The Way Forward After the Fukushima Accident

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October 12, 2011

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NUCLEAR ENERGY INSTITUTE

Today's Discussion

- Industry response to Fukushima Daiichi accident
- NRC Task Force 90-day assessment and NRC staff near-term recommendations
- U.S. reaction to the Fukushima accident

Immediate Industry Response to Fukushima

- Four directives (Incident Event Reports) from INPO requiring stations to take certain actions
  - Ability to manage flooding, seismic events
  - Spent fuel pool cooling capability
  - Effectiveness of operator fundamentals and training programs
  - Improve margin given external events and loss of AC power
- Created industry-wide Fukushima response organization

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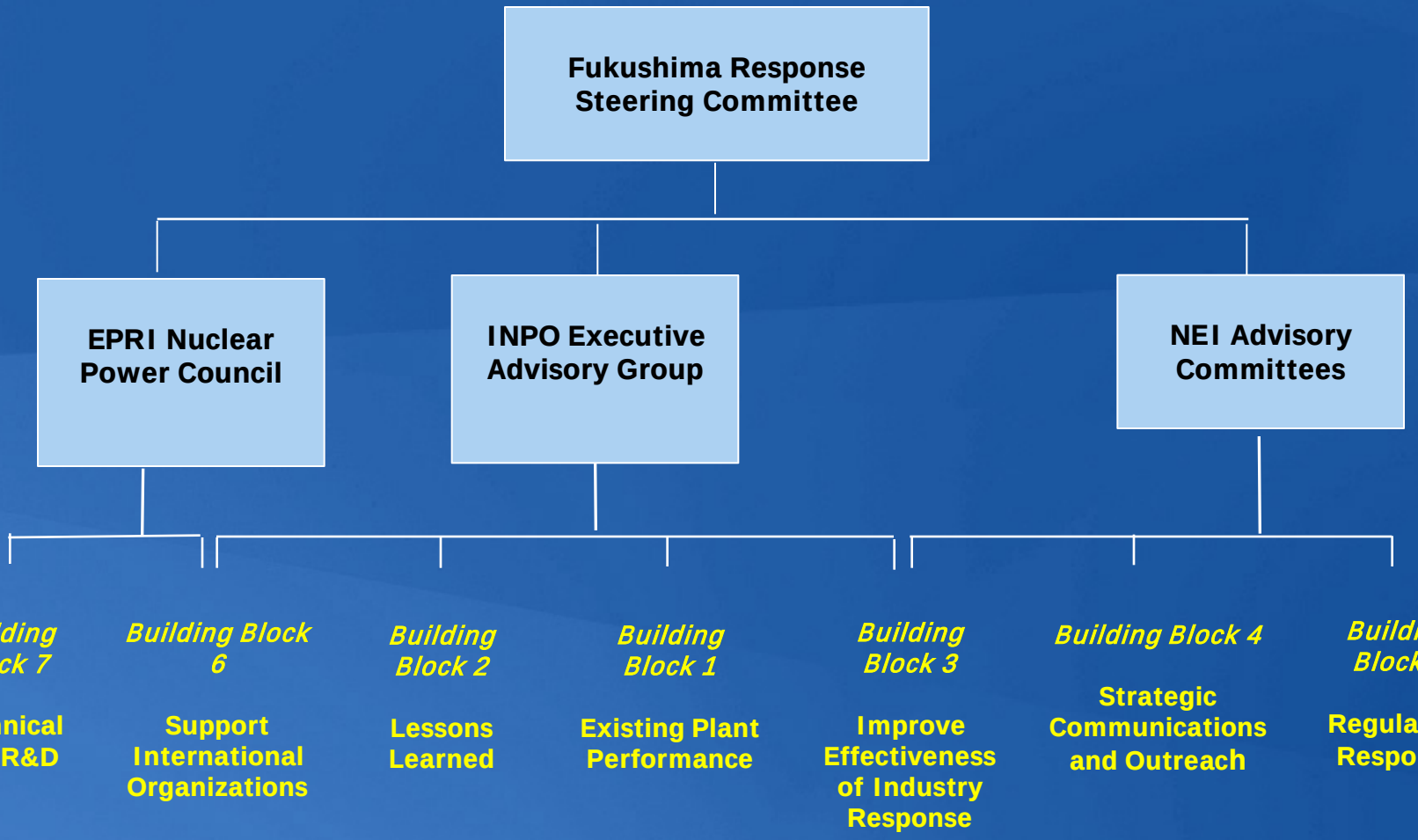
Fukushima Response Steering Committee

