Perspectives of a Commissioner in Times of a Historical Event

NRC Commissioner William C. Ostendorff

April 13, 2011

Nuclear Non-operating Owners' Group Conference

Orlando, FL

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United States Nuclear Regulatory Commission

Protecting People and the Environment

Personal Background

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United States House of Representatives
House Armed Services Committee

U.S. Department of Energy
National Nuclear Security Administration
NNSA

THE NATIONAL ACADEMIES
Advisers to the Nation on Science, Engineering, and Medicine

What we do

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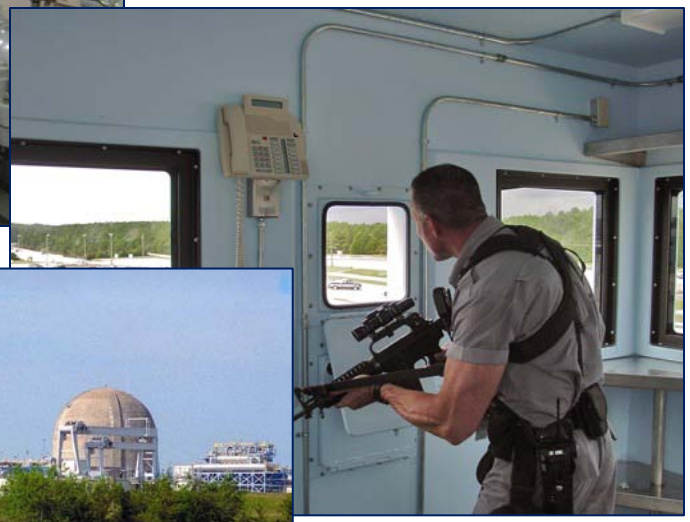
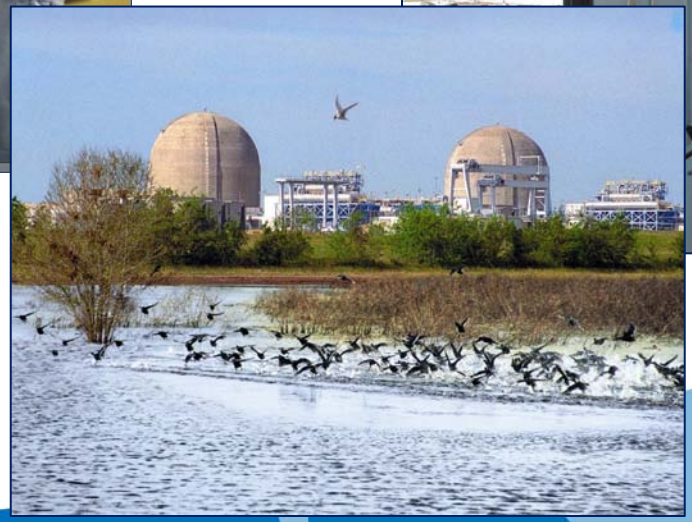
Safety

Security



Environment



The Commission

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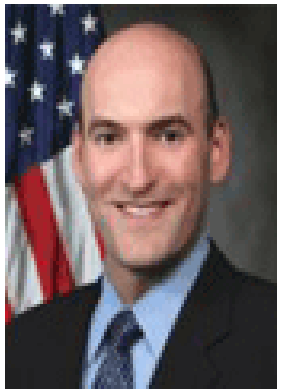
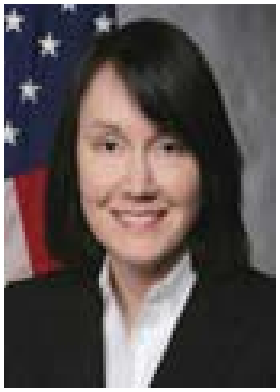
- The NRC is headed by four Commissioners and a Chairman
- All appointed by the President and confirmed by the Senate for staggered five-year terms
- No more than three can be from the same political party



Chairman Gregory Jaczko



Commissioner Kristine Svinicki

Commissioner George Apostolakis

Commissioner William Magwood

Commissioner William Ostendorff

Maintaining focus on safety

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Keeping our eyes on the ball…

