



DELIVERING THE  
NUCLEAR PROMISE

nuclear matters: my work • my plant • my industry

# **Delivering the Nuclear Promise: Consolidated NANTEL Site Access to Reduce NPP Costs and Pending Initiatives**

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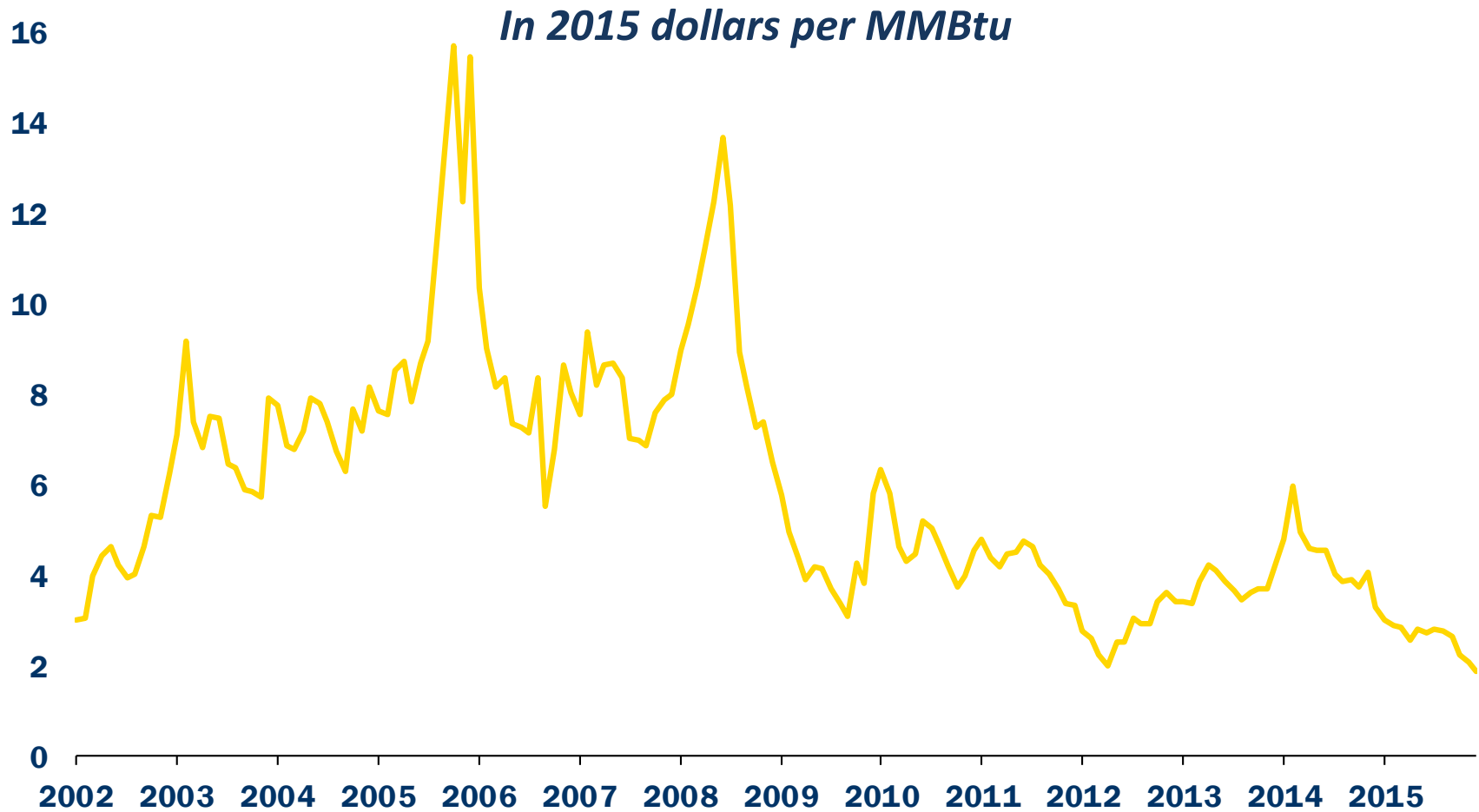
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**Exelon Nuclear**  
**January 10, 2017**

# Nuclear Energy's Economic Challenges

- Electricity demand is flat; marginal growth
- Subsidized wind
- Flawed electricity markets
- Heavy regulatory burden
- **Heavy self-imposed & industry burdens**
- Sustained low-cost natural gas



