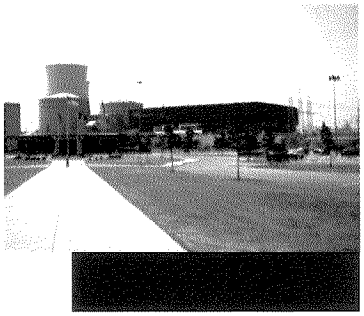
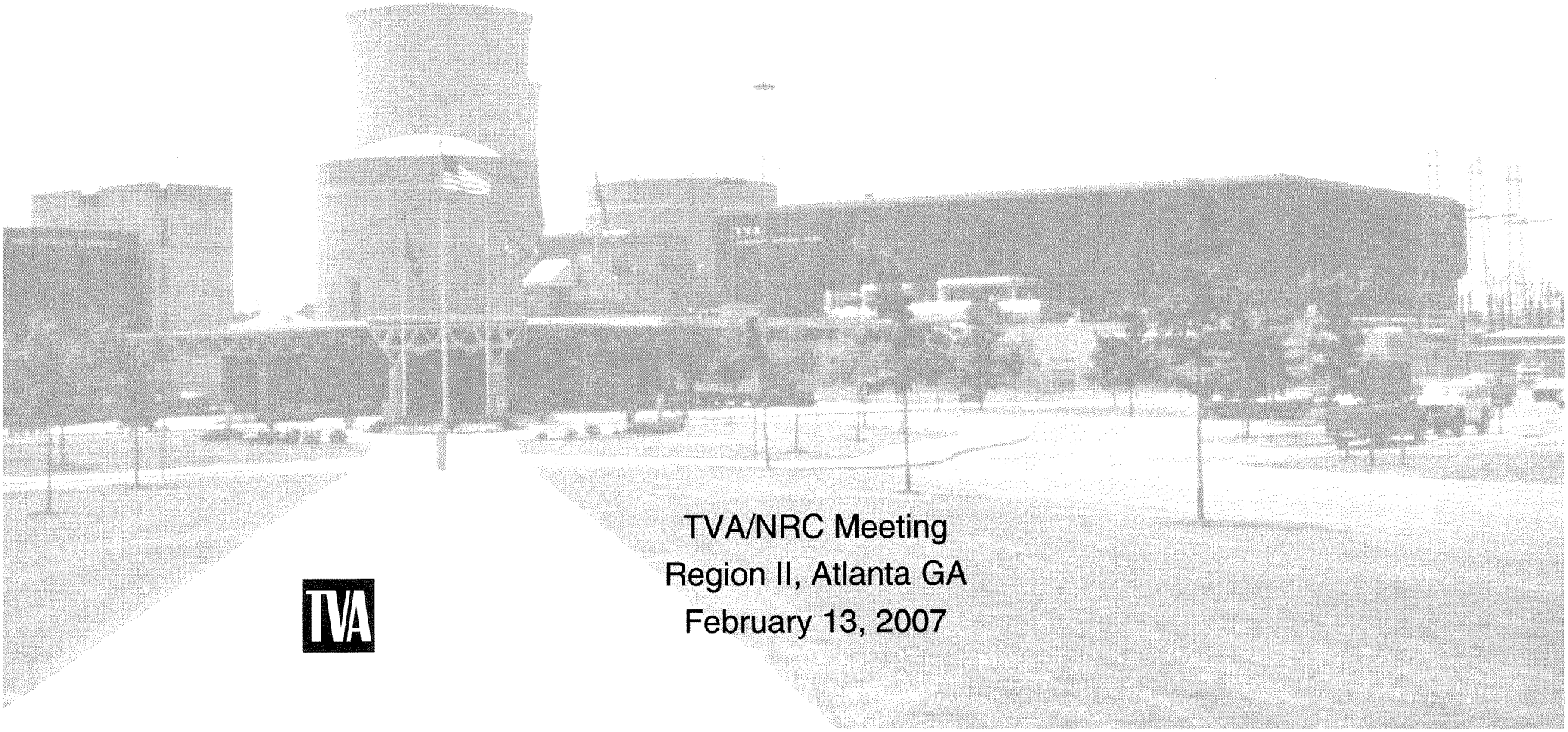


