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From: Powell, Amy
Sent: Tuesday, March 29, 2011 9:53 AM
To: Powell, Amy
Subject: NRC participation in briefing, hearings this week
Attachments: FINAL March 29 Senate Energy written statement.docx

Hi all –

Here is a listing of public meeting, hearings on the Hill in which NRC is participating this week:

Tuesday, March 29, 10:00 am – Senate Energy and Natural Resources Committee
FULL COMMITTEE MEMBER MEETING: to provide an update on the recent events at the Tokyo Electric Power Company's Fukushima Daiichi reactor complex due to the earthquake and tsunami that occurred on March 11, 2011
366 Dirksen Senate Office Building
Bill Borchardt, NRC's Executive Director for Operations, will present (statement attached)

Wednesday, March 30, 10:00 am, House Transportation and Infrastructure Subcommittee on Economic Development, Public Buildings, and Emergency Management
Emergency Management
2253 Rayburn House Office Building
Mike Weber, NRC's Deputy Executive Director for Operations will testify

Wednesday, March 30, 10:00 am, Senate Appropriations Energy and Water Subcommittee
A review of nuclear safety in light of the impact of natural disasters on Japanese nuclear facilities
138 Dirksen Senate Office Building
Chairman Jaczko will testify

Thursday, March 31, 10:00 am, House Appropriations Energy and Water Subcommittee
FY12 Budget hearing
2362B Rayburn House Office Building
Chairman Jaczko will testify

Testimony will be forwarded soon.

Thanks,
Amy

Amy Powell
Associate Director
U. S. Nuclear Regulatory Commission
Office of Congressional Affairs
Phone: 301-415-1673

**STATEMENT OF R. WILLIAM BORCHARDT
EXECUTIVE DIRECTOR FOR OPERATIONS
UNITED STATES NUCLEAR REGULATORY COMMISSION
TO THE COMMITTEE ON ENERGY AND NATURAL RESOURCES
UNITED STATES SENATE**

**NRC RESPONSE TO RECENT NUCLEAR EVENTS IN JAPAN AND THE CONTINUING
SAFETY OF THE U.S. COMMERCIAL NUCLEAR REACTOR FLEET**

MARCH 29, 2011

The staff of the U.S. Nuclear Regulatory Commission is deeply saddened by the tragedy in Japan. I and many of my colleagues on the NRC staff have had many years of very close and personal interaction with our regulatory counterparts and we would like to extend our condolences to them.

Introduction

The NRC is mindful that our primary responsibility is to ensure the adequate protection of the public health and safety of the American people. We have been very closely monitoring the activities in Japan and reviewing all currently available information. Review of this information, combined with our ongoing inspection and licensing oversight, allows us to say with confidence that the U.S. plants continue to operate safely. There has been no reduction in the licensing or oversight function of the NRC as it relates to any of the U.S. licensees.

We have a long history of conservative regulatory decision-making. We have been using risk insights to help inform our regulatory process, and, over more than 35 years of civilian nuclear power in this country, we have never stopped making improvements to our regulatory framework as we learn from operating experience.

Notwithstanding the very high level of support being provided to respond to events in Japan, we continue to maintain our focus on our domestic responsibilities.

I'd like to begin with a brief overview of our immediate and continuing response. I then want to spend the bulk of my time discussing the reasons for our confidence in the safety

of the U. S. commercial nuclear reactor fleet, and the path forward that we will take to ensure we learn any lessons we need to from events in Japan.

The NRC's immediate and Continuing Response to Events in Japan

On Friday, March 11th an earthquake hit Japan, resulting in the shutdown of more than 10 reactors. From what we know now, it appears possible that the reactors' response to the earthquake went according to design. The ensuing tsunami, however, appears to have caused the loss of normal and emergency AC power to the six units at the Fukushima Daiichi site; it is those six units that have received the majority of our attention since that time. Units One, Two, and Three at the site were in operation at the time of the earthquake. Units Four, Five, and Six were in previously scheduled outages.

Shortly after 4:00 AM EDT on Friday, March 11th, the NRC Emergency Operations Center made the first call, informing NRC management of the earthquake and the potential impact on U.S. plants. We went into the monitoring mode at the Emergency Operations Center and the first concern for the NRC was possible impacts of the tsunami on U.S. plants and radioactive materials on the West Coast, and in Hawaii, Alaska, and U.S. Territories in the Pacific.

On that same day, we began interactions with our Japanese regulatory counterparts and dispatched two experts to help at the U.S. embassy in Japan. By Monday, we had dispatched a total of 11 staff to Japan. We have subsequently rotated in additional staff to continue our on-the-ground assistance in Japan. The areas of focus for this team are: 1) to assist the Japanese government with technical support as part of the USAID response; and 2) to support the U.S. ambassador. While our focus now is on helping Japan in any way that we can, the experience will also help us assess the implications for U.S. citizens and the U.S. reactor fleet in as timely a manner as possible.

We have an extensive range of stakeholders with whom we have ongoing interaction,

including the White House, Congressional staff, our state regulatory counterparts, a number of other federal agencies, and international regulatory bodies around the world.

The NRC response in Japan and our Emergency Operations Center continue with the dedicated efforts of over 250 NRC staff on a rotating basis. The entire agency is coordinating and pulling together in response to this event so that we can provide assistance to Japan while continuing the normal activities necessary to fulfill our domestic responsibilities.

Let me also just note here in concluding this section of my remarks that the U.S. government has an extensive network of radiation monitors across this country. Monitoring equipment at nuclear power plants and in the U. S. Environmental Protection Agency's (EPA) system has not identified any radiation levels of concern in this country. In fact, natural background radiation from sources such as rocks, the sun, and buildings, is 100,000 times more than doses attributed to any level of the radiation from this event that has been detected in the U.S. to date. Therefore, we feel confident, based on current data, that there is no reason for concern in the United States regarding radioactive releases from Japan.

Continuing Confidence in the Safety of U.S. Nuclear Power Plants

I will now turn to the factors that assure us of ongoing domestic reactor safety. We have, since the beginning of the regulatory program in the United States, used a philosophy of Defense-in-Depth, which recognizes that nuclear reactors require the highest standards of design, construction, oversight, and operation, and does not rely on any single layer for protection of public health and safety. We begin with designs for every individual reactor in this country that take into account site-specific factors and include a detailed evaluation for any natural event, such as earthquakes, tornadoes, hurricanes, floods, and tsunamis, as they relate to that site.

There are multiple physical barriers to radiation in every reactor design. Additionally, there are both diverse and redundant safety systems that are required to be maintained in

operable condition and frequently tested to ensure that the plant is in a high condition of readiness to respond to any scenario.

We have taken advantage of the lessons learned from previous operating experience to implement a program of continuous improvement for the U.S. reactor fleet. We have learned from experience across a wide range of situations, including most significantly, the Three Mile Island accident in 1979. As a result of those lessons learned, we have significantly revised emergency planning requirements and emergency operating procedures. We have addressed many human factors issues regarding how control room employees operate the plant, added new requirements for hydrogen control to help prevent explosions inside of containment, and created requirements for enhanced control room displays of the status of pumps and valves.

The NRC has a post-accident sampling system that enables the monitoring of radioactive material release and possible fuel degradation. One of the most significant changes after Three Mile Island was expansion of the Resident Inspector Program, which has at least two full-time NRC inspectors on site at each nuclear power plant. These inspectors have unfettered access to all licensees' activities.

As a result of operating experience and ongoing research programs, we have developed requirements for severe accident management guidelines. These are components and procedures developed to ensure that, in the event all of the above precautions failed and a severe accident occurred, the plant would still protect public health and safety. The requirements for severe accident management have been in effect for many years and are frequently evaluated by the NRC inspection program.

As a result of the events of September 11, 2001, we identified important pieces of equipment that, regardless of the cause of a significant fire or explosion at a plant, we want licensees to have available and staged in advance, as well as new procedures, training requirements, and policies that would help deal with a severe situation.

Our program of continuous improvement based on operating experience will now include evaluation of the significant events in Japan as well as what we can learn from them. We already have begun enhancing inspection activities through temporary instructions to our inspection staff, including the resident inspectors and the region-based inspectors in our four Regional offices, to look at licensees' readiness to deal with both the design basis accidents and the beyond-design basis accidents. The information that we gather will be used to evaluate the industry's readiness for similar events, and will aid in our understanding of whether additional regulatory actions need to be taken in the immediate term.

We have also issued an information notice to the licensees to make them aware of the events in Japan, and the kinds of activities we believe they should be engaged in to verify their readiness. Specifically, we have requested them to verify that their capabilities to mitigate conditions that result from severe accidents, including the loss of significant operational and safety systems, are in effect and operational. Licensees are verifying the capability to mitigate a total loss of electric power to the nuclear plant. They also are verifying the capability to mitigate problems associated with flooding and the resulting impact on systems both inside and outside of the plant. Also, licensees are confirming the equipment that is needed is in place for the potential loss of equipment due to seismic events appropriate for the site, because each site has its own unique seismic profiles.

During the past 20 years, there have been a number of new rulemakings that have enhanced the domestic fleet's preparedness against some of the problems we are seeing in Japan. The "station blackout" rule requires every plant in this country to analyze what the plant response would be if it were to lose all alternating current so that it could respond using batteries for a period of time, and then have procedures in place to restore alternating current to the site and provide cooling to the core.

The hydrogen rule requires modifications to reduce the impacts of hydrogen

generated for beyond-design basis events and core damage. There are equipment qualification rules that require equipment, including pumps and valves, to remain operable under the kinds of environmental temperature and radiation conditions that you would see under a design basis accident. With regard to the type of containment design used by the most heavily damaged plants in Japan, the NRC has had a Boiling Water Reactor Mark I Containment Improvement Program since the late 1980s, which has required installation of hardened vent systems for containment pressure relief, as well as enhanced reliability of the automatic depressurization system.

The final factor I want to mention with regard to our belief in the ongoing safety of the U.S. fleet is the emergency preparedness and planning requirements in place that provide ongoing training, testing, and evaluations of licensees' emergency preparedness programs. In coordination with our federal partner, the Federal Emergency Management Administration (FEMA), these activities include extensive interaction with state and local governments, as those programs are evaluated and tested on a periodic basis.

The Path Ahead

Beyond the initial steps to address the experience from the events in Japan, the Chairman, with the full support of the Commission, directed the NRC staff to establish a senior level agency task force to conduct a methodical and systematic review of our processes and regulations to determine whether the agency should make additional improvements to our regulatory system and make recommendations to the Commission for its policy direction. This activity will have both near-term and longer-term objectives.

For the near term effort, we are beginning a 90-day review. This review will evaluate all of the currently available information from the Japanese events to identify immediate or near-term operational or regulatory issues potentially affecting the 104 operating reactors in the U.S., including their spent fuel pools. Areas of investigation will include the ability to

protect against natural disasters, response to station blackouts, severe accidents and spent fuel accident progression, radiological consequence analysis, and severe accident management issues regarding equipment. Over this 90-day period, we will develop recommendations, as appropriate, for changes to inspection procedures and licensing review guidance, and recommend whether generic communications, orders, or other regulatory requirements are needed.

This 90-day effort will include a 30-day "Quick Look Report" to the Commission to provide a snapshot of the regulatory response and the condition of the U.S. fleet based on information we have available at that time. Preparing a "Quick Look Report" will also ensure that the Commission is both kept informed of ongoing efforts and prepared to resolve any policy recommendations that surface. I believe we will have limited stakeholder involvement in the first 30 days to accomplish this. However over the 90-day and longer-term efforts we will seek additional stakeholder input. At the end of the 90-day period, a report will be provided to the Commission and to the public. The task force's longer-term review will begin as soon as the NRC has sufficient technical information from the events in Japan.

The task force will evaluate all technical and policy issues related to the event to identify additional potential research, generic issues, changes to the reactor oversight process, rulemakings, and adjustments to the regulatory framework that should be pursued by the NRC. We also expect to evaluate potential interagency issues, such as emergency preparedness, and examine the applicability of any lessons learned to non-operating reactors and materials licensees. We expect to seek input from stakeholders during this process. A report with appropriate recommendations will be provided to the Commission within 6 months of the start of this evaluation. Both the 90-day and final reports will be made publicly available in accordance with normal Commission processes.

Conclusion

In conclusion, I want to reiterate that we continue to make our domestic responsibilities for licensing and oversight of the U.S. licensees our top priority and that the U.S. plants continue to operate safely. In light of the events in Japan, there is a near-term evaluation of their relevance to the U.S. fleet underway, and we are continuing to gather the information necessary for us to take a longer, more thorough look at the events in Japan and their lessons for us. Based on these efforts, we will take all appropriate actions necessary to ensure the continuing safety of the U.S. fleet.

From: Belmore, Nancy
Sent: Wednesday, March 30, 2011 10:26 AM
To: Hayden, Elizabeth
Cc: Droggitis, Spiros
Subject: Testimony attached
Attachments: Final - Written Testimony for SAC Energy and Water 3 30 11.docx

*Nancy Belmore
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AN/2

WRITTEN STATEMENT
BY GREGORY B. JACZKO, CHAIRMAN
UNITED STATES NUCLEAR REGULATORY COMMISSION
TO THE
APPROPRIATIONS COMMITTEE
SUBCOMMITTEE ON ENERGY AND WATER
UNITED STATES SENATE
MARCH 30, 2011

Chairman Feinstein, Ranking Member Alexander, and Members of the Subcommittee, I appreciate the opportunity to appear before you to address the response of the United States Nuclear Regulatory Commission (NRC) to the recent tragic events in Japan. People across the country and around the world who have been touched by the magnitude and scale of this disaster are closely following the events in Japan and the repercussions in this country and in other countries.

I traveled to Japan over the past weekend, and just returned yesterday. I wanted to convey a message of support and cooperation to our Japanese counterparts there and to assess the current situation. I also met with senior Japanese government and TEPCO officials, and consulted with our NRC team of experts who are in Japan as part of our assistance effort.

I would first like to reiterate my condolences to all those who have been affected by the earthquake and tsunami in Japan. Our hearts go out to all who have been dealing with the aftermath of these natural disasters, and we are mindful of the long and difficult road they will face in recovering. We know that the people of Japan are resilient and strong, and we have every confidence that they will come through this horrific time and move forward, with resolve, to

rebuild their vibrant country. Our agency stands together with the people of Japan at this most difficult and challenging time.

The NRC is an independent agency, with approximately 4000 staff. We play a critically important role in protecting the American people and the environment. Our agency sets the rules by which commercial nuclear power plants operate, and nuclear materials are used in thousands of academic, medical and industrial settings in the United States. We have at least two resident inspectors who work full-time at every nuclear plant in the country, and we are proud to have world-class scientists, engineers and professionals representing nearly every discipline.

Since Friday, March 11, when the earthquake and tsunami struck, the NRC's headquarters 24-hour Emergency Operations Center has been fully activated, with staffing augmented to monitor and analyze events at nuclear power plants in Japan. At the request of the Japanese government, and through the United States Agency for International Development (USAID), the NRC sent a team of its technical experts to provide on-the-ground support, and we have been in continual contact with them. Within the United States, the NRC has been working closely with other Federal agencies as part of our government's response to the situation.

During these past several weeks, our staff has remained focused on our essential safety and security mission. I want to recognize their tireless efforts and their critical contributions to the U.S. response to assist Japan. In spite of the evolving situation, the long hours, and the intensity of efforts over the past week, NRC staff has approached their responsibilities with dedication, determination and professionalism, and I am incredibly proud of their efforts. The American people also can be proud of the commitment and dedication within the Federal workforce, which is exemplified by our staff every day.

The NRC's primary responsibility is to ensure the adequate protection of the public health and safety of the American people. Toward that end, we have been very closely monitoring the activities in Japan and reviewing all currently available information. Review of this information, combined with our ongoing inspection and licensing oversight, gives us confidence that the U.S. plants continue to operate safely. To date, there has been no reduction in the licensing or oversight function of the NRC as it relates to any of the U.S. licensees.

Our agency has a long history of conservative regulatory decision-making. We have been intelligently using risk insights to help inform our regulatory process, and, for more than 35 years of civilian nuclear power in this country, we have never stopped requiring improvements to plant designs, and modifying our regulatory framework as we learn from operating experience.

Despite the very high level of support being provided by the NRC in response to the events in Japan, we continue to remain focused on our domestic responsibilities.

I'd like to begin with a brief overview of our immediate and continuing response to the events in Japan. I then want to further discuss the reasons for our continuing confidence in the safety of the U. S. commercial nuclear reactor fleet, and the path forward for the NRC in order to learn all the lessons we can, in light of these events.

On Friday, March 11th, an earthquake hit Japan, resulting in the shutdown of more than 10 reactors. The ensuing tsunami appears to have caused the loss of normal and emergency alternating current power to the six unit Fukushima Daiichi site. It is those six units that have received the majority of our attention since that time. Units One, Two, and

Three were in operation at the time of the earthquake. Units Four, Five, and Six were in previously scheduled outages.

Shortly after 4:00 AM EDT on Friday, March 11th, the NRC Emergency Operations Center made the first call, informing NRC management of the earthquake and the potential impact on U.S. plants. We went into the monitoring mode at our Emergency Operations Center, and the NRC's first concern was possible impacts of the tsunami on U.S. plants and radioactive materials on the West Coast, and in Hawaii, Alaska, and U. S. Territories in the Pacific. We were in communication with licensees and NRC resident inspectors at Diablo Canyon Power Plant and San Onofre Nuclear Generating Station in California, and the Radiation Control Program Directors for California, Washington, Oregon and Hawaii.

On that same day, we began interactions with our Japanese regulatory counterparts and dispatched two experts to Japan to help at the U.S. embassy in Tokyo. By Monday, March 14, we had dispatched a total of 11 NRC staff to provide technical support to the American embassy and the Japanese government. We have subsequently rotated in additional staff to continue our on-the-ground assistance in Japan. The areas of focus for this team are: 1) to assist the Japanese government and respond to requests from our Japanese regulatory counterparts; and 2) to support the U. S. ambassador and the U.S. government assistance effort.

On Wednesday, March 16, we collaborated with other U. S. government agencies and decided to advise American citizens to evacuate within a 50-mile range around the plant. This decision was a prudent course of action and would be consistent with what we would do under similar circumstances in the United States. This evacuation range was predicated on a combination of the information that we had available at the time, which indicated the possibility that reactor cores and spent fuel pools may have been compromised, and hypothetical

calculations of the approximate activity available for release from one reactor and two spent-fuel pools at a four-reactor site.

We have an extensive range of stakeholders with whom we have ongoing interaction regarding the Japan situation, including the White House, Congressional staff, our state regulatory counterparts, a number of other federal agencies, and international regulatory bodies around the world.

The NRC response in Japan and our Emergency Operations Center continue with the dedicated efforts of over 250 NRC staff on a rotating basis. The entire agency is coordinating and working together in response to this event so that we can provide assistance to Japan while continuing the vital activities necessary to fulfill our domestic responsibilities.

It is important to note that the U. S. government has an extensive network of radiation monitors across this country. Monitoring at nuclear power plants and the U. S. Environmental Protection Agency's (EPA) system has not identified any radiation levels that effect public health and safety in this country. In fact, natural background radiation from sources such as rocks, the sun, and buildings, is 100,000 times more than doses attributed to any level that has been detected in the U.S. to date. Therefore, based on current data, we feel confident that there is no reason for concern in the United States regarding radioactive releases from Japan.

There are many factors that assure us of ongoing domestic reactor safety. We have, since the beginning of the regulatory program in the United States, used a philosophy of Defense-in-Depth, which recognizes that nuclear reactors require the highest standards of design, construction, oversight, and operation, and does not rely on any single layer of protection for public health and safety. Designs for every individual reactor in this country take into account site-specific factors and include a detailed evaluation for natural events, such as

earthquakes, tornadoes, hurricanes, floods, and tsunamis, as they relate to that site.

There are multiple physical barriers to radiation in every reactor design. Additionally, there are both diverse and redundant safety systems that are required to be maintained in operable condition and frequently tested to ensure that the plant is in a high condition of readiness to respond to any situation.

We have taken advantage of the lessons learned from previous operating experience to implement a program of continuous improvement for the U. S. reactor fleet. We have learned from experience across a wide range of situations, including most significantly, the Three Mile Island accident in 1979. As a result of those lessons learned, we have significantly revised emergency planning requirements and emergency operating procedures. We have addressed many human factors issues regarding how control room employees operate the plant, added new requirements for hydrogen control to help prevent explosions inside of containment, and created requirements for enhanced control room displays of the status of pumps and valves.

The NRC has a post-accident sampling system that enables the monitoring of radioactive material release and possible fuel degradation. One of the most significant changes after Three Mile Island was an expansion of the Resident Inspector Program, which now has at least two full-time NRC inspectors on site at each nuclear power plant. These inspectors have unfettered access to all licensees' activities related to nuclear safety and security.

As a result of operating experience and ongoing research programs, we have developed requirements for severe accident management guidelines. These are components and procedures developed to ensure that, in the event all of the above-described precautions failed and a severe accident occurred, the plant would still protect

public health and safety. The requirements for severe accident management have been in effect for many years and are frequently evaluated by the NRC inspection program.

As a result of the events of September 11, 2001, we identified important pieces of equipment that, regardless of the cause of a significant fire or explosion at a plant, the NRC requires licensees to have available and staged in advance, as well as new procedures and policies to help deal with a severe situation.

Our program of continuous improvement, based on operating experience, will now include evaluation of the significant events in Japan and what we can learn from them. We already have begun enhancing inspection activities through temporary instructions to our inspection staff, including the resident inspectors and the region-based inspectors in our four Regional offices, to look at licensees' readiness to deal with both design-basis accidents and beyond-design-basis accidents.

We have also issued an information notice to licensees to make them aware of the events in Japan, and the kinds of activities we believe they should be engaged in to verify their readiness. It is expected that licensees review the information related to their capabilities to mitigate conditions that result from severe accidents, including the loss of significant operational and safety systems, to ensure that they are in effect and operational.

During the past 20 years, there have been a number of new rulemakings that have enhanced the domestic fleet's preparedness against some of the problems we are seeing in Japan. The "station blackout" rule requires every plant in this country to analyze what the plant response would be if it were to lose all alternating current so that it could respond using batteries for a period of time, and then have procedures in place to restore alternating current to the site and provide cooling to the core.

The hydrogen rule requires modifications to reduce the impacts of hydrogen generated for beyond-design-basis events and core damage. There are equipment qualification rules that require equipment, including pumps and valves, to remain operable under the kinds of environmental temperature and radiation conditions that you would see under a design-basis accident.

With regard to the type of containment design used by the most heavily damaged plants in Japan, the NRC has had a Boiling Water Reactor Mark I Containment Improvement Program since the late 1980s. This program required installation of hardened vent systems for containment pressure relief, as well as enhanced reliability of the automatic depressurization system.

A final factor that underpins our belief in the ongoing safety of the U. S. fleet is the emergency preparedness and planning requirements in place that provide ongoing training, testing, and evaluations of licensees' emergency preparedness programs. In coordination with our federal partner, the Federal Emergency Management Administration (FEMA), these activities include extensive interaction with state and local governments, as those programs are evaluated and tested on a periodic basis.

Along with our confidence in the safety of U.S. nuclear power plants, our agency has a responsibility to the American people to undertake a systematic and methodical review of the safety of our domestic facilities, in light of the natural disaster and the resulting nuclear situation in Japan.

Examining all available information is an essential part of the effort to analyze the event and understand its impact on Japan and its implications for the United States. Our focus is always on keeping nuclear plants and radioactive materials in this country safe and secure.

On Monday, March 21, my colleagues on the Commission and I met to review the status of the situation in Japan and identify the steps needed to conduct that review. We consequently decided to establish a senior level agency task force to conduct a comprehensive review of our processes and regulations to determine whether the agency should make additional improvements to our regulatory system, and to make recommendations to the Commission for its policy direction.

The review will be conducted in both a short-term and a longer-term timeframe. The short-term review has already begun, and the task force will brief the Commission at 30, 60 and 90 day intervals, to identify potential or preliminary near-term operational or regulatory issues. The task force then will undertake a longer-term review as soon as NRC has sufficient information from the events in Japan. That longer-term review will be completed in six months from the beginning of the evaluation.

The task force will evaluate all technical and policy issues related to the event to identify additional potential research, generic issues, changes to the reactor oversight process, rulemakings, and adjustments to the regulatory framework that may warrant action by the NRC. We also expect to evaluate potential interagency issues, such as emergency preparedness, and examine the applicability of any lessons learned to non-operating reactors and materials licensees. We expect to seek input from all key stakeholders during this process. A report with appropriate recommendations will be provided to the Commission within six months of the start of this evaluation. Both the 90-day and final reports will be made

publicly available.

In conclusion, I want to reiterate that we continue to make our domestic responsibilities for licensing and oversight of the U.S. licensees our top priority and that the U.S. plants continue to operate safely. In light of the events in Japan, there will be a near-term evaluation of their relevance to the U.S. fleet, and we are continuing to gather the information necessary to take a longer, more comprehensive and thorough look at the events in Japan and their lessons for us. Based on these efforts, we will take all appropriate actions necessary to ensure the continuing safety of the American people.

Chairman Feinstein, Ranking Member Alexander, and Members of the Subcommittee, on behalf of the Commission, thank you for the opportunity to appear before you. I look forward to continuing to work with you to advance the NRC's important safety mission.

From: Belmore, Nancy
Sent: Friday, April 22, 2011 1:41 PM
To: jean.paffenback@mail.house.gov
Cc: Schmidt, Rebecca; Powell, Amy; Shane, Raeann
Subject: Edited Transcript from March 30
Attachments: Transcript EDITED.pdf

Hi Jean,

On behalf of Rebecca Schmidt, Director, Congressional Affairs, U.S. Nuclear Regulatory Commission, attached is the edited transcript by Michael Weber from the March 30 hearing.

Nancy Belmore
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U.S. Nuclear Regulatory Commission
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301-415-1776

446 Mr. WEBER. Good morning, Chairman Denham, Ranking Member
447 Norton, and members of the subcommittee. I am pleased to
448 appear before you today to represent the United States
449 Nuclear Regulatory Commission to discuss two aspects: the
450 emergency planning and preparedness program for nuclear power
451 facilities in the United States; as well as the protective
452 action guidance that we recently issued in response to the
453 events at the Fukushima Daiichi nuclear power plant station
454 in Japan.

455 NRC's primary mission, as you may know, is to regulate
456 nuclear power plants, reactors, and materials and waste in a
457 manner that protects public health and safety, and promotes
458 the common defense and security.

459 Emergency preparedness is a key element in our defense
460 in-depth philosophy, and that philosophy ensures quality in
461 design, construction, and operation of nuclear facilities,
462 requires redundant safety systems that reduce the chances of
463 accidents from occurring, and recognizes that, in spite of
464 all these preparations, unforeseen events can occur; though
465 through emergency planning and preparedness, mechanisms are
466 in place to protect the public health in the unlikely event
467 that these other measures fail.

468 The NRC emergency preparedness and planning regulations
469 are extensive and require licensees to develop comprehensive
470 and effective emergency plans as a condition of their license

471 to operate.

472 Nuclear power plant operators are required to provide
473 extensive emergency response training to emergency plant
474 workers. For example, they are required to provide severe
475 accident management training to control room operators, and
476 to conduct a rigorous drill and exercise program. The NRC
477 inspects licensees to ensure that they are meeting these
478 requirements, and monitors their performance.

479 To form a coordinated system of emergency preparedness
480 and response, the NRC works with licensees, other federal
481 agencies, state, tribal, local responders and officials, and,
482 of course, first responders. The program includes an
483 every-other-year full participation exercise that engages
484 both on-site and off-site response organizations, as well as
485 the Federal Emergency Management Agency. And we work with
486 FEMA to evaluate the quality and the conduct of those
487 exercises.

488 NRC resident inspectors also observe licensee on-site
489 emergency drills and exercises. So it's safe to say that
490 over the 30-plus years of operating experience with 140
491 operating nuclear power plants in the United States, there
492 have been thousands of drills and exercises in response to
493 both abnormal and emergency conditions.

494 For planning purposes, we define two emergency planning
495 zones, or EPZs, around nuclear power plant sites. The first

496 zone is called the plume exposure pathway, ~~and that scenario~~^{is an area}
497 that covers the 10-mile radius in the vicinity of the nuclear
498 power plant. This area would require the most immediate
499 protective actions in the event of a severe emergency causing
500 a large-scale release. Planning for this area is
501 comprehensive, and includes consideration of protective
502 measures for members of the public at very low-dose levels,
503 such as evacuation, sheltering, and administration of
504 potassium iodide, as appropriate.

505 A second emergency planning zone is the ingestion
506 pathway EPZ, and this covers a 50-mile radius around each
507 plant to protect against potential lower-level, longer-term
508 risks from ingestion of contaminated food, milk, and water.
509 The comprehensive planning in both the 10 and the 50-mile
510 EPZs provide a substantial basis for expansion, if necessary,
511 in response to the emergency.

512 Let me now address NRC's protection action
513 recommendations that we made recently for U.S. citizens in
514 Japan to evacuate out to 50 miles from the Fukushima Daiichi
515 nuclear power plant site. That decision was based on the
516 best available information we had at the time. NRC began
517 monitoring of the event with a tsunami warning that was
518 issued for Hawaii and territories in the West Coast of the
519 United States early that morning. In order to provide timely
520 information to the U.S. Ambassador to Japan, and to best

521 protect the health and safety of U.S. citizens in Japan, we
522 based our assessment on conditions as we understood them.

523 This site has six nuclear power plants, and four of
524 those plants continue to face extraordinary challenges.
525 Units one, three, and four appear to have suffered
526 significant damage as a result of hydrogen explosions. Unit
527 four was in a refueling outage, and so it recently
528 transferred spent fuel into its spent fuel pool. If the
529 water was drained from that pool, it would have posed a risk
530 of overheating that fuel, and another large-scale release.
531 Radiation monitors were showing very high levels of radiation
532 at the plant site, which would pose complications for the
533 plant crew in returning to stabilize the reactors, and ^{their work} their
534 off-site readings indicating fuel damage was occurring.

535 Since communications were limited and there was a high
536 degree of uncertainty, it is difficult to accurately assess
537 the radiological hazard. However, we conducted calculations
538 to evaluate the proper evacuation distance, and we used
539 hypothetical but not unreasonable estimates of fuel damage,
540 the containment, and other release conditions. ^{These} Calculations X
541 demonstrated that EPA's protective action guidelines could be
542 exceeded at a distance of 50 miles from the site if a
543 large-scale release occurred from the reactors in the spent
544 fuel pools. ^{at} X

545 We understood that some of our assumptions were

546 conservative, but we believed it was better to err on the
547 side of protection, especially in the case of a rapidly
548 deteriorating condition. Acting in accordance with that
549 framework, and using the best available information we had,
550 NRC determined that an evacuation out to 50 miles for U.S.
551 citizens was the appropriate course of action, and we made
552 that recommendation to the other government agencies,
553 including the ambassador.

554 This concludes my testimony. I appreciate the
555 opportunity to appear before you today, and I would be happy
556 to answer questions.

557 [Mr. Weber's prepared statement follows:]

558 *****INSERT 3*****

659 that may not be impacted by the disaster, but would need
660 federal assistance to do sheltering operations, so we worked
661 on sheltered populations outside of that.

662 A lot of this work, you know, was focused on the
663 hurricane scenarios. We are trying to move this into New
664 Madrid and the other earthquake scenarios where, again, it
665 may be that you cannot get resources in fast enough. You're
666 going to have to move people to where the resources are.
667 This is one advantage we have in these types of events. We
668 are such a large country that we do have a lot of resiliency,
669 just because of the geographical separation of key resources.
670 So it's unlikely we would have a situation where one part of
671 the country would be so overwhelmed that the other parts of
672 the country wouldn't be able to provide that assistance.

673 Mr. DENHAM. Thank you. Now I recognize Ms. Norton for
674 five minutes.

675 Ms. NORTON. Thank you, Mr. Chairman. Mr. Weber, how
676 many nuclear plants in the United States sit on or near fault
677 lines, and how many are located on the coast near to areas
678 subject to tsunami?

679 Mr. WEBER. All the nuclear power plants in the United
680 States are near faults. Faults are -

681 Ms. NORTON. How come?

682 Mr. WEBER. The point is that -

683 Ms. NORTON. I mean you must have been looking to locate

684 them on fault lines.

685 Mr. WEBER. No, ma'am. They are sited where they're
686 needed for providing the electrical power. But faults and
687 seismic activity is one of the external events that is
688 considered in the design of the nuclear power plant to ensure
689 that, should a large earthquake occur, the plant would remain
690 in a safe -

691 Ms. NORTON. Would you locate such a nuclear plant on a
692 fault line today?

693 Mr. WEBER. There are faults throughout the United
694 States.

695 Ms. NORTON. Well, would you locate a nuclear plant on a
696 fault--on or near a fault line today? I repeat my question.

697 Mr. WEBER. In siting a nuclear power plant, that is one
698 of the things we specifically look at. But not just seismic
699 activity. We also look at other natural hazards.

700 Ms. NORTON. So you would or would not, Mr. Weber? I have
701 only so much time, sir.

702 Mr. WEBER. You would take faults into consideration in
703 siting a nuclear power plant.

704 Ms. NORTON. So the--so you--have you taken them into
705 consideration before?

706 Mr. WEBER. Yes.

707 Ms. NORTON. So you're not doing anything different from
708 what you did before, even after the Japan catastrophe.

709 Mr. WEBER. Even in low seismic areas there are faults.

710 Ms. NORTON. I didn't ask you if there were--I asked you
711 would you build or would you authorize the building of a
712 plant on a nuclear [sic] fault line, and your answer is yes,
713 you take into account, and that is a very troubling answer.
714 What would you do to mitigate potential hazard of a nuclear
715 plant located on a fault line, or near a part of the coast
716 susceptible to tsunami?

717 Mr. WEBER. We would make certain that if there were an
718 earthquake on that fault, or faults near the plant, that the
719 plant would remain safe. Otherwise, we would not -

720 Ms. NORTON. How would it remain safe? You know, that is
721 what they thought in Japan.

722 Mr. WEBER. Because the site is specifically designed to
723 protect against -

724 Ms. NORTON. So was that site. Mr. Weber, I am going to
725 go on to Mr.--

726 Mr. WEBER. Okay.

727 Ms. NORTON. All you have done is to leave me with really
728 a set of questions that astonish me. I would have thought
729 that after this disaster you would say that there were some
730 steps that you are in the process of taking to mitigate the
731 effects of disasters. Are there any such steps?

732 Mr. WEBER. We are -

733 Ms. NORTON. Steps after Japan?

734 Mr. WEBER. Yes, ma'am. We are taking both a near-term
735 and a long-term review of our existing safety program. We
736 are conducting a 90-day review, which will be followed by a
737 longer-term review. The purpose of that is to learn what we
738 can from the experience in Japan, and to specifically look at
739 whether we need to change our regulatory program to ensure
740 that, in light of what we have learned from -

741 Ms. NORTON. When is that review due to be completed?

742 Mr. WEBER. The first part of that is due within 90 days
743 of last week, and the second review is due within 6 months of
744 the completion of the 90-day -

745 Ms. NORTON. Would you make sure that a copy of that
746 review is sent to this committee, to its chairman?

747 Mr. WEBER. We can do that.

748 Ms. NORTON. Mr. Fugate, when is the disaster relief fund
749 due to run out of money?

750 Mr. FUGATE. Based upon the continuing resolutions in
751 funding, we are sitting at a little over \$1.1 billion in the
752 current fund. We are also in the process of looking at open
753 disasters and replenishing that. And, based upon that, all
754 things being equal, May/June time frames look like we may get
755 close to what we would call immediate needs funding, where we
756 would drop under \$1 billion. And we would then look at
757 reductions in certain activities, most principally hazard
758 mitigation and certain public assistance. It would not

1009 of note, we have clarified for federally-recognized tribes
1010 that they can be an eligible applicant, as a grantee, after a
1011 governor has requested a disaster declaration. This is key
1012 to the sovereignty of those tribes and, again, was done
1013 internally to our policy reviews, where there was not a
1014 conflict in the Stafford Act, but we had that flexibility
1015 inherent to that, in order to do that.

1016 Mr. FINCHER. Again, we go back to the Gulf oil spill,
1017 how terrible that was. I am--still, I think good enough that
1018 no one wants to destroy the environment, that we need to make
1019 sure that we are safe with our energy, but also, at the same
1020 time, that if you do not operate and follow the law, you do
1021 pay a penalty. But again, we need to be steady, while
1022 careful, and do a good job. And I do appreciate your
1023 comments to that, guys. Thank you. I would yield back.

1024 Mr. DENHAM. Thank you, Mr. Fincher. Mr. Barletta, you
1025 are recognized for five minutes.

1026 Mr. BARLETTA. Mr. Weber, do you anticipate any major
1027 impacts of the radiation from Japan reactors on the U.S.? I
1028 saw some reports showing certain states experiencing
1029 low-level effects from the Japan reactors, Pennsylvania being
1030 one of them, my home state. So I wonder if you could talk
1031 about that?

1032 Mr. WEBER. Certainly. We do not expect to see harmful
1033 levels of radiation in the United States, and that includes

1034 the Territories, ~~X~~ Hawaii, Alaska, Aleutians. We are detecting
1035 trace levels of contamination from the releases from the
1036 Fukushima Daiichi emergency. And that is expected. And we
1037 are working within the federal community to get data from the
1038 nuclear power plants--which may be some of the data that you
1039 are referring to--to share that, so that it can be integrated
1040 with other information taken around the United States,
1041 including monitoring data from the Environmental Protection
1042 Agency, to provide confidence to the American public that
1043 they are not at risk from those releases.

1044 Mr. BARLETTA. So there won't be--you don't anticipate
1045 any effects in water and rain -

1046 Mr. WEBER. We are seeing elevated levels in rain, for
1047 example. But those levels are still at a very small amount,
1048 so that it is not posing a risk to U.S. citizens.

1049 Mr. BARLETTA. And to follow up on Ms. Norton's question,
1050 how at risk are our nuclear power plants in the United States
1051 to the type of situation that occurred in Japan?

1052 Mr. WEBER. We are confident that the operating nuclear
1053 power plants are safe, and that is safe from earthquakes,
1054 ~~that is~~ safe from tsunamis, and other external
1055 hazards--hurricanes, tornadoes. That is all part of what we
1056 look at before we license a plant to operate.

1057 However, having said that, we are taking a close look at
1058 what was actually occurring in Japan, so that we can learn

1059 | from that experience. At NRC we practice continuous
1060 | improvement. So we do not want to blow off a significant
1061 | event like occurred in Japan. We want to learn from that,
1062 | and continue to improve our programs.

1063 | Mr. BARLETTA. Thank you. Mr. Chairman, I yield back the
1064 | balance of my time.

1065 | Mr. DENHAM. Thank you. We will now start our second
1066 | round of questioning. The first question I have again, Mr.
1067 | Fugate, I am concerned about our planning. And there are
1068 | obviously some things that are unpredictable, have become a
1069 | bigger challenge for planning. Nobody could have planned
1070 | what has happened--the catastrophe that has happened in
1071 | Japan.

1072 | But here in the United States we have the opportunity to
1073 | plan for--you know, right now in California, I mean, we are
1074 | going to see a huge amount of flooding this year we are
1075 | predicting, because we just--we do not build the water
1076 | storage facilities or the conveyance facilities, and you have
1077 | a huge amount of snowfall this year, and now all of a sudden
1078 | we are in normal 70, 80-degree temperatures in California.

1079 | Can you explain to me some--the planning that you do,
1080 | based on some of the risk assessments from other departments?

1081 | Mr. FUGATE. Well, Mr. Chairman, as you point out, some
1082 | risks are dynamic. They change seasonally, they may change
1083 | because of certain climate shifts that we see that we are

1234 up for deployment. And I didn't see the status today, but I
1235 think the Virginia team is merely awaiting their -

1236 Ms. NORTON. Well, I noticed that the Virginia team came
1237 back rather quickly. Was that because of concern about a
1238 nuclear hazard?

1239 Mr. FUGATE. Unfortunately, the answer is not that. It
1240 was that the search was moving into recovery phase. They did
1241 not feel that there was going to be much more opportunity for
1242 rescues. And since those teams are primarily designed to do
1243 rescues and not body recovery, the Government of Japan asked
1244 that the teams be released and sent back to the U.S., while
1245 they continued recovery operations.

1246 Ms. NORTON. Actually, that is reassuring, actually. Mr.
1247 Weber, one last question--actually, this is a question for
1248 both of you, because I know that, Mr. Fugate, that you are
1249 about to undertake in May a much-discussed national exercise
1250 at--near the New Madrid fault line in the center of the
1251 country, south center of the country.

1252 One, are you, Mr. Weber, participating in this national
1253 exercise?

1254 Mr. WEBER. Absolutely.

1255 Ms. NORTON. Are there any nuclear plants located near
1256 this particular fault line? What are the states, again?
1257 Tennessee? What are the states?

1258 Mr. WEBER. Ten states, right?

1259 Mr. FUGATE. Yes. Basically from Mississippi north
1260 through Illinois, across Arkansas, back over to Tennessee.
1261 When we looked at this exercise, it is based upon the
1262 historical event. So we are using the event that occurred in
1263 1811/1812, was a major shock and then several major
1264 aftershocks in the area of impact, based upon USGS data that
1265 would indicate where we would see shaking and damages
1266 occurring across--it's about 8 states that would be seeing
1267 damages.

1268 There are reports that we could actually have shaking
1269 motion and impacts outside that area, but it would not result
1270 in significant damages.

1271 Ms. NORTON. Well, in those 10 states, is there any--are
1272 there any nuclear plants located along that fault line?

1273 Mr. WEBER. Yes, there are. And in addition to nuclear
1274 power plants, there is also a large nuclear facility, such as
1275 the Paducah gaseous diffusion plant, and there is a
1276 conversion facility in Metropolis, Illinois.

1277 Our preparations ^{are} were to participate fully in the
1278 national exercise, so that we could gain from the experience,
1279 working with our partners in FEMA, the states, the local
1280 responders.

1281 Ms. NORTON. And, Mr. Chairman, there--the first
1282 responders, the teams that went from Fairfax and California,
1283 might well be informative to us. I know we, ourselves, heard

1284 from the teams that went to Haiti, to see what they could
1285 tell us about what would happen if there were an earthquake
1286 in Haiti.

1287 Mr. Weber, I go back again to fault lines and
1288 construction along fault lines. Are you constructing along
1289 fault lines because you really don't have any alternative?
1290 Knowing that it is a fault line, knowing that none of us can
1291 know when the fault line will prove disruptive, what leads
1292 you to construct a nuclear facility, in particular, along a
1293 fault line? Do you look at other options?

1294 Mr. WEBER. Absolutely.

1295 Ms. NORTON. Well then why, for example, would a fault
1296 line location be chosen?

1297 Mr. WEBER. In dealing with faults, we have to
1298 distinguish between active and passive faults. Passive
1299 faults may have been active millions of years ago, but are no
1300 longer considered active.

1301 Ms. NORTON. Okay, I am interested in the active ones.

1302 Mr. WEBER. The active ones you would obviously not try
1303 to site a nuclear power plant or other large nuclear facility
1304 on top of that fault. But if you were siting a facility, for
1305 whatever reasons, and a fault were active and nearby, you
1306 would take that into account in the design of the facility,
1307 such that -

1308 Ms. NORTON. No, I am asking, in those instances, have

1309 | you, in fact, decided to build or allow a nuclear facility to
1310 | be built on a fault because there was no other alternative.

1311 | Mr. WEBER. I am not aware of those instances. I do
1312 | know, for example, ^{at} the Diablo Canyon nuclear power station in X
1313 | California, it was discovered during the course of the site
1314 | investigation that there was a large fault nearby, the Hosgri
1315 | fault. And that fault was specifically taken into
1316 | consideration, so that we could have assurance that that
1317 | facility, if there were an earthquake along that fault, that
1318 | the Diablo Canyon nuclear power -

1319 | Ms. NORTON. So what would you do in that case that you
1320 | wouldn't do if a facility were not located on a fault?

1321 | Mr. WEBER. You would add stiffening to certain parts of
1322 | the plant, so that if there were seismic motion, that the
1323 | plant would be safe. You could stand off the fault, so that
1324 | if you had subsidence along the fault, that it didn't disrupt
1325 | critical components in the nuclear power plant. So, there
1326 | are a variety of things that are taken into consideration.

1327 | I think the point that is to be made is there are faults
1328 | throughout the United States, and we need to take that into
1329 | account, because we do not want to have a situation where we
1330 | are surprised by a seismic event that causes damage to a
1331 | plant. And that is the same design philosophy that we employ
1332 | for flooding, for tsunamis, for tornadoes, for hurricanes.

1333 | Mr. DENHAM. Thank you. And do you want to do a third

1359 clarify a couple things. I still do not think that Ms.
1360 Norton's question has been answered sufficiently. So let me
1361 pull out this map here.

1362 Realize that your standard answer is that we have got
1363 faults everywhere. I get that, but we have red areas here.
1364 Highest risk areas along the coast of California, Oregon, and
1365 Washington: are we planning on building any new nuclear
1366 plants there?

1367 Mr. WEBER. At this point we do not have any applications
1368 for new nuclear power plants in those locations.

1369 Mr. DENHAM. How about the Madrid area, the red area
1370 there?

1371 Mr. WEBER. No.

1372 Mr. DENHAM. Okay. So any of the high risk areas, do we
1373 have any plans?

1374 Mr. WEBER. Most of the construction that is going on now
1375 or as planned is in the southeastern United States, and with
1376 some in the mid-Atlantic.

1377 Mr. DENHAM. Thank you.

1378 And as far as the current facilities that we have up and
1379 running today, I went to school real close to Diablo Canyon.

1380 I mean that facility must be 40 years old, 50 years old.

1381 Here we had in Japan a state of the art facility. You know,

1382 I believe that that was probably the most modern--

1383 Mr. WEBER. No, sir, I am sorry. Those plants are about

1384 40 years old. Fukushima Daiichi Unit 1 is approaching its
1385 40th anniversary.

1386 Mr. DENHAM. So similar technology?

1387 Mr. WEBER. Similar technology.

1388 Mr. DENHAM. Similar precautions?

1389 Mr. WEBER. Yes.

1390 Mr. DENHAM. Are there things that we would do now to
1391 upgrade San Onofre or Diablo Canyon or others after seeing
1392 what has happened in Japan? Are there new construction, new
1393 architecture that we would want to go in and update those
1394 facilities?

1395 Mr. WEBER. It is difficult to compare what our
1396 regulatory program has required over the years and how it is
1397 implemented versus what has been done in Japan. I will say
1398 that one of the reasons why we have been involved in our
1399 response is to insure that we learn from the Japanese
1400 experience, and we are constantly asking ourselves how would
1401 we cope with this situation in the United States.

1402 We have identified a number of features that are present
1403 in the nuclear power plants in the United States that we are
1404 not aware of were implemented in Japan, and those are the
1405 items that would be relied on to ensure that should such a
1406 catastrophe occur in the United States, that the nuclear
1407 power plants remain safe.

1408 These are things like supplemental emergency power that

1409 we have in the United States. We have diesel driven pumps.
1410 ~~So~~ we have required our licensees that operate the nuclear
1411 power plants to take additional measures, particularly since
1412 9/11, so that regardless of what event may occur, that they
1413 are in a more safe configuration, and they could cope with
1414 these kind of catastrophes.

1415 Mr. DENHAM. And I assume there is some type of risk
1416 assessment being done in light of what has happened in Japan.

1417 Mr. WEBER. Yes, sir.

1418 Mr. DENHAM. And you would be able to provide this
1419 committee with that risk assessment and the recommendations
1420 you would have for each of those facilities?

1421 Mr. WEBER. Absolutely.

1422 Mr. DENHAM. Thank you.

1423 And just to follow up, Mr. Hubbard, I want to make sure
1424 I understood your answer correctly. We have in actual
1425 disaster, we have a forest fire that takes out the entire
1426 fuel on the ground floor, leaves behind all of these trees
1427 that now are in the dying process. Before we see a second
1428 disaster, before we see a second forest fire, my
1429 understanding from your answer, what I heard from you was
1430 that the environmental review process would not be sped up.
1431 There would not be anything to provide local loggers the
1432 opportunity to come in and log those trees quickly and maybe
1433 actually get some economic impact to the local community and

From: Powell, Amy
Sent: Tuesday, April 19, 2011 2:54 PM
To: Dacus, Eugene; Schmidt, Rebecca
Cc: Belmore, Nancy; Quesenberry, Jeannette
Subject: FW: Transcript for April 12, 2011 Joint Hearing on Review of the Nuclear Emergency in Japan and Implications for the United States
Attachments: 4-12B-11.doc; 04-12B-11.wpd; Jaczko_letter.wpd; Jaczko_letter.rtf

Draft transcript is in from the Senate EPW hearing on 4/12. This will need to go up to the Chairman's office for review and correction (if any are needed). Committee asked for response by May 3, 2011.

Amy

From: Samuels, Brenda (EPW) [mailto:Brenda_Samuels@epw.senate.gov]
Sent: Tuesday, April 19, 2011 2:47 PM
To: Powell, Amy
Subject: Transcript for April 12, 2011 Joint Hearing on Review of the Nuclear Emergency in Japan and Implications for the United States

Attn: Hon. Jaczko:

Attached are:

- (1) a letter requesting the review and correction of any errors in your testimony from the hearing held before the Committee on Environment and Public Works on April 12, 2011;
- (2) a transcript of the hearing.

The attached files are formatted in both WordPerfect (.wpd) and Word (.rtf; .doc) formats for your convenience.

Please print the pages with your corrections clearly marked and FAX them to my attention at 202-228-2040.

Brenda Samuels, Printer
407 Senate Hart Office Building
Washington, DC 20510
(202) 224-7852
(202) 228-2040 (FAX)

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Washington, D.C.

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REVIEW OF THE NUCLEAR EMERGENCY IN JAPAN AND IMPLICATIONS FOR THE
UNITED STATES

Tuesday, April 12, 2011

United States Senate

Committee on Environment and Public Works

joint with

Subcommittee on Clean Air and Nuclear Safety

Washington, D.C.

The full committees met, pursuant to notice, at 2:45 p.m. in room 406, Dirksen Senate Office Building, the Honorable Thomas R. Carper [chairman of the subcommittee] presiding.

Present: Senators Carper, Barrasso, Boxer, Inhofe, Lautenberg, Udall, Merkley, Gillibrand, Alexander and Boozman.

STATEMENT OF THE HONORABLE BARBARA BOXER, A UNITED STATES SENATOR
FROM THE STATE OF CALIFORNIA

Senator Boxer. The Committee will come to order.

When Senator Carper comes, I am going to ask him to take the gavel since he is the Chair of the appropriate Subcommittee. But I want us to get started because we have a number of witnesses today.

And I want to say welcome to my distinguished Ranking Member.

Just over one month ago today, Japan was hit by a 9.0 magnitude earthquake and a tsunami that measured roughly 30 feet high. The devastation brought on by these catastrophic events is heart breaking and our deepest condolences go out to the victims and their families. And today we are hearing that this event now, in terms of radiation leaked, is equal to that of Chernobyl. So, the news is not good coming out of Japan.

The tragedy serves as an important wake up call for us. We cannot ignore it. I think one thing that we would all agree to is we must plan for the unexpected and when we know of threats we must act quickly to address them. So, what can we learn from the tragic situation in Japan?

The U.S. has 104 commercial nuclear power reactors operating at 65 sites in 31 States. Twenty-three reactors are boiling water reactors with Mark I containment systems like the ones at

the Daiichi plant. It is true that the NRC has instituted an improvement program for this type of reactor. However, the lessons from the tragedy in Japan demonstrate the importance of reassessing the safety of these reactors.

The compromised reactors in Japan, like those in the U.S., were built on a set of assumptions regarding the potential magnitude of natural disasters such as earthquakes and tsunamis. We know that some U.S. nuclear facilities are located in areas with high and moderate seismic activity. I can tell you, you are going to hear from our people, that we have a couple of those.

The situation in Japan has shown us we must take a hard look at the risk assumptions that were made when the reactors were designed. We know in the case of Japan, they designed it for a lower magnitude quake.

As a result of the catastrophic situation in Japan, Senator Tom Carper, who is going to chair this hearing as soon as I complete my remarks, Tom Carper and I have called on the NRC to conduct a comprehensive review of all nuclear facilities in the United States to assess their capacity to withstand and respond to natural or manmade disasters.

Senator Feinstein and I also requested special immediate attention be given to those U.S. nuclear reactors that are subjected to significant seismic activity or are located near coastlines such as San Onofre Nuclear Generating Station and

Diablo Canyon Nuclear Power Plant.

The NRC has identified both of these plants in California as being located in high seismicity zones. The Commissioners found another nine plants, which are located in North Carolina, Illinois, Georgia, South Carolina, Virginia and Tennessee, but they are in moderate seismicity zones.

Both reactors in California are located in high density areas. Four hundred twenty-four thousand people live within 50 miles of Diablo and 7.4 million people live within 50 miles of San Onofre. Let me repeat that. Four hundred twenty-four thousand people live within 50 miles of Diablo and 7.4 million live within 50 miles of San Onofre.

Other nuclear facilities in the United States are also located in highly-populated areas. If you look at the one in New York, it is about 17 million people live within that 50 mile radius.

Although evacuation plans are generally a State and local concern, there have been calls for more involvement from FEMA to assess those plans.

Today we will hear testimony from a number of our colleagues as well as the Chairman of the NRC, Greg Jaczko, who has been so helpful to us moving forward, and of course we will hear from the Administrator of the EPA, Lisa Jackson.

I am very interested to hear how the EPA is monitoring the

radiation in the U.S. and we have, Lisa and I, have talked over the weeks. I am just making sure we have accurate up-to-date information on the radioactivity.

We know that low levels of radiation have been detected in the U.S. from the compromised reactors in Japan. We can only imagine what the potential impacts on health and environment would be if, God forbid, we ever experienced the same type of accidents that occurred in Japan.

Small but elevated levels of radiation have been detected in milk and other food. We are going to talk about that. Experts say that we are okay right now. I want to probe that. I want to make sure of that. And whether it is the NRC's review process of our reactors or EPA's monitoring of our drinking water, complete transparency and prompt disclosure are vital to maintaining the Government's credibility, our credibility, frankly, at this Oversight Committee.

The Federal Government must heed the wake up call from the catastrophe in Japan. As Chairman of this Committee, working with everybody on both sides of the aisle, and particularly my Subcommittee Chair, I will continue to provide vigorous oversight to ensure that we learn the tragic lessons from the Fukushima reactors and take reasonable steps to make our Nation's nuclear facilities as safe as they can be made.

I know that Chairman Jaczko and Administrator Jackson share

my concern for the safety of the American people. Our common goal is to ensure we are prepared and obviously we take another hard look at what is going on in our Country at a time when we need every bit of energy we can get. There is no question about that. But, as we know from looking at what is going on over there, it is the unthinkable and we have to avoid it.

So, with that I am going to turn the gavel over to Senator Carper and ask Senator Inhofe to make his opening statement.

[The prepared statement of Senator Boxer follows:]

STATEMENT OF THE HONORABLE JAMES INHOFE, A UNITED STATES SENATOR
FROM THE STATE OF OKLAHOMA

Senator Inhofe. Thank you, Madam Chairman.

First of all, Senator Johanns was going to be here today. He is very interested in this hearing but was unable to do so. He asked if I would put into the record a statement from the Omaha Public Power District, which I put into the record right now, Mr. Chairman.

Senator Carper. [Presiding.] Without objection.

Senator Inhofe. And Chairman Jaczko, I appreciate your efforts to assure the Nation that we are, that the nuclear plants here in the United States are safe and I appreciate very much, Administrator Jackson, your repeated assurances that traces of radioactive materials that have drifted here from Japan will not impact public health.

I am sure we all agree that we need to study the accident at the Fukushima Nuclear Plant and learn from it. As Chairman Jaczko frequently reminds us, we cannot be complacent with regard to nuclear safety. Even so, we cannot allow ourselves to be paralyzed by fear. Any, harnessing any energy source carries some level of risk, and we need to be, to make sure that we can safely manage that risk.

Ensuring the safe use of nuclear energy is a very serious job. In 1974, Congress established an independent Commission and

charged five individuals with the responsibility to protect public health and safety. The public is best served by a Commission that functions collectively and collegially to pool their expertise. I am concerned that the public may currently be getting less than it deserves.

I was surprised to learn from my staff that Chairman Jaczko has invoked emergency authority and transferred Commission functions to himself in the wake of the earthquake in Japan, especially after speaking with me personally by phone and then appearing before this Committee. And let us get our dates straight because I want the Commissioner to address this.

