

November 20, 2012

The Honorable Barbara Boxer
Chairman, Committee on Environment
and Public Works
United States Senate
Washington, DC 20510

Dear Madam Chairman:

The U.S. Nuclear Regulatory Commission appeared before the Committee on Environment and Public Works on September 12, 2012, at an oversight hearing entitled, *NRC's Implementation of Recommendations for Enhancing Nuclear Reactor Safety in the 21st Century*. From that hearing, you forwarded questions for the hearing record. On behalf of Chairman Macfarlane, the responses to those questions are enclosed. If I can be of further assistance, please do not hesitate to contact me.

Sincerely,

/RA/

Rebecca L. Schmidt, Director
Office of Congressional Affairs

Enclosure:
As stated

cc: The Honorable James M. Inhofe, Ranking Member
Committee on Environment and Public Works

Questions from Senator Barbara Boxer

QUESTION 1

What actions has the NRC taken to respond to, and address, the concerns raised by elected officials in California who have written to the NRC about the safety of the San Onofre nuclear power plant? Please provide me with all NRC letters to such elected officials, a description of the actions that the NRC has taken to address each concern expressed by the elected officials, and a description of the NRC's plan and timeline to fully respond to any unaddressed concerns.

ANSWER:

The NRC has responded to concerns expressed by elected officials. Copies of the NRC response letters to the elected officials are attached for your reference. We are continuing to receive letters from elected officials and will provide you with copies of our responses. We remain committed to providing California's elected officials and the public with full and complete information regarding our process for reviewing the status of the San Onofre plant.

Some requests made by California officials, particularly requests for a license amendment process and requests for an opportunity for a hearing, were also contained in a petition to the Commission and therefore fall under the Commission's adjudicatory responsibilities. In response to the relevant petition, the Commission approved CLI-12-12 on November 8, 2012. That Order (1) refers the issue of whether there was a violation of the 10 C.F.R. §50.59 process used for replacement of the steam generators to the Executive Director for Operations for consideration under 10 C.F.R. § 2.206; (2) refers the request for a hearing on the Confirmatory Action Letter to the Atomic Safety and Licensing Board Panel (ASLBP) for consideration

pursuant to Commission direction; and (3) denies, without prejudice, the stay request and the request for a discretionary hearing.

The ASLBP and the staff, as appropriate, will be working to address those matters and the petitioners and public will be advised of the outcome.

QUESTION 2

Will the NRC respond to calls for increased transparency and scrutiny of the problems that led to San Onofre nuclear power plant's damaged steam generators by using the most thorough process available to the Commission, including a license amendment process, which allows both the NRC and citizens to ask questions, analyze issues, and resolve uncertainties to help ensure such problems are understood and addressed at the San Onofre plant?

ANSWER:

The NRC is committed to ensuring that the public is informed about the condition of the San Onofre Nuclear Generating Station (SONGS) and our staff's work to assess its safety. A number of public meetings have been held, most recently on October 9th in Dana Point, CA, to discuss the status of the issues at SONGS and to hear views of interested local stakeholders. The NRC will continue to hold public meetings concerning SONGS as part of its independent, in-depth oversight (e.g. inspections and detailed reviews) of the issues at SONGS. In addition, inspection reports, the confirmatory action letter, and other written communications related to the steam generators are also publicly available.

The NRC will not allow the plant to restart until we are satisfied that the licensee can operate the plant without undue risk to public health and safety. The NRC will take the time needed to determine the appropriate actions to ensure the safety of the public, and will continue to keep the public informed of its review process.

On June 18, 2012, the Commission received a petition to intervene and a request for a hearing related to SONGS. The petition requested a hearing on the issue of whether a license amendment was required for the replacement of the SONGS' steam generators. On November 8, 2012, the Commission issued an order referring one portion of the petition to the Atomic Safety and Licensing Board Panel for consideration, and referring another portion of the petition to the NRC Executive Director for Operations for consideration under 10 CFR 2.206. This section of the Code of Federal Regulations provides stakeholders with a forum to advance their concerns and to obtain full or partial relief, or written reasons why the request is not being granted. Actions taken throughout this process are publicly available. Any decision on either of the above-mentioned referrals is reviewable by the Commission. Therefore, it would be inappropriate for the Commission to comment on the outcome of the petition process at this time.

QUESTION 3

Will the NRC ensure that the Commission's process of overseeing nuclear power plant modifications that involve major structural work or changes to radiation containment systems undergo increased and systematic scrutiny, as through a license amendment process, in the future to help prevent a recurrence of the type of problems that have plagued the San Onofre nuclear power plant?

ANSWER:

The NRC provides independent oversight for modifications made to nuclear power plants through a combination of regulatory provisions, license amendment reviews, orders, inspections, and enforcement as appropriate. The utilization of any of these regulatory tools is dependent upon the authority, need, scope, and purpose for the particular proposed activity. With respect to the use of the license amendment process for the steam generator issue at San Onofre Nuclear Generating Station, the Commission, by Order, referred this matter to the agency's 2.206 petition process. This process, named for the section of the Code of Federal Regulations in which it is outlined, provides stakeholders with a forum to advance their concerns and to obtain full or partial relief, or written reasons why the request is not being granted. Actions taken throughout this process are publicly available. Because the Commission may review the outcome of that proceeding, it would be inappropriate for the Commission to comment on the outcome of the petition process at this time.

QUESTION 4

What is the status of the NRC's implementation of the Task Force recommendation that the Commission "initiate [a] rulemaking to require licensees to confirm seismic hazards and flooding hazards every 10 years?" Will the NRC ensure that when reassessing such hazards, the plants address important new information that can help to resolve questions about the nature of such threats and potentially change the estimated hazard that such threats pose to the plants and the public?

