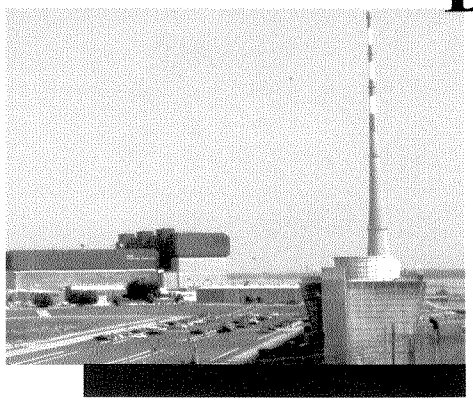
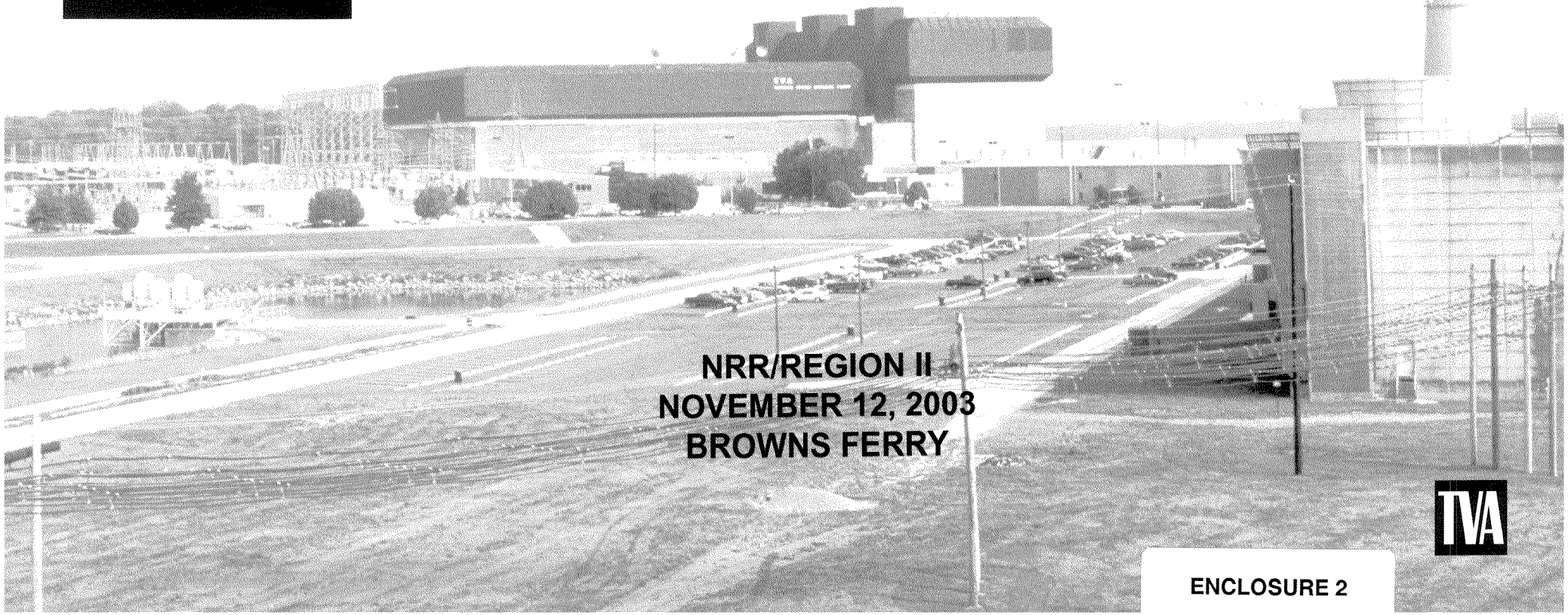
TENNESSEE VALLEY AUTHORITY
BROWNS FERRY NUCLEAR PLANT



