NGG Nuclear Generation Group

NRC Region II meeting
Dr. William Travers
July 28, 2004

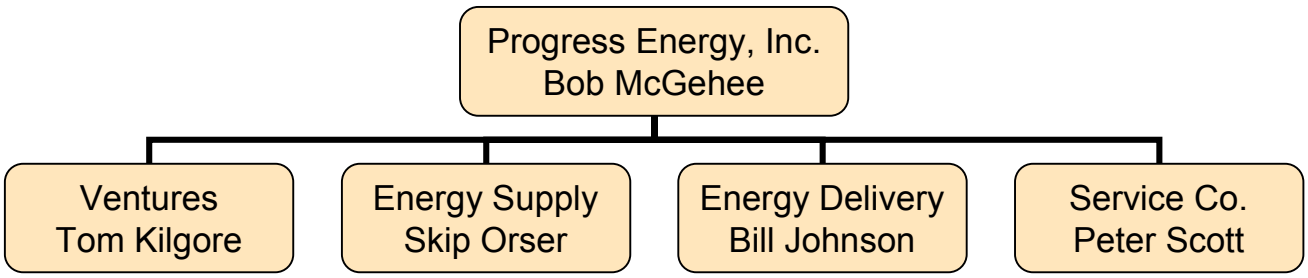
Enclosure 2

Progress Energy

Discussion topics

• Progress Energy	Scotty Hinnant
• NGG Organization and Responsibilities	Scotty Hinnant
• NGG fleet management philosophy	Scotty Hinnant
• Strategic initiatives	Scotty Hinnant/All
• NGG approach to industry issues	Joe Donahue
• Plant accomplishments and challenges ➢ CR-3 ➢ RNP ➢ HNP ➢ BNP	Dale Young Tim Cleary Bob Duncan Neil Gannon
• Region II expectations or concerns	NRC

Progress Energy



Overview

Headquarters	Raleigh, NC
Employees	15,300
Customers	2.8 Million
Service Territory	53,700 Square Miles in NC, SC, and FL

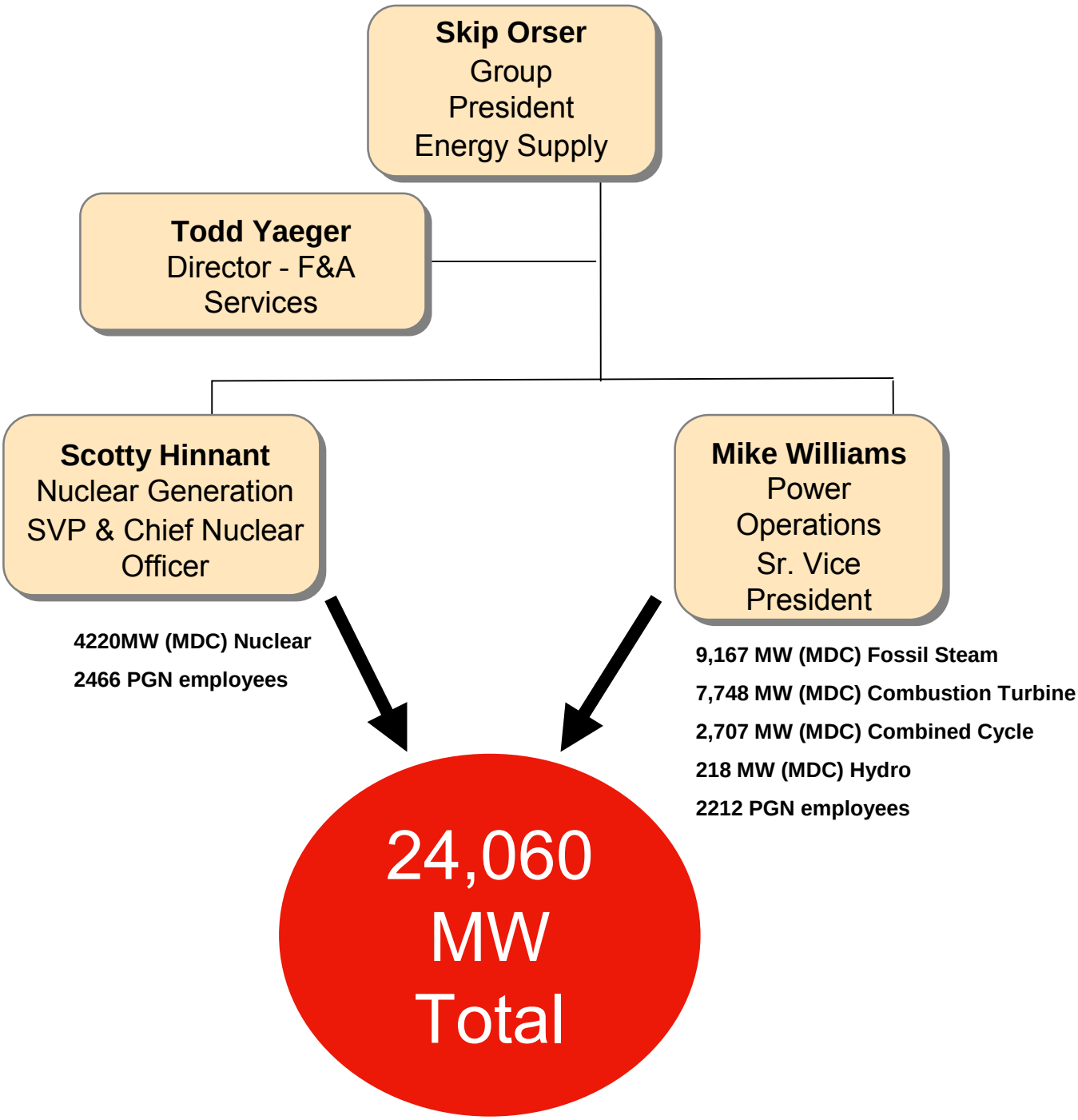
Key operational highlights

Total generating capacity	24,060MW
Generation Capability	50% gas/oil 31% coal 18% nuclear 1% hydroelectric
Distribution lines	83,545 miles
Transmission lines	10,272 miles

