



NRC Public Meeting WATTS BAR UNIT 2



Agenda

- Project Schedule Update
- Inspection / Closure Packages Status
- Cross Cutting Issues
- Heinemann Breaker Response / Plan
- Questions



Purpose of Briefing

- Provide an overview of the schedule support of completion of Watts Bar Unit 2.
- Describe the status of activities in support of completion of Watts Bar Unit 2.



WBN2 Completion Status

Engineering

- Overall Progress – 85% complete
- All Engineering Resources at Site
- Current Focus Areas and Challenges
 - Field Support
 - Corrective Action Programs and Special Programs Completion

Construction

- Successfully completed scope required for the Unit 1 outage
- Improved direct work productivity (19.7% to 25%)
- Overall Progress – >62.5% complete
- Current Focus Areas and Challenges
 - Staffing critical positions
 - Field Engineers
 - Planners (work plan writers)
 - Developing workable backlog of work plans to support craft load (currently 350K)
 - Staffing craftsmen to support up to 60,000/week earned hours for direct work



WBN2 Completion Status

Refurbishment

- Active Refurbishment Program Status
 - Safety-Related Valves (all types) – 70%
 - Safety-Related Pumps – 77%
 - Safety/Quality-Related Motors – 90%

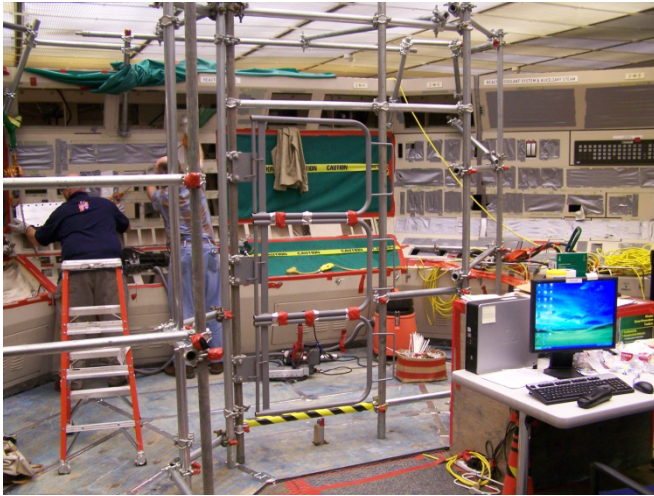
Startup Testing

- Twenty-five systems turned over to Startup Test Organization with three being turned over in May.
- Integrated Safeguards Test – To be performed with Unit 1 on-line after Hot Functional Tests.
- Essential Raw Cooling Water – Informational flow balance completed during Unit 1 outage Spring 2011 – Final flow balance without mid-cycle outage.



