

Safe Plant Operations

Reliable Plant Operations

Cost Effective Plant Operations



FENOC Vision

People with a strong safety focus
delivering top fleet operating performance.

Senior Management Briefing
January 9, 2008

Agenda

Opening Remarks, Introductions

Joe Hagan – President and CNO

Fleet Oversight

Jeannie Rinckel – Vice President, Oversight

Fleet Project Update and Assessments

Danny Pace – Senior Vice President, Fleet Engineering

Targeted Performance Improvement

Jim Lash – Senior Vice President and Chief Operating Officer

Site Performance

Perry – Barry Allen, Vice President

Davis-Besse – Mark Bezilla, Vice President

Beaver Valley – Pete Sena, Vice President

Closing Remarks

Joe Hagan



Desired Outcomes

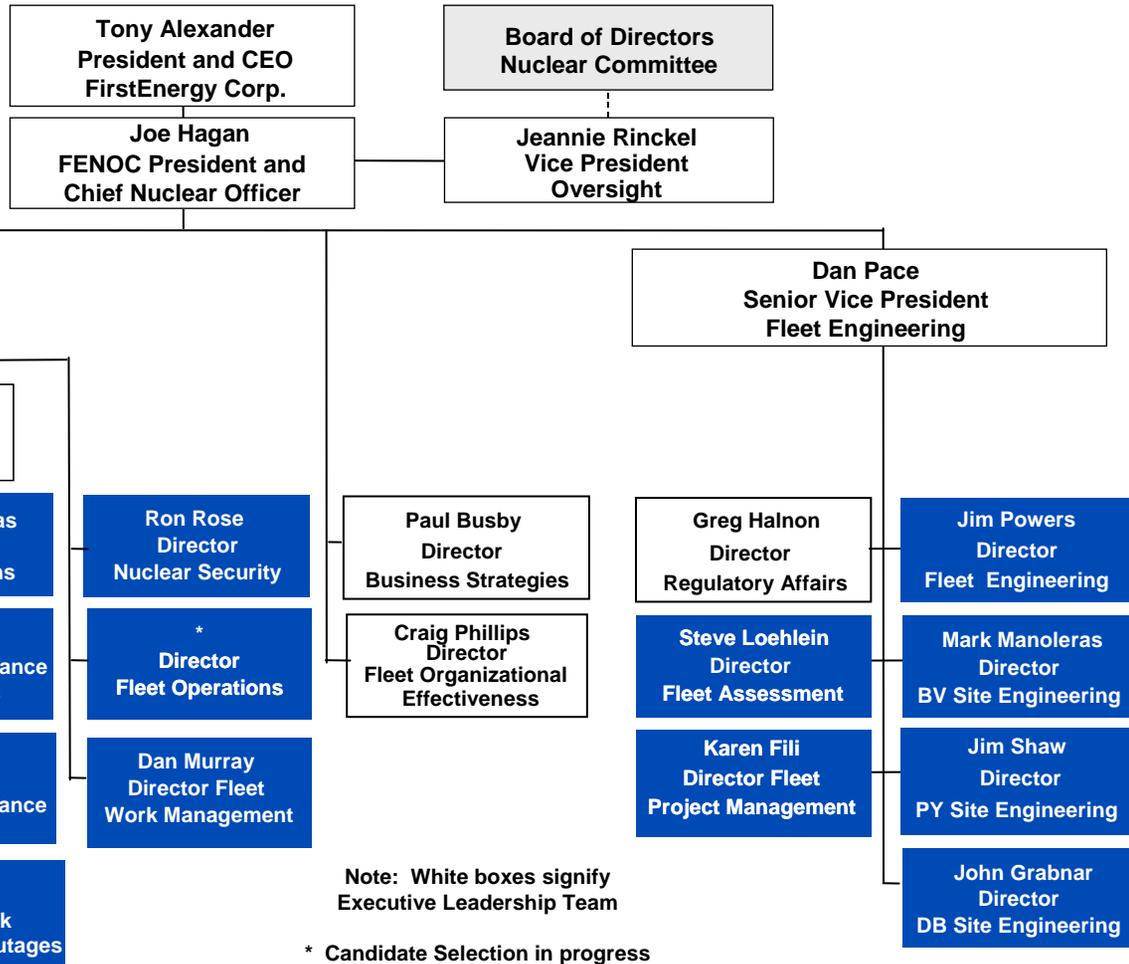
- ▶ **Review 2007 safe and reliable fleet performance**
- ▶ **Discuss Nuclear Oversight perspective**
- ▶ **Outline Fleet Projects and Assessments**
- ▶ **Discuss targeted areas to improve performance**
- ▶ **Report plant operating performance and challenges**



Fleet Overview – Organization



FirstEnergy Nuclear Operating Company



Fleet Results – 2007 in Review

■ Continued excellence in personal safety: Fleet OSHA rate = 0.29

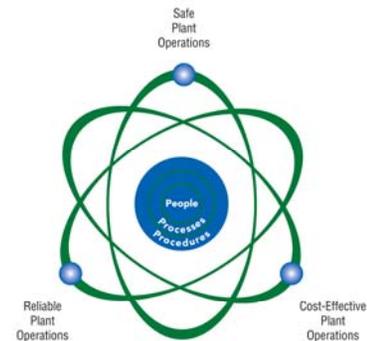
- Davis-Besse has worked >7 million hours without a Lost Time Incident
- Perry has worked >4 million hours without a Lost Time Incident
- Beaver Valley had achieved >8 million hours prior to Lost Time Incident in October 2007

■ Maintained focus on safe and reliable day-to-day operations

- 88.9% Fleet Capability Factor
- 5.07% Fleet Forced Loss Rate

■ Met staffing goals

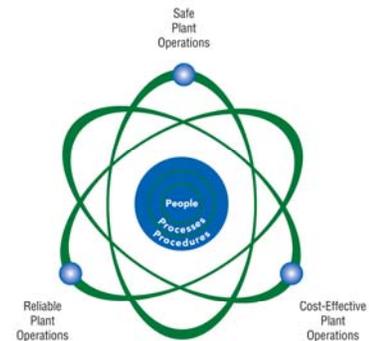
- Hired 149 new employees
 - Includes 90 vital hires (Goal = 72)
- Offset loss of 135 employees
- Licensed Operator pipeline