- Chaired by Chip Pardee, COO, Exelon Gen
- Cross-section of 12 Chief Nuclear Officers
  - INPO, EPRI and NEI
- Coordinate industry activities
- Approve action plans
- Monitor implementation of actions

The Way Forward

- Strategic Goals
- Guiding Principles
- Stakeholders and Desired Outcomes
- Organization and Building Blocks

Disciplined, Systematic Industry Response



NRC 90-Day Task Force Report

- U.S. plants are safe: "...continued operation and continued licensing activities do not pose an imminent risk to public health and safety."
- No changes required for used fuel storage
- No change in emergency planning zones
- 34 recommendations
  - 12 orders
  - 7 proposed rules
  - 15 NRC staff and long-term recommendations

NRC Tier 1 Recommendations

- Seismic and flood hazard reevaluations
- Seismic and flood walkdowns
- Station blackout regulatory actions
- 10 CFR 50.54(hh)(2) equipment
- Hardened vents for Mark I and IIs
- Spent Fuel Pool monitoring/instrumentation
- Strengthening integration of SAMGs/EDMGs
- Emergency Preparedness (Staffing and communications)

Initial Industry Assessment

- Scope of issues approximately correct
- Good alignment with industry recommendations
- All items require stakeholder interaction
- Must prioritize and integrate Fukushima-related actions with existing NRC and licensee activities

Meanwhile, Licensing Continues

- Power uprates approved for Limerick, Point Beach
- License renewals approved for Vermont Yankee, Palo Verde, Prairie Island, Salem, Hope Creek
- Final environmental impact statements approved for 7 new reactors in Georgia, South Carolina, Texas and Maryland
- Vogtle mandatory hearing
- Final safety evaluation report for ESBWR
- Construction progressing at Watts Bar 2, Vogtle and V.C. Summer

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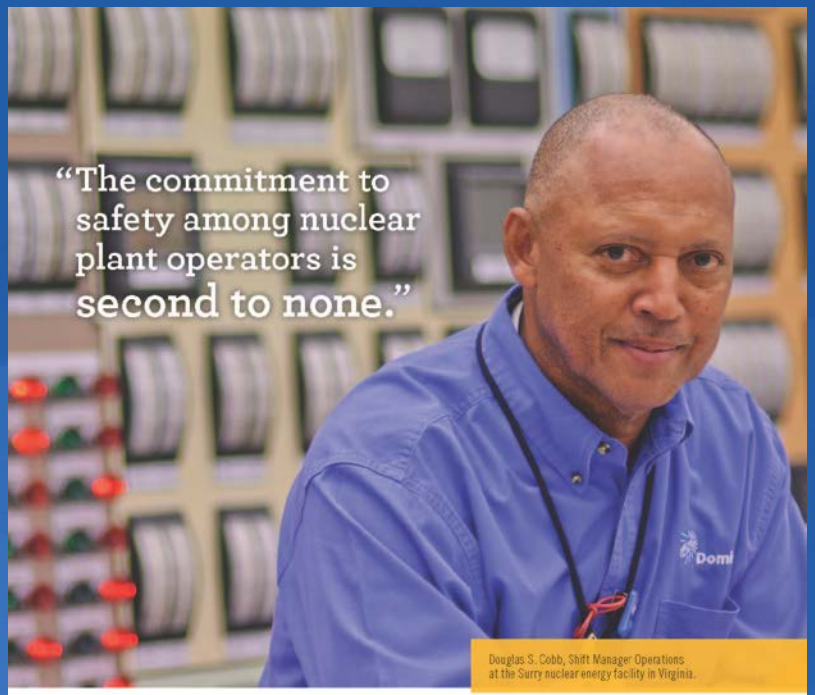
NEI Expands Public Outreach



Communities have the right to know the safety record of their nuclear energy plants. We are proud to share it. Professionals like Doug Cobb are working to exceed already stringent federal safety standards at their power plants.

