98.27	97.88	98.18	97.99	97.77	98.41	98.31	97.17

For the past 12 months, the cumulative average acceptance rate is 97.99 percent. The Quality Assurance (QA) Department continues to provide oversight of the system turnover process, testing program, and engineering and construction document closure with a focus on the conduct of pre-operational testing.

Also during this report period, American Society of Mechanical Engineers Section III Final N-5 Code Data Report approvals were obtained by Bechtel Power Corporation for the following systems: Main Steam, Steam Generator Blowdown, Fire Protection, Ventilation Air Flow, Control Air, Emergency Gas Treatment, Waste Disposal and Spent Fuel Pit Cooling.

Cost

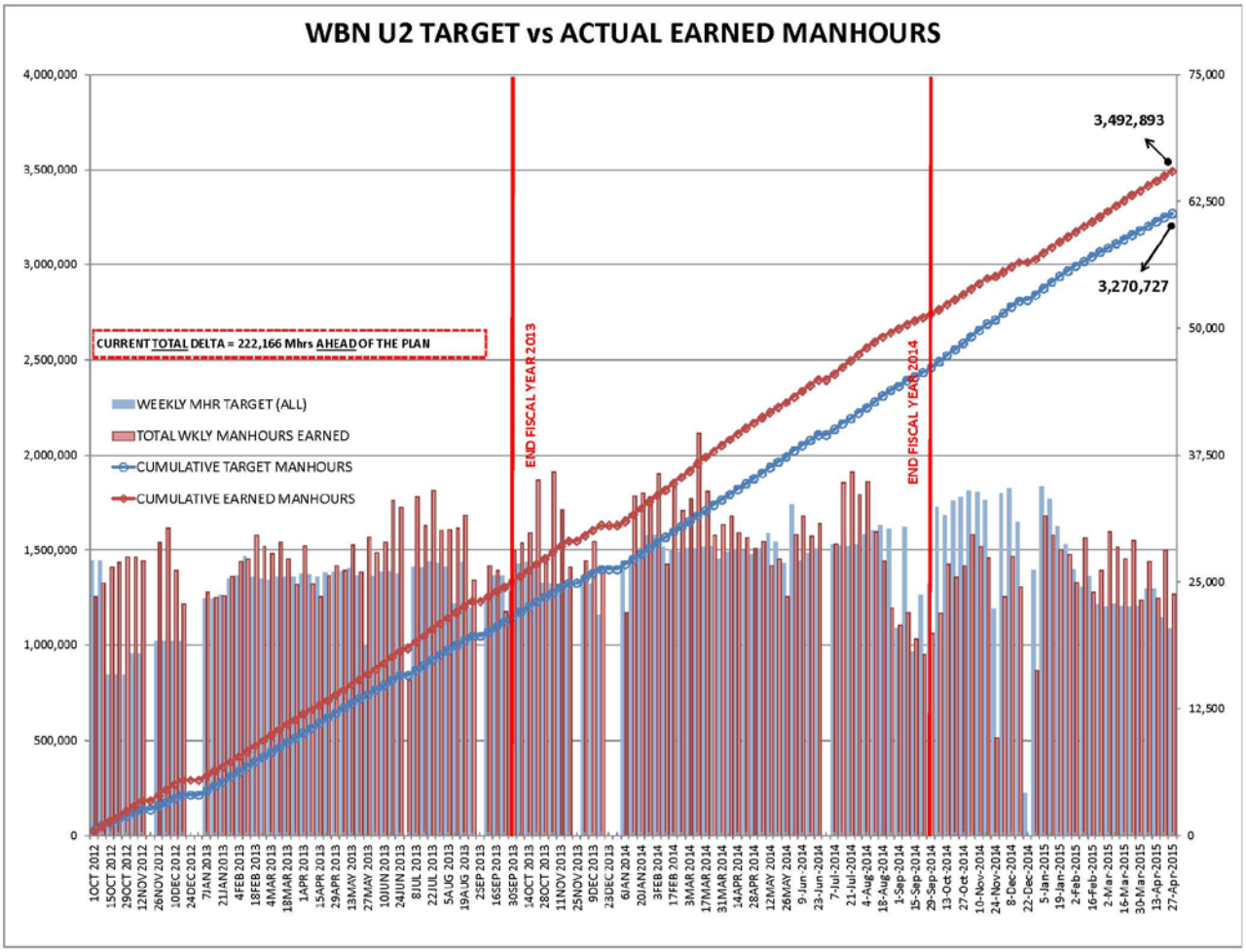
The project is trending to a total cost of $4.385 billion, which is above the most likely target established in the ETC but still within the target range.

A demobilization plan has been implemented as the project progresses through the remaining project completion major milestones. Staffing levels are continually monitored and reviewed against ETC expected levels. The effective completion of milestones and corresponding demobilization of the project is a key factor to meeting cost and schedule targets.