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Fleet Results – 2007 in Review

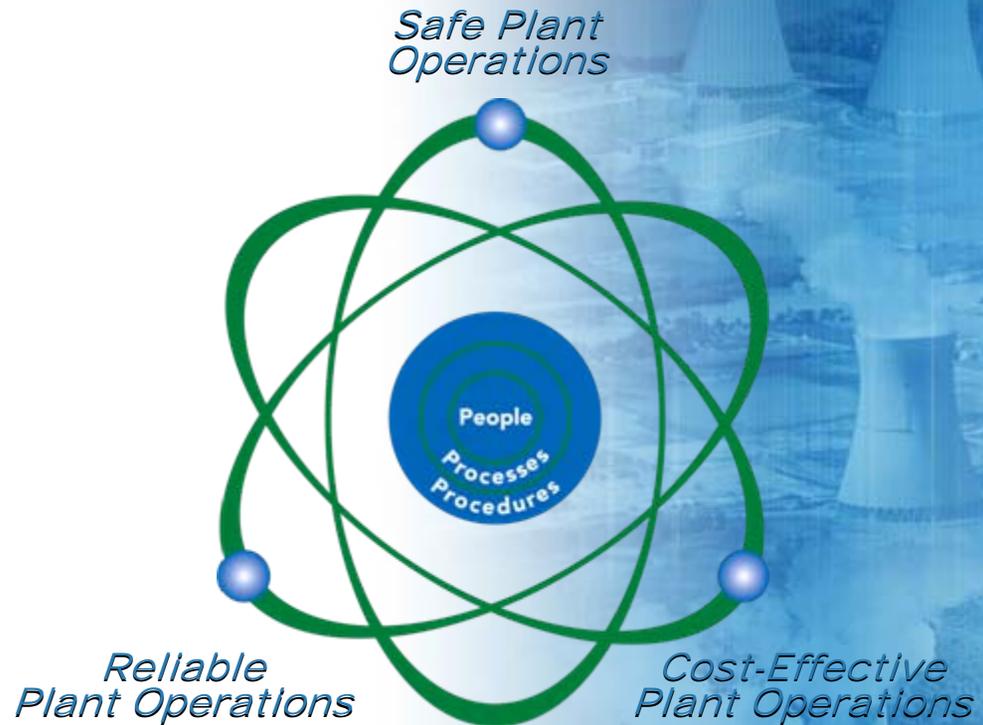
- **Continued improvement noted at Davis-Besse**
 - 2nd consecutive industry “Improved Performance” recognition
- **NRC accepted Beaver Valley License Renewal Application**
 - No hearing request
 - Two successful audits to date
- **Responded to Demand for Information and Confirmatory Order**
- **Recognized need to accelerate Perry performance improvement**



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Fleet Oversight

Jeannie Rinckel
Vice President – Oversight

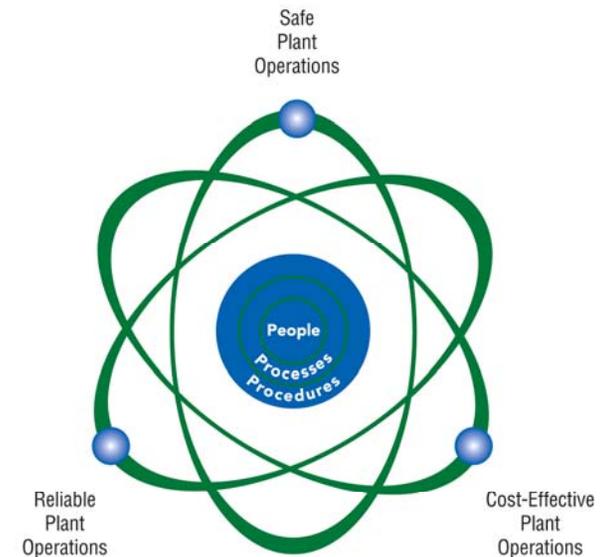


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Nuclear Fleet Oversight

- **2007 Fleet Oversight issues**
 - Equipment Reliability
 - ALARA Planning
 - Outage Preparedness
- **Quality Assurance Program Audit**
- **Workforce Advisory Committee**
- **Safety Conscious Work Environment**

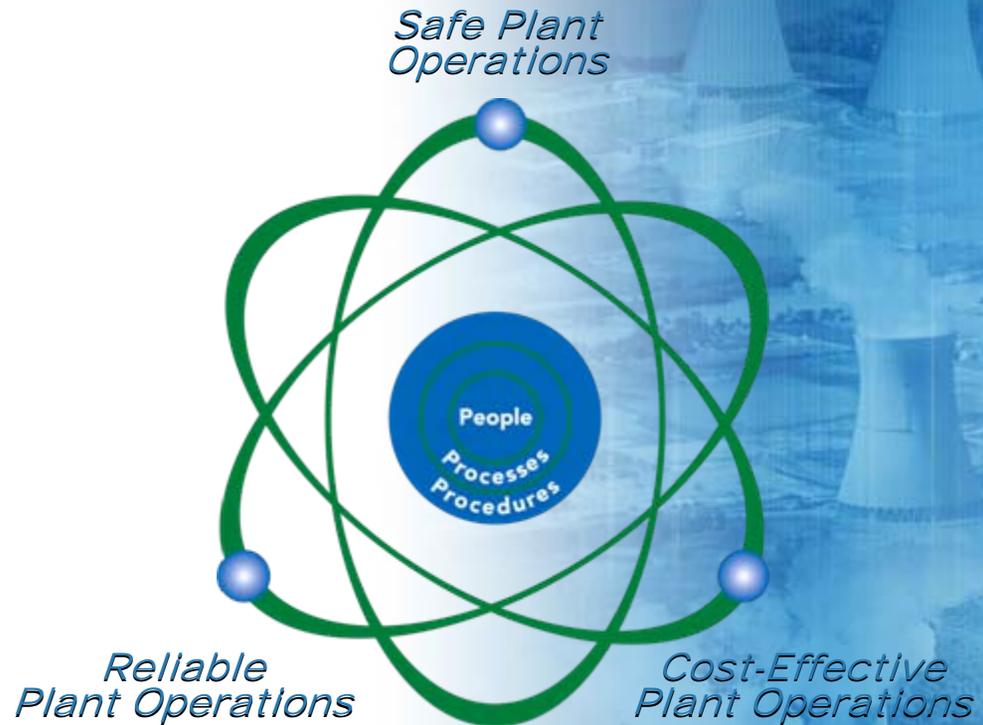


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Fleet Projects Update and Assessments