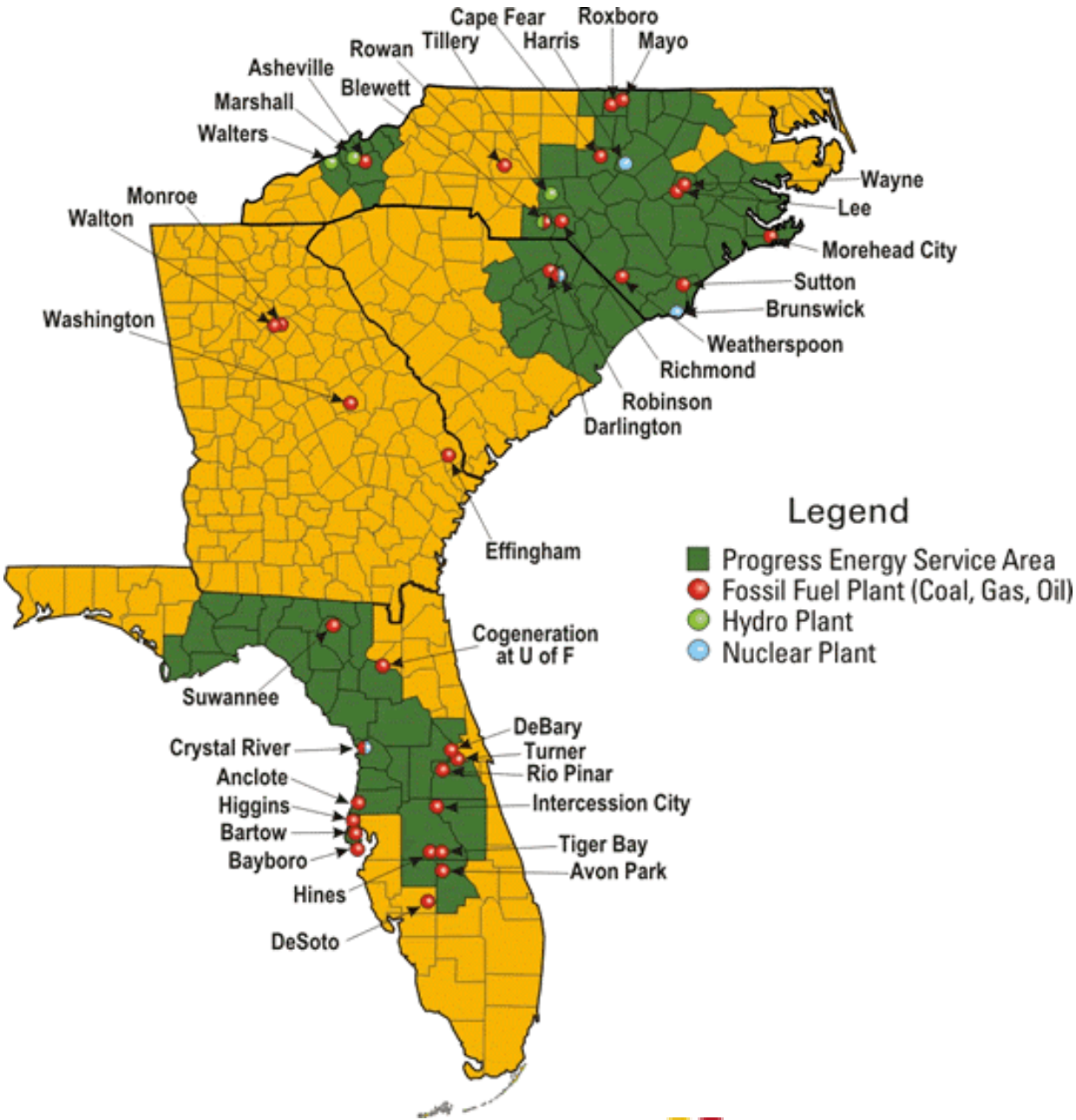
Key financial highlights

Operating revenues (2003)	$8.7 Billion
Electric sales	$100 Billion kWh
Total Assets	$26.2 Billion