# Sequoyah Nuclear Plant

## Plant Performance



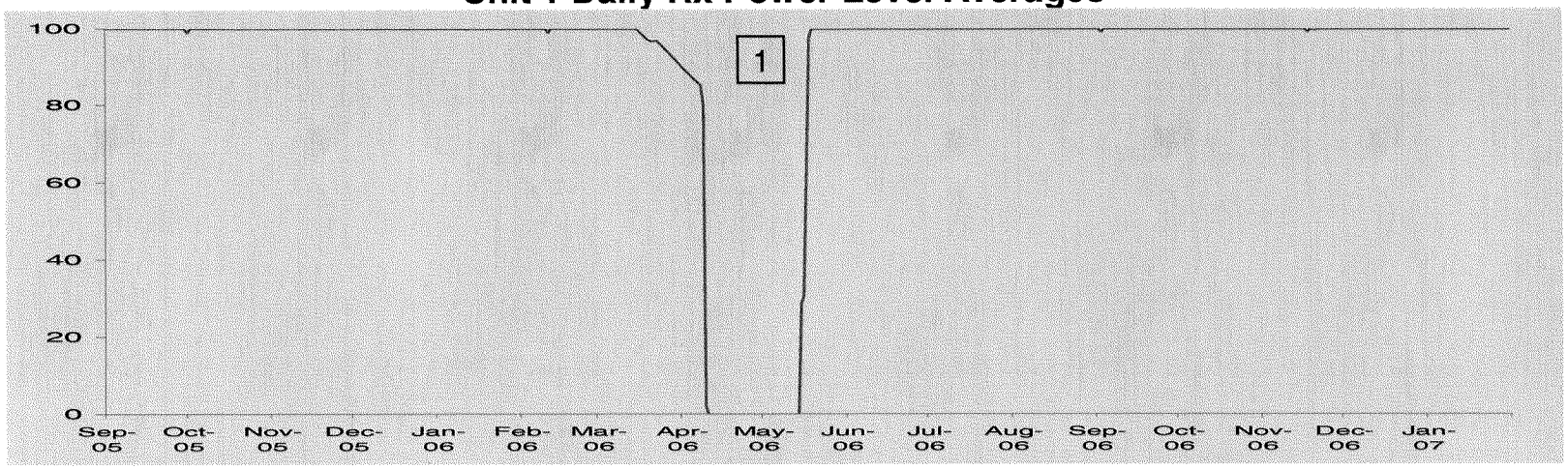
TVA/NRC Meeting
Region II, Atlanta GA
February 13, 2007

# Agenda

| | |
|---|---|
| • Introduction | Randy Douet |
| • Plant Performance | Dave Kulisek |
| • Human Performance | Dave Kulisek |
| • SQN Learning Organization Initiative | Dave Kulisek |
| • Operations Performance | Mark Palmer |
| • Outage Performance | Brian Dungan |
| • Equipment Reliability | Kevin Jones |
| • Projects | Kevin Jones |
| • 2006 INPO Evaluation Results | Randy Douet |
| • Closing Remarks | Randy Douet |