UNIT 1 RESTART STATUS



NRR/REGION II
NOVEMBER 12, 2003
BROWNS FERRY

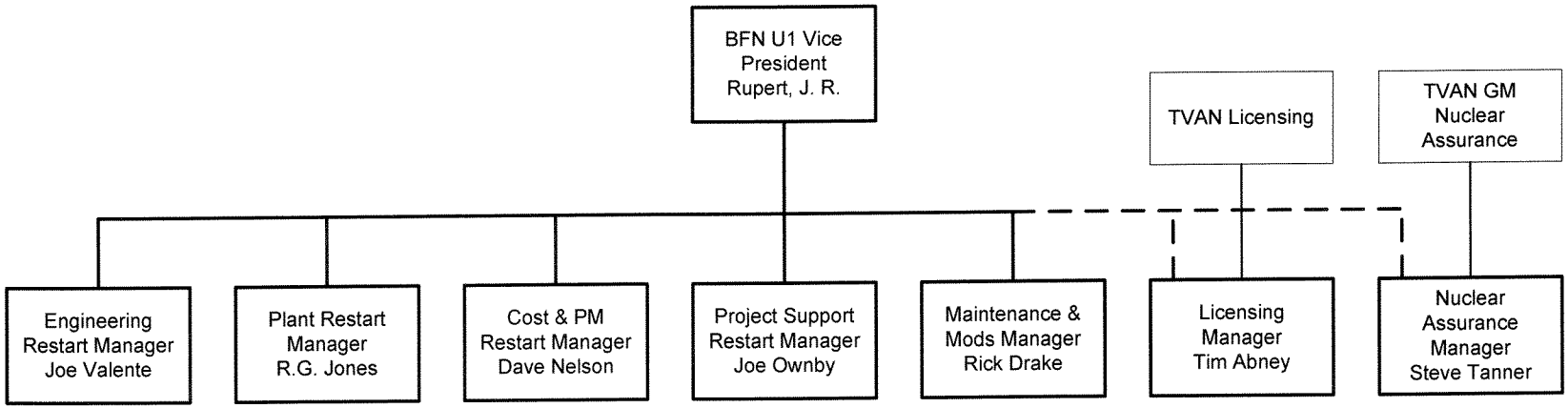
TVA

ENCLOSURE 2

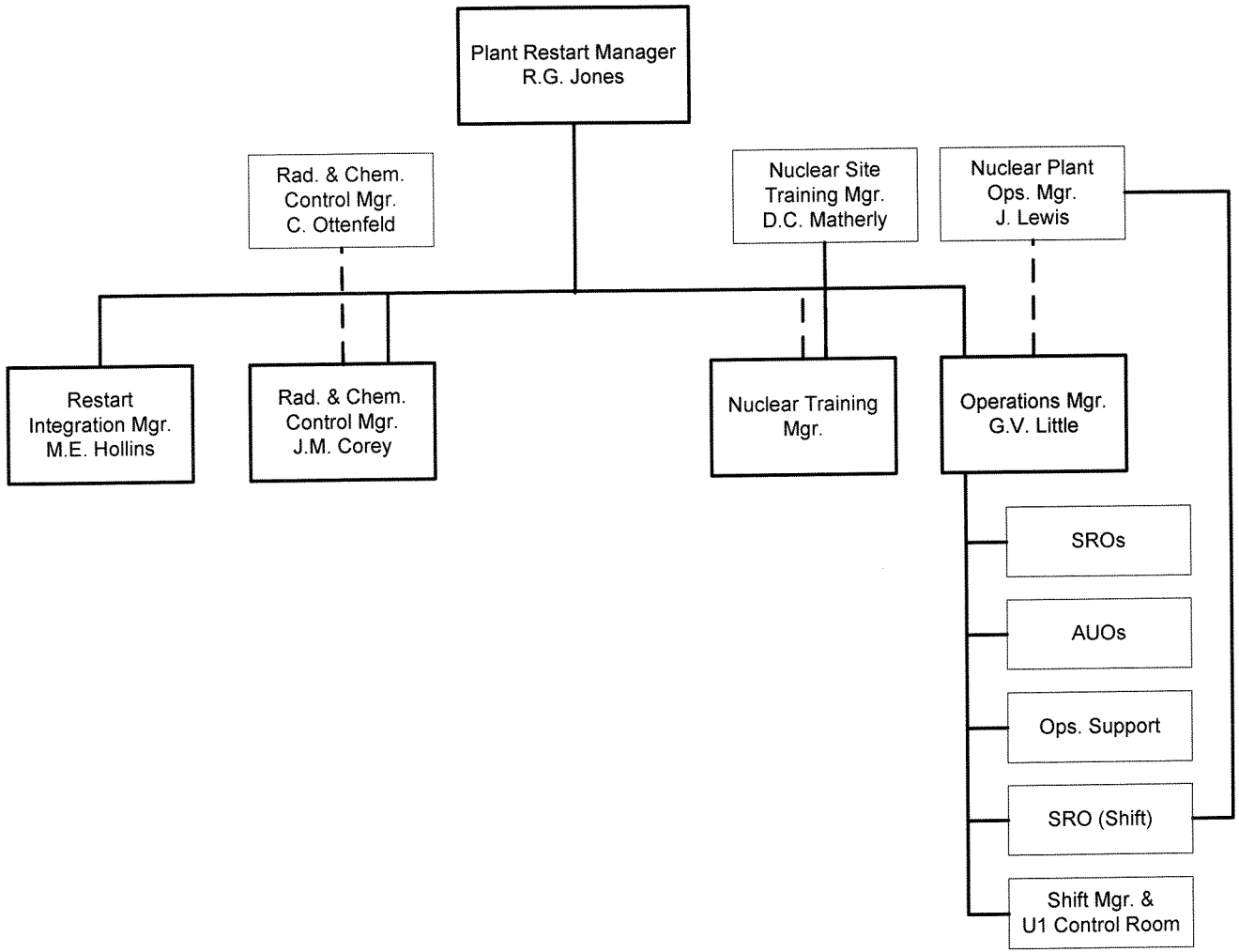
Agenda

• Introduction	J. Rupert
• Organization	J. Rupert
• Project Overview	J. Rupert
• Engineering Status	J. Valente
• Maintenance/Modifications Status	R. Drake
• Operations, Work Control, and Plant Interface	G. Little
• Licensing Status	T. Abney
• Radiation Protection Cornerstone	J. Corey
• Self Assessments	S. Bridges
• Corrective Action Program	J. Ownby
• Nuclear Assurance Oversight	S. Tanner
• Summary	J. Rupert