Schedule

Based on current and targeted schedule performance, the project continues to track to the most likely commercial operation date of December 2015. Overall, the project earned man-hours exceeded the planned target as shown in the graph below, however this was offset by delays in some system releases, component test failures, and productivity in the component testing area. This is discussed further in the Risks section of this report.

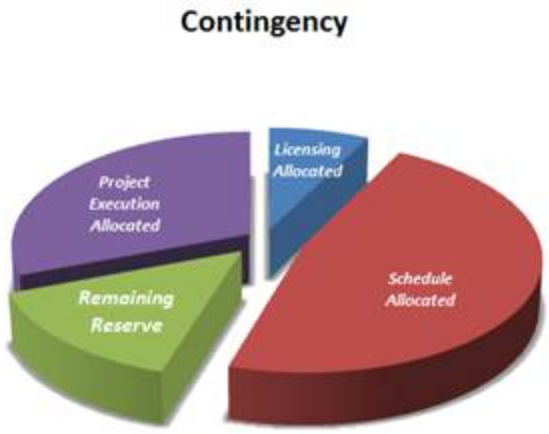
Watts Bar Unit 2 Target Versus Actual Earned Work Hours



Section 4 - Reserve Management

Project reserve money is available to fund risk management and risk occurrence, as well as unforeseen expenditures.

The chart to the right shows that the project continues to expend a moderate portion of the established reserve. The relative sizes of the total allocations from the reserve through the end of this quarter are shown in the chart.



Section 5 - Known Risks

There was one new risk identified during the quarter that might compromise project completion. This risk is addressing the issues found with the Dual-Unit Fire Protection Report during the most recent NRC Triennial inspection. A summary of that and the other significant risks follows.

Risk	Risk Trend
Fire Protection Triennial Inspection Deficiencies	New - Increasing
Startup Testing Delays	Increasing
Dual-Unit Operational Readiness	Stable
Closure of Licensing Issues	Stable
Documenting Completion of Work	Stable
Construction Completion	Stable
Emergent Work and Verification	Stable
Cyber Security	Decreasing
Waste Confidence/Continued Storage	Decreasing
Fukushima	Closed

Fire Protection Triennial Inspection Deficiencies

In December 2014, the NRC concluded an inspection of the WBN dual-unit fire protection strategies and report, identifying several issues and concerns which warranted further review, correction, and a followup inspection. The project promptly formed a team to perform a detailed review of the Dual-Unit Fire Protection Report to ensure the design basis was sound and met regulations, the design implemented that basis, and the implementing procedures met the design and were achievable. Several issues were identified, some which had implications to the existing report and the operating unit. Those have been entered into the corrective action program for review and correction. Based on these findings, the team was given appropriate resources to do a complete review to identify and correct deficiencies in all elements of the program and prepare for a re-inspection. That process is ongoing, but risk remains for scope growth in the engineering, construction, and procedures areas, and for possible impact to the operating unit. Progress is being closely monitored by site leadership as the review continues.

Startup Testing Delays

The project continues to experience delays resulting from startup testing activities. These delays are related to construction turnover, test failures, time needed to make repairs, longer times required for system flushing and cleaning, construction and startup personnel

working in the same congested areas, and complications when testing systems common to Unit 1 and Unit 2. The organization responsible for pre-operational startup testing was modified to provide dedicated component testing groups, a "ready-ready" group to make sure test preparations and support needs have been completed, a rapid response group to address testing issues, and a Project Control Center to provide centralized communication and project control. Production has improved as a result of the organization changes, and the project has focused on the early release of components and systems for testing so that equipment issues can be detected and corrected with minimal impact on the overall project.

Dual-Unit Operational Readiness

Actions to prepare for dual-unit operations continue. Those preparations are focused on the upcoming ORAT inspection, expected in June 2015. During this period the scope of the inspection, the team leader and team composition, and expected process were identified. Detailed inspections of the completion of three key risk significant systems will be used to verify the processes for completions, turnover, and operational readiness are sound and being properly implemented. Project and operating staff priorities have been arranged to ensure adequate focus and oversight on those systems and related programs, procedures, and processes.

Closure of Licensing Issues

An area that continues to require focused attention is resolving inspection, planning, and scheduling (IP&S) items with the NRC. The IP&S items must be resolved before fuel may be loaded in Unit 2. The project has developed a concentrated approach to prioritize and streamline IP&S item closure activities and has made progress toward closure of the items. Over 85 percent of the items have been completed, and of the remaining open items, a significant portion of the inspection work has been performed.

