Member Requests for the Record from Representative Steve Scalise

Question. **I don't know how anyone can look at this slide and dismiss the cumulative impact of regulations as merely a matter of scheduling, and I am told that, in addition to this, there are approximately 40 more post-Fukushima items yet to be considered. Is that correct?**

ANSWER.

The original Near Term Task Force report, from which most post-Fukushima items originated, contained a total of 12 overarching recommendations regarding potential improvements to the regulation and oversight of nuclear power plants in the U.S. Many of these recommendations had subparts, which focused on improved accident mitigation strategies for beyond design basis external hazards, spent fuel pool instrumentation, hardened containment venting systems for boiling water reactors with Mark I and Mark II containments, confirming compliance with seismic and flooding design bases, reevaluating seismic and flooding hazard assumptions, and assessing staffing and communications capabilities during extended station blackout and multi-unit events.

Counting each subpart, there were 35 total recommendations for proposed action. In its evaluation and implementation of these recommendations, the Nuclear Regulatory Commission (NRC) has recognized that many of these proposed actions can be consolidated and addressed by a single action. For example, the Mitigating Strategies Order issued in March 2012, when fully implemented, is expected to address at least seven subparts of various overarching recommendations.

The NRC continues to review and evaluate the remaining post-Fukushima items to determine if there is a sound technical basis to take additional regulatory action. The NRC staff issued its detailed plans for further evaluation of these items in a July 13, 2012, status paper to the

Commission, and issued its latest update on these activities in a February 14, 2013 information paper to the Commission.

The main focus of the NRC's efforts to address the cumulative effects of regulation (CER) is less a matter of scheduling and more one of ensuring that called for actions to promote safety actually are needed and do not inadvertently distract licensees from executing other fundamental safety or security responsibilities. The NRC developed the following definition for the cumulative effects of regulation (CER):

> CER describes the challenges that licensees, or other impacted entities (such as State partners) face while implementing new regulatory positions, programs, or requirements (e.g., rules, generic letters, backfits, inspections). CER is an organizational effectiveness challenge that results from a licensee or impacted entity implementing a number of complex regulatory positions, programs or requirements within a limited implementation period and with available resources (which may include limited available expertise to address a specific issue). CER can potentially distract licensee or entity staff from executing other primary duties that ensure safety or security.

In order to address CER, the NRC added procedures to its rulemaking process to provide licensees and other impacted entities an opportunity to inform the NRC of the impacts of proposed rules before they are finalized and implemented. To provide this opportunity, the NRC increased public participation throughout all phases of the rulemaking process, including by seeking specific public comments on CER when proposed rules are published for comment, and by holding a public meeting on implementation during the final rule stage. The NRC also added publishing draft guidance with proposed rules -- and final guidance with final rules -- to its

rulemaking process. The goal of these additional procedures is to identify any resource constraints early in the rulemaking process, reduce the likelihood of unintended consequences, and improve focus on safety-beneficial activities. While these additional CER-related rulemaking procedures may reduce, or even in some cases eliminate rulemaking actions, such eliminations or reductions are not in this respect a principal objective of CER.

The NRC continues to examine the additional procedures put in place to address CER. Last month, the Commission directed the staff to prepare a report due in March 2015 on the effectiveness of the CER process and its implementation status. The Commission also directed the staff to:

- Develop and implement outreach tools that will allow NRC to consider more completely the overall impacts of multiple rules, orders, generic communications, advisories, and other regulatory actions on licensees and their ability to focus effectively on items of greatest safety import.
- Seek volunteer facilities to perform "case studies" to review the accuracy of cost and schedule estimates used in NRC's regulatory analysis
- Carefully monitor the CER approach to ensure that no significant unintended consequences result from the direction provided

As the agency evaluates potential additional regulatory activities, actions planned or already taken will be accounted for in future decisions. For example, the Commission is currently considering a March 27, 2013, staff proposal to change the implementation plans for some additional emergency preparedness recommendations because their intent is being adequately addressed through the implementation of the Orders on mitigating strategies that were issued in March 2012.

Member Requests for the Record from Representative Bobby Rush:

Question. **Can you provide this committee with more information on programs, what forms of support the NRC provides to these HBCUs and do you think that these types of programs can be replicated at other agencies?**

ANSWER.