Energy Supply Business Unit

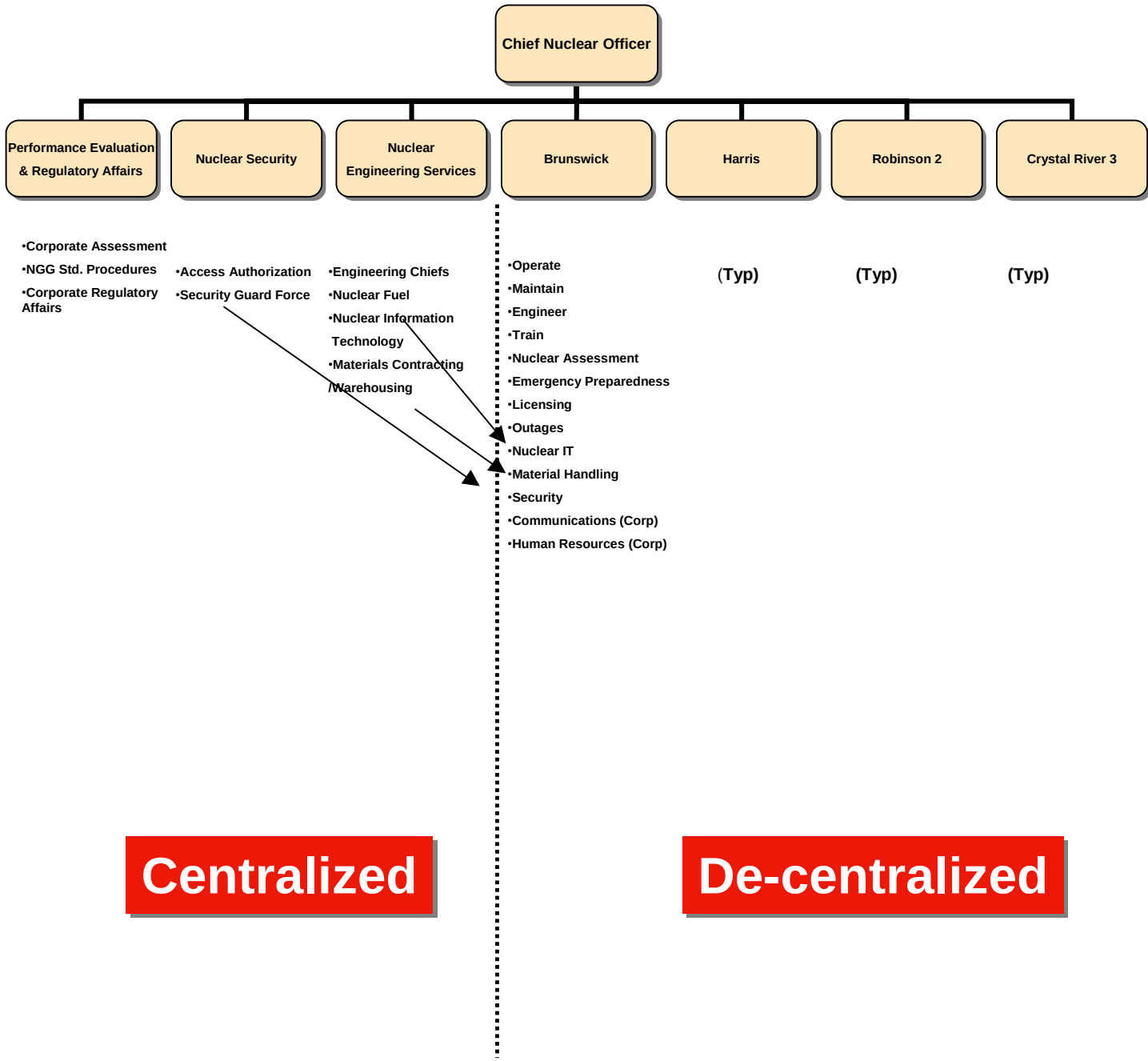


Service area



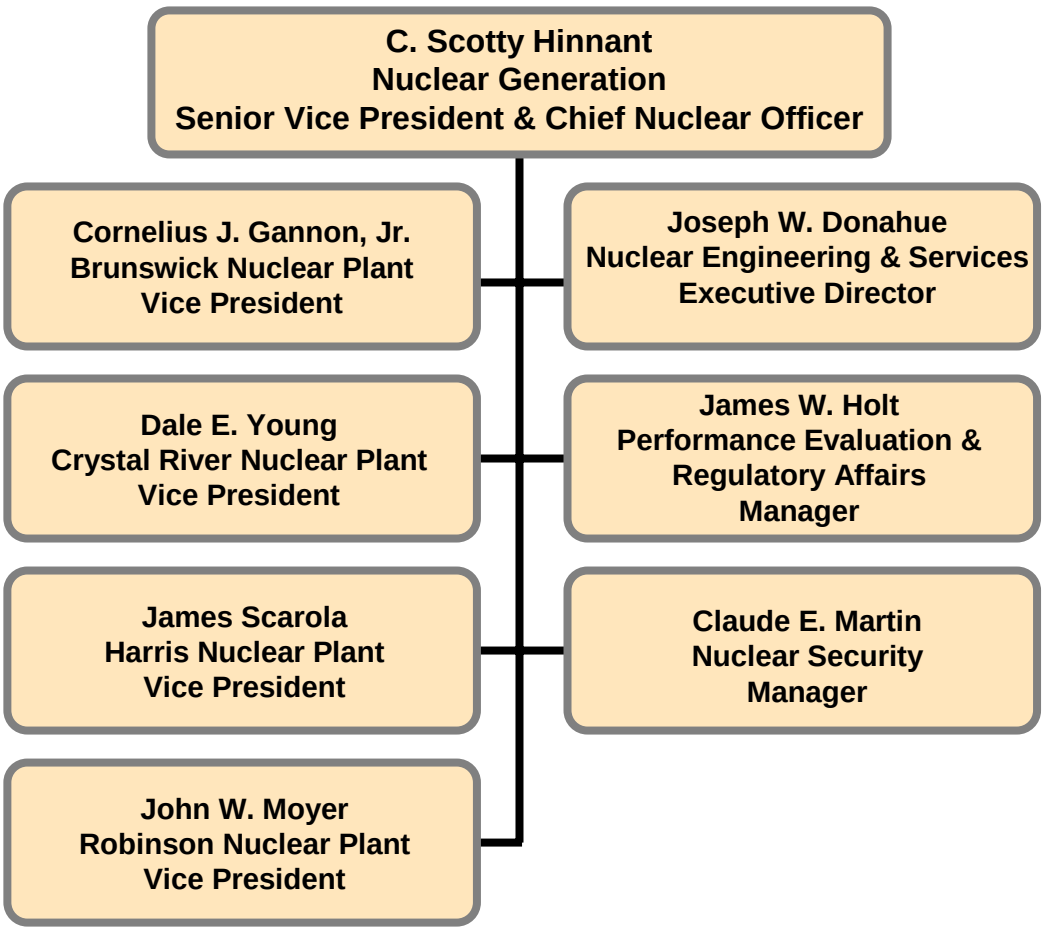
Progress Energy

Nuclear Generation Group



NGG Leadership Team

Organizational Excellence



Progress Energy NGG Fleet Management 2004 - 2005

VISION
To have a fleet that is powered by people who are driven by performance and committed to excellence to be the best nuclear program

