

UNIT 1 RESTART OVERSIGHT PANEL MEETING





TENNESSEE VALLEY AUTHORITY BROWNS FERRY NUCLEAR PLANT

UNIT 1 RESTART OVERSIGHT PANEL MEETING

May 2, 2006



Introduction

- Welcome to the Browns Ferry Unit 1 Restart Oversight Panel meeting
- Purpose
 - Review the project status
 - Discuss upcoming activities
 - Discuss challenges
 - Solicit feedback



Agenda

- Introduction
- Unit 1 Overview and Schedule
- Returning Systems to Service
- Regulatory Status
- Nuclear Assurance
- BFN Site Status
- Conclusion

- B. O'Grady
- M. Bajestani
- G. Little / J. Valente
- J. McCarthy
- R. Baron
- B. O'Grady
- B. O'Grady

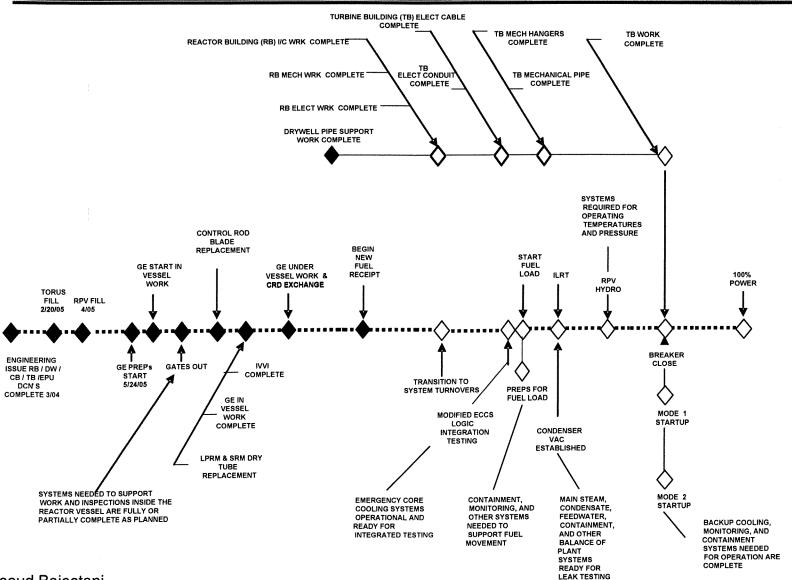


Unit 1 Overview and Schedule

- On Schedule for Start-up Early 2007
- Overall Unit 1 Restart Project 83% Complete
 - Engineering is 92% complete
 - Modifications are 80% complete



Significant Milestones





Unit 1 Overview and Schedule

- Major Work In-progress
 - Receipt of Unit 1 fuel
 - Control Room Design Review modifications
 - Switchyard breaker replacement and additions
 - Re-assembly of low pressure turbines
 - Replacing Reactor Feedwater pumps for EPU
 - Refurbishment or replacement of Feedwater Heater isolation valves and instrumentation
 - Replacing Condenser Circulating Water tube cleaning system
 - Replacing Condenser hotwell and booster pumps for EPU and to build margin into the plant
 - Modifications to the Fire Protection System, which are 90% complete
 - Upgrading transformer electrical bus cooling system



Unit 1 Overview and Schedule

Status of Major Commodities

COMMODITY	INSTALLED SINCE THE 12/07/05 TVA/NRC MEETING	CURRENTLY INSTALLED*	END OF PROJECT TOTAL
Piping - Large Bore	1,756 feet	13,198 feet	14,967 feet
Hangers - Large Bore	244	1,380	1,757
Piping - Small Bore	7,185 feet	21,697 feet	29,564 feet
Hangers - Small Bore	1,180	4,680	6,251
Conduit	35,370 feet	159,045 feet	181,917 feet (34 miles)
Conduit Supports	4,330	18,250	21,161
Cable Terminations	24,896	60,527	112,404
Cable	267,095	524,854 feet	885,925 feet (168 miles)
Cable Tray	470	9,504 feet	9,749 feet
Cable Tray Supports	26	1,507	1,538