NRC's assistance to Historically Black Colleges and Universities (HBCUs) during FY 2012 included: 1) grant awards to three HBCUs (faculty, student and curriculum development) through NRC's Nuclear Education Grants Program; 2) interactions by NRC's University Champions with school representatives to discuss agency priorities, funding, and program opportunities; and 3) a broad range of support and funding provided through the agency's Minority Serving Institutions Program.

The Minority Serving Institutions Program assists institutions including HBCUs to: 1) achieve academic excellence; 2) build capability, capacity and infrastructure; 3) develop human capital (faculty and students); 4) gain knowledge and skills needed to effectively compete for grants, cooperative agreements, contracts, and resources; 5) participate in Federal and public programs; and 6) create a diverse skilled science, technology, engineering, and mathematics (STEM) pipeline. Since its inception in 2006, the Minority Serving Institutions Program has awarded over $13 million in grants for capacity and infrastructure building, research projects, training, developmental and experiential learning, leadership, mentoring, internships, scholarships, fellowships, tuition, lodging, and other assistance. For four consecutive years, the Accreditation Board for Engineering and Technology has recognized the NRC as a "Top Supporter of HBCUs."

Additionally, there is a Minority Serving Institutions Program HBCU Research and Development (R&D) Participation program that supports mission-related research on campuses and at Federal laboratories. This program provides experiences in engineering, risk assessment, emergency preparedness, environmental assessment, information technology and management, geotechnical fields, health physics, mathematics/ statistics, materials science, and fire protection. The R&D Participation program provides participants stipends, sabbatical leave, and on- campus appointments. The program funds college sponsored STEM programs, which serve Pre-K through college students, teachers, guidance counselors, administrators, education leaders, and researchers. Over the last three years, 500 plus K-12 faculty and students have been served by HBCU faculty researchers. Over the last four years, 432 appointments were made (125 faculty and 307 students). The R&D Participation program served 80 HBCUs, 92 high schools, and five middle schools from 44 states. In FY12, NRC's Minority Serving Institutions Program awarded $1,343,326 to HBCUs to conduct STEM-related programs and activities, and $269K through the R&D Participation program.

The NRC believes that this type of Minority Serving Institutions Program may be replicated at other agencies, with the appropriate level of commitment, necessary knowledge and skills, and sufficient resources. The NRC's Minority Serving Institutions Program has been viewed as a model program for developing a workforce skilled in science, technology, engineering, and mathematics, and for diversity inclusion initiatives.

Questions from Representative Ed Whitfield

QUESTION 1. **In our hearing last July, Commissioner Magwood referred to the post-Fukushima actions the Commission approved on March 9, 2012, and stated: "We still have much work to do but the steps taken thus far represent a very significant increase in safety based on the Fukushima experience."**

a) Has any effort been made to account for the increase in safety inherent in those actions?

b) Shouldn't this new, higher level of safety provide the threshold against which the benefits of any future actions should be analyzed?

ANSWER.

a) Yes, the NRC accounts for actions already taken as well as those planned, in evaluating regulatory decisions regarding post-Fukushima actions. The Commission approved two actions taken in March of 2012 on the basis of ensuring adequate protection of the health and safety of the public. Site-specific studies would be needed to quantify the increase in safety for each individual reactor, but the Commission qualitatively considered the significant safety benefit that would be gained from these actions if an extreme external event were to cause challenges at a reactor in the United States similar to that at Fukushima.

b) The Commission will consider the safety benefit of any future post-Fukushima actions. Included in these considerations would be any cost/benefit analyses required by NRC regulations.

QUESTION 2. **I understand that there are several domestic companies developing small modular reactors (SMRs) that have engaged NRC staff about design certification activities. Which designs have been endorsed by potential license applicants who have written to the NRC indicting their intent to build such a design?**

a. Does the NRC currently have adequate staff resources to address its small reactor licensing work?

b. If the NRC is faced with limited resources for licensing activities, how will the NRC prioritize its licensing efforts with regard to small reactors?

c. Please provide the status of the NRC's progress on aligning the existing regulatory framework developed primarily for large light water reactors with that needed for SMR technologies including any issues that might require rulemaking.