NGG Chief Nuclear Officer Planning Sessions

MISSION
To safely produce reliable electricity for profitable sale while meeting the highest standards of environmental protection

Values/ Strategies	Nuclear Safety Focus	High Degree of Integrity	Meaningful Succession Plan	Value Our Employees	Embrace Diversity	Effective Training	Effective Oversight	Maintain Design Basis	Critical Self-Evaluation	Objective Performance Indicators	Environmental Stewards	Healthy External Interface	Optimal Standardization	Effective Peer Groups
NGG Directives/ Policies	NGGD-0002 NGGD-0020 NGGD-2400	HRI-HOCO-00008	NGGD-0001	NGGD-0001	Diversity Strategic Plan	NGGD-0001	NGGD-0070	NGGD-0001	NGGD-1400	NGGD-0006	NGGD-0030	NGGD-0040	NGGD-0004 NGGD-0050 NGGD-0060 NGGD-1610 NGGD-1700	NGGD-0008

Critical Success Factors

Operational Excellence

Business Plan Initiatives

- Equipment Reliability
- Outage Optimization
- Fire Protection
- Containment Sump
- Personnel Safety & Human Performance
- Security Upgrades
- Quality of Vendor Services

Implementing Actions

Core/Enabling Process

- Work Management
- Configuration Control
- Equipment Reliability
- Materials and Services
- Training
- Support Services
- Fuel Management
- Plant Operation
- Loss Prevention

Competitive Positioning

Business Plan Initiatives

- Shared Resource Optimization
- Supply Chain Improvement
- PassPort V10
- Extended Power Uprate
- License Renewal
- Spent Fuel Management
- Digital Systems
- Siren System Long Range Plan
- Alloy 600 Issues
- Large Component Change-Out

Implementing Actions

Major Projects

- Power Uprates
- License Renewals
- RV Head Replacements
- Nuclear Fuel 5 Year Plan
- Regulatory Influence
- Security

Organizational Excellence

Business Plan Initiatives

- Fleet Management
  - Fleet Engineering
  - Standard Organization Design
- Leadership Development
- Diversity
- Knowledge Transfer Strategy Development

Implementing Actions

Training & Personnel Development

- PDP
- Business Training
- Incentives
- Leadership Development
- Systematic Selection Guide

Performance Monitoring

- Employee Surveys
- Management Review Meetings
- 2 Cs
- Internal (NAS/PES) Oversight
- External (NSRC/NSOC) Oversight
- Financial Reports
- Incentive Goals
- KPIs
- CAP Trend Analysis
- Department Head Meetings
- Self-assessment
- Employee Concerns
- NRC/INPO

Critical Success Factors

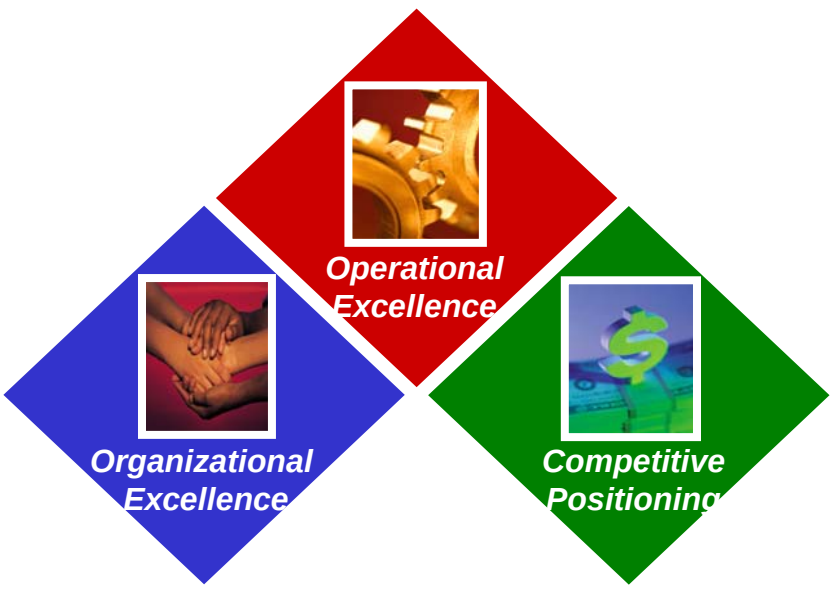
The NGG Business Plan has been developed around the three Energy Supply Critical Success Factors that explain and guide our strategy: Operational Excellence, Competitive Positioning, and Organizational Excellence. Investing in our people, plants, and technology will enable us to achieve future growth, stability, and superior performance.

Operational Excellence encompasses how we set our targets and operate our plants. Our goals are to deliver top-quartile operational performance in the areas of safety and production, while maintaining superior environmental performance.

Competitive Positioning means making sure we are positioned for success in the competitive marketplace. We must optimize the use of our O&M dollars, capital dollars, fuel dollars, and new technology to better position the fleet for a future in the competitive southeast.

Organizational Excellence involves how we build and lead the organization to ensure our performance is sustained over time. NGG has an integrated management approach, with a focus on continuous improvement and excellence in employee and management selection and training.

