AUTHENTICATED
U.S. GOVERNMENT
INFORMATION
GPO

THE NUCLEAR REGULATORY COMMISSION: POLICY AND GOVERNANCE CHALLENGES

JOINT HEARING

BEFORE THE

SUBCOMMITTEE ON ENERGY AND POWER

AND THE

SUBCOMMITTEE ON ENVIRONMENT AND THE ECONOMY

OF THE

COMMITTEE ON ENERGY AND COMMERCE
HOUSE OF REPRESENTATIVES

ONE HUNDRED THIRTEENTH CONGRESS

FIRST SESSION

FEBRUARY 28, 2013

Serial No. 113–11

Printed for the use of the Committee on Energy and Commerce
energycommerce.house.gov

U.S. GOVERNMENT PRINTING OFFICE
80–376 WASHINGTON : 2013

For sale by the Superintendent of Documents, U.S. Government Printing Office
Internet: bookstore.gpo.gov Phone: toll free (866) 512–1800; DC area (202) 512–1800
Fax: (202) 512–2104 Mail: Stop IDCC, Washington, DC 20402–0001

COMMITTEE ON ENERGY AND COMMERCE

FRED UPTON, Michigan
Chairman

RALPH M. HALL, Texas
JOE BARTON, Texas
Chairman Emeritus
ED WHITFIELD, Kentucky
JOHN SHIMKUS, Illinois
JOSEPH R. PITTS, Pennsylvania
GREG WALDEN, Oregon
LEE TERRY, Nebraska
MIKE ROGERS, Michigan
TIM MURPHY, Pennsylvania
MICHAEL C. BURGESS, Texas
MARSHA BLACKBURN, Tennessee
Vice Chairman
PHIL GINGREY, Georgia
STEVE SCALISE, Louisiana
ROBERT E. LATTA, Ohio
CATHY MCMORRIS RODGERS, Washington
GREGG HARPER, Mississippi
LEONARD LANCE, New Jersey
BILL CASSIDY, Louisiana
BRETT GUTHRIE, Kentucky
PETE OLSON, Texas
DAVID B. MCKINLEY, West Virginia
CORY GARDNER, Colorado
MIKE POMPEO, Kansas
ADAM KINZINGER, Illinois
H. MORGAN GRIFFITH, Virginia
GUS M. BILIRAKIS, Florida
BILL JOHNSON, Missouri
BILLY LONG, Missouri
RENEE L. ELLMERS, North Carolina

HENRY A. WAXMAN, California
Ranking Member
JOHN D. DINGELL, Michigan
Chairman Emeritus
EDWARD J. MARKEY, Massachusetts
FRANK PALLONE, JR., New Jersey
BOBBY L. RUSH, Illinois
ANNA G. ESHOO, California
ELIOT L. ENGEL, New York
GENE GREEN, Texas
DIANA DEGETTE, Colorado
LOIS CAPPS, California
MICHAEL F. DOYLE, Pennsylvania
JANICE D. SCHAKOWSKY, Illinois
ANTHONY D. WEINER, New York
JIM MATHESON, Utah
G.K. BUTTERFIELD, North Carolina
JOHN BARROW, Georgia
DORIS O. MATSUI, California
DONNA M. CHRISTENSEN, Virgin Islands
KATHY CASTOR, Florida
JOHN P. SARBANES, Maryland
JERRY MCNERNEY, California
BRUCE L. BRALEY, Iowa
PETER WELCH, Vermont
BEN RAY LUJAN, New Mexico
PAUL TONKO, New York

Subcommittee on Energy and Power

ED WHITFIELD, Kentucky
Chairman

STEVE SCALISE, Louisiana
Vice Chairman
JOHN SHIMKUS, Illinois
JOSEPH R. PITTS, Pennsylvania
LEE TERRY, Nebraska
MICHAEL C. BURGESS, Texas
ROBERT E. LATTA, Ohio
CATHY McMORRIS RODGERS, Washington
BILL CASSIDY, Louisiana
PETE OLSON, Texas
DAVID B. McKINLEY, West Virginia
CORY GARDNER, Colorado
MIKE POMPEO, Kansas
ADAM KINZINGER, Illinois
H. MORGAN GRIFFITH, Virginia
JOE BARTON, Texas
FRED UPTON, Michigan (ex officio)

BOBBY L. RUSH, Illinois
Ranking Member
JERRY McNERNEY, California
PAUL TONKO, New York
EDWARD J. MARKEY, Massachusetts
ELIOT L. ENGEL, New York
GENE GREEN, Texas
LOIS CAPPS, California
MICHAEL F. DOYLE, Pennsylvania
JOHN BARROW, Georgia
DORIS O. MATSUI, California
DONNA M. CHRISTENSEN, Virgin Islands
KATHY CASTOR, Florida
JOHN D. DINGELL, Michigan
HENRY A. WAXMAN, California (ex officio)

Subcommittee on Environment and Economy

JOHN SHIMKUS, Illinois
Chairman

PHIL GINGREY, Georgia
Vice Chairman
RALPH M. HALL, Texas
ED WHITFIELD, Kentucky
JOSEPH R. PITTS, Pennsylvania
TIM MURPHY, Pennsylvania
ROBERT E. LATTA, Ohio
GREGG HARPER, Mississippi
BILL CASSIDY, Louisiana
DAVID B. McKINLEY, West Virginia
GUS M. BILIRAKIS, Florida
BILL JOHNSON, Missouri
JOE BARTON, Texas
FRED UPTON, Michigan, *ex officio*

PAUL TONKO, New York
Ranking Member
FRANK PALLONE, Jr., New Jersey
GENE GREEN, Texas
DIANA DeGETTE, Colorado
LOIS CAPPS, California
JERRY McNERNEY, California
JOHN D. DINGELL, Michigan
JANICE D. SCHAKOWSKY, Illinois
JOHN BARROW, Georgia
DORIS O. MATSUI, California
HENRY A. WAXMAN, California, *ex officio*

CONTENTS

	Page
Hon. John Shimkus, a Representative in Congress from the State of Illinois, opening statement	1
Prepared statement	3
Hon. Paul Tonko, a Representative in Congress from the State of New York, opening statement	4
Hon. Bobby L. Rush, a Representative in Congress from the State of Illinois, opening statement	4
Hon. Fred Upton, a Representative in Congress from the State of Michigan, opening statement	5
Prepared statement	6
Hon. Ed Whitfield, a Representative in Congress from the Commonwealth of Kentucky, opening statement	6
Prepared statement	7
Hon. Henry A. Waxman, a Representative in Congress from the State of California, opening statement	21
Prepared statement	22

WITNESSES

Allison Macfarlane, Chairman, Nuclear Regulatory Commission	8
Prepared statement	11
Answers to submitted questions	74
Kristine L. Svinicki, Commissioner, Nuclear Regulatory Commission	23
Answers to submitted questions	108
George Apostolakis, Commissioner, Nuclear Regulatory Commission	23
Answers to submitted questions	120
William D. Magwood, IV, Commissioner, Nuclear Regulatory Commission	24
Answers to submitted questions	126
William C. Ostendorff, Commissioner, Nuclear Regulatory Commission	25
Answers to submitted questions	137

SUBMITTED MATERIAL

List of Nuclear Reglatory Commission (NRC) licensing actions, submitted by Mr. Gingrey	61
Letter of January 7, 2013, from the National Mining Association to the NRC, submitted by Mr. Burgess	64
Letter of February 7, 2013, from House Members to the NRC, submitted by Mr. Barrow	68
Picture of Emergency Filtered Containment Vent	72
Chart entitled, "Nuclear Regulatory Timeline (Typical—4 Unit Fleet)"	73

THE NUCLEAR REGULATORY COMMISSION: POLICY AND GOVERNANCE CHALLENGES

THURSDAY, FEBRUARY 28, 2013

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON ENVIRONMENT AND ECONOMY,
COMMITTEE ON ENERGY AND COMMERCE
Washington, DC.

The subcommittees met, pursuant to call, at 9:02 a.m., in Room 2123 of the Rayburn House Office Building, Hon. John Shimkus [Chairman of the Subcommittee on Energy and Power] presiding.

Members present: Representatives Shimkus, Whitfield, Scalise, Gingrey, Hall, Pitts, Terry, Murphy, Burgess, Latta, Harper, Cassidy, McKinley, Kinzinger, Griffith, Bilirakis, Johnson, Barton, Upton (ex officio), Rush, Tonko, Dingell, Markey, Engel, Green, Capps, Barrow, Christensen, Castor, McNerney, and Waxman (ex officio).

Staff present: Nick Abraham, Legislative Clerk; Gary Andres, Staff Director; Charlotte Baker, Press Secretary; Mike Bloomquist, General Counsel; Sean Bonyun, Communications Director; Allison Busbee, Policy Coordinator, Energy and Power; Annie Caputo, Professional Staff Member; Vincent Esposito, Fellow, Nuclear Programs; Tim Hassenboehler, Chief Counsel, Energy and Power; Alexa Marrero, Deputy Staff Director; David McCarthy, Chief Counsel, Environment and the Economy; Mary Neumayr, Senior Energy Counsel; Chris Sarley, Policy Coordinator, Environment and the Economy; Peter Spencer, Professional Staff Member, Oversight; Lyn Walker, Coordinator, Admin/Human Resources; Jeff Baran, Democratic Senior Counsel; Phil Barnett, Democratic Staff Director; Alison Cassady, Democratic Senior Professional Staff Member; Greg Dotson, Democratic Staff Director, Energy and Environment; and Caitlin Haberman, Democratic Policy Analyst.

OPENING STATEMENT OF HON. JOHN SHIMKUS, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF ILLINOIS

Mr. SHIMKUS. I would like to call the hearing to order, and welcome our guests and my colleagues. I recognize myself for 5 minutes for an opening statement.

Before I do that, there are early votes, as a lot of members know. We are going to try to go rapidly through the opening statements as quick as possible and then get into our round of questioning. We will then break for votes. We will see what the will of the committees are. We may have to come back to finish up at least the first round. With that, I would like to now recognize myself for 5 minutes for my opening statement.

First, let me welcome you all here. It is nearly 2 years since the Fukushima accident and nearly 1 year since the NRC issued a suite of requirements responding to the accident. Since you last testified before this committee, the NRC instituted a moratorium on licensing actions until the agency addresses a court remand of its Waste Confidence rule. We have also heard announcements two nuclear plants will close prematurely and there is speculation in the press that several others may also.

So, it is in this context I would like to discuss the defense-in-depth philosophy, which has been fundamental to nuclear safety in our country since the industry's inception. I am sure we all agree it plays a vital safety role. That was a painful lesson for the Japanese to learn and one that was highlighted by the Diet report, which stated: "The defense-in-depth concept used in other countries has still not been fully considered."

With the Atomic Energy Act, Congress endeavored to balance the benefits that nuclear energy brings to the general welfare with protection of public health and safety. I am concerned the Commission risks undermining this balance by shifting to an unlimited application of the defense-in-depth philosophy in reaction to the Fukushima accident.

Defense-in-depth has, or should have, a sensible constraint. For example, I understand there is a three-unit nuclear plant here in the United States, which currently has eight emergency diesel generators. These reactors need six generators to ensure safety in case the plant loses access to offsite supplies of electricity. That means this site has two redundant spares. In the wake of Fukushima, this site will add two more in a separate bunker away from the plant for a total of ten diesel generators.

An unmanaged application of the defense-in-depth philosophy would question why stop at 10? Why not have 20? Or a hundred? I don't know what the right number is. However, common sense and critical thinking should show that at some point there are diminishing safety benefits from additional generators. It seems to me cost-benefit analysis provides a necessary and sensible constraint in this situation: that safety gains should be significant enough to outweigh additional costs.

Unfortunately, with the NRC staff's filtered-vents proposal, we have exactly the opposite. The staff's recommendation to mandate filtered vent structures failed the cost-benefit test so the staff chose to justify the mandate based upon the defense-in-depth philosophy. The staff recommended this mandate against the advice of the NRC's body of experts, the Advisory Committee on Reactor Safeguards. That committee advised a more holistic approach, recognizing that all plants are different and a one-size-fits-all mandate may create unintended consequences.

As the Near-term Task Force wrote in their 2011 report following the Fukushima accident: "Adequate protection has typically only led to requirements addressing beyond-design-basis concerns when they were found to be associated with a substantial enhancement in safety and justified in terms of cost."

Recommendation one in their report was that the Commission should reassess the role that the defense-in-depth philosophy should play. While the Commission has not resolved this policy

question, agency staff nonetheless appears to be embedding its preferred approach in the filtered-vent recommendation. I don't think the staff should attempt to set policy on a matter on which the Commission has not yet reached a conclusion.

Furthermore, this matter was raised in our January 15th letter, which 20 of my colleagues and I signed, and the Commission's response was unsatisfactory beginning with the failure to answer our very first question: When will the NRC conduct a gap analysis of the regulation differences between the United States and Japan? I expect some of my colleagues will likely share some additional concerns with your response. I am disappointed that you didn't take your communication with members of this committee more seriously and I expect that you will do that in the future.

I again want to thank you all for being here today. I look forward to your testimony.

[The statement of Mr. Shimkus follows:]

PREPARED STATEMENT OF HON. JOHN SHIMKUS

First, let me welcome you all here. It is nearly two years since the Fukushima accident and nearly one year since the NRC issued a suite of requirements responding to the accident. Since you last testified before this Committee, the NRC instituted a moratorium on licensing actions until the agency addresses a court remand of its Waste Confidence rule. We have also heard announcements two nuclear plants will close prematurely and there is speculation in the press that several others may also.

So, it is in this context I'd like to discuss the defense-in-depth philosophy which has been fundamental to nuclear safety in our country since the industry's inception. I'm sure we all agree it plays a vital safety role. This was a painful lesson for the Japanese to learn and one that was highlighted by the Diet (Dee-ett) report which stated: "The defense-in-depth concept used in other countries has still not been fully considered."

With the Atomic Energy Act, Congress endeavored to balance the benefits that nuclear energy brings to the general welfare with protection of public health and safety. I am concerned the Commission risks undermining this balance by shifting to an unlimited application of the defense-in-depth philosophy in reaction to the Fukushima accident.

Defense-in-depth has, or should have, a sensible constraint. For example, I understand there is a three-unit nuclear plant here in the U.S. which currently has eight emergency diesel generators. These reactors need six generators to ensure safety in case the plant loses access to off-site supplies of electricity. That means this site has two redundant spares. In the wake of Fukushima, this site will add two more in a separate bunker away from the plant for a total of ten diesel generators.

An unmanaged application of defense-in-depth philosophy would question why stop at 10? Why not have 20? Or a hundred? I don't know what the right number is. However, common sense and critical thinking should show that, at some point, there are diminishing safety benefits from additional generators. It seems to me cost-benefit analysis provides a necessary and sensible constraint in this situation: that safety gains should be significant enough to outweigh additional costs.

Unfortunately, with the NRC staff's filtered vents proposal, we have exactly the opposite. The staff's recommendation to mandate filtered vent structures failed the cost-benefit test so the staff chose to justify the mandate based on the defense-in-depth philosophy. The staff recommended this mandate against the advice of the NRC's body of experts, the Advisory Committee on Reactor Safeguards. That Committee advised a more holistic approach recognizing that all plants are different and a one-size-fits-all mandate may create unintended consequences.

As the Near-term Task Force wrote in their 2011 report following the Fukushima accident:

"...adequate protection has typically only led to requirements addressing beyond-design-basis concerns when they were found to be associated with a substantial enhancement in safety and JUSTIFIED IN TERMS OF COST."

Recommendation 1 in their report was that the Commission should reassess the role that the defense-in-depth philosophy should play. While the Commission has not yet resolved this policy question, agency staff nonetheless appears to be embed-

ding ITS preferred approach in the filtered vents recommendation. I don't think the staff should attempt to set policy on a matter on which the Commission has not yet reached a conclusion.

Furthermore, this matter was raised in our January 15th letter, which twenty of my colleagues and I signed, and the Commission's response was unsatisfactory beginning with the failure to answer our first question: When will the NRC conduct a "gap analysis" of the regulation differences between the U.S. and Japan. I expect some of my colleagues will likely share some additional concerns with your response. I'm disappointed that you didn't take your communication with Members of this Committee more seriously and I expect that you will in the future.

I again want to thank you all for being here today and look forward to your testimony. I'd now like to yield to our Ranking Member Mr. Tonko for the purposes of an opening statement.

Mr. SHIMKUS. And now I would like to yield to our ranking member, Mr. Tonko, for the purposes of an opening statement.

OPENING STATEMENT OF HON. PAUL TONKO, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF NEW YORK

Mr. TONKO. Thank you, and good morning. Thank you, Chair Shimkus and Chair Whitfield, for holding this hearing. I thank Chairman Macfarlane and Commissioners Svinicki, Apostolakis, Magwood and Ostendorff for appearing before the subcommittees today.

The work of the Nuclear Regulatory Commission is extremely important to the public. Congress recognized way back in 1974 that the licensing and regulation of nuclear power and radioactive materials should be separate from research and development and promotion of the civilian nuclear industry. Public confidence in this technology is directly related to their confidence that the NRC will act to ensure the safe operation of nuclear power plants and the safe handling of nuclear materials.

Nuclear power provides nearly 20 percent of our electricity nationally. If we are to continue to rely on nuclear power, we must maintain safe operations and we must deal with nuclear waste in a manner that inspires public confidence and serves the needs of the 104 power plants that we have across our Nation. It is a tall order, and one that obviously comes with many challenges. The tragic events in Japan that occurred at the Fukushima Daiichi plant were a stark reminder of how important safety is to this industry. To the public, there is no such thing as a small nuclear accident. A large one is devastating. I encourage the NRC to take the steps necessary to implement the recommendations from the review of that tragedy to further improve the safety of our Nation's nuclear power plants.

Again, I thank you for being here this morning. I look forward to your testimony.

I would like now to yield my remaining time to the ranking member of the Energy and Power Subcommittee, Representative Rush.

OPENING STATEMENT OF HON. BOBBY L. RUSH, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF ILLINOIS

Mr. RUSH. I want to thank you, Mr. Tonko, for yielding. I want to thank the chair, and I want to thank you, Chairwoman Macfarlane, and all the NRC Commissioners for being here today.

As a representative of the great State of Illinois, which houses more nuclear reactors than any other State in the country, I am eager to hear about the progress that the NRC is making in regards to recommendations that the Near-Term Task Force released back in July 2011 following the nuclear disaster at Fukushima. My constituents want to be assured that the NRC adopts commonsense protocols for both mitigating risk of a nuclear disaster as well as procedures to safeguard the public in the event that a disaster occurs. Safety is my primary concern, and I would support the implementation of a performance-based approach that will allow licensees to employ a combination of systems to address performance standards and avoid widespread disaster in the case of emergencies.

Another issue of great importance to me is the NRC's work with Historically Black Colleges and Universities, HBCUs. In May 2012, the NRC was honored as one of the government agencies that was most supportive of the engineering departments of HBCUs, and I look forward to hearing more about the types of programs and forms of support the NRC provides to these HBCU colleges and universities. It is in the national interest to make sure that we are educating all of our students to enter the STEM fields of science, technology, engineering and math, and so it is very encouraging to hear that the Nation's foremost nuclear authority is providing its support to help move our Nation forward in this effort.

I look forward to engaging the Commissioners on these very important issues, and I yield back the balance of my time.

Mr. SHIMKUS. The gentleman yields back the balance of his time. The Chair now recognizes the chairman of the full committee, Mr. Upton, for 5 minutes.

OPENING STATEMENT OF HON. FRED UPTON, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF MICHIGAN

Mr. UPTON. Well, thank you, Mr. Chairman.

Certainly, oversight of federal agencies is a very important responsibility for this committee, especially for the NRC, given the broad scope of changes within the nuclear industry, and there are two particular issues on my mind today: the NRC's reactor oversight process and the impact of budget sequestration on the NRC.

In 2000, the NRC's reactor oversight process was implemented under Chairman Richard Meserve's leadership, a chairman well respected on both sides of the aisle. The development of the process was very rigorous with the goal of creating an objective, measurable process that would provide an accurate representation of a plant's performance while minimizing subjectivity.

Last year, the Palisades plant in my district spent time in column 3, a designation for troubled plants, which requires significantly increased inspections. This raised considerable concerns among folks in my corner of the State, concerns certainly that I shared. Entergy needed to do better, and they outlined their comprehensive and methodical plans for returning Palisades to the high level of safety that all plants should have.

This past November, the NRC returned Palisades back to column 1, the best column, which normally would signify the NRC's conclusion that the plant is operating safely and should give the local

communities confidence that the plant is back on the straight and narrow. However, when the NRC made the determination to move Palisades back into column 1, the agency did so begrudgingly, I believe, and qualified the rating, indicating that it would continue to apply increased oversight beyond the normal inspections for column 1. That does send a mixed message to the community: does Palisades belong in column 1 or not, and I would like some clarification on that.

In closing, I would like to echo the disappointment expressed by Chairman Shimkus regarding the NRC's response to our January letter. We did ask very detailed questions, yet the response was somewhat dismissive, even contradicting the Japanese Diet report' conclusion that they had not fully considered the defense-in-depth philosophy as Chairman Shimkus mentioned. You wrote that you would give us careful consideration but the answers were not quite where we would like them to be.

So with that, I would yield back the balance of my time to Chairman Whitfield.

[The prepared statement of Mr. Upton follows:]

PREPARED STATEMENT OF HON. FRED UPTON

Oversight of federal agencies is an important responsibility for this committee, especially for the Nuclear Regulatory Commission given the broad scope of changes within the nuclear industry. There are two particular issues on my mind today: The NRC's Reactor Oversight Process and the impact of budget sequestration on the NRC.

In 2000, the NRC's Reactor Oversight Process was implemented under Chairman Richard Meserve's leadership, a chairman well respected on both sides of the aisle. The development of the process was very rigorous with the goal of creating an objective, measurable process that would provide an accurate representation of a plant's performance while minimizing subjectivity.

Last year, the Palisades plant in my district spent time in "Column 3," a designation for troubled plants which requires significantly increased inspections. This raised considerable concerns among folks in Southwest Michigan—concerns that I shared. Entergy needed to do better, and they outlined their comprehensive and methodical plans for returning Palisades to the high level of safety that it should have.