- Avoiding complacency
- Continuous improvement
- Safety culture

How we regulate

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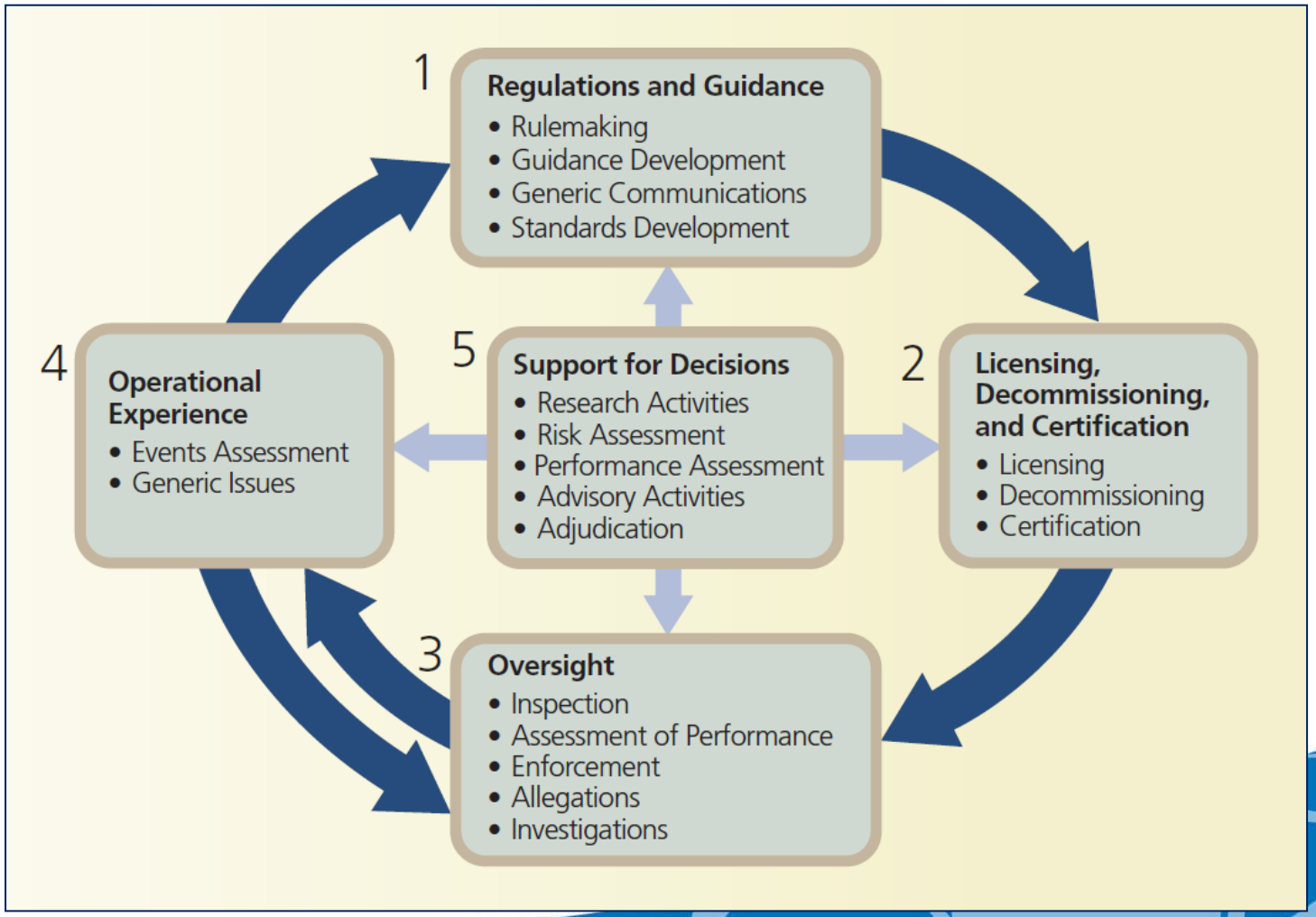