Concentrating on Operational Excellence, Competitive Positioning, and Organizational Excellence is the first step to help us reach our goals. The Critical Success Factors are tied to the successful execution of this Plan and form the foundation for this document. Key initiatives have been identified for each of these Critical Success Factors, as shown in the following pages.



NGG Strategic Issues

- Security
- License renewals
- Power up-rates
- Trip reduction/zero tolerance
- Spent fuel
- NuStart Consortium

Security

- Order requirements will be met.
- Interpretations continue to change.
- Force-on-force exercises must be controlled.
- EP drills have been run at each plant based on a security scenario.

License renewals

Plant	Application submittal
Robinson	Renewal approved
Brunswick	October, 2004
Harris	4Q 2006
Crystal River	1Q 2009

Approach

Dedicated team led by corporate manager that applies lessons learned to improve application quality and process efficiency.

Power Uprates

Plant	Status
Robinson	4.5% in 1979 1.7% in 2002
Brunswick 1	5% in 1996 14.27% in 2004
Brunswick 2	5% in 1997 14.27% in 2005
Harris	4.5% in 2001
Crystal River	3.75% in 1981 0.49% in 2002

Approach
Carefully evaluate design and equipment margins and maintain or increase margins where possible.

Trip reduction/Zero Tolerance

- Integrated trip reduction methodology
  - Focused on high risk systems
  - Integrate
    - Operational philosophies
    - Single trip vulnerabilities
    - Maintenance PM practices
- Zero tolerance
  - Identify critical components.
  - Focus preventative maintenance and rebuild programs to eliminate failures.
  - Change culture from “fix” to “prevent” failures.

Objective
High safety system availability with breaker-to-breaker plant operation.

Spent fuel

- Utilize four Harris pools for Harris, Robinson, and Brunswick fuel storage.
- Ship until limits of IF-300 casks are met for enrichment and burn-up.
- Transition to dry storage
  - RNP in 2005
  - BNP in 2007
  - CR3 in 2014

Nuclear Consortiums NuStart Energy

- Objective: Construction Operating License Application
- Members:

  Constellation
  Duke
  Entergy
  Exelon
  Florida Power & Light
  Progress Energy
  Southern Company
  TVA
  EDF Int'l North America
  General Electric
  Westinghouse

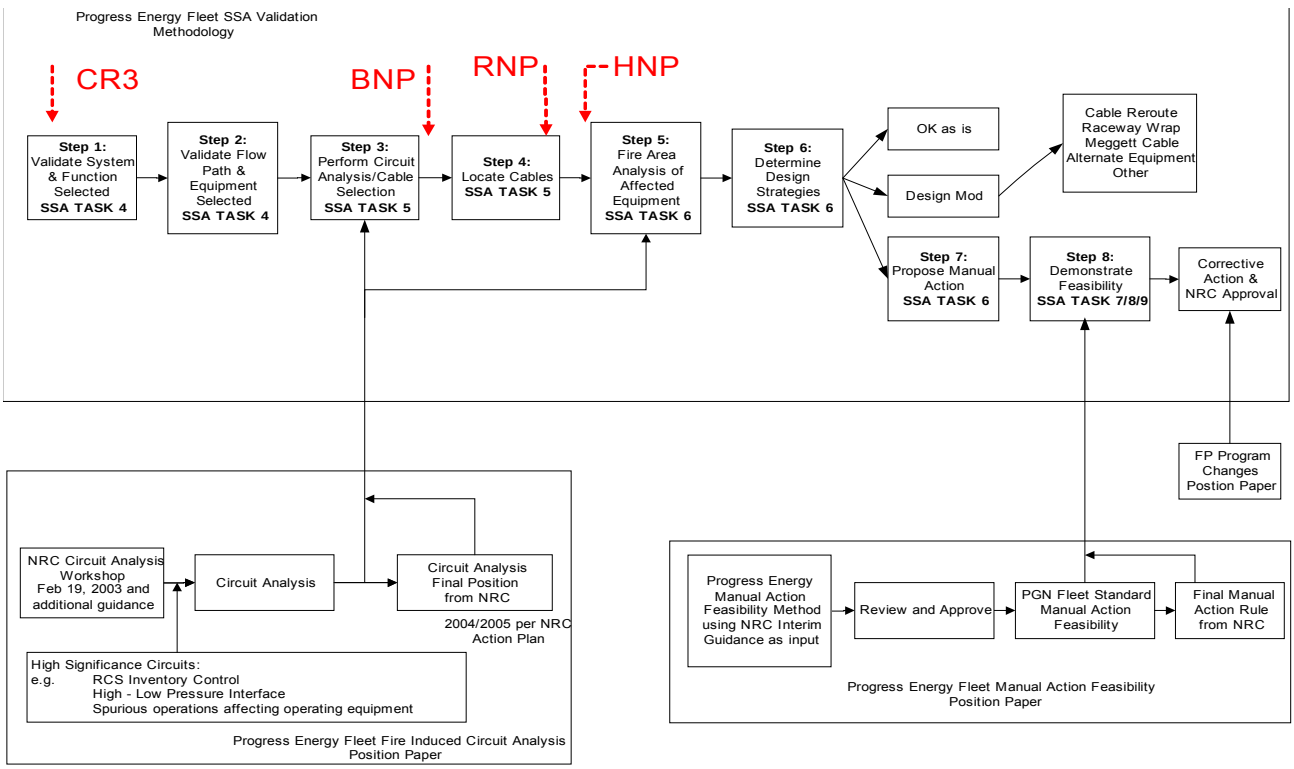
Industry issues

Nuclear Engineering & Services (NES)

- Fire protection program upgrade.
- Fuel quality/leakers.
- Inconel 600 inspection strategy.
- Digital upgrade approach.
- PWR sump screens.