This past November, the NRC returned Palisades to Column 1, the best column, which normally would signify the NRC's conclusion that the plant is operating safely and should give the local communities confidence that the plant is back on the straight and narrow. However, when the NRC made the determination to move Palisades back into Column 1, the agency did so begrudgingly and qualified the rating, indicating that it would continue to apply increased oversight beyond the normal inspections for Column 1. This sends a mixed message to the community—does Palisades belong in Column 1 or not. I would like some clarification on that.

In closing, I'd like to echo the disappointment expressed by Chairman Shimkus regarding the NRC's response to our January 15th letter. We asked very detailed questions, yet the response came off as dismissive, even contradicting the Japanese Diet (pronounced DIE-it) report's own conclusion that they had not fully considered the defense-in-depth philosophy as Chairman Shimkus mentioned. You wrote that you would give our views "careful consideration" but the answers provided to our questions fall short. These are serious questions that deserve thoughtful and thorough deliberation.

OPENING STATEMENT OF HON. ED WHITFIELD, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF KENTUCKY

Mr. WHITFIELD. Thank you very much, and I want to certainly welcome all the Commissioners here today. We appreciate the important work that you do and recognize the importance of nuclear energy for providing energy in our country.

The NRC Near-Term Task Force report, which was issued last summer, highlighted some lessons learned from the Three Mile Island accident. Some of the actions taken by the NRC after Three Mile Island were not subject to a structured review and were subsequently found not to be of substantial safety benefit and were removed.

I am concerned that the NRC's consideration of post-Fukushima issues is not as structured and integrated as it should be. I would like to call your attention to four items which appear to be interrelated but which the Commission is considering individually, independent of each other. Number one: the Near-term Task Force Recommendation number one concerning the defense-in-depth philosophy, which Chairman Shimkus mentioned; number two, the Severe Accident Management Order the Commission issued a year ago; number three, the filtered-vents proposal about which we wrote to you; then number four, the economic consequences proposal regarding the potential for land contamination.

From looking at records of the Commission, it is quite clear that many statements have been issued about how these issues are related to each other and yet it seems that the Commission is determined to treat each one separately in what some people say is an unstructured process.

The Commission's 2011 decision to prioritize its work into three tiers was a good start but time has passed and there is a great deal more information that has surfaced since then. It seems like a more integrated approach to post-Fukushima issues is long overdue. So I hope we have an opportunity to discuss that some this morning, and I would yield back the balance of my time.

[The prepared statement of Mr. Whitfield follows:]

PREPARED STATEMENT OF HON. ED WHITFIELD

I also want to thank you for coming here today. In our last hearing with the Commission, I expressed my optimism and hope that Chairman Macfarlane would restore collegiality to the Commission. She appears to be doing a better job than her predecessor and I think we are all very grateful for that.

When you folks were here last summer, I urged all of you to remember that the costs of regulatory changes are ultimately born by consumers who are struggling to fill their gas tanks and pay their bills. This concern is now joined by a concern for those who will lose their jobs at plants that may close prematurely.

I stated my firm belief that we need to ensure that any additional regulatory costs are justified by real safety benefits. Those concerns are just as valid today, especially given that the Commission is considering a recommendation from the staff that is NOT cost-justified, as Chairman Shimkus just mentioned.

Last summer, I also referenced a cautionary comment from the NRC Near-term Task Force report regarding lessons learned from the Three Mile Island accident: "...some of the actions taken by the NRC after Three Mile Island were not subjected to a STRUCTURED review and were subsequently not found to be of substantial safety benefit and were removed."

I am concerned that the NRC's consideration of post-Fukushima issues is not as structured and integrated as it should be. I'd like to call your attention to four items which appear to be inter-related but which the Commission is considering individually, independent of the others:

- The Near-term Task Force Recommendation #1 concerning the defense-in-depth philosophy which Chairman Shimkus mentioned;
- The severe accident management order the Commission issued a year ago;
- The filtered vents proposal about which we wrote to you; and
- The Economic Consequences proposal regarding the potential for land contamination.

Clearly the recommendation to mandate filtered vents is propelled by concerns about land contamination that might result from a severe accident. In fact, in the Commission's January meeting on filtered vents, there were 43 statements about how the filtered vents issue is linked to the other items I just mentioned. The transcript for the Commission's meeting on Economic Consequences last September tells a similar story: 49 statements on how it is linked to these other issues. Altogether, we reviewed transcripts from 4 Commission meetings since August on these topics and found 145 references indicating how these issues are linked.

I simply don't understand why, with these issues so intertwined, that the Commission would consider each one separately, in such an unstructured process. The Commission's 2011 decision to prioritize its work into three tiers was a good start. But time has passed and there is a great deal more information that has surfaced since then. It seems like a more integrated approach to post-Fukushima issues is long overdue. So I hope we get some clear explanations this morning.

Mr. SHIMKUS. The gentleman yields back the balance of his time. Without objection, I would like to be able to allow Mr. Waxman when he arrives 5 minutes to do his opening statement, and we will move right into questions until he arrives. So I would like to recognize myself for the first 5 minutes—oh, we will go to the Commission. We are so anxious to talk to you all, so Chairman, you are recognized 5 minutes for your opening statement.

STATEMENTS OF ALLISON MACFARLANE, CHAIRMAN, NUCLEAR REGULATORY COMMISSION; HON. KRISTINE L. SVINICKI, COMMISSIONER; HON. GEORGE APOSTOLAKIS, COMMISSIONER; HON. WILLIAM D. MAGWOOD, IV., COMMISSIONER; AND HON. WILLIAM C. OSTENDORFF, COMMISSIONER

STATEMENT OF ALLISON MACFARLANE

Ms. MACFARLANE. Thank you, Chairman Shimkus. Good morning. Chairman Whitfield, Ranking Member Rush, Chairman Shimkus, Ranking Member Tonko and distinguished members of the subcommittees, on behalf of the Commission, I appreciate the opportunity to appear before you to discuss policy and governance at the NRC.

When the Commission appeared before you last on July 24, 2012, I pledged to work closely with my fellow Commissioners and to approach my job as Chairman in a collaborative and collegial manner. Over the past 7 months, we have developed a very productive, respectful and collegial working relationship. In my tenure, I have also gained an even greater appreciation of the expertise of the NRC staff who carry out the mission of ensuring the safe and secure use of radioactive materials and protecting public health and safety and the environment. I believe the NRC is operating very well and is fulfilling its mandate. I am pleased with the NRC's commitment to use operating experience and insights to continuously improve and remain a strong and effective regulator.

As we approach the second anniversary of the great Tohoku earthquake and the subsequent tsunami in Japan, I would like to share my personal impressions from a recent visit to the Fukushima Daiichi site. I was struck by the deserted villages, abandoned roads and rail lines that we passed on the drive to the plant. More than 160,000 people today are displaced from their homes there, and the site itself is scattered with twisted metal and debris from the force of hydrogen explosions in the reactor build-

ings as well as the tsunami itself. While the Japanese are diligently working to clean up and decommission the site, it will take them many decades to complete.

The NRC continues its work to apply lessons from Fukushima to the regulation of NRC-licensed nuclear facilities. You may recall that the NRC identified a series of recommendations that were subsequently prioritized in three categories or tiers. The NRC has already taken many actions on the near-term priorities and is now turning its attention to long-term actions. We are actively exchanging lessons learned with the international community and maintaining a high level of open collaboration with the industry and public.

Throughout this process, the agency remains determined to ensure that the regulatory actions stemming from this review do not become a distraction from day-to-day safe plant operations. The NRC has approved license renewals for 73 reactors and continues to review additional applications. However, two reactors that had planned to operate an additional 20 years have recently announced their intention to permanently close due to economic factors. In the months and years ahead, the NRC will adjust our oversight from ensuring these reactors operate safely to ensuring they will be decommissioned safely.

Overall, the U.S. reactor fleet is performing well. There are a few reactors that have had significant performance problems, which the NRC is addressing in accordance with its regulatory procedures. Browns Ferry Unit 1 continues to address equipment problems. Fort Calhoun remains shut down as it addresses problems stemming from an inadequate flood strategy and a fire. And the San Onofre Nuclear Generating Station has been shut down for more than a year due to unexpected degradation of the plant's replacement steam generators. The NRC will not allow any of our licensed facilities to operate unless we are satisfied that they can do so safely.

Since the NRC issued the first combined operating licenses last year for new reactors at the Vogtle and Summer sites in Georgia and South Carolina, construction has begun. Although there has been significant progress at both sites, there have also been some delays due to design implementation and fabrication issues. We anticipate that all necessary license amendments will be issued by the end of this week, which will permit both sides to begin pouring first nuclear concrete.

Among other activities in the licensing and regulation of radioactive materials, the NRC is preparing to implement construction and operating inspection programs for two newly licensed facilities: a uranium laser enrichment facility and the depleted uranium deconversion facility. We have also revised our regulations for the physical protection of spent fuel transportation and are preparing to publish a new role to expand security measures for the physical protection of category 1 and 2 byproduct material. The NRC staff continues to make progress in addressing the issues cited in the Court of Appeals decision on waste confidence. Our work is already well underway and on schedule for completion by September 2014. The Commission has directed that all affected license application review activities will continue but the agency will not issue final

licenses dependent upon the waste confidence decision until the court's remand is addressed. The agency is actively engaging the public in the process.

The NRC continues to make international cooperation a priority with active involvement in a variety of bilateral and multilateral initiatives. I recently assumed the chairmanship of the Multinational Design Evaluation Program, an organization that strives to leverage the knowledge and resources of regulators to improve the design reviews of new commercial power reactors. In the next several months, the NRC will continue its focus on these and other important issues.

I am proud of our accomplishments and confident that we will address the challenges ahead with the same high-quality work. I thank you for the opportunity to appear before you and would be happy to answer your questions.

[The prepared statement of Ms. Macfarlane follows:]

WRITTEN STATEMENT

BY ALLISON M. MACFARLANE, CHAIRMAN

UNITED STATES NUCLEAR REGULATORY COMMISSION

TO THE

HOUSE COMMITTEE ON ENERGY AND COMMERCE

SUBCOMMITTEES ON ENERGY AND POWER, ENVIRONMENT AND THE ECONOMY

FEBRUARY 28, 2013

Good morning, Chairman Whitfield, Ranking Member Rush, Chairman Shimkus, Ranking Member Tonko, and distinguished members of the Subcommittees. On behalf of the Commission, I appreciate the opportunity to appear before you to discuss policy and governance at the U.S. Nuclear Regulatory Commission (NRC).

When the Commission appeared before you last on July 24, 2012, I had joined the NRC only 15 days earlier. At the time, I pledged to work closely with my fellow Commissioners and to approach my job as Chairman in a collaborative and collegial manner. Over the past seven months, we have developed a very productive, respectful, and collegial working relationship, and we have sustained an environment of open communication.

I also have an even greater appreciation of the skills and expertise of NRC management and staff who carry out the mission of ensuring the safe and secure use of radioactive materials and protecting public health and safety and the environment. I have been particularly impressed by the NRC resident inspectors, who are assessing licensees' activities at the nation's nuclear power plants and selected nuclear fuel cycle facilities every day. In general, I believe the NRC is operating very well, and we are addressing challenges and identifying areas for improvement to make us a more effective and efficient regulator.

In the 38 years since the NRC was established, its mission and focus has remained steadfast: protecting public health and safety and promoting common defense and security. Through our oversight of regulated facilities and materials, we use operating experience and insights to ensure we continue to learn lessons and remain a strong and effective regulator.

NRC has approved license renewals for 73 reactors. Most facilities with renewed licenses have replaced or planned to replace major pieces of equipment, such as the steam generators or reactor vessel heads. Additionally, each licensed facility has an aging management program which the agency reviews. Seeking approval for license extension, however, is not a guarantee that a reactor will choose to operate for 60 years. In addition, business factors may influence the life of nuclear power plants. Recently, the owners of the Kewaunee Nuclear Plant and Crystal River Unit 3 announced plans to permanently close these reactors due to economic factors. In the months and years ahead, NRC will adjust our oversight from ensuring these reactors operate safely to ensuring they will be safely decommissioned. In addition, a few plants are shut down for extended periods as they address some unique challenges. I will address those specifically later in my testimony.

Before turning to the challenges ahead, I want to briefly recap a few accomplishments since we were last before you in a hearing. The Commissioners and the staff have been busy. Specifically we have been:

- Steadily working through the Fukushima lessons-learned recommendations;
- Monitoring all operating reactors, including those requiring heightened oversight;
- Conducting construction oversight of the new Vogtle and Summer reactors;
- Addressing the court decision related to waste confidence;

- Continuing to engage our international partners; and
- Overseeing of construction of new fuel cycle facilities.

FUKUSHIMA

We are approaching the second anniversary of the Great Tōhoku Earthquake and subsequent tsunami in Japan. The accident at the Fukushima Dai-ichi nuclear power plant continues to serve as a reminder that the NRC and industry must be prepared to address reasonably foreseeable events that could lead to severe accidents. We continue to work applying lessons from the accident to our regulation of NRC-licensed nuclear facilities. The NRC will take every reasonable precaution to prevent such an accident from happening here in the United States.

I would like to take this opportunity to share my personal impressions of my recent visit to the Fukushima Daiichi site. I was struck on the drive to the facility by the deserted villages, abandoned roads and rail lines, covered not with cars and trains, but overgrown weeds. More than 160,000 people who lived within 20 kilometers of the plant no longer occupy their homes and do not know when they will be allowed to permanently return. The site itself is scattered with twisted metal from the hydrogen explosions in the reactor buildings and debris spread by the force of the tsunami. I have seen the progress made by the Japanese in the reinforcement of the protective sea wall, the management and cleanup of contaminated water, the stabilization of damaged buildings, and the preparation for removal of nuclear fuel, starting with the spent fuel in the Unit 4 spent fuel pool. The Japanese are diligently and methodically working to clean up and decommission the site, but it will take decades to complete.

In July 2011, we received a series of recommendations from an agency task force that was charged with reviewing NRC's regulations to determine if additional measures were needed

to address lessons learned from the Fukushima accident. After further review from experts both inside and outside the NRC, the NRC prioritized these recommendations into three tiers. Tier 1 encompasses those actions to be addressed in the near term, Tier 2 to follow as soon as the necessary information and critical skill sets become available, and Tier 3 as longer-term activities. The Commission established a goal to implement the lessons learned within five years.

To address the Tier 1 activities, in March 2012, the NRC issued orders requiring power reactor licensees to have reliable indicators of water levels in the spent fuel pool and to develop strategies to maintain or restore core cooling, containment, and spent fuel pool cooling following a "beyond-design-basis" extreme natural event. A third order required licensees with BWR Mark I and Mark II containments to have a reliable hardened vent to prevent over-pressurizing the containment during a severe accident. In addition, the agency issued a "request for information" for licensees to reevaluate the seismic and flood hazards at their sites, to conduct seismic and flooding hazard "walkdowns" to identify any degraded or nonconforming conditions, and to assess the adequacy of power supplies for their communication systems if there was a prolonged loss of offsite power. Finally, NRC initiated two rulemakings to augment existing requirements regarding station blackout and the integration of emergency procedures.

The NRC is moving forward to implement these safety enhancements at the same time as we are actively exchanging lessons learned with the international community. The agency will evaluate additional lessons learned for applicability to U.S. reactors and will take action, as necessary. Throughout the process, NRC staff has maintained a high level of open collaboration with the industry and public, holding 82 public meetings in fiscal year 2012. While it is important that we proceed to deal with the lessons of Fukushima, the agency remains

determined to assure that the regulatory actions stemming from this review not become a distraction from the day-to-day actions necessary for oversight of all operating nuclear facilities.

Let me assure you that the Commission will continue to appropriately prioritize work on measures to mitigate the impact of extreme events with the work necessary to maintain safety of the reactor fleet and other nuclear facilities. As part of that effort, the NRC is considering the cumulative effects of regulation, rulemaking initiatives stemming from Fukushima lessons-learned activities, and the agency's methodology for prioritizing rulemaking activities.

ENHANCED OVERSIGHT

There are five performance categories under the NRC's Reactor Oversight Process. Operating reactors in Column 1 of this "action matrix" have the highest level of safety and security performance and receive a baseline-level of NRC inspection, while those in Columns 2, 3 and 4 receive an increasing level of NRC oversight and inspection. Reactors in Column 5 are required to shut down until problems are addressed. For reactors in extended shutdown, NRC has special oversight programs. Currently, there are 84 reactors in Column 1, 15 in Column 2, and three in Column 3.

As you may be aware, there are reactors that have more significant performance problems. Browns Ferry Unit 1 has been in Column 4 since the fourth quarter of 2010 as a result of problems with a residual heat removal flow control valve. Plants in this column receive the most NRC attention short of a mandated shutdown.

Fort Calhoun remains under Inspection Manual Chapter 0350 oversight as a result of problems stemming from an inadequate flood strategy and a fire that started in a safety-related electric breaker. The plant has been shut down since May 2011 following flooding along the

Missouri River. The "0350" oversight process is for reactors in an extended shutdown condition resulting from significant performance or operational concerns. Fort Calhoun has been pursuing activities to prepare the plant for restart under heightened NRC oversight.

The San Onofre Nuclear Generating Station (SONGS) was placed under Inspection Manual Chapter 0351 oversight in September. This is oversight intended for reactors that are in an extended shutdown for reasons other than systemic significant performance problems. The problem at SONGS, which has been shut down since January 2012, largely centers on a single technical issue -- degradation of the plant's replacement steam generators. In this case and that of Fort Calhoun, the NRC will not authorize restart until we are satisfied that the facilities can be operated safely.

In November 2012, the NRC moved the Palisades nuclear plant from Column 3, which is for plants with a degraded level of performance, back to Column 1. Although plants in Column 1 meet all safety and security performance objectives and are inspected by NRC under the normal baseline program, in this case, the NRC is adding 1,000 hours of inspections at the plant in 2013 to ensure plant issues are adequately resolved.

NEW CONSTRUCTION

Since the NRC issued the first Combined Operating Licenses last February and March for new reactors at the Vogtle and Summer stations in Georgia and South Carolina, construction has begun. Although there has been significant progress at both sites, there also have been some delays while the NRC, the licensees, and their vendors addressed design implementation and fabrication issues. NRC inspectors have identified code compliance issues with the rebar design of the basemat and walls, which delayed pouring concrete for the "nuclear islands," or bases, of the reactors. Both licensees are in the process of resolving these problems and are

planning the first nuclear concrete pour next month. Other issues identified by NRC inspectors have been in the area of civil construction and digital instrumentation and control. Both sites experienced issues with the delivery and quality of fabrication of plant modules. The agency and the licensees remain focused on ensuring the issues are identified and resolved.

These are the first generation of reactors built under the new construction regulations. In 1989, the NRC developed an alternative licensing process under 10 CFR Part 52 to that allows applicants to seek a "combined license" for both construction and operation of a nuclear power plant. This differs from the current fleet of reactors that were licensed under a two-step process that allowed construction to begin under a construction permit based on preliminary safety and design information, followed later by an operating license after completion of construction. The Part 52 regulation authorizes construction based on a standardized design and provides conditional authority to operate the reactor subject to verification that it has been constructed in accordance with the license. The intent of the new licensing process was to eliminate the "design-as-you-go" approach. In order to minimize the potential for long delays in bringing new reactors online, applicants must adhere to specifications in their approved standardized design. The Commission and staff intend to continue to work with licensees and vendors to ensure that we establish a common understanding of the expectations regarding as-built design detail and finality of the approved design.

MATERIALS

Among other activities in the licensing and regulation of radioactive materials, the staff is preparing to implement construction and operating inspection programs for two newly-licensed facilities. In September 2012, NRC issued a license to GE-Hitachi to construct and operate a uranium enrichment plant using laser technology in Wilmington, North Carolina. In October 2012, NRC issued a license for construction and operation of a depleted uranium deconversion

facility in New Mexico. This facility will convert depleted uranium hexafluoride into fluorine products for commercial sale and depleted uranium oxide for disposal.

In ongoing work, the staff regularly inspects dry cask storage facilities and currently is reviewing applications to renew such facilities at two different reactor sites and numerous spent fuel storage casks. In fiscal year 2012, the agency revised its regulations for the physical protection of spent fuel transportation and the regulations for advanced notification to Native American tribes regarding transportation of certain types of nuclear waste.

We are also preparing to publish a new regulation, 10 CFR Part 37, which provides expanded security measures for the physical protection of category 1 and 2 byproduct material.

Other activities include continuing reviews of nine applications for new, renewed or expanded in-situ uranium recovery facilities.

WASTE CONFIDENCE

The Commission has directed the NRC staff to address the issues cited in the U.S. Court of Appeals decision on waste confidence by September 2014. The Commission also directed that all affected license application review activities will continue, but the agency will not issue final licenses dependent upon the Waste Confidence Decision or the Temporary Storage Rule until these issues are addressed. The agency has engaged the public in the process, holding six public meetings so far, and additional meetings are planned on a regular basis in the months ahead.

INTERNATIONAL

The agency continues to make international cooperation a priority. In December 2012, the NRC held the first-of-its-kind International Regulators Conference on Nuclear Security. The conference brought together regulators and security experts from around the world and served as a valuable opportunity to foster enhanced cooperation in this important area. Also in December, I led the U.S. delegation to the Ministerial Conference on Nuclear Safety in Fukushima Prefecture, Japan. It was during this trip that I had the opportunity to visit the Fukushima site. The visit also served as a significant opportunity to reaffirm the strong bilateral relationship between the NRC and our Japanese counterpart, the new Japan Nuclear Regulation Authority (JNRA). The NRC remains committed to supporting its Japanese colleagues as we all continue to move forward from the Fukushima accident. In addition, the NRC remains actively involved in U.S. Government activities with respect to the Convention on Nuclear Safety.

The NRC has also continued its international interactions in the area of new reactor development. In January, I assumed the chairmanship of the Multinational Design Evaluation Program (MDEP), an organization that strives to leverage the knowledge and resources of national regulatory authorities to improve the regulatory design reviews of new commercial power reactors. Coming up in mid-March, the MDEP Policy Group will meet in the U.S. to continue its work with a recently expanded membership that now includes India and the United Arab Emirates. In addition, the NRC remains actively involved in multilateral initiatives, such as those at the International Atomic Energy Agency, and bilateral assistance initiatives to promote a strong, independent regulatory structure for all countries that use nuclear and radioactive materials.