Documenting Completion of Work

The quantity and complexity of documentation has challenged productivity, efficiency in verifying implementation completeness, and the ability to provide necessary closure documentation. The project has seen improvement as a result of changes made to ensure the quality and ease of completion of the required construction documentation. As the project has moved further into the startup and testing phase, comparable focus has been applied to documentation and closure of startup and testing activities to ensure similar positive results.

Project back-end non-turnover systems and area work (insulation, painting, sealing, grouting, conduit supports, etc.) is ramping up around remaining critical path system completions and testing, and will produce another challenge for field and engineering documentation and closeout prior, during, and post HFT. Processes and indicators have been established to track and monitor progress to avoid adverse project impacts.

Construction Completion

Actions taken to improve construction completion productivity helped to stabilize this risk during this quarter. Construction work for the Main Steam, Main Feedwater, and Auxiliary Feedwater systems was essentially complete during this period, and those systems were released so component testing could begin in parallel with final system completion and engineering paper closure. The remaining construction work required for HFT is being closely monitored in support of that milestone. Construction work for the ice condenser and the associated glycol cooling system was complete this period, which allowed for ice condenser cooldown ahead of its milestone date.

There are challenges involving the above noted non-turnover systems and area work in terms of scope completion and integration with other critical work in support of major milestones. Focused resources are being applied and scheduling integration is ongoing to minimize risks.

Emergent Work and Verification of Released Systems

Levels of emergent work added into the schedule continue to be higher than desired. However, actions taken in the previous quarter have been effective in reducing the number of emergent work orders (WOs). Analysis indicated that only a small percentage of new WOs represented new scope, while the majority addressed timing, support, or emergent issues with planned work.

Cyber Security Requirement Implementation

The NRC has established requirements related to cyber security to help protect Critical Digital Assets – mainly systems and devices involved in the control and monitoring of plant systems – from being damaged or corrupted in a manner that might compromise their functions in support of nuclear safety. Alignment has been reached with the NRC to extend the implementation of selected cyber security mitigating actions until Spring 2017. A cyber security inspection was conducted in April 2015.

Waste Confidence/Continued Storage

The NRC approved the "Waste Confidence Rule," now called "Continued Storage of Spent Nuclear Fuel Rule." As part of the approval, the NRC vacated the outstanding contentions related to the rule and has directed the Atomic Safety and Licensing Board (ASLB) to vacate contentions raised by external stakeholders.

On September 29, 2014, and April 21, 2015, members of the Southern Alliance for Clean Energy (SACE) filed contentions in the WBN Unit 2 licensing proceeding, which had previously been terminated, relating to the NRC's new rule. The Commission rejected the September petition in February 2015. SACE also filed a motion to reopen the record and admit a contention on February 5, 2015, related to TVA's December 2014 expedited seismic evaluation report, submitted to the NRC as part of the post-Fukushima review process. The ASLB declined to reopen the record in April. Finally, on January 28, 2015, SACE petitioned the NRC to require the NRC Staff to supplement the Final Environmental Statement (FES) for WBN Unit 2. The Commission rejected this petition in April.

The last contention, filed on April 21, 2015, remains open. The April 21, 2015, filing was a hearing request and petition to intervene, along with a motion to reopen the record to admit a "place-holder" contention challenging the NRC Staff's reliance on the Continued Spent Fuel Storage Rule and Continued Spend Fuel Storage Generic Environmental Impact Statement (EIS) as part of the licensing proceeding for WBN Unit 2. TVA and the NRC Staff opposed the filings; a remaining action related to the Continued Storage Rule is the NRC Staff's comparison of the Generic EIS to the WBN Unit 2 FES to ensure that potential environmental impacts are appropriately addressed.

Fukushima Response

The Fukushima response project at WBN established a path forward that meets the NRC requirements. This includes contingency equipment for the mitigation of a broad range of "outside the design basis" events, which is stored onsite, protected from earthquakes, floods, and other natural events, and separate from the installed equipment from the original design. The NRC has issued WBN a safety evaluation approving the approach for addressing a

Fukushima-type event. Additionally, the NRC has conducted an inspection that found implementation of the Fukushima response strategy was acceptable.