Source: NRC Information Digest 2010-2011

Regulatory Principles

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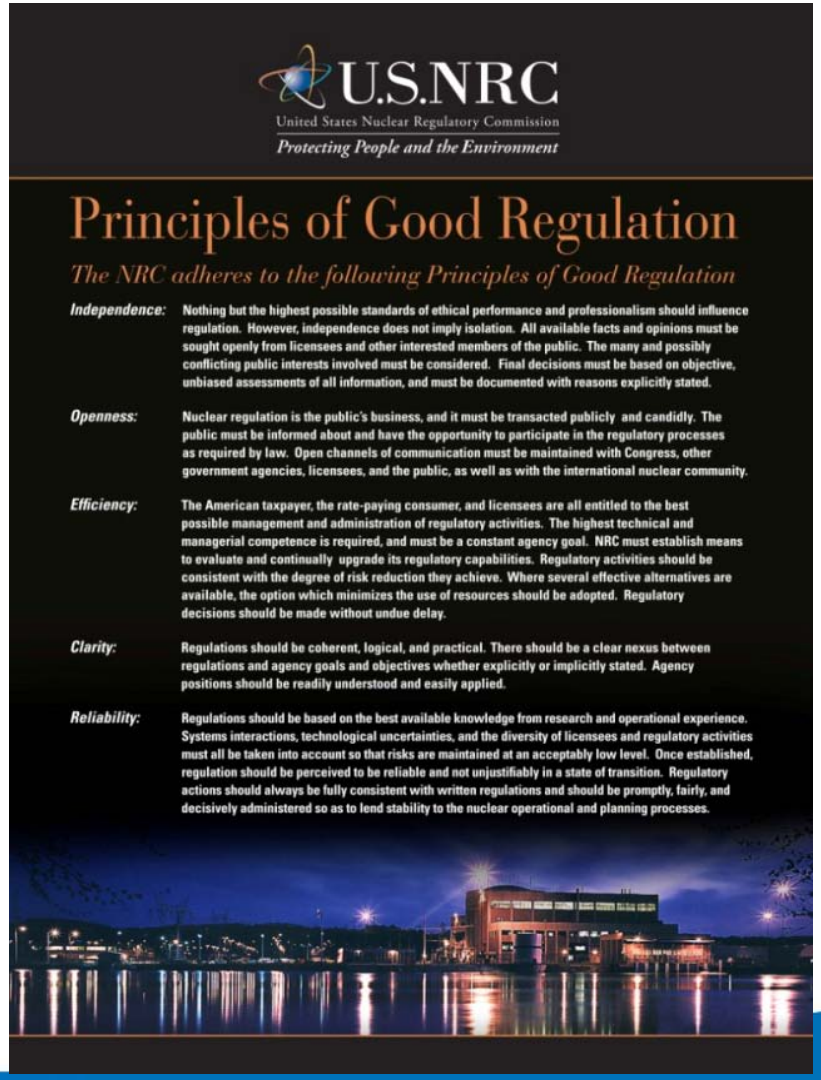

Independence

Openness

Efficiency

Clarity

Reliability

Adequate Protection

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- Generic Safety Issue – 191 on PWR sumps – safety issue but not an adequate protection issue
- 9/11 Attacks on New York and Washington - adequate protection issue with shared responsibilities
  - Federal Government
  - Licensee preparedness

Experiences and Approaches Shaping NRC Activities

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- TMI Unit 2
- Chernobyl
- Reactor Oversight Process
- Non-accidents but significant operating events or conditions (e.g., Davis Besse)
- Attacks on 9/11 – immediate actions and current lessons learned from rulemaking
- Fukushima Daiichi- TBD