WBN2 Completion Status

Area Completion – Control Room





WBN2 Completion Status

Area Completion – Control Room





WBN2 Completion Status

Area Completion – Condenser Circulating Water (CCW) Pump Room





WBN2 Completion Status

Area Completion – CCW Pump Room





WBN2 Completion Status

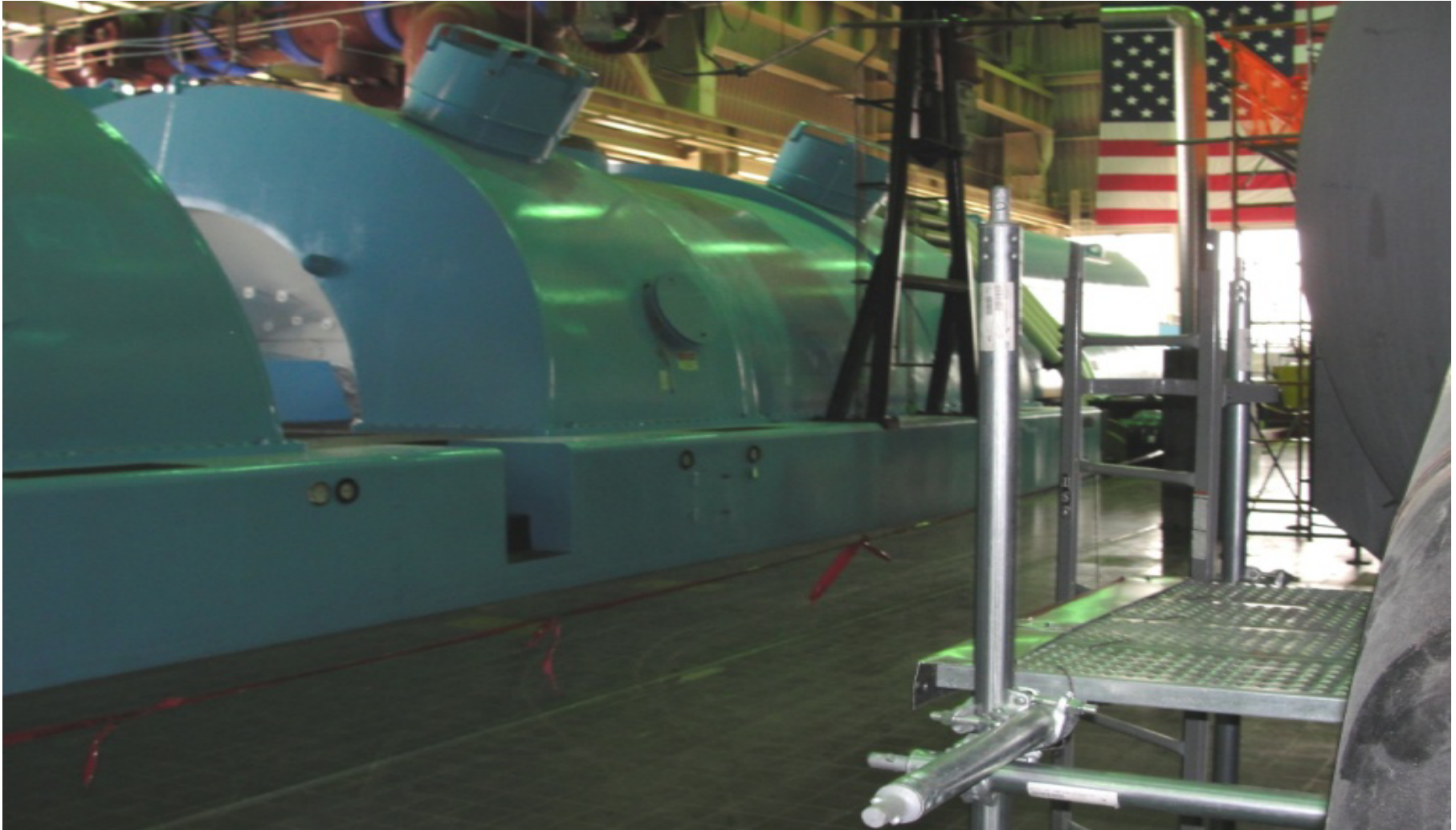
Area Completion – Main Turbine Deck





WBN2 Completion Status

Area Completion – Main Turbine Deck



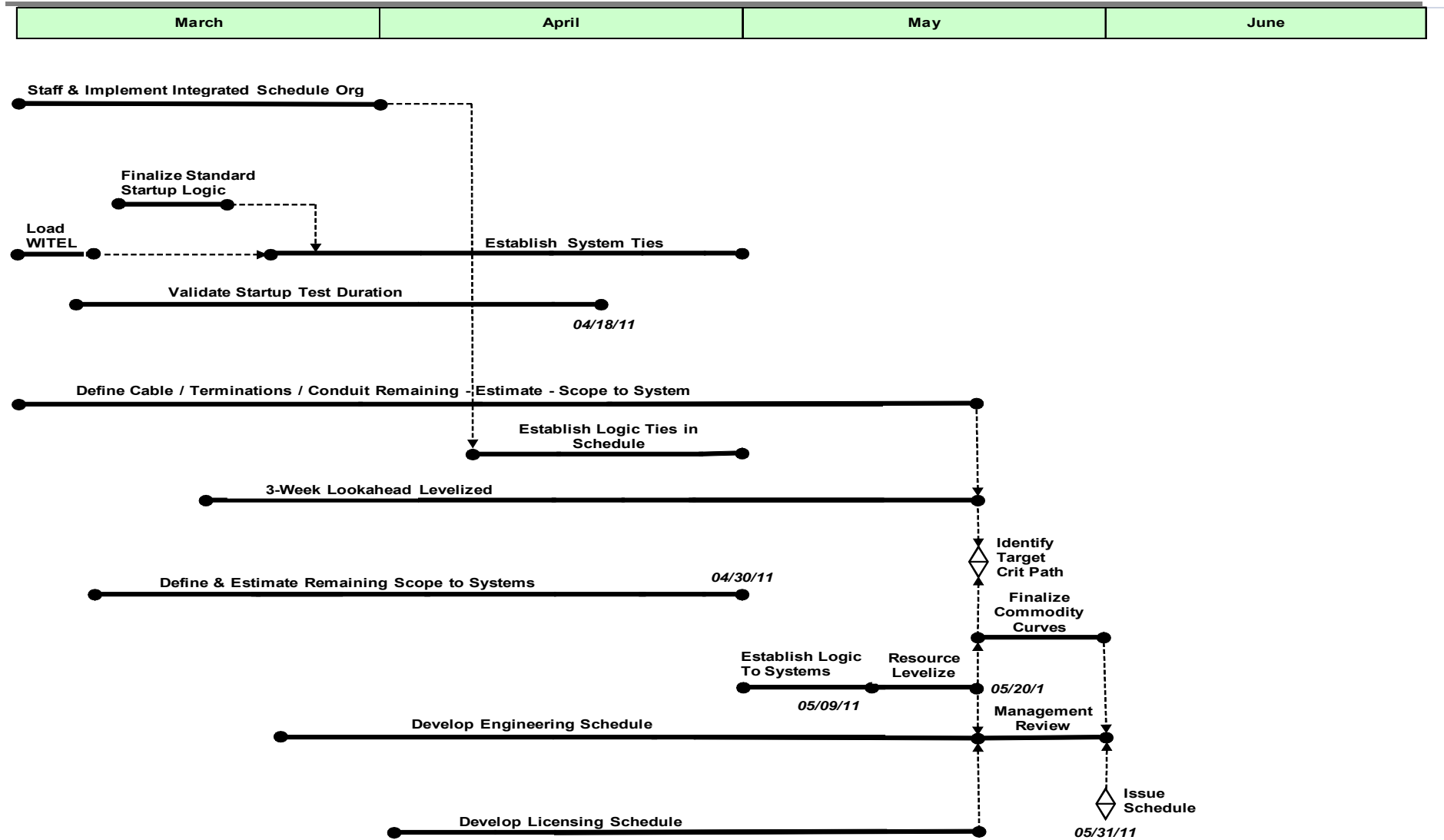


WBN2 Construction Schedule Update

- Schedule Reassessment Process
- System Turnover Schedule
- Validation Process
 - Construction Productivity - - Summer Push
 - Startup Productivity - - Fall Push
- Major Milestone Schedule