ANSWER.

The NRC annually publishes a Regulatory Information Summary to request information from industry about plans to submit design certification applications and license applications. Industry responses to the NRC's December 2012 request indicate that four domestic companies plan to submit design certification applications to the NRC for small modular light water reactor designs. Those companies are B&W mPower™, NuScale, Westinghouse, and Holtec. Two utilities responded expressing their intent to submit license applications. They are the Tennessee Valley Authority referencing the mPower™ design to be constructed at the Clinch River site in Tennessee, and Ameren referencing the Westinghouse design to be constructed at

the Callaway site in Missouri. There are also some companies, both foreign and domestic, that have informed the NRC of plans to submit design certification applications and various license applications for non-light water designs. These include Toshiba for its liquid sodium cooled reactor, the 4S, and STL, a South African company, for its pebble bed high temperature gas cooled reactor. Finally, the Next Generation Nuclear Plant Alliance, a consortium of domestic and foreign companies, has informed us of its plans to submit a construction permit application for a high-temperature gas-cooled reactor based on the Areva design.

a. The NRC's FY 2013 budget and FY2014 budget requests were predicated on conducting reviews of two small modular reactor designs that use light water reactor technology. However, neither the current budget nor the FY2014 budget request would support all of the work that has been identified. In addition to NRC staff resources, the agency had planned to rely on contractor support for parts of the reviews. However, impacts from budget sequestration, which result in reductions to contractor support, will challenge the ability of the NRC to move forward on these projects.

b. The NRC's budget for new reactor licensing activities accommodates licensing and design certification for both large reactor and small modular reactor designs. The NRC prioritizes the full range of new reactor work (large and small designs) to the extent budgeted resources are available. Within this larger context, NRC will prioritize the small modular reactor review work to first support the projects selected by the Department of Energy (DOE) through its SMR Licensing Technical Support Program.

c. The NRC's existing regulatory framework is appropriate for reviewing the small modular light water reactor designs and license applications. Through pre-application activities, principally with mPower™ and NuScale, design-specific review guidance is being developed by the NRC to facilitate review of these designs and their unique features. These design-specific

review standards are supplemented by NRC's continuing effort to maintain and update its Standard Review Plan.

Based on responses received to the December 2012 Regulatory Information Summary that indicate that some entities plan to submit design certification applications for non-light water reactor technologies, the NRC has identified approaches that could be implemented to support the review of these "advanced non-light water reactor" designs. Last year, in response to a request from Congress, the NRC staff prepared a document entitled "Report to Congress: Advanced Reactor Licensing", which details the NRC's efforts and plans regarding advanced reactors. The Commission transmitted this report to Congress on August 22, 2012.

Questions from Representative John Shimkus

QUESTION 1. **I understand the NRC is analyzing the safety of using dry cask storage for extended periods of time. What is the time frame currently being analyzed?**

a. Is the NRC considering a requirement that Independent Spent Fuel Storage Installations maintain or reinstate the capability to repackage dry cask storage canisters?

ANSWER.

The NRC is examining the technical needs and potential changes to the regulatory framework that may be needed to continue licensing of spent nuclear fuel storage beyond the initial and first renewal licensing periods. In May 2012, the NRC issued for public comment a report on identifying and prioritizing the technical information needs affecting potential regulation of extended storage and transportation of spent nuclear fuel. This report noted that, for this evaluation, the NRC has considered performance of the storage systems over an initial 300 year period following removal of the spent nuclear fuel from the reactor. The NRC staff selected the long analytical period in order to capture potential effects of relatively slow-acting degradation processes.

The NRC is not currently considering a requirement that Independent Spent Fuel Storage Installations maintain or reinstate the capability to repackage dry cask storage canisters.