ANSWER:

Under Tier 1 of the Task Force recommendations, the NRC has required that each operating reactor licensee re-evaluate the seismic and flooding hazards to its licensed facilities. These efforts are consistent with the NRC's standard practice of acting on significant new information when it becomes available. These re-evaluations and any resulting actions will be implemented over the next several years. In the meantime, the NRC staff intends to initiate some activities in Fiscal Year 2013 in preparation for a possible rulemaking or other action to address the recommendation related to a periodic assessment of hazards. The information provided by licensees regarding the on-going evaluations will help determine whether additional regulatory actions are necessary. Re-evaluations of seismic and flooding hazards at operating reactor sites, requested by NRC staff via formal letters in March 2012, will facilitate NRC's determination of whether the design bases for structures, systems, and components important to safety should be updated. The information being provided by the licensees will also inform the NRC staff's assessment of the recommendation cited in your question in terms of developing any proposed requirements for licensees to periodically consider new information and address revised estimates of risks associated with external hazards.

QUESTION 5

Given your expertise in geology please describe the importance of the Task Force's recommendation to protect nuclear power plants against earthquakes using the latest information on such risks for ensuring the safety of nearby communities.

ANSWER:

The Commission is specifically interested in advances in the understanding of seismic hazards, and the application of that knowledge to safety at NRC licensed reactors. For example, the NRC together with the Electric Power Research Institute (EPRI) and the Department of Energy (DOE) recently developed new seismic source models for the central and eastern United States. This effort predated the accident at Fukushima and is an example of the NRC's standard practice of acting on significant new information when it becomes available. This information has been folded into our Fukushima lessons learned efforts to ensure that our improved understanding of seismic risks is used by licensees during the seismic reevaluations required by the NRC for all United States nuclear power plants. Similarly, licensees in the western United States are developing seismic hazard estimates and will provide the results of their assessments the NRC as part of the submittals required by the post-Fukushima Requests for Information.

QUESTION 6

A July 13, 2012 letter from the NRC Executive Director of Operations to the Commissioners states, "There are no resources included in the FY 2012 budget and the FY 2013 Congressional Budget Justification for tier 3 activities," which include important safety enhancements related to seismic risks. Please explain how the NRC will plan and implement all the recommendations before the 2016 goal for such activities and describe the funding needed to support these efforts?

ANSWER:

The continuing need to dedicate NRC resources to the development and disposition of the post-Fukushima activities, including the longer-term Tier 3 items, has been addressed as part of the NRC's ongoing planning and budgeting process. Resources have been identified and provided to the NRC staff offices for the current fiscal year to continue their three-tier efforts to develop and apply lessons learned from the accident, consistent with the framework previously established by the Commission. The NRC has taken action to evaluate all of the identified lessons learned, including the establishment of milestones and schedules to assure completion of these activities in accordance with the project plans defined in staff papers submitted to the Commission. In addition, the NRC planning and budgeting processes include routine monitoring and adjustments of resources as necessary to ensure that the agency is focused on the appropriate safety concerns, whether related to Fukushima or other events, conditions, or issues. The NRC is committed to ensuring that the appropriate resources are dedicated within our operating budget to meet the target schedules and will incorporate such requirements in its future budget requests.

QUESTION 7

Does the NRC currently have the authority to recover 90 percent of the amount necessary to implement the Task Force recommendations through fees assessed to NRC licensees such as nuclear power plants?

ANSWER:

The NRC has the authority to recover approximately 90 percent of its budget authority through the assessment of fees to licensees for regulatory services rendered based on the Omnibus Budget Reconciliation Act of 1990, as amended. The NRC activities in response to the Near-Term Task Force recommendations are considered fee-recoverable activities.

QUESTION 8

What actions has NRC taken regarding the recommendations of the President's Blue Ribbon Commission on America's Nuclear Future?

ANSWER:

The NRC staff has reviewed the Blue Ribbon Commission's (BRC) recommendations. The U.S. Department of Energy (DOE) is the lead agency for developing a response to the BRC report and for implementing any changes to the national policy on nuclear waste management. Further, many of the BRC recommendations require legislative action before they can be implemented. The NRC staff is closely monitoring the development of any changes in national policy or legislative changes that may result from the BRC recommendations. The NRC staff is also monitoring international repository development programs to increase its understanding of potential repository issues in a variety of geologic settings. The NRC will adjust our regulatory programs, as necessary, consistent with national policy initiatives.

QUESTION 9

Which U.S. nuclear power plants are currently out of compliance with the NRC's fire safety regulations?

ANSWER:

Currently, no plants have significant unresolved inspection findings associated with fire protection regulations. Fire protection findings of very low safety significance are resolved under licensee corrective action programs. Licensees receive regular inspections to assess licensee corrective action programs and compliance with fire protection regulations under the baseline reactor oversight process.