First of all, it took place on the 11th, our phone call took place on the 14th, the hearing took place on the 16th, and never was this mentioned that this was going to be invoked. The law confers emergency authority on the Chairman in the wake of an emergency at a particular facility or materials regulated by the NRC. At present, I am not aware of an emergency condition that exists in the United States, in any United States facility.

And Chairman Jaczko, I want to work with you as the NRC tries to understand what happened in Japan, what the United States can learn from it, but our collaboration, and indeed, collaboration with all of us in Congress, can only proceed prudently if we have openness and fairness and transparency. That applies to your office.

And so, as we move forward I hope you would provide us with full and complete information about your activities and that you will work with your fellow Commissioners in the same spirit. And in that vein, I look forward to your testimony and to yours, Administrator Jackson, and to working with both of you on gaining full understanding of the impact of the Fukushima accident.

Before I yield to my colleague, I think it is significant that I get my request in here. I am anxious to see progress on the nominations of Commissioners Ostendorff and Svinicki which I hope President Obama sends us soon. Given the scope of the issues before the Commission, it is important we have our Commission full with all the members appointed and confirmed.

Thank you, Mr. Chairman.

[The prepared statement of Senator Inhofe follows:]

STATEMENT OF THE HONORABLE THOMAS R. CARPER, A UNITED STATES
SENATOR FROM THE STATE OF DELAWARE

Senator Carper. You bet. Thank you very much, Senator
Inhofe.

Let me begin by saying, first of all, Senator Inhofe and
Madam Chair, thanks very much for holding this hearing and for
giving me the opportunity to co-chair it with you.

Let me begin by saying that, again, I have said this before
and I will certainly say it again here today, our thoughts and
prayers go out to all of the citizens of Japan, especially those
families of the thousands of disaster victims and those that are
going through a very, very difficult time. As this tragedy
unfolds, I encourage the Nuclear Regulatory Commission and other
U.S. agencies to continue to coordinate with the Japanese
government to provide any assistance that they need to recover.

The events that struck Japan are reminders that we are all
vulnerable to unexpected disasters, whether it is an act of
nature or a terrorist attack. While we cannot predict when or
where the next major disaster will occur, we know that it will
occur and we also know that adequate protection, adequate
preparation in response planning are vital to minimize both the
injury and death when it does happen.

Today's hearing is one of many I hope that this Committee
will have to make sure that our Nation has prepared for the worst

in order to prevent any lives lost from nuclear power in this Country. In the United States we have, as you know, 104 nuclear power plants in some 31 States which generate approximately one-fifth of our Nation's total electric consumption. Nuclear power has helped to curb our reliance on dirty fossil fuels and reduce air pollution that damages our health and causes global warming.

Over the years, the NRC has strived to create a culture of safety in the nuclear energy industry and as long as I have been on this Subcommittee, we have worked very hard to reinforce those efforts. As a result, we have seen, not seen, any direct deaths from nuclear power by radiation exposure in this Country in over 50 years.

As part of its culture of safety, the NRC requires nuclear facilities to be designed to withstand natural disasters and terrorist attacks. After September 11th, the NRC took a closer look at the nuclear industry and put in place additional safety and security requirements.

Despite all of the protections that are in place, the crisis in Japan is a clear warning, a clear reminder, that we cannot become complacent when it comes to nuclear safety. I often say it, and my colleagues are tired of hearing me say it, if it is not perfect, make it better. And that certainly applies to nuclear plants and the way that they are operated with respect to their safety.

That is why Chairman Boxer and I asked the NRC for a conference review of our nuclear fleet. We want to make sure that every precaution is being taken to safeguard the American people from a similar nuclear accident. The NRC is just getting started on this review and I anxiously await their results.

Today I look forward to hearing from our witnesses an update on the Fukushima Daiichi Nuclear Plant and an update on our response to that crisis. I also look forward to hearing what we can learn from the ongoing crisis in order to prevent similar events from occurring right here.

I am particularly interested in hearing about the State of Emergency Planning Process from the Delaware Department of Safety and Homeland Security. Secretary Schiliro, we welcome you especially.

As Chairman of the Subcommittee on Nuclear Safety, I take seriously my responsibilities, our responsibilities, to make certain that we are taking appropriate measures to make the nuclear industry as safe as it can possibly be. And as I said before, while I am a proponent of clean energy, my top priority of our domestic power, our nuclear power industry, to me is public safety.

With that having been said, I look over to my right and I see Senator Lamar Alexander of Tennessee. We welcome you and await your comments.

[The prepared statement of Senator Carper follows:]

STATEMENT OF THE HONORABLE LAMAR ALEXANDER, A UNITED STATES
SENATOR FROM THE STATE OF TENNESSEE

Senator Alexander. Thanks, Mr. Chairman. I want to thank you and Senator Boxer for --

Senator Carper. Senator, Senator, I did not notice that Senator Barrasso had stepped in.

Senator Barrasso. [Remarks off microphone.]

Senator Carper. Are you sure? Okay, thank you very much.

Senator Alexander. Thanks, Senator Barrasso. Well, I want to thank everybody. I thank Senators Boxer and Carper for having the hearing.

I think nuclear power is, and I have said this before the Japan accident, something we ought to have more oversight of and that is because it is complex science, it is complex engineering, and it is vitally important to the future of our Country.

I remember back when I was Governor of Tennessee in the 1980s. We had a question that was presented to me when we were building, TVA was building, one of its nuclear power plants. And the issue was whether to distribute iodide tablets to people who were in the area of the new nuclear power plant.

And some people said, oh, do not do that because you will scare people to death. And the other argument, of course, was, well, if it would, if people understand what they are for, and they are only to be used in the event of an emergency, then it is

better to go ahead and talk about the process that we are using and let people know what we are dealing with. So, I made the decision then, let us go ahead and let people who live within the area of the nuclear power plant have access to iodide tablets in case there was a problem.

I feel the same way today about our nuclear power program in the United States and what happened in Japan. I cannot imagine a future for the United States that does not include nuclear power to create electricity. I mean, it is only 20 percent of our electricity, but it is 70 percent of our clean electricity. Senator Carper has been very consistent. He cares deeply about climate change. This is one way to deal with it. He and I have worked hard on clean air in the Smoky Mountains and the East Coast. This is one way to deal with it.

So, it is hard to imagine that. But on the other hand, I think those of us who, who find it especially important have maybe a special responsibility to see that there is clear oversight and public understanding of this complex system of science and engineering so that people are comfortable with whatever risks there are.

And as we look at our own history, actually, we have done a fair job of that. I mean, Three Mile Island spawned several improvements such as the Institute for Nuclear Power Operations, which has improved safety. It is important for Americans to know

that while Three Mile Island was a significant accident and a big problem, that no one was hurt at Three Mile Island. That is important to know.

September 11th. That had nothing to do with nuclear power but it caused nuclear power operators around the Country to take a look at what would happen if there were a terrorist attack. And you can go on YouTube and see what happens when an F-4 Phantom Jet runs into a concrete wall at 500 miles an hour. The jet vaporizes but the plant is still there.

Hurricane Katrina had nothing to do with nuclear power but it caused operators at the 104 nuclear plants around the Country and the Nuclear Regulatory Commission to think about well, what would happen if we had a horrific event like the size of Hurricane Katrina.

So, I think we still have a lot to learn from what happened in Japan. For example, spent fuel storage. There is a lot of talk about that. It helps us think about, is it possible, how long should it be in pools, how soon could it go to dry casks? It is important also to know, as the Chairman of the Nuclear Regulatory Commission says, as Dr. Chu has said, the President's Energy Chief and Nobel Prize Winning Physicist, that it is safe to store spent fuel on site for 100 years.

And it is important to know that all the fuel that we have produced that is used fuel from commercial reactors in the United

States would fit on one football field to a depth of about 20 feet. That is the mass that we are talking about.

It is important to ask, what about Yucca Mountain? We do need to eventually dispose of it. We have collected \$30 billion to pay for an eventual disposal: Why do we not do it?

We could ask about safety improvements. We should be thinking about new reactors. In Tennessee, TVA's got 3,200 people building a new reactor at Watts Bar. How can we know it is even safer than the other 104 reactors we have had at which, as Senator Carper said, we have not had one single fatality related to a reactor in the last, well, in the history of those facilities?

So, there are important questions to ask. There is a lot of information to learn from the Japan disaster. But it is important, at the same time, to recognize the safety record that we have for this form of energy production in the United States and keep it all in perspective.

And Senator Carper and Senator Boxer, I welcome these hearings. The more of them, the better. I believe that the more we understand and talk about this complex system of energy production, the safer it is likely to be and the more useful it will be to help produce clean air in our Country.

Thank you.

[The prepared statement of Senator Alexander follows:]

Senator Carper. Thank you, Senator Alexander. And if it is okay with Senator Barrasso, I am going to slip over to Senator Udall and then back to you. Okay? Senator Udall.

STATEMENT OF THE HONORABLE TOM UDALL, A UNITED STATES SENATOR
FROM THE STATE OF NEW MEXICO

Senator Udall. Thank you, Senator Carper, and thank you very much, you and Senator Boxer, for holding this hearing. And I appreciate very much and welcome my colleagues that I served with over in the House and look forward to hearing their testimony.

As Senator Carper and others have said, I think our thoughts and prayers really do go out to the Japanese people for this tragedy and what has happened to them. I know when I talked the other day with Japan's Ambassador to the United States he was very, very appreciative of the level of scientific support that we were giving Japan. I know many scientists have come from both California and New Mexico and from our national labs and so that is something that they appreciate and I think we are all very proud of.

This is a three-part disaster, an earthquake, a tsunami and a nuclear crisis and it is tragic. And Americans should focus on assisting our close friends, the Japanese, in recovering from it. Nuclear energy has tremendous potential for good and also for harm. Nuclear accidents are rare, but their consequences can be severe. Nuclear energy safety must be the top priority for Government regulators and it should be the top priority for the industry as well.

The Japanese crisis underscores the need for information transparency. Nuclear energy will almost certainly continue to be part of America's energy mix. We have 100, 104 reactors today, and if it economic, more will be built. But it will be harder to build reactors if the public lives in fear of them.

Our role in Congress is to conduct the oversight to ensure that the NRC and the EPA do their job and ensure U.S. nuclear power plants are safe. Safety standards are of the utmost importance and we should be highly skeptical of proposals to "streamline" or cut corners on safety standards. It will be up to the banks and the investor community to decide whether to invest in nuclear power projects compared to the other investment options out there.

Nations like France, which rely heavily on nuclear power, also have taxpayers picking up most of the tab. And that is not realistic for the United States' current budget situation.

So, I very much appreciate this list of witnesses today and I am going to yield back my time so we can get quickly to the witnesses.

[The prepared statement of Senator Udall follows:]

Senator Carper. Thank you, Senator Udall.

Senator Barrasso is the Ranking Republican Member of the Subcommittee on Clean Air and Nuclear Safety. Senator Barrasso, thank you for your patience.

STATEMENT OF THE HONORABLE JOHN BARRASSO, A UNITED STATES SENATOR
FROM THE STATE OF WYOMING

Senator Barrasso. Thank you very much, Mr. Chairman.

I appreciate our guests for being here to testify and I want to associate myself with the opening remarks of Senator Udall regarding his concerns for the people of Japan. Absolutely. Incredible challenges, incredible loss and I think the hearts of all of us on this Committee, and in this Body, have great, great concerns for the people in Japan.

The tsunami and the earthquake occurred in Japan, not in the United States. And the emergency that preceded the tsunami and the earthquake occurred in Japan. The emergency response is occurring in Japan with the help of the United States.

Some people seem to want Americans to believe that the disaster occurred here and that is not the case. As Ranking Member Inhofe has pointed out, the current Chairman of the Nuclear Regulatory Commission is operating under his emergency powers since the disaster first occurred. The reasons why these emergency powers continue to be in effect, and the implications that has for future chairmen, does not have implications for the United States nuclear safety, does have implications for the United States nuclear safety response. This is one of the reasons that I believe the hearing today is so important.

Some want to use this crisis in Japan as a tool to wipe out

nuclear power in the United States. For example, there is an April 6th inside EPA story entitled "Activists Step Up Effort to Strengthen Oversight of Uranium Recovery." The article states that "environmentalists are stepping up their efforts to push EPA to strengthen its oversight of uranium mining and processing operations in the wake of the Japanese nuclear disaster, targeting the processed metal because its extraction marks the first step in the nuclear fuel cycle that its proponents tout as a low carbon alternative to fossil fuels."

Well, how uranium mining is tied to the Japanese nuclear emergency is beyond me. I would hope that the EPA Administrator, who is with us today, would ignore these types of attacks which would have occurred whether the Japanese disaster occurred or not.

Earlier today in this very Committee we heard testimony from those who want to stop hydraulic fracturing. This is the process whereby we can tap America's vast domestic natural gas reserves. Apparently, these activists do not want natural gas either.

By attacking all of the affordable energy sources, including our nuclear and natural gas, activists are driving up the cost of energy. They are raising the costs of running a factory, or a mine, or a small business. They are raising the cost of heating and cooling homes across this Country. This will cost thousand of jobs during our economic downturn.

We cannot reach a clean energy future without natural gas and without nuclear power. We need all the power, not just some. That means coal, natural gas, wind, solar, hydro, geothermal and nuclear power. And as Senator Carper and I talk about and discuss and agree, the cheapest energy is energy that is not used. So, we need to be more efficient in how we use our energy.

But we need the kind of energy mix that keeps factories running and homes heated. Countries like Germany, which are phasing out domestic nuclear power, are discovering this fact. The Washington Post ran an Associated Press story on April 6th entitled Utilities: Germany Now Importing Energy After Taking Nuclear Power Plants Off the Grid. The article goes on and states that Chancellor Angela Merkel's decision to take some atomic power plants offline in the wake of Japan's disaster means Germany is now importing power from its nuclear-reliant neighbors. It goes on to say Germany now imports about 50 gigawatts, gigawatt hours, or the capacity equivalent to 1.5 reactors, from France and the Czech Republic every day. This is from the German Association of Energy and Water Industries.

So, this same pattern that we are seeing in Germany will occur in the United States. American States that declare themselves nuclear free, whether they are California or elsewhere, whatever States declare themselves nuclear free and shut down their nuclear plants will have to have power shipped in

from neighboring States. It is an energy shell game and it will not hide America's growing need for affordable domestic energy to power our economy.

Let us be careful not to jump to conclusions and try to shut down another domestic energy source. Let us work together to make America's energy as clean as we can as fast we can without raising energy prices and costing American jobs.

Thank you, Mr. Chairman. I look forward to the testimony.

[The prepared statement of Senator Barrasso follows:]

Senator Carper. Thank you, Senator Barrasso.

Senator Lautenberg?

STATEMENT OF THE HONORABLE FRANK R. LAUTENBERG, A UNITED STATES
SENATOR FROM THE STATE OF NEW JERSEY

Senator Lautenberg. Thanks, Mr. Chairman.

As said, we all agree that our sympathies, our concern and our desire is to be of help to the people in Japan who are affected as a result of the earthquake, tsunami and nuclear emergency. But we want to learn from it and we want to make sure that we are doing what we can for the people in our Country.

Since the latest disaster began unfolding, Americans have had one question on their minds. Could it happen here? And I am not willing to wait to find out. We need to answer that question now.

Soon after the meltdown in Japan began, I asked the Nuclear Regulatory Commission to conduct a comprehensive review of New Jersey's four nuclear power reactors which provide our State with about half of its electricity. I also requested the chief executives of New Jersey's nuclear power companies to join me in my office where they agreed to a thorough safety review at each of the four reactors. The people of New Jersey need to know if our State's nuclear plants are safe and we are determined to make sure that they get the peace of mind that they deserve, but the reality of being protected.

But this is not the only issue in New Jersey. Nuclear energy provides 20 percent of America's electricity and so we

have to make nuclear safety a national priority. The United States has a good track record of keeping our plants safe. There have been few accidents and few fatalities. But we have got to remain vigilant if we want to preserve this record.

Now Japan, a world leader in technology in its plants, were built to resist earthquakes. But as we know, it was not enough. So here in the United States we cannot take anything for granted.

To keep Americans safe also means making sure that we give citizens, our citizens, a clear guidance during emergencies. And I was troubled when American citizens in Japan were told to stay at least 50 miles away from the site of this meltdown. In our Country, the NRC Emergency Guidelines require people to stay only 10 miles away from plants during emergencies.

So, make no mistake, nuclear power generates emission-free energy and it should and will be part of our energy future. But we cannot ever trade people's safety for the sake of meeting our energy demands. We saw Chernobyl a quarter of a century ago, the effects of a single nuclear accident that will linger for generations.

So, I look forward to hearing from today's witnesses, and thank our colleagues from the House, about how we can learn from the past mistakes and make sure that nuclear power remains a safe, clean energy source.

And I want to respond to something that we heard, talked

about this morning and that is, well, costs. Costs. Nuclear power does so much for us but has risks. When we think of the contribution that nuclear power brings to our energy needs, we know that we are going to keep on having nuclear power created. But burning fossil fuel has an extra cost. It has a lasting effect on our environment and on the health and wellbeing of our citizens.

So, when we look at the costs for energy, we have to look at the costs of unfit air for those who have asthma or otherwise, and pollution generally. So, we have to look at the whole picture and I assure you that we would like to do just that.

Thank you very much.

[The prepared statement of Senator Lautenberg follows:]

Senator Carper. Thank you, Senator Lautenberg.

Senator Merkley?

STATEMENT OF THE HONORABLE JEFF MERKLEY, A UNITED STATES SENATOR
FROM THE STATE OF OREGON

Senator Merkley. Thank you, Mr. Chair.

I express my deepest sympathies to the families in Japan, victims of the triple tragedy, the earthquake, the tsunami and certainly the nuclear disaster. And I thank all of the heroes in Japan who raced to the scene to provide assistance to victims of the earthquake and tsunami and those who are working around the clock to cool the nuclear reactors and contain the radiation that is being released.

It is very much our worst nightmare that a natural disaster of some kind should cause us some more tragedy in the United States and that is why it is certainly appropriate and important that we do everything possible to take and look at the lessons in Japan and apply them to our own system. Just as we applied a stress test to the banks in the financial crisis, we need to apply a stress test to our nuclear plants and understand what the weaknesses are.

When the disaster happened in Japan, and certainly a lot of the discussion was around the cooling pools for rods, I was taken back to when I was traveling through Hanford many years ago, about 14 years ago, and was looking at the cooling pool at Hanford, and it had that kind of eerie blue glow at the bottom of the pool. And I asked the question, if an earthquake occurs and

it splits this pool, what happens when the water rushes out? And basically the response was a blank look with that would be bad. And certainly we have to be prepared in far better ways than simply saying that something would be bad.

In the last two decades, we have built only three new nuclear reactors because the cost is so high by the time we account for human error, by the time we account for natural disaster, and by the time we account for terrorist attack and design plans accordingly. And we have to take a look at those things because the upside risk is so substantial. And so that is certainly a factor.

We have strategies that have been put forward by groups like New Scale, a group in Oregon, other research that has been done on pebble bed strategies that have failsafe mechanisms and/or passive protections that I think certainly should be, we should look into and understand that part of this conversation, whether fundamentally different designs would greatly mitigate the risks.

These disasters occur because we lose the heating transfer medium and plants overheat. But there are designs intended to make sure that there is no meltdown even when that happens, whether the medium be water or the medium be helium. And that needs to be part of the national discussion.

And so with that, thank you very much, Madam Chair, and I yield back the balance of my time.

[The prepared statement of Senator Merkley follows:]

Senator Carper. I believe the next person we recognize is
Senator Gillibrand.

Senator Gillibrand?

STATEMENT OF THE HONORABLE KIRSTEN E. GILLIBRAND, A UNITED STATES
SENATOR FROM THE STATE OF NEW YORK

Senator Gillibrand. Thank you so much, Mr. Chairman, for holding the hearing. Madam Chairwoman, I appreciate you holding this hearing as well. This is obviously an issue that we share a great passion for and in light of the disaster in Japan, I am really looking for answers. So, I just want to thank you both for drawing attention to such a serious issue.

I want to thank Chairman Jaczko for coming. Congresswoman Capps, thank you so much for spending time with us to answer our questions.

I may not have the opportunity to ask my questions, but I do want to highlight some of the areas of my concern and I will submit the questions directly for answers for the record, but I do hope you get to address this in part of this hearing.

One issue is the issue of licensing exemptions. Now, in the Indian Point Plant, which is the one that serves about 30 percent of New York's electricity right now, within a 50 mile radius it hits 16 million people. So, we have significant concern to focus on that, and all the plants in New York, to make sure they are safe.

Now, with Indian Point, there have been a number of waivers given. I would like an analysis and a review of in what instances are waivers given? Are you going to re-look at the

issue in light of the Japan disaster to see if those waivers were legitimate, if they should be reconsidered and perhaps withdrawn? The issue of waivers is something I care a lot about.

The second issue is the issue of evacuations. In Japan, we have evacuated U.S. citizens within a 50 mile radius. The plan with regard to Indian Point is a 10 mile evacuation plan. I would like to know the reason why there are differences in evacuation plans.

To do a 10 mile evacuation for Indian Point takes nine hours. I understand that there are different types of redundancies at Indian Point, one is a going to a diesel system and another diesel thereafter, but, then it is a battery system that only lasts for three hours. How do you reconcile evacuations with what your redundancies are and how capable they are in such a situation?

I also care a lot about security issues. Now, obviously, we are soon on the 10-year anniversary of 9/11 and one of the 9/11 Commission recommendations was to secure all nuclear facilities. I would like to have an opportunity to talk to you about those security measures and where they stand and what kind of investigations are you doing with regard to employees, with regard to background controls and other potentially vulnerable infrastructure issues.

And then the last issue is the spent fuel pool and dry cask

storage issue. Are these pools designed to be long-term storage? What do you intend to do to move them from fuel pool to dry cask storage facilities as a general matter for safety?

So, obviously that is a long list of concerns and issues. If you do get to address them, I will be very grateful. If not, I will submit them all for the record, Madam Chairwoman.

Thank you very much, again, for your testimony.

[The prepared statement of Senator Gillibrand follows:]

Senator Carper. Thank you for your statement and introducing Congresswoman Capps and Congressman Bilbray. Let me just say to Congresswoman Capps, thank you so much for sharing with us a former member of your staff, Emily Spain. She is a gift to the people of Delaware. So, we are grateful for that.

And with that, we would like to recognize Congresswoman Lois Capps, 23rd District of California, and followed by Congressman Brian Bilbray, the 50th District of California. How many do you all have, 53? Fifty-three. We have one.

[Laughter.]

Senator Carper. But as I like to say in Delaware, if you can only send one, send the best.

We are glad you are here, we recognize you and please proceed.

STATEMENT OF THE HONORABLE LOIS CAPPS, A REPRESENTATIVE IN
CONGRESS FROM THE STATE OF CALIFORNIA

Ms. Capps. Thank you. Chairwoman Boxer, Ranking Member Inhofe, Chairman Carper and Members of the Committee, thank you for holding this hearing and for the opportunity to testify.

I am here today because my Congressional District includes Diablo Canyon Nuclear Power Plant, which has become a central focus in the weeks following the Japanese earthquake, tsunami and subsequent nuclear crisis.

Last month, I called upon the NRC to stay the license renewal process for Diablo Canyon until further studies demonstrate that the plant's design and operations can withstand an earthquake and other potential threats. Yesterday, Pacific Gas & Electric, which I will refer to as PG&E, asked the NRC to delay its license renewal application while it completes their studies.

Here today, in light of PG&E's action, I am renewing my request to the NRC to halt the re-licensing process. I do not make this request lightly. Last month, I again toured the Diablo Canyon Nuclear Power Plant. Following that visit, I was convinced of two things. First, that the employees are committed to getting it right. And second, that we are not there yet.

I am not alone in that assessment. I am grateful to be joined today by my constituent, California State Senator Sam

Blakeslee, who also represents Diablo Canyon and its surrounding communities. State Senator Blakeslee will testify today both in his role as State elected official and also as a scientist with a Ph.D. in seismic studies. I am confident that our shared assessment of the situation will offer the Committee valuable, on the ground insight into the current and future landscape of nuclear power in California.

The bottom line is this. We do not have the answers we need to confidently move forward in extending the licensing agreement of Diablo Canyon. We should not move forward until we have those answers. And, because the reactors do not need to be relicensed for more than a dozen years, we have plenty of time to find those answers.

Mr. Chairman, what happened so tragically in Japan offers us an opportunity to question and question again whether we are ready, whether we can handle the unthinkable. Now, the NRC is already, had already determined that it is non-credible that there could be multiple catastrophes such as an earthquake and a meltdown at Diablo Canyon Plant. The NRC has maintained, "The chance of such a bizarre concatenation of events occurring is extremely small. Not only is this conclusion well supported by the record evidence, it accords must eminently with common sense notions of statistical probability."

Yet, the unthinkable did happen in Japan. An earthquake, a

tsunami, and a nuclear accident, all occurring in sequence. Clearly, a bizarre concatenation of events is not merely hypothetical.

Mr. Chairman, let us be clear. We know seismic uncertainty exists at the Diablo Canyon site. In the early 1970s, while the plant was originally under construction, scientists discovered the Hosgri Offshore Fault less than three miles away, forcing a major re-design and pushing the project billions of dollars over budget.

In 2008, scientists discovered yet another fault, the Shoreline Fault, which lies offshore less than one mile from the plant. The stakes were raised just last month when the NRC confirmed that Diablo Canyon was one of two nuclear power plants in the highest risk area for seismic activity in the entire Country.

Clearly, we need answers to major questions. Can this plant, including the spent fuel pool, withstand an earthquake and a nuclear accident at the same time? How long would the plant be self-sustaining in the event of such damage? And, is Diablo Canyon's evacuation plan during an incident workable?

Many of us on the central coast of California remain concerned that the NRC has not taken action to answer these questions or address these warnings, so much so that the California Energy Commission has recommended, and our State

Public Utilities Commission has directed, that independent, peer reviewed, advanced seismic studies be performed prior to applying for re-licensing. I agree with this assessment. That is why it is so important to halt the re-licensing process. We need to take some time to get all the answers.

It is important to note that I am not calling for Diablo Canyon to be shut down. I am also not calling for PG&E to be denied an operating license. What I am doing today is asking that the re-licensing process be halted until updated, state-of-the-art seismic studies and 3D seismic mapping are completed, that they be considered as part of the re-licensing process, and that these studies be done by third party, independent scientists.

Failure to do so is unwise and irresponsible. It will feed public uncertainty about the oversight and safety of nuclear energy and it could cost taxpayers billions of dollars to once again belatedly address issues that should have been dealt with beforehand. That is why I am hopeful the NRC will work with all stakeholders to get answers to the seismic questions which, at this point, remain unstudied and unresolved prior to the continuation of the re-licensing process.

Once again, I thank you for the opportunity to testify today.

[The prepared statement of Representative Capps follows:]

Senator Carper. Congresswoman Capps, thank you so much for coming. I very much appreciate it.

Congressman Bilbray, welcome.

STATEMENT OF THE HONORABLE BRIAN P. BILBRAY, A REPRESENTATIVE IN
CONGRESS FROM THE STATE OF CALIFORNIA

Mr. Bilbray. Thank you, Mr. Chairman. Madam Chair, Members of the Committee, it is an honor to be here.

Let me say, first of all, as a lifelong resident of San Diego County, I have the same concerns that everyone who lives downwind of a nuclear power plant would have after seeing what happened in Japan. Every one of my children and grandchildren, except for those that have been exiled to Helena, Montana, live within not only the downwind area from San Onofre but also within the tsunami zone of San Diego County.

And I speak not just as a father and a grandfather, but as somebody who had the privilege of serving two terms as the Chairman of the Disaster Council for the 3 million people of San Diego County that designed the evacuation and response to not just the nuclear issue but also the tsunami issue, and also had the privilege of serving on the California Coastal Commission, an agency that has oversight and review of the nuclear power plants in California. This issue really did bring back memories of all the hearings and processes that we have had.

Frankly, there are still the facts to be taken, still research that needs to be done. But I think there are some indications that are very, very enlightening. One was the fact that even though the Japanese was not designed to those

engineered at California plants, it did survive an earthquake that is well over what our plants ever perceived to be.

In fact, the 9.0 that we are talking about that has struck this plant, we are looking at 7.0 maximum, or 7.2 maximum in California. That frequency of 7.2, as pointed out by Secretary Chu, occurs every 7,000 to 10,000 years. So, it gives you an idea of the engineering.

The Japanese were hit with a ground motion of .52. Our California San Onofre is designed not for a .52 but for a .67. You have to remember that this is also in a region that geologists say will not get anything over a 7.2, and that 7.2 will be between 7,000 and 10,000 years. It gives us some perspective of the challenges we have to have.

The biggest concern was the fact that it was not the earthquake, as we know with the information now, but it was the tsunami. And as a surfer, let me tell you something. This is not one thing that is joking in any matter, but it is one that is very, very disconcerting.

The fact is that Japan had a 10 foot surge wall. San Onofre is sitting on a 20 foot elevation with a 30 foot plus surge wall. Diablo is around 85. Obviously, in an area where all the experts say that the tidal waves would never reach that level, but if they did, the difference between the California facilities and the Japanese facilities is that the California facilities have

gravity-feed cooling built into their system and they have their pump systems totally protected from inundation, which the Japanese did not have. They did not even have their fuel tanks protected, which was a major flaw. And I think that is where good assessment can really be made on this issue.

Now remember as we talk about nuclear, ladies and gentlemen, as a former member, six years on the Air Resources Board, we are talking about 20 percent of our energy that avoids emissions equal to 96 percent of all the automobiles that are driving on American soil. I think that we have got to recognize that the challenges that we have to go forward, especially those of us who are addressing environmental issues, need to remember that even the U.N. Council on Climate Change has said that a robust commitment to nuclear is, has to be, part of any plan looking to address climate change.

But I think that one of the things we need to get out of this, Madam Chair and Mr. Chairman, is that where are we today, have we over engineered and was that over engineering prudent. I think the one thing that it looks like in California is we have and that should be reassuring.

My biggest concern is that we do not talk about the fact that, as Madam Chair knows, we are not just talking San Onofre in San Diego, we are talking many nuclear reactors that are within not just miles but within yards of residences in San Diego that

the United States Government owns. Those are issues that we sort of ignore and I think this one we address.

I guess the biggest issue, and I would like to agree with you strongly on, Senator, is not just how do we address the technology that is 40 years old that we have on the ground operating today, but how do we move forward with technology that has been upgraded that not only avoids the threats of meltdowns, totally engineers out that problem, but also creates the opportunity to address that waste problem, that 100 yard by 20 foot, that now nuclear waste not only could be a fuel that could be burned in the new technology that is now safe and designed not to do this, but also a technology that could use up our weapons grade material as we talk about going to zero options.

So, I appreciate the chance to be able to address you today, Mr. Chairman.

[The prepared statement of Representative Bilbray follows:]

Senator Carper. Congressman Bilbray, Congresswoman Capps, great of you to come. Thank you so much for your contributions. We look forward to seeing you soon. Thank you.

And with that we are going to invite our second panel, Chairman Jaczko, Administrator Jackson, to join us at the table please. Neither of our guests on the second panel are strangers to this Committee. It is great to see both of you. We appreciate your stewardship and the hard work that you are doing in response to the disaster, the disasters, in Japan.

And first we will hear from Lisa Jackson, who is the Administrator of the Environmental Protection Agency, and following her testimony, we will hear from Greg Jaczko, who is the Chairman of the Nuclear Regulatory Commission.

I will ask you to use about five minutes for your statement, and then we will have some questions.

Thank you so much for coming. Your entire statement will be made part of the record.

Please proceed.

STATEMENT OF LISA JACKSON, ADMINISTRATOR, UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY

Ms. Jackson. Thank you, Chairman Carper. And to you, Chairman Carper, Chairwoman Boxer, our Ranking Member Inhofe, and all the members of this Committee, thank you for inviting me to testify on EPA's role in responding to the tragedy in Japan.

I do want to begin by expressing my sympathy for those who have lost loved ones from the earthquake and tsunami, and my support to those who are working tirelessly to control the radiation at the Fukushima Daiichi Plant in Japan. Their efforts are selfless and truly heroic.

As Japan works to address the challenges at their nuclear reactors, many Americans are concerned about what the radiological releases to the atmosphere may mean to them and what their Government is doing to make sure that they are safe here in the United States.

Let me begin by speaking directly to those who are concerned about radiation detection that monitoring and sampling from EPA and other Federal agencies are picking up throughout the United States. And let me be clear. EPA has not seen, and does not expect to see, radiation in our air or water reaching harmful levels in the United States.

All of the data which we have seen, which we continue to make public and available on our website, indicates that while

radiation levels are slightly elevated in some places, they are significantly below problematic levels.

To put this in perspective, days after the tsunami struck, we detected radioactive isotopes consistent with a nuclear incident at several air monitors along the West Coast. These readings were so minuscule that they were 100,000 times lower than the daily exposure we all receive.

Keep in mind that all of us are exposed to radiation every day, both from natural sources such as minerals in the ground and manmade sources such as medical x-rays. That said, we will continue to monitor the environment for radiation. We will continue to make the data public. And we will continue to explain what the data mean to the people and families we serve.

As I have said to this Committee many times before, transparency and communication with the public is a priority for our agency and will guide all of our actions.

EPA's main role in this response is simple but very important. Using a variety of techniques, we monitor and track radiation and radionuclide releases into the environment in the United States. These radioactive releases range from ones that dissipate from the environment within days, such as iodine, to those that have half-lives of thousands of years, such as plutonium.

Let me speak for just a moment about those monitoring

efforts. EPA's nationwide radiation monitoring network, known as RadNet, continuously monitors the Nation's air, drinking water, rainwater and milk. The data provide the information scientists need to estimate long-term trends in environmental radiation levels and allows them to detect minuscule increases.

RadNet's air monitoring system is made up of more than 100 fixed stations that create a network of detection across the United States. Over the last five years, EPA has been enhancing the capabilities of the RadNet system by replacing existing monitoring equipment with new air monitors that send real time data to our laboratory.

In response to the Japanese nuclear incident, we added to this system by quickly deploying mobile air monitors to far westerly locations, including Alaska and islands in the Pacific, to detect radiation as it slowly moved from Japan.

In addition, several times a week, we collect filters from these air monitors and perform a detailed analysis that lets us find even minuscule amounts of radioactive material in the air.

EPA also samples rainwater for radioactive isotopes. Monitoring stations across the Country submit precipitation samples to EPA laboratories as rainfall, snow or sleet occur. Under usual circumstances, these samples are analyzed by EPA scientists quarterly. But during this response, we are analyzing precipitation samples as they come in to the laboratory and

quickly post the results on our public website.

Also, EPA routinely samples milk and drinking water from sites across the Nation. Like rainwater, these samples are normally collected and analyzed on a quarterly basis but, in response to the nuclear release in Japan, we have accelerated the normal sampling schedule.

As I mentioned, the levels detected have been far below levels of public health concern. The information is all available on EPA's website, www.epa.gov/Japan2011. This website was quickly expanded after the tsunami so that the general public, especially those without a Ph.D. in nuclear physics, could easily understand what the monitors in their communities were indicating. EPA's website has been featured extensively on CNN, Fox, and Facebook and it helps answer many of the questions that some of your constituents may be asking.

Madam Chairman, thank you for your leadership on these issues, both of our Chairmen, excuse me. I want to assure you that EPA will continue our coordination with our Federal partners and we will continue our outreach to the public and the elected officials to provide information on our monitoring results.

Thank you so much.

[The prepared statement of Ms Jackson follows:]

Senator Carper. Thank you much, very much, Administrator Jackson.

Before you testify, Mr. Chairman, I just want to say to you, to the other Commissioners, to the folks on your staff at the Nuclear Regulatory Commission, how much we appreciate the way you have stepped up and to respond to try to be as helpful as we can to the people of Miyagi and to say we appreciate your continued vigilance and we just encourage you not to let up.

Thank you. Please proceed.

STATEMENT OF GREGORY P. JACZKO, CHAIRMAN, NUCLEAR REGULATORY
COMMISSION

Mr. Jaczko. Well, thank you, Mr. Chairman, and Madam Chairman and Ranking Member Barrasso. I also appreciate the opportunity to appear before you to address the response of the Nuclear Regulatory Commission to the recent tragic events in Japan.

People across the Country and around the world who have been touched by the magnitude and scale of this disaster are closely following the events in Japan and the repercussions in this Country and in many other countries around the world.

As many have indicated, our hearts go out to all those who have been dealing with the aftermath of these natural disasters.

About two weeks ago, I made a brief visit to Japan to convey a message of support and cooperation to our Japanese counterparts there and to assess the ongoing situation. As part of that visit, I met with senior Japanese government and TEPCO officials and consulted with the NRC team of experts who are in Japan as part of our efforts to support a U.S. Government assistance to Japan.

Just to briefly recap, on Friday, March 11, when the earthquake and tsunami struck, the NRC's headquarters Operations Center began to operate on a 24 hour basis consistent with the emergency authorities and responsibilities of the agency under

the Reorganization Act of 1980.

For the past three weeks, the Operations Center has been monitoring and analyzing events in Japan. In spite of the evolving situation, the long hours and the intensity of the efforts, the NRC staff has approached their responsibilities with dedication, determination and professionalism. And they still remain focused on our central safety and security mission for reactors and facilities here in the United States. I am, needless to say, incredibly proud of their work.

As regards the current situation of the reactors in Japan, from the information we have, we believe the situation currently is static and we do not see significant changes on a day-to-day basis with the reactors. It is not yet, however, what we believe to be stable, namely that, given additional events or other circumstances, that there would not be the potential for significant additional problems at the reactors.

So, the efforts continue to be on these efforts, I think, to transition from static to stable to ensure long-term, ultimately, the ability to cool the reactors and to provide cooling for the spent fuel pools.

Looking forward to the work that we have as an agency dealing with facilities in this Country, on Monday, March 21st, only 10 days after the events in Japan, the Commission acted quickly to move forward and establish a senior level task force

to conduct a comprehensive review of our processes and regulations to determine whether the agency should make improvements to our regulatory system. This is a responsibility that we have to the American people, to undertake a systematic and methodical review of the safety of our own domestic nuclear facilities in light of the Japan situation.

This review will be conducted in the short term and a longer term time frame. The short-term review, which will take approximately 90 days, has already begun and will identify potential or preliminary near-term operational or regulatory issues. A longer term review will begin as soon as we have sufficient information from Japan. But we expect that review to be completed within six months from the beginning of the evaluation and, in fact, the Commission tasked our staff to do it in that time.

As we move forward with these efforts, we also recognize the importance of sharing our lessons learned with other regulatory counterparts in other countries throughout the world. I recently returned from the Fifth Review Meeting of the Convention on Nuclear Safety which provided an important opportunity for participating nations to address the events in Japan and begin to formulate plans for short- and long-term cooperation.

In conclusion, I want to reiterate that we continue to take our domestic responsibilities for licensing and oversight of the

U.S. licensees as our top priority and that, I want to stress, we believe that plants in the United States continue to operate safely. Based on the 90 day review and the longer term review that we have undertaken, we will take all appropriate actions necessary to ensure the continuing safety of the American people.

On behalf of the Commission, I thank you for the opportunity to appear before you today and would be happy to answer any questions that you may have.

Thank you.

[The prepared statement of Mr. Jaczko follows:]

Senator Carper. Well, thanks to both of you for your testimonies.

Madam Chairman, Chairman Boxer?

Senator Boxer. Thank you so much, Mr. Chairman.

First, I want to thank both of you because you have been available to those of us on both sides of the aisle here to answer our questions. I appreciate that so much.

I want to put in the record something I got from USGS that shows how many earthquakes, because Senator Barrasso said look, this earthquake happened over in Japan, it did not happen here. Obviously. But, how many earthquakes, I would say to my friend, have we had in America that they have managed to document? And it is 157 earthquakes all over this great Nation and in every part of this Country. So, I want to put that into the record. These are over 6.0.

Senator Carper. Without objection.

[The information follows:]

Senator Boxer. One hundred fifty-seven earthquakes over 6.0.

I also ask for the documentation on tsunami. And what I do have is the areas where the highest risks are. That would be Alaska, Hawaii, very high, West Coast, high, Puerto Rico, Virgin Islands, high, the others low to very low. So, I am going to put those, both, in the record.

Senator Carper. Without objection.

[The information follows:]

Senator Boxer. Thank you.

Mr. Jaczko, I know you have been very involved, Mr. Chairman, in helping the people in Japan. We, every one of us on both sides, are grateful because I think America is at its best when we are there for our friends and we certainly are.

Well, right now you described, you said that it is a static situation, not a stable situation. So let me ask you, what is the best thing that could happen right now with those reactors, and what is the worst thing that could happen?

Mr. Jaczko. Well, I am reluctant to speculate on what the worst thing is that could happen because, again, there is always things that one could postulate that are possible although very unlikely.

Senator Boxer. Well, I think it is important. What is the worst thing could happen? I think we all believe you have to look at this. What is the best thing that could happen, what is the worst? Now, we all hope for the best, but what is the worst thing that could happen?

Mr. Jaczko. Well, right now what our focus is on, it focuses on ensuring that we can continue to provide, or the Japanese can continue to provide, cooling to the reactor and water into the spent fuel pools. And that is a process that is working right now.

As I said, it is not necessarily the most stable

configuration. So, for instance, there was an aftershock, I believe it was last night, and as a result they had to remove some individuals from the site. They lost some of the off site power. So, some of the pumps in the systems that were working were not able to continue to work for about 50 minutes.

So what we want to see is to move into a situation in which that kind of situation would be dealt with in a more predictable manner and with less possibility of the loss of the cooling systems. So, every day that the reactors continue to have cooling and continue to receive water and other types of cooling, the likelihood of a more significant release continues to go down.

Senator Boxer. So the cooling, obviously here, is the key and there is nothing else that could happen in your mind, that could go wrong?

Mr. Jaczko. That really is --

Senator Boxer. If there is cooling going on.

Mr. Jaczko. That is correct. The primary focus is to maintain cooling. If you lose the ability to cool the reactor cores, then you have the possibility of a further degradation in the fuel which could lead to possibly a greater release than what is going on now.

Senator Boxer. And are the leaks still going on into the ocean?

Mr. Jaczko. We believe right now that some of them have been stopped. But there is the possibility that there are other leaks and other material being released.

Senator Boxer. How radioactive is that water?

Mr. Jaczko. Right now, the Japanese are surveying the water that is going out and being, into the ocean, and they are doing surveys. I have not seen the latest figures about that level of contamination.

Senator Boxer. Would you let me know, as soon as you know, what contamination is flowing into that ocean?

Mr. Jaczko. Absolutely. We can provide you with detailed information about that.

Senator Boxer. Okay. Administrator Jackson, your Scientific Advisory Board found that EPA's fixed radiation monitors had a potential sampling bias against the collection of larger particles which could include hot particles. Have you taken any actions to address the SAB's concerns?

Ms. Jackson. Yes, Chairman, we have. That report was done several years ago and since that report was done, EPA responded to the request from the SAB to do an additional study on the efficacy of our monitoring equipment in capturing all sizes of particles. The really problematic ones are the smaller ones and what we found is that through that study our fixed monitors can collect the very smallest particles reasonably effectively.

Now, I do want to say, having newer monitors, there are newer monitors out there that get even greater capture, but if you look at the purpose of the system, which is to give broad levels of background for events that are known, the current system is certainly effective.

Senator Boxer. Well, my time has expired. I just want to say to Chairman Jaczko, I have these two nuclear plants that were built a very long time ago and now apparently PG&E and Southern California Edison have withdrawn their re-licensing processing now.

I guess what I want to say, and you do not need to answer this, but I am going to be talking to you about this, for me. And again, nobody has to respond to this. It is just, I am thinking common sense. You have now 7.4 million people that live within a 50 mile radius of one of my plants, and you have got about a half a million that live within a 50 mile radius of the other. Both of these sit on or near earthquake faults.

So, all I am going to say to you and the other Commissioners when we do get a chance to speak with the others, and I think we will, is that to my mind, I think the Commission, when you are re-licensing, have to look at this as if it is a new opportunity. Would you license a plant that came to you now with that circumstance, right by or near earthquake faults, studies that say there will be more frequent earthquakes, both involved near

tsunamis, or the one is more vulnerable to a potential tsunami?

And I just hope that you, and again, I do not, I am not asking you to answer this because you have got to think a long, hard time about this. But to me, as someone whose highest responsibility is the health and safety of all of these millions of people, if you would say no to a new operator, I hope you will think about how it makes any sense to just keep on going unless there is major reinforcements and hardening of some of these buildings and the rest.

So, I just leave you with that thought. Those are my concerns.

Senator Carper. Thank you, Madam Chair.

Senator Barrasso?

Senator Barrasso. Thank you very much Mr. Chairman.

I appreciate both of you being here today and Chairman Jaczko, I appreciate the time you have been available to me by phone, visiting in the office and addressing some of these various concerns that are critical and questions that need to be answered. So, I appreciate that.

I noted that last week the California Coastal Commission concluded that "a nuclear emergency such as is occurring in Japan is extremely unlikely at the State's two operating nuclear power plants." Would you agree with that California Coastal Commission's conclusion?

Mr. Jaczko. We think it is very unlikely to see a large earthquake and a tsunami.

Senator Barrasso. And they went on to say that the combination of a strong ground motion and massive tsunami that occurred in Japan cannot be generated by the kind of faults that exist close to the, in the vicinity of, the two plants, nuclear plants in California. Do you agree with their assessment there?

Mr. Jaczko. It is my understanding that the type of fault in Japan was a different type of fault that does not exist off the coast of California.

Senator Barrasso. Okay. Thank you.

Administrator Jackson, I mentioned in my opening statement that an April 6th Inside EPA story was entitled Activists Step Up Efforts to Strengthen Oversight on Uranium Recovery and I mentioned how those activist groups are using the nuclear emergency in Japan as a reason to place additional red tape on approving uranium mines domestically here in the United State.

Do you see a connection between the Japanese nuclear emergency and the uranium mining in the United States?

Ms. Jackson. No direct kind of connection, Senator.

Mr. Barrasso. Thank you.

Mr. Chairman, when we last had an opportunity to visit in my office, I discussed my concerns about the delay in approving permits for uranium mines in Wyoming. You had mentioned that the

delay was because you were still working things out with the EPA and you thought that we had finally achieved the resolution that was necessary. You thought you now had a template to move forward with approving additional uranium mines.

Do you believe you have worked out any of those issues now with the EPA in terms of uranium mining permitting so that now we can proceed with a faster permitting process?

Mr. Jaczko. Well, I believe we have worked out, come to a good understanding of, how we deal with our environmental impact statements. We are, however, continuing to work through issues that are our responsibilities under, to consult with tribal governments as part of other requirements, and that is the last activity that we are working on as we finalize our efforts on these uranium recovery applications. And that is not necessarily an issue involving the EPA.

Senator Barrasso. So then, Administrator Jackson, you are comfortable with that statement? Do you commit to work with any issues that we need to resolve between the NRC and EPA in a timely manner?

Ms. Jackson. I remain committed to working to resolve any issues we might have with respect to Wyoming. I do not believe the article in question actually referenced any sites in Wyoming but --

Senator Barrasso. Just the overall approval. Thank you.

I wanted to get back, Mr. Chairman, with the NRC's response in Japan and I know you have about 250 NRC staff working on a rotating basis, full functioning, and working hard on this.

Given the commitment of the NRC's resources to Japan, if we had any sort of an emergency in the United States, would you be able to redeploy in a way that we would not put ourselves at a disadvantage?

Mr. Jaczko. Absolutely. And as this event has gone forward, we have looked at our staffing levels and actually we have transitioned our approach now to the staff in our Operations Center to have a smaller team there who can respond quickly but then would reach back to our larger agency to get information requests as they need. So, it is, it allows us to respond in the same timely way, but to do it in a way that allows us to continue with our other important responsibilities.

Senator Barrasso. And finally, I think Senator Inhofe raised the issue about your invoking of emergency powers as a result of this. Could you describe to me how that, how you interacted with your fellow Commissioners during this nuclear incident? And have you relied on them for some of their expertise in making decisions as well?

Mr. Jaczko. Sir, there is not so much, I think, invoking of, through the emergency authorities, that is an authority that the Chairman has. But most of the activities that I have engaged

in as part of this response have been in my normal supervisory authorities over the staff at the agency and my communication responsibilities.

I would note, and we could provide this information for the record, but immediately after we entered our monitoring mode on March 11th, an email was sent out indicating that we had done that. Within the first 24 hours, we had had four briefings of the assistants to each of the Commissioners. Over the last several weeks, I have done at least 26 briefings to my colleagues on the Commission, including one public Commission meeting that was held about a week after the event started.

There have been about, overall, 60 briefings to staff of the Commission assistants and about 80 products have been provided to the Commission indicating the status of our response efforts and the activities that are ongoing.

So, I think there has been very good communication with the Commission about what we are doing and how we are dealing with the response.

Senator Barrasso. Thank you, Mr. Chairman, and thank you, Mr. Chairman.

Senator Boxer. Mr. Chairman, as a point of personal privilege, since the Senator mentioned the plants in my State, I appreciate his concern, let me put into the record two letters by the California Coastal Commission saying that before there is a

re-licensing they want new earthquake studies. That is number one.

Number two, what my friend said about the fact that it would be unlikely we would have such an accident in California, absolutely very unlikely. It is unlikely. That is exactly what they said about Japan. To the word. So, we have got to move beyond talk and get to the serious question of what do we do to everything in our power to make it safe.

Senator Carper. Is there objection to the request? Hearing none, so ordered.

Alright. I would ask a question, my first question, of Chairman Jaczko if I could.

You have, I think, heard me say before that I like to quote Albert Einstein. Albert Einstein once said, in adversity lies opportunity. And when Chairman Boxer asked the question, what is the worst that can happen, following up on this tragedy, one of the worst things in my mind that could happen is that we would not learn anything from it. That is one of the worst things that I think could happen.

We have had not a whole lot of time, but some time has passed since this sad chapter began unfolding. Talk to us about some of the lessons that we have learned in the past weeks and maybe that would suggest that what we are doing is appropriate, good, smart, safe, and maybe some things that we have learned

that would suggest that we could do better.

Mr. Jaczko. Well, I think one of the issues that we have really come to recognize is that the station blackout event is a very serious event. I think the good aspect about it is that we have always known that that is a very serious type of event. It is a situation in which you lose all of the ability to have electrical power to the site.

Fundamentally, right now, we think that is really the primary cause of the problem. What we are really working to establish is why exactly they got into this situation where the station blacked out and what were really the lead factors affecting that.

I think we have seen the importance of emergency planning and having the ability to respond and provide emergency guidance to the population around a nuclear power plant and we have seen that that carries on its intended function, which is it moves people out of an area in which they can be exposed to harmful levels of radiation.

So, if we just look at the kinds of things that we have right now, those are, I think, some of the big lessons that we have learned.

We have this 90 day task force that is going to be looking at some very specific things in the next two months, two and a half months, and I do not want to get too far in front of the

work that they are doing because I think we have put together some really talented people at the agency who are going to do a good, thorough look at this, and I do not want them to start giving the answers that they hear me say at a hearing.

So, I think at this point, I think that if there is any one other lesson I could say that we have learned is that after Three Mile Island we learned that it was very important to go about this kind of review in a systematic and methodical way with the appropriate sense of urgency and the need to move expeditiously.

And I think that is what we are doing, and that will be the continued focus that I have with the agency because we want to make sure that we put in place the kind of changes that make safety better, and not the kind of changes that in the end wind up undermining safety. So, that is why it is so important that we do it systematically and methodically.

Senator Carper. Okay. Thank you.

I think it was Senator Alexander who said earlier, mentioned that if you took all of the spent fuel in this Country and you stacked it up on a football field it would be about 20 or 25 feet high. To some that might sound like a lot, to others not so much.

We have a Blue Ribbon Commission that has been working at the direction of the President to consider what we should be doing with that spent fuel. Give us some idea when we expect to

hear back from that Commission? I think what they find or recommend to us might actually tie in closely with what they are facing in Japan.

Mr. Jaczko. Well, I think that we are anticipating, I think an interim report from the commission sometime this summer and then with a final report sometime later, by the end of the year. When we look at these issues of spent fuel, this is something, again, the agency, the Commission, has put a strong focus on, on making sure that spent fuel can be stored safely and securely.

The structures, whether in pools or whether in dry cask storage, are very robust structures that are designed to deal with a large earthquake, that are designed to deal with natural disasters and significant security-related events. So, we have kind of a multi-tiered system of protection that exists at all of our plants and that includes these unlikely events like these natural disasters and then a layer of protection on that to look at, if that kind of unlikely event happens and all the safety systems do not function well, we have additional procedures in place to address that kind of situation and ultimately equipment that is put in the plants to kind of do that last line of defense in terms of providing cooling to the pools or, ultimately, to the reactor core.

Senator Carper. All right. Thanks.

We have 104 nuclear power plants. I said earlier that I

thought the first one was built about 50 years ago. I think it was built 42 years ago, not 50 years ago. But there are a number of plants that are up for re-licensure and some have already been relicensed. We have a number of applications before the Nuclear Regulatory Commission to build new plants with new technology, new design.

How do the events from Japan, the tragic events from Japan, how do they figure into the re-licensing process for the, oh, I do not know, the dozen or so that are before the Commission today, or will soon be, for re-licensure? And how do the lessons learned figure into the approval process, the review process, for the new design?

Mr. Jaczko. Fundamentally, we think about these issues not necessarily for a plant that is 41 years old or 42 years old or 1 year old or 10 years old. We think about this in terms of the plants that are there now and the safety of the existing fleet of reactors.

So, the reviews that we are doing, the first review is really to identify any issues that we would need to address immediately. So, we would not wait for re-licensing or any other type of activity related to license extension to make changes to the plants. So, fundamentally, the kinds of changes we are looking at or possibly would need to make would be applicable to all of the plants in the Country, whether they are getting their

license extended or not.

In addition, we have a very robust process of reviewing the license applications and the renewed license applications that gives the public an opportunity for input, that gives them an opportunity to raise issues. And we think those procedures and processes are robust enough to deal with the new issues that come about from the Japan situation.

But fundamentally, some of these changes may take time to implement and in the interim we will evaluate every situation as it comes up. If there is something we need to do to slow down, we will slow down. If we can move forward appropriately, we will move forward appropriately. But I think we will know, we will be a much better position, after this 90 day review is done to see if there are any real immediate actions that need to be taken.

Senator Carper. All right. Thank you very much.

Senator Alexander, you are next.

Senator Alexander. Thanks, Mr. Chairman. Thank you both for your testimony.

Ms. Jackson, as we look at electricity produced in the United States, we use about, I think, about 25 percent of all electricity in the world for our Country. I believe about 44 percent is produced by coal, 20 percent by nuclear power, 23 percent by natural gas, 7 percent by hydroelectric power, we usually think of those as base load powered, base load

electricity, electricity that is reliable over long periods of time, about 3 percent is wind, much less than 1 percent is solar.

What would be the effect on our Country's ability to comply with EPA's clean air standards if we did not, if we replaced nuclear power with either coal plants or natural gas plants?

Ms. Jackson. Well, nuclear power emissions are low to zero for the pollutants that EPA regulates so there would be, presumably, an increase in pollution. Even with the best pollution control technology, fossil fuel plants are going to have higher emissions, including greenhouse gas pollution which nuclear power does not have.

Senator Alexander. But probably half our coal plants do not have that --

Ms. Jackson. About half of our coal plants in the Country are not controlled for air toxics like mercury, arsenic, cadmium, acid gases. In fact, we just recently proposed a rule to address that issue. And when it comes to carbon pollution, of course it is quite different.

Senator Alexander. We have a lot of discussion, Senator Carper and I have worked a long time on the mercury issue. But the point is, to keep it in perspective, nuclear power provides about 20 percent of our electricity but about 70 percent of our emissions-free electricity, which is important as we think about

clean air and climate change.

Mr. Jaczko, how, for how long can the 104 reactors we have safely store spent fuel on site?

Mr. Jaczko. Well, the Commission recently restated what we refer to as our Waste Confidence Finding and that said that we believe at least about 40 years beyond the expected lifetime, I am sorry, about 60 years beyond the expected lifetime of a plant we can safely store spent fuel. And that gets you generally to about 100 years of time that you could store this fuel safely and securely.

And we actually, as part of this recent decision, asked the staff to go back and really look longer than that and see are there, if there are any issues right now that would make it challenging to store that fuel for 200 or 300 years or a longer timeframe. And so we expect to begin looking at that in the next year and have an answer in probably a couple of years about that question.

But right now, we do not see any major issues that would present a significant challenge for that longer term storage of the fuel.

Senator Alexander. For purposes of understanding what we are trying to store, does it sound about right to say, as I did earlier, that all of the used nuclear fuel that has been produced in the last 35 years would fill a football then about 20 feet

high?

