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Lessons from Fukushima One Year Later: NRC's Implementation of Recommendations for Enhancing Nuclear Reactor Safety in the 21st Century

Witnesses Present:

Gregory Jaczko

Chairman, Nuclear Regulatory Commission

Kristine Svinicki

Commissioner, Nuclear Regulatory Commission

George Apostolakis

Commissioner, Nuclear Regulatory Commission

William Magwood

Commissioner, Nuclear Regulatory Commission

William Ostendorff

Commissioner, Nuclear Regulatory Commission

Subcommittee Members Present:

Thomas Carper (D-DE), Chair

John Barrasso (R-WY), Ranking Member

Bernard Sanders (I-VT)

Jeff Merkley (D-OR)

Jeff Sessions (R-AL)

Full Committee Members Present:

Barbara Boxer (D-CA), Chair

James Inhofe (R-OK), Ranking Member

Kirsten Gillibrand (D-NY)

On March 15, 2012 the Senate Committee on Environment and Public Works and the Subcommittee on Clean Air and Nuclear Safety held a joint hearing to review the actions of the Nuclear Regulatory Commission (NRC) in implementing new safety recommendations one year after the Fukushima nuclear meltdown. Chairman of the NRC Gregory Jaczko along with the four NRC Commissioners were present to field questions from the Committee and Subcommittee members. The hearing was held nearly one year to the day after a 9.0 magnitude earthquake struck off the coast of Japan triggering devastating tsunami and subsequent nuclear crisis at the Fukushima Daiichi Nuclear Power Plant. The nuclear crisis thrust the safety of U.S. nuclear power plants into the Congressional spotlight. The Senate Committee on Environment and Public Works held a hearing on April 13, 2011 to review the Fukushima Daiichi Nuclear Power Plant disaster and the implications for the United States. In response to the Japanese disaster, a Near-Term Task Force was created in March of 2011 to review U.S. nuclear power plant safety requirements. In July 2011 the NRC released a report entitled "Recommendations for Enhancing Reactor in the 21st Century" which delves into the findings of the task force.

Chair of the Full Committee Barbara Boxer (D-CA) began her opening statement by clarifying that the purpose of the hearing is to review the efforts of the NRC in guaranteeing that all 104 active nuclear power plants in the U.S. are running safely. She went on to highlight some of the main recommendations found by the Near-Term Task Force. These recommendations call for improved on site emergency preparedness safety equipment, enhancing monitoring equipment in spent fuel rod pools, improving ventilation systems of the 31 boiling water reactors (same type of nuclear reactor as Fukushima Daiichi), reassessments of earthquake and flooding susceptibility, and better preparation for periods of prolonged loss of power. Boxer was concerned about the NRC's prolonged timelines for these safety requirements.

In his opening statement Ranking Member of the Full Committee James Inhofe (R-OK) praised the NRC for licensing two new

nuclear reactors in Georgia calling it a “milestone in the agency’s history.” The licensing of these nuclear power plants was approved by a four to one vote of the NRC commissioners with the one vote against tallied by Jaczko. Inhofe criticized Jaczko for his vote by saying, “There was no need for Chairman Jaczko to take his ‘my way or the highway’ approach here, lashing out at his colleagues and implying that they were ignoring the lessons of Fukushima.” Inhofe accused Jaczko of preferring to shut down the nuclear power industry by gradually decommissioning nuclear reactors and not expanding the industry by licensing more nuclear reactors. Inhofe left the duty of upholding the NRC’s reputation with the four other commissioners when he said, “It’s up to you four to uphold the NRC’s reputation for reasoned and balanced regulation.”

Chairman of the Subcommittee Thomas Carper (D-DE) opened by saying, “We cannot predict when or where the next major disaster will occur. We do know, however, that robust preparation and response planning are vital to minimize injury and death when it does happen.” He said he is convinced that the U.S. can learn from the events of the Japanese nuclear disaster despite the NRC’s findings that a similar situation in the U.S. is unlikely. Carper expressed his full support of the five NRC commissioners remarking that he did not believe there were five more qualified individuals in the country.

In his opening statement, Ranking Member of the Subcommittee John Barrasso (R-WY) stated the importance of the NRC’s job of ensuring that nuclear safety is practiced safely in the United States. He called for this NRC process to continue free of partisan politics. He emphasized the importance of an American energy strategy that pushes forward with nuclear energy and provides “...affordable domestic energy for seniors for working families and for small business owners.”

Jaczko opened his testimony by saying, “I stress that the commission continues to believe that there is no imminent risk from continued operation of nuclear power plants in the United States.” However, he believes that there are lessons to be learned from the Fukushima disaster and the NRC has put forth regulations to address these lessons. He stated that in December the NRC classified the recommendations from the task force into three tiers. Tier one consists of actions that are to be taken without delay, tier two consists of actions that are to be taken once the resources and skill sets become available, and tier three consists of those recommendations that require further study. He emphasized that these tiers are not necessarily in order of highest priority. Upon further peer input the NRC has now made enhancements to the tier classifications effective immediately to all nuclear power plants in the United States. These enhancements include the installation of water monitoring instruments in spent fuel rod pools and improved venting systems for boiling water reactors. By 2013 each power plant must submit their plan for implementing these requirements. He also said that each nuclear power plant is required to reassess their potential for seismic activity and flooding, and to assess their strategies for operation under prolonged portions of power outage.

Boxer asked Jaczko for a timetable on when some of the task force recommendations will be enforced. He responded that power outage and new emergency operation procedures will be enforced in 2014 and 2016 respectively. Jaczko said he is concerned with the time table for the seismic and flood reassessment, which he said will not be complete until 2017. NRC Commissioner George Apostolakis attempted to ease concern over the 2017 deadline by saying that the nuclear power plants most at risk to seismic activity and floods will be reassessed first.

Inhofe asked the panel to address the differences in the geology and the nuclear safety regulatory system of Japan. Apostolakis replied that the regulatory body in place in Japan, the Nuclear and Industrial Safety Agency (NISA), was very technically weak and the tsunami calculations were poorly done. The tsunami evaluations were based off of out of date data and needed to be reevaluated.

Barrasso mentioned a Union of Concerned Scientists (UCS) report entitled “The NRC and Nuclear Power Plant Safety in 2011” that disagreed with the NRC findings. The report acknowledged that the NRC has developed a plan to implement lessons learned from Fukushima but must pursue the implementation of these lessons more “expeditiously.” NRC commissioner William Magwood told the committee he disagreed with the opinions of the UCS and said he does not believe that a Fukushima type event could occur in the United States. Apostolakis disagreed with the UCS report because he does not think “what happened in Fukushima could happen here.” NRC commissioner William Ostendorff echoed the views of his colleagues disagreeing with the UCS report.

Senator Bernard Sanders (I-VT) said he disagreed with a previous statement by Magwood that the history of nuclear energy in the U.S. will be determined by economic factors. He said he thought “the future of nuclear power will one hundred percent be determined by whether or not the taxpayers of this country continue to provide huge, huge, huge financial support for the nuclear power industry.” The senator used the remainder of the time to question when the federal subsidies for nuclear energy will end. He believes that new sustainable energy technologies should receive federal subsidies instead of the 60 year old nuclear power industry. The panel recommended that the senator direct these questions to the Department of Energy because it is out of the scope of their duties at the NRC.

Opening statements, witness testimony, and a web cast of the hearing can be found at the Environment and Public Works Committee web site.