QUESTION 10

The NRC is allowing nuclear power plants to transition to alternative risk-based fire protection standard through a license amendment process.

a. Please list and describe the status of activities related to the following plants:

i. the plants that the NRC is currently reviewing for compliance with the established fire protection requirements in 10 CFR 50.48(b)

ii. the plants that have committed to use an alternative approach (National Fire Protection Association Standard 805 (NFPA 805) to comply with fire protection requirements from the 805 standard;

iii. the plants using Operator Manual Actions (OMA), including the types of OMAs;

iv. the plants using OMAs that the NRC has approved for use at such plants;

v. the plants using OMAs that the NRC has not approved for such use; and

vi. the plants at which the NRC has approved a license amendment for the use of the alternative NFPA 805 approach.

b. Please provide the NRC's schedule for completion:

i. any investigation for the unauthorized use of OMAs; and

ii. the reviews and license amendment process for each plant that has committed to using the alternative NFPA 805 approach

ANSWER:

10.a.i Currently, plants that are subject to the fire protection requirements of 10 CFR 50.48(b) are reviewed for compliance as part of the Reactor Oversight Process. This regulation only applies to plants that were licensed prior to January 1, 1979, and also does not include the three Oconee units that have already adopted National Fire Protection Association Standard 805 (NFPA 805), the voluntary performance-based, risk-informed fire protection rule. The following table includes a list of the plants that are required, per regulation, to meet 10 CFR 50.48(b):

Plant	Plant
Arkansas Nuclear One 1 and 2	Millstone 2
Beaver Valley 1	Monticello
Browns Ferry 1, 2 and 3	Nine Mile Point 1
Brunswick 1, 2	North Anna 1
Calvert Cliffs 1, 2	Oyster Creek
Cook 1, 2	Palisades
Cooper	Peach Bottom 2, 3
Crystal River 3	Pilgrim 1
Davis-Besse	Point Beach 1, 2
Dresden 2, 3	Prairie Island 1, 2
Duane Arnold	Quad Cities 1, 2
Farley 1	Robinson 2
FitzPatrick	Salem 1
Fort Calhoun	St. Lucie 1
Ginna	Surry 1, 2
Hatch 1, 2	Three Mile Island 1
Indian Point 2, 3	Turkey Point 3, 4
Kewanee	Vermont Yankee

10. a.ii. The following table lists the plants that have committed to use NFPA 805 to comply with fire protection requirements:

Plant	Plant
Arkansas Nuclear One Unit 1	Fort Calhoun
Arkansas Nuclear One Unit 2	Joseph M. Farley 1&2
Beaver Valley 1&2	Oconee 1, 2 &3
Browns Ferry 1,2,3	Nine Mile Point 1
Brunswick 1&2	Palisades
Callaway	Point Beach 1&2
Calvert Cliffs 1&2	Prairie Island 1&2
Catawba 1&2	R.E. Ginna
Cooper	Robinson 2
Crystal River 3	San Onofre 2&3
D.C. Cook 1&2	Shearon Harris
Davis Besse	St. Lucie 1&2
Diablo Canyon 1&2	Turkey Point 3&4
Duane Arnold	V.C. Summer
	Waterford 3

10.a.iii, 10.a.iv, 10.a.v, and 10.b.i. Operator manual actions are used at all U.S. nuclear power plants. The manual actions include operating switches, opening valves, and other types of operator actions.

The NRC staff reviews operator manual actions as part of the Reactor Oversight Process. Where operator manual actions are identified as unauthorized and in violation of the NRC regulations, the noncompliances are addressed as part of the Reactor Oversight Process. The NRC notes that manual actions that are not approved by the NRC are not, per se, “unauthorized”, inasmuch as there may be situations in which NRC regulations and other requirements may allow licensees to use manual actions without NRC review and approval, if certain criteria are met. Such actions are referred to as “compensatory actions.” Thus, part of

the NRC's inspection effort is determining whether a licensee's use of manual actions was done in accordance with NRC's regulations and other requirements.

Approval of operator manual actions is included in a plant's licensing basis or in approved exemptions. Plants that are using operator manual actions without NRC review and approval are subject to actions under the Reactor Oversight Process to determine whether appropriate criteria have been met. Currently, two licensees that are not adopting NFPA 805 are relying on unapproved operator manual actions until modifications can be completed such that the plant achieves compliance without reliance on operator manual actions. The two reactors involved are Indian Point 2 and 3. The NRC identified that these licensees used unapproved manual actions in violation of NRC requirements, in an inspection report dated August 16, 2012, which is publicly available. The violations do not pose immediate safety concerns and the licensee has developed a corrective action plan in a publicly available document.

10.a.vi. To date, the NRC has issued a license amendment for the use of NFPA 805 at the Shearon Harris and Oconee plants in June and December 2010, respectively.

10.b.i. is answered above.

10.b.ii. The staff is actively reviewing twelve license amendment requests that have been submitted to date. The schedule, per the staff's paper to the Commission, for reviewing the initial set of NFPA 805 license amendment requests (LARs) is two years. After completing the review of an initial set of LARs, the staff will aim for a review duration of approximately one year, while still conducting the reviews to the level of

completeness and thoroughness required for the determination of adequate protection,
per Commission direction.

QUESTION 11

The Japanese parliament's investigative commission on Fukushima identified a reluctance to question authority as one of the fundamental causes of the accident. I believe that the NRC and domestic nuclear power plants must have the highest commitment to safety in the world. What actions could help to strengthen the safety culture within the NRC and at U.S. nuclear power plants?

ANSWER:

The NRC has a longstanding history of promoting a positive safety culture to ensure the agency achieves its mission. The agency has recently undertaken initiatives to focus on continuous improvement of our internal safety culture. Communication is a key element in all efforts to strengthen the NRC's safety culture. We have in place an educational program to communicate to the staff the Commission's vision regarding safety culture. Expectations for an open and collaborative work environment (i.e., an environment that encourages differing views) are routinely communicated by managers and supervisors in a variety of formats (e.g., staff meetings, web pages, newsletters, and postings throughout agency buildings) and are included in orientation and training courses offered to all employees. In addition, to further strengthen our safety culture, the NRC maintains the Differing Views Programs (i.e., the Open Door Policy, the Differing Professional Opinions Process, and the Non-Concurrence Process), and agency-level procedures explicitly prohibit retaliation against employees who engage in the Differing Professional Opinions Process or the Non-Concurrence Process.