Schedule Reassessment Process



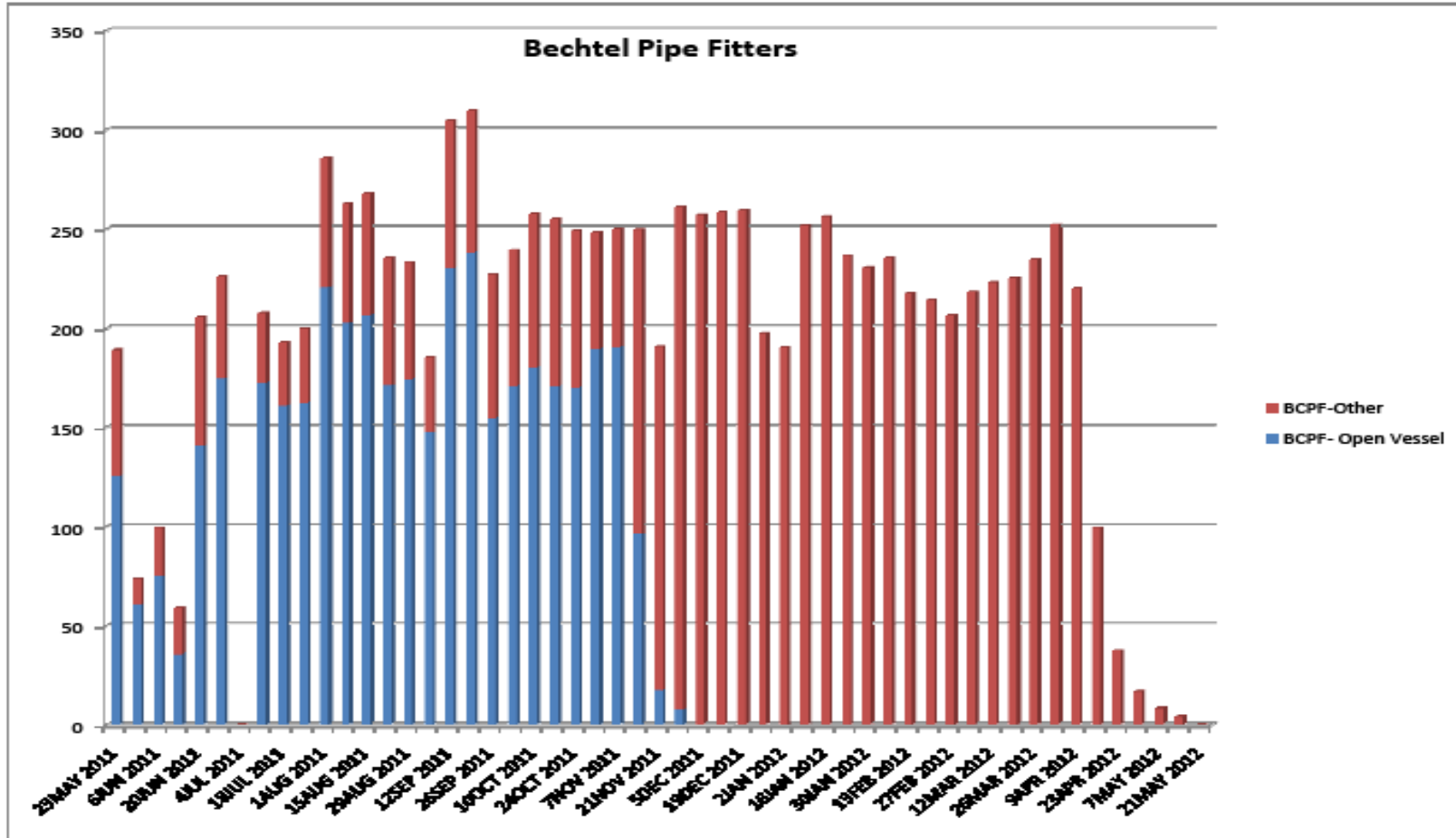


System Turnover Schedule

Mar-10	Apr-10	May-10	Jun-10	Jul-10	Aug-10	Sep-10	Oct-10	Nov-10	Dec-10	Jan-11	Feb-11	Mar-11	Apr-11	May-11	Jun-11	Jul-11	Aug-11	Sep-11	Oct-11	Nov-11	Dec-11	Jan-12	Feb-12	Mar-12	Apr-12	May-12
280	055			046.1	032	024		261	002.2	099	210	054		203	058	002	244	074	062	063	003A	065	079	228	030H	
027				098	024.1	007		035C	035A		067.1	067.2	047C	030M	067	036	006	070	061	084	030B	203	003B	270	033	268
				047B					046A		209	067.3		030N	005	030F	030A	201	0300	072	001	041	090	064	271	
											037	063.1			014	030D	030E	081		202	068	059	052	092		
																	030J.1	304.1		030J		015	046B	234		
																				077		251	013	030K		
																						030G		030I		
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																						030L	250	078		
																						026	031	043		