Mr. Jaczko. I have heard that statistic many times. I have actually never sat down and calculated it and made sure that it is right. But it sounds reasonable as an approximation.

Senator Alexander. Now, the Nuclear Waste Policy Act of 1982 established a fund into which ratepayers, those of us who pay our electric bills, have paid about \$30 billion to build a final resting place for used nuclear fuel. A second step of the Obama Administration's plan for used nuclear fuel, which I heartily endorse, is not just to store it safely on site but then to do advanced research to find a better way to reuse nuclear fuel which will greatly reduce the mass of it and permit it to be used over and over again.

But in the end, are we not still going to have some stuff left that needs to be stored over a long period of time? And we still have this football field full of nuclear fuel spread around at 104 sites. Where are we going to put that? I mean, we have got \$23 billion sitting in a fund we have collected from electric bills. Should we not be using it to find a way to put that since Yucca Mountain does not seem to be going anywhere?

Mr. Jaczko. Well, from the NRC's perspective, our job is to make sure that that fuel, regardless of how it is being used, or stored, or reprocessed, or whatever the approach may be, is done safely and securely. So that is our number one focus. And we,

of course, work with the industry, we communicate with the rest of the Federal Government as approaches are being developed to possibly deal with that in the long term.

The Commission staff have been briefing the Blue Ribbon Commission and providing them with information about our approach to safety and security as they work to formulate their opinions about ultimately what could be done with this fuel in the long term.

Senator Alexander. Thank you.

Senator Carper. You are welcome. Thank you.

Senator Lautenberg?

Senator Lautenberg. Thanks to each of you for the knowledge and energy that you bring and I use that term directly. Obviously, we feel pretty comfortable. However, the long history that Japan had with nuclear power and established nuclear regulatory system looked like Japanese installations were absolutely safe. But clearly, they were not.

Now, what assurances do we have that our nuclear plants are as prepared as we could get for our worse case scenario?

Mr. Jaczko. Well that, Senator, I would say that there are really three or four levels of protection that we have at the plants. First and foremost, the plants are designed for these very unlikely events based on what we think the maximum historical natural phenomenon is, so, like a hurricane or an

earthquake or a tsunami. So, we start with that and we design the plants to be able to deal with that kind of a situation.

Then, on top of that, all of the plants have a set of procedures and guidelines for what you would do in the situation that all of those systems that you built in to deal with the situation fail. And those are what we refer to as Severe Accident Management Guidelines. And those give you the procedures, the approaches to dealing with these very severe events if they were ever to occur. And for that to occur, a lot of safety systems that are redundant and have a lot of backups would have to fail and not work properly.

And even beyond that, if all of those systems were to fail, we have required all of the plants in this Country to have an additional set of procedures to deal with very extreme damage conditions at the plant, much like you are seeing in Japan. And we required all of the utilities to put equipment in place to respond and ultimately to be able to supply cooling to the reactors and cooling to the spent fuel pools.

So, we have a robust system to really ensure that we can minimize or mitigate any potential releases to the public.

Senator Lautenberg. What we see is rather frightening in scope because almost no matter what you do, you cannot guaranty that there will be zero risk in the production of nuclear energy and nuclear facilities. So, we keep on developing new policies

as a result of, unfortunately, some terrible experience, and we have, we hope that we have no further terrible incidences.

Ms. Jackson, you know New Jersey is home to four nuclear reactors, including the oldest nuclear plant in the Country, the Oyster Creek Nuclear Generating Station, two years older than the damaged Japanese plant.

Now, with your long experience of protecting health and the environment in New Jersey, how confident can we be that the nuclear plants in our State are sufficiently safe to protect all of our people at all times?

Ms. Jackson. Well, I would defer to the Chairman on the safety issue except that they obviously, what was recently announced, which is that that plant is voluntarily, the owners of that plant have agreed to shut it down. I think it is part of the solution with respect to that particular facility.

Senator Lautenberg. Well, we are, it is little reassurance, honestly, because if they said okay, we will even cut short the period that the license covers, which means that there is an element to worry out there, and they cannot be --

Mr. Jaczko. Senator, if I could just comment? My understanding of the, part of the reason for not extending the plant operation was motivated by the cost and some of the economic factors. Certainly, from the NRC's perspective, we did not see a safety reason for the plant to not operate beyond, I

think, 2019 when the plant will operate.

And again, when we do our license renewal, what we do is we add on additional requirements to the licensees for them to monitor the plant to make sure that as the plant equipment and the systems that are important for safety get older, that they have the way to monitor and make sure that those, that aging of those equipment does not have any adverse impact on safety.

So, in addition to the standards in the regular strong safety program that we have, we add on top of that these additional requirements to make sure that as the plants age they do it in a way that is protective of public health and safety.

Senator Lautenberg. Tom, I have one more question. One last question. The rest, beyond that, I will send to you for the record and look for a response.

The NRC requires evacuation plans only within 10 miles of a plant. But the American Government has warned Americans in Japan to stay at least 50 miles away from the damaged reactor. They only confirmed that when we turned our ships around about 50 or 60 miles out, I am not really sure.

I guess, when all else fails, we have to be absolutely certain that a way to evacuate these areas is foolproof in terms of its ability and its durability. And would it make sense to require evacuation plans in our Country to address the same distance to U.S. facilities for new plants?

Mr. Jaczkó. Well, that is something we are going to look at as part of the reviews that we are doing. The 10 mile evacuation zones that we currently have are designed to be the region in which you pre-stage and pre-prepare evacuations. If conditions were to warrant some additional option beyond that, those options, of course, could always be taken.

But I think, as we have seen in Japan, nuclear events tend to develop over a long period of time. This is three weeks into this event and we have had the time and ability to make protective option recommendations and to update those and modify them as conditions at the plant change.

So that 10 miles is really based around the idea of what you need to have prepared right away so if you have an event that develops quickly, you can address that and have pre-staged and pre-prepared what to do. But there is always the possibility to go farther, if necessary, or to modify the plans to deal with the existing conditions and the exact conditions on the ground.

But I also want to stress that this is something we are going to take a look at as part of the reviews that we are doing to see if there are changes we should make to the requirements for emergency preparedness.

Senator Lautenberg. Thanks very much and thanks to each of you.

Senator Carper. And thank you, Senator Lautenberg.

Senator Merkley?

Senator Merkley. Thank you, Mr. Chair, and thank you all for your testimony.

The first question I want to ask about, Mr. Jaczko, is, the venting system to release the hydrogen in the Japanese plants succeeded in getting the hydrogen outside of the core only to have it explode outside.

The U.S. went through, in the 1980s, a hardening of our vent systems on our Mark I reactors and I understand the Japanese plants also went through an upgrade. But what is our initial understanding of why the venting system did not succeed in disposing of the hydrogen such that it would not explode after it left the core? And is there a difference in the venting system between the Japanese plants and the U.S. plants that should give us confidence that we would not have a similar problem?

Mr. Jaczko. Well, at this point, it is not exactly clear what the source of the hydrogen was. Obviously, we saw hydrogen, or some fires, in the Unit 4 reactor. Well, that likely came from the spent fuel pools, the spent fuel pool in that building, because the reactor core there was not, did not have fuel in it.

So, at this point, we do not have definitive information about the source of the hydrogen. It is possible that it came from the spent fuel pools and not necessarily from the venting operation. That is something that we will look into as we get

some more, really as we get past the more emergent crisis in Japan, we will get the detailed information about that effort.

But I would say that, really, the fundamental issue that we see here really is the station blackout event. In the United States, when we are talking about a station blackout event, we have a lot of protections in place to prevent that complete loss of electrical power to the site. We require each plant to have at least two diesel generators for each reactor. So, if there a multiple reactor site, they will have at least four diesel generators on the site. Those diesel generators have to have their fuel in an area that is protected so that it can be, it can supply the diesel generators in the event of some type of natural hazard.

And then, beyond that, we have something that we call our station blackout or coping requirements which requires the utilities to be able to deal with that loss of offsite power until they are able to restore the offsite power.

Senator Merkley. I am going to interrupt you because I only have a limited amount of time and actually you dodged the basic question which was, is our venting system different from the Japanese system?

And also, I think it is understood that a fair amount of hydrogen in 1 and 3 came from both the splitting of water molecules and from probably explosion of the zirconium clouding.

And so, in that situation, and understanding that scenario, why did the hydrogen explode after it was vented rather than be dispersed safely into the atmosphere?

If we have no insight, that is fine. But again, back to the core question, is our venting system different in some significant way?

Mr. Jaczko. At this point, we do not have the detailed information to know.

Senator Merkley. Let me go on to a second question then.

In at least one of the reactors, I believe it is vessel 2, that there was discussion of plugs in the bottom of the reactor vessel, the core, that were used for loading fuel in and the concern that that design left a vulnerability and that plugs that were inserted after fuel was put in melted at a lower temperature than the rest of the containment, the rest of the core containment vehicle, and could have been a flaw that would allow, if you will, fuel to escape.

Is that just specific to that one reactor or is that a common design? And has that been a discussed concern in the past? And do we have that design in the United States?

Mr. Jaczko. We can get you specific information on that design. But again, I would stress that right now the information about the condition of all of the reactors is very preliminary and very uncertain. You indicated the hydrogen explosion.

Again, it is correct that that is a result of, usually of exposure of fuel. But that can, of course, occur both in the spent fuel pools as well as in the reactor core.

So again, the exact source of the hydrogen at this point is not clearly understood and it probably will be some time before we know definitively where that hydrogen came from, whether it was an interaction with the zirconium clouding in the spent fuel pool or the reactor core itself. That is where there is a bit of, some uncertainty right now.

Senator Merkley. Here again you did not answer my core question which is, these plugs that are apparently in the design of at least one of those reactors that are on the bottom side, are those, do we have a similar design and that is a concern in American nuclear power plants?

Mr. Jaczko. Again, as I said, we can get you that information. I do not have that off the top of my head right now. But again, I do not want to speculate necessarily that that was a contributing cause to any of the condition in Reactor 2 at this point.

Senator Merkley. Okay. Another issue is really the containment vessel itself. In 1972, there was a report from the predecessor organization, the Atomic Energy Commission, that recommended the Mark I system be discontinued because of unacceptable safety risks, basically because of the smaller

containment design and it was susceptible to explosion and rupture from a build up in hydrogen, obviously something that seems like it was an interesting insight given what we have now witnessed. Indeed, apparently the reason for this smaller and lighter container vehicle was simply the cost of the heavier and stronger containment vehicle.

There was later, in the 1980s, discussion. An NRC official noted that Mark I reactors had a 90 percent probability of bursting if fuel rods overheat and melt.

Have we, but there has been some changes to containment vehicles. Have we, do we feel like we have satisfactorily addressed the issues about the weakness of the containment vessel that were raised in the 1970s and the 1980s?

Mr. Jaczko. Fundamentally, the issues, the actions that were taken were, as I think you indicated, one was to provide hardened venting which provides a release path, a sensor to release material as pressure builds up in the containment, to release that pressure and to do it in a way that you release, that you prevent as much of the release of radioactive material as possible when you do that process.

The other thing that was done was efforts to do what is called inerting, or nitrogen inerting, which essentially means you introduce nitrogen into that containment atmosphere and based on the chemistry of that you reduce the likelihood of a hydrogen

combustion.

So, those came out of results and studies that were done in the late 1980s in what we called our Individual Plant Examinations and then a series of follow up studies that looked at what are these kinds of severe accident risks and how do you ultimately mitigate them.

So, for the Mark I containments, that was, those were the changes that were made to address that. Now, again, we are going to look at the information from Japan to see how similar or different their designs were at the time of the accident to our designs to see if there are additional lessons that we would learn to apply to those particular containments.

Senator Merkley. Thank you.

Senator Carper. You are welcome. Thank you.

Madam Chair?

Senator Boxer. Thanks.

I want to follow up on earthquake faults because we have written the Commission and we have asked you for an explanation of how many of our reactors, or let us just say our plants, are located on or near seismically active faults? Do you have that number for me today?

Mr. Jaczko. The number, and I think you mentioned it in your initial statement --

Senator Boxer. I know.

Mr. Jaczko. Generally, we would say that there are two plants that are near, in high seismic areas, and about nine plants that are in more medium areas.

But I want to stress, we design, require all plants in the United States to be designed to deal with seismic events. And some us who are here in Washington know, it was only a couple of months ago that we felt an earthquake here in Washington.

So, they are all designed to deal with seismic events and we design them, again, based on the accelerations that the plant itself would feel, or the actions and motions that the plant would feel at the actual site of the plant rather than based on the magnitudes of the earthquake because --

Senator Boxer. Okay, before you get into all that, I do not have a lot of time. In Japan, they would give the same answer. They gave the same answer. TEPCO said we are proud of the robustness of our containment vessels. And, in the case of an earthquake, everything would safely stop, blah, blah, blah. And I would put this into the record if I could.

Senator Carper. No objection.

Senator Boxer. Not the blah, blah, blah, but the actual words --

[Laughter.]

Senator Carper. No, I think we should put in the blah, blah, blah.

[Laughter.]

Senator Boxer. The point is it is eerie to me because I do not sense enough humility from all of us here. We are, as some great scientist once said, we think we have all the answers but Mother Nature may not agree with us.

A lot of what you are saying is the same thing that they said. And you are right, you are being conservative because even though plants do not sit on or near, you are being, you are thinking ahead. But the fact is, if you take one of my, we have the two plants that are high intensity seismic areas, one is built to, they are both built to withstand a certain level of earthquake, and yet, so was the Japanese plant, it was, I believe, 7.5 it was built to withstand. They got a 9.0.

We cannot know for sure what is going to happen. So I guess, are you doing a major inspection as Senator Feinstein and I asked you to, the NRC, of our two plants that are in these high propensity earthquake zones?

Mr. Jaczko. Well, we are looking at all the plants to make sure that we have --

Senator Boxer. I am asking about my two plants.

Mr. Jaczko. We are not doing anything specific to those two plants, but we are looking at all the plants in this Country to see if there are lessons learned from Japan --

Senator Boxer. Well, you just said that there are two

plants that are in the highest risk and yet you are not treating them any differently. That is a little worrisome to me.

Mr. Jaczko. Well, Senator, I would not necessarily say that they are in the highest risk.

Senator Boxer. Well, you said there were two plants on the highest seismic activity areas and those two are my plants in our State.

Mr. Jaczko. What we look at, ultimately, is the consequences. The plants that are in California are designed to deal with much, much higher seismic activity than any other plants in the Country.

Senator Boxer. Well, there may be a reason for that, Mr. Chairman --

Mr. Jaczko. Absolutely.

Senator Boxer. Because they are more at risk. Look, we just had the new report that says that they are not built to high enough earthquake-proof standards because we have reports there is a new fault at Diablo. We will hear that from Senator Blakeslee, who is coming forward. We, and in the case of San Onofre, there are reports that say there will be much more frequent activity than were suspected, both in perhaps tsunami and this.

So look, I am asking you again. I do not know if we got the letter back from them on this, a response? If you could just,

you know how Senator Feinstein and I feel. We, it is on our watch. I do not know how many people are in the States of Delaware? How many people in Delaware?

Senator Carper. Almost 1 million.

Senator Boxer. And how many in your State? Half a million. I have got a half million people who live within 50 miles of one of my plants, and 7.4 million who live within 50 miles of my other. So, this is not about some theoretical catastrophe if something went wrong.

I know you feel you do ongoing inspections and all the rest. Well, some of those ongoing inspections found some safety problems, too. So, let me just press you. I know Senator Blakeslee is coming up. He is from the other political party and we are working together on this. I think that is an important point. This has nothing to do with partisanship.

And if I will not be here for his testimony, can I send you his testimony and ask you to take another look because, we have both of these plants are up for renewal, although their licenses run until about 2022, something like that, 2027, 2022? So, they are not going anywhere. But they are up.

They are both now going to undertake new 3D earthquake studies, which is great, and I praise both of the operators for doing that. But it seems to me that while that is happening, correct me if I am wrong, but I think Congressman Bilbray said,

tell me if I heard him right, that the chance of something like this happening, an event like this, is between 7,000 and 10,000 years --

Mr. Jaczko. I think he said the frequency of a 7.0 magnitude earthquake is about every 7,000 years, approximately.

Senator Boxer. Okay.

Mr. Jaczko. But I do not want to speak for the Congressman.

Senator Boxer. But again, I would say to you, take a look at the record and the 157 earthquakes we have had over 6.0. So, and as we know, listen, I was told when I was a County Supervisor they said 100 year flood, we have to plan for a 100 year flood. I was a lot younger then and I said, oh, gosh, do we really need to do this? It is a 100 year flood. Well, that does not mean it is going to happen in 100 years. It could happen seven times within ten years, and then not happen again, as you know.

So, we have got to respond in a much different way. And I just do not feel the humility from all sides here. I do not think we are humble enough in the face of what Mother Nature could do. And I think that is, although I have to admit that the statements made by all parties here, I thought were very reasoned.

But I just think we need to inject a little more humility in this because look at what happened in Japan. And they are so proud, they are bragging about how this could never happen. They

arrogantly boasted of their world best nuclear power technology. Now, they cannot even figure out how to stop the darn thing from leaking and all the rest.

So, anyway, enough said. Thank you.

Senator Carper. Thank you.

Senator Barrasso? All right.

Administrator Jackson, I do not want you to feel like you are being ignored here, so I am going to --

[Laughter.]

Ms. Jackson. I am happy.

Mr. Jaczko. I thought since she was here I would not get so many questions.

Ms. Jackson. I very much appreciate it.

Senator Carper. You can barely see her lips move when you speak, Mr. Chairman.

[Laughter.]

Senator Carper. Administrator Jackson, if you could, we were talking earlier, I do not know if it was Senator Alexander or somebody else, we were talking about the number of people who have died in the 41, 42-year history of nuclear power plants in this Country because of the radiation, folks either, folks who worked in those plants or lived in the area around those.

I think I asked this question of Chairman Jaczko the last time he was here and I think he said, to the best of his

knowledge, no one has died of radiation poisoning or sickness. Is that close to what you said?

Mr. Jaczko. At nuclear power plants. There have been in some of the related industries, some accidents that let to fatalities. But in the nuclear power, at the plants themselves, no, there have not been.

Senator Carper. Okay. Thanks.

Administrator Jackson, you have been great to work with us on a wide range of clear air issues involving sulfur dioxide emissions, nitrogen oxide emissions, mercury emissions, and I do not know, I do not want to put you on the spot.

But, I would like to just get a sense for the range of injuries, death, brain damaged children born, babies born, because of emissions from fossil fuel plants that put out not just CO2 but also sulfur dioxide and nitrogen oxide and mercury. Can you just give us a sense for that?

I think we are talking about people who, we are talking about the loss of not just tens of lives or hundreds of lives but far greater. Can you just give us a sense of that over, I do not know, 40 years? Just give us a sense of the magnitude. Are we talking about thousands of folks whose lives have been shortened, whose lives have been taken? Just give us a sense of that magnitude.

Ms. Jackson. I would be happy to. But first let me thank

you for your leadership on clean air issues. You have a long and outstanding record.

Senator Carper. Thanks for saying that.

Ms. Jackson. Why do I not simply say that we recently released a proposed rule to deal with mercury and other toxic emissions from fossil fuel plants, primarily power plants that burn coal, and the estimates were annual estimates of tens of thousands of fewer bronchitis incidents, and 150,000, I believe the number was, fewer visits to asthma-related doctor or hospital visits.

And when it comes to fine particle pollution, it is not just sickness, it is death. So, literally tens of thousand a year of avoided deaths, premature deaths, as a result, each and every year.

So I do not have a number for 40 years that accumulates, but of course, the Clean Air Act has been around for 40 years and has a long and proud history of, I think the most recent estimate was \$2 trillion in avoided health costs and benefits just from 1990 to 2012, 2020 alone. And, of course money is not the same as lives saved and the tragedy of a sick child, but it has quite, those emissions have real impact for public health.

Senator Carper. One of our colleagues earlier in the hearing made the point that for almost any source of electricity in this Country, there are risk concerns related to them. And

obviously, we have the kind of concern, the risk has been borne in Japan. We need to be mindful of, to learn as much from this as we can, to make sure that kind of tragedy does not occur here or hopefully in any other country.

But whether it is coal-fired plants, in our State we want to deploy offshore windmill farms and hopefully we will start doing that in about a year or so, but there are people who think they are unsightly, there are people who are concerned about the lives of birds. We have concerns with respect to tapping the great reserves of natural gas that we are happy to have found but there are concerns raised about the fracking. There are concerns with respect to solar panels and some of the materials that we use to create those.

There are all kinds of concerns. What we have to have here at the end is to be as vigilant as we can for all of them. But I would just ask us to be as mindful and concerned about our air pollution problems that relate to fossil fuel plants as we are the potential loss of life or endangerment of health due to nuclear power plants. Sometimes, I think we lose our sense of balance.

I want to ask you, as a follow up to that, Administrator Jackson, about the EPA's radiation monitoring, if I could. In the next panel, we have got several State and local officials. Let me just ask, how does the EPA inform State and local

officials about potentially high levels of radiation in milk or water in their community, and what actions will be taken if high levels of radiation are found by EPA monitoring?

Ms. Jackson. Let me first state that every model we have seen, and we agree with the inputs to the model, do not show that we will see any high levels. And we have not seen high levels. If anything, I would characterize them as trace increases from background. And one of the wonderful things about our RadNet system is that we have decades of background. So, we have a good understanding of what is normal, if you will, for these monitors.

And what we have done is set up a system where we do post the data for rainwater and drinking water and milk, we post those on our website along with the air monitoring data which is both near real time, there is about a four to six hour delay, as well as some that the filter and cartridge data takes a longer period of time.

Even when we see a trace, a blip above background levels, we alert the States, entities that are affected by those monitors where the States are. We work very closely with our partners at Health and Human Services, because the CDC and FDA, depending on whether we are talking about foodstuffs like milk or other issues, it is very important that the health officials in those States are not surprised by even trace increases. Because we want them to feel comfortable that they know what the data says,

what they mean, and to conceptualize that for citizens because most people are not used to speaking of radiation or understand some of these units that are coming at them.

And so, we have worked very hard at that. We have not gotten it perfect every time. We also work with elected officials, so that is members of Congress and Governors' offices as well.

Senator Carper. All right. I am going to stop. A number of our colleagues, some of them were here, some of them were not, will have questions to submit in writing. How long do they have to submit them, do we know? Two weeks. So, colleagues have two weeks to submit their questions in writing if they wish and we would just ask that you promptly respond to those.

Thank you so much for being here and for testifying today. And again, our thanks to you and the teams that you lead at EPA and at the NRC for the continued vigilance that has been demonstrated in response to this disaster. Thanks so much.

And with that, we invite up our second panel, actually third panel. As our third panel participants take their seats, I am going to go ahead and begin the introductions.

The first introduction is that of California State Senator Sam Blakeslee of the 15th District of California. Next we have Mr. James Boyd who serves as Vice Chair of the California Energy Commission.

Next we have a familiar face and a friend from Delaware, Lew Schiliro. Mr. Schiliro retired from the FBI before becoming a Cabinet Secretary of Delaware's Department of Safety and Homeland Security. You are welcome. It is great of you to come.

Next we have Mr. Curtis S. Sommerhoff and he is the Director of Miami-Dade County's Department of Emergency Management. Thanks so much. And next we have Mr. Charles Pardee. Actually, Charles Pardee is quite a notable citizen in the State of Delaware, so you have a namesake who you can be proud of in our State. This Charles Pardee is Chief Operating Officer at Exelon Generation.

And finally we have Dr. Thomas B. Cochran, whose initials are the same as many of my colleagues and me, and he is a Senior Scientist with the Nuclear Program at the Natural Resources Defense Council. I welcome Dr. Cochran.

For all of your statements, if you would actually use, I will give you about five minutes. Do not try to go much over that. If you do, I will have to rein you in a little bit. But five minutes, and your full statements will be included in the record.

Let me start with Senator Blakeslee. My first question is to you. How many State Senators are there in California? We know you have 53 House Representatives.

Mr. Blakeslee. We have 40 State Senators in California

representing about 37 million people. So, just a little bit under 1 million constituents per Senator.

Senator Carper. And how many State Reps do you have?

Mr. Blakeslee. Fifty-three members of Congress and 80 members of the Lower House.

Senator Carper. All right. Great. Thanks. Please proceed.

STATEMENT OF SAM BLAKESLEE, SENATOR, CALIFORNIA STATE SENATE,
DISTRICT 15

Mr. Blakeslee. Thank you very much, Mr. Chair.

My name is Sam Blakeslee. I am a California State Senator and, as Chairman Boxer indicated, I am a Republican. In fact, I am the former Minority Leader in the Lower House.

I am a former research scientist who earned his doctorate for California Earthquake Studies from U.C. Santa Barbara, and as a geophysicist I worked for a number of years in the oil and gas industry for Exxon in Houston, Texas. I now live with my wife and two daughters in San Luis Obispo, 10 miles from Diablo Canyon.

The seismic setting for the Diablo Canyon site has been a source of well-documented controversy for over four decades. In 1967, the operator of Diablo Canyon, PG&E, stated in their initial permit application the site had only "insignificant faults that are showing no movement for at least 100,000 years and possibly millions of years."

Four years later, using oil industry seismic data, researchers discovered the Hosgri fault only three miles offshore which the USGS has estimated is capable of producing a magnitude 7.3 earthquake. In the end, it took 15 years, major retrofits, and more than \$4.4 billion in cost overruns before the plant became operational.

Upon being elected to the California legislature in 2005, I called on Pacific Gas & Electric to use more sophisticated oil and gas 3D seismic imaging technologies to assess the complex seismic setting just off the coast. PG&E's response to my call was a column written by a PG&E Vice President stating "Freshman Assemblyman Sam Blakeslee's proposed legislation to conduct another seismic survey of Diablo Canyon is unnecessary and bad policy for California customers."

Well, in 2006, Governor Schwarzenegger signed the legislation directing the Energy Commission to perform an independent review of the data to assess the potential seismic vulnerability of the State's nuclear power plants and to provide recommendations.

That same year, PG&E moved to initiate the process to relicense the facility though there was no compelling need to rush the process as their current licenses last through 2024 and 2025. Then, in 2007 while the Energy Commission study was being performed, a magnitude 6.8, not 9.0, 6.8 struck Japan and the largest nuclear power plant in the world was damaged with three of its reactors still shut down to this day.

In 2008, the Energy Commission issued their report stating that uncertainties did in fact exist near the Diablo Canyon plant and that 3D seismic studies were recommended. PG&E's written response to the Commission was "we believe there is no

uncertainty regarding the seismic setting and hazard at the Diablo Canyon site.''

Mere weeks later, the USGA discovered the active Shoreline fault running within some hundreds of yards offshore from PG&E's nuclear power plant and with an orientation that could potentially intersect with the much larger and very powerful Hosgri fault.

Within mere days, PG&E rushed to declare "we don't see anything that exceeds the plants design basis.'" The statement was made before collecting the data necessary to determine the precise location, length and relationship of the Shoreline fault to the nearby Hosgri.

Fast forward to the events of just one month ago when a magnitude 9.0 earthquake struck offshore Japan on a fault system believed capable of only a magnitude 7.9. Like the 2007 Japanese earthquake, the 2011 earthquake far exceeded the utilities seismic and engineering assumptions.

Three weeks ago, at a California Senate hearing on this issue, I asked PG&E if they still continue to maintain, did they believe their previous assertion that there was no uncertainty in the seismic setting near their plant. This time PG&E responded that, although there is always some uncertainty, they were "not concerned.''

I then asked PG&E to suspend or withdraw their license

application with the NRC until the seismic data is in hand to allow regulators to make informed decisions because, although PG&E may not be concerned about the seismic uncertainty, my community was very concerned. Yesterday, one day before this hearing, PG&E agreed to take this action.

After six years of calling for these seismic studies, State legislation, recommendations by the Energy Commission, direction from the California Public Utilities Commission, two devastating Japanese earthquakes, and now a nuclear disaster of Chernobyl proportions, the utility is finally willing to slow its relicensing effort to collect long-overdue seismic information.

In closing, I have two questions for Federal regulators. First, in the aftermath of the Japan crisis, will the NRC strengthen its own earthquake hazard review procedures that are conducted during the relicensing process for these two nuclear facilities that the NRC itself has identified as being located in the Nation's highest seismic hazard area?

And second, given the longstanding reluctance of PG&E to accept even the need for such studies, what procedures will the NRC put in place to ensure there is independent peer review analysis so that we have accurate, scientifically-robust conclusions that are drawn by those who have looked at the data independently rather than relying solely upon the utility and in-house NRS staff?

Thank you for the opportunity to present to this body.

[The prepared statement of Mr. Blakeslee follows:]

Senator Carper. Thanks so much. Thanks for coming here to testify for us today. Very, very good testimony. Thank you.

Mr. Boyd, please. Welcome.

STATEMENT OF JAMES D. BOYD, VICE CHAIRMAN, CALIFORNIA ENERGY
COMMISSION, CALIFORNIA LIAISON OFFICER TO THE U.S. NUCLEAR
REGULATORY COMMISSION

Mr. Boyd. Thank you, Senator, and to Senator Barrasso,
thank you for being here.

I am Jim Boyd, Energy Commissioner, and I happen to be a
State's Liaison Officer to the U.S. Nuclear Regulatory
Commission, which may indicate why, perhaps, I am here. I
appreciate this opportunity. I appreciate you having this
hearing.

Senator Carper. A quick question, Mr. Boyd. Are you
appointed by the Governor and confirmed by the Senate? How does
it work in California?

Mr. Boyd. Yes.

Senator Carper. Okay. And how long have you served?

Mr. Boyd. Nine, I am in my tenth year.

Senator Carper. Okay. Thanks very much. Please proceed.

Mr. Boyd. This tragic 9.0 magnitude earthquake and its
impacts on the Japanese people and this power plant certainly
underscore the importance relating to seismic understandings in a
State like California.

You have heard all about our two plants. You have heard
from Senator Blakeslee in detail the difficulties we have had
with the operator of one plant and the need for seismic studies.

We have another plant, San Onofre, which, the recommendations apply equally to that plant. The 2008 study found that there are seismic concerns there that affect tsunami potential as well.

Subsequently, you heard from, actually Senator Boxer, this morning, who referenced that my agency and the PUC directed the two agencies of the operators of these plants to undertake the studies. But that resulted in a race by PG&E to file for relicensing well in advance of what anyone thought would be necessary.

The use of these, this new technology, this technology that Senator Blakeslee has indicated, has been used by the oil industry for years. PG&E has done some studies, mainly because the NRC ordered them to have an active seismic study after all the fiasco of many years ago and to have a need to redesign the plant.

Unfortunately, while we had been pushing for this, the NRC has to date indicated that the license renewal review process does not include an assessment of seismic vulnerabilities. It does not require that these advanced seismic studies be included within the scope of their review.

And until yesterday, when we learned that PG&E has changed their mind and they want to hold up their license, we felt that the NRC was going to finish their review in 2002, and these studies would, or 2012, I am sorry, and these studies would not

even be done until 2013.

So, I thank you for having a hearing that may have had an impact upon PG&E. But, in spite of that, we still need a condition from this Southern California Edison, the operator of San Onofre, that they will do the same types of studies, and they told me they are reconsidering their position.

For us, lessons learned are first that we are looking to the NRC to carry out its short-term and long-term review of events in Japan and if they do the good job that they did on Three Mile Island, we expect a lot of positive recommendations and results. But we need to implore the Congress support the NRC, not only in these efforts but in implementing and ensuring that follow up actions are taken and implemented at all U.S. reactors as soon as feasible after they finish their studies.

Not only should they include the lessons learned from Japan, but we have some thoughts we would like to pass on to the NRC, and have in previous correspondence, in addition to lessons learned studies that we have underway with regard to seismic.

First is in the Waste Confidence Decision. The Chairman referenced that. The NRC's Waste Confidence Decision which concluded that spent nuclear fuel can be stored safely on site at reactors for 100 years should be reexamined, particularly spent fuel stored in seismically active coastal areas. The safety of long-term storage of spent fuel in seismically active or tsunami

prone areas need to be reevaluated in light of what is happening in Japan.

Secondly, spent fuel management. The Nation's spent fuel management systems and practices should be reevaluated, including the current practice of storing spent fuel in pools in tighter storage configurations than original plant designs called for.

The Energy Commission, in 2008, recommended that the utilities return their spent fuel pools to more open racking configurations as soon as feasible. Storing more spent fuel in pools in closer configuration creates greater heat load, thereby increasing the risk of fire and other possible problems.

As more and more spent fuel accumulates at reactor sites, plant owners have had to re-rack their pools multiple times to increase their onsite spent fuel storage capacity. This is an increasing safety issue at California's two plants, and the station blackout issue is another one that affects the operation of spent fuel pools.

So, in closing, I would say we would like to see that the two utilities in California undertake the studies that have been recommended. We would like to have these studies included in NRC's license renewal evaluation of these plants because they give no support in their routine oversight of a plant license for the activities that are being carried out and the recommendations that have been made.

And, we need to assure ourselves that when these studies are done, all of these activities that need to be taken with regard to equipment and process operations should be taken into account.

Thank you for this opportunity.

[The prepared statement of Mr. Boyd follows:]

Senator Carper. Thank you, Mr. Boyd.

Next we will introduce Lew Schiliro, Secretary Schiliro.

How long have you been Secretary now?

Mr. Schiliro. Just over two years, Senator.

Senator Carper. And before that I know you spent a few years in the FBI. How many?

Mr. Schiliro. Twenty-five years, sir.

Senator Carper. Twenty-five years. Thank you for our service to our Country and to our State. We are delighted that you are here today.

Please proceed.

STATEMENT OF LEWIS D. SCHILIRO, J.D., CABINET SECRETARY, DELAWARE
DEPARTMENT OF SAFETY AND HOMELAND SECURITY

Mr. Schiliro. Thank you, Senator, and good afternoon,
Chairman.

I am Lew Schiliro, the Secretary of Delaware's Department of Safety and Homeland Security. And on behalf of Governor Jack Markell, I am honored to be here today to address the important issue of Homeland Security as it relates to radiological emergency plans and preparedness. I would like to thank you for the attention and focus on this most important topic.

In the days and weeks that have followed the nuclear energy crisis in Japan, many citizens have raised concerns regarding radiological emergency preparedness in the United States. In Delaware, the citizens' concerns about the safety of nuclear energy facilities and the State's ability to handle a radiological emergency were directed to our Department.

Our Department is comprised of several Public Safety Divisions, including the Delaware State Police, Capital Police, the Office of Highway Safety and, most importantly, the Delaware Emergency Management Agency, which we refer to as DEMA.

While our divisions often work together during a public safety emergency, DEMA is primarily responsible for the State's Radiological Emergency Plan and preparedness activities. I would like to open my statement today with information on the nuclear

energy utility located just off our State's shore and our State's Radiological Emergency Plan. I will then share some insight into our experiences with the utility.

Our State's location along the East Coast puts it within 50 miles of four nuclear generating stations. They are Limerick Nuclear Generating Station and Peach Bottom Atomic Energy Station, both in Pennsylvania, Calvert Cliffs Nuclear Generating Station in Maryland, and the Salem/Hope Creek Nuclear Generating Station in New Jersey. Of these four stations, Salem/Hope, which is a 740-acre site operated by PSE&G, is the closest, located just 2.5 miles from the Delaware shoreline. Together, these plants comprise the second largest nuclear generating facility in the United States and generate enough electricity for 3 million homes each day.

According to the 2010 Census, there are approximately 41,000 people in Delaware who currently live within a 10 mile radius of this utility. The area is more commonly known as the Emergency Planning Zone or EPZ. It should be noted that within the last 10 years, Delaware's population in the EPZ increased by over 17,000 citizens, according to the recent census. This increase necessitates a mandatory evaluation of our evacuation routes and times..

The close proximity of Salem/Hope makes it the most potential threat to our State and as such, DEMA's radiological

staff continues to work closely with the nuclear people at PSE&G and the New Jersey State emergency management officials to maintain and update the State's radiological plan. This comprehensive plan, which is approved by FEMA, is DEMA's roadmap to provide command, control and coordination for any potential nuclear plant incident impacting our State.

As required by the Nuclear Regulatory Commission and FEMA, within a six-year cycle, DEMA conducts three plume exercises which really test the State's emergency response capability within the EPZ and one injection exercise which tests the State's readiness to address needs within a 50 mile radius of the utility.

Historically, Delaware's Federally-graded exercises have received very high marks from FEMA and these are graded exercises that are quite thorough and exhaustive inasmuch as they test each and every State emergency response resource that could potentially have a role in any radiological emergency incident. They involve our first responders, our evacuation plans, reception centers which are registration and decontamination sites, traffic control access points, shelters, schools, hospitals and emergency worker decontamination centers.

In addition to that, FEMA conducts quarterly radiological drills with PSE&G and New Jersey that specifically focus on the EPZ and our responder resources. In 2010, 821 people received

training specific to the REP Plan and Emergency Worker Equipment.

I am going to cut some of this short, Senator, but we have absolutely an excellent relationship with PSE&G and the emergency response officials in New Jersey.

I welcome the opportunity, as this goes on, to answer any questions that you may have regarding those plans.

Thank you.

[The prepared statement of Mr. Schiliro follows:]

Senator Carper. Thank you very, very much, Mr. Secretary.

Welcome, again, Mr. Sommerhoff. Please proceed. Thank you
for joining us.

STATEMENT OF CURTIS S. SOMMERHOFF, DIRECTOR, MIAMI-DADE
DEPARTMENT OF EMERGENCY MANAGEMENT

Mr. Sommerhoff. Good afternoon, and I wanted to thank Environment and Public Works Committee Chairman Boxer, Ranking Member Inhofe, Clean Air and Nuclear Subcommittee Chairman Carper, Ranking Member Barrasso, and the distinguished Committee members.

I am Curtis Sommerhoff, Director of the Miami-Dade Department of Emergency Management. The community I serve spans nearly 2,000 square miles, includes 35 municipalities, and has a population of more than 2.5 million. We are a coastal community vulnerable to a number of natural and manmade disasters including the threat of hurricanes, flooding, fires, mass migration, oil spills and radiological events.

Miami-Dade County's response to emergencies and disasters is guided by a comprehensive Emergency Management Plan, an all-hazards approach which supports the County's ability to respond to any type of emergency. Within our comprehensive plan we have a number of hazard-specific annexes, including a Radiological Emergency Preparedness Plan.

Our plans are regularly assessed and assumptions analyzed, revised and ultimately certified by the Federal Emergency Management Agency. Site visits and evaluated exercises bring together local, State and Federal agencies, as well as members of

the utility, to enhance collaboration and programming. FEMA oversight and formal after action reports highlight significant areas that might need improvement.

In the event of an emergency at the nuclear power plant, we have a public alert and notification system that includes warning sirens in the area around the plant, identified support facilities for the delivery of emergency services, fully trained and equipped public safety response personnel, and protective measures that are adjusted to the threat level.

Our ability to effectively respond to a radiological or other threat lies not only in our comprehensive planning but our long history of implementing protective actions for the public. Over the past decade alone, evacuation orders have been issued to the public on 10 occasions as a result of hurricanes and tropical storms and, together with our partner agencies, we have coordinated the evacuation, transportation, sheltering, medical care and feeding of tens of thousands of evacuees.

Consider this. In the 10-mile Emergency Planning Zone surrounding the Turkey Point Nuclear Power Plant, there are approximately 180,000 residents. Within Miami-Dade's three designated Hurricane Evacuation Zones, there are more than half a million residents.

We have identified shelters for temporary housing with special consideration given to individuals with special needs.

We have designated areas for the dissemination of emergency supplies, like water, ice, food and tarps in the event of widespread destruction or power outages.

We have ready-to-activate Disaster Assistance Centers to provide social services to residents in need of financial assistance, prescriptions refills, short- and long-term housing and first aid, and contracts and mutual aid agreements to ensure the continuity of operations during disaster response and recovery. In line with the National Response Framework, all of our plans are scalable, flexible and adaptable.

The County's Department of Emergency Management fosters an ongoing collaborative planning relationship with the County's mission essential departments and partner agencies to address life safety and property implications from existing hazards. We have a long-established state-of-the-art Emergency Operations Center, our nucleus for response and recovery efforts.

When disaster threatens, our emergency managers, private and non-profit sector partners, as well as our media partners, come together under one roof, a critical component for a coordinated response and timely and accurate information dissemination. Local, State and Federal coordination enables us to augment and resupply personnel and equipment as needed, even over extended periods.

Our strengths and experiences from hurricane response carry

over to our ability to implement actions for a radiological event. Conversely, our planning for a potential radiological event has a positive effect on our ability to respond to other hazards.

Based on our experiences, we respectfully offer the following recommendations for consideration.

The recommendation of the Nuclear Regulatory Commission to evacuate Americans out to 50 miles from the Fukushima Daiichi Plant has raised many questions. We support analysis of the data and assumptions behind the recommendation to determine if Emergency Planning Zones in the U.S. need to be revised. Of course, a wholesale change to increase the plume exposure pathway must be carefully evaluated and weighed against the value of making the revision.

It is also important to note that local officials currently have the flexibility to revise public protective action based on accident parameters and the situation on the ground.

As we have seen in the crisis in Japan, as well as other disasters across the United States, interaction and coordination with Federal partners is sometimes hampered by the lack of familiarity of local and state response organizations with Federal processes and systems. Increasing the inclusion of FEMA and other Federal agencies in local and State training and exercises would make the transition from a local response to a

Federally-integrated response more seamless and efficient.

Finally, it is essential to maintain and expand emergency management all-hazard funding programs such as the Emergency Management Performance Grant Program. This year alone, every EMPG dollar spent in Miami-Dade County is matched with over five local dollars to build emergency management capabilities that enhance our community's disaster preparedness.

EMPG dollars have also enabled us to invest in staff and resources that have been made available to communities throughout the Country, including assistance we were able to deploy to New York after the 9/11 attacks and, more recently, to neighboring Florida counties directly impacted by 2004's record-breaking hurricane season.

Once again, I thank you for the opportunity to share our experiences, observations and recommendations.

[The prepared statement of Mr. Sommerhoff follows:]

Senator Carper. Good. Thanks so much, Mr. Sommerhoff.

Mr. Pardee, you are now recognized. Please proceed. Thank you for joining us.

STATEMENT OF CHARLES PARDEE, CHIEF OPERATING OFFICER, EXELON
GENERATION COMPANY

Mr. Pardee. Good afternoon, Chairman Carper, members of the Committee.

My name is Charles Pardee. I am the Chief Operating Officer at Exelon Generation and as such responsible for all of the company's generating assets, including 17 units at 10 sites in Illinois, Pennsylvania and New Jersey.

I appreciate the opportunity to appear this afternoon on behalf of the nuclear industry to discuss the safety of nuclear power plants here in the United States.

We have been following the events in Japan closely since the historic earthquake and tsunami struck the plant on March 11th. Many in the United States nuclear industry have both a professional and a personal interest in the events unfolding there.

Many of us, myself included, have been to Japan a number of times as part of international technical exchange programs to share operating experience with the Tokyo Electric Power Company and others. In fact, I was at the Fukushima Daiichi station about a week prior to the earthquake striking there on one such exchange.

Our hearts go out to the Japanese people as they respond to the humanitarian crisis they are facing. Currently, six Exelon

employees are in Japan assisting with efforts there to secure, stabilize and ultimately decommission the Fukushima Daiichi reactors.

It is understandable that many Americans are asking if power plants in the United States are safe in light of the events in Japan. I firmly believe that they are safe, and I would like to make three primary points about the safety of nuclear plants in the United States to buttress this belief.

First, our plants are designed and licensed to withstand a variety of natural disasters including earthquakes, floods, tornadoes and, where appropriate, tsunamis. Plants are designed to withstand potential disasters based on the most extreme event known in their geographic location with significant margin added to that extreme event to ensure safety. Margins are reviewed and improved as necessary as additional information or experience becomes available to us.

Second, safety systems, equipment and emergency procedures at nuclear power plants are not frozen in time once the plant is built. In fact, safety is an issue that is being constantly examined by both the industry and our regulators. We have undertaken extensive safety enhancing upgrades to our plants in the aftermath of Three Mile Island, the events of 9/11, and other events such as Hurricanes Katrina and Andrew that have impacted the United States.

Particular attention has been paid to putting systems in place to avoid a build up of hydrogen in containment areas, the likely cause of the explosions at the Japanese plants. In addition, we require multiple redundancies and back up power supplies in the event of a loss of offsite power, the precipitating factor in the loss of cooling water issues that have led to the most extensive damage at the Japanese reactors.

In addition, full capability simulators have been installed at each plant in the United States, giving every operating crew the ability to train under realistic conditions on extreme events, such as loss of all AC electrical power, to ensure our mitigation strategies are robust and our operators are fully qualified to respond. I earned an operating license at a plant similar to one of the Fukushima Daiichi reactors in the 1990s, and I personally went through this training to learn how to combat scenarios such as the loss of all electrical power.

Third, while it may take months, if not years, to fully understand what happened at the Japanese reactors, the industry is not waiting to take action to incorporate lessons learned from this event. Indeed, I firmly believe that the nuclear industry is unparalleled in its ability to incorporate lessons learned to ensure excellence in operations.

There are two institutions, the U.S.-based Institute of Nuclear Power Operations and its international equivalent, the

World Association of Nuclear Operators, that are devoted to ensuring excellence by sharing best practices, assessing and incorporating lessons learned from events such as this, and rigorously assessing plant performance to ensure sound operations.

In the United States, the Institute of Nuclear Power Operations ensures that reactor operators do not become complacent in any area of operations, particularly when it comes to safety-related issues. There is a focus on continuous learning from events, both large and small, that occur at other plants. Whenever a significant event occurs, INPO performs an analysis to determine relevant lessons learned that are then shared with all operators.

Within days of the earthquake and the tsunami, the industry issued directives to each of our plants to undertake a variety of actions to ensure that seismic and safety-related equipment was in good material condition and to review our emergency response plans including each plants capability to manage a total loss of offsite power. These assessments are ongoing and I am confident that both industry and NRC will have additional action items in the coming weeks and months to further enhance our ability to operate safely.

Aside from the safety of nuclear reactors, I know that there are also concerns about the safety of spent fuel pools in light

of the events in Japan. As with our reactors, we have taken a number of steps in the aftermath of Three Mile Island and 9/11 to bolster security to spent fuel pools. Back-up power systems, abundant onsite water supplies and additional high capacity pumps provide us with the defense and depth to ensure safety of these pools.

Let me conclude by recognizing the dedicated employees of the United States nuclear industry. Safety is, and continues to be, the primary focus of our industry, and we have tens of thousands of highly-skilled, thoroughly-trained employees working tirelessly every hour of every day such that our plants operate safely and efficiently.

Thank you for this opportunity.

[The prepared statement of Mr. Pardee follows:]

Senator Carper. Mr. Pardee, thank you so much for joining us today.

Dr. Thomas Cochran. We have a Senator named Cochran, Thad Cochran from Mississippi.

Mr. Cochran. Not related.

Senator Carper. What was that? Uncle Thad?

[Laughter.]

Mr. Cochran. Not related.

Senator Carper. Oh. Okay.

STATEMENT OF THOMAS B. COCHRAN, PH.D., SENIOR SCIENTIST, NUCLEAR PROGRAM, NATURAL RESOURCES DEFENSE COUNCIL, INC.

Mr. Cochran. Chairman Carper, and also Chairman Boxer and members of the Committee, I want to thank you for providing NRDC and me the opportunity to present our views on the Japanese nuclear disaster and its implications for nuclear power reactors in the United States.

I have submitted my complete statement for the record. I will briefly highlight a few things here.

You requested that I offer my views regarding the implications the disaster has for reactor safety in the United States. First, I think we all are in agreement that the first priority is to provide assistance to our friends in Japan. But, eventually, and even today, we are turning to the issue of the implications in the U.S.

Before turning to that issue, I wish to make two observations. First, my colleague, Dr. Matthew McKinzie, with my colleague, Dr. Matthew McKinzie, we made a rough preliminary estimate of the collective radiation dose from the external exposure based on monitoring data from Japan. We should be mindful that the uncertainties in the estimated exposures at this stage are quite large. There is much we simply do not know. With this caution, we find the collective dose from the external exposure to date, and the consequentially excess cancers that are

projected to result, appear to be 10 to 100 times greater than the collective radiation dose resulting from the Three Mile Island accident.

After Chernobyl, the Fukushima nuclear accident ranks as the second most dangerous civil nuclear power reactor accident to date. The collective dose to date from the Fukushima accident appears to be in the neighborhood of 100 times less than that from the Chernobyl accident. Similarly, the long-term human health consequences are one to two orders of magnitude less than the immediate non-nuclear consequences of the earthquake and tsunami. This is a preliminary comparison and it may change as we learn more.

Second, Dr. McKinzie and I have reexamined the historical frequency of partial core melt accidents. We found the historical frequency of core melt accidents worldwide is far greater than what the NRC considers safe. By this measure, operational reactors worldwide are not sufficiently safe.

Because of differences in the numbers of reactors, the reactor safety cultures and the regulatory oversight, the next nuclear power plant disaster is more likely to occur abroad than in the United States. But if nuclear power is to have a long-term future, greater attention should be given to current operational reactors. Older obsolete designs should be phased out rather than have their licenses extended.

Turning to the implications for U.S. nuclear power reactors, there are concerns raised by the Fukushima nuclear disaster that bear directly on the safe operation and regulation of our domestic fleet. While others will add to this list, our immediate concerns include, are old GE BWRs with poorly designed Mark 1 and Mark 2 containments and subsequent upgrades imposed by the NRC safe enough to continue operation or have their licenses extended?

What additional improvements should be made to cope with hydrogen production in the event of a fuel clad interaction with steam? What improvements must be made to extend the time reactors can cope with loss of offsite power?

The NRC is overdue in requiring that spent fuel be removed from wet pools to hardened dry casks as soon as the spent fuel has cooled sufficiently to be passively cooled in air.

Which reactor sites are located in areas that cannot be adequately evacuated? Which reactor stations impose an undue economic risk to local, State and even the U.S. economy in the event of a partial core melt accident? Which U.S. reactors should be upgraded or phased out due to the risk of earthquake, flooding or tornado that is beyond the design basis?

Potential radiological accidents caused by earthquakes and tsunamis should be addressed in emergency response plans for U.S. reactors. Nuclear plant owners and operators must assume a

larger share of financial risk in the event of a catastrophic nuclear accident.

What are the implications of predicted sea level rise due to climate change on the safety of nuclear reactors near coasts? What are the implications for continued failure of the NRC to finalize and implement a fire protection rule?

What changes should be implemented regarding radiation monitoring during routine plant operations following an accident? And perhaps most importantly, what is the best process for addressing these concerns?

I would like to elaborate on a couple of these starting with the last, the need for an independent commission --

Senator Carper. Doctor, I am going to ask you not to elaborate too much, if you will.

Mr. Cochran. -- similar to the Kemeny Commission that investigated the Three Mile Island accident. Such an independent body could engender public confidence by thoroughly examining nuclear safety issues including assessing the conclusions and proposed corrective actions arrived at by both the nuclear industry and the NRC's 90-day safety review.

I will just touch on one of these issues that I raised. The 20-year license extensions already granted to 23 U.S. operational BWRs with Mark 1 and Mark 2 containments should be shortened. Similarly, no 20-year license extension should be granted to the

eight BWRs with Mark 1 and Mark 2 containments that have not received license extensions.

Mr. Chairman, thank you. I will stop there. I have some more but I have run out of time and look forward to your questions.

[The prepared statement of Mr. Cochran follows:]

Senator Carper. Thanks so much for your testimony. And, as I said earlier, the entire statement will be made part of the record.

I am going to telegraph a pitch and let you know what my last question is going to be to the panel. And basically I am going to ask each of you to give us a just a really good takeaway, a really good takeaway, not just for Chairman Boxer and myself and Senators Inhofe and Barrasso, but just really one good takeaway from each of you from this hearing for our Committee, please. So just be thinking about that.

In the meantime, let me ask a first question of Secretary Schiliro, and that would be, after seeing the devastation in Japan, are you concerned with our State, with Delaware's emergency planning process? Could anything be improved? And, to follow onto that, do you feel our plan is flexible enough to be changed if you saw a need to expand beyond the 10-mile evacuation plan?

Mr. Schiliro. Thank you, Senator. We have a very robust group in Delaware and it truly is a team effort. The ability of DEMA to incorporate all of our partners from the law enforcement and public safety communities, both State and our Federal partners, I think is very robust.

Certainly I think the lesson that we need to learn is what can we take away from the events in Japan that would allow us to

evolve that plan? Because it truly is a living document and certainly something that we need to understand.

As has been stated, the 10-mile EPZ is something that we do practice for and plan for. However, I do think the plan is flexible enough, and certainly in the power of the Governor, that in the event that the circumstances go beyond that 10 miles, that we certainly could react to. And we do, as has been stated, plan for that in terms of hurricane evacuations. So, it is adaptable.

I think, as was stated earlier, what the 10-mile zone allows us to do is to really give that early warning and to really just start to begin from that. But there is no doubt in my mind, based upon the people that we have in Delaware, that if we needed to expand it, we certainly could and would do that. So, I feel very comfortable with that.

Senator Carper. All right. Thank you.

Let me follow that one with a question of Mr. Sommerhoff and perhaps of Secretary Schiliro as well. The question is, many of the families in Japan have been away from their homes for I guess close to a month or so. And, in your emergency planning, is it explained to people being asked to evacuate that it could be not just for a couple of hours or a couple of days? It could be, in this case, for over a month for a lot of the folks in Japan, and I guess the clock is still running there.

But do we have long-term emergency housing that can

accommodate people for these kinds of extended periods of time?

Mr. Sommerhoff. One of the things we try to do as we, when we educate the public and certainly practice these drills and exercises, is we have an emergency reception center concept. And the idea with the emergency reception center is to have a place, at least temporarily, for people to seek shelter and emergency services from local government.

From there, we are also looking at some offsite reception centers, some more long-term sheltering capability. And then we would be looking at Federal resources coming in, as well as aids from the nuclear industry through American nuclear insurers and others, to provide more resources for those long-term housing needs and those types of opportunities.

But all of those things that you mentioned in terms of both human and health services type things, as well as the housing issues and the mass care issues, all that is provided and explained to folks in terms of education, as well as the resources at the reception center concept.

Senator Carper. Okay. Mr. Schiliro, Secretary Schiliro, anything you want to add to that?

Mr. Schiliro. Just one quick note, Senator. As you know, we have had occasion, unfortunately, to stand up, primarily through the Red Cross short-term shelters, one in the event of certain snowstorms that we have recently had and weather-related

events, and generally that works very well.

But obviously in the event that we needed longer term, the primary responsibility would be for the public safety and, if that were the case, I am confident that through our Federal partners and other related resources we would be able to accomplish that.

Senator. All right, thank you.

A question, if I could, of Mr. Pardee. And this is a question relating to alert systems. In Secretary Schiliro's written statement, he stated that within, he said within 15 minutes of a radiological emergency, PSE&G must send an alert to Delaware's emergency response team. Do you know if that is a requirement that is established by the Nuclear Regulatory Commission?

Mr. Pardee. Yes, Mr. Chairman. The Nuclear Regulatory Commission has very strict reporting guidelines that are applicable to all nuclear stations in the United States that ensure timely reporting of events as they are unfolding and regular periodic updates to make sure, as further information is acquired by the station, that that information is shared with State and Federal officials for the purposes of making quick protective action recommendations and mustering resources to assist.

Senator Carper. Okay. During an emergency, how does a

company communicate with the NRC and with local governments?

Mr. Pardee. We have emergency response facilities both local to the site and remote from the site, our emergency operating facilities. And those facilities all have dedicated communication links between the Nuclear Regulatory Commission operations centers and on a State-by-State basis. They are emergency operating centers. These are dedicated phone lines, they have back-ups in the form of satellite, radio or cellular communications and such. So, there are multiple communications links in which to share the information I described.

Senator Carper. Did you say earlier that you had spent some time in Japan?

Mr. Pardee. I have. I have been to both Fukushima Daiichi and the Kashiwazaki-Kariwa station that suffered an earthquake about three years ago. In that case, I went about two weeks after that earthquake hit.

Senator Carper. A member of my staff, I think it might have been Laura Haynes, I think, said to me earlier today, suggested that the NRC has the ability to monitor control rooms, maybe of all the nuclear power plants in the United States. I do not know if that is true, but if you know, and the second, like a follow up, whether that is true or not, do the folks in Japan have a similar kind of capability?

Mr. Pardee. We in the United States all have something

called the Emergency Response Data System which is a provision to provide technical data to the NRC Emergency Operations Center and other interested parties. I am not strictly familiar with what exists within the Japanese regulatory protocol, but I do know that information flow seems to be much more greatly challenged than I would ever expect it to be here in the United States.