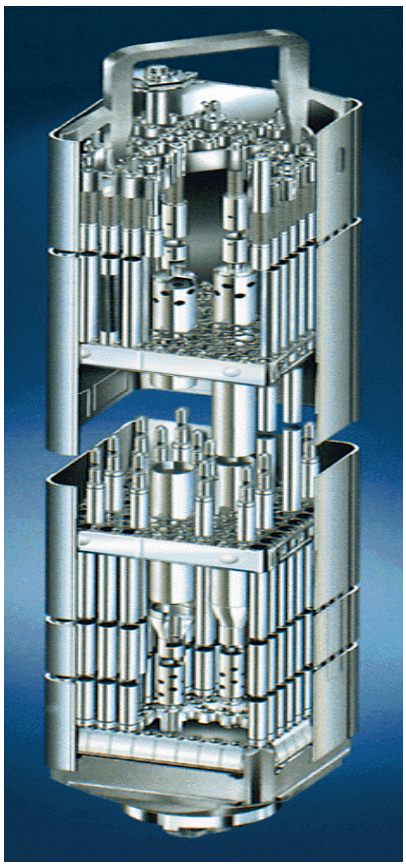
Fire protection program upgrade

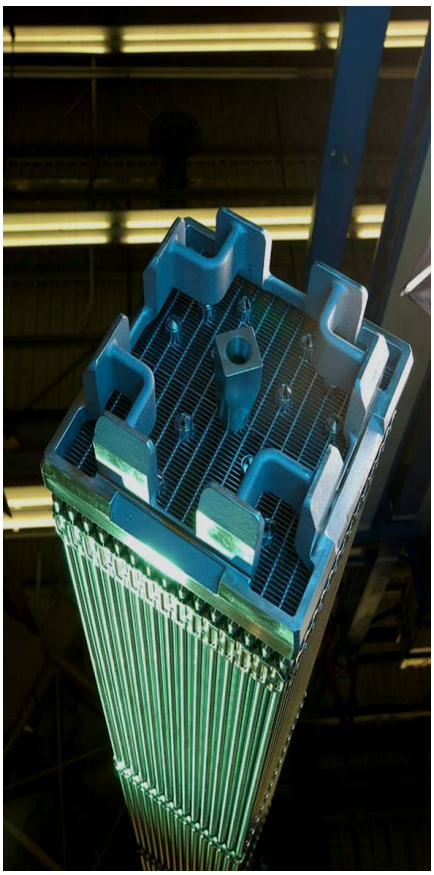
- Safe shutdown analysis
- Fire barriers
- Fire testing
- Hot short analysis

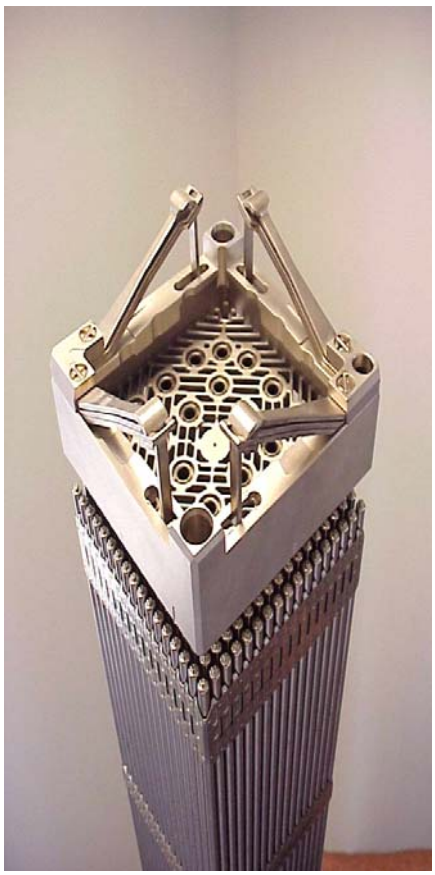


Fuel quality/leakers

- Framatome bundle redesign
- RNP/HNP experience
- GE-14 challenges
- Vendor actions and inspections



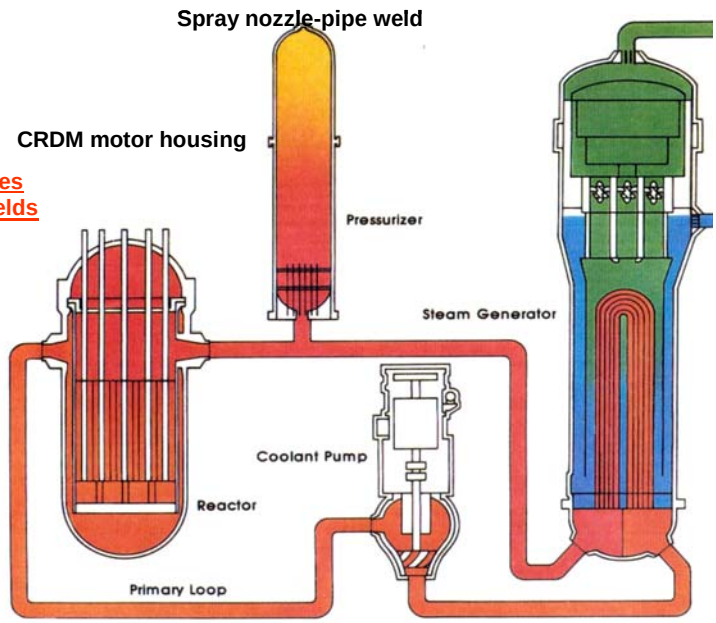




Inconel 600 inspection strategy

- Heads
  - CR3 replaced in 2003
  - RNP 2005 replacement planned
  - HNP (spare in stock)
- Steam generators
  - RNP replaced in 1984
  - HNP replaced in 2001
  - CR3 replacement planned 2009
- Inspection/replacement strategy