Danny Pace
Senior Vice President –
Fleet Engineering



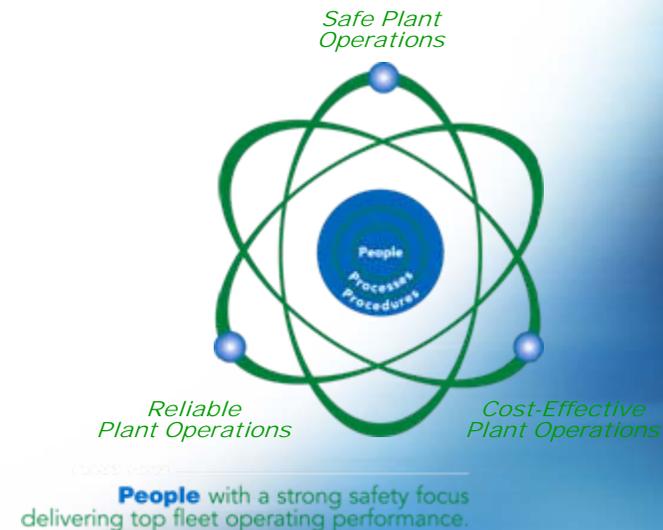
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Fleet Approach – Projects and Assessments

Applied organizational focus on improvement

- **Fleet Project Management**
 - Dedicated fleet organization
- **Fleet Corrective Action and Assessment**
 - Integrated assessments
 - Focused on programs and processes
 - Recognized fleet tracking and trending improvements



Fleet Approach – Project Status

■ License Renewal

- Beaver Valley – submitted 2007, under review
- Davis-Besse – 2010
- Perry – 2013

■ Cyber-Security Project

■ Fire Protection – NFPA 805 Transition

- Beaver Valley 1 and 2 – 2009 Completion
- Davis-Besse – 2010 Completion
- Perry – 2011 Completion

Fleet Approach – Project Status

■ Spent Fuel Storage

- Beaver Valley 2 – Rerack by 2011, dry storage after approximately 2025
- Perry – Dry storage by 2011
- Beaver Valley 1 – Dry storage by 2014
- Davis Besse – Return to dry storage by 2022

■ Improved Standard Technical Specification Conversion

- Perry – Completed 1995
- Beaver Valley – Completed 2007
- Davis-Besse – 2008

■ Vessel Head / Steam Generator Replacement

- Beaver Valley 1 – Completed 2006
- Davis-Besse – 2014 (tentative)
- Beaver Valley 2 – 2017 (tentative)

Fleet Approach – Project Status

■ Power Uprate

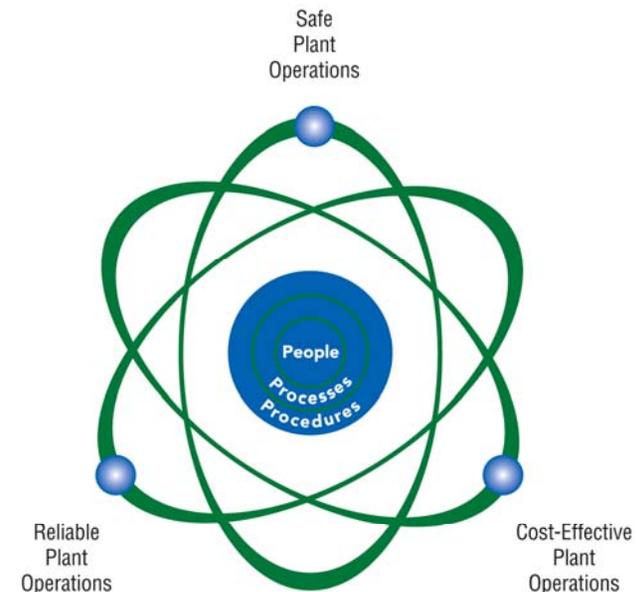
- Davis-Besse (12 MW) – 2008
- Beaver Valley 2 (45 MW) – 2008
- Perry (21 MW) – 2011
- Davis-Besse (90 MW) – 2014 (tentative)
- Perry (140 MW) – TBD

■ Alloy 600 Compliance

- Davis-Besse 2009 scope in progress
- Satisfied 2007 Materials Reliability Program (MRP) targets
- FENOC holds leadership roles in industry groups
 - Mitigation Committee
 - Vessel Internals Program

Fleet Approach – Assessment

- **First full year fleet assessments**
 - Performance objectives and criteria
 - Excellence based
- **Assessment scope**
 - Integrated performance assessments
 - Mid-cycle assessments
 - Targeted topical areas
- **Industry benchmark study**
 - Second year of study
 - Good performance – personnel safety
 - Improved safety system performance
 - Several areas for improvement