NRC employees have participated in the Federal Employees Viewpoint Survey, which was administered in the April/May 2012 timeframe and was designed to measure employees' perceptions of whether, and to what extent, conditions characterizing successful organizations

are present in Federal agencies. The survey results were very positive, ranking the NRC first among the 37 largest federal agencies in the categories of talent management and leadership and knowledge management; second in job satisfaction; and third in results-oriented performance culture.

However, the NRC leadership is always looking for ways to improve in this important dimension. In this context, the Comprehensive Plan for Agencywide Review of Safety Culture was transmitted to the Commission by the staff in July 2012. The Plan is designed at a high level to assess and continually improve the NRC's internal safety culture with a focus on the environment for raising concerns; it contains two key components that are being overseen by NRC's Agency Culture Advisory Group. The first main component relies on the results from a recently completed Safety Culture and Climate Survey conducted by the NRC Office of the Inspector General and administered in the August/September 2012 timeframe. The second main component of the plan continues ongoing implementation activities to strengthen the agency's safety culture and the trust environment required to promote openly raising concerns. The plan identifies additional activities to be undertaken to improve the agency's organizational and safety culture.

With regard to strengthening safety culture at U.S. nuclear power plants, the NRC incorporated safety culture into the Reactor Oversight Process in 2006, and results to date show that the program is effective. The NRC's 2011 Safety Culture Policy Statement, developed over a three-year period with extensive outreach to stakeholders, expresses the Commission's expectation that all organizations performing regulated activities consider the importance of developing and maintaining a positive safety culture. The Policy Statement defines safety culture as "the core values and behaviors resulting from a collective commitment by leaders and individuals to

emphasize safety over competing goals to ensure protection of people and the environment.” This policy includes an expectation that U.S. nuclear power plant licensees will continue their efforts to develop and maintain a safety conscious work environment in which employees are encouraged to speak up when they have safety concerns. The Commission has directed the staff to continue to engage with stakeholders to communicate the contents of the Policy Statement, to educate stakeholders, and to ensure they have the necessary support to effectively employ the Policy Statement as they deem appropriate. This has included the NRC’s development of educational “tools” such as brochures and a set of actual case studies representing a breadth of industries, including energy, medical, and transportation.

QUESTION 12. How will the NRC consider demographic changes, including population change around nuclear power plants, in its decisions to extend licenses and ensure safety?

ANSWER.

The NRC performs a license renewal environmental review to consider the environmental effects of operating a nuclear power plant for an additional 20 years. The Commission determined that the NRC would prepare a supplemental environmental impact statement (EIS) for each license renewal action to fulfill its responsibilities under the National Environmental Policy Act (NEPA). This review includes the effects of continued reactor operations on the population living within 50 miles of the nuclear power plant. The NEPA analysis must use the latest census data to account for recent population and demographic changes.

The license renewal environmental review focuses on environmental impacts of extended operations. The safety review for license renewal focuses on the management of aging plant systems, structures, and components within the scope of Part 54 of the Commission's regulations. The management of the aging of those systems, structures, and components is analyzed in a safety evaluation report (SER), which is published before the renewed license is issued.

Safety issues associated with ongoing reactor operations are not tied to the license renewal decision, but are issues that need to be dealt with continuously as part of a nuclear power plant's current (and renewed) operating license. Any time issues related to public health or

safety are discovered at a nuclear plant, they are addressed immediately and any safety-related changes are incorporated under the current operating license.

Emergency planning issues are related to ongoing reactor operations. Although the Commission has determined that there is no need for a special review of emergency planning issues in the context of an environmental review for license renewal, each plant owner is required to participate in an exercise testing its emergency response plan with the NRC, FEMA, and offsite authorities at least once every two years to ensure that State and local officials remain proficient in implementing their emergency plans and that the population surrounding the plant is protected. As such, the Commission, through required exercises, reviews existing emergency preparedness plans throughout the life of all nuclear power plants, keeping up with the changing demographics and other site related factors.

Question from Senator Thomas Carper

QUESTION 1

This past summer has been described as one of the hottest on record. There are reports that nuclear power plants were forced to shutdown because the water that is required to operate was too warm to help cool the plants. Some experts say that climate change may increase the risks to our nation's nuclear power plants, and, as a result, will impact our ability to generate electricity. For example, there is a concern that some nuclear power plants over time may become vulnerable to flooding due to rising sea levels.

a. How is the NRC addressing the risks that climate change may potentially impose on our nation's nuclear power plants?

b. What kind of preparation have existing and new reactors under construction undertaken to reduce their risks?

ANSWER:

a. NRC is concerned about a plant's ability to ensure that it has adequate cooling water to operate, as well as the potential threat posed by flooding and/or sea level rise. In general, NRC operational requirements regarding cooling water (e.g. sea water, lake, or river) levels and temperature are addressed in individual plant technical specifications that are part of the plant's NRC operating license.

Occasionally, some nuclear power plants have had to reduce power or shutdown due to cooling water intake or discharge exceeding technical specifications. For example, in August 2012, Millstone Power Station in Connecticut had to shut down as temperatures in its ultimate heat

sink, which receives plant cooling water discharge, exceeded those prescribed by its technical specifications.