# U.S. Natural Gas Prices



Source: ABB Velocity Suite  
Updated: 5/16

# Outlook

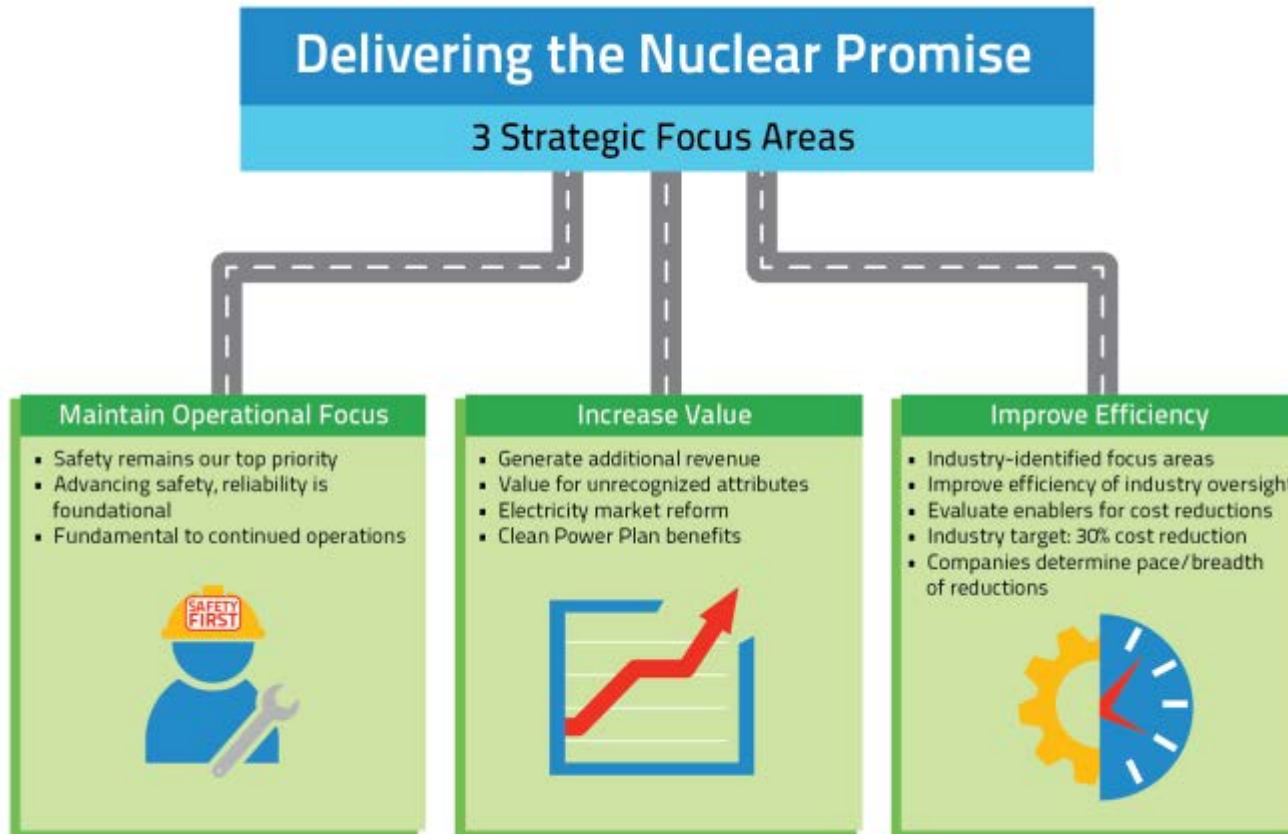
- Several U.S. nuclear plants have shut down, or announced dates of shutdown;
- Generating costs at U.S. nuclear plants have increased 28% during the last decade;
- “Business as usual” approach will not successfully address the challenges of rising costs and inadequate revenue.