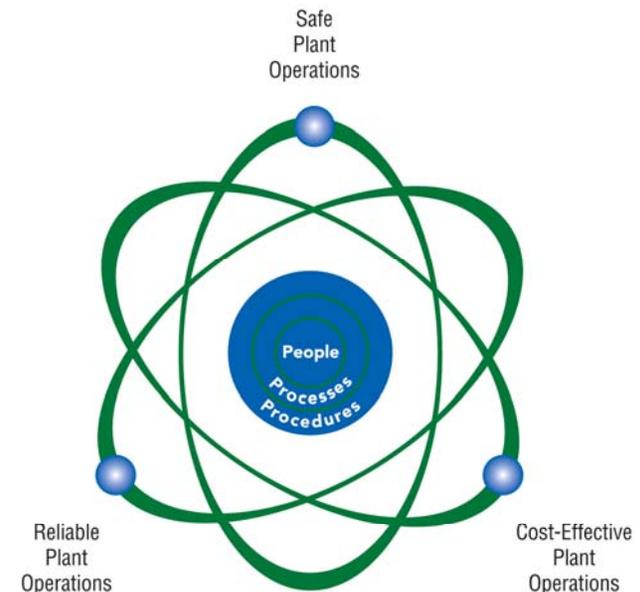
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Fleet Approach – Assessment

■ Key Focus of Excellence Plans

- Equipment Reliability
- Operations performance
- Radiological performance
- Outage planning and execution improvement

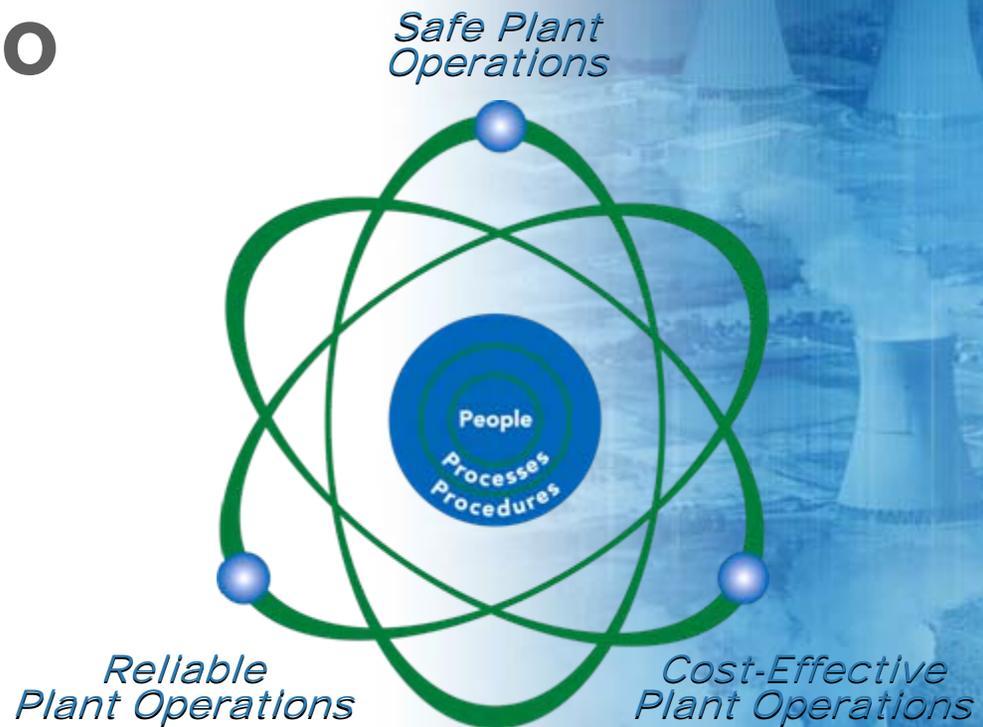


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Targeted Areas to Improve Performance

Jim Lash
Senior Vice President &
Chief Operating Officer



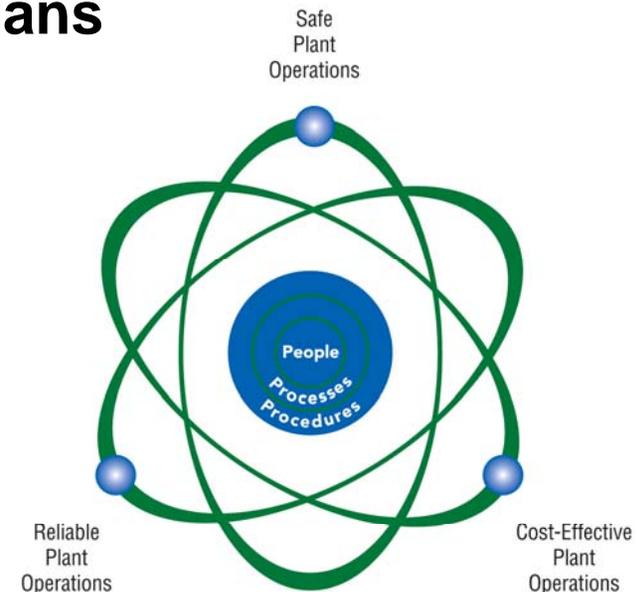
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Fleet Approach – Improvement

Fleet Improvement Action Focus

- Applied peer team efforts
- Updated and focused Excellence Plans
 - Equipment Reliability
 - Operations performance
 - Radiological performance
 - Outage planning and execution improvement
- Accelerated efforts to drive Perry improvement



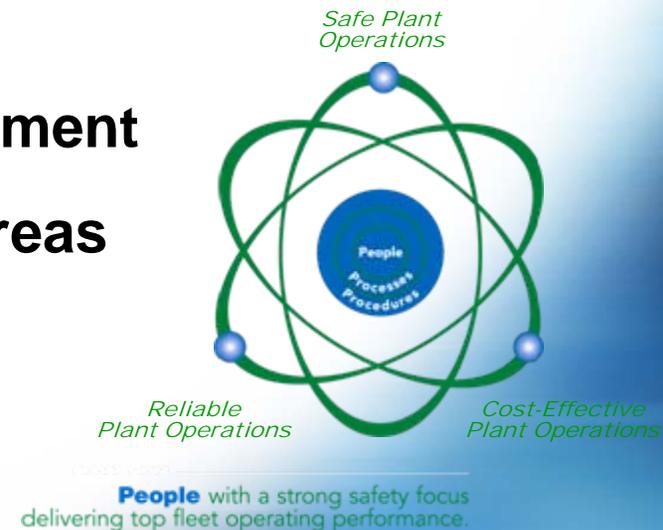
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Fleet Approach – Improvement