Finally, NRC's 25th annual Regulatory Information Conference, which will be held March 12-14, has drawn representatives from 34 countries who will participate in the conference and in bilateral meetings with me and my fellow Commissioners.

A LOOK AHEAD

While we have accomplished much, many challenges are ahead for the NRC. In the next several months, the Commission's focus will include the following issues:

- Continue enhancing our regulations where necessary in the aftermath of the Fukushima accident;
- Continue preparing the agency's waste confidence environmental impact statement and temporary storage rule;
- Strengthen our close cooperation with international partners;
- Conduct construction oversight of the new Vogtle and Summer reactors
- Complete the licensing review and prepare for the third mandatory hearing on the application in to construct a new reactor in Levy County, Florida.

Chairman Whitfield, Ranking Member Rush, Chairman Shimkus, Ranking Member Tonko, and distinguished members of the Subcommittees, thank you for the opportunity to appear before you today. My colleagues and I would be pleased to respond to your questions.

Mr. SHIMKUS. Thank you, Chairman.

Now I would like to turn to the ranking member of the full committee, Mr. Waxman, for his 5-minute opening statement. Then we will turn back to the Commissioners for your hopefully 2-minute opening statements.

OPENING STATEMENT OF HON. HENRY A. WAXMAN, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF CALIFORNIA

Mr. WAXMAN. Thank you very much, Mr. Chairman. I want to begin by welcoming Dr. Allison Macfarlane, the Chairman of the Nuclear Regulatory Commission, and her colleagues on the Commission. Thank you all for being here today.

By all accounts, Chairman Macfarlane has ushered in a new era of collegiality at the Commission. I commend her for her leadership.

The Commission is grappling with a number of important matters that deserve our attention.

In California, the San Onofre Nuclear Generating Station has been shut down for more than a year due to serious problems with the plant's brand-new steam generators. The generators cost California ratepayers $670 million. This expense was large, but the new equipment was supposed to last for decades. Two of the steam generators did not even last a year.

Southern California Edison has requested permission to restart one of the plant's two reactors. The Commission has an obligation to ensure that the reactor could operate safely before it is allowed to restart, and California residents are counting on the Commission to do its job carefully and with safety as the first priority.

But the Commission should also look at its own actions to understand why it did not detect the design and manufacturing flaws in these steam generators before they were turned on. If the NRC had detected these problems before the generators were installed, California ratepayers could have saved hundreds of millions of dollars.

The Commission also continues to address the safety gaps revealed by the Fukushima nuclear accident in Japan, which happened almost 2 years ago. Last year, the Commission issued three orders to U.S. commercial nuclear reactors to enhance safety in the wake of the Fukushima disaster. Today is the deadline for operators to submit their plans for implementing these orders. Nuclear plant operators have until the end of 2016 to fully implement their plans to increase safety. It is important that this safety deadline does not slip as others have in the past.

A major problem at Fukushima was that hydrogen gas built up in the reactor and eventually exploded when the pressure could not be released. One of the Commission's post-Fukushima orders requires reactors similar to the type used at Fukushima to install pressure-venting systems that operate reliably in severe accident conditions. That is a commonsense improvement, and I commend the Commission for requiring that step.

The Commission's technical experts recently recommended that the Commission go a step further to require these reactors to install filters on the vents in order to reduce the amount of radioactive material released with any vented gases. The NRC staff con-

ducted a full cost-benefit analysis and concluded that this safety precaution would be amply justified. Safety should be the Commission's top priority, and I urge the Commission to approve the NRC staff's recommendation to require filtered vents as soon as possible.

I was pleased to hear Chairman Macfarlane's testimony. I am looking forward to the comments of her colleagues and for the opportunity to ask questions about these issues and the other significant safety issues pending before the Commission.

Thank you, Mr. Chairman. I yield back the time.

[The prepared statement of Mr. Waxman follows:]

PREPARED STATEMENT OF HON. HENRY A. WAXMAN

I want to begin by welcoming Dr. Allison Macfarlane, the chairman of the Nuclear Regulatory Commission (NRC), and her colleagues on the Commission. Thank you for being here today.

By all accounts, Chairman Macfarlane has ushered in a new era of collegiality at the Commission. I commend her for her leadership.

The Commission is grappling with a number of important matters that deserve our attention.

In California, the San Onofre Nuclear Generating Station has been shut down for more than a year due to serious problems with the plant's brand new steam generators. The generators cost California ratepayers $670 million. This expense was large, but the new equipment was supposed to last for decades. Two of the steam generators did not even last a year.

Southern California Edison has requested permission to restart one of the plant's two reactors. The Commission has an obligation to ensure that the reactor could operate safely before it is allowed to restart, and California residents are counting on the Commission to do its job carefully and with safety as the first priority.

But the Commission should also look at its own actions to understand why it did not detect the design and manufacturing flaws in these steam generators before they were turned on. If the NRC had detected these problems before the generators were installed, California ratepayers could have saved hundreds of millions of dollars.

The Commission also continues to address the safety gaps revealed by the Fukushima nuclear accident in Japan, which happened almost two years ago.

Last year, the Commission issued three orders to U.S. commercial nuclear reactors to enhance safety in the wake of the Fukushima disaster. Today is the deadline for operators to submit their plans for implementing these orders. Nuclear plant operators have until the end of 2016 to fully implement their plans to increase safety. It is important that this safety deadline does not slip as others have in the past.

A major problem at Fukushima was that hydrogen gas built up in the reactor and eventually exploded when the pressure could not be released. One of the Commission's post-Fukushima orders requires reactors similar to the type used at Fukushima to install pressure venting systems that operate reliably in severe accident conditions. That's a commonsense improvement and I commend the Commission for requiring that step.

The Commission's technical experts recently recommended that the Commission go a step further to require these reactors to install filters on the vents in order to reduce the amount of radioactive material released with any vented gases. The NRC staff conducted a full cost-benefit analysis and concluded that this safety precaution would be amply justified. Safety should be the Commission's top priority, and I urge the Commission to approve the NRC staff's recommendation to require filtered vents as soon as possible.

I look forward to hearing the views of Chairman Macfarlane and her fellow commissioners about these issues and the other significant safety issues pending before the Commission.

Mr. SHIMKUS. The gentleman yields back his time.

The Chair now recognizes Commissioner Svinicki for 2 minutes.

STATEMENT OF KRISTINE SVINICKI

Ms. SVINICKI. Thank you, Chairman Whitfield, Ranking Member Rush, Chairman Shimkus, Ranking Member Tonko, Chairman Upton and distinguished members of the subcommittees for the opportunity to appear before you today at this oversight hearing to examine NRC policy and governance.

Since the Commission appeared before you last summer, NRC has continued its important and diverse activities related to oversight and licensing of nuclear power plants, research, test and training reactors, nuclear fuel cycle facilities, medical, industrial and academic uses of radioactive materials, and the transport, storage and disposal of radioactive materials and waste. Of these many diverse responsibilities, I will highlight two of current focus.

The NRC continues to oversee industry compliance with the cybersecurity regulations that NRC put in place in 2009 to protect critical digital assets at nuclear facilities. Working cooperatively with the Federal Energy Regulatory Commission, the North American Electric Reliability Corporation, the Department of Homeland Security and other organizations, we continue to monitor and help combat the cyber threats to our Nation.

In the area of small modular reactors, the NRC continues its work to identify and resolve policy and licensing issues related to adapting our regulatory framework, which was developed for large light water reactors, to the diverse designs and approaches put forth by the small modular reactor community of developers. NRC policy encourages early discussion prior to submission of a license application between NRC agency staff and potential applicants in public meetings. These discussions enable the NRC staff to identify and resolve potential issues early in the process. These efforts will continue and will take more specific form as the U.S. Department of Energy advances its SMR program activities this year and next.

All of these activities are achieved through the committed efforts of the women and men of the NRC who work to advance the NRC's mission of ensuring adequate protection of public health and safety and promoting the common defense and security day in and day out. I am grateful to them for the work they do.

I appreciate the opportunity to appear and look forward to your questions. Thank you.

Mr. SHIMKUS. Thank you, and now the Chair recognizes Commissioner Apostolakis for 2 minutes.

STATEMENT OF GEORGE APOSTOLAKIS

Mr. APOSTOLAKIS. Chairman Whitfield, Ranking Member Rush and members of the subcommittees, good morning.

At the 2-year anniversary of the accident at Fukushima, the NRC and the nuclear industry have made significant progress in addressing lessons learned. Decisions on nuclear safety matters should not be made without careful deliberation. Such deliberation includes the technical evaluations by NRC senior management, the views of the statutory advisory committee in regard to safeguards, and public interactions with external stakeholders.

As a result of this open and transparent process, the technical basis for implementing the Near-Term Task Force recommendations was strengthened. Additional technical issues for consider-

ation were identified in such areas as filtration of containment vents, loss of the ultimate heat sink, and the expedited transfer of spent fuel to dry casks to cask storage.

The process for reaching post-Fukushima decisions has been and continues to be methodical and transparent. This decision-making process has highlighted the potential tension between implementing new safety enhancements and maintaining regulatory stability. Our own Principles of Good Regulation state that NRC regulation should be perceived to be reliable and not unjustifiably in a state of transition. The agency will continue to face the challenge of striking the right balance between safety enhancements and regulatory stability.

In closing, I note that there are many other safety improvements being made at nuclear power plants that are not related to Fukushima. These also require significant resources to implement. It is a challenge to ensure that additional new requirements do not adversely affect the implementation of more safety significant activities or our licensees' ability to maintain their focus on day-to-day safe operation. Thank you.

Mr. SHIMKUS. Thank you, Commissioner.

Now, Commissioner Magwood, you are recognized for 2 minutes.

STATEMENT OF WILLIAM D. MAGWOOD, IV

Mr. MAGWOOD. Thank you, and good morning. Chairman Shimkus, Ranking Member Tonko, Chairman Whitfield and Ranking Member Rush, Chairman Upton and distinguished members of the subcommittees, it is a pleasure to appear before you today to discuss the activities of the Nuclear Regulatory Commission.

Two years after the massive earthquake struck northeastern Japan that precipitated the disaster at the Fukushima plant, responding to these important lessons of that event remains a very high priority for our agency. While we continue to work with our Japanese friends and the international community to study the sequence of events at Fukushima to mine this tragedy for information that will help prevent future disasters, we have already learned the highest priority lessons.

We understand that we must change the way we think about extreme events, what we in our business call beyond-design-basis events. These events are rare but can result in very high consequences. Fukushima has led to new thinking regarding how U.S. facilities should prepare for these occurrences.

From Fukushima, we understand it is possible for a nuclear plant to experience the loss of both offsite power and onsite emergency diesel generators as a result of a single event. We have also seen the unanticipated challenges associated with the failure of multiple reactors at a single site.

This Commission has led our agency to aggressively respond to these new learnings. We have issued orders to address these issues and many more. I believe that the great majority of risk revealed in the aftermath of Fukushima has been addressed by the actions we have taken thus far. Nevertheless, more work remains both in implementing successfully the decisions we have already made, and to address remaining important issues such as the improvements

that can be considered regarding containment of venting systems for Mark I and Mark II boiling-water reactors.

My colleagues and I have had many spirited, open discussions and debates over these matters, and we have all spent countless hours with the excellent NRC staff as we work to find the best solutions to these difficult issues and assure the health and safety of the American people. Meanwhile, the regular work of our agency continues. As our work continues, we appreciate the strong interest that you have demonstrated in our activities and the ongoing efforts that we have in becoming a stronger, more effective and more open nuclear safety regulator.

Thank you, and I look forward to your questions.

Mr. SHIMKUS. Thank you.

The Chair now recognizes Commissioner Ostendorff for 2 minutes.

STATEMENT OF WILLIAM C. OSTENDORFF

Mr. OSTENDORFF. Chairman Shimkus, Chairman Whitfield, Ranking Member Rush, thank you for the chance to be here today.

As we approach the 2-year anniversary of the Fukushima Daiichi event, I think that we are making very good progress at our agency in implementing previous actions in response and in looking at what needs to be done and what does not need to be done.

Along with all my colleagues here at this table, I know that we take seriously our responsibilities in making sure that we do not impose additional requirements without there being a strong justification. I firmly believe as a Commissioner that we are doing just that.

With respect to other work, safety performance of our licensees remains very good. When deficiencies are identified, we enhance our level of oversight and we ensure appropriate corrective actions are taken.

We are also effectively providing construction oversight of new reactors in Georgia and in South Carolina and are promptly addressing the waste confidence remand from the D.C. Circuit Court of Appeals.

I appreciate this committee's oversight role and I look forward to your questions.

Mr. SHIMKUS. Thank you. You get the prize, Commissioner Ostendorff. I would like to now begin our opening round of questions. I will recognize myself for the first 5 minutes.

As you all know, we are still waiting for a decision from the D.C. Circuit Court on whether the NRC is legally bound to resume consideration of the Yucca Mountain license application. Chairman Macfarlane, last July when you last testified before this committee, I asked you if you would honor the court's decision, and you said, and I quote, "Absolutely." Do you still stand by that statement?

Ms. MACFARLANE. Absolutely.

Mr. SHIMKUS. To the rest of the Commissioners, will you also commit to honor the court's decision?

Ms. SVINICKI. Yes, I do.

Mr. APOSTOLAKIS. Yes.

Mr. MAGWOOD. Yes.

Mr. OSTENDORFF. Yes.

Mr. SHIMKUS. Our investigation last year uncovered an estimate by NRC staff indicating that the Yucca Mountain Safety Evaluation Report could be completed in 6 to 8 months. The Safety Evaluation Report would document the NRC's review and conclusions regarding the license application. In answers to questions following our last hearing, the NRC stated the cost would be approximately $6.5 million. The NRC's Performance and Accountability Report issued 2 weeks ago states that the NRC currently has $10.4 million in unobligated balances from the Nuclear Waste Fund for the purpose of reviewing the license application, and this is to all five Commissioners: Having committed to honor the court's decision, if the court orders the NRC to resume its review of the license application, will you commit to ensuring that staff will complete the review and publicly release the Safety Evaluation Report in accordance with these time and resource estimates? Chairman?

Ms. MACFARLANE. Well, I will first wait to see what the court's decision is and then I will wait to see the analysis of the available funds.

Mr. SHIMKUS. So you don't believe that you have $10.5 million in unobligated accounts in the NRC?

Ms. MACFARLANE. We do. Whether it is released or not is another issue.

Mr. SHIMKUS. And you don't agree that you responded in your last appearance here that there was $6.5 million in—well, it was the projected cost.

Ms. MACFARLANE. I agreed to that.

Mr. SHIMKUS. And you have agreed that if the court decides to move forward that you as the Chairman of the Commission would do so?

Ms. MACFARLANE. Yes.

Mr. SHIMKUS. OK. Thank you. Same question to you, Commissioner Svinicki?

Ms. SVINICKI. Mr. Chairman, the figures that you mentioned, I believe are correct. I do not know if the NRC staff would need to update the cost estimate for completing and issuing the SERs. The longer the duration of the suspension of their activities, it may be that reconstituting their work would have a higher price tag than that, but of course, any direction to the staff will be deliberated amongst the Commissioners. As an individual member of the Commission, I do believe there would be value in completing that work.

Mr. SHIMKUS. Thank you. Commissioner Apostolakis?

Mr. APOSTOLAKIS. I agree with Commissioner Svinicki.

Mr. SHIMKUS. Great. Commissioner Magwood?

Mr. MAGWOOD. Yes, I would echo that as well, and also add that I think we also would require some additional guidance from Congress on that to assure we apply the money correctly, but with all those constraints, absolutely.

Mr. SHIMKUS. And Commissioner Ostendorff?

Mr. OSTENDORFF. I agree there is value in moving forward to complete the SERs and publicly issue those documents irrespective of what the long-term siting of the repository may be.

Mr. SHIMKUS. And final question. If the court issues such an order, will you commit to provide this committee with monthly reports on the staff's progress and expenditures of resources?

Ms. MACFARLANE. Yes.

Mr. SHIMKUS. Commissioner Svinicki?

Ms. SVINICKI. Yes.

Mr. APOSTOLAKIS. Yes.

Mr. MAGWOOD. Yes.

Mr. OSTENDORFF. Yes.

Mr. SHIMKUS. Thank you very much. Now the Chair recognizes the gentleman from New York, Mr. Tonko, for 5 minutes.

Mr. TONKO. Thank you, Mr. Chair.

Last March, the Commission issued three orders to United States commercial nuclear reactors to enhance safety in the wake of the Fukushima disaster. One of the orders is focusing on boiling-water reactors, similar to the type used in Fukushima. The Indian Point nuclear facility south of my Congressional district uses this type of reactor. NRC is requiring these reactors to install hydrogen venting systems that would be reliable and operable under emergency conditions. That seems like common sense, and in fact, today is the deadline for operators to submit their plans for implementing these orders to the NRC.

Chairman Macfarlane, these reactors have until the end of 2016, I believe, at the latest, to execute these plans. Is that correct?

Ms. MACFARLANE. To execute the—I believe that is correct.

Mr. TONKO. That is more than 5 years after the Fukushima accident for only three orders. The post-Fukushima task force made many additional recommendations for how to improve reactor safety. Chairman Macfarlane, how long will it take, in your opinion, to implement all of the Fukushima task force's recommendations?

Ms. MACFARLANE. This is an issue that we are looking at, and we are trying to—we are evaluating a number of these recommendations going forward. As you know, we have prioritized them into three tiers. The first tier were the activities that could be conducted immediately without further study, and now we are evaluating the tier two and tier three activities to see if there is reason to go forward with them, but we are doing it with all due deliberation.

Mr. TONKO. I appreciate that, but I believe it is important to maintain a sense of urgency in the implementation of the lessons learned from Fukushima. As time passes, we tend to lose focus, but the hazards don't become any less real over the course of time.

I want to also ask you about another issue that seems like common sense, and that is whether NRC should require the installation of filters on these hydrogen vents in order to reduce the amount of radiation released into the outside air in the event of a severe accident. NRC's technical experts recommended that the Commission require filtered vents. Some members of this committee have raised concerns that this requirement would be too costly. Chairman Macfarlane, my understanding is that the NRC staff did a full cost-benefit analysis examining both quantitative and qualitative factors. Is that correct?

Ms. MACFARLANE. That is correct.

Mr. TONKO. And there is nothing unusual about looking at qualitative factors. Is that correct?

Ms. MACFARLANE. That is correct.

Mr. TONKO. As is consistent with NRC's guidance on cost-benefit analyses?

Ms. MACFARLANE. Yes.

Mr. TONKO. OK. Well, based on its analysis, NRC staff determined that requiring filtered vents would be cost-justified and would indeed increase safety. Is that correct?

Ms. MACFARLANE. That is the staff's analysis.

Mr. TONKO. I know you are currently voting on this issue.

Ms. MACFARLANE. We are.

Mr. TONKO. And I respect that process. I believe that you need to work together to come to a conclusion on this issue, but I would encourage you to resist outside pressure to disregard the expert recommendations of your staff. I think it is imperative. I think it is important that we move forward having learned from the lessons of Fukushima, and it is important for us to maintain a sense of safety with all of our nuclear activity across the country.

So with that, I thank you, and Mr. Chair, I yield back.

Mr. SHIMKUS. The gentleman yields back his time. The Chair now recognizes the chairman of the full committee, Mr. Upton, for 5 minutes.

Mr. UPTON. Well, again, thank you, Mr. Chairman, and I do appreciate, as I said in my opening statement, your particular concern as we all share with my particular plant in my district, the Palisades plant, and it is in the interest of all that that Palisades plant be returned to column 1, which it was. I appreciated you keeping us updated. And as I indicated in my opening statement, and you indicated as well, that you are going to apply increased oversight beyond the normal inspections for that particular facility. Can you elaborate at all in terms of how long that might last, what progress we have seen since you indicated such a number of weeks ago?

Ms. MACFARLANE. Sure. The increased oversight is a result of degradation in safety culture that we observed at the Palisades plant, and they had a few other issues but this was the issue that prompted the increased oversight, and we are going to continue with the increased oversight to ensure that the positive changes that we have seen at the Palisades site in safety culture hold, and we will continue that for a while as long as we are convinced that changes have permanently taken place at the plant, and this is completely normal and this is what we do with other plants. We are not singling out Palisades in any particular manner, and it is all moving in a very positive direction.

Mr. UPTON. I appreciate that, and I appreciate your leadership, and I just want to extend an invitation. In my district, I have two facilities that are literally 10 miles north of where I live and 10 miles south, and it would be an easy trip for you perhaps to come visit both on literally the same day, so I appreciate your leadership and I yield back.

Mr. SHIMKUS. The gentleman yields back his time. The Chair now recognizes the ranking member of the Energy and Air Quality Subcommittee, Mr. Rush, for 5 minutes.

Mr. RUSH. I want to thank you, Mr. Chairman.

Chairwoman Macfarlane, I am going to switch the focus again from some of the nuclear-centered anxieties that are prevalent on

this committee, and I want to focus on what I consider one of your strengths.

In my opening statement, I remarked that I was pleased to see the NRC being honored as one of the governmental agencies that was most supportive of the engineering departments at HBCUs in 2012, and I think that is an issue that really we need some airing on and hearings of this type, and that is the issue of getting more students to go into the STEM fields so that they can be the engineers and scientists of the future, and I want to commend your agency again for its outstanding achievement.

The API recently released a report that half of this industry will turn over in the next 7 to 10 years and it is in our national security interests that we make sure that we train young people to become scientists and engineers and that they have the skills and the expertise that is necessary to replace this aging workforce. 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?

Ms. MACFARLANE. We can certainly provide a list in writing on these programs, and I think these programs are very important. Coming from an academic background myself, I find it very important and I have been getting briefed from the staff on all the range of programs that we have. We have some very important programs to not only encourage students to go into these fields but also to make sure there are faculty there to teach the students, and I think that is an important piece of this as well. So these are very important programs. I don't know if my colleagues would like to comment.

Mr. RUSH. Anybody?