From a broader perspective, implications of global climate change for flooding and sea level rise are important to coastal communities and generally to water-dependent critical infrastructure such as nuclear power plants. Changes in sea level at any individual coastal location depend not only on the increase in the global average sea level, but also on various regional geomorphic, meteorological, and hydrological factors. NRC is actively engaged regarding changes in environmental conditions at its licensed facilities. In informing NRC's operating reactor license renewal environmental reviews, NRC staff considers information sources such as the U.S. Global Change Research Program, which integrates and presents the prevailing consensus of federal research on climate and global change, as sponsored by thirteen federal agencies.

b. All currently operating nuclear power plants and new reactors under construction are located with consideration of site-specific environmental conditions, including meteorological and hydrologic siting criteria. NRC regulations also require that plant structures, systems, and components important to safety be designed to withstand the effects of natural phenomena, such as flooding from severe storms, without loss of capability to perform safety functions. If new information or operating experience relating to flooding becomes available, the NRC evaluates the new information to determine if any changes are needed at existing plants. Plant-specific flood protection issues are considered during site-specific safety reviews and, more specifically, are addressed on an ongoing basis through the Reactor Oversight Process and other NRC safety programs. In March 2012, as part of the agency's post-Fukushima actions,

the NRC required all licensees to re-analyze earthquake and flooding risks using the latest available information, and to conduct earthquake and flooding hazard “walkdowns” to closely examine each nuclear power plant’s ability to meet current licensing requirements. The NRC staff will evaluate each licensee’s response and determine if additional specific or collective actions are warranted.

Questions from Senator James Inhofe

QUESTION 1

What is the Commission doing to ensure that the NRC Staff is implementing its Fukushima recommendations in accordance with Commission direction?

a. Are you aware of instances where you believe the Staff has either misunderstood Commission direction in its implementation of the Commission's post-Fukushima orders? If so, what processes are in place to redirect the Staff's efforts?

ANSWER:

The Commission has established a Japan Lessons Learned Steering Committee consisting of senior executives from across the NRC. The Steering Committee's charter is to oversee the agency's assessments and actions related to lessons learned from the Fukushima event. The Steering Committee meets frequently with the NRC staff to obtain updates on the status of activities and to direct the staff on the development and implementation of the various project plans for the short- and long-term activities, consistent with Commission direction. The Steering Committee is supported by the Japan Lessons Learned Project Directorate that was created to help coordinate the NRC's evaluation and resolution of recommendations of the Near Term Task Force and other issues related to the Fukushima accident. The NRC staff conducts frequent public meetings with stakeholders, including the nuclear industry, to ensure that agency expectations and related industry actions are effectively communicated. The NRC Steering Committee meets regularly with an industry committee coordinated by the Nuclear Energy Institute to share information and identify possible challenges or problems related to the NRC requirements or requests for information.

The Commission receives routine reports, and conducts periodic meetings with the NRC staff and stakeholders to discuss the agency's response to the Fukushima accident. These various communication channels and interactions have, to date, prevented any significant problems related to misunderstandings between the Commission and NRC staff. However, should a problem arise, the Commission would correct the problem through our regular interactions with the NRC staff and managers, and, if necessary, by formally issuing revised instructions.

The NRC staff continues work on the Tier 1 and Tier 2 actions in a manner that is consistent with the milestones set forth by the Commission. The staff's continued high-level focus on these actions has ensured steady progress, with stakeholder engagement, consistent with the established schedules. The staff has succeeded in performing these actions while ensuring that efforts do not displace ongoing work of greater safety benefit, work that is necessary for continued safe operation – or other existing high priority work, consistent with the Commission's direction.

QUESTION 2

Much has been learned about the Fukushima accident and the Japanese response since the original near Term Task Force Report and the Commission's post-Fukushima orders.

a. Have you continued to review the decisions and recommendations in light of the changing landscape? Are any adjustments appropriate?

ANSWER:

The NRC's Japan Lessons Learned Steering Committee consists of senior executives and they meet frequently with the NRC staff to obtain updates on the status of activities and to direct the staff on the development and implementation of the various project plans for the short- and long-term post-Fukushima activities. The NRC staff has developed an "additional issues" process that involves senior agency staff assessing new issues for possible consideration by this Steering Committee. The NRC staff and Steering Committee review new information from the ongoing recovery work and analyses of the events in Japan to incorporate insights into the NRC's activities. In fact, the Tier 3 list of activities contains several issues that were not identified in the original Near Term Task Force Report, but that the NRC later determined warrant inclusion as a lessons-learned issue. The NRC staff and Steering Committee also routinely meet and assess ongoing NRC activities and plans for disposition of future items, given improved understanding of the accident and the changes already being implemented by the nuclear industry. Members of the Steering Committee also meet regularly with their industry counterparts to provide awareness of changes in understanding and proposed actions. The NRC staff provides the Commission with specific plans as well as periodic updates on the overall set of activities initiated in response to lessons learned from the Fukushima accident and the subsequent evaluations.

QUESTION 3

3. The Commission has a paper before it (SECY-12-0110) and was briefed on September 11 on the subject of the economic consequences of land contamination.

a. Do you think that the NRC needs to reassess its framework for consideration of the economic consequences of land contamination?

b. What is the Commission's statutory authority for basing regulation on matters other than protection of public health and safety?

ANSWER:

a. A key conclusion reached by the NRC staff in SECY-12-0110 was that the NRC's current regulatory framework already accounts for the offsite economic consequences arising from land contamination caused by the unintended release of radionuclides from an NRC-licensed facility during or following a severe accident or other event at the facility. However, the staff also identified potential options for revising the regulatory framework should the Commission desire to enhance or expand consideration of economic consequences from land contamination. In this paper the staff states that the accident at Fukushima Dai-ichi nuclear power plant in Japan initiated a discussion of how the NRC's regulatory framework considers offsite property damage and other economic consequences. These options are still under consideration by the Commission.

b. The Atomic Energy Act of 1954, as amended (AEA), provides the NRC with authority to regulate its licensees or applicants for the purpose of avoiding or mitigating offsite property

damage (i.e., damages to offsite property resulting from a release of radionuclides from an NRC-licensed facility during or following a severe accident or other event at the facility). The following sections of the AEA provide NRC with the authority to “minimize danger” to property: 103b.(2) (42 U.S.C. § 2133(b)(2)), 161b. (42 U.S.C. § 2201(b)), and 161i(3) (42 U.S.C. § 2201(i)(3)).

