

U.S.NRC

UNITED STATES NUCLEAR REGULATORY COMMISSION

Protecting People and the Environment

Nuclear Safety After Fukushima Dai-ichi

***Japan Atomic Industry Forum
Tokyo, Japan***

*William D. Magwood, IV
Commissioner
April 18, 2012*



U.S.NRC

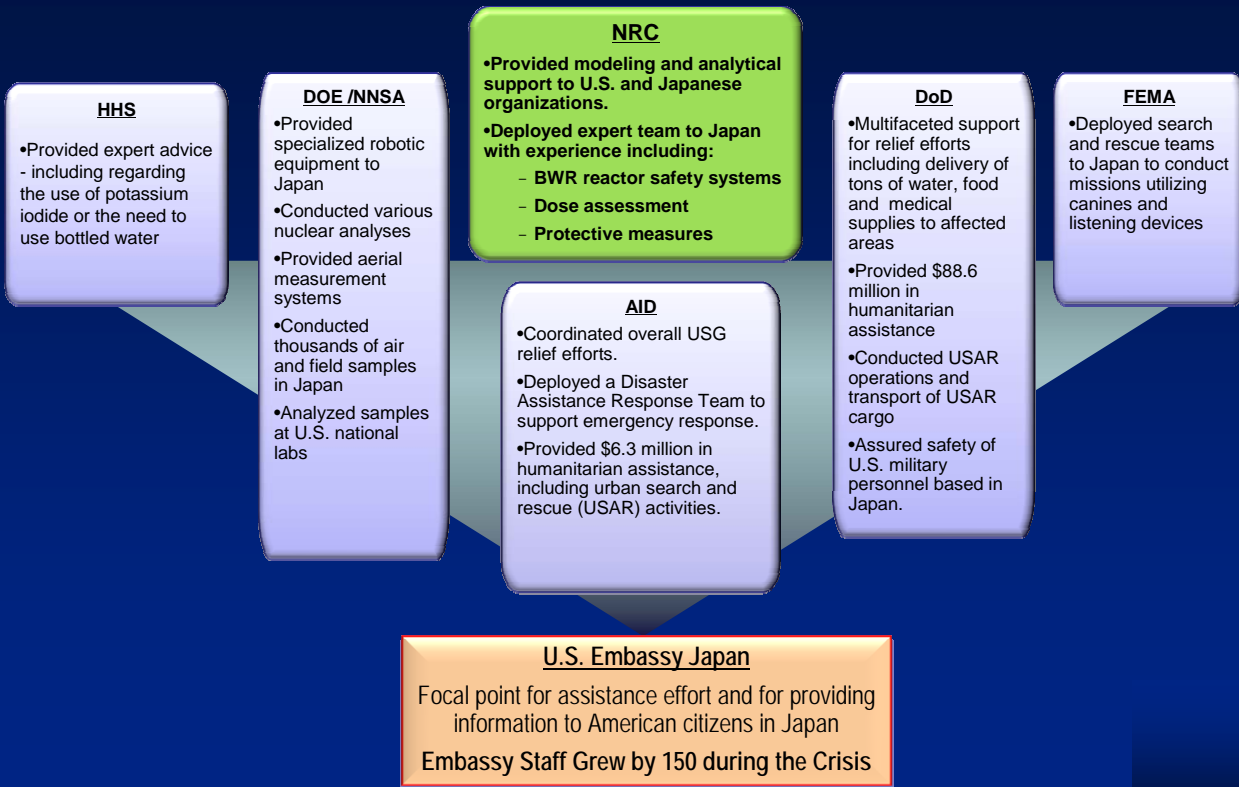
UNITED STATES NUCLEAR REGULATORY COMMISSION
Protecting People and the Environment

Fukushima Dai-ichi

March 11, 2011 and Beyond



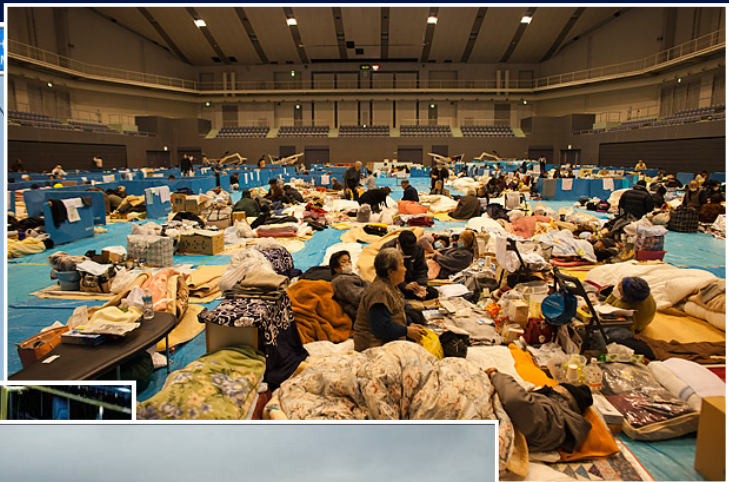
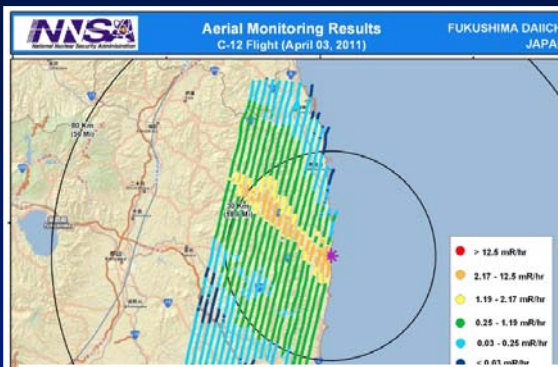
U.S. Government Response *Multi-Agency Assistance to Japan*