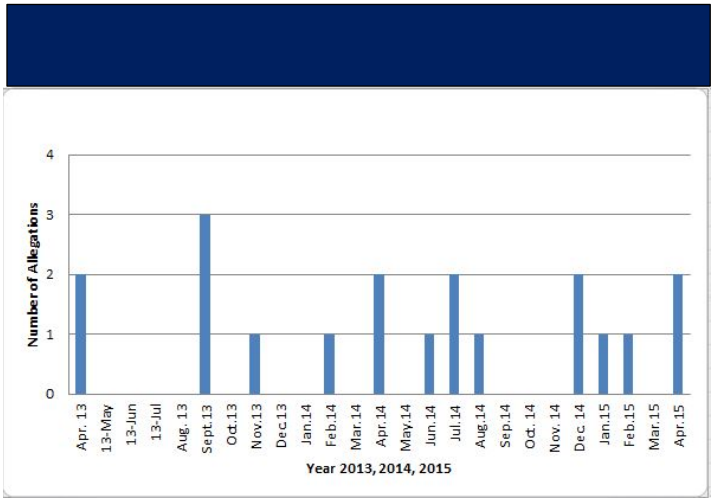
Section 6 - Project Oversight

Project Assurance

With the completion and release to startup of the significant systems for HFT, the demobilization of the Project Assurance organization was undertaken. This organizational transition was able to occur due to the project's focus shifting to testing completions – an area that is fully managed and executed by TVA leadership, with close oversight by the Senior Vice President of WBN Construction and Operations. Periodic meetings are being held with the Chief Nuclear Officer, the Chief Operating Officer, and the Chief Executive Officer and President of TVA to discuss progress of the testing and overall project. At the discretion of the Senior Vice President of WBN, periodic project or specific topic reviews will be done by specialist companies to ensure remaining work scope, schedules, and budgets are understood and forecasts are accurate.

Section 7 - Project Organizational Health

Nuclear Safety Culture



The number of employee concerns expressed during this reporting period remained constant with the previous reporting period. There were 35 last reporting and 35 this period, with the highest being received during the month of March at 17. This was accompanied by an increase in anonymous Problem Evaluation Reports (PERs) from the previous reporting period. One NRC allegation was received during the month of February and two were received in the month of April for a total of 4 allegations reported to the NRC for the 2015 calendar year (see chart). One allegation was referred to TVA for investigation during March.

The Employee Concerns Program (ECP) continues to monitor the reporting of issues to ensure personnel would use internal processes for reporting concerns by comparing the concern traffic and anonymous PERs to NRC allegation traffic. Additionally, ECP's goal is to offer all personnel exiting the site a voice to raise concerns by conducting exit interviews. ECP evaluates the termination report at the end of each month and if an exit interview form has not been completed, personnel are mailed the form offering them the opportunity to raise any issues they might have had while employed at WBN Unit 2. The average contact percentage of exiting employees by ECP is currently 90 percent.

Concerns related to Management and Personnel (MP) issues continue to be the highest contributor to the concerns received by both the Bechtel and TVA ECP. The high percentage of

concerns related to MP issues continues to emphasize the importance of timely and clear communication in addressing project status and schedule pressure.

Additionally, ECP continues the following activities to ensure issues or trends are identified early to ensure timely resolution:

- TVA ECP continues random Safety Conscious Work Environment surveys, and where issues are identified, they are escalated to senior management for correction.
- ECP continues to strive for 100 percent employee contact upon exiting the site to ensure all personnel are afforded the opportunity to raise any concerns.
- Site senior management is briefed weekly on concern status, survey results, and anonymous PER trending, and actions are identified if necessary to address any adverse trends.
- ECP has worked with both TVA Human Resources and the contractor Human Resource representatives to ensure proposed adverse actions are not tied to personnel having raised concerns.

A senior manager provides a weekly SCWE message during the Monday project review briefing and it is then cascaded to site personnel.

Project Completion Incentive Program

Approximately 3,600 workers are eligible for the WBN Unit 2 Project Completion Incentive Program. Of these, approximately 1,375 have at least 4,000 hours; 500 have at least 3,000 hours; 475 have at least 2,000 hours; and 450 have at least 1,000 hours. These individuals have been assigned and dedicated to the project; and provided they remain with the project until their work is completed, they could receive an incentive payout proportional to the hours they have worked. For any incentive payout to be made to eligible participants, commercial operation must be certified by TVA by December 31, 2015, and the project must be completed at or below $4.4 billion.

The incentive program was implemented in October 2012 to help ensure safety and achieve the construction timeline and budget of the ETC. The incentive program will be funded by savings realized by the project if it is completed in a safe, quality, cost-effective, and timely manner.

Section 8 - Going Forward

During the next quarter, work will continue to test and prepare plant systems for HFT and eventual release to the plant operating staff. Preparations are also underway to restore the Auxiliary Building Secondary Containment Enclosure to its pre-project and final boundary which includes the Unit 2 containment and to continue with the leak rate testing.

Licensing and operating staff focus will be on final preparations for the NRC's ORAT visit in June 2015. With the key systems now defined and schedule tentatively set, final preparations to demonstrate operational readiness are in progress.

The project continues its focus on completing construction activities and the implementation of the project demobilization plan. The plan will ensure that support structures and materials used during construction are removed, that permanent structures and site grounds are restored, and that staffing is reduced in a manner that will ensure effective project completion and successful transition to dual-unit operations.