Excellence Plans

- Drive improvement for functional areas
- Apply internal innovation to best industry programs, processes and procedures
- Implement strategies
- Include change management
- Address areas targeted for improvement
- Provide sustained focus on other areas



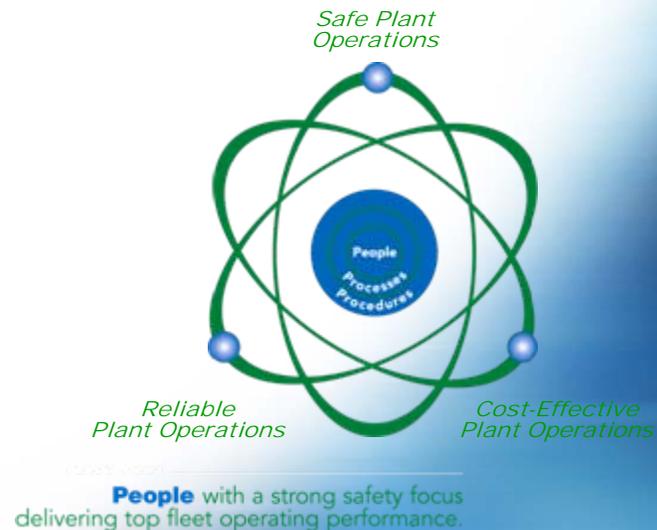
Fleet Approach – Improvement

■ Equipment Reliability

- Internalize and implement improved maintenance strategy
- Engineering focused on:
 - System monitoring
 - Component engineering focus
 - Benchmarking and industry involvement
- Improve asset health and management

■ Operations performance

- Drive high standards
- Improve configuration control
- Improve operator fundamentals and integrated plant knowledge



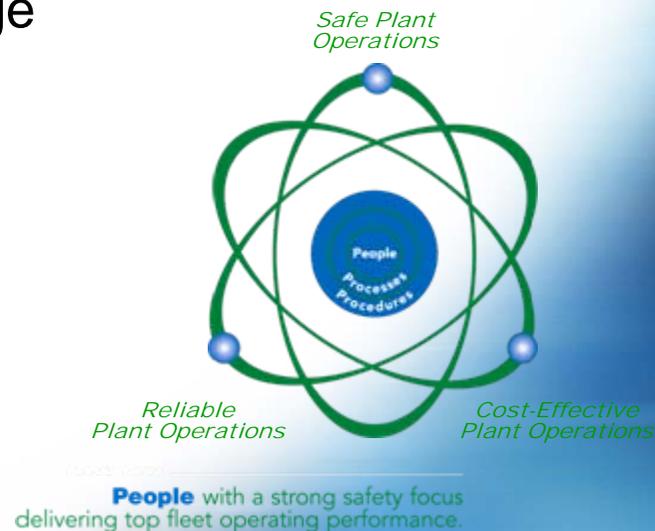
Fleet Approach – Improvement

■ Radiological Performance

- Improve area access control
- Reduce source term
- Improve contamination control practices
- Adopt industry-best ALARA planning process

■ Outage planning and execution

- Optimize safety system / division outage scheduling
- Improve outage preparation
- Improve shutdown safety execution
- Improve transitions between outage and on-line



Fleet Approach – Perry Specific Focus

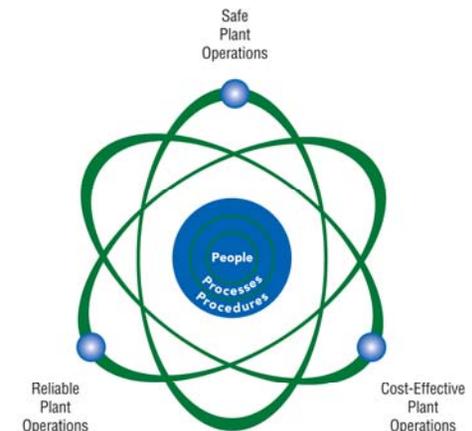
- **Accelerated Plan**

- **Driven by:**

- Benchmarking
- 2007 plant performance
- Industry assessment

- **Improvements to be accomplished by:**

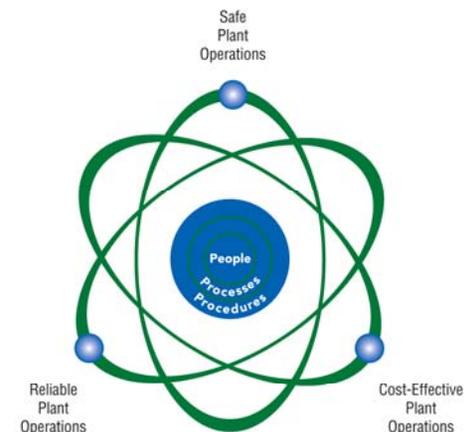
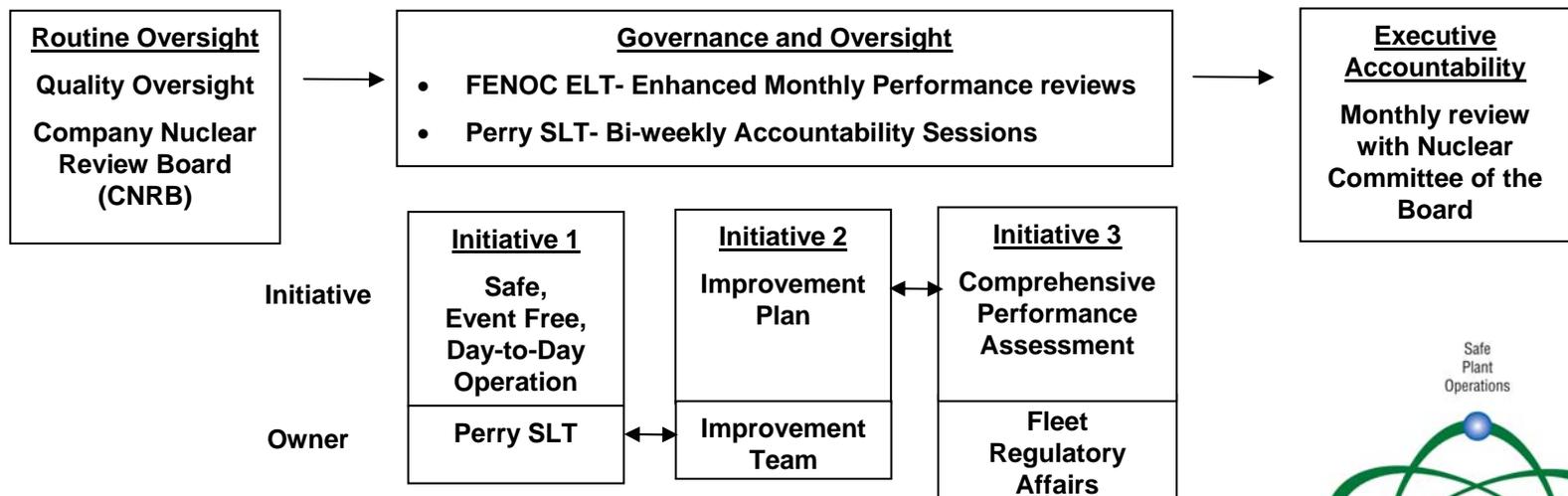
- Continued assurance of safe, event-free, day-to-day operation
- Improvement Plan
- Comprehensive Performance Assessment
- Frequent executive oversight