QUESTION 4

Is the NRC's consideration of economic consequences of land contamination based primarily upon a public perception that it is good policy rather than considerations of public health and safety?

a. To the extent that economic considerations do not form a basis for regulation under the Atomic Energy Act, should Congress consider this issue and provide direction before the NRC acts on its own?

ANSWER:

Under section 182a. of the AEA (42 U.S.C. § 2232(a)), the Commission must take those actions it deems necessary to achieve adequate protection of public health and safety regardless of economic costs. While economic considerations are not part of “adequate protection” or used to determine the safety benefit of a proposed regulatory action, economic factors may be considered when performing regulatory analyses (consistent with the guidance in OMB Circular A-4, “Regulatory Analysis”); environmental analyses pursuant to National Environmental Policy Act requirements; and when assessing the direct and indirect costs of a proposed backfit under Title 10 of the *Code of Federal Regulations* Parts 50, 70, 72, and 76. In addition to ensuring adequate protection of radiological health and safety under the AEA, the NRC has additional, discretionary authority to “minimize danger” to property under sections 103 and 161 of the AEA (see the response to question 3.b.). Under the authority provided by sections 103 and 161 of the AEA, the NRC can consider costs (as well as societal benefits) in taking regulatory actions to protect offsite property.

a. Sections 103 and 161 of the AEA (see the response to question 3.b.) provide the NRC with authority to regulate its licensees for the purpose of avoiding or mitigating offsite property

damage (i.e., damages to offsite property resulting from a release of radionuclides from an NRC-licensed facility during or following a severe accident or other event at the facility). The NRC interprets the term “property” broadly to include both real property (e.g., land and buildings) and personal property (e.g., equipment, vehicles, livestock, crops). Thus, “offsite property damage” encompasses a broad range of offsite economic impacts associated with the unintended release of radionuclides, including loss of use and damage to property, relocation costs, and business disruption. Given the NRC’s current legal authority to regulate its licensees for the purpose of avoiding or mitigating offsite property damage resulting from radiological events, the Commission does not recommend any legislative changes at this time.

QUESTION 5.a

The Commission and its staff identified the “Tier One” action items stemming from the recommendations of your post-Fukushima tsunami task force. You are implementing these in a timely way. It seems to me that since these Tier One action items will yield the most significant gains, it is incumbent on the NRC regulator and the operator implementers to focus on the successful and timely implementation of these items.

a. As the industry has by far the largest task in implementing new requirements, what assessments have you done to ensure that the impact of imposing requirements of lesser safety impact will not detract from the ability on the completion of the most significant Tier One tasks?

ANSWER:

The NRC identified those activities that should be resolved without unnecessary delay (Tier 1) and issued Orders, advance notices of proposed rulemakings, and requests for information from licensees to initiate those activities. In developing implementation plans for the Tier 1 items and in initiating discussions on the Tier 2 and Tier 3 items, the standard practice has been for both the NRC staff and industry to form working groups to coordinate activities, avoid miscommunications, and identify issues, (including any conflicts between Fukushima-related tasks and other activities needed to ensure the continued safe operation of nuclear plants). In addition to the staff-level interactions, the NRC and industry routinely communicate through joint Steering Committee meetings and Commission-sponsored meetings with stakeholders. A key aspect of these meetings is to ensure that limited resources are being dedicated to the most appropriate safety improvements.

QUESTION 5.b

b. How are you assessing the availability of vendor and engineering firms that possess the quality performance record and expertise to contract for hardware improvements and necessary analysis for tasks beyond Tier one?

ANSWER:

The Commission and the NRC staff are aware of the impact of NRC Orders, requests for information, and other activities on the availability of subject matter experts and the industry's capability to perform technical assessments and respond to regulatory changes. For example, the availability of technical experts was a major consideration in the NRC staff's development of a prioritization scheme for completion of seismic risk evaluations. The NRC understood, through collaborative efforts with the industry, that there are not enough seismic risk analysis experts to allow all U.S. reactors to be analyzed simultaneously. Therefore, the NRC has prioritized the assessments and related submittals such that those plants that may be most affected by revised seismic hazard information are first to be analyzed. The NRC continues to interact with stakeholders to understand potential challenges with expert resources and will evaluate and adapt to future issues if they arise. The nuclear industry has formed working groups for routine interactions with the NRC staff and a steering committee to interface with the NRC's Japan Lessons Learned Steering Committee. Industry executives and other stakeholders are also routinely invited to meetings with the Commission. The industry can and has raised resource issues with the NRC using all of these avenues of communication.

QUESTION 5.c

c. What is more important – the successful resolution and disposition of all post-tsunami action items or the completing them within the 5-year time frame that seems to have been established without assessment of the staffs’ or the industry’s capacity to bring resources to bear on them with proper focus? If you believe that 5 years is proper as a timeframe, please provide specific analysis and data you used to reach that determination.

ANSWER:

The NRC established goals to complete those issues identified as Tier 1 within the 5-year time frame you mention in your question. The NRC thought such goals were appropriate based on the typical timelines to complete regulatory actions. In addition, it was important to establish such goals and to incorporate them into our activities to ensure no unnecessary delays in the initiation and implementation of the most important of the safety improvements identified following the Fukushima accident. However, the focus of the agency is to ensure that issues are successfully resolved. As mentioned in the questions and responses above, various communication channels are in place to discuss the Fukushima-related activities and associated schedules to make sure that both the NRC’s and licensees’ resources are being dedicated appropriately. The project plans for the Tier 3 items are described in the staff’s July 2012 update to the Commission (SECY-12-0095). The NRC staff is initiating discussions with the nuclear industry and other stakeholders on these project plans and these discussions will include the proposed schedules, availability of resources, and other issues to ensure efforts to improve safety are carried out as effectively and efficiently as possible.