QUESTION 2. **In Finding #2 of the Commission's 2010 waste confidence determination, the NRC found that a repository would be available "when necessary". The court vacated the NRC's determination, and now the Commission is forced to initiate a new waste confidence proceeding.**

a) **Since the scope of the NRC waste confidence proceeding seems focused on environmental impact issues, how will you gather evidence to support Finding 2, which addresses repository availability, not environmental impact?**

b) **Will DOE provide evidence for the record on its plans for a repository?**

c) **Without evidence from DOE, what sort of evidence do you think would support a repository availability finding?**

d) **In vacating the NRC's Waste Confidence rule, the court directed the NRC to examine the environmental impact if a repository is never available and the period of storage on site is indefinite. Isn't the Finding #2 determination of repository availability a necessary element of determining the time period to be examined by the environmental impact statement?**

e) **To what extent will the Commission consider the "No Action" alternative documented in the Yucca Mountain Environmental Impact Statement?**

ANSWER.

a. Consistent with the National Environmental Policy Act, the NRC will make reasonable assumptions regarding the availability of a repository. The NRC's reasonable assumptions will include an assessment of repository availability within 60 years beyond the licensed life for operation of the reactor, within 160 years beyond the licensed life for operation of the reactor, and indefinite storage (i.e., a repository is never available). The information that the NRC is considering in the generic environmental impact statement includes international and domestic experience in siting a geologic repository, the January 2013 DOE report, "Strategy for the Management and Disposal of Used Nuclear Fuel and High-Level Radioactive Waste," and the 2012 report of the Blue Ribbon Commission on America's Nuclear Future.

b. In January 2013, DOE published its "Strategy for the Management and Disposal of Used Nuclear Fuel and High-Level Radioactive Waste," which will be used as part of the analysis in the generic environmental impact statement that will support the updated Waste Confidence Rule. The DOE Strategy Report states that it is the Administration's goal to have a repository sited by 2026, licensed by 2042, and constructed and open by 2048. The NRC also plans to consider other publicly available information.

c. The generic environmental impact statement will make a number of reasonable assumptions regarding repository availability. In addition to the DOE's recently published "Strategy for the Management and Disposal of Used Nuclear Fuel and High-Level Radioactive Waste" (January 2013), the NRC will rely on a variety of information and analyses to support any conclusion on repository availability. This information includes international and domestic experience in siting a geologic repository and the 2012 report of the Blue Ribbon Commission on America's Nuclear Future.

d. The Finding #2 determination of repository availability is not a necessary element of determining the time period to be examined by the environmental impact statement. The NRC is planning to analyze three scenarios in the environmental impact statement. These scenarios are the short-term period of continued storage (a repository available after 60 years), a long-term period of continued storage (repository available after 160 years), and indefinite storage (a repository is never available). The environmental impact statement will determine the impacts of continued storage for each of the scenarios.

e. The Commission, in its staff requirements memorandum of September 6, 2012, directed the NRC staff to adopt or incorporate by reference, as appropriate, all or part of other agencies' EISs in the Waste Confidence generic environmental impact statement. A specific example given by the Commission was the Yucca Mountain Environmental Impact Statement "no-action" alternative.

Questions from Representative Joe Barton

In the response to this Committee's January 15, 2013 letter regarding filtered vents, the NRC failed to answer the question of when it will conduct a full review of the regulatory differences between the U. S. and Japan that existed at the time of the accident, indicating that it has limited such review to merely three issues: station blackout protections, hydrogen control, and transferring spent fuel from pools to casks. Furthermore, the NRC response stated that the U. S. and Japan have "similar approaches to safety, including defense-in-depth protections." Such an inadequate response generates more questions than answers. Please respond to the following:

QUESTION 1. **When will the Commission conduct a full review of the regulatory differences between the U.S. and Japan that existed at the time of the accident?**

ANSWER.

Within the U. S., nuclear power plant operations are conducted in accordance with NRC regulations, informed by NRC guidance documents and industry guidance and initiatives, and controlled by programs developed by each licensee. The NRC is assessing all of these elements as we continue to more fully understand the Fukushima accident and its implications for the U. S. nuclear power plants. These assessments continue to be documented in various reports and papers generated by the agency.

The Commission recently directed the NRC staff to document its comparison of U.S. and Japanese regulatory requirements that were in effect at the time of the accident, focusing on those areas most relevant to the sequence of events and accident mitigation capabilities at Fukushima. The Commission indicated that the staff's documentation should describe how those differences were factored into post-Fukushima actions taken by the NRC.