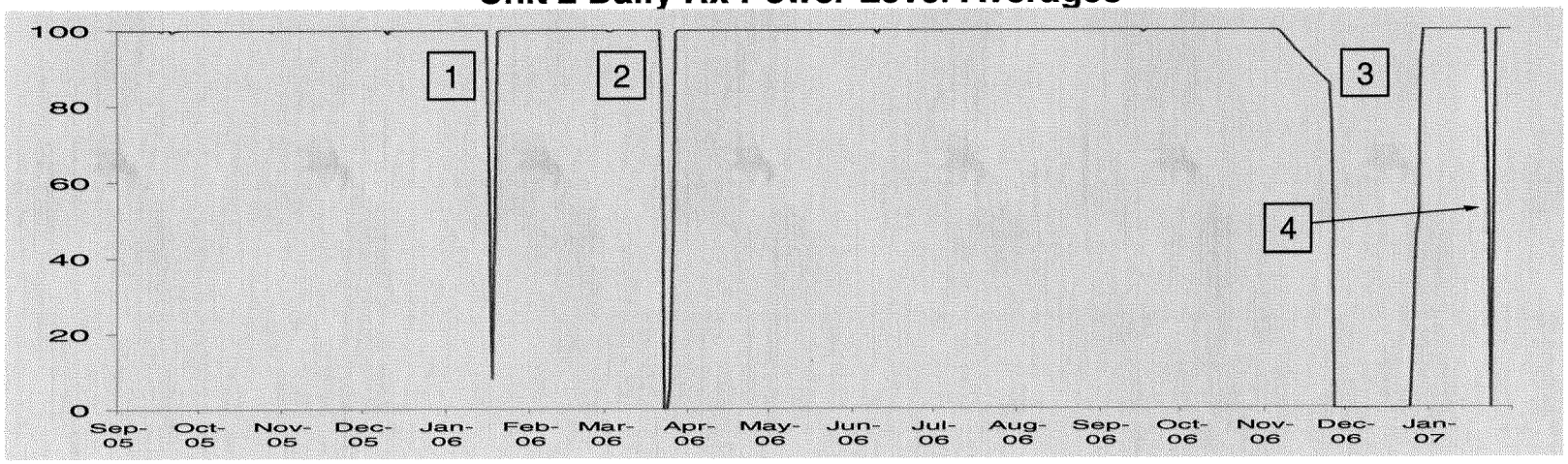
# Plant Performance

## Unit 1 Daily Rx Power Level Averages




1) 04/10/06 - U1C14 Refueling Outage

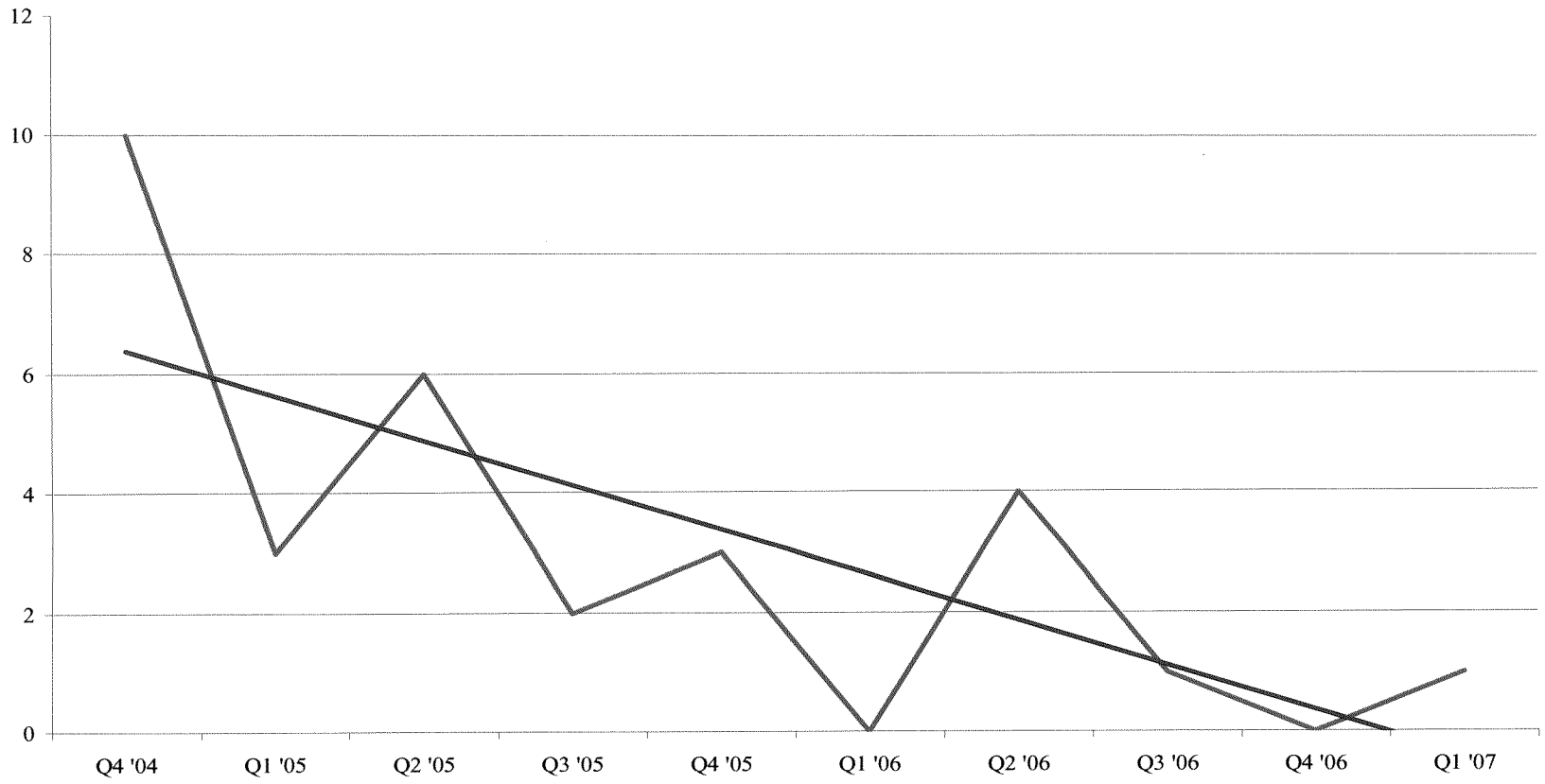
## Unit 2 Daily Rx Power Level Averages




1) 01/17/06 - Shutdown turbine to replace 2B main bank transformer
2) 03/22/06 - Reactor trip, electrical fault on generator
3) 11/27/06 - U2C14 Refueling Outage
4) 01/23/07 - Reactor trip, feedwater regulator valve

# Human Performance

**Station Clock Resets**
**Through January 2007**



# SQN Learning Organization Initiative

- Corrective Action Program Trending
- Self-Assessment
- Operating Experience / Benchmarking
- Training
- Performance Indicators

# Operations

- Results Since Last Meeting:
  - Improved leadership
  - Improved field performance
  - Improved outage performance

# Operations

- Areas Where Additional Focus is Being Given
  - Using training to improve performance
  - Increased rigor in programs and processes (including procedure use and adherence)
  - Staffing Pipeline Management
  - Operations leadership in daily work control process
  - Licensed Operator Biennial Exams

# Outage Performance

- U1 and U2 Cycle 14 Outage Summaries
  - Improving personnel safety performance