Senator Carper. Okay. Thanks.

I am going to ask a question of Secretary Schiliro and then I am going to ask Dr. Cochran and Mr. Boyd and Mr. Pardee to follow up on this. But here is the question of Secretary Schiliro. In your written testimony, I think you stated approximately 41,000 Delawareans live within 10 miles of PSE&G's Salem/Hope Creek facilities. Is that about right?

Mr. Schiliro. That is correct, Senator.

Senator Carper. All right. If there was a full evacuation of that 10-mile radius because of an emergency at the PSE&G facilities, how long do you think it would take to conduct that full evacuation?

Mr. Schiliro. Our modeling, Senator, depending on the time of the day and the time of the year, anywhere between three and six hours.

Senator Carper. Three and six hours. All right. And again, if I could, of Dr. Cochran and Charles Pardee and Mr. Boyd, if a nuclear power plant in this Country faced a full

blackout, faced a full blackout, similar to what we have seen at the Fukushima facility, in your opinion, would we have a few days before we might see the fuel rods degrade and therefore see harmful radiation levels?

I am going to say that one again. I will just say it again. If a nuclear power plant in this Country faced a full blackout similar to what we have seen at the Fukushima facility, in your opinion, would we have a few days before we might see the fuel rods degrade and therefore witness harmful radiation levels?

Mr. Cochran. I do not believe so if you include within that full blackout the loss of emergency power generation at the site. For example, you have both batteries and diesel generator backup systems. Diesel generators failed in Japan because of the tsunami. If they failed in the U.S., you then can rely on, and they also, I mean you lost offsite power, you also have battery power at some reactors. The batteries are only designed for four hours, it is my understanding.

Senator Carper. Do we have any idea if those batteries can be recharged? I just drove one of those new Chevrolet Volts yesterday and the Chevrolet Volt, as you may know, the battery provides, constantly provides, the force, if you will, for the wheels to move. Whether the engine, if the engine is running, the engine does not run, turn the wheels. It powers the battery so the battery can be charged constantly.

Any idea if these batteries at the nuclear power plants can be charged or recharged while they are drawing down electricity? Does anybody know?

Mr. Pardee. Yes they can, Mr. Chairman.

Senator Carper. Okay. Thanks.

Mr. Pardee. We have to have the requisite equipment available, but they can be recharged. They are big automobile batteries. Very big automobile batteries.

Senator Carper. I bet they are. Thanks. Okay. Doctor, go ahead and finish your response now.

Dr. Cochran. Well, in order to recharge them, you have to have a source of power. Your original premise was that you lost, that you had a station blackout, so you would not be able to charge them under those circumstances.

I think you have touched on one of several very important issues that need to be addressed as a consequence of this disaster. In my judgment, the most important thing you need to do is address how this process should be undertaken. We support the NRC's review. We support the industry's review. But we do not feel that is adequate.

We do not feel that the NRC, we should rely solely on the NRC to review its own previous failures, and we therefore believe that you need something akin to a Kemeny Commission that you had following the TMI accident, similar to the Blue Ribbon Commission

you had following the BP oil spill.

There are people in the industry, people in the Government, who do not want to have an independent review because they see that might threaten their future course of actions.

Senator Carper. All right. Thank you. May I ask, if I could, Mr. Boyd and Mr. Pardee to respond as well to this question. Mr. Boyd?

Mr. Boyd. Thank you, Senator. I know, and I just checked with my good Senator here, that Diablo Canyon has a real problem with regard to evacuation of, you heard the very small numbers of people. But there is incredibly limited access. So, the number we have is about 15 hours to evacuate the area because, and that assumes the overpasses have not collapsed on the freeway and that assumes it leaves one of the only two escape routes available.

At SONGS, it is a little different with 7 million people. I do not have the estimate on the top of my head but it, while we have significant freeway systems there, it is still a very substantial period of time that has been modeled over and over again and I can get you that information.

Additional comments on the second question because it relates to the evacuation issue. Both of our plants have eight hour battery backup capability. Diablo Canyon's backup generators are fairly high up on the hillside so it would take a very significant tsunami to impact them. But, nonetheless, we

are in discussions now as a result of what happened in Japan with both utilities about the whole question of station blackout.

The SONGS generators are right at the plant which is right on the beach although, hopefully, a less earthquake prone area. But nonetheless, they have the advantage of the entire Marine Corp across the street, Camp Pendleton, and arrangements have been made for backup generation, portable generators and what have you, in the event of some kind of problem there.

Diablo Canyon does not have that luxury and we have been talking about helicoptering in batteries and what have you in the event there is a serious problem there.

Senator Carper. All right. Thank you. And one last word, if you would, Mr. Pardee, on this question, please.

Mr. Pardee. Yes, sir. For the first question regarding evacuation times, our times also vary, station dependent, time of day, time of year, seasonal varieties, but somewhere on the order of four to 10 hours is representative of our stations as well.

To your question about our ability to forestall fuel damage for a number of days per station blackout, I do not believe that we would have fuel damage, although I do not mean to trivialize the amount of work that would be required on the part of the operators to create that result.

But we do have, even in the event of depleting batteries, we have procedures here in the United States for manual operation of

our emergency pumps that would require no battery power for operation or measurement instrumentation. And in other instances, we have temporary or portable battery supplies, such as carts with batteries on them, that would allow us to operate the equipment necessary to keep the core from being damaged. And this equipment and these procedures are pre-staged. We train on them. We have formal qualification programs on them.

I am positive that we will learn things out of the Japanese event that will make us better. We are already starting to investigate how we can extend the lives of our batteries and such. I am sure we will have to look harder at spent fuel pools and their ability to withstand sustained loss of AC electrical power. But the direct answer to your question is, I would not anticipate fuel damage after 48 hours.

Senator Carper. Okay. Thanks very much.

Let me go back to the pitch I telegraphed earlier and that is to ask each of you if you could share with us one takeaway before you go back. I will just start, if I could, with, I will start with Senator Blakeslee. If you would not mind responding, that would be great.

Mr. Blakeslee. Thank you, Senator. I appreciate the opportunity.

We have 104 reactors in the Nation and the NRC has identified there are only two plants that are in the highest

seismic potential category and both of them happen to be coastal plants. But only one of them has a recently identified fault of significant proportions in very close proximity.

My concern in listening to Commissioner Jaczko's comments in response to Senator Boxer's questioning was that, although he is looking at procedures in a 90-day and a six month window, I heard nothing that identified the unique needs of these two plants, and the one plant in particular, which have these direct analogies to the threat faced in Japan through the 2007 and 2011 earthquakes.

So I would again, the one take away I hope we can walk away with is that for these two facilities in California, we upgrade our relicensing procedures to formally include seismic safety criteria and standards that directly relate to earthquake hazard in our process.

Senator Carper. All right. Thank you, Senator. Thanks so much for being with us today.

Mr. Boyd, please.

Mr. Boyd. The Senator took my first item but I knew he might so I have got a couple of others noted here. I will mention one of them, and that is the spent fuel pool safety issue that has been discussed today. The re-racking of the spent fuel pools into high density and the slow speed with which these pools are being emptied in order to put materials into dry cask storage is a serious concern to us, particularly in the high seismic

activity areas, again, like California's two plants.

Senator Carper. All right. Thank you, sir. Secretary Schiliro?

Mr. Schiliro. Yes, thank you, Senator. In my mind, and as you know, Senator, our obligation is for the safety of the people of Delaware. But what to me is paramount is that we learn from the events in Japan from the standpoint of their reaction and the emergency response that they had. We need to learn the lessons from that. And that information needs to be transparent. It also needs to be shared with the State and local counterparts, the people that would actually be forced to respond to this kind of event.

So, what I hope is that once the lessons are learned, and once that information is gotten, that there be system to share that with us so that we can change and develop our plans to meet that. If that does not occur, then to me, that would be the greatest tragedy.

So, I would hope that as the NRC and the other Federal agencies get that that it be shared and that we learn from that. Thank you.

Senator Carper. All right. Good. Thanks so much for joining us today.

Mr. Sommerhoff?

Mr. Sommerhoff. Senator, thank you. Our protective action

decision making, it is based on plant conditions and it is based on the conditions on the ground. And from that, we start making our implementation for protective actions for the public.

We are always looking first, when we look at issues that are going to require evacuation, and evacuation is not always the protective action that we are going to implement, it might be sheltering in place, but we will look at those people who are in close proximity to the plant initially and then we are also going to look at those vulnerable populations, those difficult to move populations.

I cannot think of a situation where we would just say, everybody within 10 miles evacuate now. It does not happen like that. It happens in phases. And that is how we conduct evacuations for all types of hazards, including hurricanes and other types of hazards.

So, I just wanted to make sure that this was this understanding that the way we do implement evacuation protective actions, it is not everybody evacuate at once. And I do believe the 10-mile Emergency Planning Zone is the appropriate planning standard for us.

We have always considered that there could be implementation of protective actions outside that 10-mile zone. We have never thought that, based on environmental conditions or conditions at the plant that somehow radiation would stop at 10 miles and just

fall to the ground. We always have considered that we would have to move outside that 10 miles and implement actions outside to address the public there.

So, I just wanted to make sure that that understanding was known.

Senator Carper. Good. Thanks. Thanks so much. Mr. Pardee, one good takeaway.

Mr. Pardee. Yes. Thank you again for the opportunity. For my takeaways, I would simply say that we understand the concern on the part of the Committee and the general public, the public at large.

We are committed to open, transparent and proactive communications regarding our current state and what changes we are implementing based on the lessons learned from the events in Japan and that we share the objective of the Committee to protect the public health and safety. And we will do that through concerted operations and by profitably learning from the lessons learned and taking actions to improve our safety posture.

Senator Carper. All right. Thanks. Thanks so much.

Dr. Cochran, you have the last word, please.

Mr. Cochran. Mr. Chairman, on page five of my written statement, I gave you just over a dozen take-home lessons.

Senator Carper. Cheaper by the dozen?

Mr. Cochran. And I would hesitate to choose one or even

several as more important than others. But, let us take the spent fuel issue. We are 50 years into this industry and we do not have a geologic repository. We need to start getting that spent fuel in hardened, safe, dry cask stores and we ought to do it at the reactor sites as well as any interim site.

Then there is the issue of these BWRs. We have old reactor designs out there. One-third of the U.S. fleet. The issue that you should be thinking about is whether we have in place a process that ensures that those things get relicensed over and over again and we try to patch up the design deficiencies or are we going to get the clunkers off the street? We ought to have a process that retires these old, obsolete designs and replaces them with better technology.

Senator Carper. All right. Thanks. Thanks for those closing thoughts.

Before I thank you all and send you on your way, I just want to go back to something that Chairman Boxer said earlier in the hearing. She was asking our second panel, Chairman Jaczko and Administrator Jackson, she asked what is the worst that can happen? I think that is paraphrasing her, but she asked what is the worst that can happen?

And I said, a few minutes after that, I said maybe the worst thing that could happen was on the heels of this terrible tragedy where the folks of Miyagi, which as I may have said earlier and

as Secretary Schiliro knows, is our sister state to the State of Delaware, the Miyagi Prefecture, I have been there before and feel a real sense of empathy and compassion for the folks there.

But maybe the worst thing that could happen, at least for us here, would be for all this pain and suffering to have occurred in Japan and for us not to have learned anything from it. Or maybe for us to have learned from it but not to have done enough about it, not to have acted on the lessons that we have learned.

And there is a responsibility, I think, for all of us, not just on this Committee, not just in the Congress, not just in the industry, not just at the NRC, but there is a responsibility for all of us to work together to make sure that we fully implement the lessons that we learn and that we remain vigilant until we have done that.

And I will close with the words I use often in this room and that is, everything I do I know I could do better. I think that is true for all of us and it remains true of the nuclear industry. And we just need to remain eternally vigilant, eternally vigilant. And I am encouraged today that that is our intent and we need to make sure that that is not only our intent, but it is actually what occurs.

And with that having been said, I thank you again for joining us here today and for providing your input. And we look forward to working with you in this ongoing dialogue. Thank you

so much.

And with that, this hearing is adjourned.

[Whereupon, at 5:40 p.m. the committee was adjourned.]

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U. S. Senate

Tuesday, April 12, 2011

Committee on Environment
and Public Works

Washington, D.C.

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REVIEW OF THE NUCLEAR EMERGENCY IN JAPAN AND IMPLICATIONS FOR THE
UNITED STATES

Tuesday, April 12, 2011

United States Senate

Committee on Environment and Public Works

joint with

Subcommittee on Clean Air and Nuclear Safety

Washington, D.C.

The full committees met, pursuant to notice, at 2:45 p.m. in room 406, Dirksen Senate Office Building, the Honorable Thomas R. Carper [chairman of the subcommittee] presiding.

Present: Senators Carper, Barrasso, Boxer, Inhofe, Lautenberg, Udall, Merkley, Gillibrand, Alexander and Boozman.

STATEMENT OF THE HONORABLE BARBARA BOXER, A UNITED STATES SENATOR
FROM THE STATE OF CALIFORNIA

Senator Boxer. The Committee will come to order.

When Senator Carper comes, I am going to ask him to take the gavel since he is the Chair of the appropriate Subcommittee. But I want us to get started because we have a number of witnesses today.

And I want to say welcome to my distinguished Ranking Member.

Just over one month ago today, Japan was hit by a 9.0 magnitude earthquake and a tsunami that measured roughly 30 feet high. The devastation brought on by these catastrophic events is heart breaking and our deepest condolences go out to the victims and their families. And today we are hearing that this event now, in terms of radiation leaked, is equal to that of Chernobyl.

So, the news is not good coming out of Japan.

The tragedy serves as an important wake up call for us. We cannot ignore it. I think one thing that we would all agree to is we must plan for the unexpected and when we know of threats we must act quickly to address them. So, what can we learn from the tragic situation in Japan?

The U.S. has 104 commercial nuclear power reactors operating at 65 sites in 31 States. Twenty-three reactors are boiling water reactors with Mark I containment systems like the ones at

the Daiichi plant. It is true that the NRC has instituted an improvement program for this type of reactor. However, the lessons from the tragedy in Japan demonstrate the importance of reassessing the safety of these reactors.

The compromised reactors in Japan, like those in the U.S., were built on a set of assumptions regarding the potential magnitude of natural disasters such as earthquakes and tsunamis.

We know that some U.S. nuclear facilities are located in areas with high and moderate seismic activity. I can tell you, you are going to hear from our people, that we have a couple of those.

The situation in Japan has shown us we must take a hard look at the risk assumptions that were made when the reactors were designed. We know in the case of Japan, they designed it for a lower magnitude quake.

As a result of the catastrophic situation in Japan, Senator Tom Carper, who is going to chair this hearing as soon as I complete my remarks, Tom Carper and I have called on the NRC to conduct a comprehensive review of all nuclear facilities in the United States to assess their capacity to withstand and respond to natural or manmade disasters.

Senator Feinstein and I also requested special immediate attention be given to those U.S. nuclear reactors that are subjected to significant seismic activity or are located near coastlines such as San Onofre Nuclear Generating Station and

Diablo Canyon Nuclear Power Plant.

The NRC has identified both of these plants in California as being located in high seismicity zones. The Commissioners found another nine plants, which are located in North Carolina, Illinois, Georgia, South Carolina, Virginia and Tennessee, but they are in moderate seismicity zones.

Both reactors in California are located in high density areas. Four hundred twenty-four thousand people live within 50 miles of Diablo and 7.4 million people live within 50 miles of San Onofre. Let me repeat that. Four hundred twenty-four thousand people live within 50 miles of Diablo and 7.4 million live within 50 miles of San Onofre.

Other nuclear facilities in the United States are also located in highly-populated areas. If you look at the one in New York, it is about 17 million people live within that 50 mile radius.

Although evacuation plans are generally a State and local concern, there have been calls for more involvement from FEMA to assess those plans.

Today we will hear testimony from a number of our colleagues as well as the Chairman of the NRC, Greg Jaczko, who has been so helpful to us moving forward, and of course we will hear from the Administrator of the EPA, Lisa Jackson.

I am very interested to hear how the EPA is monitoring the

radiation in the U.S. and we have, Lisa and I, have talked over the weeks. I am just making sure we have accurate up-to-date information on the radioactivity.

We know that low levels of radiation have been detected in the U.S. from the compromised reactors in Japan. We can only imagine what the potential impacts on health and environment would be if, God forbid, we ever experienced the same type of accidents that occurred in Japan.

Small but elevated levels of radiation have been detected in milk and other food. We are going to talk about that. Experts say that we are okay right now. I want to probe that. I want to make sure of that. And whether it is the NRC's review process of our reactors or EPA's monitoring of our drinking water, complete transparency and prompt disclosure are vital to maintaining the Government's credibility, our credibility, frankly, at this Oversight Committee.

The Federal Government must heed the wake up call from the catastrophe in Japan. As Chairman of this Committee, working with everybody on both sides of the aisle, and particularly my Subcommittee Chair, I will continue to provide vigorous oversight to ensure that we learn the tragic lessons from the Fukushima reactors and take reasonable steps to make our Nation's nuclear facilities as safe as they can be made.

I know that Chairman Jaczko and Administrator Jackson share

my concern for the safety of the American people. Our common goal is to ensure we are prepared and obviously we take another hard look at what is going on in our Country at a time when we need every bit of energy we can get. There is no question about that. But, as we know from looking at what is going on over there, it is the unthinkable and we have to avoid it.

So, with that I am going to turn the gavel over to Senator Carper and ask Senator Inhofe to make his opening statement.

[The prepared statement of Senator Boxer follows:]

STATEMENT OF THE HONORABLE JAMES INHOFE, A UNITED STATES SENATOR
FROM THE STATE OF OKLAHOMA

Senator Inhofe. Thank you, Madam Chairman.

First of all, Senator Johanns was going to be here today. He is very interested in this hearing but was unable to do so. He asked if I would put into the record a statement from the Omaha Public Power District, which I put into the record right now, Mr. Chairman.

Senator Carper. [Presiding.] Without objection.

Senator Inhofe. And Chairman Jaczko, I appreciate your efforts to assure the Nation that we are, that the nuclear plants here in the United States are safe and I appreciate very much, Administrator Jackson, your repeated assurances that traces of radioactive materials that have drifted here from Japan will not impact public health.

I am sure we all agree that we need to study the accident at the Fukushima Nuclear Plant and learn from it. As Chairman Jaczko frequently reminds us, we cannot be complacent with regard to nuclear safety. Even so, we cannot allow ourselves to be paralyzed by fear. Any, harnessing any energy source carries some level of risk, and we need to be, to make sure that we can safely manage that risk.

Ensuring the safe use of nuclear energy is a very serious job. In 1974, Congress established an independent Commission and

charged five individuals with the responsibility to protect public health and safety. The public is best served by a Commission that functions collectively and collegially to pool their expertise. I am concerned that the public may currently be getting less than it deserves.

I was surprised to learn from my staff that Chairman Jaczko has invoked emergency authority and transferred Commission functions to himself in the wake of the earthquake in Japan, especially after speaking with me personally by phone and then appearing before this Committee. And let us get our dates straight because I want the Commissioner to address this.

First of all, it took place on the 11th, our phone call took place on the 14th, the hearing took place on the 16th, and never was this mentioned that this was going to be invoked. The law confers emergency authority on the Chairman in the wake of an emergency at a particular facility or materials regulated by the NRC. At present, I am not aware of an emergency condition that exists in the United States, in any United States facility.

And Chairman Jaczko, I want to work with you as the NRC tries to understand what happened in Japan, what the United States can learn from it, but our collaboration, and indeed, collaboration with all of us in Congress, can only proceed prudently if we have openness and fairness and transparency. That applies to your office.

And so, as we move forward I hope you would provide us with full and complete information about your activities and that you will work with your fellow Commissioners in the same spirit. And in that vein, I look forward to your testimony and to yours, Administrator Jackson, and to working with both of you on gaining full understanding of the impact of the Fukushima accident.

Before I yield to my colleague, I think it is significant that I get my request in here. I am anxious to see progress on the nominations of Commissioners Ostendorff and Svinicki which I hope President Obama sends us soon. Given the scope of the issues before the Commission, it is important we have our Commission full with all the members appointed and confirmed.

Thank you, Mr. Chairman.

[The prepared statement of Senator Inhofe follows:]

STATEMENT OF THE HONORABLE THOMAS R. CARPER, A UNITED STATES
SENATOR FROM THE STATE OF DELAWARE

Senator Carper. You bet. Thank you very much, Senator
Inhofe.

Let me begin by saying, first of all, Senator Inhofe and
Madam Chair, thanks very much for holding this hearing and for
giving me the opportunity to co-chair it with you.

Let me begin by saying that, again, I have said this before
and I will certainly say it again here today, our thoughts and
prayers go out to all of the citizens of Japan, especially those
families of the thousands of disaster victims and those that are
going through a very, very difficult time. As this tragedy
unfolds, I encourage the Nuclear Regulatory Commission and other
U.S. agencies to continue to coordinate with the Japanese
government to provide any assistance that they need to recover.

The events that struck Japan are reminders that we are all
vulnerable to unexpected disasters, whether it is an act of
nature or a terrorist attack. While we cannot predict when or
where the next major disaster will occur, we know that it will
occur and we also know that adequate protection, adequate
preparation in response planning are vital to minimize both the
injury and death when it does happen.

Today's hearing is one of many I hope that this Committee
will have to make sure that our Nation has prepared for the worst

in order to prevent any lives lost from nuclear power in this Country. In the United States we have, as you know, 104 nuclear power plants in some 31 States which generate approximately one-fifth of our Nation's total electric consumption. Nuclear power has helped to curb our reliance on dirty fossil fuels and reduce air pollution that damages our health and causes global warming.

Over the years, the NRC has strived to create a culture of safety in the nuclear energy industry and as long as I have been on this Subcommittee, we have worked very hard to reinforce those efforts. As a result, we have seen, not seen, any direct deaths from nuclear power by radiation exposure in this Country in over 50 years.

As part of its culture of safety, the NRC requires nuclear facilities to be designed to withstand natural disasters and terrorist attacks. After September 11th, the NRC took a closer look at the nuclear industry and put in place additional safety and security requirements.

Despite all of the protections that are in place, the crisis in Japan is a clear warning, a clear reminder, that we cannot become complacent when it comes to nuclear safety. I often say it, and my colleagues are tired of hearing me say it, if it is not perfect, make it better. And that certainly applies to nuclear plants and the way that they are operated with respect to their safety.

That is why Chairman Boxer and I asked the NRC for a conference review of our nuclear fleet. We want to make sure that every precaution is being taken to safeguard the American people from a similar nuclear accident. The NRC is just getting started on this review and I anxiously await their results.

Today I look forward to hearing from our witnesses an update on the Fukushima Daiichi Nuclear Plant and an update on our response to that crisis. I also look forward to hearing what we can learn from the ongoing crisis in order to prevent similar events from occurring right here.

I am particularly interested in hearing about the State of Emergency Planning Process from the Delaware Department of Safety and Homeland Security. Secretary Schiliro, we welcome you especially.

As Chairman of the Subcommittee on Nuclear Safety, I take seriously my responsibilities, our responsibilities, to make certain that we are taking appropriate measures to make the nuclear industry as safe as it can possibly be. And as I said before, while I am a proponent of clean energy, my top priority of our domestic power, our nuclear power industry, to me is public safety.

With that having been said, I look over to my right and I see Senator Lamar Alexander of Tennessee. We welcome you and await your comments.

[The prepared statement of Senator Carper follows:]

STATEMENT OF THE HONORABLE LAMAR ALEXANDER, A UNITED STATES
SENATOR FROM THE STATE OF TENNESSEE

Senator Alexander. Thanks, Mr. Chairman. I want to thank you and Senator Boxer for --

Senator Carper. Senator, Senator, I did not notice that Senator Barrasso had stepped in.

Senator Barrasso. [Remarks off microphone.]

Senator Carper. Are you sure? Okay, thank you very much.

Senator Alexander. Thanks, Senator Barrasso. Well, I want to thank everybody. I thank Senators Boxer and Carper for having the hearing.

I think nuclear power is, and I have said this before the Japan accident, something we ought to have more oversight of and that is because it is complex science, it is complex engineering, and it is vitally important to the future of our Country.

I remember back when I was Governor of Tennessee in the 1980s. We had a question that was presented to me when we were building, TVA was building, one of its nuclear power plants. And the issue was whether to distribute iodide tablets to people who were in the area of the new nuclear power plant.

And some people said, oh, do not do that because you will scare people to death. And the other argument, of course, was, well, if it would, if people understand what they are for, and they are only to be used in the event of an emergency, then it is

better to go ahead and talk about the process that we are using and let people know what we are dealing with. So, I made the decision then, let us go ahead and let people who live within the area of the nuclear power plant have access to iodide tablets in case there was a problem.

I feel the same way today about our nuclear power program in the United States and what happened in Japan. I cannot imagine a future for the United States that does not include nuclear power to create electricity. I mean, it is only 20 percent of our electricity, but it is 70 percent of our clean electricity. Senator Carper has been very consistent. He cares deeply about climate change. This is one way to deal with it. He and I have worked hard on clean air in the Smoky Mountains and the East Coast. This is one way to deal with it.

So, it is hard to imagine that. But on the other hand, I think those of us who, who find it especially important have maybe a special responsibility to see that there is clear oversight and public understanding of this complex system of science and engineering so that people are comfortable with whatever risks there are.

And as we look at our own history, actually, we have done a fair job of that. I mean, Three Mile Island spawned several improvements such as the Institute for Nuclear Power Operations, which has improved safety. It is important for Americans to know

that while Three Mile Island was a significant accident and a big problem, that no one was hurt at Three Mile Island. That is important to know.

September 11th. That had nothing to do with nuclear power but it caused nuclear power operators around the Country to take a look at what would happen if there were a terrorist attack. And you can go on YouTube and see what happens when an F-4 Phantom Jet runs into a concrete wall at 500 miles an hour. The jet vaporizes but the plant is still there.

Hurricane Katrina had nothing to do with nuclear power but it caused operators at the 104 nuclear plants around the Country and the Nuclear Regulatory Commission to think about well, what would happen if we had a horrific event like the size of Hurricane Katrina.

So, I think we still have a lot to learn from what happened in Japan. For example, spent fuel storage. There is a lot of talk about that. It helps us think about, is it possible, how long should it be in pools, how soon could it go to dry casks? It is important also to know, as the Chairman of the Nuclear Regulatory Commission says, as Dr. Chu has said, the President's Energy Chief and Nobel Prize Winning Physicist, that it is safe to store spent fuel on site for 100 years.

And it is important to know that all the fuel that we have produced that is used fuel from commercial reactors in the United

States would fit on one football field to a depth of about 20 feet. That is the mass that we are talking about.

It is important to ask, what about Yucca Mountain? We do need to eventually dispose of it. We have collected \$30 billion to pay for an eventual disposal. Why do we not do it?

We could ask about safety improvements. We should be thinking about new reactors. In Tennessee, TVA's got 3,200 people building a new reactor at Watts Bar. How can we know it is even safer than the other 104 reactors we have had at which, as Senator Carper said, we have not had one single fatality related to a reactor in the last, well, in the history of those facilities?

So, there are important questions to ask. There is a lot of information to learn from the Japan disaster. But it is important, at the same time, to recognize the safety record that we have for this form of energy production in the United States and keep it all in perspective.

And Senator Carper and Senator Boxer, I welcome these hearings. The more of them, the better. I believe that the more we understand and talk about this complex system of energy production, the safer it is likely to be and the more useful it will be to help produce clean air in our Country.

Thank you.

[The prepared statement of Senator Alexander follows:]

Senator Carper. Thank you, Senator Alexander. And if it is okay with Senator Barrasso, I am going to slip over to Senator Udall and then back to you. Okay? Senator Udall.

STATEMENT OF THE HONORABLE TOM UDALL, A UNITED STATES SENATOR
FROM THE STATE OF NEW MEXICO

Senator Udall. Thank you, Senator Carper, and thank you very much, you and Senator Boxer, for holding this hearing. And I appreciate very much and welcome my colleagues that I served with over in the House and look forward to hearing their testimony.

As Senator Carper and others have said, I think our thoughts and prayers really do go out to the Japanese people for this tragedy and what has happened to them. I know when I talked the other day with Japan's Ambassador to the United States he was very, very appreciative of the level of scientific support that we were giving Japan. I know many scientists have come from both California and New Mexico and from our national labs and so that is something that they appreciate and I think we are all very proud of.

This is a three-part disaster, an earthquake, a tsunami and a nuclear crisis and it is tragic. And Americans should focus on assisting our close friends, the Japanese, in recovering from it.

Nuclear energy has tremendous potential for good and also for harm. Nuclear accidents are rare, but their consequences can be severe. Nuclear energy safety must be the top priority for Government regulators and it should be the top priority for the industry as well.

The Japanese crisis underscores the need for information transparency. Nuclear energy will almost certainly continue to be part of America's energy mix. We have 100, 104 reactors today, and if it economic, more will be built. But it will be harder to build reactors if the public lives in fear of them.

Our role in Congress is to conduct the oversight to ensure that the NRC and the EPA do their job and ensure U.S. nuclear power plants are safe. Safety standards are of the utmost importance and we should be highly skeptical of proposals to "streamline" or cut corners on safety standards. It will be up to the banks and the investor community to decide whether to invest in nuclear power projects compared to the other investment options out there.

Nations like France, which rely heavily on nuclear power, also have taxpayers picking up most of the tab. And that is not realistic for the United States' current budget situation.

So, I very much appreciate this list of witnesses today and I am going to yield back my time so we can get quickly to the witnesses.

[The prepared statement of Senator Udall follows:]

Senator Carper. Thank you, Senator Udall.

Senator Barrasso is the Ranking Republican Member of the Subcommittee on Clean Air and Nuclear Safety. Senator Barrasso, thank you for your patience.

STATEMENT OF THE HONORABLE JOHN BARRASSO, A UNITED STATES SENATOR
FROM THE STATE OF WYOMING

Senator Barrasso. Thank you very much, Mr. Chairman.

I appreciate our guests for being here to testify and I want to associate myself with the opening remarks of Senator Udall regarding his concerns for the people of Japan. Absolutely. Incredible challenges, incredible loss and I think the hearts of all of us on this Committee, and in this Body, have great, great concerns for the people in Japan.

The tsunami and the earthquake occurred in Japan, not in the United States. And the emergency that preceded the tsunami and the earthquake occurred in Japan. The emergency response is occurring in Japan with the help of the United States.

Some people seem to want Americans to believe that the disaster occurred here and that is not the case. As Ranking Member Inhofe has pointed out, the current Chairman of the Nuclear Regulatory Commission is operating under his emergency powers since the disaster first occurred. The reasons why these emergency powers continue to be in effect, and the implications that has for future chairmen, does not have implications for the United States nuclear safety, does have implications for the United States nuclear safety response. This is one of the reasons that I believe the hearing today is so important.

Some want to use this crisis in Japan as a tool to wipe out

nuclear power in the United States. For example, there is an April 6th inside EPA story entitled "Activists Step Up Effort to Strengthen Oversight of Uranium Recovery.'" The article states that "environmentalists are stepping up their efforts to push EPA to strengthen its oversight of uranium mining and processing operations in the wake of the Japanese nuclear disaster, targeting the processed metal because its extraction marks the first step in the nuclear fuel cycle that its proponents tout as a low carbon alternative to fossil fuels."

Well, how uranium mining is tied to the Japanese nuclear emergency is beyond me. I would hope that the EPA Administrator, who is with us today, would ignore these types of attacks which would have occurred whether the Japanese disaster occurred or not.

Earlier today in this very Committee we heard testimony from those who want to stop hydraulic fracturing. This is the process whereby we can tap America's vast domestic natural gas reserves.

Apparently, these activists do not want natural gas either.

By attacking all of the affordable energy sources, including our nuclear and natural gas, activists are driving up the cost of energy. They are raising the costs of running a factory, or a mine, or a small business. They are raising the cost of heating and cooling homes across this Country. This will cost thousand of jobs during our economic downturn.

We cannot reach a clean energy future without natural gas and without nuclear power. We need all the power, not just some.

That means coal, natural gas, wind, solar, hydro, geothermal and nuclear power. And as Senator Carper and I talk about and discuss and agree, the cheapest energy is energy that is not used. So, we need to be more efficient in how we use our energy.

But we need the kind of energy mix that keeps factories running and homes heated. Countries like Germany, which are phasing out domestic nuclear power, are discovering this fact: The Washington Post ran an Associated Press story on April 6th entitled Utilities: Germany Now Importing Energy After Taking Nuclear Power Plants Off the Grid. The article goes on and states that Chancellor Angela Merkel's decision to take some atomic power plants offline in the wake of Japan's disaster means Germany is now importing power from its nuclear-reliant neighbors. It goes on to say Germany now imports about 50 gigawatts, gigawatt hours, or the capacity equivalent to 1.5 reactors, from France and the Czech Republic every day. This is from the German Association of Energy and Water Industries.

So, this same pattern that we are seeing in Germany will occur in the United States. American States that declare themselves nuclear free, whether they are California or elsewhere, whatever States declare themselves nuclear free and shut down their nuclear plants will have to have power shipped in

from neighboring States. It is an energy shell game and it will not hide America's growing need for affordable domestic energy to power our economy.

Let us be careful not to jump to conclusions and try to shut down another domestic energy source. Let us work together to make America's energy as clean as we can as fast we can without raising energy prices and costing American jobs.

Thank you, Mr. Chairman. I look forward to the testimony.

[The prepared statement of Senator Barrasso follows:]

Senator Carper. Thank you, Senator Barrasso.

Senator Lautenberg?

STATEMENT OF THE HONORABLE FRANK R. LAUTENBERG, A UNITED STATES
SENATOR FROM THE STATE OF NEW JERSEY

Senator Lautenberg. Thanks, Mr. Chairman.

As said, we all agree that our sympathies, our concern and our desire is to be of help to the people in Japan who are affected as a result of the earthquake, tsunami and nuclear emergency. But we want to learn from it and we want to make sure that we are doing what we can for the people in our Country.

Since the latest disaster began unfolding, Americans have had one question on their minds. Could it happen here? And I am not willing to wait to find out. We need to answer that question now.

Soon after the meltdown in Japan began, I asked the Nuclear Regulatory Commission to conduct a comprehensive review of New Jersey's four nuclear power reactors which provide our State with about half of its electricity. I also requested the chief executives of New Jersey's nuclear power companies to join me in my office where they agreed to a thorough safety review at each of the four reactors. The people of New Jersey need to know if our State's nuclear plants are safe and we are determined to make sure that they get the peace of mind that they deserve, but the reality of being protected.

But this is not the only issue in New Jersey. Nuclear energy provides 20 percent of America's electricity and so we

have to make nuclear safety a national priority. The United States has a good track record of keeping our plants safe. There have been few accidents and few fatalities. But we have got to remain vigilant if we want to preserve this record.

Now Japan, a world leader in technology in its plants, were built to resist earthquakes. But as we know, it was not enough.

So here in the United States we cannot take anything for granted.

To keep Americans safe also means making sure that we give citizens, our citizens, a clear guidance during emergencies. And I was troubled when American citizens in Japan were told to stay at least 50 miles away from the site of this meltdown. In our Country, the NRC Emergency Guidelines require people to stay only 10 miles away from plants during emergencies.

So, make no mistake, nuclear power generates emission-free energy and it should and will be part of our energy future. But we cannot ever trade people's safety for the sake of meeting our energy demands. We saw Chernobyl a quarter of a century ago, the effects of a single nuclear accident that will linger for generations.

So, I look forward to hearing from today's witnesses, and thank our colleagues from the House, about how we can learn from the past mistakes and make sure that nuclear power remains a safe, clean energy source.

And I want to respond to something that we heard, talked about this morning and that is, well, costs. Costs. Nuclear power does so much for us but has risks. When we think of the contribution that nuclear power brings to our energy needs, we know that we are going to keep on having nuclear power created. But burning fossil fuel has an extra cost. It has a lasting effect on our environment and on the health and wellbeing of our citizens.

So, when we look at the costs for energy, we have to look at the costs of unfit air for those who have asthma or otherwise, and pollution generally. So, we have to look at the whole picture and I assure you that we would like to do just that.

Thank you very much.

[The prepared statement of Senator Lautenberg follows:]

Senator Carper. Thank you, Senator Lautenberg.

Senator Merkley?

STATEMENT OF THE HONORABLE JEFF MERKLEY, A UNITED STATES SENATOR
FROM THE STATE OF OREGON

Senator Merkley. Thank you, Mr. Chair.

I express my deepest sympathies to the families in Japan, victims of the triple tragedy, the earthquake, the tsunami and certainly the nuclear disaster. And I thank all of the heroes in Japan who raced to the scene to provide assistance to victims of the earthquake and tsunami and those who are working around the clock to cool the nuclear reactors and contain the radiation that is being released.

It is very much our worst nightmare that a natural disaster of some kind should cause us some more tragedy in the United States and that is why it is certainly appropriate and important that we do everything possible to take and look at the lessons in Japan and apply them to our own system. Just as we applied a stress test to the banks in the financial crisis, we need to apply a stress test to our nuclear plants and understand what the weaknesses are.

When the disaster happened in Japan, and certainly a lot of the discussion was around the cooling pools for rods, I was taken back to when I was traveling through Hanford many years ago, about 14 years ago, and was looking at the cooling pool at Hanford, and it had that kind of eerie blue glow at the bottom of the pool. And I asked the question, if an earthquake occurs and

it splits this pool, what happens when the water rushes out? And basically the response was a blank look with that would be bad. And certainly we have to be prepared in far better ways than simply saying that something would be bad.

In the last two decades, we have built only three new nuclear reactors because the cost is so high by the time we account for human error, by the time we account for natural disaster, and by the time we account for terrorist attack and design plans accordingly. And we have to take a look at those things because the upside risk is so substantial. And so that is certainly a factor.

We have strategies that have been put forward by groups like New Scale, a group in Oregon, other research that has been done on pebble bed strategies that have failsafe mechanisms and/or passive protections that I think certainly should be, we should look into and understand that part of this conversation, whether fundamentally different designs would greatly mitigate the risks.

These disasters occur because we lose the heating transfer medium and plants overheat. But there are designs intended to make sure that there is no meltdown even when that happens, whether the medium be water or the medium be helium. And that needs to be part of the national discussion.

And so with that, thank you very much, Madam Chair, and I yield back the balance of my time.

[The prepared statement of Senator Merkley follows:]

Senator Carper. I believe the next person we recognize is
Senator Gillibrand.

Senator Gillibrand?

STATEMENT OF THE HONORABLE KIRSTEN E. GILLIBRAND, A UNITED STATES SENATOR FROM THE STATE OF NEW YORK.

Senator Gillibrand. Thank you so much, Mr. Chairman, for holding the hearing. Madam Chairwoman, I appreciate you holding this hearing as well. This is obviously an issue that we share a great passion for and in light of the disaster in Japan, I am really looking for answers. So, I just want to thank you both for drawing attention to such a serious issue.

I want to thank Chairman Jaczko for coming. Congresswoman Capps, thank you so much for spending time with us to answer our questions.

I may not have the opportunity to ask my questions, but I do want to highlight some of the areas of my concern and I will submit the questions directly for answers for the record, but I do hope you get to address this in part of this hearing.

One issue is the issue of licensing exemptions. Now, in the Indian Point Plant, which is the one that serves about 30 percent of New York's electricity right now, within a 50 mile radius it hits 16 million people. So, we have significant concern to focus on that, and all the plants in New York, to make sure they are safe.

Now, with Indian Point, there have been a number of waivers given. I would like an analysis and a review of in what instances are waivers given? Are you going to re-look at the

issue in light of the Japan disaster to see if those waivers were legitimate, if they should be reconsidered and perhaps withdrawn?

The issue of waivers is something I care a lot about.

The second issue is the issue of evacuations. In Japan, we have evacuated U.S. citizens within a 50 mile radius. The plan with regard to Indian Point is a 10 mile evacuation plan. I would like to know the reason why there are differences in evacuation plans.

To do a 10 mile evacuation for Indian Point takes nine hours. I understand that there are different types of redundancies at Indian Point, one is a going to a diesel system and another diesel thereafter, but, then it is a battery system that only lasts for three hours. How do you reconcile evacuations with what your redundancies are and how capable they are in such a situation?

I also care a lot about security issues. Now, obviously, we are soon on the 10-year anniversary of 9/11 and one of the 9/11 Commission recommendations was to secure all nuclear facilities.

I would like to have an opportunity to talk to you about those security measures and where they stand and what kind of investigations are you doing with regard to employees, with regard to background controls and other potentially vulnerable infrastructure issues.

And then the last issue is the spent fuel pool and dry cask

storage issue. Are these pools designed to be long-term storage?

What do you intend to do to move them from fuel pool to dry cask storage facilities as a general matter for safety?

So, obviously that is a long list of concerns and issues. If you do get to address them, I will be very grateful. If not, I will submit them all for the record, Madam Chairwoman.

Thank you very much, again, for your testimony.

[The prepared statement of Senator Gillibrand follows:]

Senator Carper. Thank you for your statement and introducing Congresswoman Capps and Congressman Bilbray. Let me just say to Congresswoman Capps, thank you so much for sharing with us a former member of your staff, Emily Spain. She is a gift to the people of Delaware. So, we are grateful for that.

And with that, we would like to recognize Congresswoman Lois Capps, 23rd District of California, and followed by Congressman Brian Bilbray, the 50th District of California. How many do you all have, 53? Fifty-three. We have one.

[Laughter.]

Senator Carper. But as I like to say in Delaware, if you can only send one, send the best.

We are glad you are here, we recognize you and please proceed.

STATEMENT OF THE HONORABLE LOIS CAPPS, A REPRESENTATIVE IN
CONGRESS FROM THE STATE OF CALIFORNIA

Ms. Capps. Thank you. Chairwoman Boxer, Ranking Member Inhofe, Chairman Carper and Members of the Committee, thank you for holding this hearing and for the opportunity to testify.

I am here today because my Congressional District includes Diablo Canyon Nuclear Power Plant, which has become a central focus in the weeks following the Japanese earthquake, tsunami and subsequent nuclear crisis.

Last month, I called upon the NRC to stay the license renewal process for Diablo Canyon until further studies demonstrate that the plant's design and operations can withstand an earthquake and other potential threats. Yesterday, Pacific Gas & Electric, which I will refer to as PG&E, asked the NRC to delay its license renewal application while it completes their studies.

Here today, in light of PG&E's action, I am renewing my request to the NRC to halt the re-licensing process. I do not make this request lightly. Last month, I again toured the Diablo Canyon Nuclear Power Plant. Following that visit, I was convinced of two things. First, that the employees are committed to getting it right. And second, that we are not there yet.

I am not alone in that assessment. I am grateful to be joined today by my constituent, California State Senator Sam

Blakeslee, who also represents Diablo Canyon and its surrounding communities. State Senator Blakeslee will testify today both in his role as State elected official and also as a scientist with a Ph.D. in seismic studies. I am confident that our shared assessment of the situation will offer the Committee valuable, on the ground insight into the current and future landscape of nuclear power in California.

The bottom line is this. We do not have the answers we need to confidently move forward in extending the licensing agreement of Diablo Canyon. We should not move forward until we have those answers. And, because the reactors do not need to be relicensed for more than a dozen years, we have plenty of time to find those answers.

Mr. Chairman, what happened so tragically in Japan offers us an opportunity to question and question again whether we are ready, whether we can handle the unthinkable. Now, the NRC is already, had already determined that it is non-credible that there could be multiple catastrophes such as an earthquake and a meltdown at Diablo Canyon Plant. The NRC has maintained, "The chance of such a bizarre concatenation of events occurring is extremely small. Not only is this conclusion well supported by the record evidence, it accords must eminently with common sense notions of statistical probability."

Yet, the unthinkable did happen in Japan. An earthquake, a

tsunami, and a nuclear accident, all occurring in sequence. Clearly, a bizarre concatenation of events is not merely hypothetical.

Mr. Chairman, let us be clear. We know seismic uncertainty exists at the Diablo Canyon site. In the early 1970s, while the plant was originally under construction, scientists discovered the Hosgri Offshore Fault less than three miles away, forcing a major re-design and pushing the project billions of dollars over budget.

In 2008, scientists discovered yet another fault, the Shoreline Fault, which lies offshore less than one mile from the plant. The stakes were raised just last month when the NRC confirmed that Diablo Canyon was one of two nuclear power plants in the highest risk area for seismic activity in the entire Country.

Clearly, we need answers to major questions. Can this plant, including the spent fuel pool, withstand an earthquake and a nuclear accident at the same time? How long would the plant be self-sustaining in the event of such damage? And, is Diablo Canyon's evacuation plan during an incident workable?

Many of us on the central coast of California remain concerned that the NRC has not taken action to answer these questions or address these warnings, so much so that the California Energy Commission has recommended, and our State

Public Utilities Commission has directed, that independent, peer reviewed, advanced seismic studies be performed prior to applying for re-licensing. I agree with this assessment. That is why it is so important to halt the re-licensing process. We need to take some time to get all the answers.

It is important to note that I am not calling for Diablo Canyon to be shut down. I am also not calling for PG&E to be denied an operating license. What I am doing today is asking that the re-licensing process be halted until updated, state-of-the-art seismic studies and 3D seismic mapping are completed, that they be considered as part of the re-licensing process, and that these studies be done by third party, independent scientists.

Failure to do so is unwise and irresponsible. It will feed public uncertainty about the oversight and safety of nuclear energy and it could cost taxpayers billions of dollars to once again belatedly address issues that should have been dealt with beforehand. That is why I am hopeful the NRC will work with all stakeholders to get answers to the seismic questions which, at this point, remain unstudied and unresolved prior to the continuation of the re-licensing process.

Once again, I thank you for the opportunity to testify today.

[The prepared statement of Representative Capps follows:]

Senator Carper. Congresswoman Capps, thank you so much for coming. I very much appreciate it.

Congressman Bilbray, welcome.

STATEMENT OF THE HONORABLE BRIAN P. BILBRAY, A REPRESENTATIVE IN
CONGRESS FROM THE STATE OF CALIFORNIA

Mr. Bilbray. Thank you, Mr. Chairman. Madam Chair, Members of the Committee, it is an honor to be here.

Let me say, first of all, as a lifelong resident of San Diego County, I have the same concerns that everyone who lives downwind of a nuclear power plant would have after seeing what happened in Japan. Every one of my children and grandchildren, except for those that have been exiled to Helena, Montana, live within not only the downwind area from San Onofre but also within the tsunami zone of San Diego County.

And I speak not just as a father and a grandfather, but as somebody who had the privilege of serving two terms as the Chairman of the Disaster Council for the 3 million people of San Diego County that designed the evacuation and response to not just the nuclear issue but also the tsunami issue, and also had the privilege of serving on the California Coastal Commission, an agency that has oversight and review of the nuclear power plants in California. This issue really did bring back memories of all the hearings and processes that we have had.

Frankly, there are still the facts to be taken, still research that needs to be done. But I think there are some indications that are very, very enlightening. One was the fact that even though the Japanese was not designed to those

engineered at California plants, it did survive an earthquake that is well over what our plants ever perceived to be.

In fact, the 9.0 that we are talking about that has struck this plant, we are looking at 7.0 maximum, or 7.2 maximum in California. That frequency of 7.2, as pointed out by Secretary Chu, occurs every 7,000 to 10,000 years. So, it gives you an idea of the engineering.

The Japanese were hit with a ground motion of .52. Our California San Onofre is designed not for a .52 but for a .67. You have to remember that this is also in a region that geologists say will not get anything over a 7.2, and that 7.2 will be between 7,000 and 10,000 years. It gives us some perspective of the challenges we have to have.

The biggest concern was the fact that it was not the earthquake, as we know with the information now, but it was the tsunami. And as a surfer, let me tell you something. This is not one thing that is joking in any matter, but it is one that is very, very disconcerting.

The fact is that Japan had a 10 foot surge wall. San Onofre is sitting on a 20 foot elevation with a 30 foot plus surge wall.

Diablo is around 85. Obviously, in an area where all the experts say that the tidal waves would never reach that level, but if they did, the difference between the California facilities and the Japanese facilities is that the California facilities

have gravity-feed cooling built into their system and they have their pump systems totally protected from inundation, which the Japanese did not have. They did not even have their fuel tanks protected, which was a major flaw. And I think that is where good assessment can really be made on this issue.

Now remember as we talk about nuclear, ladies and gentlemen, as a former member, six years on the Air Resources Board, we are talking about 20 percent of our energy that avoids emissions equal to 96 percent of all the automobiles that are driving on American soil. I think that we have got to recognize that the challenges that we have to go forward, especially those of us who are addressing environmental issues, need to remember that even the U.N. Council on Climate Change has said that a robust commitment to nuclear is, has to be, part of any plan looking to address climate change.

But I think that one of the things we need to get out of this, Madam Chair and Mr. Chairman, is that where are we today, have we over engineered and was that over engineering prudent. I think the one thing that it looks like in California is we have and that should be reassuring.

My biggest concern is that we do not talk about the fact that, as Madam Chair knows, we are not just talking San Onofre in San Diego, we are talking many nuclear reactors that are within not just miles but within yards of residences in San Diego that

the United States Government owns. Those are issues that we sort of ignore and I think this one we address.

I guess the biggest issue, and I would like to agree with you strongly on, Senator, is not just how do we address the technology that is 40 years old that we have on the ground operating today, but how do we move forward with technology that has been upgraded that not only avoids the threats of meltdowns, totally engineers out that problem, but also creates the opportunity to address that waste problem, that 100 yard by 20 foot, that now nuclear waste not only could be a fuel that could be burned in the new technology that is now safe and designed not to do this, but also a technology that could use up our weapons grade material as we talk about going to zero options.

So, I appreciate the chance to be able to address you today, Mr. Chairman.

[The prepared statement of Representative Bilbray follows:]

Senator Carper. Congressman Bilbray, Congresswoman Capps, great of you to come. Thank you so much for your contributions. We look forward to seeing you soon. Thank you.

And with that we are going to invite our second panel, Chairman Jaczko, Administrator Jackson, to join us at the table please. Neither of our guests on the second panel are strangers to this Committee. It is great to see both of you. We appreciate your stewardship and the hard work that you are doing in response to the disaster, the disasters, in Japan.

And first we will hear from Lisa Jackson, who is the Administrator of the Environmental Protection Agency, and following her testimony, we will hear from Greg Jaczko, who is the Chairman of the Nuclear Regulatory Commission.

I will ask you to use about five minutes for your statement, and then we will have some questions.

Thank you so much for coming. Your entire statement will be made part of the record.

Please proceed.

STATEMENT OF LISA JACKSON, ADMINISTRATOR, UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY

Ms. Jackson. Thank you, Chairman Carper. And to you, Chairman Carper, Chairwoman Boxer, our Ranking Member Inhofe, and all the members of this Committee, thank you for inviting me to testify on EPA's role in responding to the tragedy in Japan.

I do want to begin by expressing my sympathy for those who have lost loved ones from the earthquake and tsunami, and my support to those who are working tirelessly to control the radiation at the Fukushima Daiichi Plant in Japan. Their efforts are selfless and truly heroic.

As Japan works to address the challenges at their nuclear reactors, many Americans are concerned about what the radiological releases to the atmosphere may mean to them and what their Government is doing to make sure that they are safe here in the United States.

Let me begin by speaking directly to those who are concerned about radiation detection that monitoring and sampling from EPA and other Federal agencies are picking up throughout the United States. And let me be clear. EPA has not seen, and does not expect to see, radiation in our air or water reaching harmful levels in the United States.

All of the data which we have seen, which we continue to make public and available on our website, indicates that while

radiation levels are slightly elevated in some places, they are significantly below problematic levels.

To put this in perspective, days after the tsunami struck, we detected radioactive isotopes consistent with a nuclear incident at several air monitors along the West Coast. These readings were so minuscule that they were 100,000 times lower than the daily exposure we all receive.

Keep in mind that all of us are exposed to radiation every day, both from natural sources such as minerals in the ground and manmade sources such as medical x-rays. That said, we will continue to monitor the environment for radiation. We will continue to make the data public. And we will continue to explain what the data mean to the people and families we serve.

As I have said to this Committee many times before, transparency and communication with the public is a priority for our agency and will guide all of our actions.

EPA's main role in this response is simple but very important. Using a variety of techniques, we monitor and track radiation and radionuclide releases into the environment in the United States. These radioactive releases range from ones that dissipate from the environment within days, such as iodine, to those that have half-lives of thousands of years, such as plutonium.

Let me speak for just a moment about those monitoring

efforts. EPA's nationwide radiation monitoring network, known as RadNet, continuously monitors the Nation's air, drinking water, rainwater and milk. The data provide the information scientists need to estimate long-term trends in environmental radiation levels and allows them to detect minuscule increases.

RadNet's air monitoring system is made up of more than 100 fixed stations that create a network of detection across the United States. Over the last five years, EPA has been enhancing the capabilities of the RadNet system by replacing existing monitoring equipment with new air monitors that send real time data to our laboratory.

In response to the Japanese nuclear incident, we added to this system by quickly deploying mobile air monitors to far westerly locations, including Alaska and islands in the Pacific, to detect radiation as it slowly moved from Japan.

In addition, several times a week, we collect filters from these air monitors and perform a detailed analysis that lets us find even minuscule amounts of radioactive material in the air.

EPA also samples rainwater for radioactive isotopes. Monitoring stations across the Country submit precipitation samples to EPA laboratories as rainfall, snow or sleet occur. Under usual circumstances, these samples are analyzed by EPA scientists quarterly. But during this response, we are analyzing precipitation samples as they come in to the laboratory and

quickly post the results on our public website.

Also, EPA routinely samples milk and drinking water from sites across the Nation. Like rainwater, these samples are normally collected and analyzed on a quarterly basis but, in response to the nuclear release in Japan, we have accelerated the normal sampling schedule.

As I mentioned, the levels detected have been far below levels of public health concern. The information is all available on EPA's website, www.epa.gov/Japan2011. This website was quickly expanded after the tsunami so that the general public, especially those without a Ph.D. in nuclear physics, could easily understand what the monitors in their communities were indicating. EPA's website has been featured extensively on CNN, Fox, and Facebook and it helps answer many of the questions that some of your constituents may be asking.

Madam Chairman, thank you for your leadership on these issues, both of our Chairmen, excuse me. I want to assure you that EPA will continue our coordination with our Federal partners and we will continue our outreach to the public and the elected officials to provide information on our monitoring results.

Thank you so much.

[The prepared statement of Ms Jackson follows:]

Senator Carper. Thank you much, very much, Administrator Jackson.

Before you testify, Mr. Chairman, I just want to say to you, to the other Commissioners, to the folks on your staff at the Nuclear Regulatory Commission, how much we appreciate the way you have stepped up and to respond to try to be as helpful as we can to the people of Miyagi and to say we appreciate your continued vigilance and we just encourage you not to let up.

Thank you. Please proceed.

STATEMENT OF GREGORY P. JACZKO, CHAIRMAN, NUCLEAR REGULATORY
COMMISSION

Mr. Jaczko. Well, thank you, Mr. Chairman, and Madam Chairman and Ranking Member Barrasso. I also appreciate the opportunity to appear before you to address the response of the Nuclear Regulatory Commission to the recent tragic events in Japan.

People across the Country and around the world who have been touched by the magnitude and scale of this disaster are closely following the events in Japan and the repercussions in this Country and in many other countries around the world.

As many have indicated, our hearts go out to all those who have been dealing with the aftermath of these natural disasters.

About two weeks ago, I made a brief visit to Japan to convey a message of support and cooperation to our Japanese counterparts there and to assess the ongoing situation. As part of that visit, I met with senior Japanese government and TEPCO officials and consulted with the NRC team of experts who are in Japan as part of our efforts to support a U.S. Government assistance to Japan.

Just to briefly recap, on Friday, March 11, when the earthquake and tsunami struck, the NRC's headquarters Operations Center began to operate on a 24 hour basis consistent with the emergency authorities and responsibilities of the agency under

the Reorganization Act of 1980.

For the past three weeks, the Operations Center has been monitoring and analyzing events in Japan. In spite of the evolving situation, the long hours and the intensity of the efforts, the NRC staff has approached their responsibilities with dedication, determination and professionalism. And they still remain focused on our central safety and security mission for reactors and facilities here in the United States. I am, needless to say, incredibly proud of their work.

As regards the current situation of the reactors in Japan, from the information we have, we believe the situation currently is static and we do not see significant changes on a day-to-day basis with the reactors. It is not yet, however, what we believe to be stable, namely that, given additional events or other circumstances, that there would not be the potential for significant additional problems at the reactors.

So, the efforts continue to be on these efforts, I think, to transition from static to stable to ensure long-term, ultimately, the ability to cool the reactors and to provide cooling for the spent fuel pools.