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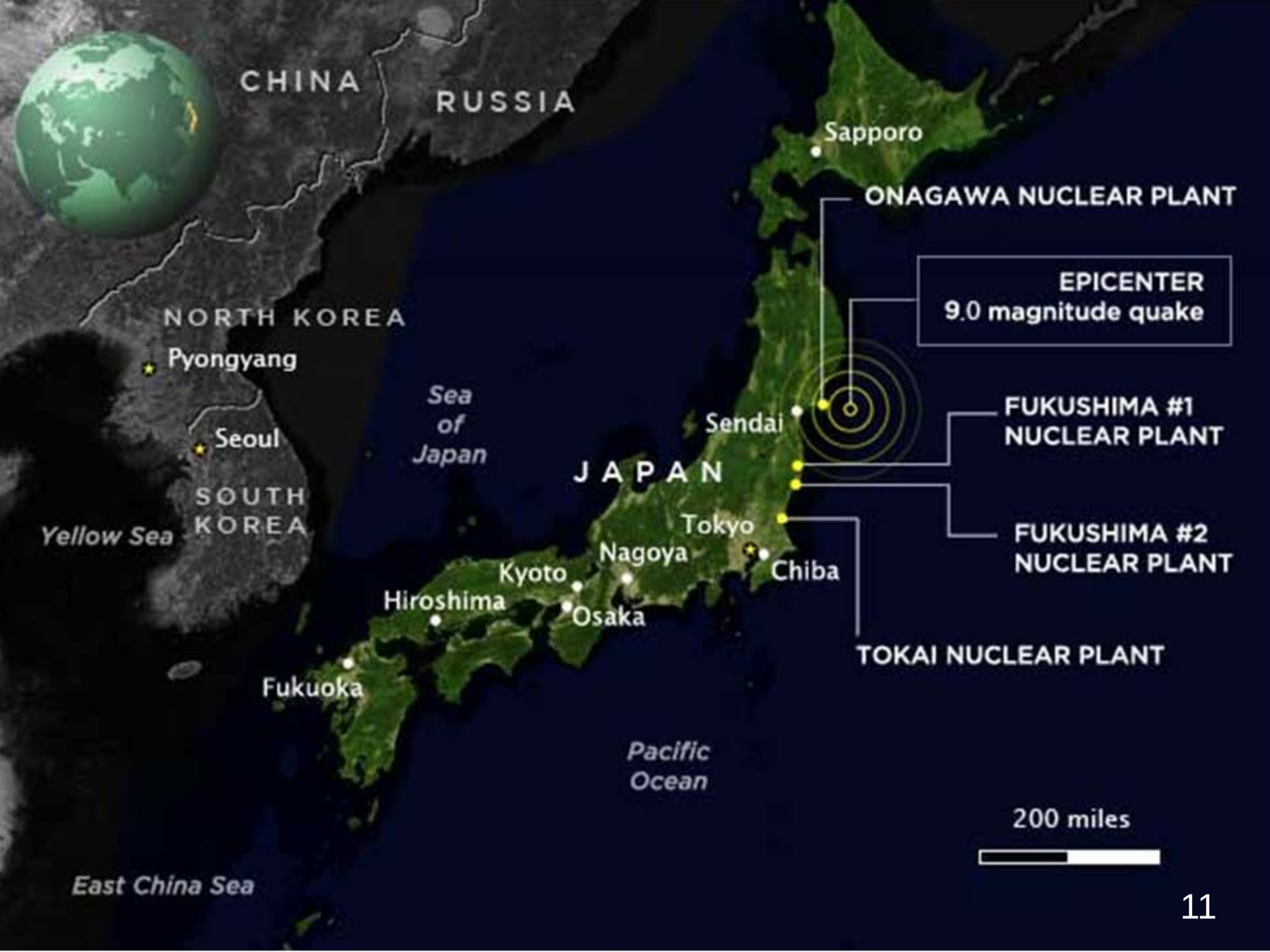
Fukushima Daiichi


CHINA
RUSSIA
Sapporo
ONAGAWA NUCLEAR PLANT
EPICENTER
9.0 magnitude quake
NORTH KOREA
Pyongyang
Sea of Japan
Sendai
FUKUSHIMA #1 NUCLEAR PLANT
Seoul
JAPAN
SOUTH KOREA
Yellow Sea
Tokyo
FUKUSHIMA #2 NUCLEAR PLANT
Nagoya
Chiba
Kyoto
Hiroshima
Osaka
TOKAI NUCLEAR PLANT
Fukuoka
Pacific Ocean
200 miles
East China Sea