Mr. MAGWOOD. Sure, Congressman, just a quick comment. I agree with Chairman Macfarlane. I think these activities are very important, and it is not simply programs aimed at HBCUs obviously. It is really the broader academic community. And NRC has a unique role to play because it is not just simply the dollars that we put into this, it is also a lot of our staff who are very interested in these programs and serve as champions for various universities across the country where they travel and I travel quite frequently to visit students and talk to students about careers in science and technology, and of course, particularly nuclear science and technology.

In the area of our Minority-Serving Institutions program, I think the biggest portion of the program is what we would call capacity building, building the ability of these universities to compete on a more equal basis with larger universities for research dollars and other types of grants. So it is something that we are very proud of.

Mr. RUSH. Ms. Macfarlane, the NRC Principles of Good Regulation state, and I quote, "Regulatory activity should be consistent with the degree of risk reduction they achieve. Where several effective alternatives are available, the option which minimizes the use of resources should be adopted," and "Once established, regulations should be perceived to be reliable and not unjustifiably in a state of transition." What specific measures do you employ to ensure that

the NRC's regulatory process provides sufficient flexibility to satisfy these principles while ensuring a predictable and stable regulatory regime?

Ms. MACFARLANE. We operate a number of different processes to ensure that there is a stable regulatory regime, and we work closely with industry and other stakeholders to ensure that we are going forward and we are sensitive to issues that come up.

Mr. RUSH. Mr. Chairman, I yield back.

Mr. SHIMKUS. The gentleman yields back his time. The Chair recognizes the chairman of the Energy and Air Quality Subcommittee, Mr. Whitfield, for 5 minutes.

Mr. WHITFIELD. Thank you, Chairman Shimkus, and thank you all for your statements.

In my opening statement, I talked about the Near-Term Task Force recommendation number one concerning the defense-in-depth philosophy, the Severe Accident Management Order, the filtered-vents proposal, and the economic consequences proposal, and I noticed that after last July's hearing, Commissioner Ostendorff, you submitted answers to some questions we had submitted in which you supported an integrated, prioritized assessment of the Near-Term Task Force recommendations, and as I said in my opening statement, all of these issues seem to be so intertwined and yet there seems to be an effort at the Commission to do them independent and separate of each other. Would you give me your views on this issue?

Mr. OSTENDORFF. Thank you very much, Chairman Whitfield, for the question. It is a very important question.

My personal views on this are as follows, that there may be some externally who would criticize the NRC staff for the sequencing of these four issues that you just raised. I take a different view, and I will tell you that amongst the five of us when we meet in periodic meetings several times a month one-on-one, we discuss this exact issue. I would fear that for us to go back and tell our Executive Director for Operations go back and sequence this in the way that you think is appropriate, that we would be inappropriately delegating our own policy decision-making authority to our staff. I think it is incumbent upon us as decisionmakers to take that integration and prioritization function on these key policy issues and deal with them as a Commission-level decision, not a staff decision.

So for instance, if I could just add, in our economic consequences vote, and nothing is wrapped up but we have all had lots of discussions on this, and the filtered-vents vote, I think you will see when those votes are released under our processes, there has been significant consideration for the interconnection of these issues.

Mr. WHITFIELD. Would any of the other Commissioners like to make a comment?

Ms. SVINICKI. Yes, Chairman Whitfield. I agree with Commissioner Ostendorff. I would add that I think since our responses last summer, individually and as a Commission, we are trying to strike a balance between, as Congressman Rush just read, our commitment to a principle that the entire regulatory framework not be unjustifiably in a state of transition and the need to disposition some of these measures which have been under evaluation. So we are attempting to integrate as well as we can but at the same time,

if issues are held open even longer, we contribute to this state of transition for the regulatory framework. So as we discuss with each other and we feel we are able, if we can disposition an individual issue, we think that getting that stabilized is beneficial.

Ms. MACFARLANE. Let me add that I agree with both of my colleagues on this issue, and we have been discussing it on a very regular basis, but I think what we are also benefiting from, as the staff does more analysis, is more information to help us really understand all the issues that are at play and exactly how we can deal with the overlap or the lack of overlap, depending on the particular issue. So we are giving this due consideration, please be assured.

Mr. WHITFIELD. Yes, sir?

Mr. APOSTOLAKIS. Well, in addition to what my colleagues said, there is one other element that plays a role in our decision-making process, and that is how long it would take to implement one of those recommendations. Ideally and logically, recommendation one should be the first one to deal with, but recommendation one requires time, it requires rethinking of the regulatory system, so I don't think any one of us would want us to still be working on recommendation one without doing anything else. So there are other actions that we can take, and it is not an ideal situation. But again, there is this time pressure too, that we do want to do something, and recommendation one will have to wait for a while.

Mr. WHITFIELD. Mr. Magwood?

Mr. MAGWOOD. Not to be the only one to stay silent on the issue, I guess I will have to make some comment. I think that the outcomes that we have been able to generate I think have been good, and that is not to say that we could not have had a more, I guess I should say a more coordinated approach to how these issues were sequenced and how we approach them, but to be honest, a lot of these issues have evolved a bit while we have been working on them. For example, we have merged some of the issues together so that they aren't independent decisions anymore. So our understanding of how to approach this has changed as we have gone forward. So it is easy to look backwards and say well, I wish we could have done it this way, but I think the progress we have made so far has been so positive that I am hesitant to be overly critical of the fact that I would have liked to have seen one decision come before another.

Mr. WHITFIELD. Well, thank you all so much for talking about it. Thank you.

Mr. SHIMKUS. The chairman's time has expired. The Chair now recognizes the ranking member of the full committee, Mr. Waxman, for 5 minutes.

Mr. WAXMAN. Thank you, Mr. Chairman.

Chair Macfarlane, I would like to start by asking you about the problems with San Onofre. I mentioned it in my opening statement. The nuclear generating station is located near San Diego. In 2010 and 2011, new steam generators were placed in service at that plant. The project cost California ratepayers $670 million but the new equipment was supposed to last for decades. However, since January 31 of last year, both reactors have been shut down after a tube in one of the units' steam generators started leaking

radioactive steam into the atmosphere. When you last testified before the committee, all five Commissioners agreed that this is a serious safety issue that must be corrected before the plant restarts. The operator of the plant, Southern California Edison, is now proposing to run one of the units at 70 percent of power for 5 months. I know that NRC staff is evaluating that proposal.

Chairman Macfarlane, would running a plant at less than full power for an extended period of time normally require an amendment to the plant's operating license?

Ms. MACFARLANE. You know, we are in the process of evaluating the proposal by Southern California Edison for their restart, and we are also evaluating whether they understand the root cause of the problem with the steam generators, and let me assure you first of all, that we will not let the plant operate until we are assured that it can operate 100 percent safely.

Mr. WAXMAN. But my question is—and I thank you for that comment—is that if they are going to run this plant at less than full power, don't they require an amendment to the plant's operating license?

Ms. MACFARLANE. I think this is in adjudicatory space right now and so I can't comment on that particular issue.

Mr. WAXMAN. NRC didn't detect the flaws in the generators before they were turned on. That raises important questions. How did this happen? How do we make sure it doesn't happen again? What progress has NRC made in answering these outstanding questions?

Ms. MACFARLANE. The process for changing out steam generators at plants—and this has been done at 65 plants across the country, 65 reactors. We have done this over and over. It has been a fairly straightforward process. So the situation at San Onofre is somewhat unique. But nonetheless, we are going back and evaluating whether we have the right procedures in place when these big pieces of equipment are changed. So this is an active area.

Mr. WAXMAN. And how long do you figure this is going to take?

Ms. MACFARLANE. That what is going to take?

Mr. WAXMAN. This evaluation to know what NRC didn't do and should have done and will do in the future.

Ms. MACFARLANE. I am not sure, but we are in the process of determining lessons learned, and we will really move on with lessons learned once this situation with San Onofre is completed.

Mr. WAXMAN. I want to turn to the issue of climate change and its impact on nuclear power plants. For years, scientists have warned that climate change will bring more extreme weather and flooding, more heat waves and droughts. We are now experiencing impacts consistent with these predictions.

Chairman Macfarlane, what is NRC doing to ensure that our Nation's nuclear plants can operate safely not only in the current climate but in a warmer climate with more extreme weather? There are indications that climate change is already having a harmful impact on the nuclear sector. Last August, Dominion Power was forced to shut down a nuclear reactor at its Millstone Power Station in Connecticut because the water it needs to cool its reactor became too warm.

Ms. MACFARLANE. Yes, I appreciate that question. I think it is important for us to evaluate all external hazards including those

that may be posed by climate change, but I think the Fukushima accident showed us that we need to be aware of recent information in terms of earthquake activity, tsunami, etc. So we need to be prepared for all of that, and in fact, we are moving in that direction right now. In the tier one activities from the Fukushima follow-on, we have asked plants to reevaluate both the seismic and flooding hazard, and the flooding hazard is a broad hazard. It can be from riverine flooding from too much rain, from coastal storm surge, as we saw during Hurricane Sandy, even from tsunamis. And then as we move through our other——

Mr. WAXMAN. Are you aware of other instances of nuclear plants shutting down or curtailing their output as a result of cooling water they depend on becoming either too warm or too scarce?

Ms. MACFARLANE. Yes. If it becomes their licensing basis, they do have to shut down.

Mr. WAXMAN. The Tennessee Valley Authority has to curtail its output of its Browns Ferry nuclear reactors in Alabama during the summers of 2010 and 2011 because the temperature of the river used for cooling waters became too hot. Exelon Corporation had to receive special permission from regulators last summer to continue to operate its Braidwood reactors in Illinois when their cooling water pond's temperature reached 102 degrees.

The impact of climate change on our Nation's nuclear power plants are real and happening now, and I think it is even going to get worse in the future. Thank you very much.

Mr. SHIMKUS. Thank you. The gentleman yields back his time. The Chair now recognizes the chairman emeritus from the full committee, Mr. Barton, for 5 minutes.

Mr. BARTON. Thank you, both chairmen and ranking members of the subcommittees for holding this hearing. It is very decent of the full Commission to come before the two subcommittees.

Madam Chairwoman, several months or maybe a month ago, myself and 20 other members sent you a letter asking some kind of general policy questions. One of the questions we asked was, when we could expect your Commission to conduct a full regulatory review between the Japanese system and the United States system, and in spite of some of the things that you said to member of this committee informally and in private conversation, you didn't answer that question, and I was a little bit surprised. I didn't think that was a trick question. Do you want to enlighten the committee why you were so nonresponsive to such a basic baseline question?

Ms. MACFARLANE. Well, let me thank you for your question. I appreciate it, and I am sorry you found our answer wanting. And I will start off, and I will invite my colleagues to jump in, because it was a response from all of us collectively.

Let me note first of all that operational experience is a foundational element in our work at the NRC, and the experiences at Fukushima represent experience that we need to learn from. We are of course aware of the situation with Japan and we are aware of the analyses that the Japanese have done themselves of the accident and their conclusions. Nonetheless, I think the accident pointed out a number of issues that are important for us to learn from. For instance, prior to the accident, we had not imagined that more

than one reactor could melt down at a single facility. So it is imperative for us to now consider that in our regulatory analysis.

Mr. BARTON. Well, can we——

Ms. MACFARLANE. But let me invite my colleagues to comment.

Mr. BARTON. Let me just do a quick follow-up. Are you willing to commit to the committee right now that you will conduct such a full regulatory review comparison and, if so, when might we expect that to be given to the committee and the public?

Ms. MACFARLANE. I think that we are working with all due deliberation, very carefully considering the lessons learned from the Fukushima accident and I think we are——

Mr. BARTON. That is not an answer to my question. You know, are you going to conduct a full regulatory review or not?

Ms. MACFARLANE. I am satisfied with the analysis and the progress that we are making at the agency.

Mr. BARTON. So you think you have already done it even though you have not——

Ms. MACFARLANE. I think we have done an adequate job, and we are——

Mr. BARTON. Does the rest of the Commission agree with that? That is a stunning statement if you all agree with that.

Ms. SVINICKI. Congressman Barton, if I may, predating Chairman Macfarlane's service on the Commission, as an individual member, I did propose in a vote to my colleagues that the Commission direct the staff to conduct a regulatory comparison. This was in the months immediately succeeding the event in Japan. In the process of working as a deliberative body, my proposal was scoped down to a comparison of station blackout requirements. I respect the majority, so I appreciate that my colleagues on the Commission supported a partial comparison at that time.

I continue to believe that a more complete comparison would be a good check for us even 2 years from the accident. It would allow us to be aware if we have any gaps that we have not yet addressed. Our direction to the staff arises from a majority vote.

Mr. BARTON. I am not trying to be argumentative but I don't see how you can decide what to do going forward if you really don't do a thorough review of the two regulatory systems that are currently in existence, or were in existence at that time.

Mr. SHIMKUS. Would the gentleman yield?

Mr. BARTON. Sure.

Mr. SHIMKUS. And our point is this. Collegiality is great, but just signing a letter because that is the majority way instead of you have opposition and you have a better way to do it, stand your ground. We want you to be collegial. We want you to talk. But this letter and this response is unacceptable to this committee, and we would ask that we get it right and that you give us a thorough analysis of the two systems.

Mr. BARTON. I can assure you that most members of the committee on both sides of the aisle are not trying to sandbag the Commission. In fact, I would say to the contrary, we are your biggest allies. So to be nonresponsive, I won't say it is shocking because it is not the first time we have received such a nonresponse from a regulatory agency but it was disappointing.

With that, I yield back.

Mr. SHIMKUS. The gentleman's time is expired. The Chair now recognizes the other chairman emeritus of the full committee, Mr. Dingell, for 5 minutes.

Mr. DINGELL. Mr. Chairman, I thank you for your courtesy and commend you for this hearing.

A yes or no question here. This is to the chairman. As you know, the Yucca Mountain facility remains unused yet we are still generating nuclear waste at facilities across the country at a tremendous rate. 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? Yes or no.

Ms. MACFARLANE. It won't invalidate existing licenses.

Mr. DINGELL. Now, if not, does the Commission plan to do so?

Ms. MACFARLANE. Sorry. Can you repeat the question?

Mr. DINGELL. If not, does the Commission plan to do so?

Ms. MACFARLANE. To invalidate existing licenses?

Mr. DINGELL. Well, what are you going to do? You have already said—you have given me an answer to the first part of the question. Does the Commission plan then to take any further action here such as terminating the use of the facility and reviewing or bringing to a halt the development of the nuclear power in the country?

Ms. MACFARLANE. Let me ask for clarification. Are we talking about——

Mr. DINGELL. Please submit the answer in written form, and Mr. Chairman, I will submit questions to the Commission.

Mr. SHIMKUS. Without objection, all members will be able to submit questions to the Commission for a response.

Mr. DINGELL. Now, Madam Chairman, would you submit then additional information on this subject for the record to the committee? I will be submitting to you an appropriate letter on this matter.

Now, this is again yes or no. The nuclear industry has been ahead of many industries in cybersecurity efforts, and the Commission had robust cyber regulations already in place. Do you believe the Commission has the necessary authority and resources to do all you can to defend against cybersecurity threats and breaches and prepare for future threats? Could you answer this yes or no?

Ms. MACFARLANE. Yes.

Mr. DINGELL. Again, Mr. Chairman, I will be submitting some questions on this point for the record.

Madam Chairman, in addition to the nuclear facilities and the computer infrastructures that support them, nuclear facilities could potentially be disrupted through offsite attacks such as attacks on the mines or transportation or on other activities at the companies that manufacture parts. If reactor fuels, 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? Yes or no.

Ms. MACFARLANE. We are beginning to look into this issue.

Mr. DINGELL. All right. And again, I will submit some questions on this.

Madam Chairman, 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, for whom I have great respect, 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, it may not be appropriate for the facilities your decision may affect due to the differences in affected reactors. Would a case-by-case evaluation provide greater certainty the best technologies are being used rather than a broad approach such as a filtered-vent proposal? Yes or no.

Ms. MACFARLANE. I am sorry. I didn't get the question.

Mr. DINGELL. Well, I am running out of time.

Ms. MACFARLANE. The filtered-vents issue is still an active area of voting so I am not going to talk about it right now, with all respect to my colleagues.

Mr. DINGELL. Thank you. I will submit again questions on this. In regards to other Fukushima recommendations already put in place, please submit for the record why these were issued as orders and not through the rulemaking process. Why did you issue these as orders and not through the rulemaking process?

Ms. MACFARLANE. Because we felt that these particular activities were activities that needed to be accomplished very quickly. Rulemaking is a very time-consuming process, and in response to what we now know about what can happen at reactors based on the Fukushima accident——

Mr. DINGELL. Now, they will be submitted rather imperfectly, and this is going to require further refinement by the Commission, is it not?

Ms. MACFARLANE. Yes. We are in rulemaking mode as well.

Mr. DINGELL. Madam Chairman, I submitted a question to you last year with regard 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 such additional information has been submitted. Does the Commission anticipate requesting further information to Aerotest?

Ms. MACFARLANE. The information was submitted, I believe, this past January and it will take between 6 to 8 months for us to review this.

Mr. DINGELL. Would you please submit for the record your timeline on this?

And Mr. Chairman, I thank you for your courtesy.

Mr. SHIMKUS. The gentleman's time is expired. The Chair now recognizes the gentleman from Georgia, Mr. Gingrey, for 5 minutes.

Mr. GINGREY. Mr. Chairman, thank you for the recognition. Since we are somewhat rushed for time—I think we have Floor votes coming up soon—let me get right to the questions, and I am going to go starting with Chairwoman Macfarlane, and I want each of the Commissioners to respond to this if you will.

To me, it seems abundantly clear that this Administration unilaterally decided to ignore the Nuclear Waste Policy Act and indeed

canceled Yucca Mountain, our Nation's only nuclear waste repository program. Subsequently, the Commission's waste confidence rule was vacated by the D.C. Circuit Court, which rebuked the Commission when it wrote, "The Commission apparently has no long-term plan other than hoping for a geologic repository." As a result, you have a 2-year moratorium now on issuing new plant licenses or renewals for existing plants. For each of the Commissioners, again, Chairwoman Macfarlane, I will start with you. Wouldn't simply following the law and reconstituting the Yucca Mountain program reestablish a basis for confidence that there will be a disposal path for spent nuclear fuel?

Ms. MACFARLANE. This issue, the Yucca Mountain issue, is in the courts right now and we will await the decision of the courts and we will follow the law.

Mr. GINGREY. Please.

Ms. SVINICKI. Yes, I believe that having clarity in both the language of the law and its implementation would allow the NRC to continue its licensing activities. I suppose I am just observing that if the national policy for disposal of these materials is uncertain, then these types of legal complications such as waste confidence arise in our licensing activities.

Mr. APOSTOLAKIS. I agree with Chairman Macfarlane.

Mr. MAGWOOD. I think it is quite evident that the uncertainty in national policy created the situation we have with Waste Confidence, so I think the answer to your question obviously is yes, but I would also stress that I believe that our original Waste Confidence decision in 2010 was, in my view, and remains, in my view, appropriate. So I still think that was a good aste confidence determination at the time despite the fact the court didn't agree with me on that.

Mr. OSTENDORFF. Congressman, I agree with Commissioner Magwood. I voted on that waste confidence decision when I first got to the Commission along with other colleagues here. I believe that we recognized it is the Department of Energy's responsibility under the Nuclear Waste Policy Act to establish a repository. We had good faith that they would follow that law. The law should be followed or amended.

Mr. GINGREY. Mr. Chairman, I have a list of the licensing actions subject to the moratorium issued by the Commission. This is the list, Mr. Chairman, and I would like unanimous consent that this document be included in our record.

Mr. SHIMKUS. Is there objection? Hearing none, so ordered.

[The information appears at the conclusion of the hearing.]

Mr. GINGREY. Mr. Chairman, thank you.

On the third page of this document, listed are two independent spent fuel storage installations. That is a fancy word for interim storage, of which we have 68, as I understand it, across the country, 68 different interim storage facilities. So there are two that can't get their existing license renewed because of this waste confidence moratorium. There are some individuals that probably hope that interim storage will fix the waste confidence problem, but that looks like a catch-22 to me. Can each of you comment, again, starting with the chairwoman, can each of you comment on how interim

storage can solve waste confidence if you cannot license it because of the moratorium?

Ms. MACFARLANE. First of all, let me point out that the resolving of the waste problems is the purview of the Congress and the Administration and not the Nuclear Regulatory Commission. Our job is to ensure that any interim storage facilities, any repositories, if so deemed by law, if that is our role, then we——

Mr. SHIMKUS. If the gentleman would yield, it is the law of the land, so just for the record, I think no one in the basic reading of the law would say that Yucca Mountain is not the law of the land.

Ms. MACFARLANE. Yes, I am not trying to say that Yucca Mountain is not the law of the land. I am just clarifying our role as regulators.

Mr. GINGREY. Why don't we move along pretty quickly? I am running out of time and I would like to hear from each one of the Commissioners on this as well.

Ms. SVINICKI. Congressman, I would only observe that the Commission, I believe, has crafted a response to the adverse court decision, which is not dependent on legislative action. We have directed our staff to remedy and rehabilitate both the rulemaking and the environmental impact statement that the court found lacking. Once that activity is complete, our ability to issue licenses and the legal underpinning for that will be restored.

Mr. APOSTOLAKIS. I agree.

Mr. MAGWOOD. Yes, I agree with Commissioner Svinicki.

Mr. OSTENDORFF. I also agree.

Mr. GINGREY. Mr. Chairman, my time is expired. I yield back. Thank you.

Mr. SHIMKUS. The gentleman's time is expired. The Chair recognizes the gentlelady from California, Ms. Capps, for 5 minutes.

Mrs. CAPPS. Thank you, Mr. Chairman.

Thank you all for your testimony, and Chairwoman Macfarlane, as we discussed before, Diablo Canyon Power Plant is located in my Congressional district. Diablo Canyon is the largest private employer in the area. PG&E, which operates the plant, does a lot of great work. I visited there several times over the years and I want to thank you for taking the time to visit the plant earlier this year.

Now, we have known for a long time that this nuclear plants sits on the Hosgri earthquake fault. But in 2008, the U.S. Geological Survey discovered a new fault called the Shoreline fault. The Energy Commission recommended and our State PUC directed that the utility conduct independent peer-reviewed advanced seismic studies prior to applying for relicensing. As you know, PG&E asked to have the relicensing request paused pending completion of these studies. The NRC granted their request, and I supported that action.