American nuclear plants are among the safest in the world because they are managed and operated by leading engineers, scientists and licensed reactor operators. They undergo significantly more oversight and have more safety measures in place than reactors in other countries.

Plant operators undergo intensive training and are frequently tested on simulators that are exact replicas of their plant control rooms. They are held to the highest of standards by independent Nuclear Regulatory Commission inspectors who provide ongoing oversight at every reactor every day.

American energy companies are the world leaders in nuclear energy, with 104 reactors producing one-fifth of our electricity. Providing affordable electricity and ending our dependence on foreign energy sources simply cannot be achieved without nuclear energy playing a significant role in a balanced energy portfolio.

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For more information on safe nuclear energy, go to **nei.org**

Communities have the right to know the safety record of their nuclear energy plants. We are proud to share it. Professionals like Natalie Wood are working to exceed the already stringent federal safety standards at their power plants.

Among the many safety features at every nuclear power plant is a four-feet thick, steel-reinforced containment building that protects the reactor and its safety systems. The U.S. Nuclear Regulatory Commission requires nuclear power plants to be able to withstand the most severe natural events that may occur near their locations, including earthquakes, tsunamis, hurricanes, floods, tornados, and large fires. The NRC also requires additional safety features to account for any uncertainties in forecasting these events.

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Public Opinion Begins To Recover

- Slight increase in favorability of nuclear energy:
  - 2009: 64%
  - April: 46%
  - July: 50% (66% among opinion leaders)
- 62% of the public favors industry expansion; 29% status quo
- 81% agree U.S. should learn from Japan and license new plants rather than stopping progress entirely

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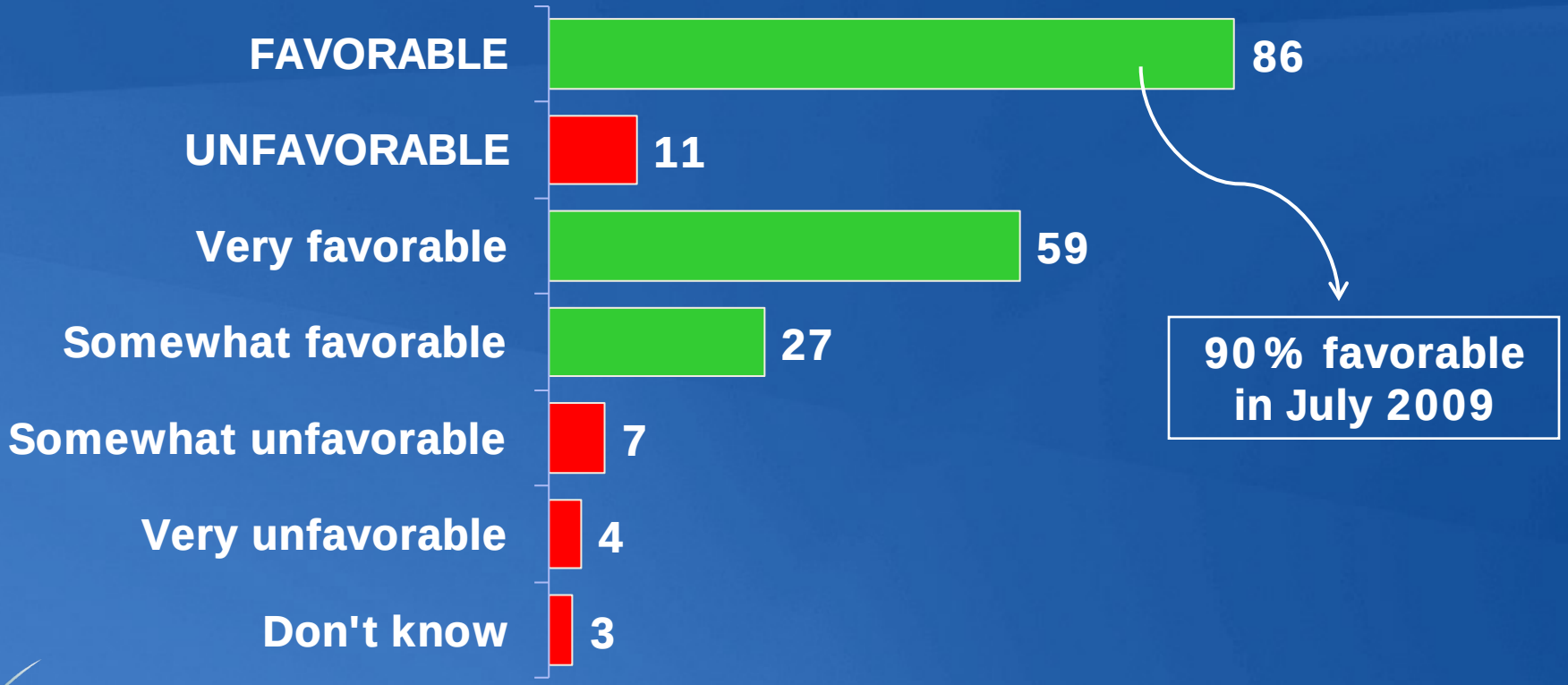
Source: Luntz Global