Overview of Fukushima Daiichi Nuclear Power Station

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Earthquake & tsunami sequence of events

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Friday March 11th at 2:36 pm local time

- Magnitude 9.0 earthquake 231 miles northeast of Tokyo
- Quake is fifth largest in the world (since 1900)
- Earthquake generated a 15 meter tsunami at plant (much higher in other locations in northern Japan)

Fukushima accident - continued

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- Three operating units shutdown at time of earthquake
- Offsite power lost; emergency diesels supply power
- Tsunami arrives at site and wipes-out emergency power
  - Extended station blackout
  - Batteries deplete and subsequent loss of all reactor cooling
  - Late injection of seawater using fire trucks
  - Core damage estimated at 75, 30, and 25 percent for Units 1, 2, 3 respectively
  - Hydrogen generated from metal water reaction in cores and possibly in Unit 4 spent fuel pool
  - Hydrogen explosions in units 1, 3, and 4 reactor buildings

photo credit Air Photo Service Co. Ltd., Japan

NRC Response

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- Emergency operations center 24/7 (starting on 3/11)
- Team of experts to Tokyo
- Support to U.S. Ambassador and Japanese
- Coordinating environmental monitoring with DOE & EPA
- Working with consortium in U.S. nuclear industry
- Commission chartered NRC task force (staff requirements memorandum)

UNITED STATES FEDERAL GOVERNMENT SUPPORT

U.S. Ambassador to Japan

Disaster Assistance Response Team

NRC Site Team Japan

NRC HQ Operations Center

Executive Team
- Reactor Safety Team
- Protective Measures Team
- Liaison Team

GOVERNMENT OF JAPAN RESPONSE

経済産業省 Ministry of Economy, Trade and Industry

NISA Nuclear and Industrial Safety Agency

TEPCO

UNITED STATES Industry Consortium

INPO

EPRI ELECTRIC POWER RESEARCH INSTITUTE

HITACHI

AREVA

BECHTEL

Define Roles & Responsibilities
- Government
- Industry
- Points of Contact

Equipment Needs

Engineering Support

Domestic Considerations

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- No anticipated U.S. health effects from Fukushima
- U.S. plants designed and inspected for protection against external events
- U.S. plants have extra capabilities installed after 9/11
- NRC has initiated additional inspections at all U.S. plants
- NRC conducting near-term and long-term reviews

International Reactions

Governments and IAEA

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- Germany immediately shuts down seven pre 1980 reactors
- European community calls for “stress test” of nuclear plants
- China reviewing nuclear energy policy but calls for safety first, quality first
- IAEA calls for international conference

NRC Near Term Actions

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- Evaluate Fukushima Daiichi accident
- Domestic operating reactors and spent fuel pools
  - External Events
  - Station Blackout
  - Severe Accident Mitigation
  - Combustible Gas Control
  - Emergency Preparedness
- Near term review due in 90 days (mid June)

NRC Longer Term Actions

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- Based on near term review and additional insights from Fukushima accident
- Identify potential technical and policy issues
  - Research Activities
  - Generic Issues
  - Reactor Oversight Process
  - Regulatory Framework
  - Interagency Emergency Preparedness

NRC – State of Operations

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- Continue safety reviews for ongoing matters (e.g., new reactors, license renewal)
- NRC has processes and regulatory authorities should the NRC task force on Fukushima identify issues warranting additional measures at U.S. plants
  - Well established backfit process
  - Well established operating experience and generic issues programs

Leadership Views

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"When we see a crisis like the one in Japan, we have a responsibility to learn from this event and to draw from those lessons to ensure the safety and security of our people."
President Obama

"Public safety is our top priority, and it is therefore vital that the Nuclear Regulatory Commission extensively investigate the risks posed to nuclear facilities in the United States as soon as possible."
Senator Boxer and Senator Carper, March 17, 2011 Statement