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Fleet Approach – Perry Specific Focus

Accelerated Improvement

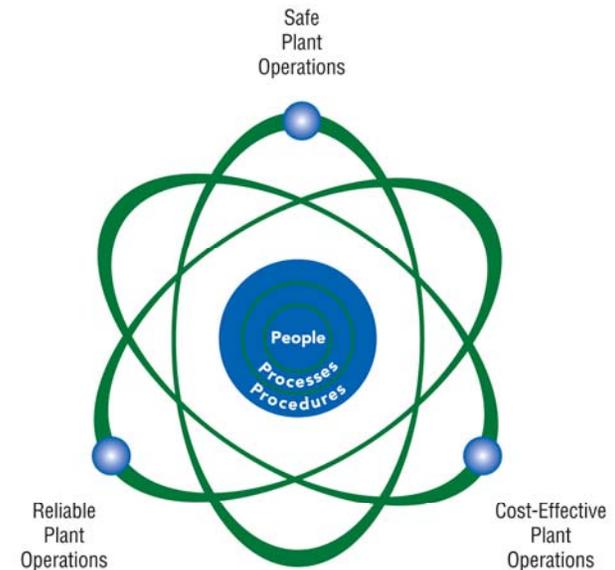


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Fleet Approach – Improvement Summary

- Overall Fleet engagement is key
- Objective is to achieve consistent, sustained performance improvement
- Fleet action in progress to target specific performance gaps
- Aggressive focus to address Perry performance issues



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Site Performance Review

Perry

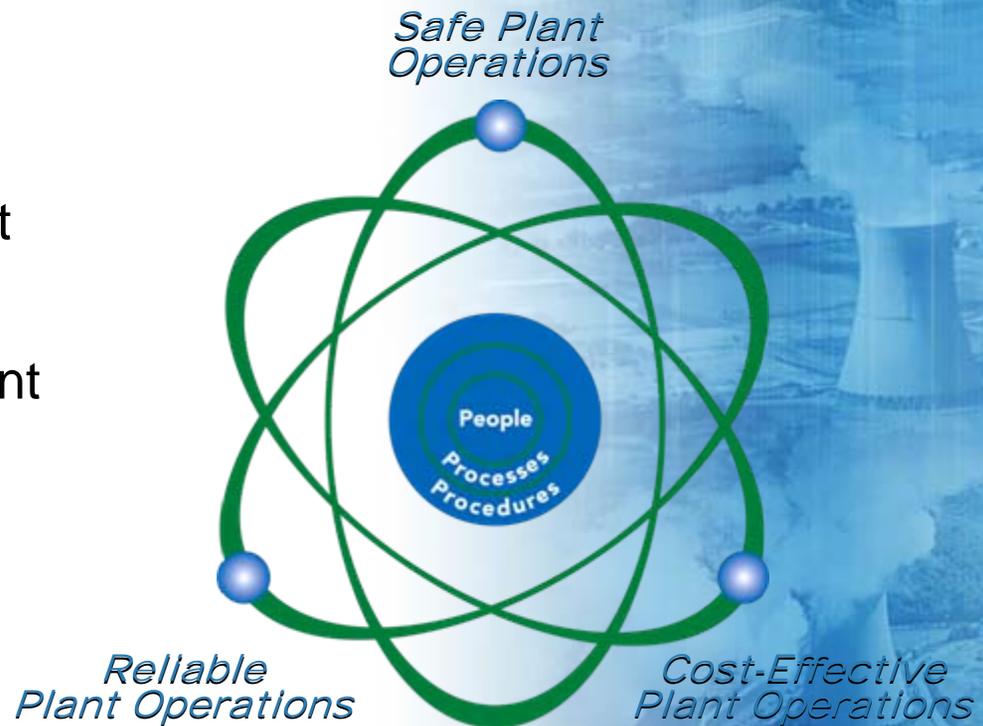
Barry Allen, Site Vice President

Davis-Besse

Mark Bezilla, Site Vice President

Beaver Valley

Pete Sena, Site Vice President



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Site Performance Review

Perry – 2007

- **Site OSHA Rate = 0.31, >4.4 million hours worked since last Lost Time Incident**
- **Unit Capability Factor = 73.6%, Forced Loss Rate = 16.4%**
- **Refuel Outage 11**
- **Multiple Unplanned Outages, three unplanned scrams**
 - Automatic Rx Scram during Feed Water Tuning, 05/2007
 - Manual Rx Scram Reactor Recirculation motor fault/replacement, 06/2007
 - Automatic Rx Scram – Digital Feedwater power supply failure, 11/2007
- **Confirmatory Action Letter closure**
- **Successful threat-based Emergency Response Organization drill**
- **B.5.b mitigation strategies completed**
- **Successful force-on-force evaluation**
- **Corrective Action Program Independent Assessment**
- **Fuel status: Defect-free operation**
- **Operator Licensing Examinations: awarded 8 NRC licenses**