Plant Neighbor Opinions June 2011

Impression of Nearby Nuclear Power Plant and How it Has Operated Recently

Percentages



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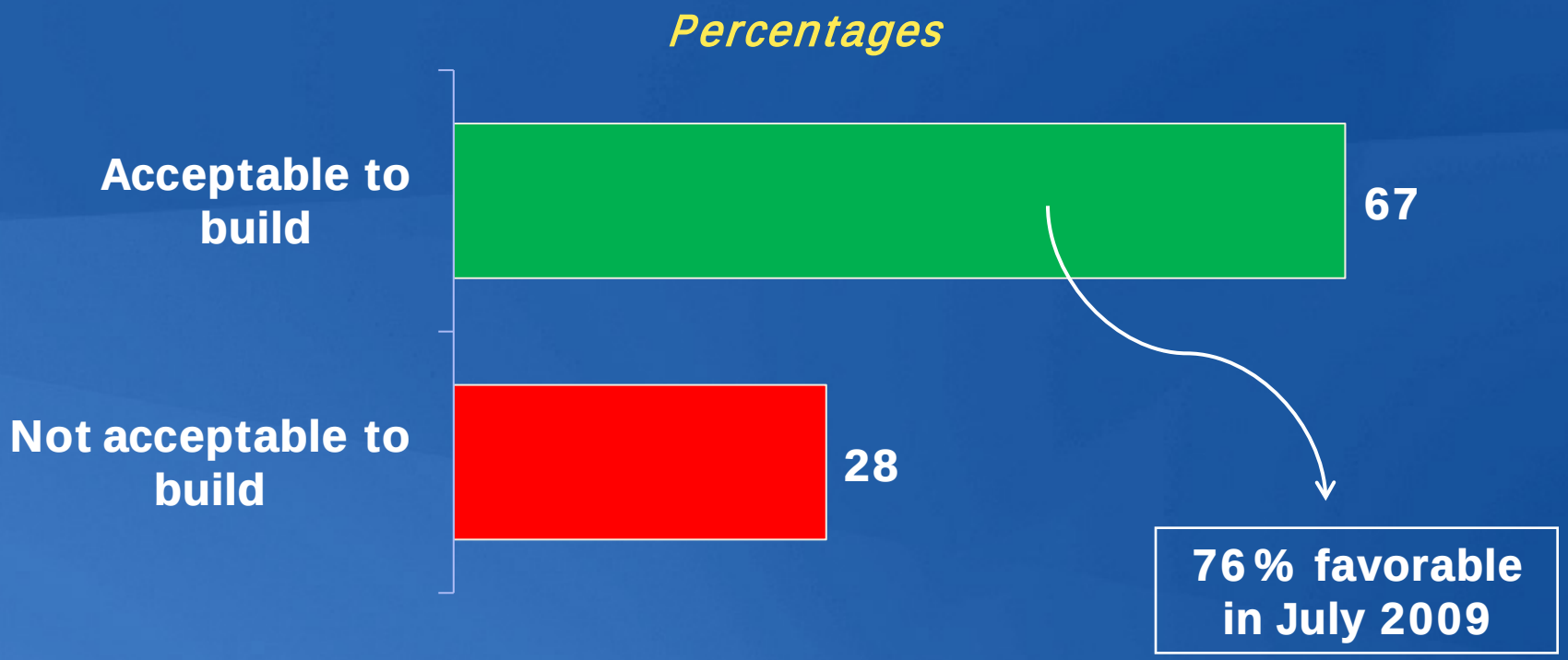
Plant Neighbor Opinions June 2011