PG&E came up with a plan for the studies but California's Coastal Commission rejected it last year due to environmental concerns. I was similarly concerned about these impacts on marine life, which is why I supported making it limited pilot program. But the health and safety of my constituents is my top priority, and I strongly believe that additional study of the fault is needed before the relicensing process can move forward. While I understand this effort has been driven by the State, I would hope the NRC would

also want to have the best, most up-to-date information about this fault.

Chairwoman Macfarlane, do you also agree that having additional independent data on the Shoreline fault would be helpful? And I would appreciate it if you just say yes or no.

Ms. MACFARLANE. Well, additional information can always be helpful but we can operate with the information that we have.

Mrs. CAPPS. But you do agree that more information is a good thing?

Ms. MACFARLANE. I agree in general that more information is a good thing.

Mrs. CAPPS. Last October, the NRC published a research information letter claiming that Diablo Canyon is seismically safe, yet there are other scientific studies that seem to conflict with the NRC's report, and I am holding up one. USGS seismologist Dr. Jeanne Hardebeck, who discovered the Shoreline fault, just published an article in the peer-reviewed Bulletin of Seismology Society of America which says, and this is a quote: "Much is unknown about the Shoreline fault." This raises concerns for me and my constituents that there are still unanswered questions about the seismic situation. So Chairwoman Macfarlane, how can we ensure that these questions and concerns are properly addressed?

Ms. MACFARLANE. Well, fortunately, right now there is an ongoing process. There is a committee called the Senior Seismic Hazard Assessment Committee that is actively evaluating the seismic situation at Diablo Canyon and they are in the middle of their process. We are observing this process and we are looking to see what the outcome is.

Mrs. CAPPS. And the fact remains that another federal scientist in a peer-reviewed study says more information is needed. So we clearly need to figure this out. I think we can agree that every angle must be thoroughly examined. NRC analysis needs to incorporate independent, concrete data that can be tested against those of seismic experts like Dr. Hardebeck. I think it makes sense to have the best eyes and minds in the country working together looking at these seismic issues because, actually, first and foremost, this is about safety. The NRC has the responsibility to make sure that Diablo Canyon is as safe as it can be today but also in the future. And I want the record to note that Diablo Canyon and the NRC have more than a decade to make these decisions because these licenses don't expire until over a decade from now, so there is no rush. We must work together to find a responsible way to gather and consider the additional data before relicensing moves forward.

Chairwoman Macfarlane, I hope you share this commitment, and I look forward to working with the NRC to ensure that this process is done right. I do have some additional questions for the Chairwoman and for other members of the panel but I am going to submit those for the record, and I look forward to their response. I do have 45 seconds left and I want to know if there is another response that you would like to give now, or any of the other members of the Commission about this very urgent need at the nuclear facility in my Congressional district.

Ms. MACFARLANE. I think it is important that we make sure that these plants can operate safety, I agree with you, but I will offer my colleagues an option to comment.

Mrs. CAPPS. All right. I yield back.

Mr. SHIMKUS. The gentlelady yields back her time. The Chair recognizes the gentleman from Nebraska, Mr. Terry, for 5 minutes.

Mr. TERRY. Thank you, Mr. Chairman.

Chairwoman Macfarlane, I represent Fort Calhoun, and you did mention Fort Calhoun in your written statement, so I want to follow up and ask a specific question regarding the NRC's relationship with the folks at Fort Calhoun and Omaha Public Power. I meet with them fairly regularly on the status of Fort Calhoun. I don't meet with you regularly on it. My question as a layman, reading the newspaper articles and hearing about their continuous meetings, what I am concerned about is, it seems about every 6, 7 months, the NRC issues a new list of to-do things for that plant before it could reopen. So it appears to me as a layperson that the NRC may not have all of its organization skills applied here in the sense that it just seems like they get really close to being able to reopen and then all of a sudden they get this new list. Why and how does that happen?

Ms. MACFARLANE. I think we are working deliberately again, carefully with Fort Calhoun, and as you know, there were a number of issues that arose at the site, I think it was in 2011 , in the summer of 2011, first the flooding issue and then a fire.

Mr. TERRY. And the fire.

Ms. MACFARLANE. Right, and then there were a number of significant safety-culture issues. As you know, Omaha Power Public District has now contracted with Exelon to operate the site, so it is a matter of getting those Exelon folks in, reestablishing stability at the site and addressing the issues that exist.

Mr. TERRY. Are you familiar with Fort Calhoun and that process?

Ms. MACFARLANE. Yes. I have not visited the site yet.

Mr. TERRY. You are speaking at a general level here. I already know about Exelon, and there was an additional punch list once the approval of Exelon had come in and helped with the management culture there, and as I understand the new punch list, it didn't really have much to do with the management aspect but physical things in that plant.

Ms. MACFARLANE. Right.

Mr. TERRY. And it just seems odd that those physical things were there a year and a half ago but they weren't on your list, and that gives me concern that, well, there is another agenda out there, at least questions like that. I just want to put that out there.

Ms. MACFARLANE. I understand your concern, and a couple of these issues have come up as a result of the licensee discovering of these issues. Some of them have to do with electrical penetrations into the containment building. There are a number of technical issues like this that the licensee noticed and therefore we are under obligation to ensure that these particular issues are addressed. I invite my colleagues to——

Mr. TERRY. Well, I am going to go on to my next question. Because of your situation and incidences that occurred internally, we

wrote a bill for reform of the NRC a couple years ago, 3657. Are you familiar with that bill?

Ms. MACFARLANE. I am familiar.

Mr. TERRY. It has not been reintroduced, comma, yet. So I am going to go down the list. Is everyone familiar with that bill? Ms. Svinicki?

Ms. SVINICKI. Yes.

Mr. TERRY. So one of the major parts of that is about the declaration of emergencies that seem to be one of the abuses that was identified. So do you believe that the Chairman should officially declare an emergency to the Commission and to Congress before assuming emergency powers? And I am going to go from you, Chairwoman, on down.

Ms. MACFARLANE. I think the Chairman should certainly consult with his or her colleagues when declaring an emergency.

Mr. TERRY. And to Congress?

Ms. MACFARLANE. And to Congress.

Ms. SVINICKI. I think certainly members of the Commission need to be notified and there needs to be an official declaration.

Mr. APOSTOLAKIS. Yes, I agree.

Mr. MAGWOOD. Yes, there should be an official declaration.

Mr. OSTENDORFF. Yes.

Mr. TERRY. I have three more questions that I cannot ask in 17 seconds.

Mr. Magwood, I just want to thank you for your strength during a difficult process before Chairman Macfarlane got there. So good job. Yield back.

Mr. SHIMKUS. The gentleman yields back his time. The Chair recognizes the lady from Florida, Ms. Castor, for 5 minutes.

Ms. CASTOR. Thank you, Mr. Chairman. Good morning and thanks to the Commissioners for your testimony this morning.

Over the past 5 years or so, certain ratepayers in Florida have struggled with the cost and uncertainty of the Crystal River nuclear power plant north of Tampa Bay. In 2009, the previous owner of the plant embarked on somewhat typical repairs to the plant but during those repairs the containment wall was seriously cracked, and the new owner announced earlier this month its intent to close the plant. That is the first closure of a nuclear power plant in Florida, the first major closure of a plant in the Southeastern United States. So I understand the utility and the NRC face two choices on how to decommission the plant. You can either decontaminate it quickly over time called decon under the NRC lingo or over 60 years, a process known as safe storage where the radioactivity decays over time. The utility announced that they are choosing the latter option. What is the role of the NRC? Do you agree with that? What analysis goes into those options? What is your role? Do you agree with that decision?

Ms. MACFARLANE. Those options are both options that are available under our regulatory framework. So a plant can decide to decommission immediately such as what was done at Maine Yankee or it can decide to put the plant in SAFSTOR for up to 60 years before finally decommissioning the site. So those are all available within our purview and our role is to ensure that whichever path is chosen is carried out safety and securely.

Ms. CASTOR. What are the pros and cons of——

Ms. MACFARLANE. I think that is in part up to the licensee to decide what the pros and cons are.

Ms. CASTOR. So the NRC's role is not to provide direction? The rules provide that they can choose either option and then you provide oversight and input once that option is selected?

Ms. MACFARLANE. Correct.

Ms. CASTOR. Because it is interesting that the estimates I have seen that decommissioning the plant quickly would cost under a billion dollars while safe storage over 60 years could cost over $6 billion. Does that sound correct in the ballpark?

Ms. MACFARLANE. I am not sure for the particular facility at Crystal River. I don't know, maybe my colleagues could comment.

Ms. CASTOR. There is just a lot of sensitivity because in Florida, there was an advanced recovery fee and ratepayers have been on the hook for future construction. They may be left on the hook for very significant sums of money for a plant that was never repaired and one that may not be built, alternative fuel, so that kind of cost-benefit analysis does not enter into your oversight responsibility?

Ms. MACFARLANE. No, that is a cost-benefit analysis that would be done by the licensee.

Ms. CASTOR. OK. So at this point once they have selected the safe store option, what kind of oversight do you provide on that process? What kind of input? How involved, what kind of staff requirements? Can you go into a little more detail on that, please?

Ms. MACFARLANE. We provide oversight to make sure that what remains of the facility remains in a safe and secure manner and so we will continually inspect it to make sure that that occurs.

Ms. CASTOR. So continually how often are you in contact with the utility and how often are you on site? Maybe it will be necessary for you all to meet with me after the hearing to provide those details.

Ms. MACFARLANE. Sure. I am happy to go through the details of all of this so that you understand the whole process.

Ms. CASTOR. Does the impending sequester, across-the-board cuts through all government agencies, affect your ability on what you would plan to do on oversight of the decommissioning process at Crystal River?

Ms. MACFARLANE. No, it won't. We will ensure that our main mission, which is to ensure the operating facilities and decommissioned facilities, shutdown facilities, will remain safe and secure.

Ms. CASTOR. Does it affect it at all?

Ms. MACFARLANE. No.

Ms. CASTOR. Thank you very much. I yield back.

Mr. SHIMKUS. The gentlelady yields back her time. The Chair now recognizes the vice chairman of the Energy and Air Quality Subcommittee, Mr. Scalise, for 5 minutes.

Mr. SCALISE. Thank you, Mr. Chairman. I appreciate all of our panelists coming and engaging in this hearing.

In a March 2011 information paper to the Commission, the NRC staff had cautioned that the cumulative effects of regulation "can potentially distract licensee or entity staff from executing other primary duties that ensure safety or security," and, you know, I have looked at this cumulative effect risk and it seems valid.

[Slide shown.]

Mr. SCALISE. If you can turn your attention to the slide on the screen, this is a timeline of the regulatory actions an average owner of four reactors would need to comply with. Clearly, this represents a lot of new requirements in addition to what we already expect of them every day to safely and reliably operate their plants.

We raised this matter in our hearing last July, and the NRC's response was "Process enhancements focus more on scheduling and less on reducing or scaling back requirements." We raised this issue again in our January 15th letter, and the NRC's response was, "The staff is currently working with industry to understand the impact of implementation dates," and mentioned the timely development of guidance.

So more regulation is not always safer. Sometimes it is just more things that they have to do that take away from their primary safety responsibility. 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?

Ms. MACFARLANE. We are in the process of considering a number of post-Fukushima activities.

Mr. SCALISE. Do you know how many? I am told it is around 40. Is that an accurate assessment or do you know an exact number?

Ms. MACFARLANE. I think it is——

Mr. SCALISE. Higher or lower?

Ms. MACFARLANE. It is lower.

Mr. SCALISE. How much lower?

Ms. MACFARLANE. It depends on exactly how specific you want to get.

Mr. SCALISE. Well, if you know it is less than 40, than you know it is some number below that, so 30 maybe?

Ms. MACFARLANE. We will get back to you with the specific exact number for the record.

Mr. SCALISE. So you will get that back to the committee?

Ms. MACFARLANE. But that does not mean we will decide to enforce all of those activities. Those are things that are under consideration.

Mr. SCALISE. Well, you know, and that is on top of what everybody is already expected to do, you know, and I guess that gets to a question of priorities. At some point if you are not going to enforce all of them, then you have got to establish some set of priorities, I would expect because——

Ms. MACFARLANE. We have.

Mr. SCALISE. You have that?

Ms. MACFARLANE. Yes, we have a set of priorities.

Mr. SCALISE. Do the people who operate all the reactors know what those priorities are that you are going to enforce?

Ms. MACFARLANE. Yes, they do.

Mr. SCALISE. And if you can get that to us as well. Can you do that?

Ms. MACFARLANE. Sure.

Mr. SCALISE. Because we all want the same thing. We want safety. We want the nuclear plants to be safe. But you have repeatedly

indicated that our plants are safe and that regulatory changes are often referred to as safety enhancements. So what I would like to know from the panel is how to seriously tackle the cumulative impacts of these regulations. Who would like to go first?

Ms. MACFARLANE. Well, we have been talking with industry on these issues. I know this is an area of concern for them, and we are concerned that we do not want to distract licensees from their main mission of ensuring safety at the facilities, of course. At the same time, I think it is our job to impose whatever requirements are needed to provide adequate protection of public health and safety.

Mr. SCALISE. But are you going to impose things that you yourself know you are not even going to enforce? I mean, is that really the responsible thing to do?

Ms. MACFARLANE. Everything we impose, we will enforce, of course. Let me ask my colleagues to comment because I think they would like to.

Mr. APOSTOLAKIS. About 3 weeks ago, the Commission directed the staff to do two broad things. The first one is to propose ways of achieving these things, prioritization of new requirements or potential requirements with existing requirements. For example, when we received the Fukushima report from the Near-Term Task Force, we just prioritized the Fukushima recommendations regardless of what else was going on. So now we are asking the staff to actually consider what else is going on in the future and give prioritization of everything. And second, we are asking the staff, directing the staff to come up with options for giving the licensees the option of arguing back why certain requirements they should delay because they are doing something else that is of more safety significance, and to do that.

Mr. SCALISE. And real quick—I apologize, I have got 3 seconds left—I just want to ask when you are sending that list with 30 or whatever the number is going to be of those new items, does that include new regulatory guides, issuing new generic communications, using revised interim staff guidance, developing inspection findings, disposition of license, amendment requests? Are those what would be included in that list or would that be outside of that?

Ms. MACFARLANE. These are issues that are under consideration. These aren't decisions that we have made yet.

Mr. SCALISE. OK. So as you get those, if you could share those with us. Thank you very much. I yield back.

Mr. SHIMKUS. The gentleman's time is expired. The Chair now recognizes the gentleman from California, Mr. McNerney, for 5 minutes.

Mr. MCNERNEY. Thank you, Mr. Chairman. So many questions, so little time.

Commissioner Svinicki, how does the security of nuclear plants compare to conventional power plants with regard to cyber attacks?

Ms. SVINICKI. I would say that the NRC has some of the, I think, most specific and strongest regulations in the cyber area. As I mentioned, in 2009, NRC was able and had the authority to put in place cybersecurity regulations that have the licensees identify all of what we term critical digital assets at the site and then propose

a security plan to the NRC. We have received those from all of our power plant licensees. We have reviewed them, and I believe that we have begun our process of inspecting those cybersecurity plans that are in place.

Mr. MCNERNEY. So they may be more secure than our conventional plants?

Ms. SVINICKI. I have visited one fossil plant but I did not discuss cybersecurity there so I am not certain.

Mr. MCNERNEY. Is there any legislation needed to enable the nuclear plants to secure themselves from cyber attack?

Ms. SVINICKI. In my time on the Commission since 2008, the Commission has looked very actively at our legal authorities, and we have not identified any gaps that we have, so we do not seek any additional authorities in this area. We feel that we have a very robust authority.

Mr. MCNERNEY. Thank you. One or two other questions for you. Small modular reactors—how long might it take for a competent power producer to get a license for a small modular reactor? Are there any licenses out there now?

Ms. SVINICKI. There are not, and we have no pending designs that are undergoing review right now. We do anticipate with the Department of Energy's program now, they made selection of a technology for their program late last year. We expect that we may receive that application in, I think either late 2013 or 2014, I believe. Chairman Macfarlane says it will be 2014.

Mr. MCNERNEY. Are there any foundries in the United States capable of producing the containment vessels for these reactors?

Ms. SVINICKI. I think I would like to take that question for the record to be certain of being accurate in my response, but I believe that the intention is that the small modular reactors would have components, a substantial portion of which would be able to be manufactured here in the United States.

Mr. MCNERNEY. But the large containment vessel, you are not sure of?

Ms. SVINICKI. I am not certain for the various designs that are proposed for small modular reactors. I am not sure of the largest of the sizes of those. I don't know if any my colleagues are.

Mr. MCNERNEY. How about for the other kind of nuclear reactors? Are those foundries capable of producing those?

Ms. SVINICKI. For the large light water reactors, there are not U.S. facilities.

Mr. MCNERNEY. Chairman Macfarlane, you are a true expert in nuclear waste. Is that correct?

Ms. MACFARLANE. That is correct.

Mr. MCNERNEY. You mentioned in your testimony the laser uranium enrichment facilities. Are those also used in processing nuclear waste?

Ms. MACFARLANE. No, they are not.

Mr. MCNERNEY. Do you see other facilities for nuclear waste than Yucca Mountain on the horizon that could be acceptable within a 20-year time frame?

Ms. MACFARLANE. I think what is acceptable and what policies develop is in part dependent on what occurs in Congress and the Administration. In the original Nuclear Waste Policy Act, there

was always a question of a second repository, and currently, the Yucca Mountain repository was to be statutorily bound by certain volume of material. That volume is already exceeded at reactors, so there is an open question about a second repository.

Mr. MCNERNEY. In a futuristic sense, do you see nuclear waste becoming valuable in its own right within the next 20 or 50 years?

Ms. MACFARLANE. It is not my area of expertise.

Mr. MCNERNEY. OK. Thank you, Mr. Chairman. I yield back.

Mr. SHIMKUS. The gentleman yields back his time. The Chair now recognizes the gentleman from Texas, Mr. Burgess, for 5 minutes.

Mr. BURGESS. I thank the chairman for the recognition.

Commissioner Svinicki, let me ask you a question. In your opening remarks, you made mention of the fact of the ability to reenergize or revisit Yucca Mountain would depend not only on the funding but the degree to which the data collected during the license application, the degree to which that data has degraded over time.

Now, I was fortunate enough to go with Chairman Shimkus to Yucca Mountain 2 years ago. At that point they were 6 months into their appropriations lapse, and the gentleman who showed us around that day did make mention of the fact that there will over time be an attrition of that data or degradation of that data. It appeared to me that there was a lot of material collected during that license application. Do you have a sense as to—you know, we always talk about the half life of nuclear material but do you have a sense about the half life of this data that has been collected during the licensing application and how long the inactivity of the Congress or the Commission, how that will harm the ability to reclaim that data?

Ms. SVINICKI. Congressman, my testimony in response to the prior question discussed the fact that the longer that activities have been in suspension, the more challenging and expensive the reconstitution is or reconstitution may even be imperiled. Although you are mentioning data and analysis, what I had in my mind when I made that statement was actually people and experts and scientists. I know that the NRC, since the suspension of its Yucca Mountain activities, has had retirements of scientists who had been on this project for over 20 years and also we have reassigned individuals. Conceptually, they may be available then to be brought back to this work but there is additionally, as you mentioned, at Yucca Mountain, there were physical samples and core borings. The quality and chain of custody of those, in the licensing process is a very, very important matter. I don't know the state of DOE's preservation of any of that or the chain of custody of those materials for the purposes of us relying upon them in a scientific investigation. So I think there are many dimensions to the challenges of reconstitution but time is the enemy.

Mr. BURGESS. Yes, there is big machinery that was in use that seemed to be just out in the weather and had daisies growing out of the treads and that sort of thing, which just you really had to wonder, this funding lapse or this appropriations lapse is very damaging, and the real loser here is the poor consumer who has funded this for years with surcharges on their bill with the expectation that in the future their reliability and their supply of elec-

tricity would be assured because the federal government was in fact taking care of this problem of long-term storage. Is that a fair statement?

Ms. SVINICKI. Yes, it is.

Mr. BURGESS. And I do want to acknowledge the fact that you have been very responsive to my office and my staff, and I appreciate that. I was also concerned when the Fukushima reactor went down, the danger from the rods and the spent fuel pools. You provided some reassurance to us that that was not as big a problem as it appeared in the press, so I was grateful for your input that day.

Chairman Macfarlane, can I ask you a question? I have a letter here from the National Mining Association to you dated from January 7th of this year, and they have several points that they were making, but the lead point and one that is of concern to uranium producers in my area of North Texas is the relicensing applications that apparently are pretty expensive. Their fees are pretty expensive and yet they are told by the Commission that the staff manhours are not there to be able to process those relicensing applications because of lack of funding, but it does seem like they are funding that activity with their application fees. What am I missing here?

Ms. MACFARLANE. No, I think we have—my understanding is, we have adequate staff to deal with the new applications and the relicensing applications. The issue sometimes is that we don't get complete applications and so there is a period of back and forth with the licensees.

Mr. BURGESS. Well, and again, the opinion of this letter submitted by the National Mining Association was these applications were submitted in their entirety and that they were complete. I would appreciate some follow-up on this because clearly there is a concern, and Mr. Chairman, I would ask unanimous consent to put the National Mining Association letter into the record.

Mr. SHIMKUS. Is there objection? Hearing none, so ordered.

[The information appears at the conclusion of the hearing.]

Mr. BURGESS. Since you were so compliant, I will yield back my 8 seconds.

Mr. SHIMKUS. It is a historical event, your yielding back time. The Chair now recognizes the gentlelady from the Virgin Islands, Mrs. Christensen, for 5 minutes.

Mrs. CHRISTENSEN. Thank you, Mr. Chairman. Good morning, everyone.

In addition to the three orders to commercial nuclear reactors in the United States in order to address the safety concerns raised by the Fukushima accident in Japan that you issued last year, the NRC also required all commercial nuclear reactors to perform inspections or walk-downs to verify that they are prepared to respond to flooding and earthquakes as required in their licenses and that all necessary equipment to respond to such events is available, functional and properly maintained.

Chairman Macfarlane, I understand that all operators have completed walk-downs of their facilities?

Ms. MACFARLANE. They have.