QUESTION 6.a

The previous Chairman indicated publically that he equated industry concerns over cumulative effects of imposing new requirements as meaning “costs.” Yet the industry has demonstrated leadership on the part of the operators of the facilities, INPO, and NEI in responding to the lessons of the tsunami.

a. Does the NRC consider cumulative impacts in making decisions on resource allocation shifts that respond to new workloads?

ANSWER:

The NRC staff recently proposed action to implement rulemaking process enhancements to address the Cumulative Effects of Regulation (CER) following a policy paper to the Commission and the resulting Commission direction.

As established by the CER process enhancements proposed by the NRC staff, the *Federal Register* notices for CER-applicable proposed rules would contain questions on cumulative effects. Specifically, those questions would ask the public to respond whether the proposed requirements are impacted by resource constraints. In addition to those questions, the CER process enhancements stress public interaction during all phases of the rulemaking process. In order for CER to be successful, the nuclear power industry and members of the public, must be engaged throughout those interactions to provide NRC information on resource constraints that should be accounted for in the final rulemaking action. Once identified, the NRC can consider creating implementation schedules that account for the availability of resources.

QUESTION 6.b

b. Do you believe there is an appropriate role for the industry and the staff to discuss and identify the resource allocation and, importantly, the focus shifts that new tasks create? Isn't this particularly wise when initiatives beyond Tier One have already been identified as having lesser safety impact than those under way and factor into the timeframes allowed to complete them?

ANSWER:

Yes, there is an appropriate role for the industry and the staff to discuss and identify the resource allocation and the focus shifts that new tasks create. The nuclear industry has formed working groups for routine interactions with the NRC staff and a steering committee to interface with the NRC's Japan Lessons Learned Steering Committee. Industry executives are also invited to participate in public meetings with the Commission. The industry can and has raised resource issues with the NRC using all of these avenues of communication. The NRC will continue its interactions with the industry and other stakeholders to remain aware of resource constraints and to consider them in how work is prioritized and scheduled. The NRC must balance the need to ensure timely implementation of safety improvements with the practical limitations of available resources for both the agency and the industry.

QUESTION 7

With regard to emergency powers, the requirements of the law are clear and unambiguous, but the former Chairman introduced ambiguity. Have you delineated the specific actions expected of a Chairman or an Acting Chairman in the event that emergency powers are needed?

ANSWER:

Reorganization Plan No. 1 of 1980 sets forth the basic legal requirements regarding the Chairman's exercise of emergency functions. Section 3(a) of the Reorganization Plan transfers "to the Chairman all the functions vested in the Commission pertaining to an emergency concerning a particular facility or materials licensed or regulated by the Commission, including the functions of declaring, responding, issuing orders, determining specific policies, advising the civil authorities, and the public, directing, and coordinating actions relative to such emergency incident." Section 3(c) of the Reorganization Plan then provides: "To the maximum extent possible under the emergency conditions, the Chairman or other member of the Commission delegated authority [to exercise emergency powers], shall inform the Commission of actions taken relative to the emergency." Section 3(d) also states that "[f]ollowing the conclusion of the emergency, the Chairman [or other Commissioner to whom emergency authority was delegated] shall render a complete and timely report to the Commission on the actions taken during the emergency."

If it becomes necessary during my chairmanship to declare an emergency and invoke the use of emergency powers, I will notify my Commission colleagues immediately. Throughout the duration of such an emergency event, I will make every effort, as emergency conditions allow, to keep my Commission colleagues informed as the agency's response unfolds and utilize their

expertise when assessing potential emergency-response actions. Once I have ceased exercising my emergency authority, I will promptly notify them and provide a complete and timely report. I would expect any Acting Chairman I designate to do the same.

QUESTION 8

An ambitious schedule has been set for addressing the deficiencies found by the Court in the Waste Confidence rule. You also indicate that you will be reallocating resources to support this schedule. We applaud your intent but there are several concerns that need to be explored.

There are important efforts on-going within the Agency and other renewed efforts pending the resolution of other Court cases and pending decision by DOE in the near term. The Court case is the decision that is pending regarding expenditure of remaining funds on the Yucca Mountain application. The DOE initiatives are plans the Department and the Administration may adopt pursuant to the recommendations of the Blue Ribbon Commission (BRC). Also DOE intends to announce the selection of two applicants for awards for small modular reactor (SMR) development.

- a. Can you assure us that funds and resources that remain for the Yucca Mountain application cannot and will not be diverted to the Waste Confidence rulemaking?**
- b. Can you assure us that funds and resources that would be used for SMR development, especially for the selectees of the FOA program, are preserved?**
- c. Can you assure us that you will be able to support the administrative actions the Department will make from its program resulting from the BRC recommendations as they concern Consolidated Fuel Storage?**

- d. Can you assure us that you are putting safeguards and performance measures in place as you reallocate resources to preclude an agency-wide delay in regulatory and licensing matters that will be attributed to the Waste Confidence undertaking?**
- e. Can you assure us that safety and inspection programs will continue to be robust?**
- f. And finally, can you assure us that your task in fixing these deficiencies gives you appreciation for the reality of the management challenge of cumulative effects?**