The NRC routinely considers international operating experience within our regulatory processes and has done targeted comparisons of U.S. requirements against those of Japan and other countries to enhance our understanding of the events at Fukushima Dai-ichi or help identify lessons learned from the Fukushima accident.

The assessments performed by the NRC and other regulatory bodies around the world have highlighted that there are lessons to be learned regardless of the regulatory program in place. The NRC staff's lessons-learned include the need to consider multi-unit accident scenarios; have adequate staffing and communication capabilities during an emergency of this type; have spent fuel pool instrumentation for real-time monitoring of water levels; consider enhanced protection against extreme natural hazards; and be prepared for prolonged station black-outs.

The NRC's discussions with its international regulatory counterparts, and comparisons of our respective implementation strategies, suggests that safety regulatory bodies are coming to similar conclusions. The NRC is participating in conferences and meetings convened by the International Atomic Energy Agency and other organizations to continue to communicate regarding lessons learned. All of this outreach has informed the staff's efforts and reinforced that we have identified appropriate lessons learned.

QUESTION 2. **If the Commission believes the U.S. and Japan have similar approaches to safety, including defense-in-depth protections, does it also believe we face a similar risk for a Fukushima-like accident? If not, please describe any and all nuclear safety differences between the U.S. and Japan as existed in Japan at the time of the Fukushima accident including but not limited to, each of the following:**

a. **A fully independent and transparent regulatory agency**

b. **The design basis process for siting and constructing nuclear plants including data and assumptions used as underpinnings for the design basis**

c. **Operator training and licensing**

d. **Emergency preparedness and response including communications, training, government interface**

e. **Control room habitability**

f. **Station blackout protections**

g. **Safety culture including a safety-conscious work environment and corrective action program**

h. **Supplemental emergency equipment similar the NRC's B.5.b requirements**

i. **Severe accident preparation including training, manuals, equipment inspections and maintenance**

j. Seismic and flooding requirements

ANSWER.

The NRC Near Term Task Force report issued in July 2011 concluded that an event similar to the Fukushima accident was not likely to occur at U.S. plants. However, the NRC recognized that we could learn from the event and make appropriate safety enhancements at U.S. plants by reviewing the course of events that resulted in the Fukushima Dai-ichi accident, and we are currently taking appropriate regulatory action to implement those safety enhancements.

As described in the answer to Question 1, the Commission recently directed the NRC staff to document its comparison of U.S. and Japanese regulatory requirements that were in effect at the time of the accident, focusing on those areas most relevant to the sequence of events and accident mitigation capabilities at Fukushima. We expect that the staff's comparison will address most or all of the items described in parts (a) through (j) of your question. We will submit the staff's comparison to the Committee when it is completed.

QUESTION 3. **Was the Japanese Diet report incorrect when it stated that Japan had not fully incorporated the defense-in-depth philosophy? If yes, please explain.**

ANSWER.

The Commission respects the conclusions of the Japanese Diet report, has no basis to disagree with any of them in relation to Japan's regulatory needs, and has taken the Diet's report conclusions into account when considering whether changes should be made to NRC regulatory programs.

As additional background, the Japanese Diet report refers to a defense-in-depth framework prepared by the International Atomic Energy Agency, which includes five levels of defense. The first three levels generally relate to the protection against traditional design-basis events associated with both plant malfunctions and external hazards. The plant equipment and procedures to protect against these design-basis events in Japan are similar to that required in the U.S. and other countries. The fourth level of defense in depth in the IAEA framework is intended to provide protection against beyond-design-basis events such as the unexpected failure of multiple-plant systems or an external event exceeding the design-basis values (e.g., the tsunami flooding the Fukushima site). The fifth level of defense in the IAEA framework is associated with offsite emergency preparedness.

It is within the fourth level of defense that some countries had imposed requirements beyond those in place in Japan at the time of the accident. As mentioned in the NRC's near term task force report, U.S. plants had put in place severe accident management guidelines and mitigating strategies for the loss of large areas due to fires or explosions, both of which might have helped operators deal with beyond-design-basis external events. Many of the actions taken by the NRC, as well as the new Japanese Nuclear Regulatory Authority and other

international regulators, have focused on this fourth level of defense by providing additional improvements to nuclear plant capabilities to deal with these beyond-design-basis external hazards and the related losses of electrical power.