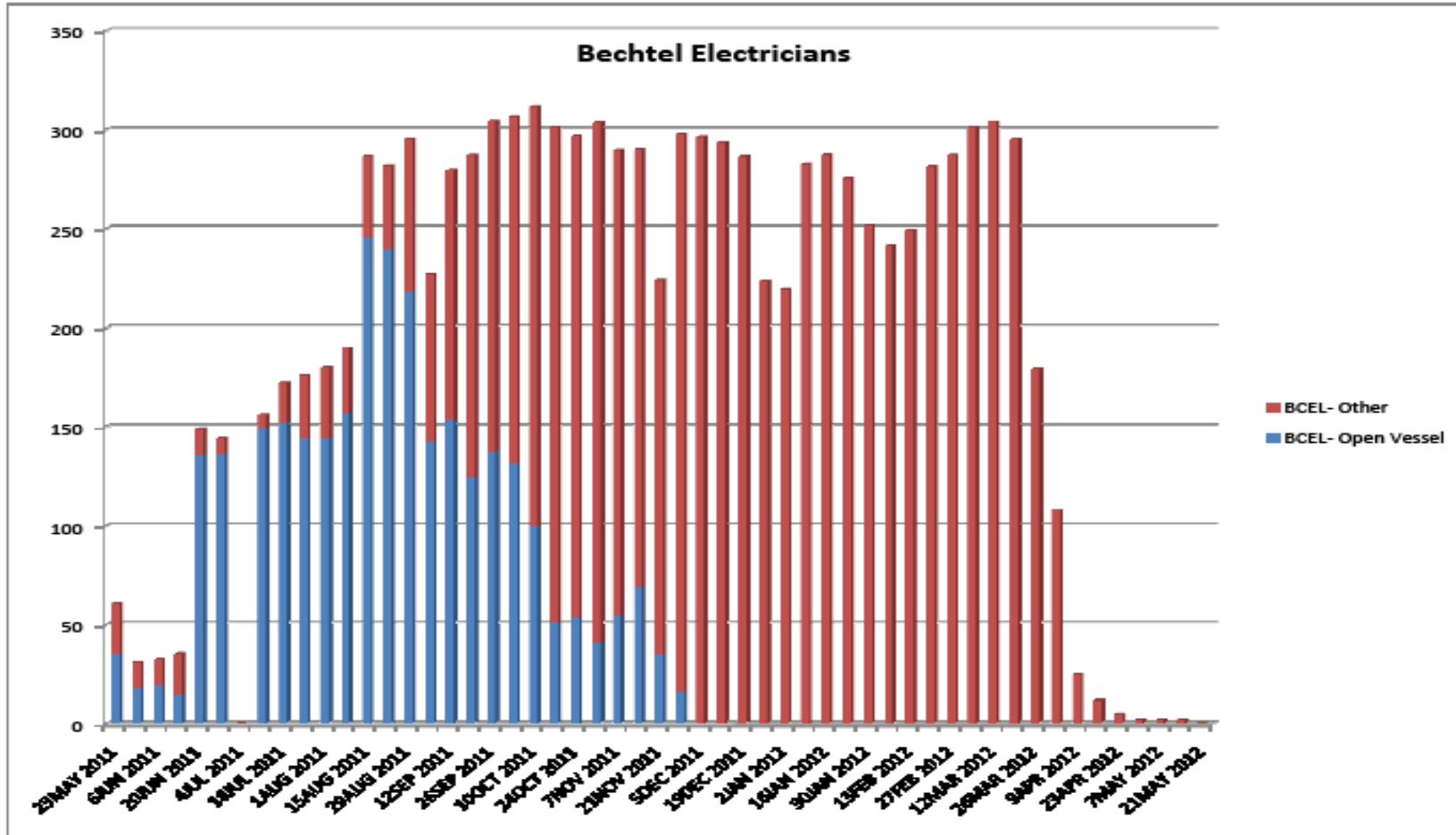


Pipe Fitter Staffing Levels



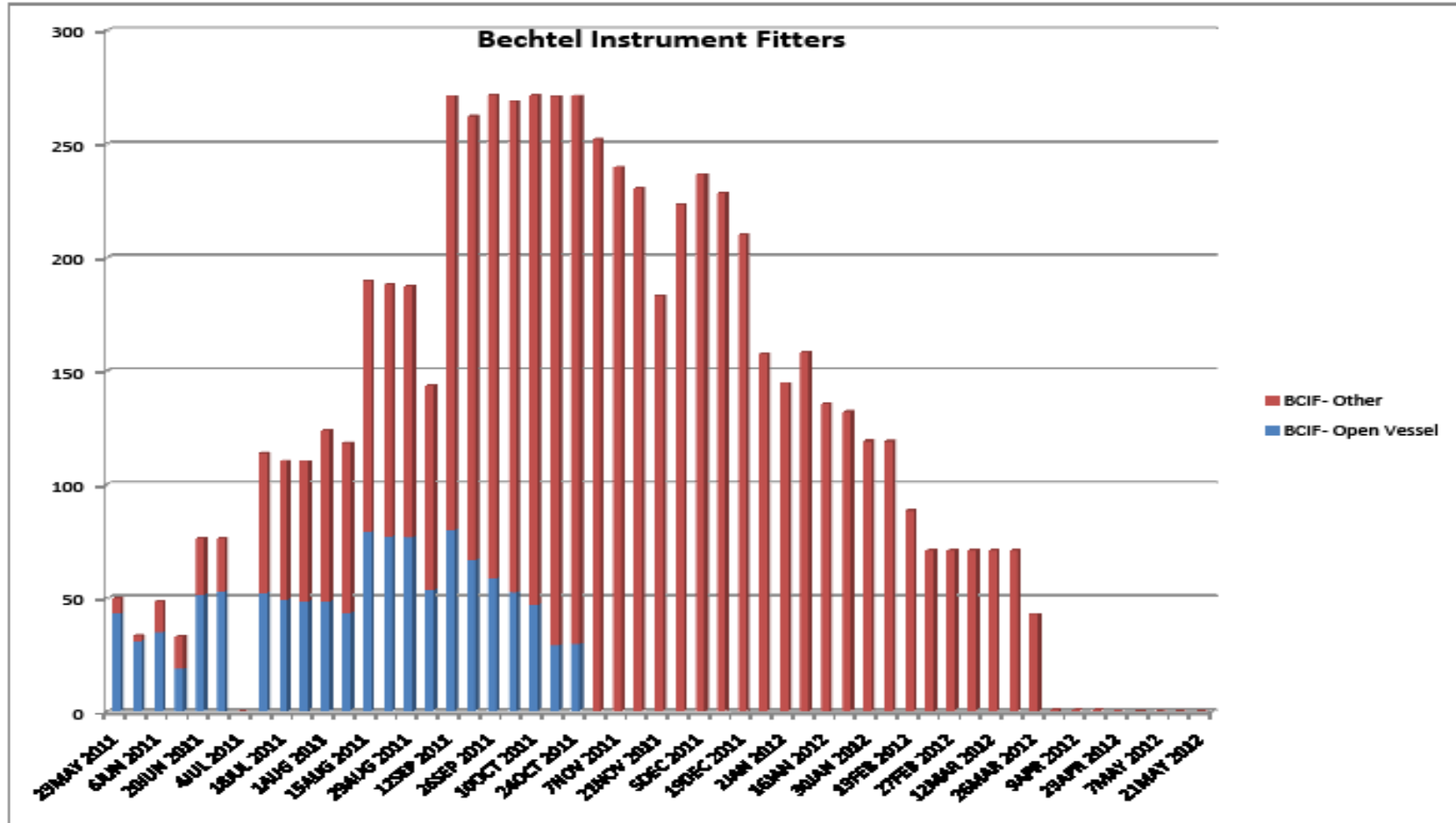


Electrician Staffing Levels



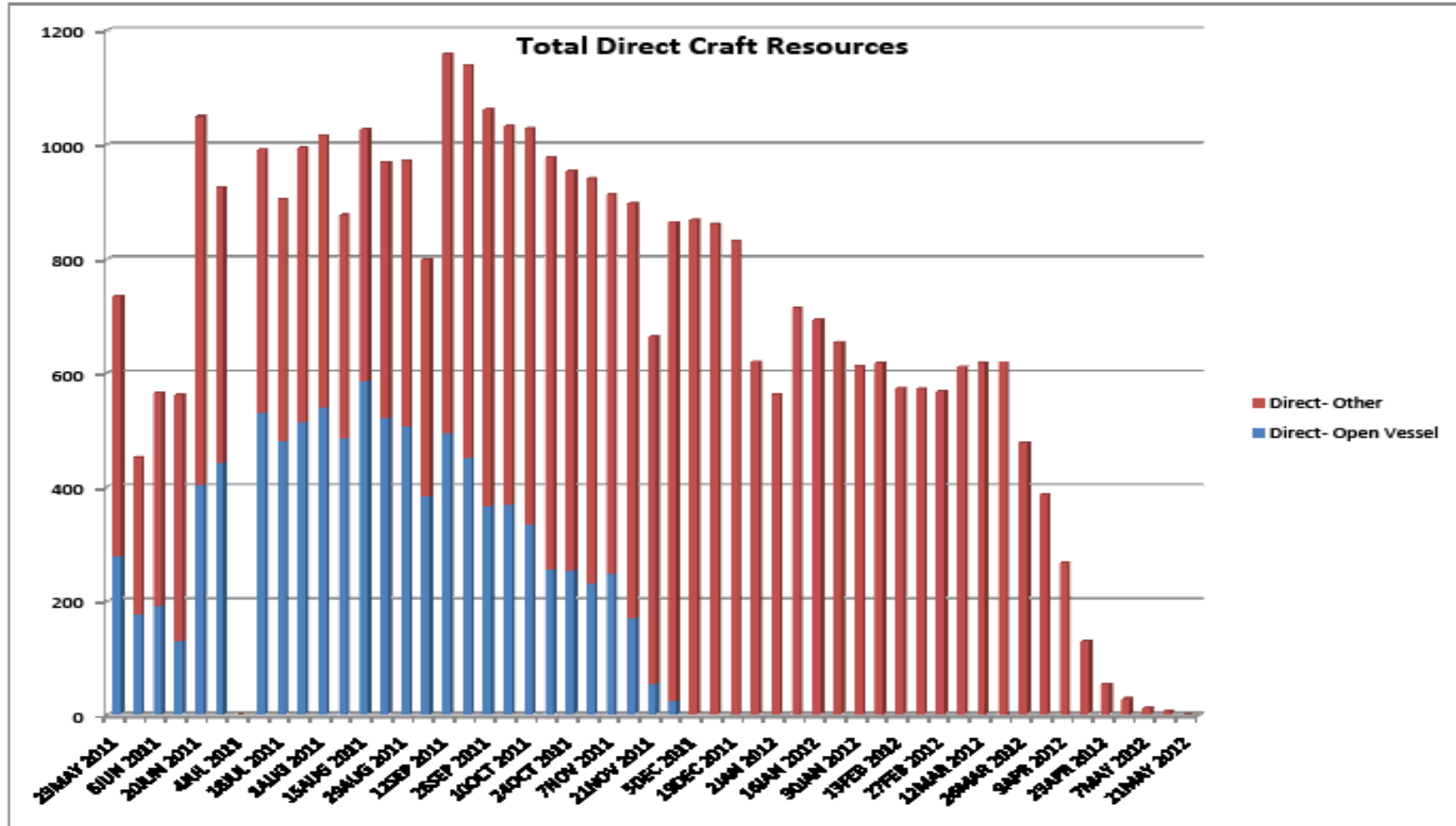


Instrument Fitter Staffing Levels





All Craft Staffing Levels





Validation Process

- **Construction Productivity - - Summer Push**
 - ◇ Validate Unit Rate Performance
 - ◇ Validate Peak Direct Work Earn Performance
 - ◇ Validate Staffing Performance