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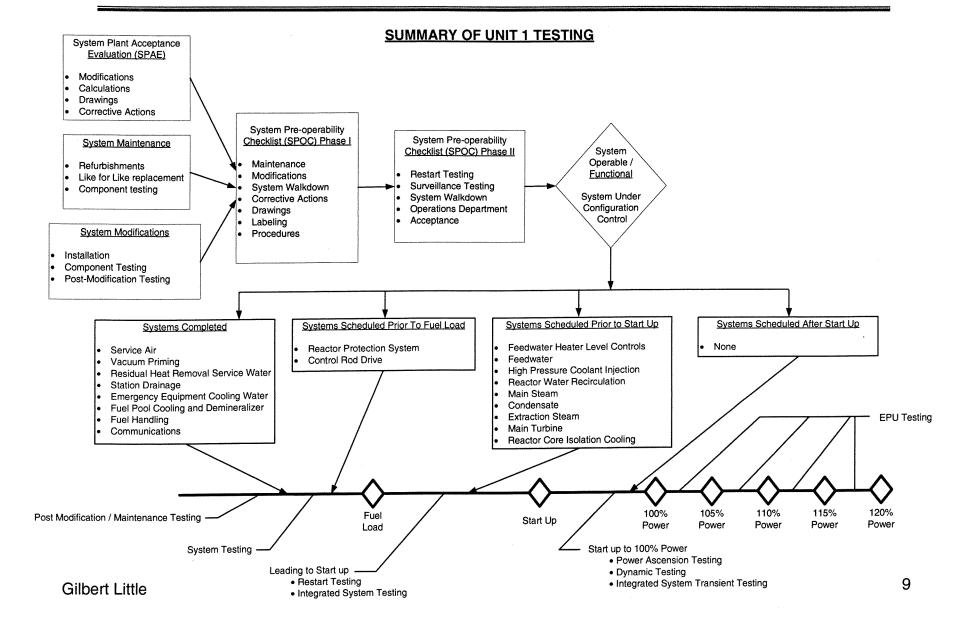


Returning Systems to Service

- System Plant Acceptance Evaluations (SPAEs) Completed
- System Pre-operability Checklists (SPOCs) Phase I
 - 12 completed
 - 31 scheduled in the next six months
- System Pre-operability Checklists (SPOCs) Phase II
 - 13 completed
 - 25 scheduled in the next six months
- Self-Assessment of SPAE/SPOC