Acceptability of New Reactor at Nearby Plant Site



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Conclusion: Responsible Reactions

- Expect disciplined regulatory response from NRC
- Measured political response
- Public attitudes (particularly opinion leaders) remain strong
- Reasoned editorial reaction

The Washington Post

"If it is serious about cutting carbon emissions, the United States should keep nuclear on the table."

—April 29 editorial

THURSDAY, JULY 14, 2011

ENERGY

NRC Report Makes Few Waves Across Washington

BY AMY HARDER

On the same day Japan's prime minister said he wants to stop using nuclear power in light of his country's disaster at the Fukushima Daiichi power plant, a new U.S. government report outlining what America needs to do to ensure its reactors are safe was received quietly in Washington.

The gap in the two countries' policy perspectives is huge but not surprising. In the aftermath of Japan's nuclear crisis, President Obama has not backed away from his support for nuclear power and neither have most U.S. lawmakers. Japanese Prime Minister Naoto Kan joined German Chancellor Angela Merkel in moving away from nuclear power in response to the Fukushima meltdown.

Rather than make sweeping decisions like Germany and Japan, the U.S. government has taken more measured steps. The government report, released Wednesday, was done by a task force made up of a half-dozen senior Nuclear Regulatory Commission officials and seeks to take a snapshot of where America's nuclear safety regime is three months after Japan's crisis. The NRC is also doing an extended review of the Fukushima disaster and expects to issue a report this winter.

The U.S. government's response has so far amounted to task forces, reports, public meetings, and hearings. It could likely be more than a year until the NRC implements any major regulatory change. In fact, the NRC is still working out kinks to the licensing process it overhauled in response to the 1979 partial meltdown the Three Mile Island reactor in Pennsylvania.

The initial review released Wednesday recommends the NRC unite its "patchwork" of safety rules and offers 12 voluntary guidelines. NRC Chairman Greg Jaczko and the other four commissioners will review the report next week, but it's unclear whether or when the NRC might implement the recommendations.

Senate Environment and Public Works Chairwoman **Barbara Boxer**, D-Calif., told *National Journal Daily* that she would hold an Aug. 2 hearing on the report, when she will be asking about enforcement.

"They took an important step forward on many issues of concern, but what's important to me is the implementation be done forcefully," said Boxer, who added that the report did not adequately address certain issues such as spent nuclear fuel rods.

Unlike other countries, the United States is not building nuclear plants for a host of issues (such as high capital costs) that predate Fukushima. That makes it easier for American policymakers to continue supporting nuclear power since its growth is already stagnated. Reports like the one released Wednesday mainly address the fleet of 104 reactors without much attention paid to new reactors. But if new safety standards are implemented, it could further hinder the nuclear renaissance with even higher capital costs.

"More safety generally entails higher costs," said Edwin Lyman, a senior scientist in the Global Security Program at the Union of Concerned Scientists, a nuclear watchdog group. "The easiest way to make things safer is to spend more money, and that could well have an impact on the cost of nuclear power, which is not competitive and requires significant subsidies to get off the ground in this country."

Nuclear Energy Institute lobbyist Tony Pietrangelo said it was too early to predict what potential costs may mount with new safety standards.

Lyman called Wednesday's announcement from Japan's prime minister "unthinkable," but said it's incumbent upon the Obama administration and Congress to take seriously new safety regulations in the United States, even if changes come with more cost hurdles for nuclear energy.

"It's in everyone's interest to make sure that nuclear power is as safe as possible," Lyman said. "Fukushima turned public opinion against nuclear in Japan overnight." ■

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