  - Cleared control room deficiencies, operator work arounds, temp leak repairs, 91-18 issues, temp alterations
  - Reduced elective and corrective maintenance backlogs
  - Managed PER backlog
  - No outage-related Licensee Event Reports
  - Improving Rad Worker performance

# Outage Performance

| Safety and Reliability Activities | | |
|---|---|---|
| **Units 1 and 2** | **Unit 1** | **Unit 2** |
| • ECCS Hi-Point Vents<br>– Pipe and test header<br>• LP Rotor refurbishment and inspections<br>• Pri / Sec Check valve inspections and repairs<br>• Main Bank Transformer inspections<br>• Isophase bus duct repairs | • 10-Year ISI<br>• MFP/MFPT<br>– 1A Inspection<br>– Vibration system<br>• 1A CCW motor refurbishment<br>• 1B Condensate Demineralizer motor/pump refurbishment<br>• RVLIS RTD replacement<br>• 1A RHR motor / pump replacement | • Containment Sump Modification<br>• PZR Weld Overlay / sleeve inspections<br>• Volumetric Head inspections<br>• Exciter change-out<br>• CILRT<br>• Generator H2 purity issue<br>• 2A RHR motor / pump replacement<br>• 2B Condensate Demineralizer motor / pump refurbishment<br>• 2A CCP motor refurbishment<br>• Main Condenser Dogbone seal repairs<br>• Steam Generator<br>– Sludge lancing<br>– Eddy-current testing<br>– Tube pull analysis |