Mrs. CHRISTENSEN. And what did the walk-downs find? Did they raise any red flags about the preparedness of the U.S. nuclear fleet to respond to a serious flood or seismic event?

Ms. MACFARLANE. I appreciate the question. Most plants were just finding only minor discrepancies. A few plants identified more significant issues in the flooding walk-downs. In the seismic walk-downs, no significant issues to date.

Mrs. CHRISTENSEN. And the NRC, as I understand it, they asked the U.S. commercial reactors to go a step further and reevaluate their flood and seismic hazards and compare any newly identified hazards with the extreme-events plans are designed to withstand. What was the goal of the reevaluations, or was that just for the few plants that——

Ms. MACFARLANE. Well, the reevaluation actually was begun even before Fukushima, the Fukushima accident, and then it was folded into the Fukushima recommendations, but the goal is to bring the plants and their seismic hazard analysis and flooding hazard analysis into up-to-date current information that is available in the earth sciences. So it is updating the hazard analysis at all these facilities.

Mrs. CHRISTENSEN. I understand that the reevaluations will be completed by the end of 2015. Is that correct?

Ms. MACFARLANE. Yes.

Mrs. CHRISTENSEN. And then once they are complete, what would the next step be for NRC?

Ms. MACFARLANE. Depending on what is found, we will have to go individually plant by plant and see if some changes are required or not. It depends on what we find at each plant.

Mrs. CHRISTENSEN. Thank you. These reevaluations, they are to be a critical step in ensuring that the U.S. nuclear fleet is prepared to respond to a range of hazards and protect the public health in an emergency. I appreciate your answers.

I don't have any further questions, Mr. Chairman. I yield back.

Mr. SHIMKUS. The gentlelady yields back her time and now the Chair recognizes the gentleman from Ohio, Mr. Latta, for 5 minutes.

Mr. LATTA. Well, thank you very much, Mr. Chairman, and thank you very much to you all for being here today. We really appreciate it.

If I could just kind of back up a little bit. There were a few comments made today about cybersecurity, and as we all know, in the last month, month and a half, it has been in the news quite a bit, and in fact, just last week in my district, we had a large cybersecurity event that we had the FBI in to talk to about 170-plus people in my district as to what is happening and what they have to do protect themselves and their businesses. But if I could, going back, the NRC had an order after September 11th that had ordered nuclear power plants to enhance their security including requirements for certain cybersecurity threats, and this effort later culminated in a specific cybersecurity rule in 2009 and the associated regulatory guidance was based on the cybersecurity standards published by the National Institute of Standards and Technology and the Department of Homeland Security, and if I could, Commissioner Ostendorff, could I ask if you could give a brief overview of

how that rule is being implemented and the level of coordination between the NRC and other agencies.

Mr. OSTENDORFF. Thank you, Congressman, for the question. This is a complicated area. Two years ago, this Commission worked with FERC and NERC to outline the lines of demarcation using what is called a bright-line survey to ensure that we had a unitary regulatory approach that only the NRC would regulate on-site, basically the transmission line boundary of the plants, recognizing that NERC on behalf of FERC is regulating externall y. So that I would say is a great example of positive cooperation inside the U.S. interagency to ensure we did not have conflicting regulatory inspections, rules, et cetera.

The cyber rule that our licensees are required to be in compliance with as of the end of December of last year, currently our staff is out and doing inspections to ascertain compliance with that rule. I think our staff is well equipped to do that. I think we will find some things we hadn't thought about. This is a tough area. But I think we have the proper resources and the proper approach going forward. This Commission is staying very actively involved with our federal agency counterparts. Just last Thursday, we spent 2½ hours in a classified briefing with DHS on cyber issues for the United States and so I think it is an issue that is very much before us as a Commission and an agency.

Mr. LATTA. Well, thank you very much, and Mr. Magwood, if I could just ask you briefly, I know that in 2011 when you all were testifying before us here in committee, I had asked questions, just kind of paraphrasing how if you had all the information that you needed to make informed decisions and pretty much you had said most of the time that that was happening. Can you tell me how are things going right now with the flow of information back and forth for you all to make these very important decisions that come before the NRC today?

Mr. MAGWOOD. Actually, Congressman, the question has never come to my mind in the last 6 or 7 months so I think the situation at the NRC is working very well.

Mr. LATTA. Thank you very much. Mr. Chairman, I yield back.

Mr. SHIMKUS. The gentleman yields back his time. The Chair recognizes the gentleman from Texas, Mr. Green, for 5 minutes.

Mr. GREEN. Thank you, Mr. Chairman.

Chairman Macfarlane, in your testimony you mentioned the importance of international cooperation with the NRC. In 2011, our committee members led by Representative Murphy, we did a trip to France and Sweden to see how the French and Swedish reprocess and store their nuclear waste. I was impressed with the progress not only in France, because I was there in 1998 to look at how they are reprocessing their waste but particularly with Sweden seeing what they have done with even a prototype of a deep storage. I am interested in learning what cooperation is presently taking place between the Commission and, for example, Sweden and France and what lessons can be taken from their models.

Ms. MACFARLANE. In terms of nuclear waste disposal?

Mr. GREEN. Nuclear waste disposal, or recycling.

Ms. MACFARLANE. Right. We don't do a lot on the back end of the fuel cycle with these countries. We certainly exchange information

with their regulators and what their regulators regulate because it is not our job to make policy for the back end of the fuel cycle in the United States. We just oversee the existing facilities. So we are aware of what is going on there and we are aware of what their regulators are doing at these facilities.

Mr. GREEN. Well, it sounds like you are saying that for the United States to be involved in reprocessing, and even for the long-term nuclear storage, whether it be Yucca Mountain or something similar to what Sweden has done, you need more guidance from Congress?

Ms. MACFARLANE. Yes, please.

Mr. GREEN. Myself along with 25 other Democratic members sent a letter to you 3 weeks ago calling for your agency to adopt a flexible performance-based approach as recommended by the independent ACRS with regard to mandating filters on boiling-water reactors. First I wanted to ask, what is the status of the Commission's response to our letter?

Ms. MACFARLANE. We responded to your letter.

Mr. GREEN. You did?

Ms. MACFARLANE. We sent you a response.

Mr. SHIMKUS. Unacceptably, but they did respond.

Mr. GREEN. OK. Second, I would like to learn what outreach the Commission has made toward industry and other stakeholders in order to achieve the regulatory goal in the safest and most effective and least costly manner.

Ms. MACFARLANE. We meet regularly with industry and other stakeholders who are interested in these issues and understand their concerns and work together.

Mr. GREEN. Another question. In your testimony, you state the NRC, due to the lack of final waste confidence rule, will not issue any final licenses until at least September of 2014. As you are aware, most legislation that is passed by this chamber and signed into law typically calls for agencies to issue rules within 6 to 12 months, and I would like to hear why the Commission, for an issue that goes to the heart of your agency's duties, needs in excess of 2 years to issue a final rule.

Ms. MACFARLANE. In developing an environmental impact statement and other processes we are governed by NEPA law and other laws, and there is a public comment period that must be incorporated into all these things, and this is in part what takes time.

Mr. GREEN. Additionally, I would like to learn what guidance the Commission has provided these facilities whose licenses are being delayed.

Ms. MACFARLANE. We are actively working on the licenses. We just won't issue the final licenses or license renewals in this period.

Mr. GREEN. With the likelihood of sequestration hitting all federal agencies by midnight tonight, I would like to ask first what steps is the NRC taking in order to best comply with sequestration. Are furloughs or layoffs anticipated?

Ms. MACFARLANE. We do not anticipate any furloughs or layoffs.

Mr. GREEN. And second, will sequestration in any way degrade the NRC's ability to keep our Nation's nuclear facilities safe?

Ms. MACFARLANE. Absolutely not.

Mr. GREEN. Thank you, Mr. Chairman.

Mr. SHIMKUS. And if the gentleman would yield, just to correct the record, I think you were referring to a Barrow letter that you signed that I am unsure of whether the Commissioner responded to. Would someone want to address that?

Ms. MACFARLANE. I believe we have not responded to that letter. Sorry.

Mr. GREEN. You haven't responded to the Barrow letter?

Ms. MACFARLANE. Right.

Mr. GREEN. Because obviously from Georgia, they have a bigger interest. We are having our problems in Texas because one of our investors for the South Texas expansion also owned Tokyo Power, so we are still looking for $125 million to expand nuclear power in South Texas. Thank you.

Mr. SHIMKUS. The gentleman yields back his time. The Chair now recognizes the other gentleman from Ohio, Mr. Johnson, for 5 minutes.

Mr. JOHNSON. I thank the chairman for the recognition, and I am new to the Energy and Commerce Committee so I look forward to the discussions we will have with you Commissioners, and I thank the chairman for holding this hearing on a very, very important topic.

Ms. Macfarlane, according to the Japanese government's report, and I quote, "TEPCO's manual for emergency response to a severe accident was completely ineffective." What is your view and the view of your colleagues about the ability of U.S. emergency response capability to a severe accident?

Ms. MACFARLANE. I think we are prepared but I think we must be mindful that there are situations that we may not be expecting and we need to learn from operating experience, but I invite my colleagues to comment.

Mr. APOSTOLAKIS. One of the problems that they had in Japan is that there was no single authority making decisions. In this country, we have made sure that there is one authority. We are not going to go to higher political figures to approve what needs to be done. So I believe that we are in much better shape than the Japanese were at that time.

Mr. OSTENDORFF. Congressman, I would just add to my colleagues' comments two specific issues we are also addressing. One, as mentioned earlier, in response to a prior question, we have not typically dealt with multiple-unit accidents. We have dealt with a one-reactor accident at one site even if that site had two or three reactors. So we are looking at multi-unit response. Secondly, we are looking at how to integrate our casualty and operating procedures in a more effective way.

Mr. JOHNSON. Sure. Well, I appreciate those answers, and Mr. Apostolakis, you actually hit on something that I want to go to next. The Japanese Diet report stated, "We believe that the root causes were the organizational and regulatory systems that supported faulty rationales for decisions and actions." A report by the American Nuclear Society Special Committee on Fukushima stated, "The committee believes that in responding to the accident at the Fukushima Daiichi plant, human error and flows in governance and regulatory oversight contributed to the severity of the accident."

Mr. Apostolakis, you just mentioned that we are way ahead of where the Japanese were. Don't you think it is important to compare our regulatory systems with Japan's to see if we share some of the gaps that contributed to the accident?

Mr. APOSTOLAKIS. There is no formal comparison that the Commission has done. However, that doesn't mean that we are not aware of the differences, and if one wanted a more formal approach to the evaluation, that would be an interesting thing, but I don't think we can say that we completely ignored the differences between us and the Japanese when we issue actions, orders or other regulations.

Mr. JOHNSON. Well, I appreciate that. It seems to me that such a comparison would reveal and further validate what you just testified to, that America is much further ahead of where the Japanese were in terms of information flow, decision making, and it would seem to me that that would be an important step prior to issuing additional regulations that are going to additionally hamstring our nuclear industry from operating, and in some cases, according to nuclear industry experts, drive our team our of existence.

So I am not sure we are doing our homework. We know that we are ahead of the Japanese and yet we want to proliferate regulations to address what? I mean, if we don't know what the gaps are, what are we addressing?

Mr. OSTENDORFF. I wanted just to comment. I think we have heard loud and clear today, I don't think we have been effective at communicating back to this committee a satisfactory answer to your question. I think the Japanese Lessons Learned Directorate, about 20 people on our staff, have been working these issues, looking at differences. I think we failed to communicate that in a clear manner to this committee and I think I need to talk to my colleagues about how can we better respond because I think a lot of the work that we have done, we have not appropriately told you how we are doing it.

Mr. JOHNSON. Well, I would appreciate responses to that because I think that is a necessary first step before we start issuing regulations that address some gap that we are not even aware of.

Mr. Chairman, I yield back.

Mr. SHIMKUS. And I appreciate the gentleman from Ohio. Maybe we will get a chance to officially ask you for a better response. And now the Chair recognizes the gentleman from New York, Mr. Engel, for 5 minutes.

Mr. ENGEL. Thank you very much, Mr. Chairman, and I welcome everyone. Thank you for joining us here today.

My district is very close to the Indian Point nuclear plant in Buchanan, New York. The safety of Indian Point continues to be one of the most serious issues facing the Hudson Valley region, and I have been calling for it to be shut down for years. I was the first Member of Congress to call for its shutdown, probably 10 years ago, and Governor Cuomo has also called for it to shut down. The bottom line is the siting of the plant, it is near the major metropolitan area in the country, the New York metropolitan area, and if it were being built today, it would never be built in Buchanan, New York. Frankly, I think that the scrutiny of the renewal for the licenses of these plants should be as great as a new plant being

built. I don't understand why there seems to be less of a threshold for relicensing of the plants than there is for a brand-new plant. Safety is safety, and it should be the same for both of them.

Since the disaster at Fukushima, the need to shut down Indian Point, as far as I am concerned, has only grown. I am not opposed to nuclear power. I never mentioned closing Indian Point until I started learning about it. It is built on a major fault. On September 11th, one of the planes hitting the World Trade Center flew directly over Indian Point. It is just unbelievable. I am happy that the NRC has implemented three immediate orders but I hope there will be strong follow-up, especially in regards to plants like Indian Point that have a history of problems. The fire last month at one of their transformers is just the latest in a long line of a systematic failures at the Point. Let me say, every Member of Congress who has a district very near to Indian Point has called for its closing.

Beyond the safety issues at Indian Point, there are numerous environmental concerns—the effect on the Hudson River—and I have asked the NRC to see if we can move to a closed-cycle cooling system, which would have less of an impact on the water and the fish. Another major concern is the radioactive waste stored in the pools, almost three times the amount that is currently being stored there than was stored at Fukushima, and the plant sits near a reservoir that serves almost 9 million people. I hope we will find a long-term plan for storing this waste. I will soon be reintroducing legislation that would call for material to be moved into dry casks within a year, and I hope that we will consider it.

Let me say that the safety violations at Indian Point and other nuclear power plants have raised serious questions about nuclear power safety. I anticipate that the NRC will continue to monitor the plants closely and to see that the three immediate orders are implemented quickly and effectively.

Can someone please tell me why there seems to be a lesser standard for the relicensing of plants than there is to build a plant? If a plant is unsafe or if there are questions about its safety, why should it matter if it is newly built or if it is an old plant where the license is being renewed? Safety is safety and that is the bottom line. I am wondering if anybody can tell me the rationale for that.

Ms. MACFARLANE. I will take a stab at that and offer it to my colleagues, but very briefly, in relicensing, we look at the overall systems and structures in the plant. We continually evaluate the equipment, inspect and oversee the equipment, the operations of the facility, the safety culture of the facility. We have resident inspectors on site. Currently right now at Indian Point there are four for two reactors who every day are there overseeing the safe operation of the facility, but let me ask my colleagues to jump in.

Mr. APOSTOLAKIS. Yes, I don't think it is accurate to say that we have a lesser standard for license renewal. The license renewal focuses on aging effects, and I think that is appropriate because the plant has operated for 40 years or will have been operated for 40 years. If anything else happens that threatens safety, as the chairman said, then it is handled according to the normal processes we have for operating plants, so the only new thing is this aging effect,

so it is not a lesser standard, it is a more limited review. The scope is more limited.

Mr. ENGEL. Well, it still would seem to me—I understand what you are saying, but it still would seem to me that the scope should be broadened. There have been questions about it and they are legitimate questions. It is not just two or three people who are opposed to nuclear power. There are serious questions by those of us that support nuclear power, and I do. I think the United States has to have a balanced energy policy, but I think that it is clear to me that Indian Point should be shut down. Thank you, Mr. Chairman.

Mr. SHIMKUS. The gentleman yields back his time. The Chair recognizes the gentleman from Texas, Mr. Hall, for 5 minutes.

Mr. HALL. Thank you, Mr. Chairman.

I noted, Commissioner Magwood, you were talking of issues and the things that you are faced with, and I am just trying to make the point that you all do work and studies for us with dangerous, threatening and relentless enemies out there.

I think I want to ask Commissioner Apostolakis—I do better calling you George. Did I pronounce it right?

Mr. APOSTOLAKIS. Yes.

Mr. HALL. A year ago, you testified before the Senate EPW committee and made the following remarks: "I don't think that what happened in Fukushima can happen here, and I repeated, it was not unthinkable." Were you talking about it was not unthinkable that that could happen there? Is that what you meant? It is not important, but that is the way I took it.

Mr. APOSTOLAKIS. People were saying that what happened in Fukushima was an unthinkable event. I said no, it was not. I mean, there were so many flaws in the system and the design that really it was not unthinkable.

Mr. HALL. Well, let me go, and in fairness to you, say what you did say. You said, "I don't think what happened in Fukushima can happen here, and I repeat, it was not unthinkable. They made terrible mistakes. There are, I think, a couple of things that stand out if you look at happened in Japan. The regulatory authority there, NISA, was very, very weak technically and they didn't have the amount of independence that we have, for example. The second is more technical. It has to do with tsunami calculations where they were very poorly done, let us put it that way. They ignored data from the past." Is that still—do you still feel that way?

Mr. APOSTOLAKIS. This is still my view, yes.

Mr. HALL. You don't think an accident like Fukushima can happen here?

Mr. APOSTOLAKIS. No, I don't think so.

Mr. HALL. Well——

Mr. APOSTOLAKIS. Well, I mean——

Mr. HALL. I hope so. I hope you are right. But, you know, some 15 or 20 years ago, we did a study in the committee I chaired at that time studying asteroids, and we found out during the hearing—and I got people from Russia, China, England and, I believe, France that were supposed to have witnesses here but none of them showed because they were told that we were going to get a world operation to look for asteroids because they affect the world and not just Texas or not just your State or this Nation, and none

of them showed. But during the committee hearing, it came up that an asteroid had just missed this country by 15 minutes some time the year before. No one knew it. I didn't know it. No one knew it, and we really ought to be studying that.

I think isn't it more reasonable to think and to thoroughly consider the imposition of additional requirements and ensure that any requirements are cost-effective, that an accident like Fukushima can happen here? The asteroid just happened in Russia, and we got pictures of it. We know what happened there. We don't know why it was there or when it was coming or when the next one will come. You protect us from very serious and relentless enemies. Why is it that you think that that just couldn't happen? Please don't let up, because it could happen.

Mr. APOSTOLAKIS. Well, I don't think the question really should be whether something can happen. It is really a question of probability, and for example, you mentioned the asteroid issue. I don't think that there could be a rationale on our part to start protecting nuclear plants from them. It happened in Russia, but this is not something that we should do.

Mr. SHIMKUS. I apologize. I have no idea what is going on with the microphone. We will work through it. Would the gentleman continue?

Mr. HALL. Don't you kind of think the public might benefit from a better understanding of the differences between nuclear safety in Japan and nuclear safety here?

Mr. APOSTOLAKIS. No, we certainly would benefit from that, yes.

Mr. HALL. But if you think it couldn't happen here, I don't understand how you can answer that last question as you did. I know things can happen. I don't know how much more time I have.

Mr. SHIMKUS. Your time is expired.

Mr. HALL. In that case, I want to yield a question—oh, the gentleman is gone.

Mr. SHIMKUS. No, the gentleman's time is expired.

Mr. HALL. I yield back my time.

Mr. SHIMKUS. The gentleman yields back his time. Just in time for Mr. Markey. The Chair now recognizes the gentleman from Massachusetts, Mr. Markey, for 5 minutes.

Mr. MARKEY. Thank you, Mr. Chairman, very much.

The Fukushima meltdowns taught us that not only do we need to develop safeguards to present nuclear accidents but we must also plan strategies to respond to such an accident and to minimize the damage. Twenty-three reactors in this country have the same design as the ones that melted down in Japan including Pilgrim in Massachusetts and Vermont Yankee. The NRC staff recommended that these reactors have vents that could release hydrogen gas to prevent the sort of explosions that occurred in Japan and also that the vents include filters to remove the radioactive materials that would be released into the air if the vents were used. These filtered vents are already used in Canada and in many European countries. I strongly urge the Commission to follow the recommendations of the technical staff. If you fail to do so, I believe you will be making a mistake. I think you have a responsibility to ensure public health and safety in the face of a nuclear catastrophe that we know could happen here.

You have all testified in the past that you support the Commission's internal commission procedures. Do you all believe that we should follow those internal Commission procedures that are currently in force? Do you all believe that that is the case?

Mr. APOSTOLAKIS. Yes.

Ms. MACFARLANE. I think we should strive to comply with our internal Commission procedures but they don't foresee every situation that might occur.

Mr. MARKEY. So I have here a copy of your procedures for transmitting sensitive documents to Congress, which says that your general practice is to release them to members of your oversight committee, and that includes every member of this committee. Over the years, members of this committee have requested and received hundreds of sensitive documents as part of their oversight efforts including security-sensitive materials, proprietary materials and other nonpublic documents. I believe that every member of this committee will be as disturbed as I was to learn that in its failure to fully respond to several of my most recent oversight letters, the Commission is currently violating its internal Commission procedures. The Commission is even considering a change to these procedures to enable it to refuse future requests for documents made by members of this committee. So I ask all of you, do you support your current procedures to provide sensitive documents to members of your oversight committee?

Ms. MACFARLANE. Right now, the Commission is evaluating the request that you made, and we are in deliberations on it, and I don't want to say any more about that until we have actually been able to go through them.

Mr. MARKEY. Well, I think that in fact the Justice Department has made a ruling that there is not a conflict with the Freedom of Information Act, that in fact their current guidance says that giving materials to a Member of Congress should not result in an agency having to make them public. So if you make this change, you will be obstructing legitimate Congressional oversight of your activities and you will be creating a more secretive agency, and I am going to resist this in every single way I can.

The San Onofre nuclear reactors have been shut down for more than a year because of unexpectedly high levels of wear found in both steam generators. Three weeks ago, Senator Boxer and I sent you a document I obtained that said that Southern California Edison and Mitsubishi engineers had identified some technical problems that could have caused this wear long before the steam generators were installed, but the document also says that they chose not to implement recommended design fixes because they wanted to avoid a more rigorous safety review and licensing process at the Nuclear Regulatory Commission. You then told us that you had initiated an expansive investigation regarding the completeness and accuracy of information that had been provided to you, and I understand that the Inspector General has also initiated an investigation of its own. So Chairperson Macfarlane, Southern California Edison wants to restart one of the reactors as soon as this summer. Can you commit to postponing any decision on this request until after the pending investigations are completed and reviewed by the Commission?