Returning Systems to Service





Returning Systems to Service

SUMMARY OF SIGNIFICANT UNIT 1 TESTING

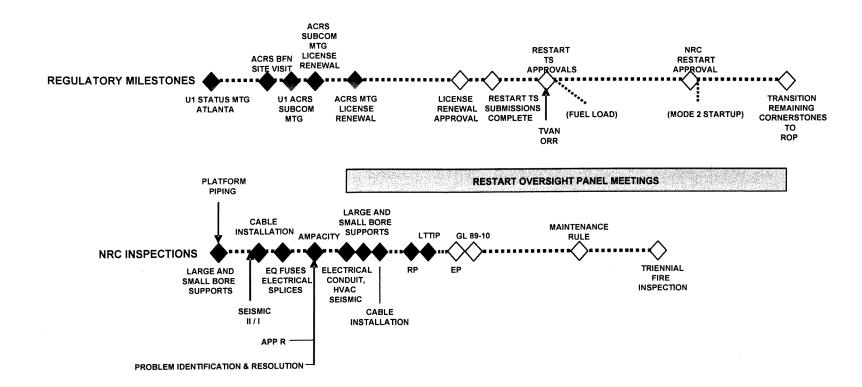
EPU Testing Post Modification / Maintenance Testing Main Turbine Condensate and Condensate Booster pumps Verification of proper rotation and setting limits on valves trip testing Motor-operated valve (MOV) setting and baseline diagnostics (for GL 89-10 valves) Reactor Feedwater Pump testing / tuning Leak-rate testing for Primary Containment isolation valves Reactor Feedwater Level Control System tuning Pump operability testing (verification of rated flow within specified period) Recirculation flow control testing Valve operability testing Electro-hydraulic Control pressure regulator System flow balancing System and component leak testing Instrument channel calibration and functional testing **EPU Performance Monitoring** Protective relay calibration and functional testing Logic system functional testing. Turbine Sealing System System run and confirmation that process parameters are within expected ranges Moisture Separators Feedwater Heaters Steam Separator-Dryer Testing Leading to Fuel Load Reactor Recirculation pump motors Main Generator Unit 1 Common Accident Signal logic testing Isolation Phase Bus Duct cooling Residual Heat Removal / Core Spray logic system functional testing Main Bank transformers Diesel Generator Load Acceptance testing Vibration monitoring 480V Load Shed testing Main Steam Isolation Valves Source Range Monitor / Intermediate Range Monitor testing Steam / Feedwater normal flow rate Chemical and Radiochemical Radiation measurements Core Performance 110% 115% 120% 100% 105% Fuel Start up Power Power Power Power Power Load Start up to 100% Power (Power Ascension Testing) Shutdown Margin testing Source / Intermediate / Average Power Range Monitors overlap testing Leading to Start up (Restart Testing) Thermal Expansion walkdowns Electro-hydraulic Control / Bypass Valve testing at 150 psig Control Rod timing and testing Reactor Feedwater Pump overspeed testing / tuning at 250 psig Recirculation flow control testing Safety Relief Valve manual cycle testing Primary Containment leak rate testing Average and Low Power Range / Rod Block monitors calibration Reactor Pressure Vessel hydrostatic pressure testing Process Computer and Core Performance testing High Pressure Coolant Injection / Reactor Core Isolation Cooling High Pressure Coolant Injection / Reactor Core Isolation Cooling cold quick start testing on Auxiliary Boiler steam testing High Pressure Coolant Injection / Reactor Core Isolation Cooling vessel injection testing Turbine Stop Valve / Turbine Control Valve Reactor Protection Reactor Feedwater Pump testing / tuning System trip functional testing Reactor Feedwater Level Control System tuning Main Steam Isolation Valve testing and timing Recirculation flow control testing Backup Control Panel testing Electro-hydraulic Control pressure regulator tuning Condensate / Booster Pumps post-modification testing Main Turbine overspeed testing Condensate Demineralizers Full Scram at greater than 1% power Main Steam Relief Valve setpoint testing Turbine valve testing (Stop Valves, Control Valves and Bypass Valves) Main Steam Relief Valve pressure switch logic testing Scram time testing

Baseline radiation surveys
Recirculation System flow calibration

Vibration monitoring



Regulatory Status





Unit 1 Regulatory Status

- Unit 1 License Amendments
 - 21 amendments identified
 - 19√18 submitted to date
 - 5 approved by NRC
 - 6 on hold pending approval of instrument setpoint amendment
 - Expanded operating domain (MELLLA+) submittal pending NRC issuance of Topical Report SERs
- Relief Requests
 - 6 relief requests submitted and 5 approved by NRC
 - Risk informed ISI to be submitted for post-restart implementation



Unit 1 Regulatory Status

- Other Unit 1 Submittals
 - 88 topics require programmatic and/or completion submittals
 - o 37 submitted to date
 - 4 approved by NRR
 - o 22 closed by Inspection Report
 - Quarterly status letter being used to notify NRC upon the completion of items
- Inspection of Special Programs
 - Implementation of Units 2 and 3 program
 - Planned inspections complete for 12 of 30 programs
 - Additional programs have fieldwork more than 66% complete and are ready for NRC inspection
- Open Items
 - Appendix R



Nuclear Assurance

Focus Areas

- Areas with sustained improvement
 - Welding, material control, piping/pipe supports, and Fire Protection installations
- Areas with noted improvement and reduced Nuclear Assurance attention
 - Mechanical installation and cable pulling
- Continued Nuclear Assurance attention
 - Electrical equipment and instrumentation installations, control of modifications work, and system return to service (test and turnover)



BFN Site Status

- Three Unit Operation
 - Status of operational units
 - Site staffing plan
 - Involvement in system turnover process
- Oversight
 - Operational Readiness program
 - Departmental readiness reviews
 - Nuclear Safety Review Board
 - Nuclear Safety Oversight Committee
 - INPO



Conclusion