 - ◇ Validate Paper Closure Performance



Construction Productivity – Summer Push

June	July	August	September
		030J.1	304.1
014	030D	030E	081
005	030F	030A	201
058	002	244	074
067	036	006	070



Validation Process

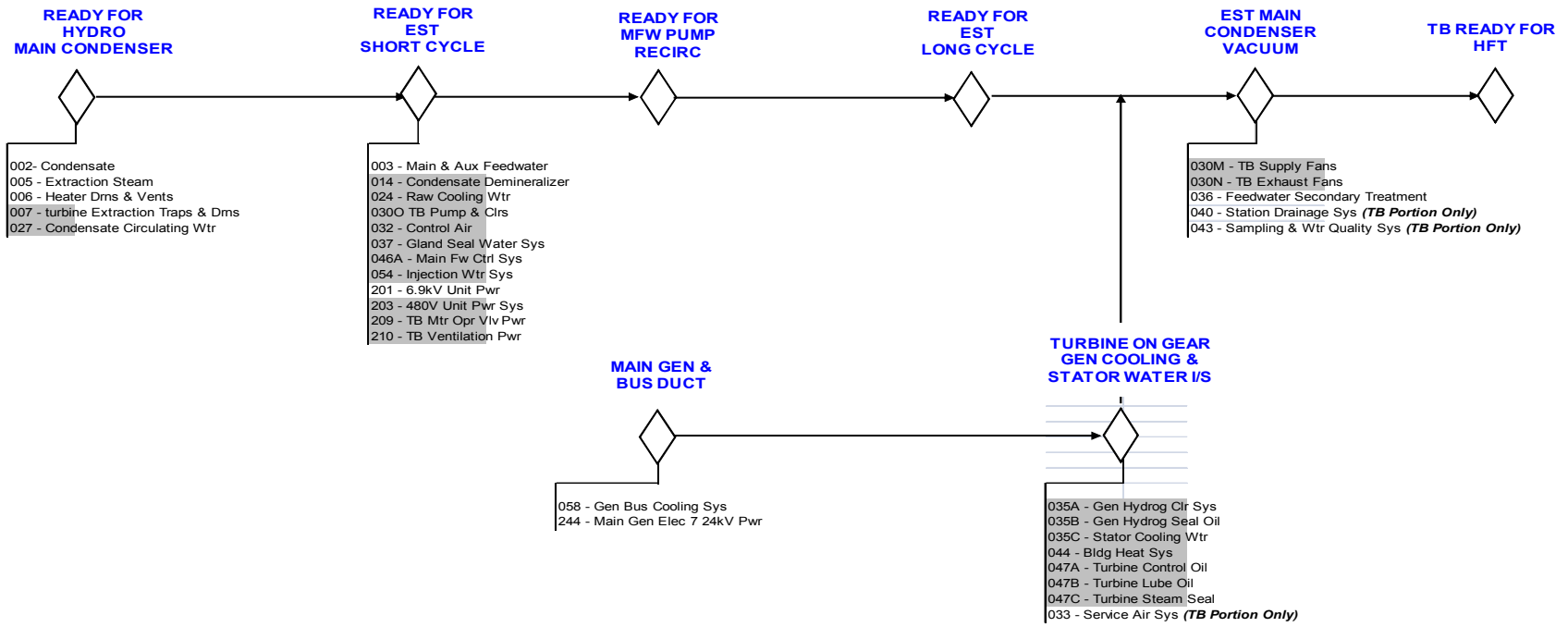
- **Startup Productivity - - Fall Push**
 - ◇ Validate Startup Test Procedure Performance
 - ◇ Validate Component Test Performance
 - ◇ Validate Startup Organizational Performance
 - ◇ Validate Milestone Focused Performance