After Fukushima *We Must Learn the Big Lessons*

- Understand the Risks Facing Each Plant
- We Can't Predict Every Event
- Recovering from Disaster is At Least as Important as Preparing for Disaster
- Potential for Common Cause Failure of On-Site and Off-Site AC Power





- No imminent risk from continued nuclear power plant operation and licensing activities.
- Similar events in the U.S. very unlikely.
- Mitigation measures already in place could reduce the likelihood of core damage and radiological releases.
- 12 Technical recommendations to further enhance U.S. nuclear safety.





Enhancements to Nuclear Safety *Elements of Prioritized NRC Action*

- Reevaluation of All External Hazards for Each Plant
- Enhanced Station Black Out Rulemaking
- Mitigating Strategies for Beyond Design Basis Events
- Installation of Reliable Hardened Vents for BWR Mark I and Mark II Containments
- New Spent Fuel Pool Instrumentation Requirements
- Integration of Emergency Procedures
- Staffing and Communications for Multiunit Events

7



What's Next? *In the US – Major Policy Questions*

- **Should We Further Revise our Approach to Emergency Planning?**
- **Should more Spent Fuel be Removed from Pools and Placed in Dry Storage?**
- **Do We Need a New Regulatory Regime to Address Beyond Design Bases Events?**
- **Do We Need to Revise Our Regulatory Approach to Look Beyond Safety and Address Large Socio-economic Disruptions?**

8



Four Pillars of Nuclear Safety *Moving Beyond Fukushima Dai-ichi*

PILLAR ONE: EXPERIENCED PERSONNEL

• **Regulatory Agencies and Plant Operators MUST have high-quality, technically experienced staffs**

- Neither should rely on outside organizations for core technical expertise—such reliance can be disastrous in an emergency
- Academic training and management expertise is important but deep experience in operations and regulatory oversight is more important

9



Four Pillars of Nuclear Safety *Moving Beyond Fukushima Dai-ichi*

PILLAR TWO: INDEPENDENT DECISION-MAKING

• **Regulatory Officials and Plant Operators MUST have the ability to make IMMEDIATE decisions regarding plant safety**

- Plant Operators should be authorized and **EXPECTED** to make decisions on-the-spot when circumstances warrant
- Regulatory decisions should have a clear technical bases
- National policy authorities should be reluctant to become involved in purely regulatory decisions

10



Four Pillars of Nuclear Safety *Moving Beyond Fukushima Dai-ichi*

PILLAR THREE: SAFETY CULTURE

•All organizations involved in nuclear operations and safety oversight must develop an effective safety culture

- A strong safety culture is the first and last line of defense
- Vital to emphasize a questioning attitude in all operational choices and regulatory decisions
- Important to establish an atmosphere in which all personnel can raise concerns without fear

11



Four Pillars of Nuclear Safety *Moving Beyond Fukushima Dai-ichi*

PILLAR FOUR: TRANSPARENCY

•Regulatory and Operational decisions should be made in a transparent fashion

- Recognize that the public has a RIGHT to know!
- Demonstrating that decisions are made on the technical facts with safety as the highest interest will build public trust and confidence—even when members of the public disagree with the decision
- Public will understand the need to protect security information

12



Four Pillars of Nuclear Safety

Moving Beyond Fukushima Dai-ichi

- Experienced Personnel
- Independent Decision-Making
- Safety Culture
- Transparency

We knew this before Fukushima

....

After Fukushima, all can see that these pillars are invaluable and essential for future safety

13



Looking Forward

The Work Continues



Since Fukushima, NRC has granted licenses to build and operate new Generation III+ nuclear plants in Georgia and South Carolina

NRC is evaluating 10 additional new plant applications from power companies across the United States



14



Looking Forward

The Vital Importance of Japan

- Japan remains a nuclear technology and industrial superpower
- The U.S. and other nations rely on Japanese capabilities and expertise to support new nuclear construction
- Japanese research and development into advanced fuel cycles and Generation IV reactors is a global asset
- Japanese leadership is essential to address global issues such as nonproliferation and climate change

15



WWW.NRC.GOV