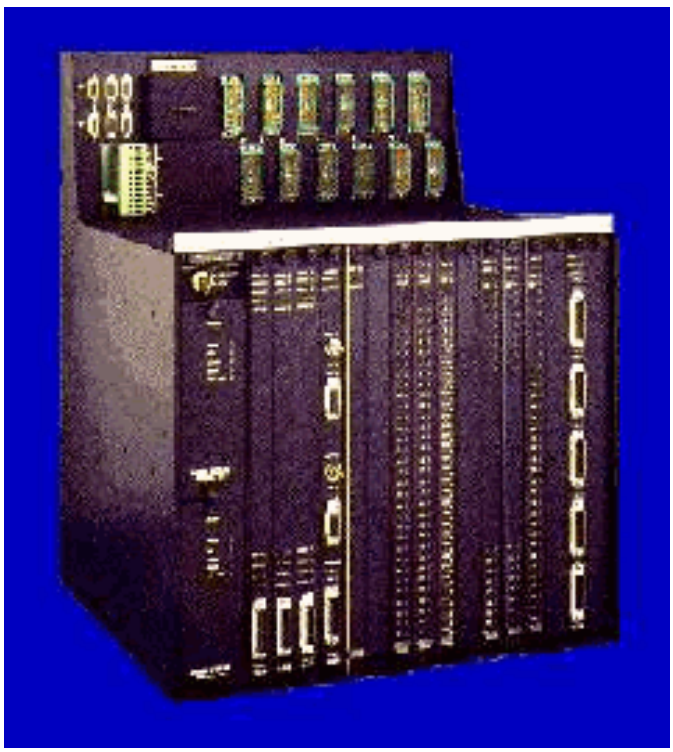
•Red font = cracking locations in industry



- HNP – about **129** locations (includes 65 on top head and 50 BMNs)
- RNP – about **56** locations (includes 50 BMNs)

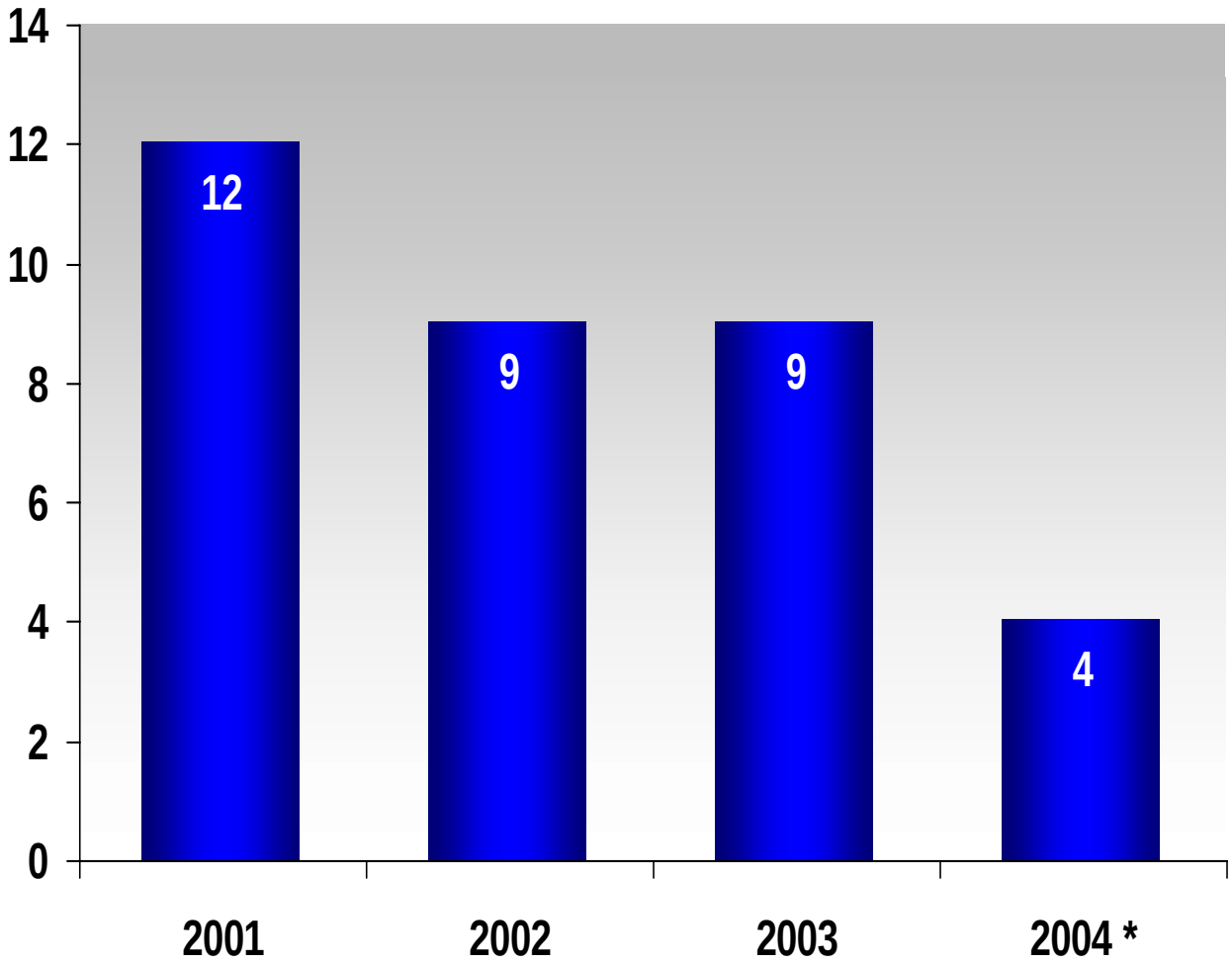
Digital upgrade approach

- Standard hardware platform
  - BOP – Honeywell
  - NSS – final platform selection in progress
- Fleet approach
  - Apply design lessons learned
  - Standard training
  - Standard parts back-up
- Phased approach
  - Install infrastructure
  - Phase in modules as plant needs dictate