Regarding the fifth level of defense, lessons learned from the Fukushima accident related to emergency preparedness are also being evaluated, with improvements being pursued in the U.S., Japan, and other countries.

Questions from Representative John D. Dingell

QUESTION 1. **As you know, the Yucca Mountain facility remains unused yet we are still generating nuclear waste at facilities across the country. Has the Commission considered whether the D.C. Circuit Court's 2012 decision and the lack of a permanent storage facility will affect the continuation of existing licenses or possibly invalidate them? Please answer yes or no.**

ANSWER.

Yes, the Commission has considered whether the D.C. Circuit Court's 2012 vacatur and remand of the 2010 update to the Waste Confidence Rule invalidates or otherwise affects the continuation of licenses that the NRC issued prior to the court's decision. Under the National Environmental Policy Act (NEPA), an agency need not revisit or invalidate a past, final decision like a license issuance or a license renewal when new information emerges after the agency has made a final decision. As a result, the Commission has not revoked, suspended, or amended existing licenses.

Further, the Commission considered the effects of the court's decision on ongoing licensing reviews. In an August 7, 2012 Commission Order, the Commission stated that it would not issue reactor or independent spent fuel storage installation licenses dependent upon the Waste Confidence Decision or the Temporary Storage Rule until the court's remand is appropriately addressed. The Commission stated, however, that this determination extends only to final license issuance, and that all licensing review work and proceedings should continue to move forward, short of a final decision on license issuance.

Regarding the current lack of a repository for spent nuclear fuel, the D.C. Circuit found that the NRC must consider a "no-repository" scenario in its NEPA analysis for Waste Confidence. The

NRC has stated publicly that it will consider a no-repository scenario in the generic environmental impact statement that it plans to issue to support an updated Waste Confidence Rule. By September 2013, the NRC plans to issue for public comment the draft generic environmental impact statement and proposed update to the Waste Confidence Rule.

QUESTION 2. **In addition to nuclear facilities and the computer infrastructures that support them, nuclear facilities could potentially be disrupted through off site attacks such as at the mines that produce fuel or companies that manufacture parts. If reactor fuel, parts, equipment, or other products are qualified to come on site, should the Commission have jurisdiction or input over cyber or physical protection before it comes on site?**

ANSWER.

The NRC has sufficient jurisdiction over the materials and components that enter NRC-licensed facilities to provide reasonable assurance of adequate protection of public health and safety and common defense and security under the Atomic Energy Act of 1954, as amended, and the Energy Reorganization Act of 1974. The NRC has also consistently asserted its jurisdiction over a broad range of activities throughout the nuclear fuel cycle and throughout the component manufacturing process in an effort to maintain the integrity of materials and components that can impact safety and security. In addition, the NRC and the U.S. Department of Transportation have transportation requirements to ensure safe and secure shipments of material from one facility to another.

More specifically, with regard to cyber and physical protection, the NRC implements a rigorous oversight program based on the licensees' approved physical and cyber security plans, which comply with NRC regulations for physical protection of plants and materials. Among other things, these plans require licensees to inspect the contents of all deliveries. In addition, NRC inspections are conducted to ensure that licensees are performing in accordance with their approved plans. The NRC's broader oversight program includes routine inspections, interviewing licensee staff, performing exercises, assessing overall performance, participating in working groups with industry for information sharing, and intelligence networks.

Additionally, the NRC regulations emphasize that the licensees are ultimately responsible for buying from qualified vendors and for the integrity and compliance of all materials brought onsite. As part of the NRC's oversight program, the NRC periodically inspects vendors that produce parts and equipment for operating and new reactor facilities to ensure that the licensees are adhering to our requirements for vendor oversight and to ensure those requirements remain current and adequate.

QUESTION 3. **The Fukushima disaster obviously gave us a lot to think about when it comes to nuclear energy and the Commission has put considerable thought into this matter. However, in a recent letter to the Commission, I joined my committee colleague, Mr. Barrow, and others, to express concern about a pending decision that may require a significant number of nuclear facilities to install containment filtered vents. The concern is that it may not be appropriate for the facilities your decision may affect. Due to the differences in the affected reactors, would a case-by-case evaluation provide greater certainty that the best technologies are being used rather than a broad approach such as the filtered vent proposal?**

a. In regards to other Fukushima recommendations already put into place, please explain why these were issued as orders and not through the rulemaking process.

