



Delivering the Nuclear Promise: Advancing Safety, Reliability And Economic Performance

The History and Goals of the DNP Initiative
Center for Energy Workforce Development
2017 DNP Webinar Series
January 18, 2017

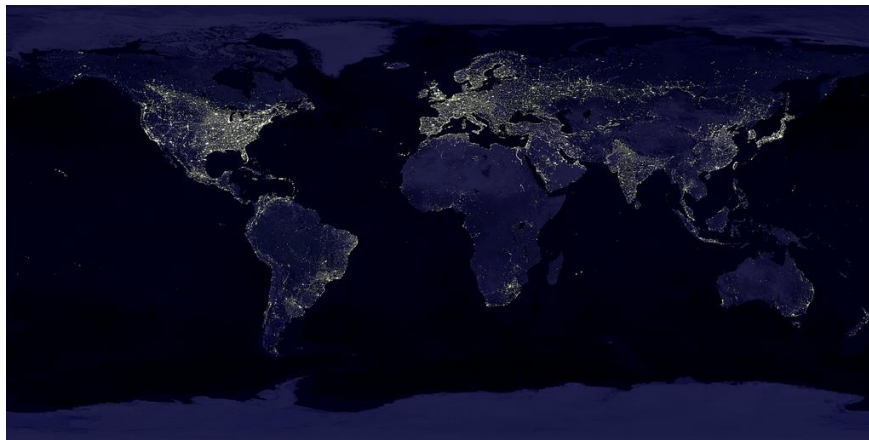
DNP-1/6/2017

Today's Briefing

- Why nuclear energy matters
- Major industry challenges
- Preserving existing reactors—and jobs
- Defining the future of nuclear energy
- Key takeaways



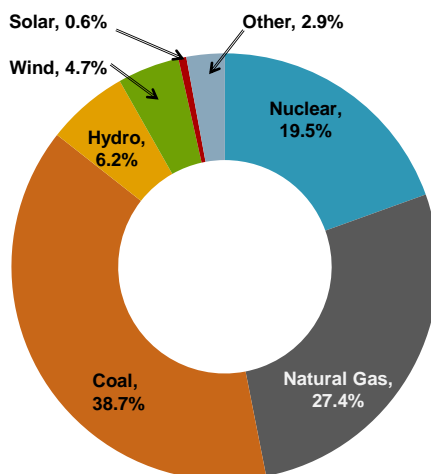
Electricity: The Haves and the Have-Nots



Data courtesy of Marc Imhoff, NASA GSFC, and Christopher Elvidge, NOAA NGDC. [Image](#) by Craig Mayhew and Robert Simmon, NASA GSFC.

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US Electricity Fuel Shares (2015)



Nuclear energy provides nearly 20% of America's electricity. As a major source of always-on power, it part of our critical energy infrastructure.

Source: Energy Information Administration
Updated: 3/16

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Nuclear Energy's Value to America



SAVES CONSUMERS
AN AVERAGE OF
6 PERCENT
ON ELECTRICITY BILLS

SUPPORTS
475,000
JOBS



Source: *The Nuclear Industry's Contribution to the U.S. Economy*,
The Brattle Group, July 2015

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Major Industry Challenges

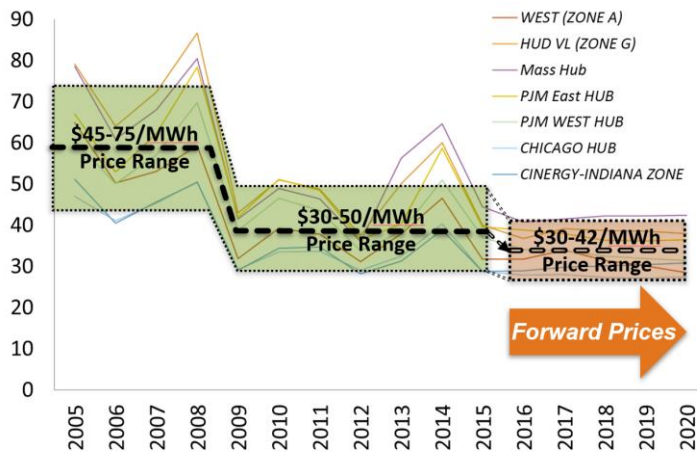
- Electricity demand is expected to remain flat or show marginal growth
- Nuclear plant costs increased as electricity markets were deluged with natural gas at historically low prices
- Solar and wind continue to expand thanks to state, federal policy support
- Flawed electricity markets fail to recognize and value nuclear energy's key attributes
- Nuclear energy's average generating cost peaked at \$40 per megawatt-hour in 2012