Looking forward to the work that we have as an agency dealing with facilities in this Country, on Monday, March 21st, only 10 days after the events in Japan, the Commission acted quickly to move forward and establish a senior level task force

to conduct a comprehensive review of our processes and regulations to determine whether the agency should make improvements to our regulatory system. This is a responsibility that we have to the American people, to undertake a systematic and methodical review of the safety of our own domestic nuclear facilities in light of the Japan situation.

This review will be conducted in the short term and a longer term time frame. The short-term review, which will take approximately 90 days, has already begun and will identify potential or preliminary near-term operational or regulatory issues. A longer term review will begin as soon as we have sufficient information from Japan. But we expect that review to be completed within six months from the beginning of the evaluation and, in fact, the Commission tasked our staff to do it in that time.

As we move forward with these efforts, we also recognize the importance of sharing our lessons learned with other regulatory counterparts in other countries throughout the world. I recently returned from the Fifth Review Meeting of the Convention on Nuclear Safety which provided an important opportunity for participating nations to address the events in Japan and begin to formulate plans for short- and long-term cooperation.

In conclusion, I want to reiterate that we continue to take our domestic responsibilities for licensing and oversight of the

U.S. licensees as our top priority and that, I want to stress, we believe that plants in the United States continue to operate safely. Based on the 90 day review and the longer term review that we have undertaken, we will take all appropriate actions necessary to ensure the continuing safety of the American people.

On behalf of the Commission, I thank you for the opportunity to appear before you today and would be happy to answer any questions that you may have.

Thank you.

[The prepared statement of Mr. Jaczko follows:]

Senator Carper. Well, thanks to both of you for your testimonies.

Madam Chairman, Chairman Boxer?

Senator Boxer. Thank you so much, Mr. Chairman.

First, I want to thank both of you because you have been available to those of us on both sides of the aisle here to answer our questions. I appreciate that so much.

I want to put in the record something I got from USGS that shows how many earthquakes, because Senator Barrasso said look, this earthquake happened over in Japan, it did not happen here. Obviously. But, how many earthquakes, I would say to my friend, have we had in America that they have managed to document? And it is 157 earthquakes all over this great Nation and in every part of this Country. So, I want to put that into the record. These are over 6.0.

Senator Carper. Without objection.

[The information follows:]

Senator Boxer. One hundred fifty-seven earthquakes over 6.0.

I also ask for the documentation on tsunami. And what I do have is the areas where the highest risks are. That would be Alaska, Hawaii, very high, West Coast, high, Puerto Rico, Virgin Islands, high, the others low to very low. So, I am going to put those, both, in the record.

Senator Carper. Without objection.

[The information follows:]

Senator Boxer. Thank you.

Mr. Jaczko, I know you have been very involved, Mr. Chairman, in helping the people in Japan. We, every one of us on both sides, are grateful because I think America is at its best when we are there for our friends and we certainly are.

Well, right now you described, you said that it is a static situation, not a stable situation. So let me ask you, what is the best thing that could happen right now with those reactors, and what is the worst thing that could happen?

Mr. Jaczko. Well, I am reluctant to speculate on what the worst thing is that could happen because, again, there is always things that one could postulate that are possible although very unlikely.

Senator Boxer. Well, I think it is important. What is the worst thing could happen? I think we all believe you have to look at this. What is the best thing that could happen, what is the worst? Now, we all hope for the best, but what is the worst thing that could happen?

Mr. Jaczko. Well, right now what our focus is on, it focuses on ensuring that we can continue to provide, or the Japanese can continue to provide, cooling to the reactor and water into the spent fuel pools. And that is a process that is working right now.

As I said, it is not necessarily the most stable

configuration. So, for instance, there was an aftershock, I believe it was last night, and as a result they had to remove some individuals from the site. They lost some of the off site power. So, some of the pumps in the systems that were working were not able to continue to work for about 50 minutes.

So what we want to see is to move into a situation in which that kind of situation would be dealt with in a more predictable manner and with less possibility of the loss of the cooling systems. So, every day that the reactors continue to have cooling and continue to receive water and other types of cooling, the likelihood of a more significant release continues to go down.

Senator Boxer. So the cooling, obviously here, is the key and there is nothing else that could happen in your mind, that could go wrong?

Mr. Jaczko. That really is --

Senator Boxer. If there is cooling going on.

Mr. Jaczko. That is correct. The primary focus is to maintain cooling. If you lose the ability to cool the reactor cores, then you have the possibility of a further degradation in the fuel which could lead to possibly a greater release than what is going on now.

Senator Boxer. And are the leaks still going on into the ocean?

Mr. Jaczko. We believe right now that some of them have been stopped. But there is the possibility that there are other leaks and other material being released.

Senator Boxer. How radioactive is that water?

Mr. Jaczko. Right now, the Japanese are surveying the water that is going out and being, into the ocean, and they are doing surveys. I have not seen the latest figures about that level of contamination.

Senator Boxer. Would you let me know, as soon as you know, what contamination is flowing into that ocean?

Mr. Jaczko. Absolutely. We can provide you with detailed information about that.

Senator Boxer. Okay. Administrator Jackson, your Scientific Advisory Board found that EPA's fixed radiation monitors had a potential sampling bias against the collection of larger particles which could include hot particles. Have you taken any actions to address the SAB's concerns?

Ms. Jackson. Yes, Chairman, we have. That report was done several years ago and since that report was done, EPA responded to the request from the SAB to do an additional study on the efficacy of our monitoring equipment in capturing all sizes of particles. The really problematic ones are the smaller ones and what we found is that through that study our fixed monitors can collect the very smallest particles reasonably effectively.

Now, I do want to say, having newer monitors, there are newer monitors out there that get even greater capture, but if you look at the purpose of the system, which is to give broad levels of background for events that are known, the current system is certainly effective.

Senator Boxer. Well, my time has expired. I just want to say to Chairman Jaczko, I have these two nuclear plants that were built a very long time ago and now apparently PG&E and Southern California Edison have withdrawn their re-licensing processing now.

I guess what I want to say, and you do not need to answer this, but I am going to be talking to you about this, for me. And again, nobody has to respond to this. It is just, I am thinking common sense. You have now 7.4 million people that live within a 50 mile radius of one of my plants, and you have got about a half a million that live within a 50 mile radius of the other. Both of these sit on or near earthquake faults.

So, all I am going to say to you and the other Commissioners when we do get a chance to speak with the others, and I think we will, is that to my mind, I think the Commission, when you are re-licensing, have to look at this as if it is a new opportunity.

Would you license a plant that came to you now with that circumstance, right by or near earthquake faults, studies that say there will be more frequent earthquakes, both involved near

tsunamis, or the one is more vulnerable to a potential tsunami?

And I just hope that you, and again, I do not, I am not asking you to answer this because you have got to think a long, hard time about this. But to me, as someone whose highest responsibility is the health and safety of all of these millions of people, if you would say no to a new operator, I hope you will think about how it makes any sense to just keep on going unless there is major reinforcements and hardening of some of these buildings and the rest.

So, I just leave you with that thought. Those are my concerns.

Senator Carper. Thank you, Madam Chair.

Senator Barrasso?

Senator Barrasso. Thank you very much Mr. Chairman.

I appreciate both of you being here today and Chairman Jaczko, I appreciate the time you have been available to me by phone, visiting in the office and addressing some of these various concerns that are critical and questions that need to be answered. So, I appreciate that.

I noted that last week the California Coastal Commission concluded that "a nuclear emergency such as is occurring in Japan is extremely unlikely at the State's two operating nuclear power plants.'" Would you agree with that California Coastal Commission's conclusion?

Mr. Jaczko. We think it is very unlikely to see a large earthquake and a tsunami.

Senator Barrasso. And they went on to say that the combination of a strong ground motion and massive tsunami that occurred in Japan cannot be generated by the kind of faults that exist close to the, in the vicinity of, the two plants, nuclear plants in California. Do you agree with their assessment there?

Mr. Jaczko. It is my understanding that the type of fault in Japan was a different type of fault that does not exist off the coast of California.

Senator Barrasso. Okay. Thank you.

Administrator Jackson, I mentioned in my opening statement that an April 6th Inside EPA story was entitled Activists Step Up Efforts to Strengthen Oversight on Uranium Recovery and I mentioned how those activist groups are using the nuclear emergency in Japan as a reason to place additional red tape on approving uranium mines domestically here in the United State.

Do you see a connection between the Japanese nuclear emergency and the uranium mining in the United States?

Ms. Jackson. No direct kind of connection, Senator.

Mr. Barrasso. Thank you.

Mr. Chairman, when we last had an opportunity to visit in my office, I discussed my concerns about the delay in approving permits for uranium mines in Wyoming. You had mentioned that the

delay was because you were still working things out with the EPA and you thought that we had finally achieved the resolution that was necessary. You thought you now had a template to move forward with approving additional uranium mines.

Do you believe you have worked out any of those issues now with the EPA in terms of uranium mining permitting so that now we can proceed with a faster permitting process?

Mr. Jaczko. Well, I believe we have worked out, come to a good understanding of, how we deal with our environmental impact statements. We are, however, continuing to work through issues that are our responsibilities under, to consult with tribal governments as part of other requirements, and that is the last activity that we are working on as we finalize our efforts on these uranium recovery applications. And that is not necessarily an issue involving the EPA.

Senator Barrasso. So then, Administrator Jackson, you are comfortable with that statement? Do you commit to work with any issues that we need to resolve between the NRC and EPA in a timely manner?

Ms. Jackson. I remain committed to working to resolve any issues we might have with respect to Wyoming. I do not believe the article in question actually referenced any sites in Wyoming but --

Senator Barrasso. Just the overall approval. Thank you.

I wanted to get back, Mr. Chairman, with the NRC's response in Japan and I know you have about 250 NRC staff working on a rotating basis, full functioning, and working hard on this.

Given the commitment of the NRC's resources to Japan, if we had any sort of an emergency in the United States, would you be able to redeploy in a way that we would not put ourselves at a disadvantage?

Mr. Jaczko. Absolutely. And as this event has gone forward, we have looked at our staffing levels and actually we have transitioned our approach now to the staff in our Operations Center to have a smaller team there who can respond quickly but then would reach back to our larger agency to get information requests as they need. So, it is, it allows us to respond in the same timely way, but to do it in a way that allows us to continue with our other important responsibilities.

Senator Barrasso. And finally, I think Senator Inhofe raised the issue about your invoking of emergency powers as a result of this. Could you describe to me how that, how you interacted with your fellow Commissioners during this nuclear incident? And have you relied on them for some of their expertise in making decisions as well?

Mr. Jaczko. Sir, there is not so much, I think, invoking of, through the emergency authorities, that is an authority that the Chairman has. But most of the activities that I have engaged

in as part of this response have been in my normal supervisory authorities over the staff at the agency and my communication responsibilities.

I would note, and we could provide this information for the record, but immediately after we entered our monitoring mode on March 11th, an email was sent out indicating that we had done that. Within the first 24 hours, we had had four briefings of the assistants to each of the Commissioners. Over the last several weeks, I have done at least 26 briefings to my colleagues on the Commission, including one public Commission meeting that was held about a week after the event started.

There have been about, overall, 60 briefings to staff of the Commission assistants and about 80 products have been provided to the Commission indicating the status of our response efforts and the activities that are ongoing.

So, I think there has been very good communication with the Commission about what we are doing and how we are dealing with the response.

Senator Barrasso. Thank you, Mr. Chairman, and thank you, Mr. Chairman.

Senator Boxer. Mr. Chairman, as a point of personal privilege, since the Senator mentioned the plants in my State, I appreciate his concern, let me put into the record two letters by the California Coastal Commission saying that before there is a

re-licensing they want new earthquake studies. That is number one.

Number two, what my friend said about the fact that it would be unlikely we would have such an accident in California, absolutely very unlikely. It is unlikely. That is exactly what they said about Japan. To the word. So, we have got to move beyond talk and get to the serious question of what do we do to everything in our power to make it safe.

Senator Carper. Is there objection to the request? Hearing none, so ordered.

Alright. I would ask a question, my first question, of Chairman Jaczko if I could.

You have, I think, heard me say before that I like to quote Albert Einstein. Albert Einstein once said, in adversity lies opportunity. And when Chairman Boxer asked the question, what is the worst that can happen, following up on this tragedy, one of the worst things in my mind that could happen is that we would not learn anything from it. That is one of the worst things that I think could happen.

We have had not a whole lot of time, but some time has passed since this sad chapter began unfolding. Talk to us about some of the lessons that we have learned in the past weeks and maybe that would suggest that what we are doing is appropriate, good, smart, safe, and maybe some things that we have learned

that would suggest that we could do better.

Mr. Jaczko. Well, I think one of the issues that we have really come to recognize is that the station blackout event is a very serious event. I think the good aspect about it is that we have always known that that is a very serious type of event. It is a situation in which you lose all of the ability to have electrical power to the site.

Fundamentally, right now, we think that is really the primary cause of the problem. What we are really working to establish is why exactly they got into this situation where the station blacked out and what were really the lead factors affecting that.

I think we have seen the importance of emergency planning and having the ability to respond and provide emergency guidance to the population around a nuclear power plant and we have seen that that carries on its intended function, which is it moves people out of an area in which they can be exposed to harmful levels of radiation.

So, if we just look at the kinds of things that we have right now, those are, I think, some of the big lessons that we have learned.

We have this 90 day task force that is going to be looking at some very specific things in the next two months, two and a half months, and I do not want to get too far in front of the

work that they are doing because I think we have put together some really talented people at the agency who are going to do a good, thorough look at this, and I do not want them to start giving the answers that they hear me say at a hearing.

So, I think at this point, I think that if there is any one other lesson I could say that we have learned is that after Three Mile Island we learned that it was very important to go about this kind of review in a systematic and methodical way with the appropriate sense of urgency and the need to move expeditiously.

And I think that is what we are doing, and that will be the continued focus that I have with the agency because we want to make sure that we put in place the kind of changes that make safety better, and not the kind of changes that in the end wind up undermining safety. So, that is why it is so important that we do it systematically and methodically.

Senator Carper. Okay. Thank you.

I think it was Senator Alexander who said earlier, mentioned that if you took all of the spent fuel in this Country and you stacked it up on a football field it would be about 20 or 25 feet high. To some that might sound like a lot, to others not so much.

We have a Blue Ribbon Commission that has been working at the direction of the President to consider what we should be doing with that spent fuel. Give us some idea when we expect to

hear back from that Commission? I think what they find or recommend to us might actually tie in closely with what they are facing in Japan.

Mr. Jaczko. Well, I think that we are anticipating, I think an interim report from the commission sometime this summer and then with a final report sometime later, by the end of the year.

When we look at these issues of spent fuel, this is something, again, the agency, the Commission, has put a strong focus on, on making sure that spent fuel can be stored safely and securely.

The structures, whether in pools or whether in dry cask storage, are very robust structures that are designed to deal with a large earthquake, that are designed to deal with natural disasters and significant security-related events. So, we have kind of a multi-tiered system of protection that exists at all of our plants and that includes these unlikely events like these natural disasters and then a layer of protection on that to look at, if that kind of unlikely event happens and all the safety systems do not function well, we have additional procedures in place to address that kind of situation and ultimately equipment that is put in the plants to kind of do that last line of defense in terms of providing cooling to the pools or, ultimately, to the reactor core.

Senator Carper. All right. Thanks.

We have 104 nuclear power plants. I said earlier that I

thought the first one was built about 50 years ago. I think it was built 42 years ago, not 50 years ago. But there are a number of plants that are up for re-licensure and some have already been relicensed. We have a number of applications before the Nuclear Regulatory Commission to build new plants with new technology, new design.

How do the events from Japan, the tragic events from Japan, how do they figure into the re-licensing process for the, oh, I do not know, the dozen or so that are before the Commission today, or will soon be, for re-licensure? And how do the lessons learned figure into the approval process, the review process, for the new design?

Mr. Jaczko. Fundamentally, we think about these issues not necessarily for a plant that is 41 years old or 42 years old or 1 year old or 10 years old. We think about this in terms of the plants that are there now and the safety of the existing fleet of reactors.

So, the reviews that we are doing, the first review is really to identify any issues that we would need to address immediately. So, we would not wait for re-licensing or any other type of activity related to license extension to make changes to the plants. So, fundamentally, the kinds of changes we are looking at or possibly would need to make would be applicable to all of the plants in the Country, whether they are getting their

license extended or not.

In addition, we have a very robust process of reviewing the license applications and the renewed license applications that gives the public an opportunity for input, that gives them an opportunity to raise issues. And we think those procedures and processes are robust enough to deal with the new issues that come about from the Japan situation.

But fundamentally, some of these changes may take time to implement and in the interim we will evaluate every situation as it comes up. If there is something we need to do to slow down, we will slow down. If we can move forward appropriately, we will move forward appropriately. But I think we will know, we will be a much better position, after this 90 day review is done to see if there are any real immediate actions that need to be taken.

Senator Carper. All right. Thank you very much.

Senator Alexander, you are next.

Senator Alexander. Thanks, Mr. Chairman. Thank you both for your testimony.

Ms. Jackson, as we look at electricity produced in the United States, we use about, I think, about 25 percent of all electricity in the world for our Country. I believe about 44 percent is produced by coal, 20 percent by nuclear power, 23 percent by natural gas, 7 percent by hydroelectric power, we usually think of those as base load powered, base load

electricity, electricity that is reliable over long periods of time, about 3 percent is wind, much less than 1 percent is solar.

What would be the effect on our Country's ability to comply with EPA's clean air standards if we did not, if we replaced nuclear power with either coal plants or natural gas plants?

Ms. Jackson. Well, nuclear power emissions are low to zero for the pollutants that EPA regulates so there would be, presumably, an increase in pollution. Even with the best pollution control technology, fossil fuel plants are going to have higher emissions, including greenhouse gas pollution which nuclear power does not have.

Senator Alexander. But probably half our coal plants do not have that --

Ms. Jackson. About half of our coal plants in the Country are not controlled for air toxics like mercury, arsenic, cadmium, acid gases. In fact, we just recently proposed a rule to address that issue. And when it comes to carbon pollution, of course it is quite different.

Senator Alexander. We have a lot of discussion, Senator Carper and I have worked a long time on the mercury issue. But the point is, to keep it in perspective, nuclear power provides about 20 percent of our electricity but about 70 percent of our emissions-free electricity, which is important as we think about

clean air and climate change.

Mr. Jaczko, how, for how long can the 104 reactors we have safely store spent fuel on site?

Mr. Jaczko. Well, the Commission recently restated what we refer to as our Waste Confidence Finding and that said that we believe at least about 40 years beyond the expected lifetime, I am sorry, about 60 years beyond the expected lifetime of a plant we can safely store spent fuel. And that gets you generally to about 100 years of time that you could store this fuel safely and securely.

And we actually, as part of this recent decision, asked the staff to go back and really look longer than that and see are there, if there are any issues right now that would make it challenging to store that fuel for 200 or 300 years or a longer timeframe. And so we expect to begin looking at that in the next year and have an answer in probably a couple of years about that question.

But right now, we do not see any major issues that would present a significant challenge for that longer term storage of the fuel.

Senator Alexander. For purposes of understanding what we are trying to store, does it sound about right to say, as I did earlier, that all of the used nuclear fuel that has been produced in the last 35 years would fill a football then about 20 feet

high?

Mr. Jaczko. I have heard that statistic many times. I have actually never sat down and calculated it and made sure that it is right. But it sounds reasonable as an approximation.

Senator Alexander. Now, the Nuclear Waste Policy Act of 1982 established a fund into which ratepayers, those of us who pay our electric bills, have paid about \$30 billion to build a final resting place for used nuclear fuel. A second step of the Obama Administration's plan for used nuclear fuel, which I heartily endorse, is not just to store it safely on site but then to do advanced research to find a better way to reuse nuclear fuel which will greatly reduce the mass of it and permit it to be used over and over again.

But in the end, are we not still going to have some stuff left that needs to be stored over a long period of time? And we still have this football field full of nuclear fuel spread around at 104 sites. Where are we going to put that? I mean, we have got \$23 billion sitting in a fund we have collected from electric bills. Should we not be using it to find a way to put that since Yucca Mountain does not seem to be going anywhere?

Mr. Jaczko. Well, from the NRC's perspective, our job is to make sure that that fuel, regardless of how it is being used, or stored, or reprocessed, or whatever the approach may be, is done safely and securely. So that is our number one focus. And we,

of course, work with the industry, we communicate with the rest of the Federal Government as approaches are being developed to possibly deal with that in the long term.

The Commission staff have been briefing the Blue Ribbon Commission and providing them with information about our approach to safety and security as they work to formulate their opinions about ultimately what could be done with this fuel in the long term.

Senator Alexander. Thank you.

Senator Carper. You are welcome. Thank you.

Senator Lautenberg?

Senator Lautenberg. Thanks to each of you for the knowledge and energy that you bring and I use that term directly. Obviously, we feel pretty comfortable. However, the long history that Japan had with nuclear power and established nuclear regulatory system looked like Japanese installations were absolutely safe. But clearly, they were not.

Now, what assurances do we have that our nuclear plants are as prepared as we could get for our worse case scenario?

Mr. Jaczko. Well that, Senator, I would say that there are really three or four levels of protection that we have at the plants. First and foremost, the plants are designed for these very unlikely events based on what we think the maximum historical natural phenomenon is, so, like a hurricane or an

earthquake or a tsunami. So, we start with that and we design the plants to be able to deal with that kind of a situation.

Then, on top of that, all of the plants have a set of procedures and guidelines for what you would do in the situation that all of those systems that you built in to deal with the situation fail. And those are what we refer to as Severe Accident Management Guidelines. And those give you the procedures, the approaches to dealing with these very severe events if they were ever to occur. And for that to occur, a lot of safety systems that are redundant and have a lot of backups would have to fail and not work properly.

And even beyond that, if all of those systems were to fail, we have required all of the plants in this Country to have an additional set of procedures to deal with very extreme damage conditions at the plant, much like you are seeing in Japan. And we required all of the utilities to put equipment in place to respond and ultimately to be able to supply cooling to the reactors and cooling to the spent fuel pools.

So, we have a robust system to really ensure that we can minimize or mitigate any potential releases to the public.

Senator Lautenberg. What we see is rather frightening in scope because almost no matter what you do, you cannot guaranty that there will be zero risk in the production of nuclear energy and nuclear facilities. So, we keep on developing new policies

as a result of, unfortunately, some terrible experience, and we have, we hope that we have no further terrible incidences.

Ms. Jackson, you know New Jersey is home to four nuclear reactors, including the oldest nuclear plant in the Country, the Oyster Creek Nuclear Generating Station, two years older than the damaged Japanese plant.

Now, with your long experience of protecting health and the environment in New Jersey, how confident can we be that the nuclear plants in our State are sufficiently safe to protect all of our people at all times?

Ms. Jackson. Well, I would defer to the Chairman on the safety issue except that they obviously, what was recently announced, which is that that plant is voluntarily, the owners of that plant have agreed to shut it down. I think it is part of the solution with respect to that particular facility.

Senator Lautenberg. Well, we are, it is little reassurance, honestly, because if they said okay, we will even cut short the period that the license covers, which means that there is an element to worry out there, and they cannot be --

Mr. Jaczko. Senator, if I could just comment? My understanding of the, part of the reason for not extending the plant operation was motivated by the cost and some of the economic factors. Certainly, from the NRC's perspective, we did not see a safety reason for the plant to not operate beyond, I

think, 2019 when the plant will operate.

And again, when we do our license renewal, what we do is we add on additional requirements to the licensees for them to monitor the plant to make sure that as the plant equipment and the systems that are important for safety get older, that they have the way to monitor and make sure that those, that aging of those equipment does not have any adverse impact on safety.

So, in addition to the standards in the regular strong safety program that we have, we add on top of that these additional requirements to make sure that as the plants age they do it in a way that is protective of public health and safety.

Senator Lautenberg. Tom, I have one more question. One last question. The rest, beyond that, I will send to you for the record and look for a response.

The NRC requires evacuation plans only within 10 miles of a plant. But the American Government has warned Americans in Japan to stay at least 50 miles away from the damaged reactor. They only confirmed that when we turned our ships around about 50 or 60 miles out, I am not really sure.

I guess, when all else fails, we have to be absolutely certain that a way to evacuate these areas is foolproof in terms of its ability and its durability. And would it make sense to require evacuation plans in our Country to address the same distance to U.S. facilities for new plants?

Mr. Jaczko. Well, that is something we are going to look at as part of the reviews that we are doing. The 10 mile evacuation zones that we currently have are designed to be the region in which you pre-stage and pre-prepare evacuations. If conditions were to warrant some additional option beyond that, those options, of course, could always be taken.

But I think, as we have seen in Japan, nuclear events tend to develop over a long period of time. This is three weeks into this event and we have had the time and ability to make protective option recommendations and to update those and modify them as conditions at the plant change.

So that 10 miles is really based around the idea of what you need to have prepared right away so if you have an event that develops quickly, you can address that and have pre-staged and pre-prepared what to do. But there is always the possibility to go farther, if necessary, or to modify the plans to deal with the existing conditions and the exact conditions on the ground.

But I also want to stress that this is something we are going to take a look at as part of the reviews that we are doing to see if there are changes we should make to the requirements for emergency preparedness.

Senator Lautenberg. Thanks very much and thanks to each of you.

Senator Carper. And thank you, Senator Lautenberg.

Senator Merkley?

Senator Merkley. Thank you, Mr. Chair, and thank you all for your testimony.

The first question I want to ask about, Mr. Jaczko, is, the venting system to release the hydrogen in the Japanese plants succeeded in getting the hydrogen outside of the core only to have it explode outside.

The U.S. went through, in the 1980s, a hardening of our vent systems on our Mark I reactors and I understand the Japanese plants also went through an upgrade. But what is our initial understanding of why the venting system did not succeed in disposing of the hydrogen such that it would not explode after it left the core? And is there a difference in the venting system between the Japanese plants and the U.S. plants that should give us confidence that we would not have a similar problem?

Mr. Jaczko. Well, at this point, it is not exactly clear what the source of the hydrogen was. Obviously, we saw hydrogen, or some fires, in the Unit 4 reactor. Well, that likely came from the spent fuel pools, the spent fuel pool in that building, because the reactor core there was not, did not have fuel in it.

So, at this point, we do not have definitive information about the source of the hydrogen. It is possible that it came from the spent fuel pools and not necessarily from the venting operation. That is something that we will look into as we get

some more, really as we get past the more emergent crisis in Japan, we will get the detailed information about that effort.

But I would say that, really, the fundamental issue that we see here really is the station blackout event. In the United States, when we are talking about a station blackout event, we have a lot of protections in place to prevent that complete loss of electrical power to the site. We require each plant to have at least two diesel generators for each reactor. So, if there a multiple reactor site, they will have at least four diesel generators on the site. Those diesel generators have to have their fuel in an area that is protected so that it can be, it can supply the diesel generators in the event of some type of natural hazard.

And then, beyond that, we have something that we call our station blackout or coping requirements which requires the utilities to be able to deal with that loss of offsite power until they are able to restore the offsite power.

Senator Merkley. I am going to interrupt you because I only have a limited amount of time and actually you dodged the basic question which was, is our venting system different from the Japanese system?

And also, I think it is understood that a fair amount of hydrogen in 1 and 3 came from both the splitting of water molecules and from probably explosion of the zirconium clouding.

And so, in that situation, and understanding that scenario, why did the hydrogen explode after it was vented rather than be dispersed safely into the atmosphere?

If we have no insight, that is fine. But again, back to the core question, is our venting system different in some significant way?

Mr. Jaczko. At this point, we do not have the detailed information to know.

Senator Merkley. Let me go on to a second question then.

In at least one of the reactors, I believe it is vessel 2, that there was discussion of plugs in the bottom of the reactor vessel, the core, that were used for loading fuel in and the concern that that design left a vulnerability and that plugs that were inserted after fuel was put in melted at a lower temperature than the rest of the containment, the rest of the core containment vehicle, and could have been a flaw that would allow, if you will, fuel to escape.

Is that just specific to that one reactor or is that a common design? And has that been a discussed concern in the past? And do we have that design in the United States?

Mr. Jaczko. We can get you specific information on that design. But again, I would stress that right now the information about the condition of all of the reactors is very preliminary and very uncertain. You indicated the hydrogen explosion.

Again, it is correct that that is a result of, usually of exposure of fuel. But that can, of course, occur both in the spent fuel pools as well as in the reactor core.

So again, the exact source of the hydrogen at this point is not clearly understood and it probably will be some time before we know definitively where that hydrogen came from, whether it was an interaction with the zirconium clouding in the spent fuel pool or the reactor core itself. That is where there is a bit of, some uncertainty right now.

Senator Merkley. Here again you did not answer my core question which is, these plugs that are apparently in the design of at least one of those reactors that are on the bottom side, are those, do we have a similar design and that is a concern in American nuclear power plants?

Mr. Jaczko. Again, as I said, we can get you that information. I do not have that off the top of my head right now. But again, I do not want to speculate necessarily that that was a contributing cause to any of the condition in Reactor 2 at this point.

Senator Merkley. Okay. Another issue is really the containment vessel itself. In 1972, there was a report from the predecessor organization, the Atomic Energy Commission, that recommended the Mark I system be discontinued because of unacceptable safety risks, basically because of the smaller

containment design and it was susceptible to explosion and rupture from a build up in hydrogen, obviously something that seems like it was an interesting insight given what we have now witnessed. Indeed, apparently the reason for this smaller and lighter container vehicle was simply the cost of the heavier and stronger containment vehicle.

There was later, in the 1980s, discussion. An NRC official noted that Mark I reactors had a 90 percent probability of bursting if fuel rods overheat and melt.

Have we, but there has been some changes to containment vehicles. Have we, do we feel like we have satisfactorily addressed the issues about the weakness of the containment vessel that were raised in the 1970s and the 1980s?

Mr. Jaczko. Fundamentally, the issues, the actions that were taken were, as I think you indicated, one was to provide hardened venting which provides a release path, a sensor to release material as pressure builds up in the containment, to release that pressure and to do it in a way that you release, that you prevent as much of the release of radioactive material as possible when you do that process.

The other thing that was done was efforts to do what is called inerting, or nitrogen inerting, which essentially means you introduce nitrogen into that containment atmosphere and based on the chemistry of that you reduce the likelihood of a hydrogen

combustion.

So, those came out of results and studies that were done in the late 1980s in what we called our Individual Plant Examinations and then a series of follow up studies that looked at what are these kinds of severe accident risks and how do you ultimately mitigate them.

So, for the Mark I containments, that was, those were the changes that were made to address that. Now, again, we are going to look at the information from Japan to see how similar or different their designs were at the time of the accident to our designs to see if there are additional lessons that we would learn to apply to those particular containments.

Senator Merkley. Thank you.

Senator Carper. You are welcome. Thank you.

Madam Chair?

Senator Boxer. Thanks.

I want to follow up on earthquake faults because we have written the Commission and we have asked you for an explanation of how many of our reactors, or let us just say our plants, are located on or near seismically active faults? Do you have that number for me today?

Mr. Jaczko. The number, and I think you mentioned it in your initial statement --

Senator Boxer. I know.

Mr. Jaczko. Generally, we would say that there are two plants that are near, in high seismic areas, and about nine plants that are in more medium areas.

But I want to stress, we design, require all plants in the United States to be designed to deal with seismic events. And some us who are here in Washington know, it was only a couple of months ago that we felt an earthquake here in Washington.

So, they are all designed to deal with seismic events and we design them, again, based on the accelerations that the plant itself would feel, or the actions and motions that the plant would feel at the actual site of the plant rather than based on the magnitudes of the earthquake because --

Senator Boxer. Okay, before you get into all that, I do not have a lot of time. In Japan, they would give the same answer. They gave the same answer. TEPCO said we are proud of the robustness of our containment vessels. And, in the case of an earthquake, everything would safely stop, blah, blah, blah. And I would put this into the record if I could.

Senator Carper. No objection.

Senator Boxer. Not the blah, blah, blah, but the actual words --

[Laughter.]

Senator Carper. No, I think we should put in the blah, blah, blah.

[Laughter.]

Senator Boxer. The point is it is eerie to me because I do not sense enough humility from all of us here. We are, as some great scientist once said, we think we have all the answers but Mother Nature may not agree with us.

A lot of what you are saying is the same thing that they said. And you are right, you are being conservative because even though plants do not sit on or near, you are being, you are thinking ahead. But the fact is, if you take one of my, we have the two plants that are high intensity seismic areas, one is built to, they are both built to withstand a certain level of earthquake, and yet, so was the Japanese plant, it was, I believe, 7.5 it was built to withstand. They got a 9.0.

We cannot know for sure what is going to happen. So I guess, are you doing a major inspection as Senator Feinstein and I asked you to, the NRC, of our two plants that are in these high propensity earthquake zones?

Mr. Jaczko. Well, we are looking at all the plants to make sure that we have --

Senator Boxer. I am asking about my two plants.

Mr. Jaczko. We are not doing anything specific to those two plants, but we are looking at all the plants in this Country to see if there are lessons learned from Japan --

Senator Boxer. Well, you just said that there are two

plants that are in the highest risk and yet you are not treating them any differently. That is a little worrisome to me.

Mr. Jaczko. Well, Senator, I would not necessarily say that they are in the highest risk.

Senator Boxer. Well, you said there were two plants on the highest seismic activity areas and those two are my plants in our State.

Mr. Jaczko. What we look at, ultimately, is the consequences. The plants that are in California are designed to deal with much, much higher seismic activity than any other plants in the Country.

Senator Boxer. Well, there may be a reason for that, Mr. Chairman --

Mr. Jaczko. Absolutely.

Senator Boxer. Because they are more at risk. Look, we just had the new report that says that they are not built to high enough earthquake-proof standards because we have reports there is a new fault at Diablo. We will hear that from Senator Blakeslee, who is coming forward. We, and in the case of San Onofre, there are reports that say there will be much more frequent activity than were suspected, both in perhaps tsunami and this.

So look, I am asking you again. I do not know if we got the letter back from them on this, a response? If you could just,

you know how Senator Feinstein and I feel. We, it is on our watch. I do not know how many people are in the States of Delaware? How many people in Delaware?

Senator Carper. Almost 1 million.

Senator Boxer. And how many in your State? Half a million.

I have got a half million people who live within 50 miles of one of my plants, and 7.4 million who live within 50 miles of my other. So, this is not about some theoretical catastrophe if something went wrong.

I know you feel you do ongoing inspections and all the rest.

Well, some of those ongoing inspections found some safety problems, too. So, let me just press you. I know Senator Blakeslee is coming up. He is from the other political party and we are working together on this. I think that is an important point. This has nothing to do with partisanship.

And if I will not be here for his testimony, can I send you his testimony and ask you to take another look because, we have both of these plants are up for renewal, although their licenses run until about 2022, something like that, 2027, 2022? So, they are not going anywhere. But they are up.

They are both now going to undertake new 3D earthquake studies, which is great, and I praise both of the operators for doing that. But it seems to me that while that is happening, correct me if I am wrong, but I think Congressman Bilbray said,

tell me if I heard him right, that the chance of something like this happening, an event like this, is between 7,000 and 10,000 years --

Mr. Jaczko. I think he said the frequency of a 7.0 magnitude earthquake is about every 7,000 years, approximately.

Senator Boxer. Okay.

Mr. Jaczko. But I do not want to speak for the Congressman.

Senator Boxer. But again, I would say to you, take a look at the record and the 157 earthquakes we have had over 6.0. So, and as we know, listen, I was told when I was a County Supervisor they said 100 year flood, we have to plan for a 100 year flood. I was a lot younger then and I said, oh, gosh, do we really need to do this? It is a 100 year flood. Well, that does not mean it is going to happen in 100 years. It could happen seven times within ten years, and then not happen again, as you know.

So, we have got to respond in a much different way. And I just do not feel the humility from all sides here. I do not think we are humble enough in the face of what Mother Nature could do. And I think that is, although I have to admit that the statements made by all parties here, I thought were very reasoned.

But I just think we need to inject a little more humility in this because look at what happened in Japan. And they are so proud, they are bragging about how this could never happen. They

arrogantly boasted of their world best nuclear power technology.

Now, they cannot even figure out how to stop the darn thing from leaking and all the rest.

So, anyway, enough said. Thank you.

Senator Carper. Thank you.

Senator Barrasso? All right.

Administrator Jackson, I do not want you to feel like you are being ignored here, so I am going to --

[Laughter.]

Ms. Jackson. I am happy.

Mr. Jaczko. I thought since she was here I would not get so many questions.

Ms. Jackson. I very much appreciate it.

Senator Carper. You can barely see her lips move when you speak, Mr. Chairman.

[Laughter.]

Senator Carper. Administrator Jackson, if you could, we were talking earlier, I do not know if it was Senator Alexander or somebody else, we were talking about the number of people who have died in the 41, 42-year history of nuclear power plants in this Country because of the radiation, folks either, folks who worked in those plants or lived in the area around those.

I think I asked this question of Chairman Jaczko the last time he was here and I think he said, to the best of his

knowledge, no one has died of radiation poisoning or sickness. Is that close to what you said?

Mr. Jaczko. At nuclear power plants. There have been in some of the related industries, some accidents that let to fatalities. But in the nuclear power, at the plants themselves, no, there have not been.

Senator Carper. Okay. Thanks.

Administrator Jackson, you have been great to work with us on a wide range of clear air issues involving sulfur dioxide emissions, nitrogen oxide emissions, mercury emissions, and I do not know, I do not want to put you on the spot.

But, I would like to just get a sense for the range of injuries, death, brain damaged children born, babies born, because of emissions from fossil fuel plants that put out not just CO2 but also sulfur dioxide and nitrogen oxide and mercury.

Can you just give us a sense for that?

I think we are talking about people who, we are talking about the loss of not just tens of lives or hundreds of lives but far greater. Can you just give us a sense of that over, I do not know, 40 years? Just give us a sense of the magnitude. Are we talking about thousands of folks who lives have been shortened, whose lives have been taken? Just give us a sense of that magnitude.

Ms. Jackson. I would be happy to. But first let me thank

you for your leadership on clean air issues. You have a long and outstanding record.

Senator Carper. Thanks for saying that.

Ms. Jackson. Why do I not simply say that we recently released a proposed rule to deal with mercury and other toxic emissions from fossil fuel plants, primarily power plants that burn coal, and the estimates were annual estimates of tens of thousands of fewer bronchitis incidents, and 150,000, I believe the number was, fewer visits to asthma-related doctor or hospital visits.

And when it comes to fine particle pollution, it is not just sickness, it is death. So, literally tens of thousand a year of avoided deaths, premature deaths, as a result, each and every year.

So I do not have a number for 40 years that accumulates, but of course, the Clean Air Act has been around for 40 years and has a long and proud history of, I think the most recent estimate was \$2 trillion in avoided health costs and benefits just from 1990 to 2012, 2020 alone. And, of course money is not the same as lives saved and the tragedy of a sick child, but it has quite, those emissions have real impact for public health.

Senator Carper. One of our colleagues earlier in the hearing made the point that for almost any source of electricity in this Country, there are risk concerns related to them. And

obviously, we have the kind of concern, the risk has been borne in Japan. We need to be mindful of, to learn as much from this as we can, to make sure that kind of tragedy does not occur here or hopefully in any other country.

But whether it is coal-fired plants, in our State we want to deploy offshore windmill farms and hopefully we will start doing that in about a year or so, but there are people who think they are unsightly, there are people who are concerned about the lives of birds. We have concerns with respect to tapping the great reserves of natural gas that we are happy to have found but there are concerns raised about the fracking. There are concerns with respect to solar panels and some of the materials that we use to create those.

There are all kinds of concerns. What we have to have here at the end is to be as vigilant as we can for all of them. But I would just ask us to be as mindful and concerned about our air pollution problems that relate to fossil fuel plants as we are the potential loss of life or endangerment of health due to nuclear power plants. Sometimes, I think we lose our sense of balance.

I want to ask you, as a follow up to that, Administrator Jackson, about the EPA's radiation monitoring, if I could. In the next panel, we have got several State and local officials. Let me just ask, how does the EPA inform State and local

officials about potentially high levels of radiation in milk or water in their community, and what actions will be taken if high levels of radiation are found by EPA monitoring?

Ms. Jackson. Let me first state that every model we have seen, and we agree with the inputs to the model, do not show that we will see any high levels. And we have not seen high levels. If anything, I would characterize them as trace increases from background. And one of the wonderful things about our RadNet system is that we have decades of background. So, we have a good understanding of what is normal, if you will, for these monitors.

And what we have done is set up a system where we do post the data for rainwater and drinking water and milk, we post those on our website along with the air monitoring data which is both near real time, there is about a four to six hour delay, as well as some that the filter and cartridge data takes a longer period of time.

Even when we see a trace, a blip above background levels, we alert the States, entities that are affected by those monitors where the States are. We work very closely with our partners at Health and Human Services, because the CDC and FDA, depending on whether we are talking about foodstuffs like milk or other issues, it is very important that the health officials in those States are not surprised by even trace increases. Because we want them to feel comfortable that they know what the data says,

what they mean, and to conceptualize that for citizens because most people are not used to speaking of radiation or understand some of these units that are coming at them.

And so, we have worked very hard at that. We have not gotten it perfect every time. We also work with elected officials, so that is members of Congress and Governors' offices as well.

Senator Carper. All right. I am going to stop. A number of our colleagues, some of them were here, some of them were not, will have questions to submit in writing. How long do they have to submit them, do we know? Two weeks. So, colleagues have two weeks to submit their questions in writing if they wish and we would just ask that you promptly respond to those.

Thank you so much for being here and for testifying today. And again, our thanks to you and the teams that you lead at EPA and at the NRC for the continued vigilance that has been demonstrated in response to this disaster. Thanks so much.

And with that, we invite up our second panel, actually third panel. As our third panel participants take their seats, I am going to go ahead and begin the introductions.

The first introduction is that of California State Senator Sam Blakeslee of the 15th District of California. Next we have Mr. James Boyd who serves as Vice Chair of the California Energy Commission.

Next we have a familiar face and a friend from Delaware, Lew Schiliro. Mr. Schiliro retired from the FBI before becoming a Cabinet Secretary of Delaware's Department of Safety and Homeland Security. You are welcome. It is great of you to come.

Next we have Mr. Curtis S. Sommerhoff and he is the Director of Miami-Dade County's Department of Emergency Management. Thanks so much. And next we have Mr. Charles Pardee. Actually, Charles Pardee is quite a notable citizen in the State of Delaware, so you have a namesake who you can be proud of in our State. This Charles Pardee is Chief Operating Officer at Exelon Generation.

And finally we have Dr. Thomas B. Cochran, whose initials are the same as many of my colleagues and me, and he is a Senior Scientist with the Nuclear Program at the Natural Resources Defense Council. I welcome Dr. Cochran.

For all of your statements, if you would actually use, I will give you about five minutes. Do not try to go much over that. If you do, I will have to rein you in a little bit. But five minutes, and your full statements will be included in the record.

Let me start with Senator Blakeslee. My first question is to you. How many State Senators are there in California? We know you have 53 House Representatives.

Mr. Blakeslee. We have 40 State Senators in California

representing about 37 million people. So, just a little bit under 1 million constituents per Senator.

Senator Carper. And how many State Reps do you have?

Mr. Blakeslee. Fifty-three members of Congress and 80 members of the Lower House.

Senator Carper. All right. Great. Thanks. Please proceed.

STATEMENT OF SAM BLAKESLEE, SENATOR, CALIFORNIA STATE SENATE,
DISTRICT 15

Mr. Blakeslee. Thank you very much, Mr. Chair.

My name is Sam Blakeslee. I am a California State Senator and, as Chairman Boxer indicated, I am a Republican. In fact, I am the former Minority Leader in the Lower House.

I am a former research scientist who earned his doctorate for California Earthquake Studies from U.C. Santa Barbara, and as a geophysicist I worked for a number of years in the oil and gas industry for Exxon in Houston, Texas. I now live with my wife and two daughters in San Luis Obispo, 10 miles from Diablo Canyon.

The seismic setting for the Diablo Canyon site has been a source of well-documented controversy for over four decades. In 1967, the operator of Diablo Canyon, PG&E, stated in their initial permit application the site had only "insignificant faults that are showing no movement for at least 100,000 years and possibly millions of years."

Four years later, using oil industry seismic data, researchers discovered the Hosgri fault only three miles offshore which the USGS has estimated is capable of producing a magnitude 7.3 earthquake. In the end, it took 15 years, major retrofits, and more than \$4.4 billion in cost overruns before the plant became operational.

Upon being elected to the California legislature in 2005, I called on Pacific Gas & Electric to use more sophisticated oil and gas 3D seismic imaging technologies to assess the complex seismic setting just off the coast. PG&E's response to my call was a column written by a PG&E Vice President stating "Freshman Assemblyman Sam Blakeslee's proposed legislation to conduct another seismic survey of Diablo Canyon is unnecessary and bad policy for California customers."

Well, in 2006, Governor Schwarzenegger signed the legislation directing the Energy Commission to perform an independent review of the data to assess the potential seismic vulnerability of the State's nuclear power plants and to provide recommendations.

That same year, PG&E moved to initiate the process to relicense the facility though there was no compelling need to rush the process as their current licenses last through 2024 and 2025. Then, in 2007 while the Energy Commission study was being performed, a magnitude 6.8, not 9.0, 6.8 struck Japan and the largest nuclear power plant in the world was damaged with three of its reactors still shut down to this day.

In 2008, the Energy Commission issued their report stating that uncertainties did in fact exist near the Diablo Canyon plant and that 3D seismic studies were recommended. PG&E's written response to the Commission was "we believe there is no

uncertainty regarding the seismic setting and hazard at the Diablo Canyon site.'

Mere weeks later, the USGA discovered the active Shoreline fault running within some hundreds of yards offshore from PG&E's nuclear power plant and with an orientation that could potentially intersect with the much larger and very powerful Hosgri fault.

Within mere days, PG&E rushed to declare "we don't see anything that exceeds the plants design basis.'" The statement was made before collecting the data necessary to determine the precise location, length and relationship of the Shoreline fault to the nearby Hosgri.

Fast forward to the events of just one month ago when a magnitude 9.0 earthquake struck offshore Japan on a fault system believed capable of only a magnitude 7.9. Like the 2007 Japanese earthquake, the 2011 earthquake far exceeded the utilities seismic and engineering assumptions.

Three weeks ago, at a California Senate hearing on this issue, I asked PG&E if they still continue to maintain, did they believe their previous assertion that there was no uncertainty in the seismic setting near their plant. This time PG&E responded that, although there is always some uncertainty, they were "not concerned."

I then asked PG&E to suspend or withdraw their license

application with the NRC until the seismic data is in hand to allow regulators to make informed decisions because, although PG&E may not be concerned about the seismic uncertainty, my community was very concerned. Yesterday, one day before this hearing, PG&E agreed to take this action.

After six years of calling for these seismic studies, State legislation, recommendations by the Energy Commission, direction from the California Public Utilities Commission, two devastating Japanese earthquakes, and now a nuclear disaster of Chernobyl proportions, the utility is finally willing to slow its relicensing effort to collect long-overdue seismic information.

In closing, I have two questions for Federal regulators. First, in the aftermath of the Japan crisis, will the NRC strengthen its own earthquake hazard review procedures that are conducted during the relicensing process for these two nuclear facilities that the NRC itself has identified as being located in the Nation's highest seismic hazard area?

And second, given the longstanding reluctance of PG&E to accept even the need for such studies, what procedures will the NRC put in place to ensure there is independent peer review analysis so that we have accurate, scientifically-robust conclusions that are drawn by those who have looked at the data independently rather than relying solely upon the utility and in-house NRS staff?

Thank you for the opportunity to present to this body.

[The prepared statement of Mr. Blakeslee follows:]

Senator Carper. Thanks so much. Thanks for coming here to testify for us today. Very, very good testimony. Thank you.

Mr. Boyd, please. Welcome.

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STATEMENT OF JAMES D. BOYD, VICE CHAIRMAN, CALIFORNIA ENERGY
COMMISSION, CALIFORNIA LIAISON OFFICER TO THE U.S. NUCLEAR
REGULATORY COMMISSION

Mr. Boyd. Thank you, Senator, and to Senator Barrasso,
thank you for being here.

I am Jim Boyd, Energy Commissioner, and I happen to be a
State's Liaison Officer to the U.S. Nuclear Regulatory
Commission, which may indicate why, perhaps, I am here. I
appreciate this opportunity. I appreciate you having this
hearing.

Senator Carper. A quick question, Mr. Boyd. Are you
appointed by the Governor and confirmed by the Senate? How does
it work in California?

Mr. Boyd. Yes.

Senator Carper. Okay. And how long have you served?

Mr. Boyd. Nine, I am in my tenth year.

Senator Carper. Okay. Thanks very much. Please proceed.

Mr. Boyd. This tragic 9.0 magnitude earthquake and its
impacts on the Japanese people and this power plant certainly
underscore the importance relating to seismic understandings in a
State like California.

You have heard all about our two plants. You have heard
from Senator Blakeslee in detail the difficulties we have had
with the operator of one plant and the need for seismic studies.

We have another plant, San Onofre, which, the recommendations apply equally to that plant. The 2008 study found that there are seismic concerns there that affect tsunami potential as well.

Subsequently, you heard from, actually Senator Boxer, this morning, who referenced that my agency and the PUC directed the two agencies of the operators of these plants to undertake the studies. But that resulted in a race by PG&E to file for relicensing well in advance of what anyone thought would be necessary.

The use of these, this new technology, this technology that Senator Blakeslee has indicated, has been used by the oil industry for years. PG&E has done some studies, mainly because the NRC ordered them to have an active seismic study after all the fiasco of many years ago and to have a need to redesign the plant.

Unfortunately, while we had been pushing for this, the NRC has to date indicated that the license renewal review process does not include an assessment of seismic vulnerabilities. It does not require that these advanced seismic studies be included within the scope of their review.

And until yesterday, when we learned that PG&E has changed their mind and they want to hold up their license, we felt that the NRC was going to finish their review in 2002, and these studies would, or 2012, I am sorry, and these studies would not

even be done until 2013.

So, I thank you for having a hearing that may have had an impact upon PG&E. But, in spite of that, we still need a condition from this Southern California Edison, the operator of San Onofre, that they will do the same types of studies, and they told me they are reconsidering their position.

For us, lessons learned are first that we are looking to the NRC to carry out its short-term and long-term review of events in Japan and if they do the good job that they did on Three Mile Island, we expect a lot of positive recommendations and results.

But we need to implore the Congress support the NRC, not only in these efforts but in implementing and ensuring that follow up actions are taken and implemented at all U.S. reactors as soon as feasible after they finish their studies.

Not only should they include the lessons learned from Japan, but we have some thoughts we would like to pass on to the NRC, and have in previous correspondence, in addition to lessons learned studies that we have underway with regard to seismic.

First is in the Waste Confidence Decision. The Chairman referenced that. The NRC's Waste Confidence Decision which concluded that spent nuclear fuel can be stored safely on site at reactors for 100 years should be reexamined, particularly spent fuel stored in seismically active coastal areas. The safety of long-term storage of spent fuel in seismically active or tsunami

prone areas need to be reevaluated in light of what is happening in Japan.

Secondly, spent fuel management. The Nation's spent fuel management systems and practices should be reevaluated, including the current practice of storing spent fuel in pools in tighter storage configurations than original plant designs called for.

The Energy Commission, in 2008, recommended that the utilities return their spent fuel pools to more open racking configurations as soon as feasible. Storing more spent fuel in pools in closer configuration creates greater heat load, thereby increasing the risk of fire and other possible problems.

As more and more spent fuel accumulates at reactor sites, plant owners have had to re-rack their pools multiple times to increase their onsite spent fuel storage capacity. This is an increasing safety issue at California's two plants, and the station blackout issue is another one that affects the operation of spent fuel pools.

So, in closing, I would say we would like to see that the two utilities in California undertake the studies that have been recommended. We would like to have these studies included in NRC's license renewal evaluation of these plants because they give no support in their routine oversight of a plant license for the activities that are being carried out and the recommendations that have been made.

And, we need to assure ourselves that when these studies are done, all of these activities that need to be taken with regard to equipment and process operations should be taken into account.

Thank you for this opportunity.

[The prepared statement of Mr. Boyd follows:]

Senator Carper. Thank you, Mr. Boyd.

Next we will introduce Lew Schiliro, Secretary Schiliro.

How long have you been Secretary now?

Mr. Schiliro. Just over two years, Senator.

Senator Carper. And before that I know you spent a few years in the FBI. How many?

Mr. Schiliro. Twenty-five years, sir.

Senator Carper. Twenty-five years. Thank you for our service to our Country and to our State. We are delighted that you are here today.

Please proceed.

STATEMENT OF LEWIS D. SCHILIRO, J.D., CABINET SECRETARY, DELAWARE
DEPARTMENT OF SAFETY AND HOMELAND SECURITY

Mr. Schiliro. Thank you, Senator, and good afternoon,
Chairman.

I am Lew Schiliro, the Secretary of Delaware's Department of Safety and Homeland Security. And on behalf of Governor Jack Markell, I am honored to be here today to address the important issue of Homeland Security as it relates to radiological emergency plans and preparedness. I would like to thank you for the attention and focus on this most important topic.

In the days and weeks that have followed the nuclear energy crisis in Japan, many citizens have raised concerns regarding radiological emergency preparedness in the United States. In Delaware, the citizens' concerns about the safety of nuclear energy facilities and the State's ability to handle a radiological emergency were directed to our Department.

Our Department is comprised of several Public Safety Divisions, including the Delaware State Police, Capital Police, the Office of Highway Safety and, most importantly, the Delaware Emergency Management Agency, which we refer to as DEMA.

While our divisions often work together during a public safety emergency, DEMA is primarily responsible for the State's Radiological Emergency Plan and preparedness activities. I would like to open my statement today with information on the nuclear

energy utility located just off our State's shore and our State's Radiological Emergency Plan. I will then share some insight into our experiences with the utility.

Our State's location along the East Coast puts it within 50 miles of four nuclear generating stations. They are Limerick Nuclear Generating Station and Peach Bottom Atomic Energy Station, both in Pennsylvania, Calvert Cliffs Nuclear Generating Station in Maryland, and the Salem/Hope Creek Nuclear Generating Station in New Jersey. Of these four stations, Salem/Hope, which is a 740-acre site operated by PSE&G, is the closest, located just 2.5 miles from the Delaware shoreline. Together, these plants comprise the second largest nuclear generating facility in the United States and generate enough electricity for 3 million homes each day.

According to the 2010 Census, there are approximately 41,000 people in Delaware who currently live within a 10 mile radius of this utility. The area is more commonly known as the Emergency Planning Zone or EPZ. It should be noted that within the last 10 years, Delaware's population in the EPZ increased by over 17,000 citizens, according to the recent census. This increase necessitates a mandatory evaluation of our evacuation routes and times.

The close proximity of Salem/Hope makes it the most potential threat to our State and as such, DEMA's radiological

staff continues to work closely with the nuclear people at PSE&G and the New Jersey State emergency management officials to maintain and update the State's radiological plan. This comprehensive plan, which is approved by FEMA, is DEMA's roadmap to provide command, control and coordination for any potential nuclear plant incident impacting our State.

As required by the Nuclear Regulatory Commission and FEMA, within a six-year cycle, DEMA conducts three plume exercises which really test the State's emergency response capability within the EPZ and one injection exercise which tests the State's readiness to address needs within a 50 mile radius of the utility.

Historically, Delaware's Federally-graded exercises have received very high marks from FEMA and these are graded exercises that are quite thorough and exhaustive inasmuch as they test each and every State emergency response resource that could potentially have a role in any radiological emergency incident. They involve our first responders, our evacuation plans, reception centers which are registration and decontamination sites, traffic control access points, shelters, schools, hospitals and emergency worker decontamination centers.

In addition to that, FEMA conducts quarterly radiological drills with PSE&G and New Jersey that specifically focus on the EPZ and our responder resources. In 2010, 821 people received

training specific to the REP Plan and Emergency Worker Equipment.

I am going to cut some of this short, Senator, but we have absolutely an excellent relationship with PSE&G and the emergency response officials in New Jersey.

I welcome the opportunity, as this goes on, to answer any questions that you may have regarding those plans.

Thank you.

[The prepared statement of Mr. Schiliro follows:]

Senator Carper. Thank you very, very much, Mr. Secretary.

Welcome, again, Mr. Sommerhoff. Please proceed. Thank you for joining us.

STATEMENT OF CURTIS S. SOMMERHOFF, DIRECTOR, MIAMI-DADE
DEPARTMENT OF EMERGENCY MANAGEMENT

Mr. Sommerhoff. Good afternoon, and I wanted to thank Environment and Public Works Committee Chairman Boxer, Ranking Member Inhofe, Clean Air and Nuclear Subcommittee Chairman Carper, Ranking Member Barrasso, and the distinguished Committee members.