Startup Productivity – Fall Push

WBN UNIT 2 TURBINE BUILDING (TB) TURNOVER MILESTONES

DATE: 06/16/11

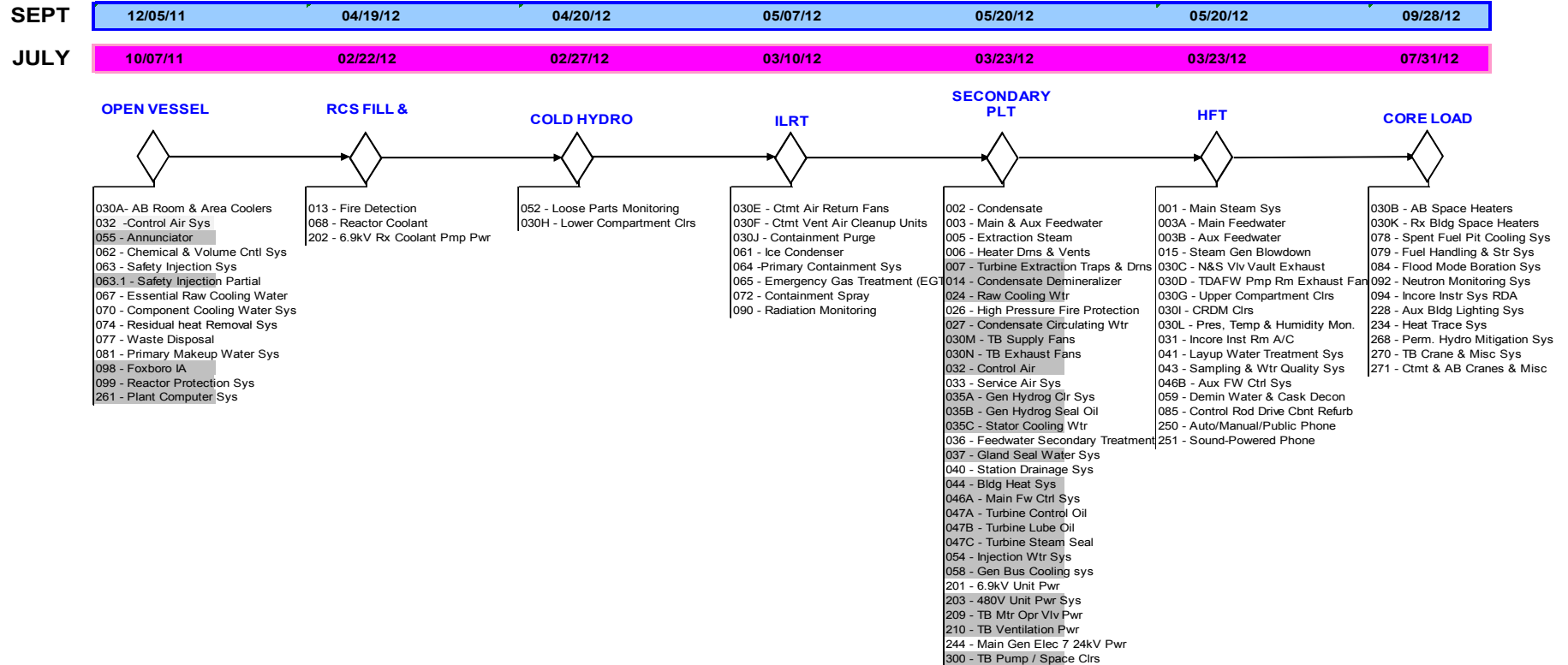




Major Milestone Schedule

WBN UNIT 2 STARTUP MAJOR MILESTONES

Revision 1 - 6/8/11



TURNED OVER TO STARTUP

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WBN2 Commitment Closure Process

- Plan Developed to Programmatically Close Commitments
 - Closure Procedure Established
 - Tracking Mechanism Established
 - Dedicated Closure Team Established
 - Initial Schedule and Assignments Completed
 - Closure Packages Being Submitted to Inspection Staff