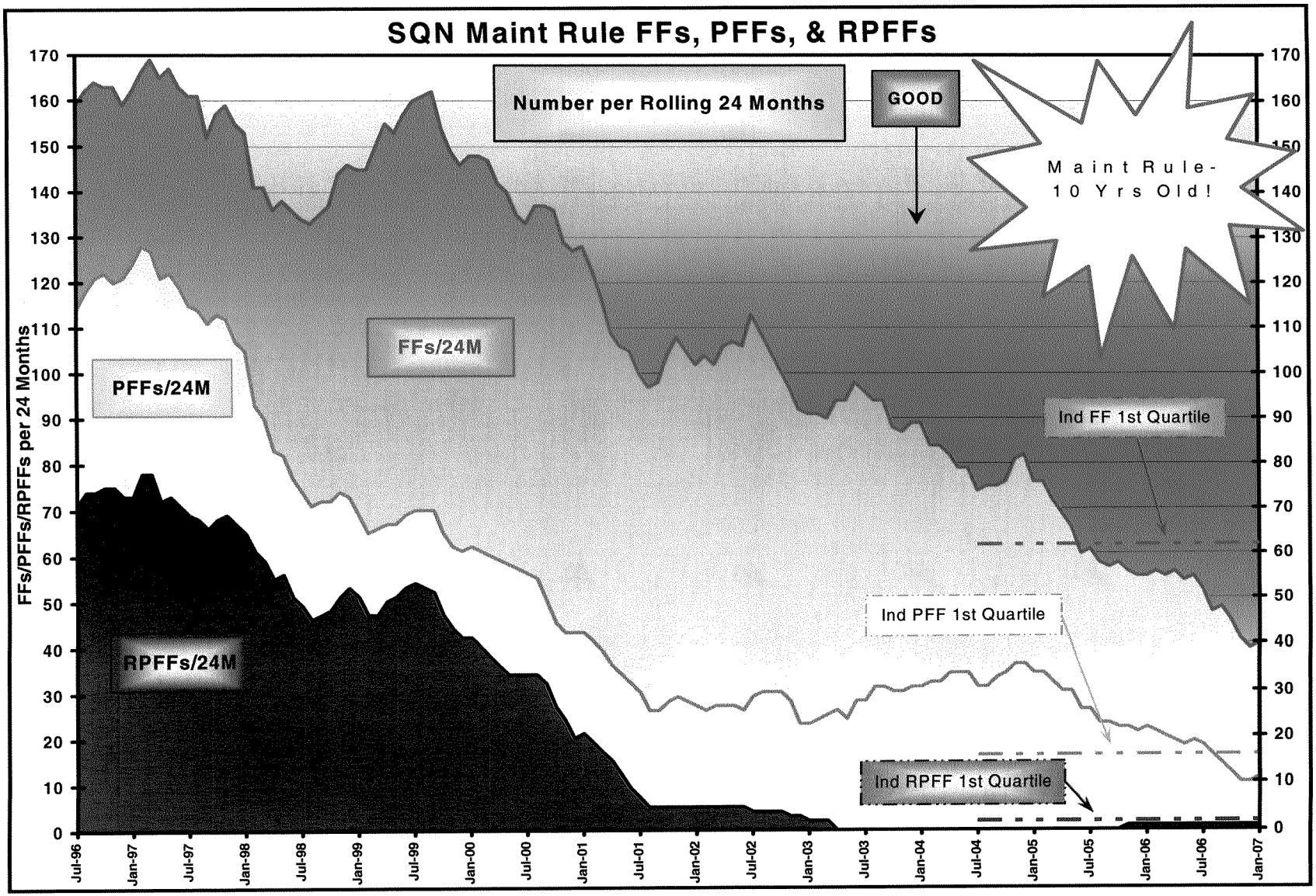
# Outage Performance

- Unit 1 and 2 Cycle 14 Outage Challenges
  - Fuel Movement
  - Supplemental Personnel Oversight
  - Project Dose Challenges

# Equipment Reliability

- High Safety-System Reliability
- Reduce Equipment-Related Challenges to Plant Operations
- Maintenance Rule
- Equipment Trending

# Equipment Reliability



# Equipment Reliability

- Reliability Improvements
  - Diesel Generator Air-Start System
  - 6.9-kV Emergency Raw Cooling Water Cable Replacement
  - Emergency Core Cooling System Gas Accumulation
  - Chillers
  - Transformer Replacements

# Equipment Reliability

- Challenges
  - Essential Raw Cooling Water Piping Replacement
  - Appendix R Program
  - Ultimate Heat Sink TS Change and Modification

# Projects

- Independent Spent Fuel Storage Installation (ISFSI)
  - Successful Spring 2006 campaign (5 canisters)
  - Six canisters planned this spring
- Reactor Vessel Head Inspection
  - Full volumetric inspection of penetrations
  - Unit 2 completed with no flaws identified
  - Unit 1 scheduled for Cycle 15

# Projects

- Containment Sump
  - Analysis addressed debris generation, transport, and accumulation
  - Unit 2 installation successfully completed
  - Unit 1 implementation scheduled for Cycle 15
- Alloy 600
  - Pressurizer nozzles (6)
  - No flaws detected in as-found/as-left UT for Unit 2
  - Unit 2 weld overlay successfully completed
  - Unit 1 implementation scheduled for Cycle 15

# 2006 INPO Evaluation Results

- Setting and Reinforcing High Standards
  - SQN performance improved during the past two years.
  - Lack of management understanding of the extent to which rest of the industry was also improving.
  - We did not use benchmarking to its fullest.
  - We are implementing actions to ensure increased management engagement in the benchmarking process.

- Operator Performance
  - Improvement opportunities exist in the area of fundamental skill sets within Operations.
  - Actions have been developed to improve operator diagnostic skills, and observation feedback to efficiently improve operator performance.
  - Actions are also being put in place to re-emphasize Shift Manager ownership of operating crew performance.

- INPO Strength: SQN Safety Culture

# Closing Remarks