Nuclear Plant Costs

Year	Total Cost (\$/MWh)
2002	28.27
2005	29.80
2010	36.59
2011	39.08
2012	39.75
2013	36.91
2014	36.35
2015	35.50

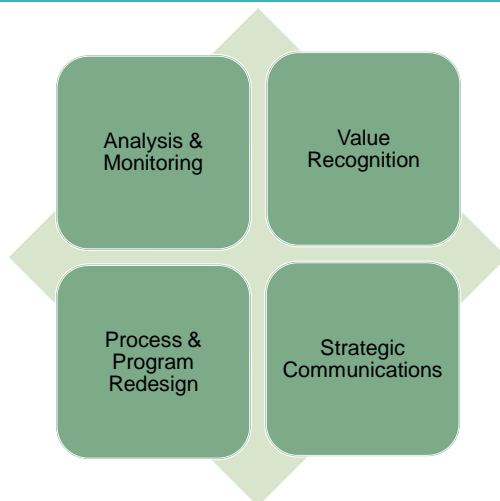
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Declining Wholesale Electricity Prices



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Delivering the Nuclear Promise: Four Building Blocks



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Industry's Efficiency Program: Delivering the Nuclear Promise

- Sustain high levels of safety and reliability
- Identify opportunities to re-design plant processes, drive innovation to improve efficiency and effectiveness
- Gain greater value for nuclear energy in electricity policy



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Teams and Executive Leads

- **Corrective Action Program** Danny Bost, Southern Nuclear
- **Engineering** Tim Rausch, Talen Energy
- **In-Processing** Bill Pitesa, Duke Energy
- **Oversight and Assessment** Mano Nazar, NextEra Energy
- **Preventive Maintenance Templates** Neil Wilmshurst, EPRI
- **Radiation Protection** Fadi Diya, Ameren Missouri
- **Regulatory Efficiency** Mano Nazar, NextEra Energy
- **Risk-Informed Operations** Bob Bement, Arizona Public Service
- **Security** Bryan Hanson, Exelon
- **Training** Tim Powell, South Texas Project
- **Transform Organization** Tim O'Connor, Xcel Energy
- **Work Management Preparation** Dennis Koehl, South Texas Project
- **Supply Chain** Adam Heflin, Wolf Creek Nuclear Operating Corp.

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What We've Accomplished So Far

- 42 efficiency bulletins being implemented; more on the way
 - Going forward, annual data from Electric Utility Cost Group will allow us to assess industrywide progress
- Emphasizing need for cultural change
 - Efficiency must take its place with hallmarks of safety, reliability
 - More autonomy for certain low-risk activities

efficiency bulletin

June 3, 2016

Efficiency Bulletin: 16-14 Training Cumulative Impact Strategies (Part 2)

Reduce low-value administrative burdens to produce efficiency gains in training.

Addressees: Chief nuclear officers, NEI APCs and INPO APCs

Issue: TRN-3.0, Cumulative Impact Strategies (Part 2)

Background

This bulletin addresses the following cumulative impact items: TQ-2, Lesson Plan Detail; TQ-3, Management Observations of Training; and TQ-8, Training Committee from the INPO report "Training Cumulative Impact Report," dated January 2016. These three items were evaluated by Reactor/Training directors and guidance has been provided (attached) for consistent industry implementation.

Summary of Efficiency Opportunity

- **Desired end-state—Streamline training administrative activities to reduce distractions from training, reduce the time and resources required to conduct observations of training, focus on the quality rather than the quantity of observations, and reduce the time required for live and training participation in training committee activities.**
- **Value proposition (reason of excellence)—Improve the quality and efficiency of training by eliminating low-value administrative burdens accumulated from years of incremental internal and external responses to individual training-related performance issues. Shift the focus of observations to quality vs. quantity and remove the self-imposed obstacles for completing observations. Lastly, reduce time, simplify and focus training committees by reducing the quorum requirements, simplifying the agendas and reducing the frequency of required meetings.**

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Color Code: Blue

Due: September 2016

NEI

NUCLEAR ENERGY INSTITUTE
The Nuclear Energy Institute is the nuclear energy industry's policy organization.