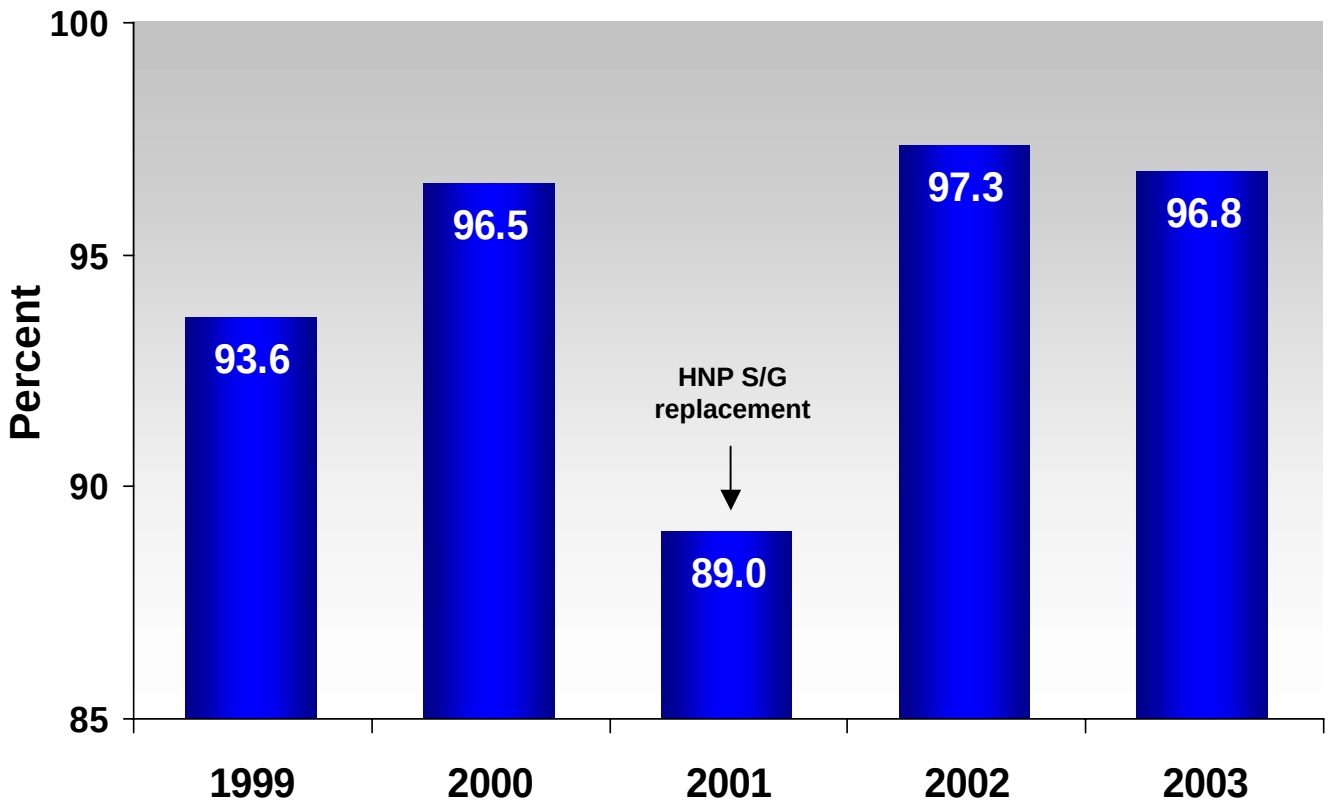
EXCELLENCE through a FLEET powered by PEOPLE

NGG Human Performance Events



* Year-to-date through June

Annual Capacity Factor



Includes CR3 beginning in 2001

Crystal River 3

Achievements

- NGG Integration
- RV Head Replacement
- IN 600 inspections
- Improved safety, production, efficiency

Challenges

- Following RF13
- Worker performance
- Operations focus
- Site Excellence Plans

Robinson

Achievements

- License renewal, April 2004.
- Bottom mounted instruments inspected April 2004 – clean, no indications.
- Reactor vessel head inspected May 2004 – clean, no indications.
- Back-to-back 500+ continuous operating cycles, 3-year capacity factor 94%.

Challenges

- Reactor vessel head replacement, October 2005.
- Dry cask storage project, construction underway, load cask July 2005.
- Security order change implementation.

Harris

Achievements

- Upper and lower reactor vessel head inspections completed with no findings.
- Control room inleakage testing results among best in industry – well within our design bases.
- Personnel safety
- Utilization of risk perspectives

Challenges

- Fire Protection
- Trip reduction culture

Brunswick

Accomplishments

- EPU
  - 120% on U1
  - EPU Margin Gains
  - Steam Dryer Mods
- ALARA Performance
- U2 Maintenance Outage

Challenges

- Adverse Trend in HU
  - EDG JWC
  - HPCI check valve
- OSART Preparations
- Spent Fuel Shipping

NRC Region II comments

- Dr. Travers
  - expectations/comments
- Region II concerns/comments