"The Fukushima crisis has confronted the Agency and the international community with a major challenge. It is vitally important that we learn the right lessons from what happened on 11 March, and afterwards, in order to strengthen nuclear safety throughout the world."
Secretary Amano, IAEA Director General, March 28, 2011

Risk Communication

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External communication and outreach

- Shared responsibility of regulator and industry
- Promote understanding of risks and the bases for regulatory activities
- Proactive engagement

"I fully support his [Chairman Jaczko's] call for a systematic and methodical review. We must also do this in a way that clearly communicates to the American people what this review means and what it implies for the safety of our existing nuclear power plants."

William C. Ostendorff
March 21, 2011 Commission Briefing on NRC response to Recent Events in Japan

Public Trust and Confidence

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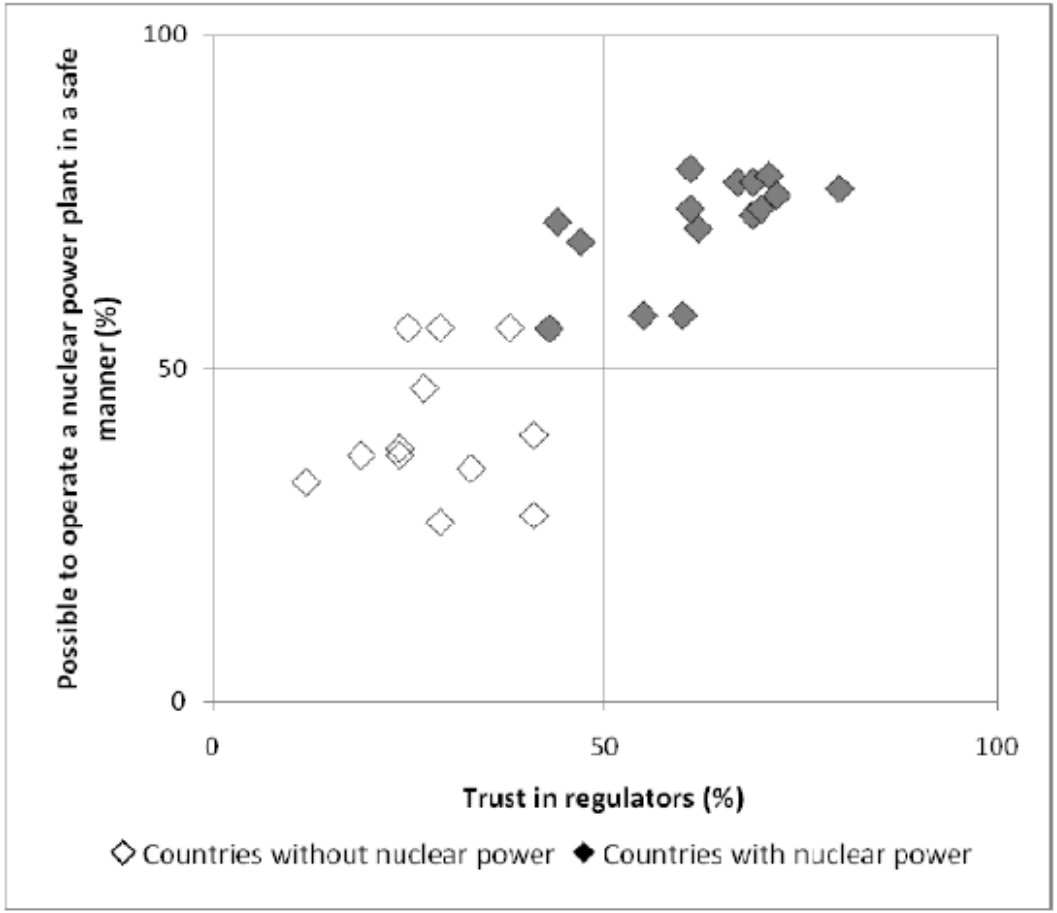
Key message…

The importance of a strong regulator



Source: Eurobarometer (2007).

Thank You

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Questions

Comments

Discussion