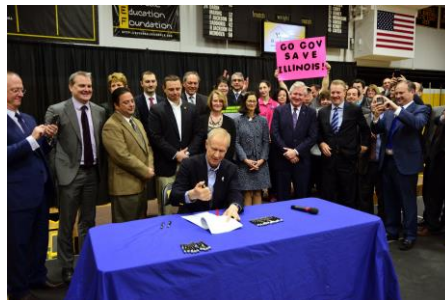
This bulletin and additional information about nuclear energy are available at www.nei.org

1203 F Street, NW
Washington, DC 20004
NEI.org

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States Recognize Need for Action

- **New York** – December 2015, public service commission made nuclear plants eligible for credits under the state's Clean Energy Standard
- **Illinois** – December 2016, governor signed Future Energy Jobs bill
- **Connecticut** – Working to level the playing field for nuclear power plants



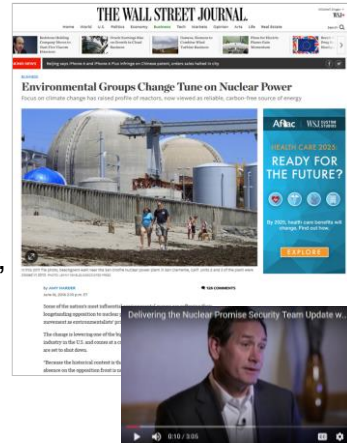
"I was unwilling to gamble with these communities, thousands of good paying jobs and our energy diversity. [This legislation] allows us to protect jobs, ratepayers and taxpayers."

**– Illinois Gov. Bruce Rauner
Dec. 7, 2016**

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Strategic Communications

- Employee communications
 - Industry survey shows 72% of industry workers agree that they have a good understanding of Delivering the Nuclear Promise
- Communications emphasizing industry's effort to enhance efficiency, need for value recognition
- Advocating greater value for nuclear power plants in electricity and clean air markets



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Defining Our Future: License Renewal

- More than 80 reactors have renewed operating licenses
- Nearly a dozen applications for license renewal under NRC review and more are expected
- Dominion and Exelon will apply for second license renewal for Surry and Peach Bottom, respectively



Dominion's Surry nuclear plant, Virginia



Exelon's Peach Bottom plant, Pennsylvania

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Small Modular and Advanced Reactors

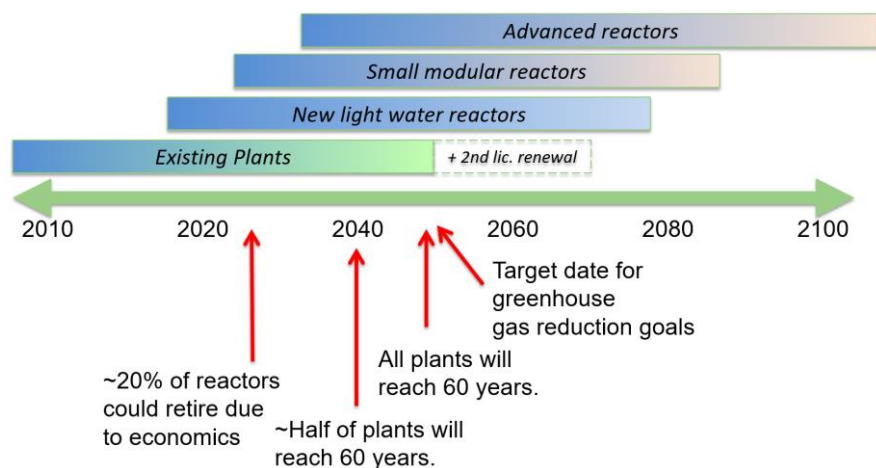
- NuScale Power to file design certification application for its small modular reactor by early 2017
- Growing interest in advanced reactors



NuScale Power Module

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Defining Our Future: A Logical Progression



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DNP Summary

- Industrywide initiative will make us more efficient and effective
- We will not sacrifice safety to reduce costs
- Three strategic goals: maintain operational focus, increase value, improve efficiency
- Stakeholder outreach to industry workforce, unions and NRC
- More than 40 efficiency bulletins issued; more in progress
- Transformative ideas that will alter fundamental processes are in the works

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Part 2: What Can You Do to Help?



Organizational
Effectiveness



Human
Resource



Talent
Acquisition

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Questions

Webinar Two: Understanding the Efficiency Bulletins.

- Thursday, January 26, 2017
- 2:00PM – 3:00PM EST

Webinar Three: New Workforce Planning Aids to Assist in Actualizing Savings

- Tuesday, January 31, 2017
- 1:00PM – 2:30PM

Webinar Four: Communicating the DNP: Ways to better Recruit and Retain employees

- February 8, 2017
- 12:30PM – 1:30PM EST