ANSWER:

a. Funds that Congress appropriated to the NRC in recent years from the Nuclear Waste Fund were specifically for the purpose of funding the NRC's review of the Yucca Mountain application. Because federal law requires agencies to apply appropriations "only to the objects for which the appropriations were made," 31 U.S.C. § 1301, the NRC's remaining unobligated balance of these funds cannot and will not be diverted to the Waste Confidence rulemaking or be used for any other purpose. The NRC suspended the Yucca Mountain licensing proceeding on September 30, 2011, and has not made any carryover funding from the Nuclear Waste Fund available for obligation through the NRC's administrative control of funds process after that date. The Waste Confidence rulemaking is being funded from NRC's regular appropriations.

b. Over the last four years, the NRC has been taking steps to make certain we are fully prepared to undertake the review of licensing applications for the Small Modular Reactor designs. We have tailored our program to be responsive to the applications that we reasonably

can expect to receive, and our budget requests have been consistent with our program development. We fully expect to execute these licensing review activities consistent with our budget requests, modified only by the actual submittal schedules from the vendors.

c. The NRC is coordinating closely with the U.S. Department of Energy to ensure that we are aware of any actions it plans to take in response to BRC recommendations. NRC reviewed and approved the license application for Private Fuel Storage (a planned but not constructed consolidated spent fuel storage facility) and is confident that the lessons learned during this extensive review effort can be applied to the review of any Consolidated Spent Fuel Storage site. The NRC's basic regulations, guidance, and regulatory infrastructure are in place and can be used to accommodate the potential national policy changes related to BRC recommendations for centralized storage.

d. The Commission, in an order issued on August 7, 2012, stated that it would not issue licenses dependent upon the Waste Confidence rule until the Court's remand is appropriately addressed. Although the issuance of final licenses may be delayed in some instances because of the DC Circuit's decision, the resources devoted to addressing the Waste Confidence Rulemaking in response to the Court decision should not impact other agency regulatory and licensing efforts.

e. Safety licensing and inspection programs are two of NRC's major activities. The NRC will maintain licensing and inspection program performance consistent with the agency's mission.

f. The NRC takes seriously the management challenges posed by cumulative effects of regulations (CER). NRC has implemented, and continues to consider additional changes to agency rulemaking practices to address CER concerns.

QUESTION 9

What is your view as to the adequacy of the time afforded to licensees to comply with the initial set of post-Fukushima orders?

a. Do you have concerns that the cumulative effects of complying with those orders by the times established could distract licensees from other important safety issues?

ANSWER:

The Commission and NRC staff carefully considered the required timeframes associated with implementing the post-Fukushima orders before they were issued. Public and industry input was a significant part of this process. The NRC must balance the need to require implementation of safety improvements in a reasonable timeframe with consideration of the impact on resources. As a safety regulator, the NRC considered the time afforded to licensees to comply with the post-Fukushima orders to be reasonable and fair, but the NRC would be concerned if presented with evidence that licensees were being distracted from other important safety issues. For potential future actions, the NRC will again engage stakeholders to understand potential impacts and use those considerations to inform the decision-making process.

QUESTION 10

My understanding is that NRC licensees meet adequate protection for fire protection. Would you like to expand on how the NRC approves, reviews, and monitors licensee plans and performance?

ANSWER:

The NRC has separate processes for approving changes to nuclear power plants' licensing bases and monitoring the performance of nuclear power plants. The licensing basis of the plant is established through the initial licensing process and is subsequently modified as necessary through orders, license amendments, and license conditions. Changes to a plant's licensing basis requiring NRC review and approval are typically submitted to the NRC in the form of a license amendment request. Alternatively, changes to the licensing basis can be made through a request for an exemption from compliance with the NRC's regulations, which may be approved through a process separate from the license amendment process. Under NRC regulations, the Commission may grant exemptions that are authorized by law, will not present an undue risk to the public health and safety, and are consistent with the common defense and security. The Commission will not consider granting an exemption unless special circumstances, described in 10 CFR 50.12(a)(2), are present.

In addition to the day-to-day monitoring by the Resident Inspectors, the NRC monitors licensee performance for nuclear power plants through the NRC's Reactor Oversight Process. The Reactor Oversight Process uses a variety of tools to monitor and evaluate the performance of commercial nuclear power plants. The process is designed to focus on those plant activities most important to safety. In the fire protection area, the Reactor

Oversight Process relies on the results of quarterly, annual, and triennial fire protection inspections of nuclear plants and other indicators of plant performance.

QUESTION 11

What are some examples for the reasons behind giving fire protection exemptions?

ANSWER:

During the development of the Fire Protection Rule (10 CFR 50.48), the NRC staff acknowledged that exemptions from the regulations would be necessary for a number of reasons. A common exemption concerns a section of the regulation (10 CFR 50, Appendix R, Section III.G.3.b) that requires the installation of fixed fire suppression capability in a plant's main control room, which is classified as an alternative shutdown area. In this case, the staff determined that, because the control room was continually staffed and the inadvertent operation of such a system could complicate plant shutdown, plants could be exempted from this requirement. The NRC will not grant an exemption unless it concludes that there is no undue risk to public health and safety.

A listing of all exemptions is publicly available through the NRC's Web site.

QUESTION 12

If compensatory measures for fire protection are utilized, are these measures adequate to protect health and safety?

ANSWER:

The NRC has concluded that appropriate compensatory measures provide adequate protection to ensure the health and safety of the public. All U.S. nuclear power plant licensees are approved to use compensatory measures when fire protection equipment is out of service or in the interim while a violation of regulations is being corrected.

When a licensee is using compensatory measures, NRC inspectors verify the adequacy of those measures and ensure that the measures are maintained until compliance is restored.