# Announcements of Near-Term NPP Shutdown

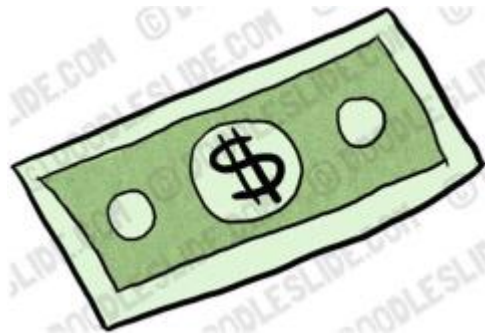
- **U.S. currently has 99 operating reactors**
  
- **Announced shutdowns**
  - Fort Calhoun- shut down on October 24, 2016
  - Palisades - October 1, 2018
  - Pilgrim - June 1, 2019
  - Oyster Creek - December, 2019
  - Diablo Canyon 1&2 – 2024 & 2025
  
- **Previously Announces shutdowns**
  - Crystal River 3
  - Kewaunee
  - San Onofre Nuclear Generating Stations 1&2

# Rising to the Challenge: Delivering the Nuclear Promise



# Three Strategic Focus Areas

- **Maintain Operational Focus**—Continue to enhance already high levels of safety and reliability
- **Increase Value**—Educate and drive awareness of the value of nuclear energy, particularly the economic and environmental benefits
- **Improve Efficiency**—Identify opportunities and redesign fundamental plant processes to improve efficiency and effectiveness



# Four Building Block Teams

## Building Block 1: Analysis and Monitoring



Objective: Analyze plant cost drivers and identify opportunities to improve efficiency.

## Building Block 2: Value Recognition



Objective: Leverage federal and state policies to ensure greater recognition of nuclear energy's value.

## Building Block 3: Process and Program Redesign



Objective: Re-design nuclear plant processes to improve efficiency while advancing fundamentals of safe, reliable operation.

## Building Block 4: Strategic Communications



Objective: Implement a communications strategy to ensure industry engagement.



# Outreach to Key Stakeholders

Industry is continuing outreach to key stakeholders:

Labor Unions



U.S. NRC



Suppliers



Utility/Plant Employees

# 13 Teams DNP Teams

- Corrective Action Program
- Engineering:
- Preventive Maintenance Program Scope
- **Radiation Protection**
- Regulatory Efficiency
- Security
- Training
- Transform the Organization
- Work Management
- Supply Chain Efficiency
- Oversight and Assessment
- In-Processing
- Finance - Review IO Savings Estimates

# Radiation Protection Guide Rails

## ➤ Metrics – Non-Negotiables

- No increase in (L)HRA events.
- No increase in Radioactive Material Control (RAM) Events
- Improved Radiation Worker Performance

## ➤ Performance metrics

- Improved Radiation Worker Performance
  - One (1) industry Standard
- Improved Radiation Protection Program Performance
  - Focus on high radiological risk activities

# How Do We Communicate Efficiencies?

- Efficiency Bulletins!



- Mechanism for communicating efficiency improvement initiatives to industry
- Are being distributed to nuclear plant operators to clearly identify, characterize and standardize improvement opportunities
- Implementation has begun. In most cases, the pace and scope of implementation will be determined by each company

# Efficiency Bulletins

- Include background, summary description, relevant standards, guidance reference, recommended actions, change management
- Color coded for accountability/ implementation
  - All must do (red), all should do (blue), company discretion (green)



# What Have We Accomplished So Far?

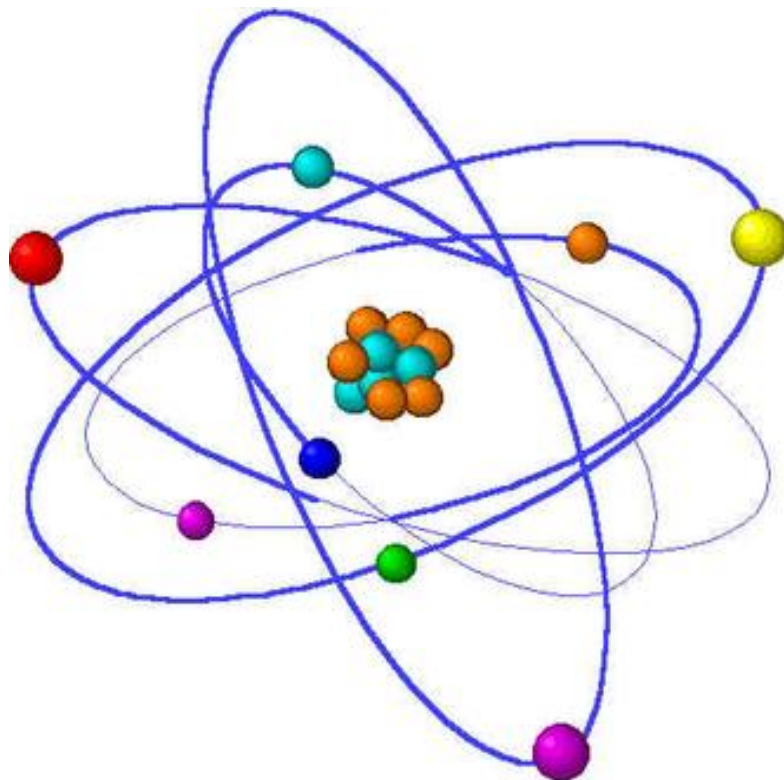
- The industry has issued 42 efficiency bulletins to date in 2016 & 2107
- More efficiency bulletins scheduled for completion this year
- The program will run through 2018 and will be institutionalized