Site Performance Review

Top Focus Areas, Perry

- **Safe, secure, reliable, event-free operation**
- **Equipment reliability**
- **Maintenance human performance**
- **Operations performance**
- **Radiation Protection performance**
- **Outage performance**
- **Problem identification and resolution**
- **Accelerate station performance**

Site Performance Review

Looking Forward, Perry

- **Improvement plan implementation**
- **NRC Component Design Bases Inspection – May 2008**
- **Emergency Plan Evaluated Exercise – October 2008**
- **Operations Training Program accreditation renewal**
- **Operator licensing pipeline – 12 candidates for January 2009 examination**

Site Performance Review

Davis-Besse – 2007

- **Site OSHA Rate = 0.24, >7.6 million hours worked since last Lost Time Incident**
- **Unit Capability Factor = 98.6%, Forced Loss Rate = 0.11%**
- **Successful Department of Homeland Security comprehensive review**
- **B.5.b mitigation strategies completed**
- **Successful Emergency Plan evaluated exercise**
- **Technical Skills Program accreditation renewal**
- **NRC Fire Protection Triennial Inspection**
- **NRC Component Design Bases Inspection**
- **15th Refueling Outage Preparation**
- **Completed Confirmatory Order Independent Assessments**
 - No Areas For Improvement
 - Continued improvement noted in all four Assessments
 - Safety Culture and SCWE Assessment results placed Davis-Besse in the industry top quartile in all assessment rating areas

Site Performance Review

Davis-Besse – Refuel Outage Update

Major Projects

■ Generator Rewind

- Field Work at GE in Chicago in progress, on schedule
- Onsite Stator Work in progress, on schedule

■ Alloy 600 Weld Overlay

- 16 reinforcing welds planned, nearly 40 percent complete
- One emergent issue

■ Feedwater/Extraction Steam Piping Replacement

- 180 tasks scheduled, nearly 20 percent complete

■ Decay Heat Cooler Valve Replacement

- Three valves to be replaced, two Train One valve bodies replaced

■ Fuel Inspection

Site Performance Review

Top Focus Areas, Davis-Besse

- **Safe, secure, reliable, event-free operation**
- **Operations performance improvement**
 - Enhance leadership and performance
 - Reduced events, prevent operational transients, and increased station reliability
 - Workforce replenishment and Operator pipeline
- **Radiological performance improvement**
 - Station collective and online dose reduction
 - Dose and source term reduction strategies implementation
 - Increased use of lead shielding and reduced number and size of high radiation areas
 - ALARA planning and execution
- **Outage planning and execution improvement**
 - Focus on safety, reliability, duration, and cost
 - Improved worker practices and control of supplemental personnel
 - Implementation of a soft shutdown and improved shutdown chemistry
- **Maintenance strategy implementation**

Site Performance Review

Looking Forward, Davis-Besse

- **Improved Standard Technical Specifications implementation**
- **Revised Emergency Action Levels (NEI 99-01) implementation**
- **Confirmatory Order Independent Assessment commitments completed**
- **Operator licensing pipeline – 12 candidates for February 2008 examination**

Site Performance Review

Beaver Valley – 2007

- **Site OSHA Rate = 0.30, achieved a site record of >8 million hours worked without a lost time incident before October 2007 incident**
- **Capability Factor: Unit 1 = 90.5% / Unit 2 = 99.8%**
- **Forced Loss Rate: Unit 1 = 0.00% / Unit 2 = 0.05%**
- **1R18 Outage Performance**
 - Containment sump modification, 10 year vessel ISI exam, “C” Reactor Coolant Pump motor replacement
 - Preemptive weld overlays on Pressurizer lines, upper internals guide tube support pin replacement
- **Sump debris blockage issue (GSI-191)**
- **Improved Standard Technical Specifications implementation**
- **NRC Acceptance of License Renewal Application**
- **Successful force-on-force evaluation**
- **Successful Department of Homeland Security comprehensive review**
- **Unit 1 Extended Power Uprate completed**
- **Fuel status: Defect-free operation**
- **Operator Licensing Examinations: awarded 11 NRC licenses**

Site Performance Review

Top Focus Areas, Beaver Valley

- **Safe, secure, reliable, event-free operation**
- **Operations performance improvement**
 - Transient response
 - Procedure usage and adherence
 - Driving Operations leadership down to the Non-licensed Operator level
- **Radiological performance improvement**
 - Currently top decile on-line dose
 - Outage Improvements: PRC-01 resin, increased letdown flow modification, improved shielding packages, Westinghouse Customer First initiative
 - Unit 1 18-month collective exposure ranks in 2nd quartile
- **Outage planning and execution improvement**
 - Westinghouse Window Microgap Analysis
 - Best BV window performance in 6/10 windows
- **Maintenance strategy implementation**