I am Curtis Sommerhoff, Director of the Miami-Dade Department of Emergency Management. The community I serve spans nearly 2,000 square miles, includes 35 municipalities, and has a population of more than 2.5 million. We are a coastal community vulnerable to a number of natural and manmade disasters including the threat of hurricanes, flooding, fires, mass migration, oil spills and radiological events.

Miami-Dade County's response to emergencies and disasters is guided by a comprehensive Emergency Management Plan, an all-hazards approach which supports the County's ability to respond to any type of emergency. Within our comprehensive plan we have a number of hazard-specific annexes, including a Radiological Emergency Preparedness Plan.

Our plans are regularly assessed and assumptions analyzed, revised and ultimately certified by the Federal Emergency Management Agency. Site visits and evaluated exercises bring together local, State and Federal agencies, as well as members of

the utility, to enhance collaboration and programming. FEMA oversight and formal after action reports highlight significant areas that might need improvement.

In the event of an emergency at the nuclear power plant, we have a public alert and notification system that includes warning sirens in the area around the plant, identified support facilities for the delivery of emergency services, fully trained and equipped public safety response personnel, and protective measures that are adjusted to the threat level.

Our ability to effectively respond to a radiological or other threat lies not only in our comprehensive planning but our long history of implementing protective actions for the public. Over the past decade alone, evacuation orders have been issued to the public on 10 occasions as a result of hurricanes and tropical storms and, together with our partner agencies, we have coordinated the evacuation, transportation, sheltering, medical care and feeding of tens of thousands of evacuees.

Consider this. In the 10-mile Emergency Planning Zone surrounding the Turkey Point Nuclear Power Plant, there are approximately 180,000 residents. Within Miami-Dade's three designated Hurricane Evacuation Zones, there are more than half a million residents.

We have identified shelters for temporary housing with special consideration given to individuals with special needs.

We have designated areas for the dissemination of emergency supplies, like water, ice, food and tarps in the event of widespread destruction or power outages.

We have ready-to-activate Disaster Assistance Centers to provide social services to residents in need of financial assistance, prescriptions refills, short- and long-term housing and first aid, and contracts and mutual aid agreements to ensure the continuity of operations during disaster response and recovery. In line with the National Response Framework, all of our plans are scalable, flexible and adaptable.

The County's Department of Emergency Management fosters an ongoing collaborative planning relationship with the County's mission essential departments and partner agencies to address life safety and property implications from existing hazards. We have a long-established state-of-the-art Emergency Operations Center, our nucleus for response and recovery efforts.

When disaster threatens, our emergency managers, private and non-profit sector partners, as well as our media partners, come together under one roof, a critical component for a coordinated response and timely and accurate information dissemination. Local, State and Federal coordination enables us to augment and resupply personnel and equipment as needed, even over extended periods.

Our strengths and experiences from hurricane response carry

over to our ability to implement actions for a radiological event. Conversely, our planning for a potential radiological event has a positive effect on our ability to respond to other hazards.

Based on our experiences, we respectfully offer the following recommendations for consideration.

The recommendation of the Nuclear Regulatory Commission to evacuate Americans out to 50 miles from the Fukushima Daiichi Plant has raised many questions. We support analysis of the data and assumptions behind the recommendation to determine if Emergency Planning Zones in the U.S. need to be revised. Of course, a wholesale change to increase the plume exposure pathway must be carefully evaluated and weighed against the value of making the revision.

It is also important to note that local officials currently have the flexibility to revise public protective action based on accident parameters and the situation on the ground.

As we have seen in the crisis in Japan, as well as other disasters across the United States, interaction and coordination with Federal partners is sometimes hampered by the lack of familiarity of local and state response organizations with Federal processes and systems. Increasing the inclusion of FEMA and other Federal agencies in local and State training and exercises would make the transition from a local response to a

Federally-integrated response more seamless and efficient.

Finally, it is essential to maintain and expand emergency management all-hazard funding programs such as the Emergency Management Performance Grant Program. This year alone, every EMPG dollar spent in Miami-Dade County is matched with over five local dollars to build emergency management capabilities that enhance our community's disaster preparedness.

EMPG dollars have also enabled us to invest in staff and resources that have been made available to communities throughout the Country, including assistance we were able to deploy to New York after the 9/11 attacks and, more recently, to neighboring Florida counties directly impacted by 2004's record-breaking hurricane season.

Once again, I thank you for the opportunity to share our experiences, observations and recommendations.

[The prepared statement of Mr. Sommerhoff follows:]

Senator Carper. Good. Thanks so much, Mr. Sommerhoff.

Mr. Pardee, you are now recognized. Please proceed. Thank you for joining us.

STATEMENT OF CHARLES PARDEE, CHIEF OPERATING OFFICER, EXELON
GENERATION COMPANY

Mr. Pardee. Good afternoon, Chairman Carper, members of the
Committee.

My name is Charles Pardee. I am the Chief Operating Officer
at Exelon Generation and as such responsible for all of the
company's generating assets, including 17 units at 10 sites in
Illinois, Pennsylvania and New Jersey.

I appreciate the opportunity to appear this afternoon on
behalf of the nuclear industry to discuss the safety of nuclear
power plants here in the United States.

We have been following the events in Japan closely since the
historic earthquake and tsunami struck the plant on March 11th.
Many in the United States nuclear industry have both a
professional and a personal interest in the events unfolding
there.

Many of us, myself included, have been to Japan a number of
times as part of international technical exchange programs to
share operating experience with the Tokyo Electric Power Company
and others. In fact, I was at the Fukushima Daiichi station
about a week prior to the earthquake striking there on one such
exchange.

Our hearts go out to the Japanese people as they respond to
the humanitarian crisis they are facing. Currently, six Exelon

employees are in Japan assisting with efforts there to secure, stabilize and ultimately decommission the Fukushima Daiichi reactors.

It is understandable that many Americans are asking if power plants in the United States are safe in light of the events in Japan. I firmly believe that they are safe, and I would like to make three primary points about the safety of nuclear plants in the United States to buttress this belief.

First, our plants are designed and licensed to withstand a variety of natural disasters including earthquakes, floods, tornadoes and, where appropriate, tsunamis. Plants are designed to withstand potential disasters based on the most extreme event known in their geographic location with significant margin added to that extreme event to ensure safety. Margins are reviewed and improved as necessary as additional information or experience becomes available to us.

Second, safety systems, equipment and emergency procedures at nuclear power plants are not frozen in time once the plant is built. In fact, safety is an issue that is being constantly examined by both the industry and our regulators. We have undertaken extensive safety enhancing upgrades to our plants in the aftermath of Three Mile Island, the events of 9/11, and other events such as Hurricanes Katrina and Andrew that have impacted the United States.

Particular attention has been paid to putting systems in place to avoid a build up of hydrogen in containment areas, the likely cause of the explosions at the Japanese plants. In addition, we require multiple redundancies and back up power supplies in the event of a loss of offsite power, the precipitating factor in the loss of cooling water issues that have led to the most extensive damage at the Japanese reactors.

In addition, full capability simulators have been installed at each plant in the United States, giving every operating crew the ability to train under realistic conditions on extreme events, such as loss of all AC electrical power, to ensure our mitigation strategies are robust and our operators are fully qualified to respond. I earned an operating license at a plant similar to one of the Fukushima Daiichi reactors in the 1990s, and I personally went through this training to learn how to combat scenarios such as the loss of all electrical power.

Third, while it may take months, if not years, to fully understand what happened at the Japanese reactors, the industry is not waiting to take action to incorporate lessons learned from this event. Indeed, I firmly believe that the nuclear industry is unparalleled in its ability to incorporate lessons learned to ensure excellence in operations.

There are two institutions, the U.S.-based Institute of Nuclear Power Operations and its international equivalent, the

World Association of Nuclear Operators, that are devoted to ensuring excellence by sharing best practices, assessing and incorporating lessons learned from events such as this, and rigorously assessing plant performance to ensure sound operations.

In the United States, the Institute of Nuclear Power Operations ensures that reactor operators do not become complacent in any area of operations, particularly when it comes to safety-related issues. There is a focus on continuous learning from events, both large and small, that occur at other plants. Whenever a significant event occurs, INPO performs an analysis to determine relevant lessons learned that are then shared with all operators.

Within days of the earthquake and the tsunami, the industry issued directives to each of our plants to undertake a variety of actions to ensure that seismic and safety-related equipment was in good material condition and to review our emergency response plans including each plants capability to manage a total loss of offsite power. These assessments are ongoing and I am confident that both industry and NRC will have additional action items in the coming weeks and months to further enhance our ability to operate safely.

Aside from the safety of nuclear reactors, I know that there are also concerns about the safety of spent fuel pools in light

of the events in Japan. As with our reactors, we have taken a number of steps in the aftermath of Three Mile Island and 9/11 to bolster security to spent fuel pools. Back-up power systems, abundant onsite water supplies and additional high capacity pumps provide us with the defense and depth to ensure safety of these pools.

Let me conclude by recognizing the dedicated employees of the United States nuclear industry. Safety is, and continues to be, the primary focus of our industry, and we have tens of thousands of highly-skilled, thoroughly-trained employees working tirelessly every hour of every day such that our plants operate safely and efficiently.

Thank you for this opportunity.

[The prepared statement of Mr. Pardee follows:]

Senator Carper. Mr. Pardee, thank you so much for joining us today.

Dr. Thomas Cochran. We have a Senator named Cochran, Thad Cochran from Mississippi.

Mr. Cochran. Not related.

Senator Carper. What was that? Uncle Thad?

[Laughter.]

Mr. Cochran. Not related.

Senator Carper. Oh. Okay.

STATEMENT OF THOMAS B. COCHRAN, PH.D., SENIOR SCIENTIST, NUCLEAR PROGRAM, NATURAL RESOURCES DEFENSE COUNCIL, INC.

Mr. Cochran. Chairman Carper, and also Chairman Boxer and members of the Committee, I want to thank you for providing NRDC and me the opportunity to present our views on the Japanese nuclear disaster and its implications for nuclear power reactors in the United States.

I have submitted my complete statement for the record. I will briefly highlight a few things here.

You requested that I offer my views regarding the implications the disaster has for reactor safety in the United States. First, I think we all are in agreement that the first priority is to provide assistance to our friends in Japan. But, eventually, and even today, we are turning to the issue of the implications in the U.S.

Before turning to that issue, I wish to make two observations. First, my colleague, Dr. Matthew McKinzie, with my colleague, Dr. Matthew McKinzie, we made a rough preliminary estimate of the collective radiation dose from the external exposure based on monitoring data from Japan. We should be mindful that the uncertainties in the estimated exposures at this stage are quite large. There is much we simply do not know. With this caution, we find the collective dose from the external exposure to date, and the consequentially excess cancers that are

projected to result, appear to be 10 to 100 times greater than the collective radiation dose resulting from the Three Mile Island accident.

After Chernobyl, the Fukushima nuclear accident ranks as the second most dangerous civil nuclear power reactor accident to date. The collective dose to date from the Fukushima accident appears to be in the neighborhood of 100 times less than that from the Chernobyl accident. Similarly, the long-term human health consequences are one to two orders of magnitude less than the immediate non-nuclear consequences of the earthquake and tsunami. This is a preliminary comparison and it may change as we learn more.

Second, Dr. McKinzie and I have reexamined the historical frequency of partial core melt accidents. We found the historical frequency of core melt accidents worldwide is far greater than what the NRC considers safe. By this measure, operational reactors worldwide are not sufficiently safe.

Because of differences in the numbers of reactors, the reactor safety cultures and the regulatory oversight, the next nuclear power plant disaster is more likely to occur abroad than in the United States. But if nuclear power is to have a long-term future, greater attention should be given to current operational reactors. Older obsolete designs should be phased out rather than have their licenses extended.

Turning to the implications for U.S. nuclear power reactors, there are concerns raised by the Fukushima nuclear disaster that bear directly on the safe operation and regulation of our domestic fleet. While others will add to this list, our immediate concerns include, are old GE BWRs with poorly designed Mark 1 and Mark 2 containments and subsequent upgrades imposed by the NRC safe enough to continue operation or have their licenses extended?

What additional improvements should be made to cope with hydrogen production in the event of a fuel clad interaction with steam? What improvements must be made to extend the time reactors can cope with loss of offsite power?

The NRC is overdue in requiring that spent fuel be removed from wet pools to hardened dry casks as soon as the spent fuel has cooled sufficiently to be passively cooled in air.

Which reactor sites are located in areas that cannot be adequately evacuated? Which reactor stations impose an undue economic risk to local, State and even the U.S. economy in the event of a partial core melt accident? Which U.S. reactors should be upgraded or phased out due to the risk of earthquake, flooding or tornado that is beyond the design basis?

Potential radiological accidents caused by earthquakes and tsunamis should be addressed in emergency response plans for U.S. reactors. Nuclear plant owners and operators must assume a

larger share of financial risk in the event of a catastrophic nuclear accident.

What are the implications of predicted sea level rise due to climate change on the safety of nuclear reactors near coasts? What are the implications for continued failure of the NRC to finalize and implement a fire protection rule?

What changes should be implemented regarding radiation monitoring during routine plant operations following an accident?

And perhaps most importantly, what is the best process for addressing these concerns?

I would like to elaborate on a couple of these starting with the last, the need for an independent commission --

Senator Carper. Doctor, I am going to ask you not to elaborate too much, if you will.

Mr. Cochran. -- similar to the Kemeny Commission that investigated the Three Mile Island accident. Such an independent body could engender public confidence by thoroughly examining nuclear safety issues including assessing the conclusions and proposed corrective actions arrived at by both the nuclear industry and the NRC's 90-day safety review.

I will just touch on one of these issues that I raised. The 20-year license extensions already granted to 23 U.S. operational BWRs with Mark 1 and Mark 2 containments should be shortened. Similarly, no 20-year license extension should be granted to the

eight BWRs with Mark 1 and Mark 2 containments that have not received license extensions.

Mr. Chairman, thank you. I will stop there. I have some more but I have run out of time and look forward to your questions.

[The prepared statement of Mr. Cochran follows:]

Senator Carper. Thanks so much for your testimony. And, as I said earlier, the entire statement will be made part of the record.

I am going to telegraph a pitch and let you know what my last question is going to be to the panel. And basically I am going to ask each of you to give us a just a really good takeaway, a really good takeaway, not just for Chairman Boxer and myself and Senators Inhofe and Barrasso, but just really one good takeaway from each of you from this hearing for our Committee, please. So just be thinking about that.

In the meantime, let me ask a first question of Secretary Schiliro, and that would be, after seeing the devastation in Japan, are you concerned with our State, with Delaware's emergency planning process? Could anything be improved? And, to follow onto that, do you feel our plan is flexible enough to be changed if you saw a need to expand beyond the 10-mile evacuation plan?

Mr. Schiliro. Thank you, Senator. We have a very robust group in Delaware and it truly is a team effort. The ability of DEMA to incorporate all of our partners from the law enforcement and public safety communities, both State and our Federal partners, I think is very robust.

Certainly I think the lesson that we need to learn is what can we take away from the events in Japan that would allow us to

evolve that plan? Because it truly is a living document and certainly something that we need to understand.

As has been stated, the 10-mile EPZ is something that we do practice for and plan for. However, I do think the plan is flexible enough, and certainly in the power of the Governor, that in the event that the circumstances go beyond that 10 miles, that we certainly could react to. And we do, as has been stated, plan for that in terms of hurricane evacuations. So, it is adaptable.

I think, as was stated earlier, what the 10-mile zone allows us to do is to really give that early warning and to really just start to begin from that. But there is no doubt in my mind, based upon the people that we have in Delaware, that if we needed to expand it, we certainly could and would do that. So, I feel very comfortable with that.

Senator Carper. All right. Thank you.

Let me follow that one with a question of Mr. Sommerhoff and perhaps of Secretary Schiliro as well. The question is, many of the families in Japan have been away from their homes for I guess close to a month or so. And, in your emergency planning, is it explained to people being asked to evacuate that it could be not just for a couple of hours or a couple of days? It could be, in this case, for over a month for a lot of the folks in Japan, and I guess the clock is still running there.

But do we have long-term emergency housing that can

accommodate people for these kinds of extended periods of time?

Mr. Sommerhoff. One of the things we try to do as we, when we educate the public and certainly practice these drills and exercises, is we have an emergency reception center concept. And the idea with the emergency reception center is to have a place, at least temporarily, for people to seek shelter and emergency services from local government.

From there, we are also looking at some offsite reception centers, some more long-term sheltering capability. And then we would be looking at Federal resources coming in, as well as aids from the nuclear industry through American nuclear insurers and others, to provide more resources for those long-term housing needs and those types of opportunities.

But all of those things that you mentioned in terms of both human and health services type things, as well as the housing issues and the mass care issues, all that is provided and explained to folks in terms of education, as well as the resources at the reception center concept.

Senator Carper. Okay. Mr. Schiliro, Secretary Schiliro, anything you want to add to that?

Mr. Schiliro. Just one quick note, Senator. As you know, we have had occasion, unfortunately, to stand up, primarily through the Red Cross short-term shelters, one in the event of certain snowstorms that we have recently had and weather-related

events, and generally that works very well.

But obviously in the event that we needed longer term, the primary responsibility would be for the public safety and, if that were the case, I am confident that through our Federal partners and other related resources we would be able to accomplish that.

Senator. All right, thank you.

A question, if I could, of Mr. Pardee. And this is a question relating to alert systems. In Secretary Schiliro's written statement, he stated that within, he said within 15 minutes of a radiological emergency, PSE&G must send an alert to Delaware's emergency response team. Do you know if that is a requirement that is established by the Nuclear Regulatory Commission?

Mr. Pardee. Yes, Mr. Chairman. The Nuclear Regulatory Commission has very strict reporting guidelines that are applicable to all nuclear stations in the United States that ensure timely reporting of events as they are unfolding and regular periodic updates to make sure, as further information is acquired by the station, that that information is shared with State and Federal officials for the purposes of making quick protective action recommendations and mustering resources to assist.

Senator Carper. Okay. During an emergency, how does a

company communicate with the NRC and with local governments?

Mr. Pardee. We have emergency response facilities both local to the site and remote from the site, our emergency operating facilities. And those facilities all have dedicated communication links between the Nuclear Regulatory Commission offices and on a State-by-State basis. They are emergency operating centers. These are dedicated phone lines, they have back-ups in the form of satellite, radio or cellular communications and such. So, there are multiple communications links in which to share the information I described.

Senator Carper. Did you say earlier that you had spent some time in Japan?

Mr. Pardee. I have. I have been to both Fukushima Daiichi and the Kashiwazaki-Kariwa station that suffered an earthquake about three years ago. In that case, I went about two weeks after that earthquake hit.

Senator Capen. A member of my staff, I think it might have been Laura Haynes, I think, said to me earlier today, suggested that the NRC has the ability to monitor control rooms, maybe of all the nuclear power plants in the United States. I do not know if that is true, but if you know, and the second, like a follow up, whether that is true or not, do the folks in Japan have a similar kind of capability?

Mr. Pardee. We in the United States all have something

called the Emergency Response Data System which is a provision to provide technical data to the NRC Emergency Operations Center and other interested parties. I am not strictly familiar with what exists within the Japanese regulatory protocol, but I do know that information flow seems to be much more greatly challenged than I would ever expect it to be here in the United States.

Senator Carper. Okay. Thanks.

I am going to ask a question of Secretary Schiliro and then I am going to ask Dr. Cochran and Mr. Boyd and Mr. Pardee to follow up on this. But here is the question of Secretary Schiliro. In your written testimony, I think you stated approximately 41,000 Delawareans live within 10 miles of PSE&G's Salem/Hope Creek facilities. Is that about right?

Mr. Schiliro. That is correct, Senator.

Senator Carper. All right. If there was a full evacuation of that 10-mile radius because of an emergency at the PSE&G facilities, how long do you think it would take to conduct that full evacuation?

Mr. Schiliro. Our modeling, Senator, depending on the time of the day and the time of the year, anywhere between three and six hours.

Senator Carper. Three and six hours. All right. And again, if I could, of Dr. Cochran and Charles Pardee and Mr. Boyd, if a nuclear power plant in this Country faced a full

blackout, faced a full blackout, similar to what we have seen at the Fukushima facility, in your opinion, would we have a few days before we might see the fuel rods degrade and therefore see harmful radiation levels?

I am going to say that one again. I will just say it again.

If a nuclear power plant in this Country faced a full blackout similar to what we have seen at the Fukushima facility, in your opinion, would we have a few days before we might see the fuel rods degrade and therefore witness harmful radiation levels?

Mr. Cochran. I do not believe so if you include within that full blackout the loss of emergency power generation at the site.

For example, you have both batteries and diesel generator backup systems. Diesel generators failed in Japan because of the tsunami. If they failed in the U.S., you then can rely on, and they also, I mean you lost offsite power, you also have battery power at some reactors. The batteries are only designed for four hours, it is my understanding.

Senator Carper. Do we have any idea if those batteries can be recharged? I just drove one of those new Chevrolet Volts yesterday and the Chevrolet Volt, as you may know, the battery provides, constantly provides, the force, if you will, for the wheels to move. Whether the engine, if the engine is running, the engine does not run, turn the wheels. It powers the battery so the battery can be charged constantly.

Any idea if these batteries at the nuclear power plants can be charged or recharged while they are drawing down electricity?

Does anybody know?

Mr. Pardee. Yes they can, Mr. Chairman.

Senator Carper. Okay. Thanks.

Mr. Pardee. We have to have the requisite equipment available, but they can be recharged. They are big automobile batteries. Very big automobile batteries.

Senator Carper. I bet they are. Thanks. Okay. Doctor, go ahead and finish your response now.

Dr. Cochran. Well, in order to recharge them, you have to have a source of power. Your original premise was that you lost, that you had a station blackout, so you would not be able to charge them under those circumstances.

I think you have touched on one of several very important issues that need to be addressed as a consequence of this disaster. In my judgment, the most important thing you need to do is address how this process should be undertaken. We support the NRC's review. We support the industry's review. But we do not feel that is adequate.

We do not feel that the NRC, we should rely solely on the NRC to review its own previous failures, and we therefore believe that you need something akin to a Kemeny Commission that you had following the TMI accident, similar to the Blue Ribbon Commission

you had following the BP oil spill.

There are people in the industry, people in the Government, who do not want to have an independent review because they see that might threaten their future course of actions.

Senator Carper. All right. Thank you. May I ask, if I could, Mr. Boyd and Mr. Pardee to respond as well to this question. Mr. Boyd?

Mr. Boyd. Thank you, Senator. I know, and I just checked with my good Senator here, that Diablo Canyon has a real problem with regard to evacuation of, you heard the very small numbers of people. But there is incredibly limited access. So, the number we have is about 15 hours to evacuate the area because, and that assumes the overpasses have not collapsed on the freeway and that assumes it leaves one of the only two escape routes available.

At SONGS, it is a little different with 7 million people. I do not have the estimate on the top of my head but it, while we have significant freeway systems there, it is still a very substantial period of time that has been modeled over and over again and I can get you that information.

Additional comments on the second question because it relates to the evacuation issue. Both of our plants have eight hour battery backup capability. Diablo Canyon's backup generators are fairly high up on the hillside so it would take a very significant tsunami to impact them. But, nonetheless, we

are in discussions now as a result of what happened in Japan with both utilities about the whole question of station blackout.

The SONGS generators are right at the plant which is right on the beach although, hopefully, a less earthquake prone area. But nonetheless, they have the advantage of the entire Marine Corp across the street, Camp Pendleton, and arrangements have been made for backup generation, portable generators and what have you, in the event of some kind of problem there.

Diablo Canyon does not have that luxury and we have been talking about helicoptering in batteries and what have you in the event there is a serious problem there.

Senator Carper: All right. Thank you. And one last word, if you would, Mr. Pardee, on this question, please.

Mr. Pardee. Yes, sir. For the first question regarding evacuation times, our times also vary, station dependent, time of day, time of year, seasonal varieties, but somewhere on the order of four to 10 hours is representative of our stations as well.

To your question about our ability to forestall fuel damage for a number of days per station blackout, I do not believe that we would have fuel damage, although I do not mean to trivialize the amount of work that would be required on the part of the operators to create that result.

But we do have, even in the event of depleting batteries, we have procedures here in the United States for manual operation of

our emergency pumps that would require no battery power for operation or measurement instrumentation. And in other instances, we have temporary or portable battery supplies, such as carts with batteries on them, that would allow us to operate the equipment necessary to keep the core from being damaged. And this equipment and these procedures are pre-staged. We train on them. We have formal qualification programs on them.

I am positive that we will learn things out of the Japanese event that will make us better. We are already starting to investigate how we can extend the lives of our batteries and such. I am sure we will have to look harder at spent fuel pools and their ability to withstand sustained loss of AC electrical power. But the direct answer to your question is, I would not anticipate fuel damage after 48 hours.

Senator Carper. Okay. Thanks very much.

Let me go back to the pitch I telegraphed earlier and that is to ask each of you if you could share with us one takeaway before you go back. I will just start, if I could, with, I will start with Senator Blakeslee. If you would not mind responding, that would be great.

Mr. Blakeslee. Thank you, Senator. I appreciate the opportunity.

We have 104 reactors in the Nation and the NRC has identified there are only two plants that are in the highest

seismic potential category and both of them happen to be coastal plants. But only one of them has a recently identified fault of significant proportions in very close proximity.

My concern in listening to Commissioner Jaczko's comments in response to Senator Boxer's questioning was that, although he is looking at procedures in a 90-day and a six month window, I heard nothing that identified the unique needs of these two plants, and the one plant in particular, which have these direct analogies to the threat faced in Japan through the 2007 and 2011 earthquakes.

So I would again, the one take away I hope we can walk away with is that for these two facilities in California, we upgrade our relicensing procedures to formally include seismic safety criteria and standards that directly relate to earthquake hazard in our process.

Senator Carper. All right. Thank you, Senator. Thanks so much for being with us today.

Mr. Boyd, please.

Mr. Boyd. The Senator took my first item but I knew he might so I have got a couple of others noted here. I will mention one of them, and that is the spent fuel pool safety issue that has been discussed today. The re-racking of the spent fuel pools into high density and the slow speed with which these pools are being emptied in order to put materials into dry cask storage is a serious concern to us, particularly in the high seismic

activity areas, again, like California's two plants.

Senator Carper. All right. Thank you, sir. Secretary Schiliro?

Mr. Schiliro. Yes, thank you, Senator. In my mind, and as you know, Senator, our obligation is for the safety of the people of Delaware. But what to me is paramount is that we learn from the events in Japan from the standpoint of their reaction and the emergency response that they had. We need to learn the lessons from that. And that information needs to be transparent. It also needs to be shared with the State and local counterparts, the people that would actually be forced to respond to this kind of event.

So, what I hope is that once the lessons are learned, and once that information is gotten, that there be system to share that with us so that we can change and develop our plans to meet that. If that does not occur, then to me, that would be the greatest tragedy.

So, I would hope that as the NRC and the other Federal agencies get that that it be shared and that we learn from that.

Thank you.

Senator Carper. All right. Good. Thanks so much for joining us today.

Mr. Sommerhoff?

Mr. Sommerhoff. Senator, thank you. Our protective action

decision making, it is based on plant conditions and it is based on the conditions on the ground. And from that, we start making our implementation for protective actions for the public.

We are always looking first, when we look at issues that are going to require evacuation, and evacuation is not always the protective action that we are going to implement, it might be sheltering in place, but we will look at those people who are in close proximity to the plant initially and then we are also going to look at those vulnerable populations, those difficult to move populations.

I cannot think of a situation where we would just say, everybody within 10 miles evacuate now. It does not happen like that. It happens in phases. And that is how we conduct evacuations for all types of hazards, including hurricanes and other types of hazards.

So, I just wanted to make sure that this was this understanding that the way we do implement evacuation protective actions, it is not everybody evacuate at once. And I do believe the 10-mile Emergency Planning Zone is the appropriate planning standard for us.

We have always considered that there could be implementation of protective actions outside that 10-mile zone. We have never thought that, based on environmental conditions or conditions at the plant that somehow radiation would stop at 10 miles and just

fall to the ground. We always have considered that we would have to move outside that 10 miles and implement actions outside to address the public there.

So, I just wanted to make sure that that understanding was known.

Senator Carper. Good. Thanks. Thanks so much. Mr. Pardee, one good takeaway.

Mr. Pardee. Yes. Thank you again for the opportunity. For my takeaways, I would simply say that we understand the concern on the part of the Committee and the general public, the public at large.

We are committed to open, transparent and proactive communications regarding our current state and what changes we are implementing based on the lessons learned from the events in Japan and that we share the objective of the Committee to protect the public health and safety. And we will do that through concerted operations and by profitably learning from the lessons learned and taking actions to improve our safety posture.

Senator Carper. All right. Thanks. Thanks so much.

Dr. Cochran, you have the last word, please.

Mr. Cochran. Mr. Chairman, on page five of my written statement, I gave you just over a dozen take-home lessons.

Senator Carper. Cheaper by the dozen?

Mr. Cochran. And I would hesitate to choose one or even

several as more important than others. But, let us take the spent fuel issue. We are 50 years into this industry and we do not have a geologic repository. We need to start getting that spent fuel in hardened, safe, dry cask stores and we ought to do it at the reactor sites as well as any interim site.

Then there is the issue of these BWRs. We have old reactor designs out there. One-third of the U.S. fleet. The issue that you should be thinking about is whether we have in place a process that ensures that those things get relicensed over and over again and we try to patch up the design deficiencies or are we going to get the clunkers off the street? We ought to have a process that retires these old, obsolete designs and replaces them with better technology.

Senator Carper. All right. Thanks. Thanks for those closing thoughts.

Before I thank you all and send you on your way, I just want to go back to something that Chairman Boxer said earlier in the hearing. She was asking our second panel, Chairman Jaczko and Administrator Jackson, she asked what is the worst that can happen? I think that is paraphrasing her, but she asked what is the worst that can happen?

And I said, a few minutes after that, I said maybe the worst thing that could happen was on the heels of this terrible tragedy where the folks of Miyagi, which as I may have said earlier and

as Secretary Schiliro knows, is our sister state to the State of Delaware, the Miyagi Prefecture, I have been there before and feel a real sense of empathy and compassion for the folks there.

But maybe the worst thing that could happen, at least for us here, would be for all this pain and suffering to have occurred in Japan and for us not to have learned anything from it. Or maybe for us to have learned from it but not to have done enough about it, not to have acted on the lessons that we have learned.

And there is a responsibility, I think, for all of us, not just on this Committee, not just in the Congress, not just in the industry, not just at the NRC, but there is a responsibility for all of us to work together to make sure that we fully implement the lessons that we learn and that we remain vigilant until we have done that.

And I will close with the words I use often in this room and that is, everything I do I know I could do better. I think that is true for all of us and it remains true of the nuclear industry. And we just need to remain eternally vigilant, eternally vigilant. And I am encouraged today that that is our intent and we need to make sure that that is not only our intent, but it is actually what occurs.

And with that having been said, I thank you again for joining us here today and for providing your input. And we look forward to working with you in this ongoing dialogue. Thank you

so much.

And with that, this hearing is adjourned.

[Whereupon, at 5:40 p.m. the committee was adjourned.]

April 19, 2011

TO: Hon. Jaczko:

Attached is a transcript of your testimony before the hearing of the **SENATE COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS** on April 12, 2011.

Please review your testimony, and where necessary make legible corrections to amend errors in transcription, spelling, or grammar. Also, at this time, please supply any additional information and/or exhibits that have been requested by the Senators of the committee.

If you prefer to transmit the corrected pages by FAX, send only the marked pages to my attention at (202) 228-2040. Please include your voice and FAX telephone numbers in case the transmission is unsuccessful.

Otherwise, please return the corrected transcript by mail to:

Brenda Samuels, Printing Clerk
Committee on Environment and Public Works
SH-407, United States Senate
Washington, DC 20510-6175

Please be advised that illegible or confusing editorial marks or new text that exceeds editorial limits may be refused or returned to sender to be redone, time permitting.

Please return the material to my attention not later than May 3, 2011, to meet the printing schedules of the committee. We will assume that you are satisfied with your remarks as transcribed if the transcript is not received by the due date.

Respectfully,

Brenda Samuels
(202) 224-7852
(202) 228-2040 FAX
brenda_samuels@epw.senate.gov

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Respectfully,

Brenda Samuels
(202) 224-7852
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brenda_samuels@epw.senate.gov

From: Powell, Amy
Sent: Friday, March 11, 2011 8:27 AM
To: Shane, Raeann
Subject: Update re: Markey letter

I left a VM for Tom Bergman, letting him know that Mr. Markey's staff is double-checking the letter reference. Michal said she would let me know today. If they did cite Dr. Ma as the author in error (which I suspect is the case), Chairman's office is inclined to have the response politely but firmly correct the record.

Amy Powell
Associate Director
U. S. Nuclear Regulatory Commission
Office of Congressional Affairs
Phone: 301-415-1673

From: Powell, Amy
Sent: Friday, March 11, 2011 9:18 AM
To: Schmidt, Rebecca
Subject: FW: earthquake

FYI – Mr. Markey's staff is asking about the nuclear power plant in Japan. I am sure that he will not be the only one doing that today, so we're coordinating with OPA who is working on talking points and gathering facts about the Japanese plant situation.

From: Weil, Jenny
Sent: Friday, March 11, 2011 9:16 AM
To: Powell, Amy
Cc: Decker, David
Subject: RE: earthquake

OPA is working on three things and will send along when they are ready:
--earthquakes and nuclear power plants
--tsunamis and npps
--specific points relating to the Japanese situation

From: Powell, Amy
Sent: Friday, March 11, 2011 9:11 AM
To: Weil, Jenny
Cc: Decker, David
Subject: FW: earthquake
Importance: High

Jenny – David is due in around 9:45-10:15am. My guess is that OPA may have some info on this in prep for questions; would you check with Holly Harrington to see if that is the case?

Thanks,
Amy

From: Freedhoff, Michal [mailto:Michal.Freedhoff@mail.house.gov]
Sent: Friday, March 11, 2011 9:09 AM
To: Powell, Amy; Decker, David
Subject: earthquake
Importance: High

David and Amy:

What do you know about the potential impacts of the earthquake/tsunami on nuclear facilities in Japan? EJM is anxious to know.

Thanks
Michal

Michal Ilana Freedhoff, Ph.D.
Policy Director

Office of Congressman Edward J. Markey (D-MA)
2108 Rayburn House Office Building
Washington, DC 20515
202-225-2836

From: Powell, Amy
Sent: Friday, March 11, 2011 10:20 AM
To: Batkin, Joshua; Brenner, Eliot
Cc: Schmidt, Rebecca; Coggins, Angela; Weil, Jenny
Subject: Looking for info re: NPPs in Japan

I understand that we don't want to get ahead of our Japanese counterpart, but we are starting to get inquiries about the reactors in Japan and their status following the earthquake/tsunami. We are keeping the message focused on what NRC is doing and precautions taken for plants/licensees here. However, is there anything Japan-specific that we can share at this point without stepping on toes?

Amy

From: Decker, David
Sent: Friday, March 11, 2011 12:57 PM
To: Quesenberry, Jeannette; Schmidt, Rebecca; Powell, Amy; Shane, Raeann; Weil, Jenny; Belmore, Nancy
Subject: RE: 12:30 EST Update on Facility Status from Region IV

I'm sending the press releases out to Doug Clapp/Carrie Apostolou; Michal; Liz Craddock (Landrieu's staff) and the Diablo and San Onofre congressional delegations.

From: Quesenberry, Jeannette
Sent: Friday, March 11, 2011 12:54 PM
To: Schmidt, Rebecca; Powell, Amy; Shane, Raeann; Decker, David; Weil, Jenny; Belmore, Nancy
Subject: RE: 12:30 EST Update on Facility Status from Region IV

Yes

From: Schmidt, Rebecca
Sent: Friday, March 11, 2011 12:53 PM
To: Powell, Amy; Quesenberry, Jeannette; Shane, Raeann; Decker, David; Weil, Jenny; Belmore, Nancy
Subject: Re: 12:30 EST Update on Facility Status from Region IV

So jeannette and david are sending out the releases?

From: Powell, Amy
To: Quesenberry, Jeannette; Shane, Raeann; Schmidt, Rebecca; Decker, David; Weil, Jenny; Belmore, Nancy
Sent: Fri Mar 11 12:51:04 2011
Subject: Re: 12:30 EST Update on Facility Status from Region IV

Jenny got a number of inquiries early (Markey, Murkowski, Carper). Doug Clapp also asked if we'd have a statement.

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Quesenberry, Jeannette
To: Shane, Raeann; Powell, Amy; Schmidt, Rebecca; Decker, David; Weil, Jenny; Belmore, Nancy
Sent: Fri Mar 11 12:50:01 2011
Subject: RE: 12:30 EST Update on Facility Status from Region IV

Liz called from Senator Landrieu's office looking for a statement. Amy returned the call.

From: Shane, Raeann
Sent: Friday, March 11, 2011 12:49 PM
To: Powell, Amy; Schmidt, Rebecca; Decker, David; Weil, Jenny; Quesenberry, Jeannette; Belmore, Nancy

Subject: FW: 12:30 EST Update on Facility Status from Region IV
Importance: High

Latest from RIV. Conference call with the Chairman is now at 1:00 on the ET bridge. Have you guys been getting any calls from the Hill? I have not sent any updates out from here.

From: LIA12 Hoc
Sent: Friday, March 11, 2011 12:43 PM
To: Shane, Raeann
Subject: FW: 12:30 EST Update on Facility Status from Region IV
Importance: High

From: LIA01 Hoc
Sent: Friday, March 11, 2011 12:41 PM
To: LIA04 Hoc; LIA02 Hoc; LIA12 Hoc; LIA11 Hoc; LIA07 Hoc
Subject: FW: 12:30 EST Update on Facility Status from Region IV
Importance: High

From: Howell, Linda
Sent: Friday, March 11, 2011 12:40 PM
To: HOO Hoc; LIA01 Hoc
Cc: Wright, Ned
Subject: 12:30 EST Update on Facility Status from Region IV
Importance: High

Attached is an update for the chairman's use and for the Liaison Team.

March 11, 2011 Tsunami Event
Status of NRC and Agreement State Facilities
Region IV Update current as of 12:30 p.m. EST

Diablo Canyon Power Plant declared a Notice of Unusual Event at 0423 EST based on receipt of a tsunami warning for the local coastal area. The licensee anticipates a wave surge of approximately 3 feet at the intake structure to occur around 1100 EST. The licensee does not expect a surge of this magnitude to impact plant operation. The licensee intends to keep both units at full power through the event. As a precaution, the licensee has provided limited staffing of the Technical Support Center, and has evacuated all personnel from the vicinity of the intake structure, invoking 50.54(x) for security measures. The licensee also sent all nonessential personnel offsite, and placed the circulating water screen wash system into manual operation to provide continuous flushing of the screens to prevent potential fouling. The resident inspectors are on site and monitoring plant conditions and licensee actions from the control room.

At 11:30 EST, the licensee observed potential tsunami effects of one foot based on buoy information. The licensee expects this to build to approximately a three foot surge over the ensuing 1-2 hours. This change is within the normal tidal range and not expected to impact plant operation.

The effects of the tsunami at San Onofre Nuclear Generating Station are expected to be less severe than at Diablo Canyon. San Onofre is under a tsunami advisory and has not reached any EAL thresholds. Both units continue to operate at essentially full power.

Region IV has identified 17 licensees in the states of Hawaii and Alaska that possess Category 1 or 2 sources. All of these are sealed-source users, primarily radiographers and irradiators. There is one NRC licensee at Camp McClellan in Sacramento. Region IV has commenced contacting these licensees.

The decommissioned Humboldt Bay nuclear plant has contacted the NRC and reported that they are staffed onsite and preparing for any tsunami effects. The Humboldt Bay fossil plant observed a one foot surge from the tsunami.

Region IV has been in contact with the Radiation Control Program Director for California. He has identified no Category 1 or 2 licensees that would be threatened. California has fully activated its coastal and southern Regional Operations Centers. The California Emergency Operations Center is partially activated. Region IV has contacted Radiation Control Program Directors in Washington and Oregon. Washington does not currently anticipate activating its Emergency Operations Center. Region IV is waiting on a status report for the state of Oregon.

The state of Hawaii has fully activated its Emergency Operations Center. The state has received Federal support from the Department of Homeland Security, the U.S. Coast Guard and the Federal Emergency Management Agency (FEMA). The highest waves reported in Hawaii were six feet above sea level.

FEMA Region 9 has fully activated the Regional Response Coordination Center.

From: Schmidt, Rebecca
Sent: Friday, March 11, 2011 12:58 PM
To: Quesenberry, Jeannette
Subject: Re: 12:30 EST Update on Facility Status from Region IV

Great

From: Quesenberry, Jeannette
To: Schmidt, Rebecca; Powell, Amy; Shane, Raeann; Decker, David; Weil, Jenny; Belmore, Nancy
Sent: Fri Mar 11 12:53:48 2011
Subject: RE: 12:30 EST Update on Facility Status from Region IV

Yes

From: Schmidt, Rebecca
Sent: Friday, March 11, 2011 12:53 PM
To: Powell, Amy; Quesenberry, Jeannette; Shane, Raeann; Decker, David; Weil, Jenny; Belmore, Nancy
Subject: Re: 12:30 EST Update on Facility Status from Region IV

So Jeanette and David are sending out the releases?

From: Powell, Amy
To: Quesenberry, Jeannette; Shane, Raeann; Schmidt, Rebecca; Decker, David; Weil, Jenny; Belmore, Nancy
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From: Howell, Linda
Sent: Friday, March 11, 2011 12:40 PM
To: HOO Hoc; LIA01 Hoc
Cc: Wright, Ned
Subject: 12:30 EST Update on Facility Status from Region IV
Importance: High

Attached is an update for the chairman's use and for the Liaison Team.

From: Shane, Raeann
Sent: Friday, March 11, 2011 1:07 PM
To: Decker, David; Powell, Amy; Schmidt, Rebecca; Weil, Jenny; Quesenberry, Jeannette; Belmore, Nancy
Subject: Re: 12:30 EST Update on Facility Status from Region IV

Thanks.

From: Decker, David
To: Shane, Raeann; Powell, Amy; Schmidt, Rebecca; Weil, Jenny; Quesenberry, Jeannette; Belmore, Nancy
Sent: Fri Mar 11 12:50:25 2011
Subject: RE: 12:30 EST Update on Facility Status from Region IV

Thanks Raeann. I think Amy took the last call on the tsunami topic earlier today. Since then I haven't had any. Maybe the press release info is helping cut that down?

From: Shane, Raeann
Sent: Friday, March 11, 2011 12:49 PM
To: Powell, Amy; Schmidt, Rebecca; Decker, David; Weil, Jenny; Quesenberry, Jeannette; Belmore, Nancy
Subject: FW: 12:30 EST Update on Facility Status from Region IV
Importance: High

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Importance: High

Attached is an update for the chairman's use and for the Liaison Team.

From: Decker, David
Sent: Friday, March 11, 2011 3:35 PM
To: Haynes, Laura (Carper); Schmidt, Rebecca; Powell, Amy
Subject: RE: UCS on the nuclear crisis at Fukushima (Japan)

Laura,
I'll start checking to see if there is anything more on this that we know for sure. As far as I know, what we know from Japan (that we put in the press-release type info that just went out a few minutes ago) is "there is the possibility of a release of radioactive materials due to decrease in reactor water level".

David

From: Haynes, Laura (Carper) [mailto:Laura_Haynes@carper.senate.gov]
Sent: Friday, March 11, 2011 3:26 PM
To: Schmidt, Rebecca; Decker, David; Powell, Amy
Subject: FW: UCS on the nuclear crisis at Fukushima (Japan)

This is a lot more information than I received earlier from David— is there any way to validate the claims in this email or reports?

From: Robert Cowin [mailto:rcowin@ucsusa.org]
Sent: Friday, March 11, 2011 3:20 PM
To: Haynes, Laura (Carper)
Subject: UCS on the nuclear crisis at Fukushima (Japan)

Nuclear Crisis at Fukushima

| by [Ed Lyman](#) | [nuclear power](#) | [nuclear power safety](#) |

As of 2:30 pm EST Friday 3/11/11:

The massive earthquake off the northeast coast of Japan has caused a potentially catastrophic situation at one of Japan's nuclear power plants. The situation is still evolving, but here is a preliminary assessment based on the facts we currently understand them.

The plant's owner, Tokyo Electric Power Company (TEPCO), reported that at 2:46 p.m. local time (12:46 a.m. EST) "turbines and reactors of Tokyo Electric Power Company's Fukushima Daiichi Nuclear Power Station Unit 1 ... and Units 2 and 3 ... automatically shut down due to the Miyagiken-oki Earthquake."

These reactors are 3 of the 6 operating reactors at the Fukushima I nuclear facility. All are boiling water reactors. Unit 1 has a rated output of 460 megawatts, and Units 2 and 3 each have a rated output of 784 megawatts.

TEPCO went on to state the shutdowns were caused by the loss of off-site power "due to malfunction of one out of two off-site power systems." This loss of power triggered emergency diesel generators, which automatically started to provide backup power to the reactors.

However, at 3:41 p.m. local time (1:46 a.m. EST), the emergency diesel generators shut down “due to malfunction, resulting in the complete loss of alternating current for all three units,” according to TEPCO. The failure of the diesel generators was most likely due to the arrival of the tsunami, which caused flooding in the area. The earthquake was centered 240 kilometers from Japan, and it would have taken the tsunami approximately an hour to reach the Japanese islands.

This power failure resulted in one of the most serious conditions that can affect a nuclear plant—a “station blackout”—during which off-site power and on-site emergency alternating current (AC) power is lost. Nuclear plants generally need AC power to operate the motors, valves and instruments that control the systems that provide cooling water to the radioactive core. If all AC power is lost, the options to cool the core are limited.

The boiling water reactors at Fukushima are protected by a Reactor Core Isolation Cooling (RCIC) system, which can operate without AC power because it is steam-driven and therefore does not require electric pumps. However, it does require DC power from batteries for its valves and controls to function.

If battery power is depleted before AC power is restored, however, the RCIC will stop supplying water to the core and the water level in the reactor core could drop. If it drops far enough, the core would overheat and the fuel would become damaged. Ultimately, a “meltdown” could occur: The core could become so hot that it forms a molten mass that melts through the steel reactor vessel. This would release a large amount of radioactivity from the vessel into the containment building that surrounds the vessel.

The containment building’s purpose is to keep radioactivity from being released into the environment. A meltdown would build up pressure in the containment building. At this point we do not know if the earthquake damaged the containment building enough to undermine its ability to contain the pressure and allow radioactivity to leak out.

According to technical documents translated by Aileen Mioko Smith of Green Action in Japan, if the coolant level dropped to the top of the active fuel rods in the core, damage to the core would begin about 40 minutes later, and damage to the reactor vessel would occur 90 minutes after that.

Concern about a serious accident is high enough that while TEPCO is trying to restore cooling the government has evacuated a 3-km (2-mile) radius area around the reactor.

Bloomberg News reported that the battery life for the RCIC system is eight hours. This means that the batteries would have been depleted before 10 a.m. EST today. It is unclear if this report is accurate, since it suggests that several hours have elapsed without any core cooling. Bloomberg also reported that Japan had secured six backup batteries and planned to transport them to the site, possibly by military helicopter. It is unclear how long this operation would take.

There also have been news reports that Fukushima Unit 2 has lost its core cooling, suggesting its RCIC stopped working, but that the situation “has been stabilized,” although it is not publicly known what the situation is. TEPCO reportedly plans to release steam from the reactor to reduce the pressure, which had risen 50% higher than normal. This venting will release some radioactivity.

More information about the cooling issue is available in this [*New York Times* story](#).

We will post updates as more information becomes available.

<http://allthingsnuclear.org/post/3788886037/nuclear-crisis-at-fukushima>



From: Powell, Amy
Sent: Friday, March 11, 2011 4:01 PM
To: Tallarico, Alison
Subject: Re: Possible Participation at All SLS meeting

No worries - Fridays come in two flavors: quiet and crazy! No slides for me.

Thanks
Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Tallarico, Alison
To: Powell, Amy
Sent: Fri Mar 11 15:56:32 2011
Subject: RE: Possible Participation at All SLS meeting

I'm sorry to add stress to your day! Is it only one handout and not slides that you'd be speaking from? If that's the case, I can get it from you on Monday.

Thanks
Alison
301-492-2326

From: Powell, Amy
Sent: Friday, March 11, 2011 3:55 PM
To: Tallarico, Alison
Subject: Re: Possible Participation at All SLS meeting

Sorry - crazy day with the tsunami related issues. I am en route to HQ from the Hill and will try to forward the one handout that I may use.

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Tallarico, Alison
To: Powell, Amy
Sent: Fri Mar 11 14:50:58 2011
Subject: RE: Possible Participation at All SLS meeting

Hello Amy,

Do you have any slides/handouts ready?

Thanks
Alison
301-492-2326

From: Powell, Amy
Sent: Tuesday, March 08, 2011 11:30 AM
To: Tallarico, Alison
Subject: RE: Possible Participation at All SLS meeting

I appreciate that – thank you.

From: Tallarico, Alison
Sent: Tuesday, March 08, 2011 11:29 AM
To: Powell, Amy
Subject: RE: Possible Participation at All SLS meeting

Thanks, and e-mailing is fine. I'll be making some other copies and can add yours to my mix.

Thanks
Alison
301-492-2326

From: Powell, Amy
Sent: Tuesday, March 08, 2011 11:29 AM
To: Tallarico, Alison
Subject: RE: Possible Participation at All SLS meeting

I will have you anything I'll be using by Friday. Sending you e-mail copy okay or do you need a set amount of hard copies?

From: Tallarico, Alison
Sent: Tuesday, March 08, 2011 11:24 AM
To: Powell, Amy
Subject: RE: Possible Participation at All SLS meeting

Hello Amy,

Will you have any slides to present, or handouts (or both)? If so, could I get them by this Friday, 3/11?

Thanks
Alison
301-492-2326

From: Powell, Amy
Sent: Monday, March 07, 2011 9:46 AM
To: Tallarico, Alison
Cc: Schmidt, Rebecca
Subject: Re: Possible Participation at All SLS meeting

Sure - I'd be glad to do that.

Amy

Amy Powell
Associate Director

Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Tallarico, Alison
To: Powell, Amy
Sent: Mon Mar 07 09:43:49 2011
Subject: FW: Possible Participation at All SLS meeting

Hello Amy,

Ms. Schmidt offered your name to possibly participate in an upcoming all SLS meeting we're having next Monday, 3/14, beginning at 1:30. Would you be available to give the same presentation she gave at the recent all SES meeting?

Thank you,
Alison Tallarico

From: Schmidt, Rebecca
Sent: Monday, March 07, 2011 9:03 AM
To: Tallarico, Alison
Subject: RE: Possible Participation at All SLS meeting

I have a couple of meetings at that time but Amy Powell might be available.

From: Tallarico, Alison
Sent: Monday, March 07, 2011 8:49 AM
To: Schmidt, Rebecca
Subject: Possible Participation at All SLS meeting

Hello Ms. Schmidt,

I work w/ Nancy Johns, and we're arranging an all SLS meeting scheduled for 3/14/11, from 1:30 to 3:30, in the OWF Commissioners' Conference/Hearing Room.

I did not attend the recent all SES meeting, but I understand you presented some information about the various Congressional committees. Nancy asked if I would check to see if you were interested and available to give the same presentation at this upcoming SLS meeting.

Thank you,
Alison Tallarico
301-492-2326

From: Powell, Amy
Sent: Friday, March 11, 2011 4:10 PM
To: 'John.Ohly@mail.house.gov'
Subject: Re: Letter

Hi John - I'm heading back to the office now. As you might imagine, the tsunami-related issues have ruled the day, understandably. I can't get the attachment to open on Bberry, but I am guessing that it's not a thank you ltr...

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Ohly, John <John.Ohly@mail.house.gov>
To: Powell, Amy
Sent: Fri Mar 11 14:52:00 2011
Subject: Letter

Good Afternoon Amy,

Hope all is well. I just left you a message and understand you are meetings this afternoon.

Please see the attached letter from Chairman Issa to Chairman Jaczko.

I will be in and out of meetings this afternoon but let me know if you have any questions.

Regards,
John

DARRELL E. JASSA, CALIFORNIA
CHAIRMAN

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Congress of the United States

House of Representatives

COMMITTEE ON OVERSIGHT AND GOVERNMENT REFORM

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LAWRENCE J. BRADY
STAFF DIRECTOR

March 11, 2011

The Honorable Gregory Jaczko
Chairman
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Dear Chairman Jaczko:

The Committee on Oversight and Government Reform is conducting an investigation into the termination of the Yucca Mountain Project. In particular, the recent actions of the Nuclear Regulatory Commission (NRC) in connection with the Department of Energy's motion to withdraw the license application require further explanation.

The Nuclear Waste Policy Act of 1982 (NWPA), established the authority of the federal government, specifically the U.S. Department of Energy (DOE), to site, construct and operate a permanent geologic repository for the nation's spent nuclear fuel (SNF) and high level waste (HLW). In 1987, Congress amended the NWPA, designating Yucca Mountain in Nevada as the only site available for consideration.

In 2002, pursuant to the process defined by the NWPA, Congress and the President approved the recommendation of the Secretary of Energy to construct a repository at Yucca Mountain. In June 2008, DOE submitted a license application to the NRC to construct and operate the proposed repository. Yet, your actions and those of current Energy Secretary Steven Chu appear to undermine congressional intent.

The U.S. Court of Appeals for the D.C. Circuit stated in a 2004 opinion that "Congress has settled the matter, and we, no less than the parties, are bound by its decision."¹ On March 3, 2010, however, the Department of Energy filed a motion to withdraw the license application with prejudice in an attempt to ensure the Yucca Mountain Project could never be resurrected.² Affected parties challenged the legality of this action, and in June 2010, the NRC's Atomic Safety and Licensing Board (ASLB) unanimously denied DOE's motion, citing a lack of authority.³

¹ See *Nuclear Energy Inst., Inc. v. Envtl. Prot. Agency*, 373 F.3d 1251, 1302 (D.C. Cir. 2004).

² U.S. Department of Energy's Motion to Withdraw (Mar. 3, 2010), available at <http://www.energy.gov/news/8721.htm>.

³ ASLB Order (Granting Intervention to Petitioners and Denying Withdrawal Motion) (Jun. 29, 2010).

Eight months later, the Commission has still not decided whether to review the ASLB's decision. It has come to this Committee's attention that Commissioners William Ostendorff, Kristine Svinicki, and William Magwood filed their "preliminary" votes with the Secretary of the Commission last summer.⁴ Although you filed your vote last summer as well, you delayed the resolution of this matter by later withdrawing your vote.⁵ You proceeded to continue solitary deliberations until after the start of the new fiscal year and resubmitted your vote on October 29, 2010.⁶ Despite having all preliminary votes submitted more than four months ago, and the enormous significance of the Commission's decision in this matter, you have failed to schedule an affirmation session to ratify those votes. Nevertheless, until the affirmation session is held, the ASLB's determination that the application cannot be withdrawn continues to stand.

While delaying a final vote on the ASLB decision, you instructed staff to proceed with an "orderly closure" of the NRC's license application review.⁷ NRC staff are following your instruction "to continue [the staff's] activities on the Yucca Mountain license application" in accordance with the "Commission's decisions on the fiscal year 2011 budget request" during the Continuing Resolution, which, by your interpretation, dictates termination of the review.⁸ In response to congressional and your fellow commissioners' questions about your instruction to the NRC staff,⁹ you have stated that neither the FY 2010 Appropriations Act and associated committee reports nor the FY 2011 Continuing Resolution provided you with any express direction on how to expend taxpayer dollars on Yucca Mountain activities in FY 2011.¹⁰ Your fellow commissioners¹¹ and a former NRC Chairman¹² have expressed their strong disagreement with this position publicly.

If you insist the staff continue down this path, I would expect the "orderly closure" you requested to include a complete accounting of the staff's work to date. Part of this effort would logically be the public release of Volume III of the Safety Evaluation Report, which contains the conclusions of the NRC staff regarding the technical merits of

⁴ Letter from Comm'r Kristine Svinicki to Senator James Inhofe (Nov. 4, 2010); letter from Comm'r William Ostendorff to Senator James Inhofe (Nov. 4, 2010); letter from Comm'r William Magwood to Senator James Inhofe (Nov. 5, 2010).

⁵ Letter from Chairman Gregory Jaczko to Senator James Inhofe (Nov. 5, 2010).

⁶ *Id.*

⁷ See Memorandum from Comm'r Ostendorff to Chairman Jaczko *et al.*, "Disagreement with Staff Budget Guidance Under Fiscal Year 2011 Continuing Resolution" (Oct. 8, 2010) (hereinafter Ostendorff Memo).