<http://www.nei.org/Issues-Po>

[he-Nuclear-Promise](http://www.nei.org/Issues-Po)

# Radiation Protection



# DNP RP Team

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- Ellen Anderson, NEI
- Jim Kost, Mirion
- Jimmy Orr, BHI Energy
- John Rayment, IBEW



# Radiation Protection EBs Published to Date

- 16-03: Align Personnel Contamination Event Response to Industry Guidance
- 16-04: Source Checking Personnel and Tool Contamination Monitors – daily to weekly
- 16-12: Graded Approach to Long-Term Dose Reduction Plan
- 16-13: Perform Self-Briefs for Low Radiological Risk Activities
- 16-26c: Implement Common NANTeL Radiation Work Training
- 16-32: Dosimetry Requirements for Visitors



# 16-26c: Implement Common NANTeL Radiation Worker Training

- Aligns Industry to one (1) standard of Radiation Worker Expectations
  - Revise ACAD 00-008, to eliminate site specific allowances
  - Revise Common NANTEL RWT, to incorporate content that had previously been taught on a site specific level
  - Extend Frequency of retraining to 2 & 4 years
  
- Industry Alignment, with forcing function, on stan terminology
  - Aligned Survey map Legends
  - Consistent Posting Standards
  - Common Industry Terminology.



# Pending Radiation Protection EBs Published

- 17-01: Portable Supplemental Radiation Protection Technician Training and Qualification
- 17-02: Self-Protection for Radiological Work Activities



# 17-01: Portable Supplemental Radiation Protection Technician Training and Qualification

- 12 Industry Standard Task Evaluations (STEs) maintained on the EPTI database roll up to a common industry standard ANSI technician
  - ANSI 3.1, 2014
  - Completion of STEs
  - Annual Continuing Training
- Supported by ~10 Industry Standard Procedures
  - Posting and Labelling, Surveys, Unconditional Release, Radiography, etc.
- Vendors provide the initial and continuing training through Industry funded means

# 17-01: Portable Supplemental Radiation Protection Technician Training and Qualification

- Actions To be Completed by COB 2017
  - All fleets to align procedures with Industry standard procedures maintained on the INPO Library.
  - Industry to Develop 12 STEs for EPRI database, including Objectives, Test Bank, and Practical Evaluation Criteria
  - Equivalencies documented for all currently 'qualified' Supplemental RPTs with sufficient rigor that ALL sites accept.
- Industry Documents to be revised
  - ACAD 93-008, Radiation Protection Technician Training
  - INPO 05-008

# Future RP Efficiencies on the Horizon & Under Review

- RP-8: Change Source Check Frequency of Survey Meters
- RP-15: Dosimeter of Legal Record for Permanent Station Personnel
- RP-25: Standardize 2002 onsite burial exemption
- RP-35: Standard RP Practices



# What Role Are Employees Playing?

- Remaining focused on safety
- Sharing their expertise
- Challenging one another to continually improve
- Putting forward and sharing pioneering ideas
- Thinking outside the box



# Key Takeaways

- This is a critical industrywide initiative that will make the industry more efficient and effective
- We will not sacrifice safety to reduce costs
- This initiative has three strategic goals: maintain operational focus, increase value, improve efficiency
- Stakeholder outreach has been extensive with industry employees, labor unions, NRC and suppliers





Thank you for your attention

# Questions



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