Ms. MACFARLANE. What our usual process is in this kind of situation, when all the technical aspects of the particular issues have been adequately addressed, our staff, our executive director of operations will check with our office of Inspector General, our office of investigations to ask if there are any issues or information that might prevent the restart, and that is how we usually go about this.

Mr. MARKEY. Well, I strongly recommend that you complete the investigation before you give permission to restart. I think that the prudent way to proceed on this issue, and I thank you, Mr. Chairman.

Mr. SHIMKUS. The gentleman's time is expired. Just for informing the public, there are votes now on the floor. We are going to try to make sure those in attendance get a chance to speak. I would encourage people to do it quickly.

I would also, just in response to my colleague, I think there is an understanding of personal and executive sessions and issues in the record that may not be appropriate to air, and so we can address that later.

The Chair now recognizes the gentleman from Virginia, Mr. Griffith, for 5 minutes.

Mr. GRIFFITH. Thank you, Mr. Chairman, and I do appreciate all of you all being here. I will tell you that in my first term of Congress, that first meeting that I had with you—not you, Chairman, but before you were on board—was probably the scariest hearing that I participated in just because I knew the important issues you all were dealing with and the problems that you all were having were of great concern. I feel much better today. While we may or may not agree on some issues, I feel very confident that you all are working hard and trying to move in the right direction, and it makes me feel much better than I did this time a little short of 2 years ago. So I do appreciate that.

I would ask you all to look at, and particularly, I am going to address this question to you, Commissioner Ostendorff. You all have had some time working on this and the subcommittees have. In the Commonwealth of Virginia, we had a nuclear power plant, North Anna, which after experiencing a nearby earthquake in Mineral, Virginia, was shut down for a period of time. We understand this shutdown was a result of the earthquake and subsequent NRC processes were a positive example of bringing a unit back online after an atypical event. The San Onofre Nuclear Generating Station, which was just mentioned, is currently offline, and I know there may be other issues involved, but it had an atypical event that initially at least didn't rank as high as the earthquake, and I am just wondering if you can explain if the process that was used in North Anna is also the same process that is currently being used in that situation, San Onofre.

Mr. OSTENDORFF. Congressman, I would comment that overall, the process is the same as far as how a determination is made whether it is safe to technically restart a nuclear power plant. There are some significant differences, however, between the San Onofre case and the North Anna earthquake from August of 2011. Those differences involve other pending investigations, which we can't discuss in this forum. They also involve adjudicatory matters

before the Atomic Safety and Licensing Board, so I will acknowledge there are some significant differences there.

Mr. GRIFFITH. All right. I appreciate that.

I had another question, and I want to just make a statement. It appears that when looking at regulations, and I have been given some data that it appears that the estimates for new regulations, the cost of those estimates have been off by being as much as 350 percent more. I hope that you all will look at your processes behind the scenes, because when you are deciding what to do on regulation, there is a cost analysis involved, and if you are off by 350 percent, it indicates that something is not being analyzed correctly and I would hope that you all would do a better job on that as you go forward with any new regulations.

And with that, Mr. Chairman, I am going to yield back.

Mr. SHIMKUS. Thank you. The Chair recognizes the gentleman from Georgia, Mr. Barrow, for 5 minutes.

Mr. BARROW. I thank the chairman. I thank the Commissioners for appearing today. I just want to share my concerns about proposed regulations to require the installation of external containment filters on boiling-water reactors. I want to begin by saying, I understand the Commission requires a cost-benefit analysis in order to make sure there is adequate protection for the public. I also understand that there is a movement to go forward with such regulations even in the absence of a finding that it is necessary in order to provide adequate protection for the public concern.

I have generated a letter, which has been subscribed to by a number of my colleagues, members of the House as diverse as Mike McIntyre, Jim Matheson, myself, Mr. Dingell on the one hand and other members like Steny Hoyer, Jim Clyburn, Mike Doyle, Joe Crowley, Rob Andrews and Chaka Fattah on the other, basically making the case that we want to have you all make sure that there is an adequate cost-benefit analysis performed before imposing any such mandate on the industry. The letter concludes as follows: "Absent a finding that mandatory filter installation is necessary to ensure adequate protection of the public, we believe the Commission should work with the industry to achieve the regulatory goal in the safest, most effective and least costly manner." That letter speaks for itself, and with the chairman's permission, I would like to submit this letter for inclusion in the record.

Mr. SHIMKUS. Without objection, so ordered. We have already discussed the letter.

Mr. BARROW. I want to make it a part of the record on my time. Thank you, Mr. Chairman, and thank you all.

[The information appears at the conclusion of the hearing.]

Mr. SHIMKUS. The gentleman yields back his time. The Chair now recognizes our final member, Mr. Kinzinger from Illinois, for 5 minutes.

Mr. KINZINGER. Thank you, Mr. Chairman, and thank you all for your time today. Chairman Macfarlane, I am happy to see that the focus of this hearing is on the important work of the Commission. I believe your work over the next several years will determine the viability of the industry, and your decisions will have an impact on U.S. energy policy for decades.

The members of this committee need to be aware that the bounty of natural gas that we have unlocked through technology and innovation is a blessing but it is going to bring new challenges. I have 35 power-generating facilities in my district, and every single one is being impacted by the lower price of natural gas including the four nuclear power plants. Good for the consumer but it may not be good for a diverse energy supply. We have some of the best minds in the world creating and collaborating on new nuclear technology. It would be a shame if low-cost natural gas discouraged U.S. companies from investing in nuclear R&D, facilities and education.

A lot of what you heard today is about the regulatory process, and I believe that the members who support nuclear power want to ensure that the Commission is operating under the best processes for the safety of the plant. I hope you will help us in this effort by answering a few more questions. We will just make them quick yes or no questions.

I understand that the Atomic Energy Act grants the Commission broad authority to issue safety requirements and that the Commission's regulatory tools include orders, rulemaking and policy statements. So just yes or no, please. With regard to orders, is it true that the Commission has the authority to issue orders with merely a majority vote? We will start with you.

Ms. MACFARLANE. Yes.

Ms. SVINICKI. Yes.

Mr. APOSTOLAKIS. Yes.

Mr. MAGWOOD. Yes.

Mr. OSTENDORFF. Yes.

Mr. SHIMKUS. Is it that the Commission has the authority to issue orders without conducting technical and cost-benefit analysis?

Ms. MACFARLANE. If we deem it adequate protection, yes.

Mr. KINZINGER. So yes?

Ms. SVINICKI. Yes.

Mr. APOSTOLAKIS. Yes.

Mr. MAGWOOD. Yes.

Mr. OSTENDORFF. A regulatory basis is required for orders.

Mr. KINZINGER. OK. Is it true that the Commission has the authority to issue orders without any public participation? Do you have the authority?

Ms. MACFARLANE. Yes, we do.

Ms. SVINICKI. Yes.

Mr. KINZINGER. And as I understand it, safety requirements that the Commission determines are necessary for the adequate protection of safety are not subjected to cost-benefit analysis. The less significant safety enhancements are subject to cost-benefit analysis, and if found inadequate, can be challenged under the agency's Backfit Rule. Is it true that orders are not subject to challenge under the Backfit Rule?

Mr. APOSTOLAKIS. True.

Ms. MACFARLANE. Yes.

Mr. KINZINGER. Yet here we have the agency staff recommending that you issue an order to mandate filter systems, an approach that your expert advisory body, the Advisory Committee on Reactor Safeguards, disagrees with, that failed a cost-benefit analysis and

about which there are serious questions that agency staff may have underestimated the cost. I believe that orders are a necessary and a valid tool where there is an urgent safety need in the immediate aftermath of events like September 11th or Fukushima. However, it is nearly 2 years since the Fukushima accident and the Commission acted on the most urgent, safety-significant changes a year ago. It is time to return to what we members would call regular order: restoring the agency's historic reliance on rigorous technical and cost-benefit analysis and public involvement inherent in the process of rulemaking.

I understand my friend and colleague, Lee Terry, is working on legislation in this area, and I plan to work with him to address my concern that the Commission's use of orders should be limited to urgent, significant safety needs, and with that, Mr. Chairman, I will yield back.

Mr. SHIMKUS. The gentleman yields back his time. We want to thank you for coming. It will not be your last appearance. I know you are looking forward to that.

If there are no other members wishing to ask questions, members are reminded that the record will remain open for 10 business days to submit additional questions for the record.

There being no other business to come before the subcommittee, the subcommittee stands adjourned.

[Whereupon, at 11:30 a.m., the subcommittee was adjourned.]

[Material submitted for inclusion in the record follows:]

LICENSING ACTIONS AFFECTED BY WASTE CONFIDENCE REMAND

Projects Managed by the Office of Nuclear Reactor Regulation (NRR)

Project	Projected DSEIS[1] Publication	Projected FSEIS[2] Publication	Projected Delay[3]	Adjudicatory Issues Other than Waste Confidence
South Texas	Nov. 2012	June 2013	4 months for SEISs, 14 months for license issuance	No
Grand Gulf	Feb. 2013	Aug. 2013	None for SEISs, 12 months for license issuance	No
Callaway	Feb. 2013	Sept. 2013	None for SEISs, 10 months for license issuance	No
Crystal River	Published	TBD	None for FSEIS, up to 14 months for license issuance	No
Limerick	Nov. 2012	May 2013	3 months for SEISs, 9 months for license issuance	Yes
Watts Bar 2 (10 CFR Part 50 operating license)[4]	Published	Dec. 2012	None for SFES[5] or license issuance	Yes
Davis-Besse	Feb. 2013	Sept. 2013	None for SEISs, 4 months for license issuance	Yes
Seabrook (supplement)	Dec. 2012	April 2013	None for SEISs, 9 months for issuance	Yes
Indian Point (supplement)	Published	Dec. 2012	None for FSEIS, up to 13 months for license issuance	Yes
Diablo Canyon	Jan. 2015	June 2015	None; not likely to require explanatory text given projected SEIS dates	Yes

1 Draft supplemental environmental impact statement
2 Final supplemental environmental impact statement
3 Assumes license issuance occurs in October 2014 or later. Where applicable, projections are contingent on resolution of adjudicatory issues.
4 Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, "Domestic Licensing of Production and Utilization Facilities"
5 Supplemental final environmental statement

Project	Projected DSEIS[1] Publication	Projected FSEIS[2] Publication	Projected Delay[3]	Adjudicatory Issues Other than Waste Confidence
Sequoyah (anticipated)	Jan. 2014	Aug. 2014	None	Application not yet received
Byron and Braidwood (anticipated)	June 2014	Jan. 2015	None	Application not yet received

Projects Managed by the Office of New Reactors (NRO)

Project	Projected DEIS[6] Publication	Projected FEIS[7] Publication	Projected SER Completion Estimate	Planned Uncontested Hearings
Levy	Published	Published	Oct. 2012*	Feb. 2013*
STP	Published	Published	TBD	TBD
Comanche	Published	Published	June 2015*	Nov. 2015*
Calvert	Published	Published	TBD	TBD
Fermi	Published	Nov. 2012*	TBD	TBD
Lee	Published	TBD	Nov. 2012*	March 2013
North Anna	TBD	TBD	TBD	TBD
Turkey Point	TBD	TBD	TBD	TBD
Harris	Jan. 2013*	Jan. 2014*	TBD	TBD
Bell Bend	TBD	TBD	TBD	TBD
PSEG ESP	June 2013*	June 2014*	July 2014*	TBD
*Dates are tentative				

6 Draft environmental impact statement
7 Final environmental impact statement

3

Projects Managed by the Office of Nuclear Material Safety and Safeguards (NMSS)

Project	**Projected Final EA[8] Publication**	**Projected Delay in Issuing License**	**Adjudicatory Issues Other than Waste Confidence**
Calvert Cliffs ISFSI[9] renewal	Published	2 years	No
Prairie Island ISFSI renewal	Oct. 2013	10 months	Yes

8 Environmental assessment
9 Independent spent fuel storage installation

KATIE SWEENEY
General Counsel

January 7, 2013

The Honorable Allison M. Macfarlane
Chairman
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Dear Chairman Macfarlane:

Thank you for the invitation to brief the Nuclear Regulatory Commission (NRC) on February 20, 2013 regarding issues of importance to the National Mining Association's uranium recovery members. As we discussed last year, NMA believes that an annual meeting on uranium recovery regulatory issues can provide an excellent forum to allow Commission members to be thoroughly briefed by industry and other interested stakeholders. The format of the briefing, however, is critical to ensure adequate discussion of the most significant issues. Therefore, I am writing to comment on the proposed format for this briefing, as well as to offer some suggestions on topics that currently are at the forefront of the development of the domestic uranium recovery industry. I hope that you will consider these suggestions when finalizing the schedule for this briefing.

I am concerned that the format of this briefing will not allow the NMA to adequately address relevant industry issues. By offering only 5-10 minutes for NMA to present its views on specific issues, the Commission is relegating our discussion to mere "talking points" rather than to a truly substantive discussion. Previously, in an August 2012 letter to the Commission, NMA suggested that the Commission use a format that allows more time for interested stakeholders to present their views and for an expanded dialogue between such stakeholders and Commission members so that all views and their supporting facts may be considered and queried. Furthermore, NMA suggested that all stakeholders' slides, written testimony, and any other detailed information be shared in advance with the Commission, NRC staff and others speaking at the briefing. Advance submissions on relevant regulatory issues also will be a good way to focus the scope of discussion. By allowing stakeholders to submit issues in advance, the Commission can direct such stakeholders to consult NRC Staff on which issues are of particular importance to NRC from a legal and/or policy perspective and to direct stakeholders to prepare and submit specific advance information that the Commission deems most relevant to a productive briefing. Thus, NMA respectfully requests that the Commission tailor a format for this briefing that reflects NMA's previous suggestion.

In addition, NMA believes that the list of issues, ranging from legal/regulatory to policy-related items, should include each of the following topics.

(1) First, as a general matter, the lack of NRC Staff agency resources available to process uranium recovery license and license amendment or renewal applications has resulted in considerable problems for the industry. Several license applicants have experienced significant delays in licensing of their proposed projects and, the vast majority of the time, are being told it is due to a lack of agency resources. At least two license applicants that participated in the NRC's pre-submission audit process and who submitted extremely high-quality applications already have experienced significant delays in the licensing process starting with basic completeness review. While NRC's primary mission does not relate to shareholder or investor perspectives, NMA believes the Commission needs to assure that processing of license applications must be accomplished efficiently and cost-effectively.

(2) Second, NRC's conduct of the National Historic Preservation Act's (NHPA) Section 106 process has become a source of great concern within the uranium recovery industry. Industry understands that the Section 106 process is mandatory for new operating facilities and for some other licensing actions and has attempted to assist the Agency in conducting this process. However, industry is deeply concerned with the lack of a standardized process or protocol, perhaps a regional programmatic agreement, for the Section 106 process and with the failure of NRC Staff to be more decisive in its role as the "lead agency" in its licensing process. NMA believes an open discussion on this issue will allow all interested stakeholders to better understand how the process can be improved and can lead to more efficient licensing.

(3) Third, there are several process-related issues that require some detailed discussion with the Commission. NRC billing practices have long been a difficult issue for industry. For several years, industry has been dissatisfied with the level of detail contained in NRC's billing invoices, especially when it relates to time and fees charged by NRC-retained independent contractors. NRC invoices have been wholly lacking in standard detail that every consultant, law or accounting firm in the private sector must provide and NRC's hourly rates exceed those of many of these organizations in the Western part of the country. Accordingly, NRC's invoices do not offer industry any opportunity to gauge the reasonableness of fees incurred for different phases of the licensing process which, in turn, makes a lessons learned approach for future licensing actions virtually impossible to implement. NMA has met with and communicated in writing with NRC's Chief Financial Officer (See Attached Letter) and has received no reply to date. NMA would like to explore this issue in more depth with the Commission.

(4) The structure and focus of licensing reviews are also an issue that requires some significant attention. Industry has found that environmental and safety reviews often employ different licensing approaches and do not narrow their focus to "significant risks"

of harm contrary to the Supreme Court caution in the so-called 1980 *Benzene* decision (Industrial Union Department, AFL-CIO v. American Petroleum Institute) and the Commission-approved risk-informed regulatory program. By allowing license reviews to be focus on a larger range of "insignificant risks," additional delays are realized in the licensing process. Moreover, environmental reviews which are essentially procedural in nature take far too much time and cost far too much compared with the Commission's primary responsibility for public health and safety reviews. This results in a waste of agency and company resources that should not occur in the first place. Thus, this issue is paramount to achieving the goal of cost-effective and efficient licensing.

(5) Several looming regulatory and policy issues need to be extensively discussed during this briefing. Industry is concerned with the lack of progress on the finalization of new and/or revised standard review plans (SRP) for in situ and conventional/heap leach uranium recovery facilities. NRC Staff typically refer to the former as the "bible" for new ISR license applications and license renewals. Yet, industry has been proceeding over the last six years without an updated set of SRPs and have been forced to "read the minds" of NRC Staff when it comes to changing or evolving safety and environmental requirements. Indeed, the Commission needs to address the importance of such documents specifically to its licensing board panels, which have little familiarity with the technical aspects of these operations. Finalization of these SRPs should be a priority as they will require extensive public comment prior to finalization.

(6) The Commission should also consider involving itself in the upcoming rulemaking by the Environmental Protection Agency (EPA) regarding 40 CFR Part 61, Subpart W radon emission standards for uranium mill tailings impoundments. The interpretation and application of these standards by EPA to uranium recovery facilities appears to be unnecessarily redundant and overly burdensome given the Commission's existing regulations for such facilities. Precedent for Commission involvement in regulations under Part 61 exists as the Commission participated in the rescission of 40 CFR Part 61, Subpart I and T in the 1980s which resulted in a reduction of duplicative, overlapping regulation. Industry believes that the Commission would be well-served to actively consider this opportunity to increase regulatory efficiency.

(7) Finally, the new final rule for revisions to 10 CFR Part 40.32(e) on pre-licensing site construction is a source of immense confusion for industry. When a potential revision to Part 40.32(e) was initially raised by an industry delegation, the ultimate goal for this new rulemaking was to clarify the scope of pre-licensing site construction activities that could be conducted without concern for denial of a requested license. Unfortunately, the Statement of Considerations for the final rule as well as the rule itself has further complicated this issue. NMA believes that the Commission decision in *NFS* cited by both NMA and the Nuclear Energy Institute (NEI) in its comments on the Proposed Rule has either been ignored or wholly misinterpreted, thus leaving industry in a state of confusion. NMA would appreciate further discussion of this issue at the February 20, 2013 briefing.

Chairman Macfarlane
January 7, 2013
Page Four

Please do not hesitate to contact me to discuss these requests at (202) 463-2627. Thank you very much for your time and consideration in this matter.

Sincerely,

Katie Sweeney
General Counsel

Congress of the United States
Washington, DC 20515

February 7, 2013

The Honorable Allison M. Macfarlane
Chairman
United States Nuclear Regulatory Commission
Mail Stop 016-G4
Washington DC 20555-0001

Dear Chairman Macfarlane:

Nuclear Regulatory Commission (NRC) regulations require that a cost-benefit analysis be performed and meet specified standards prior to imposing new requirements - a process that is designed to ensure that the regulation of our civilian reactor fleet is grounded in successful and realistic performance. We want to make sure that a recent proposal to require installation of external containment filters on boiling water reactors meets those standards.

It's our understanding that Commission staff has concluded that such a mandate is not necessary to meet the "adequate protection" standard and is not justified on a cost-benefit basis. In addition, the Commission's independent Advisory Committee on Reactor Safeguards (ACRS), after reviewing an analysis prepared by the staff and others on this issue, concluded that a more flexible, performance-based approach would work better to reduce the potential for radioactive material releases than a "one size fits all" requirement.

The NRC's *Principles of Good Regulation* states, "... regulatory activities should be consistent with the degree of risk reduction they achieve. Where several effective alternatives are available, the option which minimizes the use of resources should be adopted." Based on that guidance and consistent with the ACRS conclusions, it appears that plant-specific strategies, based on risk assessments, scientific data, and a site's unique characteristics, might be more effective at preventing land contamination in a severe accident. Absent a finding that mandatory filter installation is necessary to ensure adequate protection of the public, we believe the Commission should work with the industry to achieve the regulatory goal in the safest, most effective, and least costly manner.

Thank you again for your service. We look forward to your response.

Sincerely,

PRINTED ON RECYCLED PAPER

John L. Mica — Gene Green

Ed Pastor — Danny K. Davis

Christopher Shays — Daniel Lipinski

Steny Hoyer — Jerry Lewis

Bill Owens — Dan Maffei

James E. Clyburn — H. F.