Organization



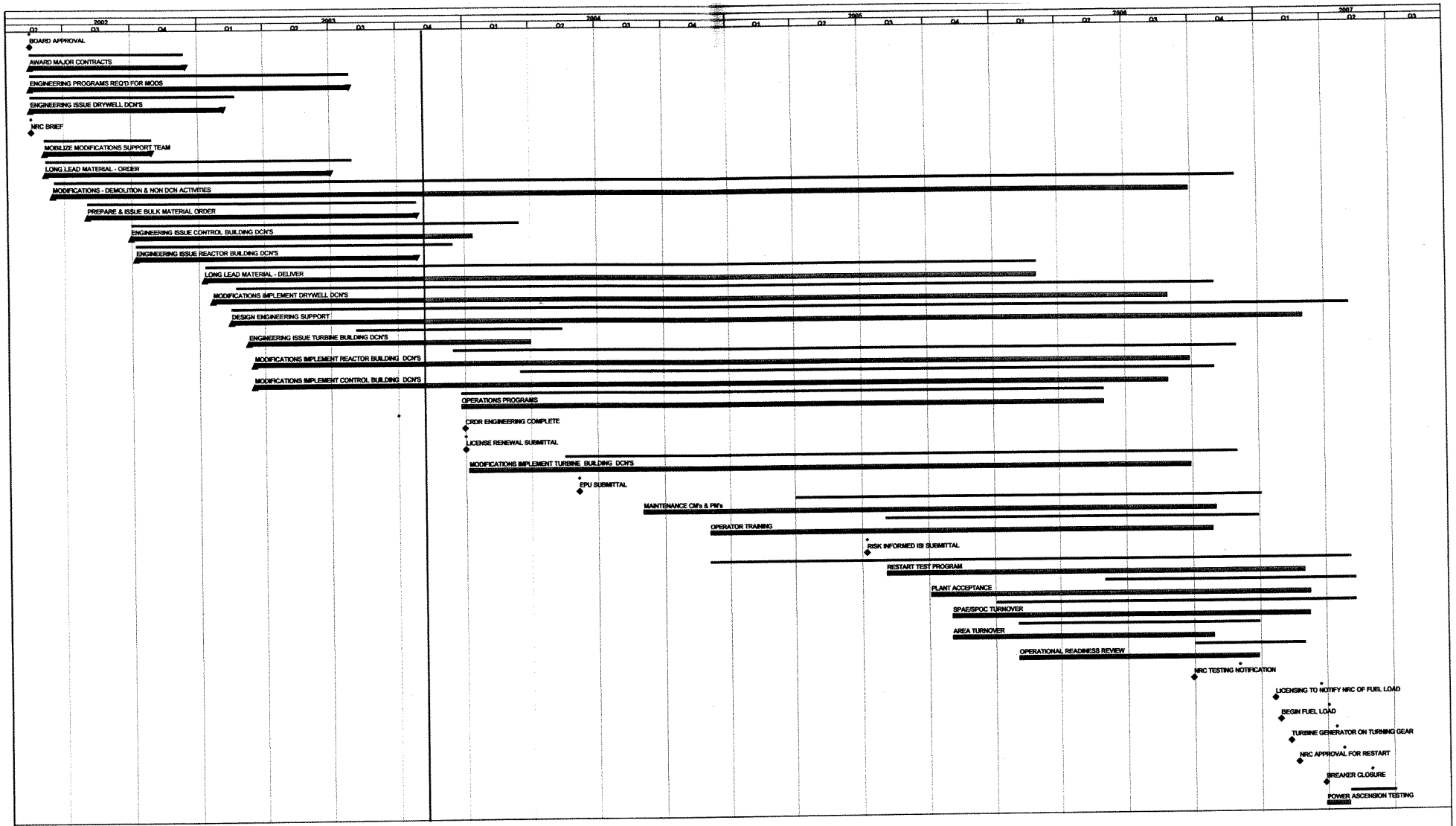
Unit 1 Plant Restart Manager's Organization



Jon Rupert

Project Overview

- Project is in Transition from Engineering Design to Modifications Implementation



Start Date	01APR02 00:00	TARGET BAR
Finish Date	20NOV07 16:00	Early Bar
Data Date	08NOV03 15:00	Progress Bar
Run Date	09NOV03 16:01	

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TVA BFN UNIT-1
MAJOR MILESTONES
REV 3

Date	Revision	Checked	Approved

Engineering Status

- Schedule
  - Program activities on schedule
  - DCN Status
    - Drywell DCNs complete
    - Reactor Building DCNs complete
    - Control Bay DCNs complete end of December
    - Turbine Building DCNs complete end of March

Engineering Status

- Focus Areas
  - Modification / Field Support
  - Restart Testing Support Preparations
  - Development of Program Closure Documentation