⁸ *Id.*; Memo from J.E. Dyer, Chief Financial Officer, and R.W. Borchardt, Executive Director for Operations, "Guidance Under a Fiscal Year 2011 Continuing Resolution" (Oct. 4, 2010).

⁹ Letter from Rep. Jim Sensenbrenner to Chairman Gregory Jaczko (Oct. 13, 2010); letter from Comm'r Kristine Svinicki to Rep. Jim Sensenbrenner (Nov. 1, 2010); Ostendorff Memo, *supra* note 7.

¹⁰ Letter from Chairman Gregory Jaczko to Rep. Joe Barton (Oct. 27, 2010).

¹¹ Letter from Comm'r Kristine Svinicki to Rep. Joe Barton (Nov. 1, 2010); letter from Comm'r William Ostendorff to Rep. Doc Hastings (Oct. 27, 2010).

¹² Open Letter to Journalists from Dale E. Klein, former Chairman, Nuclear Regulatory Commission (Oct. 29, 2010), available at <http://www.nucleartownhall.com/blog/ex-nrc-chairman-klein-rebuffs-jaczko-yucca-shut-down-alibi/>.

the license application. Thus far, the NRC has only released a redacted, pre-decisional version of the document in response to a Freedom of Information Act (FOIA) request.¹³ The document's pre-decisional state directly contradicts Commissioner Ostendorff's October 27, 2010, letter informing Rep. Doc Hastings "on July 15, 2010, Volume III was transmitted to the Director.... [f]or concurrence and authorization to publish."¹⁴ Furthermore, in the words of the ASLB, none of the evidence provided "comports with the Staff's characterization of SER Volume 3 being a preliminary draft."¹⁵

Shortly after taking office, President Obama pledged that "the public must be able to trust the science and scientific process informing public policy decisions."¹⁶ Likewise, as Chairman, you have stressed the importance of "conduct[ing] the public's work in an open and transparent manner."¹⁷ Unfortunately, your actions surrounding the termination of the Yucca Mountain Project fail to live up to this pledge.

In order to assist the Committee with its investigation, please provide the following information and documents:

1. A timeline of significant events related to the Commission's review of the ASLB's decision on DOE's motion to withdraw the license application, including but not limited to the following:
 - a. Filing of each Commissioner's vote.
 - b. Withdrawal of any Commissioner's vote.
 - c. Active deliberation or discussions between Commissioners or their staff.
2. Documents and communications, including e-mails, relating to the Commission's review of the ASLB's decision on DOE's motion to withdraw the license application.
3. Documents and communications, including e-mails, relating to reasons for the delay between the filing of the final Commissioner's vote and the scheduling of the affirmation session.
4. A timeline of all significant events related to the "orderly closure" of the High-Level Waste Program and the use of Nuclear Waste Fund resources

¹³ Response to Freedom of Information Act/ Privacy Act Request, No. 2011-0015 (Feb. 14, 2011), available at <http://www.nrc.gov/reading-rm/adams/web-based.html> (Accession no. ML110480651).

¹⁴ Letter from Comm'r William Ostendorff to Rep. Doc Hastings (Oct. 27, 2010).

¹⁵ ASLB Order (Directing NRC Staff's Show Cause) (Feb. 25, 2011).

¹⁶ President Barack Obama, *Remarks on Signing of Stem Cell Executive Order and Scientific Integrity Presidential Memorandum* (Mar. 9, 2009), available at http://www.whitehouse.gov/the_press_office/remarks-of-the-president-as-prepared-for-delivery-signing-of-stem-cell-executive-order-and-scientific-integrity-presidential-memorandum/.

¹⁷ Prepared Remarks, The Honorable Gregory Jaczko, Chairman, U.S. Nuclear Regulatory Commission, "A Firm Foundation, A Strong Regulatory Future," (Mar. 9, 2010) available at http://adamswebsearch2.nrc.gov/idmws/DocContent.dll?library=PU_ADAMS^pbntad01&LogonID=3d46d1e295e9ff82d1bd118bda083450&id=100680285.

under the Continuing Resolution, including but not limited to the following:

- a. Communication to or among the Commissioners or their respective staffs.
 - b. Internal communication to NRC staff.
5. Documents and communications, including e-mails, relating to all significant dates concerning the "orderly closure" of the High-Level Waste Program and the use of Nuclear Waste Fund resources under the Continuing Resolution.
 6. Documents and communications, including e-mails, exchanged among or originated by the Commissioners, their respective staffs, and Commission staff relating to the funding of the High-Level Waste Program in FY2011. This request includes any reviews or recommendations provided by the Office of the General Counsel.
 7. Documents and communications, including e-mails, exchanged among or originated by the Commissioners, their respective staffs, and Commission staff relating to the release of Volume III of the SER
 8. A statement by each individual responsible for reviewing and signing Volume III of the SER specifying whether he/she received the document for final concurrence and whether and when he/she gave that concurrence.
 9. Documents and communications, including e-mails, related to the decision to develop a report separate from the SER to document the NRC staff's technical review activities completed to date.
 10. Volume III of the SER, in unredacted form.

The Committee on Oversight and Government Reform is the principal oversight committee of the House of Representatives and may at "any time" investigate "any matter" as set forth in House Rule X.

The Committee requests that the NRC produce Volume III of the SER in its unredacted, electronic form no later than noon on March 23, 2011. We ask that you provide the remaining requested information and documents as soon as possible, but no later than 5:00 p.m. on April 1, 2011. When producing documents to the Committee, please deliver production sets to the Majority Staff in Room 2157 of the Rayburn House Office Building and the Minority Staff in Room 2471 of the Rayburn House Office Building. The Committee prefers, if possible, to receive all documents in electronic format. An attachment to this letter provides additional information about responding to the Committee's request.

The Honorable Gregory Jaczko
March 11, 2011
Page 5

If you have any questions about this request, please contact John Ohly of the Committee Staff at (202) 225-5074. Thank you for your attention to this matter.

Sincerely,



Darrell Issa
Chairman

Enclosure

cc: The Honorable Elijah E. Cummings, Ranking Minority Member

The Honorable William C. Ostendorff, Commissioner
U.S. Nuclear Regulatory Commission

The Honorable George Apostolakis, Commissioner
U.S. Nuclear Regulatory Commission

The Honorable Kristine Svinicki, Commissioner
U.S. Nuclear Regulatory Commission

The Honorable William D. Magwood, IV, Commissioner
U.S. Nuclear Regulatory Commission

ONE HUNDRED TWELFTH CONGRESS

Congress of the United States

House of Representatives

COMMITTEE ON OVERSIGHT AND GOVERNMENT REFORM

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WASHINGTON, DC 20515-6143

Majority (202) 225-5074
Minority (202) 225-5051

Responding to Committee Document Requests

1. In complying with this request, you should produce all responsive documents that are in your possession, custody, or control, whether held by you or your past or present agents, employees, and representatives acting on your behalf. You should also produce documents that you have a legal right to obtain, that you have a right to copy or to which you have access, as well as documents that you have placed in the temporary possession, custody, or control of any third party. Requested records, documents, data or information should not be destroyed, modified, removed, transferred or otherwise made inaccessible to the Committee.
2. In the event that any entity, organization or individual denoted in this request has been, or is also known by any other name than that herein denoted, the request shall be read also to include that alternative identification.
3. The Committee's preference is to receive documents in electronic form (i.e., CD, memory stick, or thumb drive) in lieu of paper productions.
4. Documents produced in electronic format should also be organized, identified, and indexed electronically.
5. Electronic document productions should be prepared according to the following standards:
 - (a) The production should consist of single page Tagged Image File ("TIF"), files accompanied by a Concordance-format load file, an Opticon reference file, and a file defining the fields and character lengths of the load file.
 - (b) Document numbers in the load file should match document Bates numbers and TIF file names.
 - (c) If the production is completed through a series of multiple partial productions, field names and file order in all load files should match.

6. Documents produced to the Committee should include an index describing the contents of the production. To the extent more than one CD, hard drive, memory stick, thumb drive, box or folder is produced, each CD, hard drive, memory stick, thumb drive, box or folder should contain an index describing its contents.
7. Documents produced in response to this request shall be produced together with copies of file labels, dividers or identifying markers with which they were associated when they were requested.
8. When you produce documents, you should identify the paragraph in the Committee's request to which the documents respond.
9. It shall not be a basis for refusal to produce documents that any other person or entity also possesses non-identical or identical copies of the same documents.
10. If any of the requested information is only reasonably available in machine-readable form (such as on a computer server, hard drive, or computer backup tape), you should consult with the Committee staff to determine the appropriate format in which to produce the information.
11. If compliance with the request cannot be made in full, compliance shall be made to the extent possible and shall include an explanation of why full compliance is not possible.
12. In the event that a document is withheld on the basis of privilege, provide a privilege log containing the following information concerning any such document: (a) the privilege asserted; (b) the type of document; (c) the general subject matter; (d) the date, author and addressee; and (e) the relationship of the author and addressee to each other.
13. If any document responsive to this request was, but no longer is, in your possession, custody, or control, identify the document (stating its date, author, subject and recipients) and explain the circumstances under which the document ceased to be in your possession, custody, or control.
14. If a date or other descriptive detail set forth in this request referring to a document is inaccurate, but the actual date or other descriptive detail is known to you or is otherwise apparent from the context of the request, you should produce all documents which would be responsive as if the date or other descriptive detail were correct.
15. The time period covered by this request is included in the attached request. To the extent a time period is not specified, produce relevant documents from January 1, 2009 to the present.
16. This request is continuing in nature and applies to any newly-discovered information. Any record, document, compilation of data or information, not produced because it has not been located or discovered by the return date, shall be produced immediately upon subsequent location or discovery.

17. All documents shall be Bates-stamped sequentially and produced sequentially.
18. Two sets of documents shall be delivered, one set to the Majority Staff and one set to the Minority Staff. When documents are produced to the Committee, production sets shall be delivered to the Majority Staff in Room 2157 of the Rayburn House Office Building and the Minority Staff in Room 2471 of the Rayburn House Office Building.
19. Upon completion of the document production, you should submit a written certification, signed by you or your counsel, stating that: (1) a diligent search has been completed of all documents in your possession, custody, or control which reasonably could contain responsive documents; and (2) all documents located during the search that are responsive have been produced to the Committee.

Definitions

1. The term "document" means any written, recorded, or graphic matter of any nature whatsoever, regardless of how recorded, and whether original or copy, including, but not limited to, the following: memoranda, reports, expense reports, books, manuals, instructions, financial reports, working papers, records, notes, letters, notices, confirmations, telegrams, receipts, appraisals, pamphlets, magazines, newspapers, prospectuses, inter-office and intra-office communications, electronic mail (e-mail), contracts, cables, notations of any type of conversation, telephone call, meeting or other communication, bulletins, printed matter, computer printouts, teletypes, invoices, transcripts, diaries, analyses, returns, summaries, minutes, bills, accounts, estimates, projections, comparisons, messages, correspondence, press releases, circulars, financial statements, reviews, opinions, offers, studies and investigations, questionnaires and surveys, and work sheets (and all drafts, preliminary versions, alterations, modifications, revisions, changes, and amendments of any of the foregoing, as well as any attachments or appendices thereto), and graphic or oral records or representations of any kind (including without limitation, photographs, charts, graphs, microfiche, microfilm, videotape, recordings and motion pictures), and electronic, mechanical, and electric records or representations of any kind (including, without limitation, tapes, cassettes, disks, and recordings) and other written, printed, typed, or other graphic or recorded matter of any kind or nature, however produced or reproduced, and whether preserved in writing, film, tape, disk, videotape or otherwise. A document bearing any notation not a part of the original text is to be considered a separate document. A draft or non-identical copy is a separate document within the meaning of this term.
2. The term "communication" means each manner or means of disclosure or exchange of information, regardless of means utilized, whether oral, electronic, by document or otherwise, and whether in a meeting, by telephone, facsimile, email, regular mail, telexes, releases, or otherwise.
3. The terms "and" and "or" shall be construed broadly and either conjunctively or disjunctively to bring within the scope of this request any information which might

otherwise be construed to be outside its scope. The singular includes plural number, and vice versa. The masculine includes the feminine and neuter genders.

4. The terms "person" or "persons" mean natural persons, firms, partnerships, associations, corporations, subsidiaries, divisions, departments, joint ventures, proprietorships, syndicates, or other legal, business or government entities, and all subsidiaries, affiliates, divisions, departments, branches, or other units thereof.
5. The term "identify," when used in a question about individuals, means to provide the following information: (a) the individual's complete name and title; and (b) the individual's business address and phone number.
6. The term "referring or relating," with respect to any given subject, means anything that constitutes, contains, embodies, reflects, identifies, states, refers to, deals with or is pertinent to that subject in any manner whatsoever.

From: Schmidt, Rebecca
Sent: Friday, March 11, 2011 4:28 PM
To: Powell, Amy
Subject: RE: Raeann

I just talked to her. She is going to call me. OPA is not down there

-----Original Message-----

From: Powell, Amy
Sent: Friday, March 11, 2011 4:01 PM
To: Schmidt, Rebecca
Subject: Raeann

Does someone need to relieve Raeann in the Ops Center? She's been down there since about 10am. Are they looking to staff it all night?

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Schmidt, Rebecca
Sent: Friday, March 11, 2011 5:14 PM
To: Caputo, Annie (EPW)
Subject: FW: Schedule for Ops Center -- OCA participation

Amy is sending this schedule out to all of our oversight staffers for the weekend so you know who to contact in between press releases.

From: Schmidt, Rebecca
Sent: Friday, March 11, 2011 5:08 PM
To: Shane, Raeann; Dacus, Eugene; Schmidt, Rebecca; Droggitis, Spiros; Decker, David; Powell, Amy; Riley (OCA), Timothy
Cc: Batkin, Joshua; Brenner, Eliot; Hayden, Elizabeth
Subject: Schedule for Ops Center -- OCA participation

Thanks for all your help. Here is a schedule for our participation at the Ops Center:

Friday
Raeann 10:00 am to 10:00 pm
Gene 10:00 pm to 7:00 am

Saturday
Becky 7:00 am to 2:00 pm
Spiros 2:00 pm to 9:00 pm
David 9:00 pm to 7:00 am

Sunday
Amy 7:00 am to 2:00 pm
Tim 2:00pm to 9:00pm

We will figure out if we need to cycle again later in the weekend. Also, I will send the list of who we are sending the press releases to in my next email

From: Powell, Amy
Sent: Friday, March 11, 2011 5:19 PM
To: Decker, David; Schmidt, Rebecca
Subject: RE: Update on Japan Nuclear Reactors

I'll send all oversight contacts and others following this an e-mail with our coverage schedule for the weekend.

Thanks,
AP

From: Decker, David
Sent: Friday, March 11, 2011 5:10 PM
To: Powell, Amy; Schmidt, Rebecca
Subject: FW: Update on Japan Nuclear Reactors

Should I tell her that e-mail is fine to reach at least one of us since we're manning the Ops Center until further notice?

From: Caputo, Annie (EPW) [mailto:Annie_Caputo@epw.senate.gov]
Sent: Friday, March 11, 2011 5:06 PM
To: Decker, David
Subject: RE: Update on Japan Nuclear Reactors

What do I do if I need more info over the weekend? And do you have anything about the radiation levels 1000x normal?

From: Decker, David [mailto:David.Decker@nrc.gov]
Sent: Friday, March 11, 2011 4:43 PM
To: Dedrick, Kathy (EPW); Haynes, Laura (Carper); Caputo, Annie (EPW); Clifford, Brian (Barrasso); michael.beckerman@mail.house.gov; Baran, Jeff; mary.neumayr@mail.house.gov; abigail.pinkele@mail.house.gov; david.mccarthy@mail.house.gov; john.marshall@mail.house.gov; chris.sarley@mail.house.gov; maryam.brown@mail.house.gov; Fowler, Sam (Energy); Epstein, Jonathan (Bingaman); Billups, Karen (Energy); Edwards, Isaac (Energy)
Subject: Update on Japan Nuclear Reactors

Attached is updated information regarding the status of the Fukushima reactor in Japan. This is the one that's been having issues with cooling water. Unit 1 apparently did vent steam (underlining below is my change), while a mobile power generator arrived on-site as well.

David

At 1945 UTC (1445 EST), the International Atomic Energy Agency (IAEA) Incident and Emergency Centre released information about the status of the Fukushima Daiichi nuclear power plant. This information was a result of IAEA communications with Japan's Nuclear and Industrial Safety Agency (NISA) and Ministry of Education, Culture, Sports, Science, and Technology (MEXT). The following information comes from the release:

"Unit 1

The reactor is being maintained shutdown. However there is no information regarding the status of the supply of power to Unit 1. The reactor water level is reported to be oscillating. At 15:30 UTC the reactor water was approximately 130 cm above the top of the core. Containment is intact in Unit 1, however due to an increase of pressure within containment the decision has been made to perform a limited controlled venting to avoid over pressurization of the containment.

Unit 2

The reactor is being maintained shutdown. There is currently no supply of power to Unit 2. Work is currently being undertaken to restore power. At 15:30 UTC the reactor water level is reported to be at approximately 350 cm above the top of the core. Containment is intact in Unit 2.

Unit 3

The reactor is being maintained shutdown. Power is being supplied to Unit 3. At 13:00 UTC the reactor water level is reported to be at approximately 450 cm above the top of the core. Containment is intact in Unit 3.

A mobile power generator has arrived at the site of the Fukushima Daiichi nuclear power plant.”

From: Shane, Raeann
Sent: Friday, March 11, 2011 6:04 PM
To: Decker, David; Caputo, Annie (EPW)
Cc: Powell, Amy; Schmidt, Rebecca; Dacus, Eugene; Riley (OCA), Timothy
Subject: RE: Update on Japan Nuclear Reactors

Annie:

We don't have absolute confirmation but the 1000x could be pretty close.

From: Decker, David
Sent: Friday, March 11, 2011 5:40 PM
To: Caputo, Annie (EPW)
Cc: Powell, Amy; Schmidt, Rebecca; Shane, Raeann; Dacus, Eugene; Riley (OCA), Timothy
Subject: RE: Update on Japan Nuclear Reactors

Annie,

Here's what I found about the radiation levels from a NYTimes article – it may be the same thing you've seen, but I wanted to send it to you in case you hadn't seen it.

Emergency Declared at Japanese Nuclear Plant

Japanese officials early Saturday expanded the area around a crippled nuclear power plant subject to emergency evacuation, as radiation levels inside the facility were reported to have surged and operators struggled to keep the plant's cooling system operating on battery power.

A Japanese nuclear safety panel said radiation levels were 1,000 times above normal in a reactor control room after a huge quake damaged a plant's cooling system, according to Kyodo News. The elevated radiation reading was taken inside the control room of the No. 1 reactor of the Fukushima plant.

Prime Minister Naoto Kan said before boarding a helicopter to visit the plant that the government had expanded the evacuation area around the plant subject to a six-mile from a two-mile radius. Public broadcaster NHK of Japan, quoting nuclear safety officials, said there was "no immediate health hazard" to nearby residents from a possible minute leakage, and people were urged to evacuate the area calmly.

The nuclear plant, known formally as the Fukushima Daiichi Nuclear Power Station, was operating in an emergency, battery-powered cooling mode seventeen hours after the earthquake knocked out its two main sources of the electrical power needed for safe shutdown. But the International Atomic Energy Agency said that "mobile electricity supplies have arrived at the site" to keep the crisis at the crippled plant from worsening.

The Chief Cabinet Secretary of the Japanese government said the plant was releasing steam with a "very small" amount of radioactive material to relieve pressure in one reactor at the. The government had earlier declared an "atomic power emergency" to begin the evacuation, a difficult challenge in the midst of a natural catastrophe.

"With evacuation in place and the ocean-bound wind, we can ensure the safety," said the official, Yukio Edano, at a news conference early Saturday. It was not clear, however, how long the reactor could continue to function in an emergency mode or when normal power supplies could be restored to the plant.

A pump run by steam, designed to function in the absence of electricity, was adding water to the reactor vessel, and as that water boiled off, it was being released. Such water is usually only slightly radioactive, according to nuclear experts. As long as the fuel stays covered by water, it will remain intact, and the bulk of the radioactive materials will stay inside it. If the fuel is exposed, it could result in a meltdown at the plant.

Three reactors at the plant, run by the Tokyo Electric Power Company, shut down when the earthquake began, at 2:46 PM in Tokyo (or 12:46 AM in New York). As designed, emergency diesel generators started up to provide power for continued operating of cooling functions to ensure a safe shutdown. But they ran for a little less than an hour and then stop functioning, possibly because the tsunami generated by the earthquake took out the diesel-powered generators at the plan. Reactor unit 1 suffered a rise in pressure, leading operators to vent it.

The International Atomic Energy Agency did not say how the power supplies - possibly portable generators or batteries - had arrived. Secretary of State Hillary Clinton, speaking in Washington, said earlier that American military planes had already delivered "coolant," but American military officials indicated that while they were prepared to help Japan grapple with any problems related to its nuclear facilities, but had not been asked to do so.

"To our knowledge, we have not actually carried anything in support in the nuclear facilities," said Lt. Col. John S. Haynes, a spokesman for the Air Force. "We're standing by for full up assistance to the government for whatever they might need. We have civil engineer teams, and airlift capability."

Japan relies heavily on nuclear power, and it generates just over a third of the country's total electricity. The facilities are designed to withstand earthquakes, which are common in Japan, but experts have long expressed concerns about safety standards at the plants, particularly about the impact a major quake could have if it hit close to a reactor.

At least two other Japanese nuclear plants also reported trouble, but there was no radiation leak at either of them, government officials said. A number of nuclear reactors around the hardest-hit area of the country were shut down, and Japanese news media said a fifth of the country's total nuclear generating capacity was offline because of the quake.

One major concern is that while operators can quickly shut down a nuclear reactor in an earthquake or another emergency, they cannot allow the cooling systems to stop working. Even after the plant's chain reaction is stopped, its fuel rods still produce about six percent as much heat as they did when the plant was running. The production of heat drops off sharply over the following hours, but continued cooling is needed, or the water will boil away and the fuel will melt, releasing the uranium fragments inside.

Heat from the nuclear fuel rods must be removed by water in a cooling system, but that requires power to run the pumps and to align the valves in the pipes, and run the instruments. So the plant requires a continuous supply of electricity even after the reactor stops generating its own power.

- With the steam-driven pump in operation, pressure valves on the reactor vessel would open automatically as pressure rose too high, or could be opened by operators. "It's not like they have a breach, there's no broken pipe venting steam," said Margaret E. Harding, a nuclear safety consultant, who managed a team at General Electric, the reactor's designer, that analyzed pressure build-up in reactor containments. "You're getting pops of release valves, for minutes, not hours, that take pressure back down." Some of the radioactive steam would condense back to liquid in the containment building, she said. An analyst with the World Nuclear Association, a major international nuclear power group, told Reuters that he understood fresh cool water was now being pumped into the cooling system at Fukushima, reducing the threat of a meltdown.

"We understand this situation is under control," the analyst said, adding that he understood that a back-up battery power system had been brought online after about an hour and began pumping water back into the cooling system, where the water level had been falling.

Japanese news media quoted officials in Fukushima Prefecture as saying that water levels were 3.4 meters — about 10 feet — above the fuel rods at the No. 2 reactor at the plant. Tokyo Electrical Power officials confirmed that water levels had been falling but said that fuel rods had not been exposed.

Civilian power reactors are designed with emergency diesel generators to assure the ability to continue cooling even during a blackout. Many reactors have two, assuring redundancy; some have three, so that if one must be taken out of service for maintenance, the plant can still keep running.

It was not immediately clear how many there are at Fukushima, but the operators reported earlier in the day that they were not working, prompting the evacuation.

Fukushima 1, which was designed by General Electric and entered commercial service in 1971, was probably equipped to function for some hours without emergency diesel generators, according to David Lochbaum, who worked at three American reactor complexes that use General Electric technology.

Mr. Lochbaum, who also worked as an instructor for the Nuclear Regulatory Commission on GE reactors, said he did not know the details of Fukushima, but that such reactors were equipped to ride out interruptions in electrical power by using pumps that could be powered by steam, which would still be available in case of electric power failure. Valves can be opened by motors that run off batteries, he said.

Older plant designs, of the era of Fukushima, generally have batteries sized to operate for four hours, he said.

After four hours, heat production in the core is still substantial but has been reduced, he said. The heat would boil away the cooling water, raising pressure in the reactor vessel, until automatic relief valves opened to let some of the steam out. Then the valves would close and the pressure would start building again.

If the cooling system remains inoperative for many hours, the water would eventually boil away, he said, and the fuel would begin to melt. That is what happened at Three Mile Island, the reactor near Harrisburg, Pa., that suffered a partial core melt in March 1979. In that case the cause was not an earthquake, but mechanical failure, operator error and poor design, government investigators later found.

Mr. Lochbaum, who now works for the Union of Concerned Scientists, a group that is very often critical of nuclear safety standards, said that if the cooling water in the vessel was boiling away, the process of boiling enough to expose the fuel would take “hours, not minutes.”

The radioactive steam — which would become far more radioactive as the fuel began to melt — would fill the containment building, he said. That building is designed to be cooled, to keep down steam pressure and leaks. But those pumps require the main sources of power at the plant to function properly.

“If they start melting fuel, the containment integrity is going to be the key in terms of what gets out,” Mr. Lochbaum said. “Their focus now has to be on getting back A.C. power” — or the main power supplies for the plant.

From: Caputo, Annie (EPW) [mailto:Annie_Caputo@epw.senate.gov]
Sent: Friday, March 11, 2011 5:06 PM
To: Decker, David
Subject: RE: Update on Japan Nuclear Reactors

What do I do if I need more info over the weekend? And do you have anything about the radiation levels 1000x normal?

From: Decker, David [mailto:David.Decker@nrc.gov]
Sent: Friday, March 11, 2011 4:43 PM
To: Dedrick, Kathy (EPW); Haynes, Laura (Carper); Caputo, Annie (EPW); Clifford, Brian (Barrasso); michael.beckerman@mail.house.gov; Baran, Jeff; mary.neumayr@mail.house.gov; abigail.pinkele@mail.house.gov; david.mccarthy@mail.house.gov; john.marshall@mail.house.gov; chris.sarley@mail.house.gov; maryam.brown@mail.house.gov; Fowler, Sam (Energy); Epstein, Jonathan (Bingaman); Billups, Karen (Energy); Edwards, Isaac (Energy)
Subject: Update on Japan Nuclear Reactors

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Unit 3

The reactor is being maintained shutdown. Power is being supplied to Unit 3. At 13:00 UTC the reactor water level is reported to be at approximately 450 cm above the top of the core. Containment is intact in Unit 3.

A mobile power generator has arrived at the site of the Fukushima Daiichi nuclear power plant.

From: Powell, Amy
Sent: Friday, March 11, 2011 7:09 PM
To: Zach, Andy
Subject: RE: Heading back to office

OK - I am at my desk, believe it or not. I got back and headed over to our operations center where we're monitoring the events in Japan.

-----Original Message-----

From: Zach, Andy [mailto:Andy.Zach@mail.house.gov]
Sent: Friday, March 11, 2011 7:08 PM
To: Powell, Amy
Subject: RE: Heading back to office

Thanks, Amy.

Let's chat Monday.

-----Original Message-----

From: Powell, Amy [mailto:Amy.Powell@nrc.gov]
Sent: Friday, March 11, 2011 3:58 PM
To: Zach, Andy
Subject: Heading back to office

What a day - the tsunami related issues have understandably ruled the day! I am heading back to my office and will call you (if you are still there on a fairly nice Fri after a long week...) Amy Powell Associate Director Office of Congressional Affairs U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Powell, Amy
Sent: Friday, March 11, 2011 7:33 PM
To: Dedrick, Kathy (EPW)
Subject: RE: NRC Congressional Affairs contacts, coverage regarding Japanese earthquake and tsunami issues

We'll send out updates related to any NRC actions. I'll make sure our crew has Bettina on the list as well.

From: Dedrick, Kathy (EPW) [mailto:Kathy_Dedrick@epw.senate.gov]
Sent: Friday, March 11, 2011 7:22 PM
To: Powell, Amy
Subject: RE: NRC Congressional Affairs contacts, coverage regarding Japanese earthquake and tsunami issues

Will you be sending updates throughout the weekend? If so, can you please include Bettina on the emails? Her address is: Bettina_Poirier@epw.senate.gov

From: Powell, Amy [mailto:Amy.Powell@nrc.gov]
Sent: Friday, March 11, 2011 7:02 PM
To: Powell, Amy
Cc: Shane, Raeann; Schmidt, Rebecca; Droggitis, Spiros; Riley (OCA), Timothy; Decker, David; Dacus, Eugene
Subject: NRC Congressional Affairs contacts, coverage regarding Japanese earthquake and tsunami issues
Importance: High

Hi all –

In the event that it is needed, NRC's Office of Congressional Affairs is planning to have staff available in the NRC's Operations Center through the weekend as the agency continues to track Japanese earthquake and tsunami issues. Here is the schedule for who will be available and when:

Friday, March 11th

Raeann Shane	until 10:00 pm
Eugene "Gene" Dacus	10:00 pm to 7:00 am

Saturday, March 12th

Rebecca "Becky" Schmidt	7:00 am to 2:00 pm
Spiros Droggitis	2:00 pm to 9:00 pm
David Decker	9:00 pm to 7:00 am

Sunday, March 13th

Amy Powell	7:00 am to 2:00 pm
Tim Riley	2:00pm to 9:00pm

I've cc'ed all of our NRC Congressional Affairs staff on this schedule so that you have their e-mail addresses. If this changes at any point in the weekend, we will notify you.

Amy

Amy Powell
Associate Director
U. S. Nuclear Regulatory Commission

Office of Congressional Affairs
Phone: 301-415-1673

From: Powell, Amy
Sent: Friday, March 11, 2011 7:34 PM
To: Schmidt, Rebecca; Shane, Raeann; Dacus, Eugene; Droggitis, Spiros; Decker, David; Riley (OCA), Timothy
Subject: An additional contact for updates this weekend

Kathy Dedrick asked that we also include Bettina Poirer, her staff director: Bettina_Poirier@epw.senate.gov

From: Schmidt, Rebecca
Sent: Friday, March 11, 2011 5:19 PM
To: Shane, Raeann; Dacus, Eugene; Droggitis, Spiros; Decker, David; Powell, Amy; Riley (OCA), Timothy
Subject: FW: E-mails for contacts

Notice a few new names now

From: Powell, Amy
Sent: Friday, March 11, 2011 5:17 PM
To: Schmidt, Rebecca
Subject: E-mails for contacts

House Energy and Commerce Committee

Jeff Baran (Chairman Waxman - Full Committee)

jeff.baran@mail.house.gov

Abby Pinkele

abigail.pinkele@mail.house.gov

Mary Neumayr (Rep. Barton, Ranking Member - Full Committee)

mary.neumayr@mail.house.gov

David McCarthy

david.mccarthy@mail.house.gov

John Marshall

JohnM@mail.house.gov

Maryam Brown

maryam.brown@mail.house.gov

Michael Beckerman (Rep. Upton, Ranking Member - Subcommittee on Energy and Environment)

michael.beckerman@mail.house.gov

Chris Sarley

chris.sarley@mail.house.gov

Senate Environment and Public Works Committee

Kathy Dedrick (Sen. Boxer, Chair - Full Committee)

kathy_dedrick@epw.senate.gov

Ruth Van Mark (Sen. Inhofe, Ranking Member - Full Committee; Ruth is Minority Staff Director)

ruth_vanmark@epw.senate.gov

Annie Caputo (Sen. Inhofe, Ranking Member - Full Committee)

annie_caputo@epw.senate.gov

Laura Haynes (Sen. Carper, Chair - Subcommittee on Clean Air and Nuclear Safety)

laura_haynes@carper.senate.gov

Brian Clifford (Sen. Barrasso staff, Ranking member on EPW Clean Air and Nuclear Safety Subcommittee)

Brian_Clifford@barrasso.senate.gov

Senator Landrieu's staff:

Liz Craddock elizabeth_craddock@landrieu.senate.gov

Appropriations staff

Doug Clapp

Doug_clapp@appro.senate.gov

Carrie Apostolou

Carrie_apostolou@appro.senate.gov

Taunja Berquam

Taunja.berquam@mail.house.gov

Rob Blair

Rob.blair@mail.house.gov

Diablo Canyon contingent

SEN. BARBARA BOXER D

Bridget Petruczok (legislative assistant)

bridget_petruczok@boxer.senate.gov

Jennifer Tang (senior field representative)

jennifer_tang@boxer.senate.gov

Hilary Bishop Pearson (special projects director)

hilary_pearson@boxer.senate.gov

SEN. DIANNE FEINSTEIN D

Matthew Nelson (legislative assistant)

matthew_nelson@feinstein.senate.gov

John Watts (legislative director)

john_watts@feinstein.senate.gov

Shelly Abajian (district director)

shelly_abajian@feinstein.senate.gov

Sarah Moffat

Sarah_Moffat@feinstein.senate.gov

REP. LOIS CAPPS D 23rd Dist.

Jonathan Levenshus (legislative director)

jonathan.levenshus@mail.house.gov

Dist. Office - San Luis Obispo

Greg Haas (district representative)

greg.haas@mail.house.gov

REP. KEVIN McCARTHY R 22nd Dist.

Kyle Lombardi (legislative assistant)

kyle.lombardi@mail.house.gov

Mike Whiteford (field representative)

mike.whiteford@mail.house.gov

REP. ELTON GALLEGLY R 24th Dist.

Richard Mereu (legislative director)

richard.mereu@mail.house.gov

San Onofre contingent

SEN. BARBARA BOXER (D-CA)

Bridget Petruczok

bridget_petruczok@boxer.senate.gov

Jennifer Tang

jennifer_tang@boxer.senate.gov

SEN. DIANNE FEINSTEIN (D-CA)

Matthew Nelson

matthew_nelson@feinstein.senate.gov

John Watts

john_watts@feinstein.senate.gov

Chris Carrillo

Chris_Carrillo@feinstein.senate.gov

James Peterson

james_peterson@feinstein.senate.gov

REP. KEN CALVERT (R-CA) 44th Dist.

Maria Bowie (legislative director)

maria.bowie@mail.house.gov

Jolyn Murphy (district director)

jolyn.murphy@mail.house.gov

Shawna Rimke (district caseworker/representative)

shawna.rimke@mail.house.gov

REP. DARRELL ISSA (R-CA) 49th Dist.

Molly Boyl (energy policy aide)

molly.boyl@mail.house.gov

Phil Paule (district director)

phil.paule@mail.house.gov

From: Decker, David

Sent: Friday, March 11, 2011 5:05 PM

To: Schmidt, Rebecca; Powell, Amy

Subject: Who We've Been Sending Update To

Here's the list of people we've been sending updates on the Earthquake/Tsunami issues:

Oversight Staffers

Kathy Dedrick

Laura Haynes

Annie Caputo
Brian Clifford
Michael Beckerman
Mary Neumayr
Jeff Baran
David McCarthy
Chris Sorley
Maryam Brown
Abigail Pinkele
John Marshall
Sam Fowler
Jon Epstein
Karen Billups
Isaac Edwards

Diablo Canyon Congressional Delegation
San Onofre Congressional Delegation

Liz Craddock (Senator Landrieu's office)

Michal Freedhoff/Avenel Joseph, Ilya Fischhoff (Congressman Markey's office)

Doug Clapp and Carrie Apostolou (Senate Appropriations Subcommittee on Energy and Water)

From: Powell, Amy
Sent: Friday, March 11, 2011 8:26 PM
To: Shane, Raeann
Subject: Re: NRC Update: Diablo Canyon

You rock - and I'm home :)

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Shane, Raeann
To: Powell, Amy
Sent: Fri Mar 11 19:54:16 2011
Subject: FW: NRC Update: Diablo Canyon

Great minds think alike. Should have cc'd you. Got 2 bounce backs, but I corrected them, user error. Go home

From: Shane, Raeann
Sent: Friday, March 11, 2011 7:39 PM
To: Shane, Raeann
Subject: NRC Update: Diablo Canyon

Just a quick update. We still don't have much officially from Japan. The one update I can give you is that Diablo Canyon has exited their Unusual Event status due to a reduced threat of tsunami.

From: Schmidt, Rebecca
Sent: Saturday, March 12, 2011 8:53 AM
To: Shane, Raeann; Decker, David; Powell, Amy; Droggitis, Spiros; Riley (OCA), Timothy; Dacus, Eugene
Subject: RE: How's it going?

Still don't know anything new. Eliot and I are going to get the CHR's ok on a few bullets--Chr. has contacted his counterparts in Japan and offered help; we have NRC employees on 2 DART teams on the way to Japan; we are monitoring health effects for Hawaii, Alaska, California, Washington, Oregon. Hopefully we will have something I can send out by 10am.

-----Original Message-----

From: Shane, Raeann
Sent: Saturday, March 12, 2011 8:46 AM
To: Schmidt, Rebecca
Subject: How's it going?

From: Haynes, Laura (Carper) <Laura_Haynes@carper.senate.gov>
Sent: Saturday, March 12, 2011 10:19 AM
To: Schmidt, Rebecca
Subject: Re: Japanese Earthquake and Tsunami--10:00 am Saturday

Fyi - the Senator is asking....

Laura Haynes
Office of U.S. Senator Tom Carper
Sent using BlackBerry

From: Haynes, Laura (Carper)
Sent: Saturday, March 12, 2011 10:16 AM
To: 'Rebecca.Schmidt@nrc.gov' <Rebecca.Schmidt@nrc.gov>
Subject: Re: Japanese Earthquake and Tsunami--10:00 am Saturday

Any intel on the explosion?

Laura Haynes
Office of U.S. Senator Tom Carper
Sent using BlackBerry

From: Schmidt, Rebecca [mailto:Rebecca.Schmidt@nrc.gov]
Sent: Saturday, March 12, 2011 10:15 AM
To: jeff.baran@mail.house.gov <jeff.baran@mail.house.gov>; abigail.pinkele@mail.house.gov <abigail.pinkele@mail.house.gov>; mary.neumayr@mail.house.gov <mary.neumayr@mail.house.gov>; david.mccarthy@mail.house.gov <david.mccarthy@mail.house.gov>; JohnM@mail.house.gov <JohnM@mail.house.gov>; maryam.brown@mail.house.gov <maryam.brown@mail.house.gov>; michael.beckerman@mail.house.gov <michael.beckerman@mail.house.gov>; chris.sarley@mail.house.gov <chris.sarley@mail.house.gov>; Dedrick, Kathy (EPW); VanMark, Ruth (EPW); Caputo, Annie (EPW); Haynes, Laura (Carper); Clifford, Brian (Barrasso); Craddock, Elizabeth (Landrieu); Clapp, Doug (Appropriations); Apostolou, Carrie (Appropriations); Taunja.berquam@mail.house.gov <Taunja.berquam@mail.house.gov>; Rob.blair@mail.house.gov <Rob.blair@mail.house.gov>; Karen.Wayland@mail.house.gov <Karen.Wayland@mail.house.gov>; Poirier, Bettina (EPW); 'Mary.Frances.Repko@mail.house.gov' <'Mary.Frances.Repko@mail.house.gov'>
Cc: Powell, Amy <Amy.Powell@nrc.gov>; Decker, David <David.Decker@nrc.gov>; Riley (OCA), Timothy <Timothy.RileyOCA@nrc.gov>; Shane, Raeann <Raeann.Shane@nrc.gov>; Droggitis, Spiros <Spiros.Droggitis@nrc.gov>
Subject: Japanese Earthquake and Tsunami--10:00 am Saturday

I wanted to pass on the latest info as of this morning. We will continue to update you throughout the day.

- The Nuclear Regulatory Commission has spoken with its counterpart agency in Japan, offering the assistance of U.S. technical experts. Should the Japanese want to make use of U.S. expertise, NRC staffers with extensive background in boiling water reactors are available to assist efforts in Japan.
- The NRC is coordinating its actions with other Federal agencies as part of the U.S. government response.
- The NRC is examining all available information as part of the effort to analyze the event and understand its implications both for Japan and the United States.
- The NRC has regulations in place that require licensees to design their plants to withstand the effects of tsunamis.
(10CFR 50, Appendix A, Criterion 2, “Design bases for protection against natural phenomenon” requires licensees to design structures, systems, and components important to safety to withstand the effects of natural phenomenon, including tsunamis.)
- Nuclear power plants are built to withstand environmental hazards, including earthquakes. Even those plants that are located outside of areas with extensive seismic activity are designed for safety in the event of such a natural disaster.
- The NRC requires that safety-significant structures, systems, and components be designed to take into account the most severe natural phenomena historically reported for the site and surrounding area. The NRC then adds a margin for error to account for the historical data’s limited accuracy. In other words, U.S. nuclear power plants are designed to be safe based on historical data from the area’s maximum credible earthquake.

From: Schmidt, Rebecca
Sent: Saturday, March 12, 2011 1:24 PM
To: Tift, Doug; McNamara, Nancy
Subject: RE: Japanese Earthquake and Tsunami--10:00 am Saturday

sure

-----Original Message-----

From: Tift, Doug
Sent: Saturday, March 12, 2011 12:34 PM
To: Schmidt, Rebecca; McNamara, Nancy
Subject: RE: Japanese Earthquake and Tsunami--10:00 am Saturday

Thanks Becky. Could you CC Nancy and I on future updates you send to the Congressionals so we can keep our states up to date?

Thanks,
-Doug

From: Schmidt, Rebecca
Sent: Saturday, March 12, 2011 12:23 PM
To: McNamara, Nancy; Tift, Doug
Subject: FW: Japanese Earthquake and Tsunami--10:00 am Saturday

From: Schmidt, Rebecca
Sent: Saturday, March 12, 2011 10:15 AM
To: 'jeff.baran@mail.house.gov'; 'abigail.pinkele@mail.house.gov'; 'mary.neumayr@mail.house.gov'; 'david.mccarthy@mail.house.gov'; 'JohnM@mail.house.gov'; 'maryam.brown@mail.house.gov'; 'michael.beckerman@mail.house.gov'; 'chris.sarley@mail.house.gov'; 'kathy_dedrick@epw.senate.gov'; 'ruth_vanmark@epw.senate.gov'; 'annie_caputo@epw.senate.gov'; 'laura_haynes@carper.senate.gov'; 'Brian_Clifford@barrasso.senate.gov'; 'elizabeth_craddock@landrieu.senate.gov'; 'Doug_clapp@appro.senate.gov'; 'Carrie_apostolou@appro.senate.gov'; 'Taunja.berquam@mail.house.gov'; 'Rob.blair@mail.house.gov'; 'Karen.Wayland@mail.house.gov'; 'Bettina_Poirier@epw.senate.gov'; 'Mary.Frances.Repko@mail.house.gov'
Cc: Powell, Amy; Decker, David; Riley (OCA), Timothy; Shane, Raeann; Droggitis, Spiros
Subject: Japanese Earthquake and Tsunami--10:00 am Saturday

I wanted to pass on the latest info as of this morning. We will continue to update you throughout the day.

The Nuclear Regulatory Commission has spoken with its counterpart agency in Japan, offering the assistance of U.S. technical experts. Should the Japanese want to make use of U.S. expertise, NRC staffers with extensive background in boiling water reactors are available to assist efforts in Japan.

The NRC is coordinating its actions with other Federal agencies as part of the U.S. government response.

- The NRC is examining all available information as part of the effort to analyze the event and understand its implications both for Japan and the United States.

- The NRC has regulations in place that require licensees to design their plants to withstand the effects of tsunamis.

(10CFR 50, Appendix A, Criterion 2, "Design bases for protection against natural phenomenon" requires licensees to design structures, systems, and components important to safety to withstand the effects of natural phenomenon, including tsunamis.)

- Nuclear power plants are built to withstand environmental hazards, including earthquakes. Even those plants that are located outside of areas with extensive seismic activity are designed for safety in the event of such a natural disaster.

- The NRC requires that safety-significant structures, systems, and components be designed to take into account the most severe natural phenomena historically reported for the site and surrounding area. The NRC then adds a margin for error to account for the historical data's limited accuracy. In other words, U.S. nuclear power plants are designed to be safe based on historical data from the area's maximum credible earthquake.

From: Schmidt, Rebecca
Sent: Saturday, March 12, 2011 1:41 PM
To: Craddock, Elizabeth (Landrieu)
Subject: RE: Press Release: NRC in Communication with Japanese Regulations

You are the first—we will be working with other Federal agencies (DHS,EPA) to make sure the equipment IF NECESSARY is available. At this time, we are still monitoring the situation.

From: Craddock, Elizabeth (Landrieu) [mailto:Elizabeth_Craddock@landrieu.senate.gov]
Sent: Saturday, March 12, 2011 1:23 PM
To: Schmidt, Rebecca
Subject: Re: Press Release: NRC in Communication with Japanese Regulations

Have y'all been getting any questions as to if a nuclear release occurred in Japan, what impact it would have on the US?

From: Schmidt, Rebecca [mailto:Rebecca.Schmidt@nrc.gov]
Sent: Saturday, March 12, 2011 12:03 PM
To: jeff.baran@mail.house.gov <jeff.baran@mail.house.gov>; abigail.pinkele@mail.house.gov <abigail.pinkele@mail.house.gov>; mary.neumayr@mail.house.gov <mary.neumayr@mail.house.gov>; david.mccarthy@mail.house.gov <david.mccarthy@mail.house.gov>; JohnM@mail.house.gov <JohnM@mail.house.gov>; maryam.brown@mail.house.gov <maryam.brown@mail.house.gov>; michael.beckerman@mail.house.gov <michael.beckerman@mail.house.gov>; chris.sarley@mail.house.gov <chris.sarley@mail.house.gov>; Dedrick, Kathy (EPW); VanMark, Ruth (EPW); Caputo, Annie (EPW); Haynes, Laura (Carper); Clifford, Brian (Barrasso); Craddock, Elizabeth (Landrieu); Clapp, Doug (Appropriations); Apostolou, Carrie (Appropriations); Taunja.berquam@mail.house.gov <Taunja.berquam@mail.house.gov>; Rob.blair@mail.house.gov <Rob.blair@mail.house.gov>; Karen.Wayland@mail.house.gov <Karen.Wayland@mail.house.gov>; Poirier, Bettina (EPW); mary.frances.repko@mail.house.gov <mary.frances.repko@mail.house.gov>
Subject: FW: Press Release: NRC in Communication with Japanese Regulations

Attached for immediate release and posting.

Office of Public Affairs
US Nuclear Regulatory Commission
301-415-8200
opa_resource@nrc.gov

From: Droggitis, Spiros
Sent: Saturday, March 12, 2011 3:41 PM
To: Shane, Raeann; Schmidt, Rebecca; Dacus, Eugene; Decker, David; Powell, Amy; Riley (OCA), Timothy
Cc: Brenner, Eliot; Hayden, Elizabeth
Subject: RE: Schedule for Ops Center -- OCA participation

I can do Tues. am

You got it. Right now we have:

Sun – 9pm-7am – Gene
Mon – 7am-2pm – Raeann
Mon – 2pm-9pm – open
Mon – 9pm-7am – Tim
Tues – 7am-2pm - Spiros

From: Shane, Raeann
Sent: Saturday, March 12, 2011 3:31 PM
To: Schmidt, Rebecca; Dacus, Eugene; Droggitis, Spiros; Decker, David; Powell, Amy; Riley (OCA), Timothy
Cc: Brenner, Eliot; Hayden, Elizabeth
Subject: Re: Schedule for Ops Center -- OCA participation

I will take Mon 7am to 2 If it's still open

From: Schmidt, Rebecca
To: Schmidt, Rebecca; Shane, Raeann; Dacus, Eugene; Droggitis, Spiros; Decker, David; Powell, Amy; Riley (OCA), Timothy
Cc: Brenner, Eliot; Hayden, Elizabeth
Sent: Sat Mar 12 12:48:01 2011
Subject: RE: Schedule for Ops Center -- OCA participation

The Ops Center has to check a box so I need volunteers to man the following hours:

Sun night 9pm – 7am Monday morning
Mon 7am – 2PM
Mon 2pm – 9 pm
Mon 9 pm – Tues 7am
Tues 7am to 2pm

First come, first serve!!!

From: Schmidt, Rebecca
Sent: Friday, March 11, 2011 5:08 PM
To: Shane, Raeann; Dacus, Eugene; Schmidt, Rebecca; Droggitis, Spiros; Decker, David; Powell, Amy; Riley (OCA), Timothy
Cc: Batkin, Joshua; Brenner, Eliot; Hayden, Elizabeth
Subject: Schedule for Ops Center -- OCA participation

Thanks for all your help. Here is a schedule for our participation at the Ops Center:

Friday

Raeann 10:00 am to 10:00 pm
Gene 10:00 pm to 7:00 am

Saturday

Becky 7:00 am to 2:00 pm
Spiros 2:00 pm to 9:00 pm
David 9:00 pm to 7:00 am

Sunday

Amy 7:00 am to 2:00 pm
Tim 2:00pm to 9:00pm

We will figure out if we need to cycle again later in the weekend. Also, I will send the list of who we are sending the press releases to in my next email

From: Schmidt, Rebecca
Sent: Saturday, March 12, 2011 5:42 PM
To: Powell, Amy
Subject: Re: repko"s email

Got it. It was the same but for some reason on the third try it went. I conformed she got them

From: Powell, Amy
To: Schmidt, Rebecca
Sent: Sat Mar 12 17:38:53 2011
Subject: Re: repko"s email

That's what I have - I'll check online when I get back home. Still catching up on email.

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Schmidt, Rebecca
To: Powell, Amy
Sent: Sat Mar 12 10:35:41 2011
Subject: repko"s email

Didn't go through. I tried mary.frances.repko@mail.house.gov and mary.francis.repko@mail.house.gov and neither worked

From: Droggitis, Spiros
Sent: Saturday, March 12, 2011 5:47 PM
To: Schmidt, Rebecca; Powell, Amy
Subject: RE: Update on Japan Nuclear Reactors

Done

From: Schmidt, Rebecca
Sent: Saturday, March 12, 2011 5:47 PM
To: Droggitis, Spiros; Powell, Amy
Subject: Re: Update on Japan Nuclear Reactors

He isn't but go ahead and add him. Send him the previous ones

From: Droggitis, Spiros
To: Powell, Amy
Cc: Schmidt, Rebecca
Sent: Sat Mar 12 17:42:01 2011
Subject: RE: Update on Japan Nuclear Reactors

Is he on the distribution list?

From: Powell, Amy
Sent: Saturday, March 12, 2011 5:38 PM
To: Droggitis, Spiros
Cc: Schmidt, Rebecca
Subject: Fw: Update on Japan Nuclear Reactors

Been out of town all day and catching up now - see Jon Epstein's email below (Sen Bingaman's staff on Senate Energy)

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Epstein, Jonathan (Bingaman) <Jonathan_Epstein@bingaman.senate.gov>
To: Decker, David
Cc: Powell, Amy; Edwards, Isaac (Energy) <Isaac_Edwards@energy.senate.gov>
Sent: Sat Mar 12 09:54:53 2011
Subject: Re: Update on Japan Nuclear Reactors

David is there a coordinated monitoring of the Japan reactor situation I'm the USG?

Are their regular situation reports I can have sent to us?

I will probably have to ask you all (or some team) of agencies to come over and give a briefing on what the NRC knows

and their assessment next week.

Sent from my BlackBerry Wireless Handheld - please excuse the typos

From: Epstein, Jonathan (Bingaman)
Sent: Friday, March 11, 2011 04:53 PM
To: Decker, David <David.Decker@nrc.gov>
Subject: RE: Update on Japan Nuclear Reactors

that would be good, thank you.

From: Decker, David [mailto:David.Decker@nrc.gov]
Sent: Friday, March 11, 2011 4:53 PM
To: Epstein, Jonathan (Bingaman)
Subject: RE: Update on Japan Nuclear Reactors

Jon,

We had the exact same question! At this point, we're still wondering what she was referring to. My guess is that she's offered to fly over a replacement diesel generator, and that somehow "cooling water" was described? If I find out anything I will let you know.

David

From: Epstein, Jonathan (Bingaman) [mailto:Jonathan_Epstein@bingaman.senate.gov]
Sent: Friday, March 11, 2011 4:48 PM
To: Decker, David
Subject: RE: Update on Japan Nuclear Reactors

David – can you tell me what the shipping of cooling water is that Secretary Clinton talked about?

From: Decker, David [mailto:David.Decker@nrc.gov]
Sent: Friday, March 11, 2011 4:43 PM
To: Dedrick, Kathy (EPW); Haynes, Laura (Carper); Caputo, Annie (EPW); Clifford, Brian (Barrasso); michael.beckerman@mail.house.gov; Baran, Jeff; mary.neumayr@mail.house.gov; abigail.pinkele@mail.house.gov; david.mccarthy@mail.house.gov; john.marshall@mail.house.gov; chris.sarley@mail.house.gov; maryam.brown@mail.house.gov; Fowler, Sam (Energy); Epstein, Jonathan (Bingaman); Billups, Karen (Energy); Edwards, Isaac (Energy)
Subject: Update on Japan Nuclear Reactors

Attached is updated information regarding the status of the Fukushima reactor in Japan. This is the one that's been having issues with cooling water. Unit 1 apparently did vent steam (underlining below is my change), while a mobile power generator arrived on-site as well.

David

At 1945 UTC (1445 EST), the International Atomic Energy Agency (IAEA) Incident and Emergency Centre released information about the status of the Fukushima Daiichi nuclear power plant. This information was a result of IAEA communications with Japan's Nuclear and Industrial Safety Agency (NISA) and Ministry of Education, Culture, Sports, Science, and Technology (MEXT). The following information comes from the release:

"Unit 1

The reactor is being maintained shutdown. However there is no information regarding the status of the supply of power to Unit 1. The reactor water level is reported to be oscillating. At 15:30 UTC the reactor water was approximately 130 cm above the top of the core. Containment is intact in Unit 1, however due to an increase of pressure within containment the decision has been made to perform a limited controlled venting to avoid over pressurization of the containment.

Unit 2

The reactor is being maintained shutdown. There is currently no supply of power to Unit 2. Work is currently being undertaken to restore power. At 15:30 UTC the reactor water level is reported to be at approximately 350 cm above the top of the core. Containment is intact in Unit 2.

Unit 3

The reactor is being maintained shutdown. Power is being supplied to Unit 3. At 13:00 UTC the reactor water level is reported to be at approximately 450 cm above the top of the core. Containment is intact in Unit 3.

A mobile power generator has arrived at the site of the Fukushima Daiichi nuclear power plant."

From: Schmidt, Rebecca
Sent: Saturday, March 12, 2011 5:57 PM
To: Droggitis, Spiros
Subject: Re: Update on Japan Nuclear Reactors

Ask the fedliasion person next to yopu to add your name to email. Also need to add your replacement. I haven't gotten one in a long time. For some reason we aren't on the list. She has to add your name to the list. Make sure to add to our switch out form!!!!

----- Original Message -----

From: Droggitis, Spiros
To: Schmidt, Rebecca; Powell, Amy; Decker, David
Sent: Sat Mar 12 17:54:23 2011
Subject: RE: Update on Japan Nuclear Reactors

I sent him the TP's that you sent out this morning and the 2 press releases. Since Bill Borchardt just briefed everybody using the TEPCO press release, I sent that too, but I now see from below that he's been on that site. I also sent him the IAEA press release, since we are making a big deal of working through them. Don't know what a sitreport is though.

-----Original Message-----

From: Schmidt, Rebecca
Sent: Saturday, March 12, 2011 5:51 PM
To: Powell, Amy; Droggitis, Spiros; Decker, David
Subject: Re: Update on Japan Nuclear Reactors

Don't send him the sitreports though. We aren't ending them out

----- Original Message -----

From: Powell, Amy
To: Droggitis, Spiros; Decker, David
Cc: Schmidt, Rebecca
Sent: Sat Mar 12 17:48:00 2011
Subject: Fw: Update on Japan Nuclear Reactors

Just caught up with today's email - here is a long chain involving Jon Epstein. Pete Lyons was looped in as well by Jon. Spiros, Jon was NOT on the email list but let's add him. Jonathan_Epstein@bingaman.senate.gov in case you can't view the address from the chain.

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

----- Original Message -----

From: Lyons, Peter <Peter.Lyons@Nuclear.Energy.gov>

To: Epstein, Jonathan <Alert> <Jonathan_Epstein@bingaman.senate.gov>
Cc: Edwards, Isaac (Energy) <Isaac_Edwards@energy.senate.gov>; Fowler, Sam <sam_fowler@energy.senate.gov>;
Simon, Bob <Alert> <Bob_Simon@energy.senate.gov>; Powell, Amy; Decker, David
Sent: Sat Mar 12 13:49:10 2011
Subject: RE: Update on Japan Nuclear Reactors

Tepeco site seems consistent with info we are getting from other sources.