ANSWER.

This matter was still pending at the time of the hearing and a decision regarding installation of filters on containment vents has since been made. On March 19, 2013, the Commission directed the staff to amend a March 2012 Order to require that containment vents be capable of operation during a severe accident (i.e., after reactor core melting begins). In addition, the Commission directed the staff to initiate a rulemaking to look at a variety of additional strategies that could reduce the potential release of radioactive material during a severe accident including, but not limited to, containment filters. This rulemaking will also examine how to best assure the integrity of the reactor containments during severe accidents. This rulemaking effort, including the time to evaluate additional strategies, is expected to take about four years.

a. In March 2012, the Commission issued three Orders, two of which were based upon ensuring adequate protection of the health and safety of the public, because the Commission believed that the safety improvements to be gained from the Orders should be achieved more immediately than the rulemaking process could accommodate. Although the NRC did not go through the rulemaking process, the NRC staff engaged a range of stakeholders during development of the Orders. We expect that rulemaking will be undertaken in the future to incorporate these Orders into regulations.

QUESTION 4. **Last year I submitted a question to Chairman Macfarlane in regards to the status of an application by Aerotest Operations for an indirect license transfer to Nuclear Labyrinth. In your written response, you indicated that the Commission would request additional information from Aerotest. It is my understanding that the additional information was submitted by Aerotest last month. Does Commission anticipate requesting additional information from Aerotest?**

a. What is the Commission's anticipated timeline to make a final decision on the application?

ANSWER.

On January 10, 2013, Aerotest Operations and Nuclear Labyrinth submitted responses to the requests for additional information. The NRC staff is reviewing these responses and, at this time, does not anticipate requesting more information.

a. The NRC staff is performing a review of the indirect license transfer application and all responses to the requests for additional information to determine if the transfer application meets the requirements of the regulations. Consistent with the established schedule of a six to eight month review time following the receipt of all required information, the NRC staff plans to make a final decision by the end of June 2013.

Questions from Representative Lois Capps

QUESTION 1. **My constituents are concerned by the lack of progress on implementing a long-term storage solution for the spent fuel at Diablo Canyon. Chairman Macfarlane, what assurances can you provide my constituents that the NRC is committed to implementing a long-term solution for fuel storage?**

a. **If no long-term site can be identified, I'm concerned that San Luis Obispo and other communities will become de facto long-term storage sites. Has the NRC developed a plan for long-term storage of spent fuel at Diablo Canyon and other nuclear reactor sites?**

b. **If you are developing such a plan, will it strengthen current standards to ensure long term safety?**

ANSWER.

The U.S. Department of Energy (DOE) is the lead agency for implementing any changes to the national policy on nuclear waste management. The DOE released its *Strategy for the Management and Disposal of Used Nuclear Fuel and High-Level Radioactive Waste,* which provides the Administration's framework for implementing a long-term solution for fuel storage and disposal. The NRC is prepared to fulfill its regulatory role in assuring the continued safe management of spent nuclear fuel. Spent nuclear fuel is currently managed safely and securely under NRC oversight in both wet and dry storage at Diablo Canyon and other nuclear reactor sites. As the national policy evolves, the NRC's mission remains the same – to ensure the safe and secure use of radioactive materials while protecting people and the environment.

QUESTION 2. **Dr. Jeanne Harderbeck, a U.S. Geological Survey seismologist, recently published a peer-reviewed article in the Bulletin of the Seismology Society of America that raises numerous questions about the safety of the Shoreline Fault. Did the NRC consider Dr. Harderbeck's scientific findings in its analysis for "RIL 12-01 Confirmatory Analysis of Seismic hazard at the Diablo Canyon Power Plant from the Shoreline Fault Zone" (ML121230035)?**

a. If not, why not? And, if so, how did Dr. Harderbeck's findings affect the NRC's analysis

ANSWER.