- Evaluation Results Associated With NRC Bulletin 79-14 Weld Inspection

Engineering Status

Major Engineering Programs
Breakage Identification

Engineering Programs	Discipline	Status
79-14 Stress Analyses	Plant Design	Complete
Drywell Steel	Civil	Complete
Equipment Qualification	Electrical	Complete
Appendix R	Electrical	Complete
Cable Issues	Electrical	
Flex Conduit	Electrical	Complete
Cable Splices	Electrical	Complete
Vertical Support	Electrical	Complete
External Separation	Electrical	Complete
Missing Bushings	Electrical	Complete
Condulets as Pull Points	Electrical	Complete
Brand Rex	Electrical	Complete
V5 Bend Radius	Electrical	Complete
Baseline Calculations	Electrical	
4.16kV/480V Load Flow	Electrical	Complete
120V Load Flow	Electrical	Complete
4.16kV/480V Protection/Coord	Electrical	Complete
125/250V Protection/Coord	Electrical	Complete
120V Protection	Electrical	Complete
125/250V CCVD	Electrical	Complete
120V CCVD	Electrical	Complete
250V Load Flow	Electrical	Complete
EDG Loading	Electrical	Complete
Drywell Penetration Protection	Electrical	Complete
Station Blackout Diesel Sizing	Electrical	Complete
Ampacity	Electrical	Complete
Fuse Sizing	Electrical	Complete
TOL Sizing	Electrical	Complete
Sensing Lines	I&C	Complete
Baseline Calculations	Mechanical	Complete
Analytical Limit Calcs	Mechanical	Complete
Moderate Energy Line Break Flooding	Mechanical	Complete
Containment Coatings	Mechanical	Complete
Op Mode calcs	Mechanical	Complete
Motor Operated Valves (GL 89-10)	Mechanical	Complete

Joe Valente

Maintenance/Modifications Status

- Overview
  - Demolition Phase
  - Modification and Installation
  - Maintenance Inspection and Rebuild

- Schedule Status
  - Completed Activities
  - Current Activities
  - Future work

Maintenance/Modifications Status

- Focus Areas
  - Industrial Safety
  - Self Critical Culture
  - Material Fabrication and Delivery
  - Work Order Planning and Assessment

- Safe End Installation
  - Welding overview
  - WSI documentation weakness

Operations, Work Control, and Plant Interface

- Organization
  - Work Control
  - Procedures
  - Component Labeling

- Activities
  - Work Control
  - Maintenance support
  - Preparing for System Return to Service
  - Control Room Design Review - Additional simulator
  - Procedures upgrade

- Focus Areas
  - No impact to operating units
  - Smooth transition from non-operational to operable systems

Licensing Status

- Unit 1 Restart Regulatory Framework Approved by NRC
  - Two remaining open items
    - License condition related to conversion to Improved Tech Specs
    - Closure status for Generic Letter 88-20
  - Plan to meet in February to resolve

- Submittals Pending NRC Actions
  - TS 424, Revision in Number of ECCS Subsystems Required for LOCA
  - TS 437, Scram Discharge Instrument Volume Setpoint Change
  - ASME Section XI, Subsection IWE, Containment Inspection Program, Requests for Relief 1-CISI-1,-2, & -3

Licensing Status

- Restart Submittals Identified To Date
  - 20 License Amendments
  - 50 Generic Communications
    - Program Descriptions
    - Program Completion
    - Many Require Closeout Actions by NRC
  - 22 Nuclear Performance Plan Program Completions
  - 3 Miscellaneous (e.g. Additional Simulator Validation Notice)

NOTE: Many submittals may be combined in periodic status reports

Licensing Status

- Significant Licensing Actions
  - License Renewal Application scheduled for submittal on December 31, 2003
  - Extended Power Uprate application scheduled for submittal in June, 2004
  - 24 Month Fuel Cycle application scheduled for submittal in June, 2004