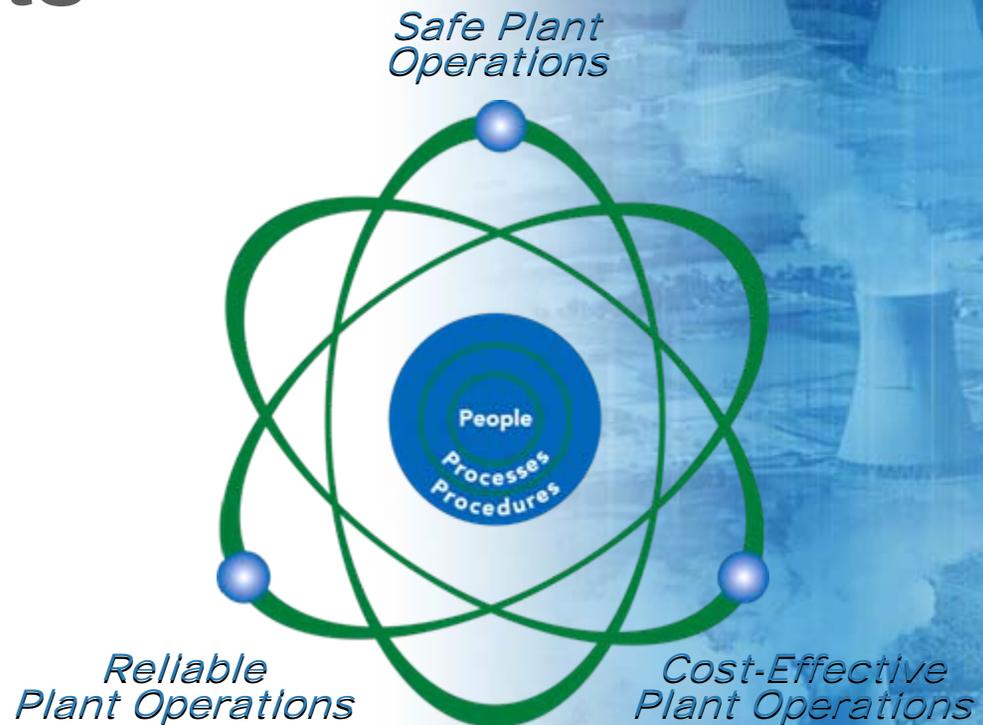
Site Performance Review

Looking Forward, Beaver Valley

- **Fire Protection Program - NFPA 805 Development**
- **Emergency Plan Evaluated Exercise – June 2008**
- **Technical Training Programs accreditation renewal**
- **License Renewal audit support**
- **Unit 2 Outage – April 2008**
 - Ten-year reactor vessel inservice inspection
 - Upper internals guide tube support pin replacements
 - Power uprate modifications, HP turbine installation
 - Targeted insulation replacement to support GSI-191
- **NRC Component Design Bases Inspection (2nd round)**
- **Operator licensing pipeline – 12 candidates for Unit 2 examination December 2008**

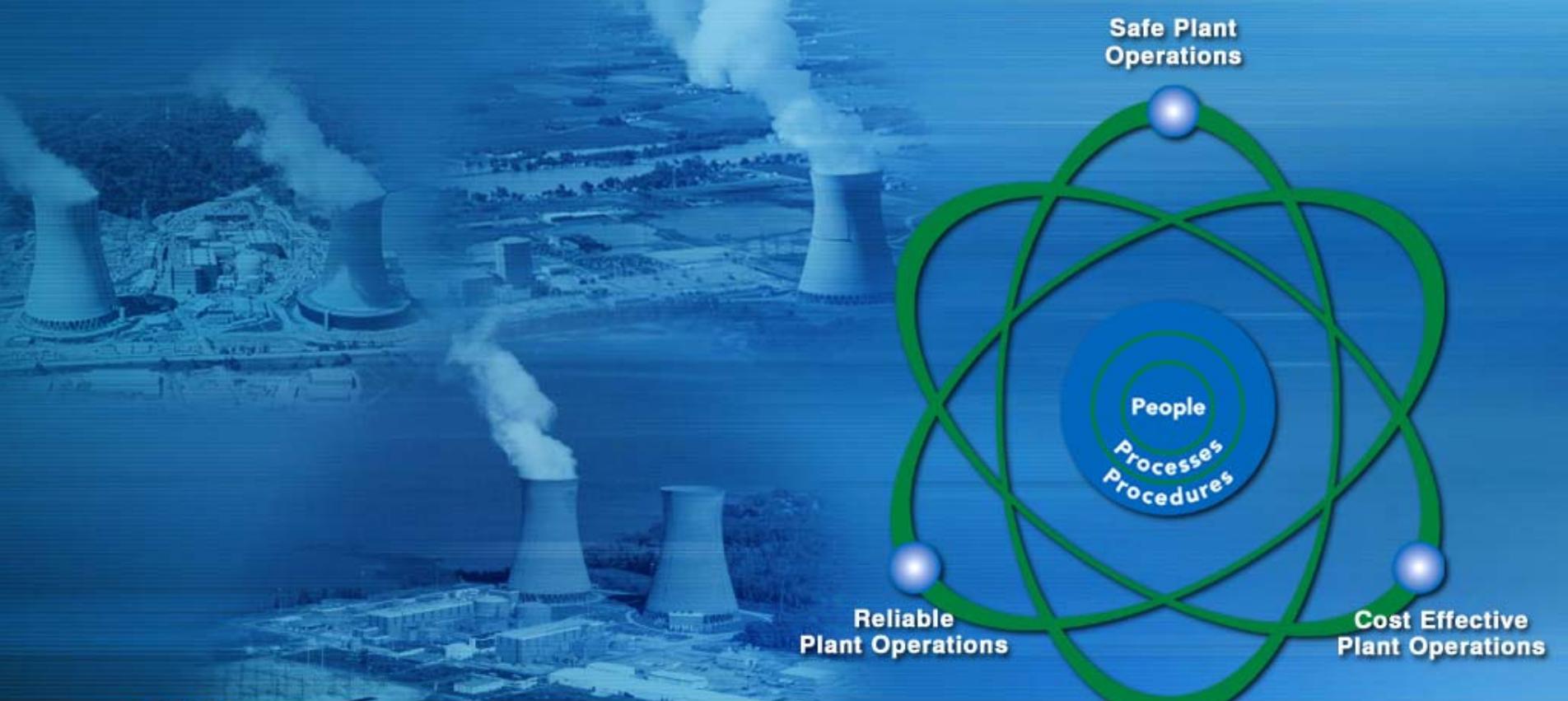
Closing Comments

Joe Hagan
President and
Chief Nuclear Officer



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Safe Plant Operations

Reliable Plant Operations

Cost Effective Plant Operations

People

Processes

Procedures

FENOC

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