- Closure Status
 - CAP and Special Programs
 - Commitment Closure Actions



WBN2 Commitment Closure Process

CAP/SP Completion Status

June 13, 2011

	NRR Plan Approval	Imp. Plan	Closure Self Assess.	Closure Report	QA Review	NRC Inspect.	CAP/SP Closure
CAP: Adhes Backed Cable Support Mount	●	●	NR	●	●	●	●
CAP: Cable Bend Radius	●	●	●	●	○	○	○
CAP: Cable Jamming	●	NR	NR	●	●	●	●
CAP: Cable Proximity to Hot Pipes	●	●	NR	○	○	○	○
CAP: Cable Pullbys	●	●	●	●	○	○	○
CAP: Cable Sidewall Bearing Pressure	●	NR	NR	●	●	●	●
CAP: Cable Splices	●	●	●	●	○	○	○
CAP: Cable Support in Vert. Conduits	●	●	●	●	○	○	○
CAP: Cable Support in Vertical Trays	●	●	●	●	○	○	○
CAP: Cable Tray & Tray Supports	●	●	NR	○	○	○	○
CAP: Computerized Cable Routing Sys	●	●	○	○	○	○	○
CAP: Conduit Support	●	●	●	●	○	○	○
CAP: Contact Coil Rating of Elec Device.	●	●	NR	●	○	○	○
CAP: Design Baseline and Verification	●	●	○	○	○	○	○
CAP: Equipment Seismic Qualification	●	●	●	○	○	○	○
CAP: Fire Protection	●	●	○	○	○	○	○
CAP: Flexible Conduit Installations	●	●	●	●	○	○	○
CAP: Hanger and Analysis Update	●	●	○	○	○	○	○
CAP: Heat Code Traceability	●	●	●	●	○	○	○
CAP: HVAC Duct and Duct Supports	●	●	●	●	○	○	○
CAP: Instrument Sensing Lines	●	●	○	○	○	○	○
CAP: Phys Cable Separ. and Elec Isol.	●	●	●	●	○	○	○
CAP: Pulling Cable through 90° Conduit	●	NR	NR	●	○	○	○
CAP: QA Records	●	●	○	○	○	○	○
CAP: Q-List	●	●	○	○	○	○	○
CAP: Replacement Items	●	●	●	●	○	○	○
CAP: Seismic Analysis	●	●	●	●	○	○	○
CAP: Silicone Rubber Insulated Cables	●	●	●	●	○	○	○
CAP: Torq Switch/Overload Relay Byp	●	●	NR	●	○	○	○
CAP: Vendor Information	●	●	●	●	○	○	○
CAP: Welding	●	●	○	○	○	○	○
SP: Containment Cooling	●	●	NR	●	○	○	○
SP: Control Room Design Review	●	●	○	○	○	○	○
SP: EQ of Electrical Equipment	●	●	○	○	○	○	○
SP: Master Fuse List	●	●	NR	●	○	○	○
SP: Mechanical Equip. Qualification	●	●	●	○	○	○	○
SP: Microbiologically Induced Corrosion	●	●	●	●	○	○	○
SP: Moderate Energy Line Break	●	●	●	●	○	○	○
SP: Radiation Monitoring System	●	●	○	○	○	○	○
SP: Use-Ar-Is	●	●	●	●	○	○	○

● 100% Fully complete
● 75% complete

○ 50% complete
○ 25% complete

○ No activity
NR Not required



WBN2 Commitment Closure Process

TVA

Job Number: 25402
Job Location: WBN2

Watts Bar Nuclear Unit 2 Completion Project Knoxville Licensing Commitment Closures Actual vs. Forecast