Licensing Status

- Licensing Issues
  - Appendix R, Section III.G.2 Manual Actions
    - As the staff recognized in SECY 03-0100, many plants, including BFN Units 2 and 3, rely on manual actions
    - SECY 03-0100 states that exemptions to the regulation would be a large burden to the staff and licensees with very little net safety improvement
    - In accordance with SECY 03-0100 and related SRM, approving rule making plan, Unit 1 will incorporate similar manual actions to those utilized on Units 2 and 3
    - Consistent with the rulemaking direction, no exemption requests will be submitted for use of the manual actions on Unit 1
  - Manual Chapter 2509 Specifies Transition to ROP process on a cornerstone by cornerstone basis
    - TVA agrees with this concept
    - TVA believes the transition can be made now for Security, Emergency Planning, and Radiation Protection cornerstones
    - PIs are reported on a plant basis
    - Programs are not unit specific

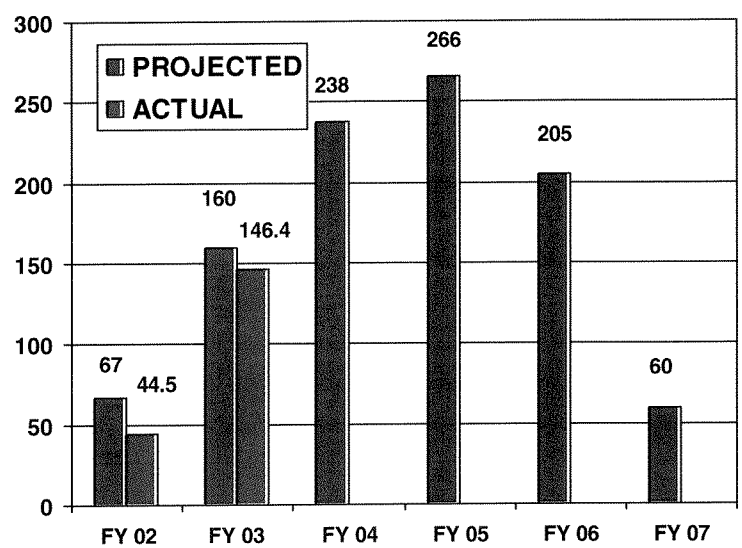
Restart Test Program

- Units 1 and 3 Restart Test Program submitted September 27, 1991
- Approved by NRC for Unit 3 restart on August 30, 1994
- Unit 1 test program essentially identical to Unit 3 program
  - Baseline Test Requirements
  - Post-Maintenance Tests
  - Post-Modification Tests
  - Surveillance Tests
- Power Ascension Testing
  - Testing specified at appropriate power levels
- Additional testing will be added for extended power uprate and other Unit 1 modifications
- Before reaching full power, Unit 1 will have been extensively tested

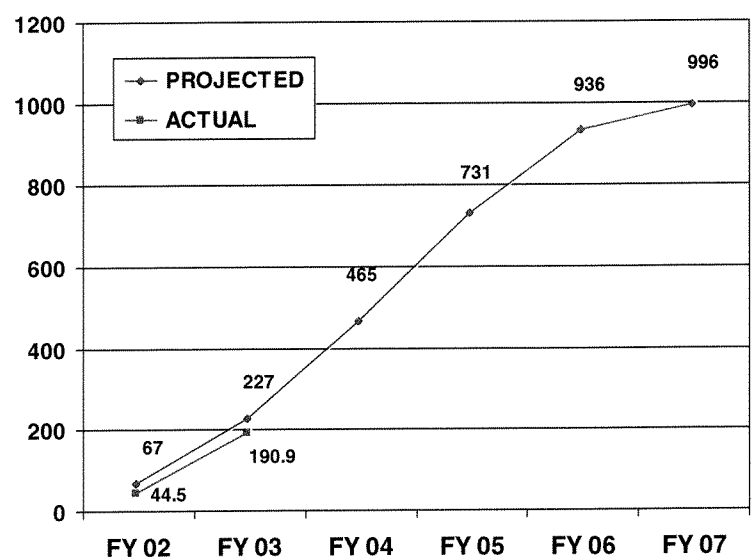
Radiation Protection Cornerstone

- Unit 1 Restart Goal
  - Plan and execute required work activities such that worker dose is maintained ALARA
  - Implement ALARA initiatives to ensure Unit 1 will operate in the top decile of BWRs in terms of collective radiation exposure