Mike Doyle — Mike Bradley

Joe Knollenberg — Bill Foster

Bennie G. Thompson

Mike McIntyre

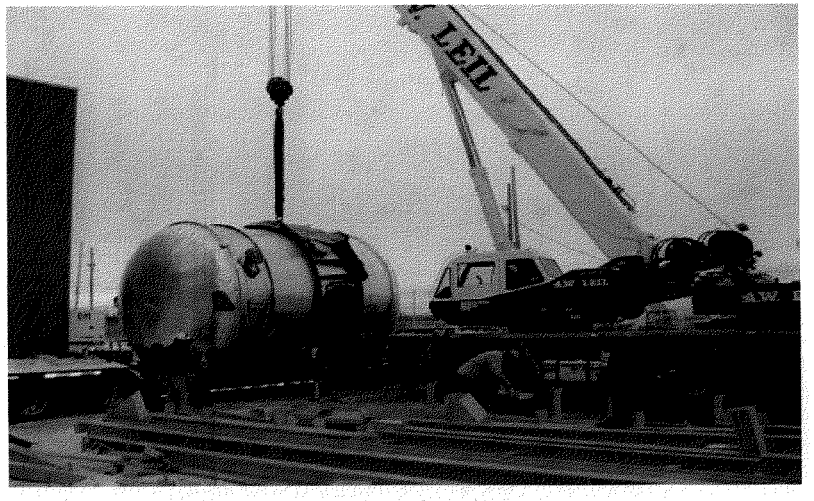
Bobby L. Rush

Jim Matheson

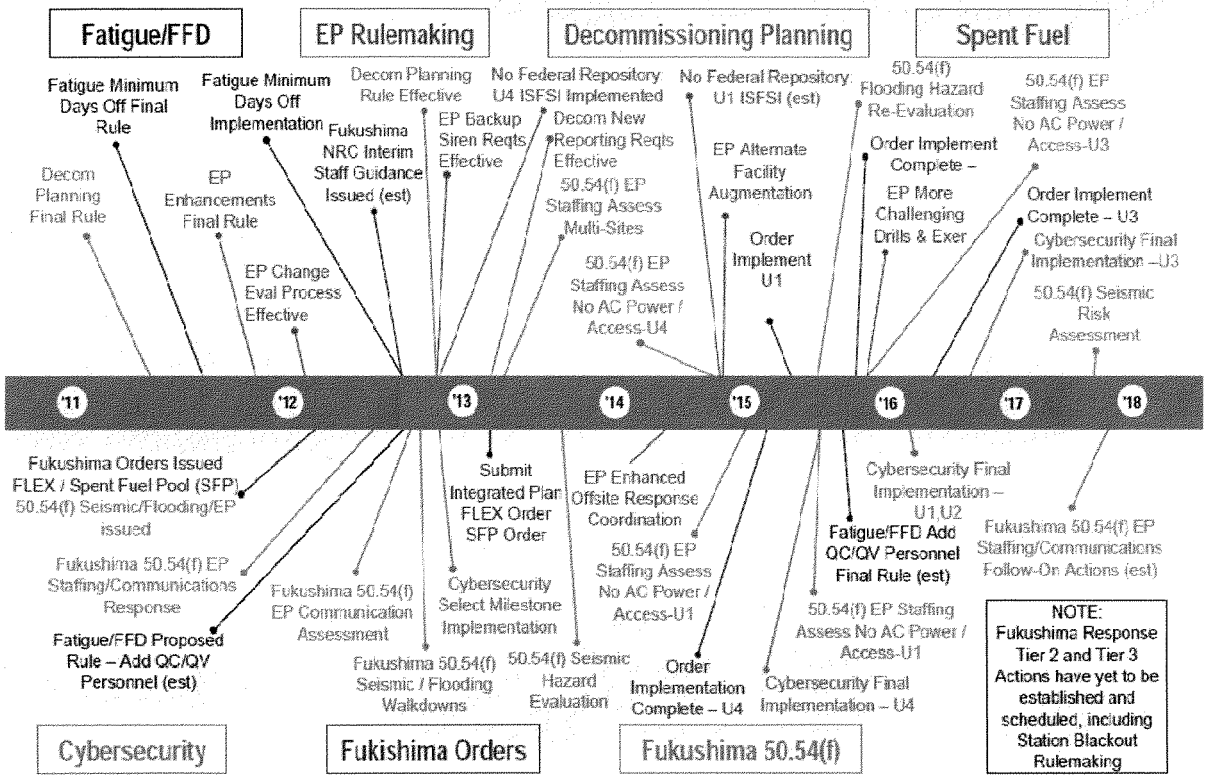
1. John Barrow
2. Bill Pascrell, Jr.
3. Stanford Bishop, Jr.
4. John D. Dingell, Jr.
5. Ed Pastor
6. Sheila Jackson Lee
7. Steny H. Hoyer
8. William L. Owens
9. James E. Clyburn
10. Michael F. Doyle
11. Joseph Crowley
12. Bennie Thompson
13. Bobby L. Rush
14. Robert E. Andrews
15. Chaka Fattah
16. C.A. Dutch Ruppersberger
17. Gene Green
18. Danny K. Davis
19. Daniel Lipinski
20. Terri A. Sewell
21. Daniel B Maffei
22. Cedric L. Richmond
23. Robert A. Brady
24. Bill Foster
25. Mike McIntyre
26. Jim Matheson

Emergency Filtered Containment Vent
Point Lepreau Nuclear Generating Station

Scrubber Vessel



Nuclear Regulatory Timeline (Typical - 4 Unit Fleet)



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

April 26, 2013

The Honorable Ed Whitfield
Chairman, Subcommittee on Energy and Power
Committee on Energy and Commerce
United States House of Representatives
Washington, DC 20510

Dear Chairman Whitfield:

The U.S. Nuclear Regulatory Commission appeared before the Committee on Energy and Commerce, Subcommittee on Energy and Power and Subcommittee on Environment and the Economy, on February 28, 2013, at a hearing entitled, *"The Nuclear Regulatory Commission: Policy and Governance Challenges."* From that hearing, you forwarded questions for the hearing record. The responses to those questions are enclosed. If I can be of further assistance, please do not hesitate to contact me.

Sincerely,

Rebecca Schmidt

Rebecca L. Schmidt, Director
Office of Congressional Affairs

Enclosure:
As stated

cc: The Honorable Bobby L. Rush, Ranking Member
Subcommittee on Energy and Power

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

April 26, 2013

The Honorable John Shimkus
Chairman, Subcommittee on Environment and the Economy
Committee on Energy and Commerce
United States House of Representatives
Washington, DC 20510

Dear Chairman Shimkus:

The U.S. Nuclear Regulatory Commission appeared before the Committee on Energy and Commerce, Subcommittee on Energy and Power and Subcommittee on Environment and the Economy, on February 28, 2013, at a hearing entitled, "*The Nuclear Regulatory Commission: Policy and Governance Challenges.*" From that hearing, you forwarded questions for the hearing record. The responses to those questions are enclosed. If I can be of further assistance, please do not hesitate to contact me.

Sincerely,

Rebecca Schmidt

Rebecca L. Schmidt, Director
Office of Congressional Affairs

Enclosure:
As stated

cc: The Honorable Gene Green, Ranking Member
Subcommittee on Environment and the Economy

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.

April 19, 2013

The Honorable Ed Whitfield
Chairman, Subcommittee on Energy
and Power
Committee on Energy and Commerce
United States House of Representatives
Washington, D.C. 20515

The Honorable John Shimkus
Chairman, Subcommittee on Environment
and the Economy
Committee on Energy and Commerce
United States House of Representatives
Washington, D.C. 20515

Dear Chairman Whitfield and Chairman Shimkus:

I appeared before the Subcommittee on Energy and Power and the Subcommittee on Environment and the Economy of the Committee on Energy and Commerce on February 28, 2013, at an oversight hearing entitled, "The Nuclear Regulatory Commission: Policy and Governance Challenges," along with my colleagues on the Commission. In response to your letter of March 22, 2013, enclosed please find my responses to questions for the record, directed to me, from that hearing.

If I can be of further assistance, please do not hesitate to contact me.

Sincerely,

/RA/

Kristine L. Svinicki

Enclosure: As stated

cc: The Honorable Bobby L. Rush
Ranking Member
Subcommittee on Energy and Power

The Honorable Paul Tonko
Ranking Member
Subcommittee on Environment
and the Economy

Member Requests for the Record from Representative Jerry McNerney

QUESTION 1 **Small Modular Reactors (SMRs) – how long might it take for a competent power producer to get a license for a SMR?**

ANSWER:

For planning purposes, the NRC assumes that it would take a minimum of 30 months after an application is accepted for docketing for the agency to reach a licensing decision. The ability to meet this timeline would be dependent on many factors, including: the licensing process chosen by the applicant (10 CFR Part 50 or Part 52); whether the applicant is referencing a design previously certified by the NRC; the completeness and quality of the license application; and the applicant's responsiveness to NRC requests for additional information. Other factors that could lengthen the time it takes to complete the review of an application, which are separate from the application itself, include the NRC's ability to staff and resource its review, and the degree to which the application presents novel aspects that have not been previously considered by the NRC. This last point, in particular, could have the largest impact on the review schedule of an application incorporating a first-of-a-kind plant design.

QUESTION 2 **Are there any foundries in the United States capable of producing the containment vessels for these reactors?**

ANSWER:

Based on information provided by the NRC staff, it is my understanding that Lehigh Heavy Forge Corporation, in Bethlehem, Pennsylvania, is capable of producing the vessel for an SMR. If there are other fabricators with this capability, they have not yet been identified to the NRC staff.

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, such as the three March 2012 actions as well as those planned, in evaluating regulatory decisions regarding post-Fukushima actions.

b) The Commission will consider the safety benefit of any future post-Fukushima actions, including any cost/benefit and backfit analyses required by NRC regulations. Additionally, actions planned or taken will be accounted for in future decisions.

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 indicating their intent to build such a design?**

a) Does the NRC currently have adequate staff and 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 their liquid sodium-cooled reactor, the 4S, and STL, a South African company, for their 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 the 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 period for analytical purposes 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, for example, 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 report "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. A specific example given by the Commission was the Yucca Mountain Environmental Impact Statement "no-action" alternative.

Questions from Representative Doris O. Matsui

QUESTION 1

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.

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 DOE report "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 the DOE report "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. 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.

QUESTION 3.

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.

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.

COMMISSIONER

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

April 19, 2013

The Honorable Ed Whitfield
Chairman, Subcommittee on
Energy and Power
Congress of the United State
2125 Rayburn House Office Building
Washington, DC 20515-6115

The Honorable John Shimkus
Chairman, Subcommittee on
Environment and the Economy
Congress of the United State
2125 Rayburn House Office Building
Washington, DC 20515-6115

Dear Chairman Whitfield and Chairman Shimkus:

Regarding the questions addressed to me in your letter of March 22, 2013, my response is attached.

Sincerely,

George Apostolakis

cc: The Honorable Bobby L. Rush, Ranking Member, Subcommittee on Energy and Power
The Honorable Paul Tonko, Ranking Member, Subcommittee on Environment and Economy

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) 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, and one action as a significant enhancement to the protection of public health and safety. 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 continue to consider the safety benefit for any future post-Fukushima actions. Included in these considerations would be any cost/benefit analyses required by NRC regulations or Commission direction. I intend to consider previously required safety enhancements, as appropriate.

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 indicating 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 exiting 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 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 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. Budget sequestration could 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 the small modular reactor designs. 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) 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.

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. Responses received to the December 2012 Regulatory Information Summary indicate that some organizations 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.

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 discharge 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, and 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) As directed by the Commission on September 6, 2012, the NRC staff will use available information from a number of sources, including the Yucca Mountain Environmental Impact Statement. The NRC will consider the Yucca Mountain Environmental Impact Statement "no-action" alternative in the Waste Confidence generic environmental impact statement.

Questions from Representative Doris O. Matsui

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

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 the recently released *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 has the regulatory infrastructure in place to license dry interim storage facilities and has already licensed such a facility. 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 the recently released *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 not responsible for implementing the national policy on nuclear waste management including development of interim storage facilities. NRC's responsibility is licensing, regulation, and oversight of interim storage facilities. NRC is not responsible for site selection, but will consider the suitability of the 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.

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.

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555

COMMISSIONER

April 19, 2013

The Honorable Ed Whitfield
Chairman, Subcommittee on Energy
and Power
Committee on Energy and Commerce
United States House of Representatives
Washington, D.C. 20515

The Honorable John Shimkus
Chairman, Subcommittee on Environment
and the Economy
Committee on Energy and Commerce
United States House of Representatives
Washington, D.C. 20515

Dear Chairman Whitfield and Chairman Shimkus:

Thank you for the opportunity to appear before the Subcommittee on Energy and Power and the Subcommittee on Environment and the Economy at the February 28, 2013 hearing entitled "Nuclear Regulatory Commission: Policy and Governance Challenges." By letter dated March 22, 2013, you provided additional questions for the record related to this hearing; my responses to these questions are enclosed. In developing these responses I have worked closely with my colleagues and expect that my responses will be consistent with those provided by Chairman Macfarlane and other members of the Commission.

Please do not hesitate to contact me should you or the members of your subcommittees have any additional questions.

Sincerely,

William D. Magwood, IV

cc: The Hon. Bobby L. Rush, Ranking Member, Subcommittee on Energy and Power
The Hon. Paul Tonko, Ranking Member, Subcommittee on Environment and the Economy

Enclosure

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) The Commission approved actions taken in March of 2012 on the basis, in part, of ensuring adequate protection of the health and safety of the public. Site-specific studies would be needed to evaluate 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. There is much benefit to planning for unexpected events. As the accident at Fukushima taught us, you cannot prevent or predict every natural disaster or every accident. But we can better prepare for how we will recover from unexpected events.

b) The Commission will consider the safety benefit for any future post-Fukushima actions. Included in these considerations would be any necessary cost/benefit analyses.

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 indicating 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 exiting regulatory framework developed primarily for large light water reactors with that needed for SMR technologies including any issues that might require rulemaking.**

ANSWER

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

a) The NRC's FY2013 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 resulted 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 the small modular reactor designs. 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) 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 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 period for analytical purposes in order to capture potential effects of relatively slow-acting degradation processes.

a) 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, and 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) As directed by the Commission on September 6, 2012, the NRC staff will use available information from a number of sources, including the Yucca Mountain Environmental Impact Statement. The NRC will consider the Yucca Mountain Environmental Impact Statement "no-action" alternative in the Waste Confidence generic environmental impact statement.

Questions from Representative Doris O. Matsui

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

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 the recently released *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 has the regulatory infrastructure in place to license dry interim storage facilities and has licensed such a facility. 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 the recently released *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 not responsible for implementing the national policy on nuclear waste management including development of interim storage facilities. 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 the 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.

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.

April 19, 2013

The Honorable John Shimkus
Chairman, Subcommittee on Environment and the Economy
Committee on Energy and Commerce
United States House of Representatives
2125 Rayburn House Office Building
Washington, DC 20515-6115

Dear Chairman Shimkus:

I appeared before the Subcommittee on Environment and the Economy on February 28, 2013, along with my colleagues on the Commission. On March 22, 2013, you forwarded questions for the hearing record. The responses to those questions are enclosed. My fellow colleagues on the Commission and I worked closely together to respond to the Subcommittees' questions. I expect that my responses will be generally consistent with those provided by Chairman Macfarlane and my other Commission colleagues.

If I can be of further assistance, please do not hesitate to contact me.

Sincerely,

William C. Ostendorff

Enclosures:
As stated

cc: The Honorable Paul Tonko

Committee on Energy and Commerce
Subcommittees on Energy and Power & Environment and Economy Hearing
February 28, 2013
Follow-Up Questions for Written Submission

Questions for Commissioner Ostendorff
The Honorable Ed Whitfield

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, such as the three March 2012 actions as well as those planned, in evaluating regulatory decisions regarding post-Fukushima actions.

b. Several processes are in place for the rigorous review of possible changes to NRC regulatory requirements. Following the Fukushima accident, the Commission established a senior management steering committee to consider possible post-Fukushima regulatory actions the agency may undertake. In addition, the NRC operates in accordance with its own "backfit rule," which applies whenever the NRC considers adopting possible regulatory changes. These backfit rule assessments consider the safety benefits of existing plant features and those required by previous regulatory actions (e.g., the Orders issued in March 2012).

   As the agency continues to evaluate Tier 2 and Tier 3 recommendations, actions planned or already taken will be considered. For example, the Commission is currently considering a March 27, 2013, staff proposal to change the implementation plans for Tier 2 emergency preparedness recommendations because their intent is adequately addressed through the implementation of the March 2012 Orders on mitigating strategies. In addition, the Commission recently directed the staff to begin rulemaking efforts for the inclusion of filtering strategies for boiling water reactors with Mark I and Mark II containments. In that decision, the Commission approved issuing orders that require licensees to install severe accident capable hardened vents. Therefore, as part of the rulemaking effort, the staff will assume the installation and safety benefit of those severe accidents capable hardened venting systems.

Committee on Energy and Commerce
Subcommittees on Energy and Power & Environment and Economy Hearing
February 28, 2013
Follow-Up Questions for Written Submission

Questions for Commissioner Ostendorff
The Honorable Ed Whitfield

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 indicating 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 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 their liquid sodium-cooled reactor, the 4S, and STL, a South African company, for their 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 an AREVA design.

a. The NRC's FY2013 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, with 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 the 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, the 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. 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 the 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.

Committee on Energy and Commerce
Subcommittees on Energy and Power & Environment and Economy Hearing
February 28, 2013
Follow-Up Questions for Written Submission

Questions for Commissioner Ostendorff
The Honorable John Shimkus

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.

a. 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.

Committee on Energy and Commerce
Subcommittees on Energy and Power & Environment and Economy Hearing
February 28, 2013
Follow-Up Questions for Written Submission

Questions for Commissioner Ostendorff
The Honorable John Shimkus

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.

Committee on Energy and Commerce
Subcommittees on Energy and Power & Environment and Economy Hearing
February 28, 2013
Follow-Up Questions for Written Submission

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. As directed by the Commission on September 6, 2012, the NRC staff will use available information from a number of sources, including the Yucca Mountain Environmental Impact Statement. The NRC will consider the Yucca Mountain Environmental Impact Statement "no-action" alternative in the Waste Confidence generic environmental impact statement.

Committee on Energy and Commerce
Subcommittees on Energy and Power & Environment and Economy Hearing
February 28, 2013
Follow-Up Questions for Written Submission

Questions for Commissioner Ostendorff
The Honorable Doris 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.

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. But, 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 recently released "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.

Committee on Energy and Commerce
Subcommittees on Energy and Power & Environment and Economy Hearing
February 28, 2013
Follow-Up Questions for Written Submission

Questions for Commissioner Ostendorff
The Honorable Doris Matsui

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 the recently released "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. The NRC's responsibility is independent licensing, regulation, and oversight of interim storage facilities. The NRC is not responsible for site selection, but will consider the suitability of the 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.

Committee on Energy and Commerce
Subcommittees on Energy and Power & Environment and Economy Hearing
February 28, 2013
Follow-Up Questions for Written Submission

Questions for Commissioner Ostendorff
The Honorable Doris Matsui

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.

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 the 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.

April 19, 2013

The Honorable Ed Whitfield
Chairman, Subcommittee on Energy and Power
Committee on Energy and Commerce
United States House of Representatives
2125 Rayburn House Office Building
Washington, DC 20515-6115

Dear Chairman Whitfield:

I appeared before the Subcommittee on Energy and Power on February 28, 2013, along with my colleagues on the Commission. On March 22, 2013, you forwarded questions for the hearing record. The responses to those questions are enclosed. My fellow colleagues on the Commission and I worked closely together to respond to the Subcommittees' questions. I expect that my responses will be generally consistent with those provided by Chairman Macfarlane and my other Commission colleagues.

If I can be of further assistance, please do not hesitate to contact me.

Sincerely,

William C. Ostendorff

Enclosures:
As stated

cc: The Honorable Bobby L. Rush

Committee on Energy and Commerce
Subcommittees on Energy and Power & Environment and Economy Hearing
February 28, 2013
Follow-Up Questions for Written Submission

Questions for Commissioner Ostendorff
The Honorable Ed Whitfield

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, such as the three March 2012 actions as well as those planned, in evaluating regulatory decisions regarding post-Fukushima actions.

b. Several processes are in place for the rigorous review of possible changes to NRC regulatory requirements. Following the Fukushima accident, the Commission established a senior management steering committee to consider possible post-Fukushima regulatory actions the agency may undertake. In addition, the NRC operates in accordance with its own "backfit rule," which applies whenever the NRC considers adopting possible regulatory changes. These backfit rule assessments consider the safety benefits of existing plant features and those required by previous regulatory actions (e.g., the Orders issued in March 2012).

   As the agency continues to evaluate Tier 2 and Tier 3 recommendations, actions planned or already taken will be considered. For example, the Commission is currently considering a March 27, 2013, staff proposal to change the implementation plans for Tier 2 emergency preparedness recommendations because their intent is adequately addressed through the implementation of the March 2012 Orders on mitigating strategies. In addition, the Commission recently directed the staff to begin rulemaking efforts for the inclusion of filtering strategies for boiling water reactors with Mark I and Mark II containments. In that decision, the Commission approved issuing orders that require licensees to install severe accident capable hardened vents. Therefore, as part of the rulemaking effort, the staff will assume the installation and safety benefit of those severe accidents capable hardened venting systems.

Committee on Energy and Commerce
Subcommittees on Energy and Power & Environment and Economy Hearing
February 28, 2013
Follow-Up Questions for Written Submission

Questions for Commissioner Ostendorff
The Honorable Ed Whitfield

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 indicating 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 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 their liquid sodium-cooled reactor, the 4S, and STL, a South African company, for their 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 an AREVA design.

a. The NRC's FY2013 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, with 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 the 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, the 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. 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 the 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.

Committee on Energy and Commerce
Subcommittees on Energy and Power & Environment and Economy Hearing
February 28, 2013
Follow-Up Questions for Written Submission

Questions for Commissioner Ostendorff
The Honorable John Shimkus

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.

a. 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.

Committee on Energy and Commerce
Subcommittees on Energy and Power & Environment and Economy Hearing
February 28, 2013
Follow-Up Questions for Written Submission

Questions for Commissioner Ostendorff
The Honorable John Shimkus

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.

Committee on Energy and Commerce
Subcommittees on Energy and Power & Environment and Economy Hearing
February 28, 2013
Follow-Up Questions for Written Submission

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. As directed by the Commission on September 6, 2012, the NRC staff will use available information from a number of sources, including the Yucca Mountain Environmental Impact Statement. The NRC will consider the Yucca Mountain Environmental Impact Statement "no-action" alternative in the Waste Confidence generic environmental impact statement.

Committee on Energy and Commerce
Subcommittees on Energy and Power & Environment and Economy Hearing
February 28, 2013
Follow-Up Questions for Written Submission

Questions for Commissioner Ostendorff
The Honorable Doris 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.

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. But, 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 recently released "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.

Committee on Energy and Commerce
Subcommittees on Energy and Power & Environment and Economy Hearing
February 28, 2013
Follow-Up Questions for Written Submission

Questions for Commissioner Ostendorff
The Honorable Doris Matsui

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 the recently released "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. The NRC's responsibility is independent licensing, regulation, and oversight of interim storage facilities. The NRC is not responsible for site selection, but will consider the suitability of the 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.

Committee on Energy and Commerce
Subcommittees on Energy and Power & Environment and Economy Hearing
February 28, 2013
Follow-Up Questions for Written Submission

Questions for Commissioner Ostendorff
The Honorable Doris Matsui

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.

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 the 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.

○