

CSIS Program: Nuclear Safety after Fukushima
Thursday, April 7, 2-5 p.m.

Panel 1, National Responses

Congressional Response

Introduction and disclaimers

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Congressional response falls into three major areas

Specific nuclear power plant safety issues
Role of nuclear power in U.S. energy policy
Nuclear waste policy
Statements and actions so far have included all those areas

Immediate reaction

Images of nuclear reactor buildings exploding one after the other was a major shock around the world

Similarity of Fukushima plants to many in the United States created immediate local concern

Possibly mitigated by seemingly surreal nature of the tsunami to most people in the United States. (Note Senator Al Franken comment about tsunami in Minnesota.)

Several hearings held in House and Senate

Facts of the accident, what happened
Safety implications for U.S. reactors
Nuclear waste policy, new reactors

Positions on nuclear power restated

Obama Administration reiterated its support for U.S. nuclear expansion as part of clean energy program

Nuclear supporters in Congress have also not changed their position

Democrats don't generally oppose Administration but express many safety concerns

Interchange between Senators Diane Feinstein and Lamar Alexander at March 30 hearing illustrates differing nuclear paradigms (about Alexander's introduction into the record of pro-nuclear article by British environmentalist George Monbiot).

Safety issues raised in Congress related to accident

- Earthquake and flood resistance
- Station blackout
- Spent fuel pools
- Potassium iodide (KI) pills out to 20 miles
- Ocean contamination, seafood safety
- Use of MOX fuel
- International nuclear safety
- License extension for U.S. reactors
- Emergency planning zones
- Hydrogen management
- Licensing of new reactors and new designs

Nuclear energy policy considerations

Ultimately, effect on U.S. nuclear policy is likely to depend on how soon radioactive releases are halted and the eventual extent of contamination

Analysis shows expansion of U.S. nuclear power depends on federal policy

- Currently two new projects with four reactors most likely
- Non-licensing activities at South Texas Project expansion put on hold
- About 20 other projects have made less commitment to move forward
- Some positive statements made since accident, such as by Duke

Many nuclear projects had been announced in anticipation of carbon controls

Inclusion of nuclear in Clean Energy Standard could provide similar boost

- Competition with natural gas may be major factor
 - Potentially plentiful supplies of shale gas
 - Inclusion of gas at half-credit in CES

Administration still seeking \$36 billion increase in loan guarantee authority

Concern about increased costs of nuclear power

Increased perception of risk and public opposition (not clear yet)

Nuclear waste policy

Some criticism at every hearing that halting Yucca Mountain would leave waste at plant sites longer

Some defenses of Administration policy and Blue Ribbon Commission

Bills introduced

Nuclear Power Plant Safety Act of 2011, H.R. 1242, Rep. Markey, March 29

NRC must revise its regulations with 18 months to ensure nuclear plants can adequately handle

Earthquakes, tsunamis, storms, and other major events

Loss of primary power (from grid) for 14 days

Loss of primary backup power (diesel generators) for 72 hours (up from 4 or 8 under station blackout rule)

Spent fuel must be moved from pools to dry casks within one year of eligibility (sufficient cooling)

Emergency response exercises must include multiple concurrent disasters

NRC may not issue construction permit, operating license, license extension, design certification, combined license, design approval, or manufacturing license until required revisions take effect

Furthering International Nuclear Safety Act of 2011, S. 640, Sen. Akaka, March 17, H.R. 1326, Rep. Fortenberry, April 1

Requires U.S. delegation to the Convention on Nuclear Safety to encourage countries to

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Use metrics in assessing safety improvements

Post national safety reports and other info on public web site

Federal agencies to submit strategic plan for international nuclear safety cooperation

Fifth review meeting of Convention is now underway in Vienna, from April 4-14

Nuclear Power Licensing Reform Act of 2011, H.R. 1268, Rep. Lowey, March 30

Reactors must not pose “unreasonable threat” from terrorist attacks or other safety vulnerabilities

Reactors must have federal and state approved evacuation plans for 50 mile radius (instead of current 10)

License renewals subject to same standards as new plants

Legislative response to TMI, Chernobyl, and 9/11

Shows possible timing and mechanisms for congressional action

Often in parallel with executive branch action, particularly NRC

TMI (March 1979)

Major shock; showed postulated accidents could really happen

NRC authorization acts of 1980 (June 1980)

- Required emergency plans
- Required demographic criteria for siting new plants
- Accident data communication link with NRC
- Review of NRC management structure and processes
- Other TMI-related measures

Chernobyl (April 1986)

Concerns about DOE production reactors (Hanford N Reactor shut down)

Debate on Price-Anderson extension affected by Chernobyl and TMI

Convention on Nuclear Safety

- U.S. supported 1991 IAEA resolution to negotiate agreement
- Agreement entered force in 1996
- U.S. Senate ratified in 1999

9/11 terrorist attacks

Many congressional proposals on nuclear safety

- Increased DBT, based on 9/11 attackers
- Force-on-force exercises
- Distribution of KI tablets
- Larger emergency planning zones – up to 50 miles

Security of radiation sources (dirty bombs)

KI distribution in 20-mile radius of nuclear power plants approved in Public Health Security and Bioterrorism Preparedness and Response Act of 2002 (Sec. 127) (but implementation is continuing issue)

DBT and force-on-force proposals included in Energy Policy Act of 2005