The NRC's Research Information Letter (RIL) was made public in September 2012. This document used a deterministic approach to confirm that the seismic hazard (response spectrum) from the Shoreline Fault was still enveloped by the Hosgri Spectrum represented by the ground motion response spectrum previously used to evaluate Diablo Canyon's safety related structures, systems and components. Dr. Harderbeck's paper was published in February 2013. She used a specific algorithm (Optimal Anisotropic Dynamic Clustering) to infer and refine the geometry of the Shoreline Fault. Based on the study, she proposed that the two faults, Hosgri and Shoreline faults, may intersect each other at certain depth. She also estimated that the hypothetical earthquake associated with the Shoreline fault would be in the range of 6.4 to 6.8.

Although the RIL incorporated more or less the same Shoreline Fault model in terms of magnitude and geometry to estimate the seismic hazard at the Diablo Canyon site, it did not and could not consider some of Dr. Harderbeck's more recent views expressed in her paper published in the Bulletin of the Seismological Society of America because the RIL pre-dates the

paper. However, per NRC's Post-Fukushima seismic information letter request to all licensees, the Diablo Canyon licensee is currently reevaluating the seismic hazard at the site using the latest seismic source, ground motion prediction equations, and site response (all three seismic hazard components), based on the latest NRC regulatory requirements. The NRC staff believes that the views expressed in Dr. Harderbeck's paper will be fully considered by the experts involved in the seismic hazard reevaluation process.

Questions from Representative Doris O. Matsui

As you know, there are nine commercial shut down nuclear power plant sites in the U. S., including Rancho Seco owned by my hometown utility, the Sacramento Municipal Utility District. Although the spent fuel is monitored and well-guarded, and is not an immediate safety or security concern, the presence of spent fuel at these sites is costly and prevents the use of the site for economically productive uses that would benefit the community.

Because SMUD and the utilities that own the other shut down reactors are not able to move the spent fuel to a permanent storage site, I am supportive of the federal government moving it to interim storage facilities. We need interim storage with or without a permanent facility.

QUESTION 1. **Can you outline for me what challenges the Commission faces in moving spent fuel to interim storage?**

ANSWER.

The NRC has the regulatory infrastructure in place to license dry interim storage facilities and has licensed such a facility. The Department of Energy is the lead agency for implementing any changes to the national policy on nuclear waste management, which includes moving fuel to dry interim storage. This topic is addressed in the *Strategy for the Management and Disposal of Used Nuclear Fuel and High-Level Radioactive Waste* (January 2013), which provides the Administration's framework for implementing a long-term solution for fuel storage and disposal. As the national policy evolves, the NRC's mission remains the same – to ensure the safe and secure use of radioactive materials while protecting people and the environment.

QUESTION 2. **Do you believe that independent progress can be made on developing interim storage facilities even though we cannot currently reach a consensus on a permanent repository?**

ANSWER.

The Department of Energy is the lead agency for implementing any changes to the national policy on nuclear waste management, which includes moving fuel to dry interim storage. This topic is addressed in *Strategy for the Management and Disposal of Used Nuclear Fuel and High-Level Radioactive Waste* (January 2013), which provides the Administration's framework for implementing a long-term solution for fuel storage and disposal. The NRC is not responsible for implementing the national policy on nuclear waste management including development of interim storage facilities. Rather, the NRC's responsibility is independent licensing, regulation, and oversight of interim storage facilities. NRC is not responsible for site selection, but will consider the suitability of a site as part of the licensing process. The NRC has in place the appropriate regulatory framework to license and regulate future interim dry storage facilities.

I believe it makes sense to move spent nuclear fuel from decommissioned sites first and I hope we can start seeing progress made in this area. As we all know, the U. S. Court of Appeals for the D. C. Circuit is currently considering whether or not to order the NRC to resume consideration of the Yucca Mountain license application.

QUESTION 3. **Can you tell me what challenges the NRC or DOE would face if the federal court orders work to resume on Yucca? In particular do you see impediments to reacquiring the permits, or finding the personnel and knowledge base to resume where work was left off?**

ANSWER.

If the federal court directs NRC to resume work on the Yucca Mountain license application, the agency will comply, to the extent that funds are currently available. The NRC's principal challenge would be to reconstitute its review team with individuals from within and outside the Agency who possess the critical skills and knowledge base.