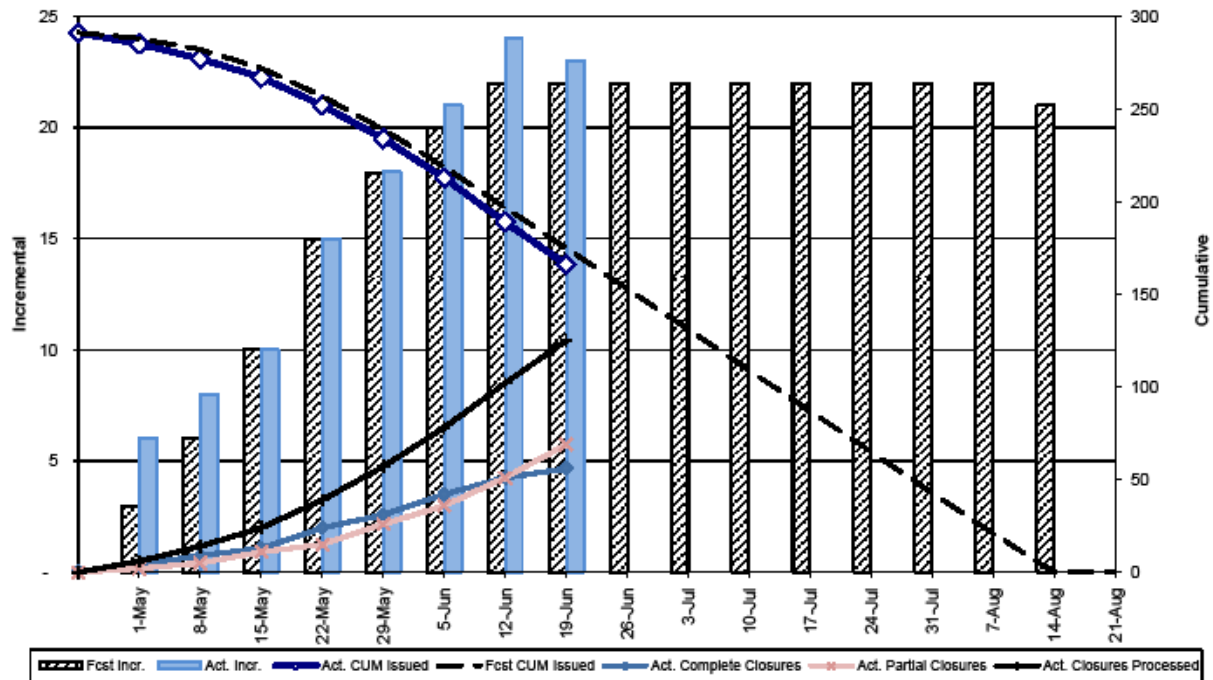


Data Date: 17-Jun-11
Run Date: 20-Jun-11

Planned FTE: 12
Current FTE: 8

Total Closures: 291
To Go Closures: 166

Closures Processed: 125
Complete: 56
Partial (Work Remains): 69



Owner: Chuck Day



WBN2 Commitment Closure Process

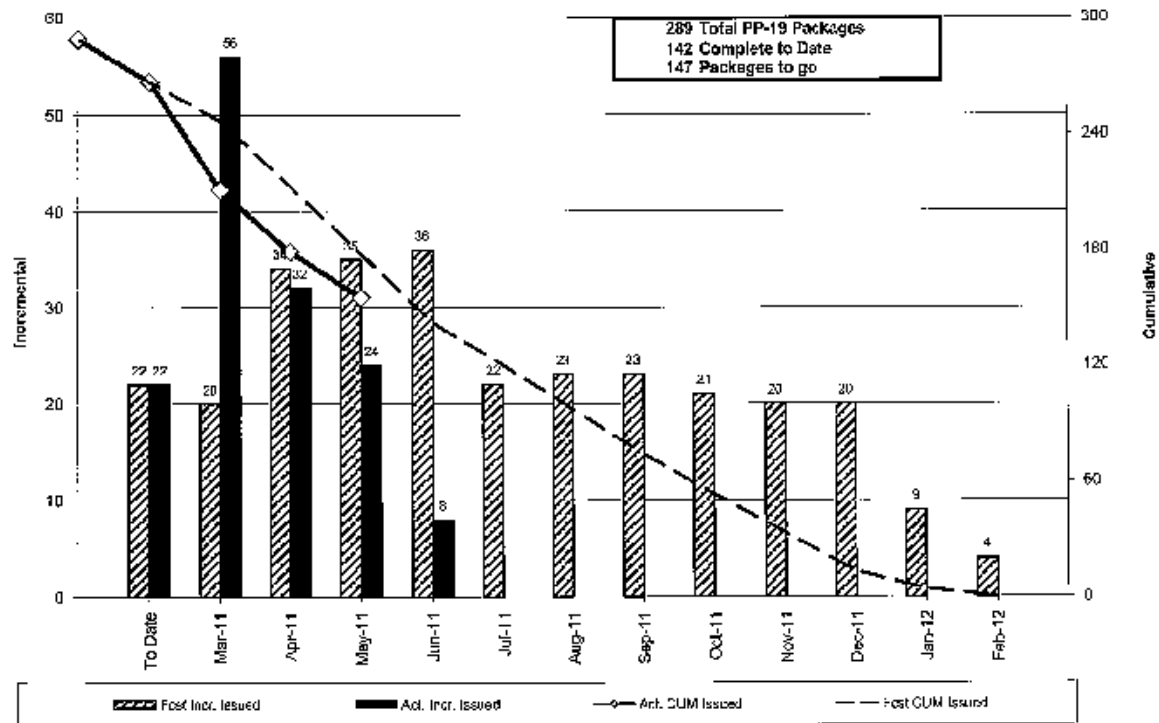
Watts Bar Nuclear Unit 2 Completion Project Engineering PP-19 Packages Actual vs. Forecast



Job Number: 25102
Job Location: W3N2

Planned FTE: 5.75
Current FTE: 5.50

Data Date: 12-Jun-11
Run Date: 13-Jun-11



Owner: Roger Smith x3761



WBN2 Cross Cutting Theme

- Issue
 - Procedure Compliance Challenges Identified In 2010
- Actions Taken
 - Training Upgraded to Include Case Studies of Identified Weaknesses
 - Training Performed for Unit 2 Site Personnel
 - Effectiveness Assessments Performed
- Results
 - Improvement has been limited
 - Procedure Compliance Challenges Continue to Occur
 - Evaluation of Recent Weaknesses in Progress



WBN2 Cross Cutting Theme



Fundamental HU Tool	
STOP When Unsure	
WHY	<ul style="list-style-type: none">• Odds for error could be 1-in-2 (a coin flip)• Prompts you to get accurate information• So knowledgeable people resolve issues
WHEN	<ul style="list-style-type: none">• If uncertain, confused or in doubt• Outside bounds of a technical procedure• Outside the bounds of key parameters• Not sure of expectations or procedures• Inexperienced or lack knowledge of task• Someone expresses doubt or concern
HOW	<ol style="list-style-type: none">1. Stop the activity2. Place the job in a safe condition3. Notify your immediate supervisor
AVOID	<ul style="list-style-type: none">• Dismissing contrary points of view• Discounting concerns of junior individuals• Not asking for help from those who know• Being too embarrassed to ask for help• Believing nothing bad can happen• Not having clear abort criteria



Heinemann Circuit Breaker

- Issues
 - Notice of Violation – Adequacy of Design and Suitability of Testing Related to Molded Case Circuit Breakers
- Actions
 - TVA Admitted the Violations Occurred
 - 1974 and 1992 Qualification Tests Reviewed to Confirm Consistency with Field Configuration
 - Breakers Confirmed Properly Mounted and Rigidly Locally Mounted
 - EPDM Added to Aid Front to Back Alignment of the Breakers
 - Push Test Successfully Performed
 - Breaker Configuration Changes Captured in TVA Inventory Control and Drawing
 - Current Breaker Mounting Configurations in Full Compliance with Requirements
 - Revision to Installation Procedure Guidance – September 2011



Heinemann Circuit Breaker

- Independent Review
 - ARES Corporation Performed Independent Technical Review
 - Qualification of Original and Re-Configured Heinemann Circuit Breakers
 - ARES Conclusions
 - Breakers are Rigidly Mounted to the Instrument Power Boards
 - 1974 Seismic Test Replicated the Mounting Configuration in the Plant
 - Power Boards and Breakers met IEEE 344-1971
 - Rigid Connections Replicated and IEEE 344-1975 Satisfied by 1992 Seismic Test
 - Aging Does Not Affect Seismic Performance and Clamping Pressure Does Not Directly Contribute to the Safety Related Functions of the Breaker.
 - Reconfigured Breaker Does Not Affect Seismic Qualification
 - Qualified Electrical and Mechanical Configuration of the Breakers Helps to Limit Seismic Motion and Shocks



Lessons Learned System Testing

- Construction to Start-up Test Group Process
 - Adverse Trend Identified During Emergency Raw Cooling Water System Component Testing & System Walkdowns
 - 18 Valves Affected
- Project Management Placed a “Hold” on Turnover of Safety Related Systems/Components
- Common and Root Cause Evaluations Performed
- Extent of Condition/Cause Evaluation Performed
- Corrective Actions
 - Construction to Perform Pre-Turnover Walkdowns
 - Define Single Point Accountability in the Construction System Completion Group
 - Improve Documentation & Processing of Deficiencies



QUESTIONS?