Man-rem by Fiscal Year



Man-rem Cumulative Trend



Radiation Protection Cornerstone

- Restart ALARA Initiatives
  - Gamma scanned piping to identify hot spots and high radiation areas for elimination or reduction
  - Chemically deconned Recirculation, Residual Heat Removal, Reactor Water Cleanup and Fuel Pool Cooling Systems prior to initiation of work activities
  - Deconned majority of drywell to permit work activities in street clothes
  - Shielded major radiation sources associated with work activities
    - Safe-end replacement
    - Fuel Pool Cooling heat exchangers and piping
  - Additional initiatives in the planning/implementation process
    - Desludge of Condensate Storage Tanks # 1 and 5
    - Hydrolazing CRD headers
    - Shielding of CRD suction and discharge filters

Radiation Protection Cornerstone

- Restart ALARA Initiatives to Support Unit 1 Operation
  - Stellite reduction
    - Control Rod Blades
    - Turbine Blades
    - Valves
  - Preoxidation/passivation of selected piping and components
  - Installation of permanent shielding
    - Drywell Recirculation piping

Self Assessments

- Self Assessments Completed – FY03
  - Mechanical Baseline Calculations
  - Reactor Water Clean-up System DCN
  - Engineering Training Effectiveness
  - Contractor Control for Unit 1 Restart
  - Unit Barrier Separation
  - Work Plan/Work Order
  - Drywell Steel
  - Procurement and Materials Process
  - Integrated Data Base (ITEL)
  - Unit 1 Restart Work Control Operations Activities
  - ALARA Program
- 72 PERs Initiated To Track Areas For Improvement and Correct Problems

Self Assessments

- FY 04 Assessment Areas
  - Stellite Reduction Program
  - ALARA
  - Master Equipment List (MEL) Data
  - Operations Procedures/Labeling
  - EQ Implementation
  - WO Package Closure
  - In Process Work Order Documentation
  - FME
  - Electrical Issues
  - EQ Program
  - Appendix R
  - Scheduling
  - Estimating
  - Work Control
  - Engineering Records Processing

Corrective Action Program

- Unit 1 Restart Program Structure
  - Same Program As All TVAN
  - Unit 1 Subcommittee Reviews All PERs Daily
- Self Critical Culture
- Trending
- Program Health

Nuclear Assurance Oversight

- Oversight Methods
  - Audits
  - Assessments

- Oversight Scope
  - Functional Areas
  - Nuclear Performance Plan Volume 3, Special Programs

Nuclear Assurance Oversight

- Audits
  - Engineering & Special Programs
  - Quality Programs
  - Fire Protection

- Special Assessments
  - RHR System Design & Analysis
  - DCN Implementation
  - Design Basis Verification Program
  - Corrective Action Program
  - Work Control & Operating Unit Interfaces
  - Integrated Task Equipment List (ITEL)
  - Implementation of Special Processes
  - Appendix R

Nuclear Assurance Oversight

- Assessments – Observations
  - Drywell Steel Design, Analysis and Installation
  - Coating Installation
  - Torus Recovery
  - Cable Tray Installation
  - Work Control
  - Special Processes
  - Procurement
  - Radiation Protection/ALARA

Nuclear Assurance Oversight

- Results
  - No significant conditions have been identified
  - Minor Implementation issues

- Oversight Conclusions
  - Adequate programs and processes are in place
  - Self-evaluation methods and tools are being used to monitor performance
  - Implementation issues are being appropriately documented and resolved using the corrective action program

Nuclear Assurance Oversight

- Planned Oversight
  - Audits
    - Operations
    - Fitness for Duty
    - Security
    - Fire Protection
    - Maintenance
  - Special Assessments
    - Cable Tray & Conduit Supports
    - DCN Implementation – Mechanical & Electrical
    - Common Accident Signal

Final Comments