

INPRO Dialogue Forum on Global Nuclear Energy Sustainability:  
**Long-term Prospects for Nuclear Energy in the  
Post-Fukushima Era**

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*U.S. Nuclear Industry Policies*

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# 1. National vision and strategy for Nuclear Power in the 21<sup>st</sup> century in **United States**



- Global demand for electric generation and nuclear technologies is driving focus on U.S. nuclear supply chain capabilities
- New plant construction is underway in 3 U.S. states —Georgia, South Carolina and Tennessee
- Industry is developing smaller reactor design that can be used for power and other uses



## 2. Main lessons learned after Fukushima in United States



- Improve ability to maintain safety even with an extended loss of electric power
- Add second system to monitor used fuel storage pools
- Ensure reliable containment venting on specific designs
- Evaluate protection against extreme events (earthquakes, flooding, etc.)
- Enhance emergency planning, staffing for multi-reactor events

# MAKING SAFE NUCLEAR ENERGY SAFER AFTER FUKUSHIMA

**FLEX** is a flexible and diverse strategy developed by the nuclear energy industry to quickly and effectively implement the Nuclear Regulatory Commission (NRC's) Fukushima task force recommendations. The FLEX protection strategy addresses the main safety challenges at Fukushima—the loss of cooling capability and electrical power resulting from a severe natural event that exceeded the plant's design basis—to make U.S. facilities even safer. It builds on safety steps taken by industry during the past three decades by providing a fast, effective and efficient way to apply the lessons learned from Japan's experience.

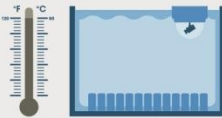
## MULTIPLE LAYERS OF POWER SUPPLY

Backup generators provide reliable electrical power and cooling capability if an extreme event disables the normal plant equipment. Additional battery banks provide electrical power and cooling capability if an extreme event disrupts regular and other backup power supply.



## ADDITIONAL SPENT FUEL MONITORING

Additional equipment in spent fuel storage pools will provide another layer of monitoring to ensure temperature and water levels are maintained.



## PREPARING OUR PEOPLE

Nuclear plant and emergency response workers will use the FLEX approach to support key safety functions across multiple reactors. Capabilities and training will be verified for nuclear plant workers to assure the continued viability and reliability of equipment. Communications capabilities will be expanded to include satellite phones and equipment to connect personnel at the plant with government emergency communications networks. Specific strategies include the following:

### Enhanced Training



### Expanded Maintenance and Testing of Equipment



### Satellite Communications



## ADDITIONAL PUMPS

To ensure cooling procedures are maintained during and after an extreme event, additional pumps can supply water where needed.



## REGIONAL CENTERS

Additional emergency equipment will be stationed in off-site support centers to provide another layer of safety and ensure prolonged reliable operation.



## PUBLIC OPINION

**74%**

of Americans believe that U.S. nuclear power plants are safe and secure

**80%**

of Americans believe U.S. nuclear power plants have been made safer as we've learned from experience and added technology

Bisconti Research Inc. with GfK Roper survey of 1,000 U.S. adults in February 2012

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### 3. **United States'** expectations for global Nuclear Power development in the 21<sup>st</sup> century



- Cost of equipment upgrades
- Updating emergency preparedness protocols
- Examining the economics of new nuclear
- Licensing activities by the NRC