-----Original Message-----

From: Epstein, Jonathan <Alert>
Sent: Saturday, March 12, 2011 1:48 PM
To: Lyons, Peter
Cc: Edwards, Isaac (Energy); Fowler, Sam; Simon, Bob <Alert>; 'Amy.Powell@nrc.gov'; 'David.Decker@nrc.gov'
Subject: Re: Update on Japan Nuclear Reactors

Thanks, the TEPCO web page has been providing regular and detailed updates and world nuclear association web page has been doing it too with necessary graphics. But I think it will be important to have a common set of vetted facts for members and staff.

Sent from my BlackBerry Wireless Handheld - please excuse the typos

----- Original Message -----

From: Lyons, Peter [mailto:Peter.Lyons@Nuclear.Energy.gov]
Sent: Saturday, March 12, 2011 01:25 PM
To: Epstein, Jonathan (Bingaman)
Cc: Edwards, Isaac (Energy); Fowler, Sam (Energy); Simon, Bob (Energy); 'Amy.Powell@nrc.gov' <Amy.Powell@nrc.gov>;
'David.Decker@nrc.gov' <David.Decker@nrc.gov>
Subject: RE: Update on Japan Nuclear Reactors

Jonathan

I'm back from White House meeting. Situation, while certainly not good, may be getting closer to a degree of stability. There is an activity now to put in place a Q&A format that should prove useful to you and colleagues. I hope it will be ready in a few hours. Sorry for my frantic response this morning.
pete

-----Original Message-----

From: Epstein, Jonathan <Alert>
Sent: Saturday, March 12, 2011 10:24 AM
To: Lyons, Peter
Cc: Edwards, Isaac (Energy); Fowler, Sam; Simon, Bob <Alert>; 'Amy.Powell@nrc.gov'; 'David.Decker@nrc.gov'
Subject: Re: Update on Japan Nuclear Reactors

I suspect we will be asking for some kind of assessment for members and staff next week

Sent from my BlackBerry Wireless Handheld - please excuse the typos

----- Original Message -----

From: Lyons, Peter [mailto:Peter.Lyons@Nuclear.Energy.gov]
Sent: Saturday, March 12, 2011 10:07 AM
To: Epstein, Jonathan (Bingaman)

Subject: RE: Update on Japan Nuclear Reactors

Jonathan

We're frantically working towards a WH meeting soon. Doe and NRC are monitoring the situation and trying to help. We haven't had time to put together anything resembling a situation report here.

Sorry

We could not be busier now.

pete

-----Original Message-----

From: Epstein, Jonathan <Alert>

Sent: Saturday, March 12, 2011 10:04 AM

To: Lyons, Peter

Subject: Fw: Update on Japan Nuclear Reactors

Fyi

Sent from my BlackBerry Wireless Handheld - please excuse the typos

From: Epstein, Jonathan (Bingaman)

Sent: Saturday, March 12, 2011 09:54 AM

To: 'David.Decker@nrc.gov' <David.Decker@nrc.gov>

Cc: 'Amy.Powell@nrc.gov' <Amy.Powell@nrc.gov>; Edwards, Isaac (Energy)

Subject: Re: Update on Japan Nuclear Reactors

David is there a coordinated monitoring of the Japan reactor situation I'm the USG?

Are their regular situation reports I can have sent to us?

I will probably have to ask you all (or some team) of agencies to come over and give a briefing on what the NRC knows and their assessment next week.

Sent from my BlackBerry Wireless Handheld - please excuse the typos

From: Epstein, Jonathan (Bingaman)

Sent: Friday, March 11, 2011 04:53 PM

To: Decker, David <David.Decker@nrc.gov>

Subject: RE: Update on Japan Nuclear Reactors

that would be good, thank you.

From: Decker, David [mailto:David.Decker@nrc.gov]

Sent: Friday, March 11, 2011 4:53 PM

To: Epstein, Jonathan (Bingaman)
Subject: RE: Update on Japan Nuclear Reactors

Jon,

We had the exact same question! At this point, we're still wondering what she was referring to. My guess is that she's offered to fly over a replacement diesel generator, and that somehow "cooling water" was described? If I find out anything I will let you know.

David

From: Epstein, Jonathan (Bingaman) [mailto:Jonathan_Epstein@bingaman.senate.gov]
Sent: Friday, March 11, 2011 4:48 PM
To: Decker, David
Subject: RE: Update on Japan Nuclear Reactors

David – can you tell me what the shipping of cooling water is that Secretary Clinton talked about?

From: Decker, David [mailto:David.Decker@nrc.gov]
Sent: Friday, March 11, 2011 4:43 PM
To: Dedrick, Kathy (EPW); Haynes, Laura (Carper); Caputo, Annie (EPW); Clifford, Brian (Barrasso); michael.beckerman@mail.house.gov; Baran, Jeff; mary.neumayr@mail.house.gov; abigail.pinkele@mail.house.gov; david.mccarthy@mail.house.gov; john.marshall@mail.house.gov; chris.sarley@mail.house.gov; maryam.brown@mail.house.gov; Fowler, Sam (Energy); Epstein, Jonathan (Bingaman); Billups, Karen (Energy); Edwards, Isaac (Energy)
Subject: Update on Japan Nuclear Reactors

Attached is updated information regarding the status of the Fukushima reactor in Japan. This is the one that's been having issues with cooling water. Unit 1 apparently did vent steam (underlining below is my change), while a mobile power generator arrived on-site as well.

David

At 1945 UTC (1445 EST), the International Atomic Energy Agency (IAEA) Incident and Emergency Centre released information about the status of the Fukushima Daiichi nuclear power plant. This information was a result of IAEA communications with Japan's Nuclear and Industrial Safety Agency (NISA) and Ministry of Education, Culture, Sports, Science, and Technology (MEXT). The following information comes from the release:

"Unit 1

The reactor is being maintained shutdown. However there is no information regarding the status of the supply of power to Unit 1. The reactor water level is reported to be oscillating. At 15:30 UTC the reactor water was approximately 130 cm above the top of the core. Containment is intact in Unit 1, however due to an increase of pressure within containment the decision has been made to perform a limited controlled venting to avoid over pressurization of the containment.

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The reactor is being maintained shutdown. There is currently no supply of power to Unit 2. Work is currently being undertaken to restore power. At 15:30 UTC the reactor water level is reported to be at approximately 350 cm above the top of the core. Containment is intact in Unit 2.

Unit 3

The reactor is being maintained shutdown. Power is being supplied to Unit 3. At 13:00 UTC the reactor water level is reported to be at approximately 450 cm above the top of the core. Containment is intact in Unit 3.

A mobile power generator has arrived at the site of the Fukushima Daiichi nuclear power plant."

From: Schmidt, Rebecca
Sent: Saturday, March 12, 2011 6:05 PM
To: Droggitis, Spiros; Decker, David; Powell, Amy; Riley (OCA), Timothy; Dacus, Eugene; Shane, Raeann
Subject: After we send an email to our congressional list

Make sure we send it to each other too

From: Spencer, Peter <Peter.Spencer@mail.house.gov>
Sent: Saturday, March 12, 2011 6:09 PM
To: Powell, Amy
Subject: Re:

Yeah. Watching that too. Meltdown? Contained?

Sent from BlackBerry

----- Original Message -----

From: Powell, Amy <Amy.Powell@nrc.gov>
To: Spencer, Peter
Sent: Sat Mar 12 17:57:42 2011
Subject: Re:

Sorry - a little busy with the Japan situation. Office Director of the NRC's office where the High-Level Waste division is seated.

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

----- Original Message -----

From: Spencer, Peter <Peter.Spencer@mail.house.gov>
To: Powell, Amy
Sent: Sat Mar 12 11:33:26 2011
Subject:

Who is Catherine Haney?

Sent from BlackBerry

From: Droggitis, Spiros
Sent: Saturday, March 12, 2011 6:11 PM
To: Schmidt, Rebecca; Powell, Amy; Shane, Raeann; Riley (OCA), Timothy; Dacus, Eugene; Decker, David; Weil, Jenny
Subject: FW: Japanese Earthquake and Tsunami--10:00 am Saturday
Attachments: 11-044.docx; 11-045.docx

This is what I just sent to Jonathan since he was not on the earlier distributions. At the bottom are links to TEPCO and IAEA websites, TEPCO because Bill said it was the best source of information on plant conditions and IAEA because we got an inquiry from Chris Miller on the INES designation. Josh told him that it was too early for that, but it turns out it was not. I sent it to Chris to clarify. I don't think we need to forward outside press release to others unless they inquire. Jenny forwarded questions from Markey, that Josh said were not a priority to respond to and to give them to OPA to add to the Q's & A's that they are developing.

From: Droggitis, Spiros
Sent: Saturday, March 12, 2011 5:47 PM
To: 'Jonathan_Epstein@bingaman.senate.gov'
Subject: FW: Japanese Earthquake and Tsunami--10:00 am Saturday

From: Schmidt, Rebecca
Sent: Saturday, March 12, 2011 10:15 AM
To: jeff.baran@mail.house.gov; abigail.pinkele@mail.house.gov; mary.neumayr@mail.house.gov; david.mccarthy@mail.house.gov; JohnM@mail.house.gov; maryam.brown@mail.house.gov; michael.beckerman@mail.house.gov; chris.sarley@mail.house.gov; kathy_dedrick@epw.senate.gov; ruth_vanmark@epw.senate.gov; annie_caputo@epw.senate.gov; laura_haynes@carper.senate.gov; Brian_Clifford@barrasso.senate.gov; elizabeth_craddock@landrieu.senate.gov; Doug_clapp@appro.senate.gov; Carrie_apostolou@appro.senate.gov; Taunja.berquam@mail.house.gov; Rob.blair@mail.house.gov; Karen.Wayland@mail.house.gov; Bettina_Poirier@epw.senate.gov; 'Mary.Frances.Repko@mail.house.gov'
Cc: Powell, Amy; Decker, David; Riley (OCA), Timothy; Shane, Raeann; Droggitis, Spiros
Subject: Japanese Earthquake and Tsunami--10:00 am Saturday

I wanted to pass on the latest info as of this morning. We will continue to update you throughout the day.

- The Nuclear Regulatory Commission has spoken with its counterpart agency in Japan, offering the assistance of U.S. technical experts. Should the Japanese want to make use of U.S. expertise, NRC staffers with extensive background in boiling water reactors are available to assist efforts in Japan.

- The NRC is coordinating its actions with other Federal agencies as part of the U.S. government response.
- The NRC is examining all available information as part of the effort to analyze the event and understand its implications both for Japan and the United States.
- The NRC has regulations in place that require licensees to design their plants to withstand the effects of tsunamis.
(10CFR 50, Appendix A, Criterion 2, “Design bases for protection against natural phenomenon” requires licensees to design structures, systems, and components important to safety to withstand the effects of natural phenomenon, including tsunamis.)
- Nuclear power plants are built to withstand environmental hazards, including earthquakes. Even those plants that are located outside of areas with extensive seismic activity are designed for safety in the event of such a natural disaster.
- The NRC requires that safety-significant structures, systems, and components be designed to take into account the most severe natural phenomena historically reported for the site and surrounding area. The NRC then adds a margin for error to account for the historical data’s limited accuracy. In other words, U.S. nuclear power plants are designed to be safe based on historical data from the area’s maximum credible earthquake.

<http://www.iaea.org/press/?p=1160>

<http://www.tepco.co.jp/en/press/corp-com/release/11031301-e.html>

From: Powell, Amy
Sent: Saturday, March 12, 2011 6:13 PM
To: Schmidt, Rebecca
Subject: FYI from Sen Energy

You may have seen this buried in Jon Epstein's previous email, but just in case. He is "hoping" for a coordinated briefing next week with "vetted" timelines and facts. Note Pete Lyons is on the email.

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Epstein, Jonathan (Bingaman) <Jonathan_Epstein@bingaman.senate.gov>
To: Powell, Amy; Edwards, Isaac (Energy) <Isaac_Edwards@energy.senate.gov>; Simon, Bob (Energy) <Bob_Simon@energy.senate.gov>; Fowler, Sam (Energy) <Sam_Fowler@energy.senate.gov>; 'peter.lyons@hq.doe.gov' <peter.lyons@hq.doe.gov>; Decker, David
Sent: Sat Mar 12 18:10:22 2011
Subject: Re: Update on Japan Nuclear Reactors

Thanks - Amy, as I mentioned I hope there will be some coordinated effort to brief next week so everyone has vetted facts and time lines.

Sent from my BlackBerry Wireless Handheld - please excuse the typos

From: Powell, Amy [mailto:Amy.Powell@nrc.gov]
Sent: Saturday, March 12, 2011 06:03 PM
To: Epstein, Jonathan (Bingaman)
Subject: Re: Update on Japan Nuclear Reactors

Hi Jon - sorry, I've been out of the area all day and am catching up. My understanding is that we've looped you in and will keep you posted through the weekend. Congressional Affairs is with the Ops Center team 24-7 at this point in shifts. Spiros Droggittis is there now, David Decker follows 9pm - 7am, and I head in tomorrow 7am - 2pm. I'll send you the rest of the schedule once set.

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Epstein, Jonathan (Bingaman) <Jonathan_Epstein@bingaman.senate.gov>
To: Decker, David

Cc: Powell, Amy; Edwards, Isaac (Energy) <Isaac_Edwards@energy.senate.gov>
Sent: Sat Mar 12 09:54:53 2011
Subject: Re: Update on Japan Nuclear Reactors

David is there a coordinated monitoring of the Japan reactor situation I'm the USG?

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Sent from my BlackBerry Wireless Handheld - please excuse the typos

From: Epstein, Jonathan (Bingaman)
Sent: Friday, March 11, 2011 04:53 PM
To: Decker, David <David.Decker@nrc.gov>
Subject: RE: Update on Japan Nuclear Reactors

that would be good, thank you.

From: Decker, David [mailto:David.Decker@nrc.gov]
Sent: Friday, March 11, 2011 4:53 PM
To: Epstein, Jonathan (Bingaman)
Subject: RE: Update on Japan Nuclear Reactors

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From: Epstein, Jonathan (Bingaman) [mailto:Jonathan_Epstein@bingaman.senate.gov]
Sent: Friday, March 11, 2011 4:48 PM
To: Decker, David
Subject: RE: Update on Japan Nuclear Reactors

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From: Decker, David [mailto:David.Decker@nrc.gov]
Sent: Friday, March 11, 2011 4:43 PM
To: Dedrick, Kathy (EPW); Haynes, Laura (Carper); Caputo, Annie (EPW); Clifford, Brian (Barrasso); michael.beckerman@mail.house.gov; Baran, Jeff; mary.neumayr@mail.house.gov; abigail.pinkele@mail.house.gov; david.mccarthy@mail.house.gov; john.marshall@mail.house.gov; chris.sarley@mail.house.gov; maryam.brown@mail.house.gov; Fowler, Sam (Energy); Epstein, Jonathan (Bingaman); Billups, Karen (Energy); Edwards, Isaac (Energy)
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The reactor is being maintained shutdown. However there is no information regarding the status of the supply of power to Unit 1. The reactor water level is reported to be oscillating. At 15:30 UTC the reactor water was approximately 130 cm above the top of the core. Containment is intact in Unit 1, however due to an increase of pressure within containment the decision has been made to perform a limited controlled venting to avoid over pressurization of the containment.

Unit 2

The reactor is being maintained shutdown. There is currently no supply of power to Unit 2. Work is currently being undertaken to restore power. At 15:30 UTC the reactor water level is reported to be at approximately 350 cm above the top of the core. Containment is intact in Unit 2.

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A mobile power generator has arrived at the site of the Fukushima Daiichi nuclear power plant.

From: Powell, Amy
Sent: Saturday, March 12, 2011 6:18 PM
To: 'isaac_edwards@energy.senate.gov'
Subject: Re: Update on Japan Nuclear Reactors

You should be, but I'll double check.

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Edwards, Isaac (Energy) <Isaac_Edwards@energy.senate.gov>
To: Powell, Amy
Sent: Sat Mar 12 18:16:32 2011
Subject: Fw: Update on Japan Nuclear Reactors.

Amy - can you make sure I'm on the email list as well of any updates that go out?

Thanks
Isaac

From: Epstein, Jonathan (Bingaman)
Sent: Saturday, March 12, 2011 06:10 PM
To: 'Amy.Powell@nrc.gov' <Amy.Powell@nrc.gov>; Edwards, Isaac (Energy); Simon, Bob (Energy); Fowler, Sam (Energy); 'peter.lyons@hq.doe.gov' <peter.lyons@hq.doe.gov>; 'David.Decker@nrc.gov' <David.Decker@nrc.gov>
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Thanks - Amy, as I mentioned I hope there will be some coordinated effort to brief next week so everyone has vetted facts and time lines.

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From: Powell, Amy [mailto:Amy.Powell@nrc.gov]
Sent: Saturday, March 12, 2011 06:03 PM
To: Epstein, Jonathan (Bingaman)
Subject: Re: Update on Japan Nuclear Reactors

Hi Jon - sorry, I've been out of the area all day and am catching up. My understanding is that we've looped you in and will keep you posted through the weekend. Congressional Affairs is with the Ops Center team 24-7 at this point in shifts. Spiros Droggittis is there now, David Decker follows 9pm - 7am, and I head in tomorrow 7am - 2pm. I'll send you the rest of the schedule once set.

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Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

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To: Decker, David
Cc: Powell, Amy; Edwards, Isaac (Energy) <Isaac_Edwards@energy.senate.gov>
Sent: Sat Mar 12 09:54:53 2011
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From: Droggitis, Spiros
Sent: Saturday, March 12, 2011 6:23 PM
To: Powell, Amy
Cc: Schmidt, Rebecca
Subject: RE: Isaac Edwards

Don't see him on the list. Should I forward what I just sent to Jonathan to him?

From: Powell, Amy
Sent: Saturday, March 12, 2011 6:20 PM
To: Droggitis, Spiros
Cc: Schmidt, Rebecca
Subject: Isaac Edwards

I think he is on the list per my email exchange with Becky, but wanted to double-check. He is on Sen. Murkowski's Energy Comm staff (isaac_edwards@energy.senate.gov)

Thanks
Amy Powell
Associate Director
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From: Schmidt, Rebecca
Sent: Saturday, March 12, 2011 6:25 PM
To: Powell, Amy; Droggitis, Spiros
Subject: Re: Isaac Edwards

Add him now that we added jonathan. I will have 3 more names to add soon--mccconnell, cantor and boehner.

From: Powell, Amy
To: Droggitis, Spiros
Cc: Schmidt, Rebecca
Sent: Sat Mar 12 18:19:38 2011
Subject: Isaac Edwards

I think he is on the list per my email exchange with Becky, but wanted to double-check. He is on Sen. Murkowski's Energy Comm staff (isaac_edwards@energy.senate.gov)

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A mobile power generator has arrived at the site of the Fukushima Daiichi nuclear power plant."

From: Schmidt, Rebecca
Sent: Saturday, March 12, 2011 6:29 PM
To: Droggitis, Spiros; Powell, Amy; Decker, David
Subject: Fw: Updates on Japan nuclear plant

Add to list. Waiting on her intro to Cantor's staff. When I hear I'll send that name too

----- Original Message -----

From: Caputo, Annie (EPW) <Annie_Caputo@epw.senate.gov>
To: 'jay.cranford@mail.house.gov' <jay.cranford@mail.house.gov>; Chatterjee, Neil (McConnell) <Neil_Chatterjee@mcconnell.senate.gov>
Cc: Schmidt, Rebecca
Sent: Sat Mar 12 18:26:18 2011
Subject: Updates on Japan nuclear plant

Gentlemen,

Becky Schmidt, NRC Director of Congressional Affairs, asked for contacts for your offices so she can provide updates from the NRC on the Fukushima nuclear plants in Japan. I've cc'd her on this list so that she has your emails. Given the nature of the situation, I didn't think you'd mind.

Annie

From: Schmidt, Rebecca
Sent: Saturday, March 12, 2011 6:29 PM
To: 'Annie_Caputo@epw.senate.gov'
Subject: Re: Updates on Japan nuclear plant

Thanks! Just added to the list

----- Original Message -----

From: Caputo, Annie (EPW) <Annie_Caputo@epw.senate.gov>
To: 'jay.cranford@mail.house.gov' <jay.cranford@mail.house.gov>; Chatterjee, Neil (McConnell) <Neil_Chatterjee@mcconnell.senate.gov>
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Annie

From: Schmidt, Rebecca
Sent: Saturday, March 12, 2011 6:30 PM
To: Droggitis, Spiros
Subject: Re: Fwd: NEI has just posted the following fact sheet

The fed lady wanted them too

From: Droggitis, Spiros
To: Schmidt, Rebecca
Sent: Sat Mar 12 18:29:08 2011
Subject: RE: Fwd: NEI has just posted the following fact sheet

Just sent it to OPA. Anybody else?

From: Schmidt, Rebecca
Sent: Saturday, March 12, 2011 6:27 PM
To: Droggitis, Spiros; Powell, Amy; Decker, David; Riley (OCA), Timothy; Shane, Raeann; Dacus, Eugene
Subject: Fw: Fwd: NEI has just posted the following fact sheet

From: FLINT, Alex <af@nei.org>
To: Schmidt, Rebecca
Sent: Sat Mar 12 18:12:39 2011
Subject: Fwd: NEI has just posted the following fact sheet

Begin forwarded message:

Date: March 12, 2011 5:04:48 PM EST
Subject: NEI has just posted the following fact sheet

Events at the Fukushima Daiichi Nuclear Power Plant in Japan

March 12, 2011 (posted at 4:40 p.m. EST, Saturday, March 12)

Key Facts

The Incident

Unit 1 of the Fukushima Daiichi nuclear power plant was damaged in a magnitude 8.9 earthquake and subsequent tsunami on March 11. The plant is centered along the shore of the Sendai region, which contains the capital Tokyo.

The plant is a General Electric boiling water reactor 3 Mark 1 design, operated by Tokyo Electric Power Company (TEPCO).

Eleven of Japan's 55 nuclear reactors automatically shut down, as they are designed to do, when the earthquake hit.

After the earthquake and tsunami, there were difficulties powering the cooling system for unit 1 of the Fukushima Daiichi plant. After a buildup of hydrogen gas in the secondary containment structure at the plant, there was an explosion at that reactor on March 12.

The explosion caused a breach in the secondary containment. However, the primary containment that houses and protects the reactor vessel and fuel remains intact and is safe. This structure is made of steel and is extremely robust. The primary and secondary containment are designed to prevent radiation from being released into the environment in the case of an accident. However, TEPCO intentionally vented steam from the secondary containment building in an effort to reduce pressure in that building. For a diagram of the reactor type used at Fukushima Daiichi, [click here](#).

It appears that as the level of coolant in the reactor vessel lowered, a portion of the top of the uranium fuel rods was exposed. This may have caused zirconium cladding of the fuel rods to react with water to create hydrogen. This hydrogen was vented, then somehow ignited, causing the explosion.

As the explosion did not occur inside the reactor core—and the primary containment was not breached—there has not been a significant public health impact from the release of radiation from the containment structure.

Reactors 2 and 3 at Fukushima Daiichi were shut down in response to the earthquake. Units 4, 5 and 6 had been shut down prior to the earthquake for inspections and scheduled outages.

The Response

TEPCO has been pumping seawater, laced with boron, into the reactor core of Unit 1 of the Fukushima-Daiichi plant to cool the fuel.

Backup diesel generators and batteries have arrived at the Fukushima Daiichi plant. They will be used as an emergency source of electric power to pump water into the reactor core or containment of units 2 and 3 to continue cooling the reactor cores.

The Japanese government has expanded the evacuation zone around the facility to 20 kilometers, or about 12 miles.

TEPCO also is preparing to vent the containment structures at Fukushima Daiichi Units 2 and 3 to reduce the pressure inside primary containment in these reactors and maintain the structural integrity of the containment. Venting reduces pressure in the containment, but can be done in a safe manner.

Similar Reactors in the United States

The General Electric BWR 3 Mark 1 reactor design is used in six of 104 reactors in the United States. Every nuclear power plant is designed, built and managed to prevent radioactive releases, even in the event of natural disasters, operational accidents or security threats.

A variety of measures work together to protect public safety: the design and safety features built into nuclear power plants; the multiple layers of physical barriers that protect the reactor; and highly trained, federally certified professionals who operate the plant safely and know how to respond in the event of emergencies.

More information

To learn about boiling water reactors in general, [click here](#).

For more on nuclear reactors and seismic events, [click here](#).

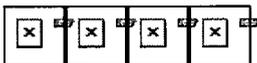
To stay up to date:

See these resources:

- NEI
- TEPCO
- World Nuclear News
- International Atomic Energy Agency



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From: Droggitis, Spiros
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To: Weil, Jenny
Subject: FW: Fwd: NEI has just posted the following fact sheet

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Subject: Fwd: NEI has just posted the following fact sheet

Begin forwarded message:

Date: March 12, 2011 5:04:48 PM EST
Subject: NEI has just posted the following fact sheet

Events at the Fukushima Daiichi Nuclear Power Plant in Japan

March 12, 2011 (posted at 4:40 p.m. EST, Saturday, March 12)

Key Facts

The Incident

Unit 1 of the Fukushima Daiichi nuclear power plant was damaged in a magnitude 8.9 earthquake and subsequent tsunami on March 11. The plant is centered along the shore of the Sendai region, which contains the capital Tokyo.

The plant is a General Electric boiling water reactor 3 Mark 1 design, operated by Tokyo Electric Power Company (TEPCO).

Eleven of Japan's 55 nuclear reactors automatically shut down, as they are designed to do, when the earthquake hit.

After the earthquake and tsunami, there were difficulties powering the cooling system for unit 1 of the Fukushima Daiichi plant. After a buildup of hydrogen gas in the secondary containment structure at the plant, there was an explosion at that reactor on March 12.

The explosion caused a breach in the secondary containment. However, the primary containment that houses and protects the reactor vessel and fuel remains intact and is safe. This structure is made of steel and is extremely robust. The primary and secondary containment are designed to prevent radiation from being released into the environment in the case of an accident. However, TEPCO intentionally vented steam from the secondary containment building in an effort to reduce pressure in that building. For a diagram of the reactor type used at Fukushima Daiichi, [click here](#).

It appears that as the level of coolant in the reactor vessel lowered, a portion of the top of the uranium fuel rods was exposed. This may have caused zirconium cladding of the fuel rods to react with water to create hydrogen. This hydrogen was vented, then somehow ignited, causing the explosion.

As the explosion did not occur inside the reactor core—and the primary containment was not breached—there has not been a significant public health impact from the release of radiation from the containment structure.

Reactors 2 and 3 at Fukushima Daiichi were shut down in response to the earthquake. Units 4, 5 and 6 had been shut down prior to the earthquake for inspections and scheduled outages.

The Response

TEPCO has been pumping seawater, laced with boron, into the reactor core of Unit 1 of the Fukushima-Daiichi plant to cool the fuel.

Backup diesel generators and batteries have arrived at the Fukushima Daiichi plant. They will be used as an emergency source of electric power to pump water into the reactor core or containment of units 2 and 3 to continue cooling the reactor cores.

The Japanese government has expanded the evacuation zone around the facility to 20 kilometers, or about 12 miles.

TEPCO also is preparing to vent the containment structures at Fukushima Daiichi Units 2 and 3 to reduce the pressure inside primary containment in these reactors and maintain the structural integrity of the containment. Venting reduces pressure in the containment, but can be done in a safe manner.

Similar Reactors in the United States

The General Electric BWR 3 Mark 1 reactor design is used in six of 104 reactors in the United States. Every nuclear power plant is designed, built and managed to prevent radioactive releases, even in the event of natural disasters, operational accidents or security threats.

A variety of measures work together to protect public safety: the design and safety features built into nuclear power plants; the multiple layers of physical barriers that protect the reactor; and highly trained, federally certified professionals who operate the plant safely and know how to respond in the event of emergencies.

More information

To learn about boiling water reactors in general, [click here](#).

For more on nuclear reactors and seismic events, [click here](#).

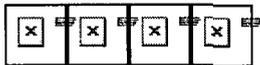
To stay up to date:

See these resources:

- NEI
- TEPCO
- World Nuclear News
- International Atomic Energy Agency



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Sent through mail.messaging.microsoft.com

From: Schmidt, Rebecca
Sent: Saturday, March 12, 2011 9:50 PM
To: Batkin, Joshua
Subject: Re: FYI re: Senate Energy

I don't think so

----- Original Message -----

From: Batkin, Joshua
To: Schmidt, Rebecca
Sent: Sat Mar 12 21:48:59 2011
Subject: RE: FYI re: Senate Energy

Right. Was there a nom Friday night?

-----Original Message-----

From: Schmidt, Rebecca
Sent: Saturday, March 12, 2011 9:40 PM
To: Batkin, Joshua
Subject: Fw: FYI re: Senate Energy

Shouldn't do this before our committees

----- Original Message -----

From: Powell, Amy
To: Schmidt, Rebecca
Sent: Sat Mar 12 21:36:43 2011
Subject: FYI re: Senate Energy

Starting w/DOE re coordinating a briefing Monday

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

----- Original Message -----

From: Epstein, Jonathan (Bingaman) <Jonathan_Epstein@bingaman.senate.gov>
To: Decker, David; Powell, Amy
Sent: Sat Mar 12 19:58:40 2011
Subject: Fw: Monday

Fyi - I have to start with DOE due to jurisdiction over here.

Sent from my BlackBerry Wireless Handheld - please excuse the typos

----- Original Message -----

From: Epstein, Jonathan (Bingaman)

Sent: Saturday, March 12, 2011 07:55 PM

To: 'laneje@Hq.Doe.Gov' <laneje@Hq.Doe.Gov>

Cc: 'peter.lyons@hq.doe.gov' <peter.lyons@hq.doe.gov>; Simon, Bob (Energy); Fowler, Sam (Energy); Bennett, Mia (Energy); Edwards, Isaac (Energy)

Subject: Monday

Jeff do you think DOE can come over Monday and brief staff on Fukushima I and II status. If you can then can you coordinate with NRC and maybe have them come too?

If this can be done name some possible times so Mia can get SD366, reply to all please.

Thanks JE

Sent from my BlackBerry Wireless Handheld - please excuse the typos

From: Powell, Amy
Sent: Saturday, March 12, 2011 10:06 PM
To: Decker, David
Subject: Re: Schedule for Ops Center -- OCA participation

LOL - and I'll be an hour more tired!! Is there coffee there? :)

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Decker, David
To: Powell, Amy
Sent: Sat Mar 12 22:05:33 2011
Subject: RE: Schedule for Ops Center -- OCA participation

I've never been so happy about the spring-forward daylight savings!

From: Powell, Amy
Sent: Saturday, March 12, 2011 10:01 PM
To: Decker, David
Subject: Re: Schedule for Ops Center -- OCA participation

OK - see you around 7am!

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Decker, David
To: Powell, Amy
Sent: Sat Mar 12 22:00:53 2011
Subject: RE: Schedule for Ops Center -- OCA participation

I did the turn over with Spiros about an hour ago, and thankfully it's very slow right now. I'm reading through the days e-mail more thoroughly than I did earlier today from my BB. OpCenter is well staffed – a lot of people here.

From: Powell, Amy
Sent: Saturday, March 12, 2011 9:59 PM

To: Decker, David
Subject: Re: Schedule for Ops Center -- OCA participation

Yep - how is it going so far? I've been out of the area most of the day, so I am catching up...

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Decker, David
To: Powell, Amy
Sent: Sat Mar 12 21:56:13 2011
Subject: RE: Schedule for Ops Center -- OCA participation

Thanks Amy! I didn't sign up because I'm scheduled to be with CFO/EDO to brief the FY12 budget with EPW staffers at 3pm.

From: Powell, Amy
Sent: Saturday, March 12, 2011 9:54 PM
To: Droggitis, Spiros; Shane, Raeann; Schmidt, Rebecca; Dacus, Eugene; Decker, David; Riley (OCA), Timothy
Cc: Brenner, Eliot; Hayden, Elizabeth
Subject: Re: Schedule for Ops Center -- OCA participation

If Monday 2pm - 9pm is still open, I can cover that.

Amy

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Droggitis, Spiros
To: Shane, Raeann; Schmidt, Rebecca; Dacus, Eugene; Decker, David; Powell, Amy; Riley (OCA), Timothy
Cc: Brenner, Eliot; Hayden, Elizabeth
Sent: Sat Mar 12 15:41:14 2011
Subject: RE: Schedule for Ops Center -- OCA participation

I can do Tues. am

You got it. Right now we have:

Sun - 9pm-7am - Gene
Mon - 7am-2pm - Raeann
Mon - 2pm-9pm - open
Mon - 9pm-7am - Tim
Tues - 7am-2pm - Spiros

From: Shane, Raeann
Sent: Saturday, March 12, 2011 3:31 PM
To: Schmidt, Rebecca; Dacus, Eugene; Droggitis, Spiros; Decker, David; Powell, Amy; Riley (OCA), Timothy
Cc: Brenner, Eliot; Hayden, Elizabeth
Subject: Re: Schedule for Ops Center -- OCA participation

I will take Mon 7am to 2 If it's still open

From: Schmidt, Rebecca
To: Schmidt, Rebecca; Shane, Raeann; Dacus, Eugene; Droggitis, Spiros; Decker, David; Powell, Amy; Riley (OCA), Timothy
Cc: Brenner, Eliot; Hayden, Elizabeth
Sent: Sat Mar 12 12:48:01 2011
Subject: RE: Schedule for Ops Center -- OCA participation

The Ops Center has to check a box so I need volunteers to man the following hours:

Sun night 9pm – 7am Monday morning
Mon 7am – 2PM
Mon 2pm – 9 pm
Mon 9 pm – Tues 7am
Tues 7am to 2pm

First come, first serve!!!

From: Schmidt, Rebecca
Sent: Friday, March 11, 2011 5:08 PM
To: Shane, Raeann; Dacus, Eugene; Schmidt, Rebecca; Droggitis, Spiros; Decker, David; Powell, Amy; Riley (OCA), Timothy
Cc: Batkin, Joshua; Brenner, Eliot; Hayden, Elizabeth
Subject: Schedule for Ops Center -- OCA participation

Thanks for all your help. Here is a schedule for our participation at the Ops Center:

Friday
Raeann 10:00 am to 10:00 pm
Gene 10:00 pm to 7:00 am

Saturday
Becky 7:00 am to 2:00 pm
Spiros 2:00 pm to 9:00 pm
David 9:00 pm to 7:00 am

Sunday
Amy 7:00 am to 2:00 pm
Tim 2:00pm to 9:00pm

We will figure out if we need to cycle again later in the weekend. Also, I will send the list of who we are sending the press releases to in my next email

From: Powell, Amy
Sent: Sunday, March 13, 2011 7:33 AM
To: Batkin, Joshua
Subject: RE: Upton addresses focus of Wed's hearing

Here at Ops Ctr – they are piping the TA call into the liaison room so I am hearing but not “on”

From: Batkin, Joshua
Sent: Sunday, March 13, 2011 7:26 AM
To: Powell, Amy; Schmidt, Rebecca
Cc: Coggins, Angela
Subject: Re: Upton addresses focus of Wed's hearing

Saw that. Haven't had a chance to talk to him about it after our discussion but will do so this morning.

Joshua C. Batkin
Chief of Staff
Chairman Gregory B. Jaczko
(301) 415-1820

From: Powell, Amy
To: Batkin, Joshua; Schmidt, Rebecca
Cc: Coggins, Angela
Sent: Sun Mar 13 07:25:15 2011
Subject: Upton addresses focus of Wed's hearing

Perhaps this is what you discussed last night, but wanted to make sure you saw this from The Hill:

House energy chairman vows inquiry into Japan nuke plant damage

By Ben Geman - 03/12/11 11:59 PM ET

House Energy and Commerce Committee Chairman Fred Upton (R-Mich.) plans to question the top U.S. nuclear power regulator next week about damage to Japanese nuclear reactors stemming from the catastrophic earthquake and tsunami.

Upton – who is planning legislation to help spur construction of new U.S. reactors – said Saturday night that the committee's planned March 16 hearing with Nuclear Regulatory Commission Chairman Gregory Jaczko will focus on the Japanese crisis.

“[W]e will use that opportunity to explore what is known in the early aftermath of the damage to Japanese nuclear facilities, as well as to reiterate our unwavering commitment to the safety of U.S. nuclear sites,” Upton said in a statement about the hearing, which was scheduled to review the NRC and Energy Department budget plans.

Upton's plans come amid reports that a meltdown may be underway at the damaged Fukushima Daiichi Nuclear Power Station in northeast Japan.

“A meltdown may have occurred at at least one nuclear power reactor in Japan, the country's chief cabinet secretary, Yukio Edano, said Sunday, adding that authorities are concerned about the possibility of another meltdown at a second reactor,” CNN **reported**.

“Some 170,000 people have been ordered to evacuate the area covering a radius of 20 kilometers around the plant in Fukushima near Iwaki,” the Associated Press **reports**.

The problems in Japan could create new hurdles for Upton and other advocates of helping the nuclear industry win permission and funding to build the first fleet of new U.S. reactors in decades.

Rep. Ed Markey (D-Mass.), who is a senior member of the Energy and Commerce and nuclear industry critic, **said Saturday** that the U.S. is also vulnerable to major nuclear accidents.

Markey called on the Obama administration and the NRC to consider the implementation of several policy changes in light of the disaster.

Among the proposed reforms, he called for a moratorium of siting new nuclear reactors on seismically active areas and called for reactors in seismically active zones to be retrofitted with stronger containment systems.

The NRC, meanwhile, has dispatched staff with expertise in boiling water nuclear reactors to Japan to assist with the unfolding crisis.

“We have some of the most expert people in this field in the world working for the NRC and we stand ready to assist in any way possible,” NRC Chairman Jaczko said in a statement Saturday.

Upton also said, “As we extend our thoughts and prayers to those affected by this historic earthquake and the damage it wrought, we will carefully continue to assess and examine the situation.”

Source:

<http://thehill.com/blogs/e2-wire/677-e2-wire/149135-house-energy-chairman-vows-quick-inquiry-into-japan-nuke-plant-damage>

From: Schmidt, Rebecca
Sent: Sunday, March 13, 2011 8:39 AM
To: 'af@nei.org'
Subject: Re:

As of late last night nothing was scheduled. Eliot will notify us if something comes up

----- Original Message -----

From: FLINT, Alex <af@nei.org>
To: Schmidt, Rebecca
Sent: Sun Mar 13 07:10:39 2011
Subject:

Dale Klein is going to be on Fox&Friends shortly. It was suppose to be at 7:15am, but I understand they are running behind.

Marv will be on Meet the Press. It tapes at 9am and airs some places before it is broadcast at 10:30am here.

Are you guys planning on any public statements, etc today?

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Sent through mail.messaging.microsoft.com

From: Schmidt, Rebecca
Sent: Sunday, March 13, 2011 9:03 AM
To: Powell, Amy
Subject: Re: Figured out the log

Probably because Spiros and I aren't on the system.

From: Powell, Amy
To: Schmidt, Rebecca
Sent: Sun Mar 13 09:01:01 2011
Subject: Figured out the log

Everything you and Spiros entered got attributed to Gene. He must have stayed logged in, so his name is stamped on everything which initially made me think it was "old." I'm logged in now, so anything I put in will show up as mine, which should make life easier for Tim when he comes in.

From: Powell, Amy
Sent: Sunday, March 13, 2011 9:17 AM
To: Schmidt, Rebecca
Subject: Call with GBJ

I stumbled into a call in the ET room with GBJ. Marty started to go down the hearing prep road; Josh was on the line and told GBJ that he would talk with him about last night's 9pm call offline. So, any work today by technical staff will focus on Q&As for a variety of venues including Hill. I'll get some Qs into them – if you have some, send them my way and we'll get them in.

FYI, GBJ is coming into the Ops Center to work here for the day.

From: Powell, Amy
Sent: Sunday, March 13, 2011 9:59 AM
To: Batkin, Joshua
Subject: I'm in the Ops Ctr

Here until 2pm if you need anything

From: Powell, Amy
Sent: Sunday, March 13, 2011 10:11 AM
To: Schmidt, Rebecca
Subject: RE: Hearing outreach

OK - I'll start reaching out now. Word here is that WH press release is "on hold."

-----Original Message-----

From: Schmidt, Rebecca
Sent: Sunday, March 13, 2011 10:09 AM
To: Powell, Amy
Subject: Fw: Hearing outreach

See if any members are available today or tomorrow

----- Original Message -----

From: Schmidt, Rebecca
To: Batkin, Joshua
Sent: Sun Mar 13 10:07:52 2011
Subject: Re: Hearing outreach

Ok. Will let you know if any calls are possible today

----- Original Message -----

From: Batkin, Joshua
To: Schmidt, Rebecca
Cc: Powell, Amy; Loyd, Susan; Brenner, Eliot; Coggins, Angela; Pace, Patti; Monninger, John
Sent: Sun Mar 13 10:04:48 2011
Subject: Hearing outreach

Chairman agreed with all recommendations from our 9pm call. Becky, please move forward ASAP with:

- 1) Outreach to chair and ranking of E and C full and subcommittees (followed after by other interested committee member/s) to offer meeting/call on our Japan activities, what we know, and what we can and can't say. He will do them as soon as now and in whatever combination works best for them. Also can offer to EPW.
- 2) Update the testimony
- 3) Leave hearing format alone
- 4) Set up a staff to staff technical briefing for thursday or friday

Call me with any questions

Joshua C. Batkin
Chief of Staff
Chairman Gregory B. Jaczko
(301) 415-1820

From: Powell, Amy
Sent: Sunday, March 13, 2011 10:32 AM
To: annie_caputo@epw.senate.gov
Subject: Offer of call with NRC Chairman Jaczko

Importance: High

Hi Annie –

If it would be helpful, Chairman Jaczko is available and more than willing to have a call with Senator Inhofe today or tomorrow about our activities related to Japan. Let me know and we can set it up.

Thanks for your help with contacts yesterday – Becky really appreciated it.

Amy

From: Powell, Amy
Sent: Sunday, March 13, 2011 10:41 AM
To: Batkin, Joshua
Cc: Schmidt, Rebecca; Pace, Patti
Subject: RE: Hearing outreach

Great - thanks. Patti, I will let you know as I start hearing back from staff.

-----Original Message-----

From: Batkin, Joshua
Sent: Sunday, March 13, 2011 10:37 AM
To: Powell, Amy
Cc: Schmidt, Rebecca; Pace, Patti
Subject: Re: Hearing outreach

Patti is in the office and managing his schedule.

Joshua C. Batkin
Chief of Staff
Chairman Gregory B. Jaczko
(301) 415-1820

----- Original Message -----

From: Powell, Amy
To: Batkin, Joshua
Cc: Schmidt, Rebecca
Sent: Sun Mar 13 10:36:26 2011
Subject: RE: Hearing outreach

I reached out to the oversight committee/subcommittee chairs and rankings staff, both chambers. As folks start to take us up on this, are you the hub for his schedule today or is there another way you want it vetted?

-----Original Message-----

From: Batkin, Joshua
Sent: Sunday, March 13, 2011 10:05 AM
To: Schmidt, Rebecca
Cc: Powell, Amy; Loyd, Susan; Brenner, Eliot; Coggins, Angela; Pace, Patti; Monninger, John
Subject: Hearing outreach

Chairman agreed with all recommendations from our 9pm call. Becky, please move forward ASAP with:

- 1) Outreach to chair and ranking of E and C full and subcommittees (followed after by other interested committee member/s) to offer meeting/call on our Japan activities, what we know, and what we can and can't say. He will do them as soon as now and in whatever combination works best for them. Also can offer to EPW.
- 2) Update the testimony
- 3) Leave hearing format alone
- 4) Set up a staff to staff technical briefing for thursday or friday

Call me with any questions

Joshua C. Batkin
Chief of Staff
Chairman Gregory B. Jaczko
(301) 415-1820

From: Powell, Amy
Sent: Sunday, March 13, 2011 10:55 AM
To: Batkin, Joshua; Schmidt, Rebecca
Subject: Bettina, Sen. Boxer

Bettina is our first response – appreciates the offer, wants a summary of what we could cover (got that) but also wants a summary of issues this raises for US and earthquake prone areas like CA... I can lean on yesterday's talking points that reference design requirements, reason safety must be paramount... Does he have talking points on that he can use if this call happens?

From: Powell, Amy
Sent: Sunday, March 13, 2011 11:08 AM
To: Freedhoff, Michal; Weil, Jenny; Decker, David
Cc: Fischhoff, Ilya
Subject: RE: What are US nuke earthquake stds rated to? Someone is reporting 7 on riChter. True?

Hi Michal - I'm in the Ops Center, so I've got your question into the reactor safety folks for a more complete answer, but anything suggesting a flat standard is not correct. The NRC requires that safety-significant structures, systems, and components be designed to take into account the most severe natural phenomena historically reported for the site and surrounding area. The NRC then adds a margin for error to account for the historical data's limited accuracy. In other words, U.S. nuclear power plants are designed to be safe based on historical data from the area's maximum credible earthquake. I'll get you more information from our reactor safety team.

-----Original Message-----

From: Freedhoff, Michal [mailto:Michal.Freedhoff@mail.house.gov]
Sent: Sunday, March 13, 2011 10:54 AM
To: Weil, Jenny; Decker, David; Powell, Amy
Cc: Fischhoff, Ilya
Subject: What are US nuke earthquake stds rated to? Someone is reporting 7 on riChter. True?

Michal Ilana Freedhoff, Ph.D.
Policy Director
Office of Representative Edward J. Markey
2108 Rayburn House Office Building
Washington, DC 20515
202-225-2836

Sent using BlackBerry

From: Lane, Jeff <laneje@Hq.Doe.Gov>
Sent: Sunday, March 13, 2011 11:25 AM
To: Levy, Jonathan; Powell, Amy
Subject: Re: Touching Base

Amy,

We may need your help with a briefing SENR has asked us to conduct tomorrow on the situation in Japan. I will let you know.

Jeff

----- Original Message -----

From: Levy, Jonathan
To: 'Amy.Powell@nrc.gov' <Amy.Powell@nrc.gov>
Cc: Lane, Jeff
Sent: Sun Mar 13 11:20:19 2011
Subject: Re: Touching Base

Thanks, Amy. We want to link up ahead of Wednesday's E&C hearing. I have cc'd Jeff Lane, our Assistant Secretary for Congressional and Intergovernmental Affairs.

----- Original Message -----

From: Powell, Amy <Amy.Powell@nrc.gov>
To: Levy, Jonathan
Sent: Sun Mar 13 11:18:19 2011
Subject: RE: Touching Base

Hi Jonathan -

Yes, I am still with NRC's Office of Congressional Affairs.

Amy

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

-----Original Message-----

From: Levy, Jonathan [mailto:Jonathan.Levy@hq.doe.gov]
Sent: Sunday, March 13, 2011 11:10 AM
To: Powell, Amy
Subject: Touching Base

Amy,

Are you still the appropriate POC at NRC for leg affairs questions?

Thanks,

Jonathan

From: Batkin, Joshua
Sent: Sunday, March 13, 2011 11:37 AM
To: Schmidt, Rebecca; Powell, Amy
Subject: Re: DOE outreach re: Wednesday hearing

Agreed.

Joshua C. Batkin
Chief of Staff
Chairman Gregory B. Jaczko
(301) 415-1820

----- Original Message -----

From: Schmidt, Rebecca
To: Batkin, Joshua; Powell, Amy
Sent: Sun Mar 13 11:35:50 2011
Subject: Re: DOE outreach re: Wednesday hearing

I think we should be careful meeting with DOE. I would recommend a phone call monday with leg affairs and not the witnesses. We don't want it to slide into collusion on Yucca. I would be happy to talk anytime tomorrow about japan

----- Original Message -----

From: Batkin, Joshua
To: Powell, Amy; Schmidt, Rebecca
Sent: Sun Mar 13 11:32:54 2011
Subject: Re: DOE outreach re: Wednesday hearing

Make sure they are ready for what upton said he would ask chu on yucca. And we'll need a plan for getting coordinated on Japan.

Joshua C. Batkin
Chief of Staff
Chairman Gregory B. Jaczko
(301) 415-1820

----- Original Message -----

From: Powell, Amy
To: Schmidt, Rebecca; Batkin, Joshua
Sent: Sun Mar 13 11:23:04 2011
Subject: DOE outreach re: Wednesday hearing

FYI in case one of you would prefer to jump in on this. Jeff Lane from DOE's Congressional/Intergovernmental Affairs will be reaching out re: Wednesday's hearing.

-----Original Message-----

From: Levy, Jonathan [mailto:Jonathan.Levy@hq.doe.gov]
Sent: Sunday, March 13, 2011 11:20 AM
To: Powell, Amy

Cc: Lane, Jeff
Subject: Re: Touching Base

Thanks, Amy. We want to link up ahead of Wednesday's E&C hearing. I have cc'd Jeff Lane, our Assistant Secretary for Congressional and Intergovernmental Affairs.

----- Original Message -----

From: Powell, Amy <Amy.Powell@nrc.gov>
To: Levy, Jonathan
Sent: Sun Mar 13 11:18:19 2011
Subject: RE: Touching Base

Hi Jonathan -

Yes, I am still with NRC's Office of Congressional Affairs.

Amy

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

-----Original Message-----

From: Levy, Jonathan [mailto:Jonathan.Levy@hq.doe.gov]
Sent: Sunday, March 13, 2011 11:10 AM
To: Powell, Amy
Subject: Touching Base

Amy,

Are you still the appropriate POC at NRC for leg affairs questions?

Thanks,

Jonathan

From: Powell, Amy
Sent: Sunday, March 13, 2011 11:37 AM
To: Batkin, Joshua; Schmidt, Rebecca
Subject: DOE, Senate Energy briefing tomorrow

Jeff Lane just e-mailed to say that DOE may need our help on a Senate Energy briefing they've been asked to conduct tomorrow re: Japan. I wonder if there is any chance that SENR and EPW would play nicely and do a joint...

From: Batkin, Joshua
Sent: Sunday, March 13, 2011 11:51 AM
To: Schmidt, Rebecca; Powell, Amy
Subject: Re: Maryam's stupid idea

I don't

Joshua C. Batkin
Chief of Staff
Chairman Gregory B. Jaczko
(301) 415-1820

----- Original Message -----

From: Schmidt, Rebecca
To: Powell, Amy; Batkin, Joshua
Sent: Sun Mar 13 11:47:55 2011
Subject: Re: Maryam's stupid idea

I bet Alex flint has it. If josh doesn't I could ask alex

----- Original Message -----

From: Powell, Amy
To: Schmidt, Rebecca; Batkin, Joshua
Sent: Sun Mar 13 11:47:05 2011
Subject: Re: Maryam's stupid idea

Sorry - GBJ asked me to come into the ET, he was on the bridge. I have Gary's direct line but not his cell. Josh, did he leave you his cell during the Boyce battle?

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

----- Original Message -----

From: Schmidt, Rebecca
To: Batkin, Joshua; Powell, Amy
Sent: Sun Mar 13 11:45:46 2011
Subject: Re: Maryam's stupid idea

I have Upton's home phone number but I think we should go through Gary

----- Original Message -----

From: Batkin, Joshua
To: Schmidt, Rebecca; Powell, Amy

Sent: Sun Mar 13 11:39:30 2011
Subject: Re: Maryam's stupid idea

Sure

Joshua C. Batkin
Chief of Staff
Chairman Gregory B. Jaczko
(301) 415-1820

----- Original Message -----

From: Schmidt, Rebecca
To: Batkin, Joshua; Powell, Amy
Sent: Sun Mar 13 11:37:53 2011
Subject: Maryam's stupid idea

Should we call gary anders and suggest the phone call tell him a written report would never get cleared. Offer a 15 min call to his boss and see what he says

From: Powell, Amy
Sent: Sunday, March 13, 2011 12:24 PM
To: Batkin, Joshua; Coggins, Angela
Cc: Schmidt, Rebecca
Subject: Follow up from Sen. Boxer's staff

Bettina is asking the following: if Sen. Boxer is not available today for a call, would Bettina be able to get a briefing that she could then in turn share with the Senator? In the past, I know that GBJ has been willing to meet with Bettina in lieu of Sen. Boxer. Would he want to talk with her? She seems primarily interested in how the CA plants are designed, referencing that NEI is talking about how several US plants are based on a similar design to the ones in Japan, but also interested in what we are doing (and thanked us for all we are doing, including the Hill outreach). What do you think?

From: Powell, Amy
Sent: Sunday, March 13, 2011 12:39 PM
To: Batkin, Joshua; Schmidt, Rebecca
Subject: House E&C update

I have Dave McCarthy's cell (Chief Counsel on the Environment Subcommittee) – I talked with him briefly until his cell cut out. He seems to get it, so he is going to call me back once he get signal so that we can get this written report tamped down.

From: Powell, Amy
Sent: Sunday, March 13, 2011 12:57 PM
To: Batkin, Joshua; Schmidt, Rebecca
Subject: House E&C wrap-up (I think)

I just finished up with Dave McCarthy – he gets it. Maryam has been tasked with writing a memo for the Chairmen for Monday morning and has been piecing together everything from NEI updates, media, our press releases, etc.... Dave said that he does not anticipate another statement from Mr. Upton until Wednesday's hearing, so a call is appreciated but not requested right now and getting testimony in due course (Tuesday am) is fine.

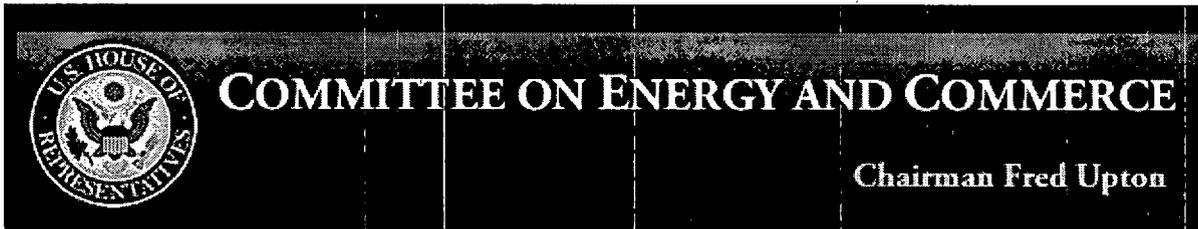
From: Powell, Amy
Sent: Sunday, March 13, 2011 1:03 PM
To: Batkin, Joshua; Schmidt, Rebecca
Cc: Coggins, Angela; Decker, David
Subject: FW: Upton Statement on Status of Nuclear Reactors in Japan After Earthquake Damage
Attachments: image001.jpg; image002.png; image003.png; image004.png; image005.png

Here is the press release from Mr. Upton that generated The Hill's article.

From: McCarthy, David [mailto:David.McCarthy@mail.house.gov]
Sent: Sunday, March 13, 2011 12:59 PM
To: Powell, Amy
Subject: Fw: Upton Statement on Status of Nuclear Reactors in Japan After Earthquake Damage

Sent using BlackBerry

From: Energy and Commerce News
Sent: Sat Mar 12 21:40:07 2011
Subject: Upton Statement on Status of Nuclear Reactors in Japan After Earthquake Damage



FOR IMMEDIATE RELEASE
March 12, 2011

CONTACT: Press Office
(202) 226-4972

Upton Statement on Status of Nuclear Reactors in Japan After Earthquake Damage

WASHINGTON, DC – Congressman Fred Upton (R-MI), chairman of the U.S. House Committee on Energy and Commerce, issued the following statement today in response to ongoing reports about the damage to Japanese nuclear facilities after a historic earthquake and tsunami hit the country on Friday:

"Our first priority is the safety of the Japanese people as they assess the damage and work to recover from this terrible natural disaster, and I support the President in his effort to provide assistance to the Japanese government and its people. I understand the Nuclear

Regulatory Commission technical staff have offered support to help mitigate damage to the reactors, and our experts are closely monitoring developments at the Fukushima Daiichi nuclear power plant and other affected facilities. As we extend our thoughts and prayers to those affected by this historic earthquake and the damage it wrought, we will carefully continue to assess and examine the situation.

"The details of this tragedy are still unfolding. The head of the Nuclear Regulatory Commission is scheduled to testify before the Energy and Commerce Committee next week, and we will use that opportunity to explore what is known in the early aftermath of the damage to Japanese nuclear facilities, as well as to reiterate our unwavering commitment to the safety of U.S. nuclear sites."

###



From: Powell, Amy
Sent: Sunday, March 13, 2011 1:05 PM
To: McCarthy, David
Subject: RE: Upton Statement on Status of Nuclear Reactors in Japan After Earthquake Damage
Attachments: image001.jpg; image002.png; image003.png; image004.png; image005.png

Thanks Dave – at this point, our office will remain part of the 24-7 coverage at the NRC’s operations center so we will keep updates on NRC activities coming to you all.

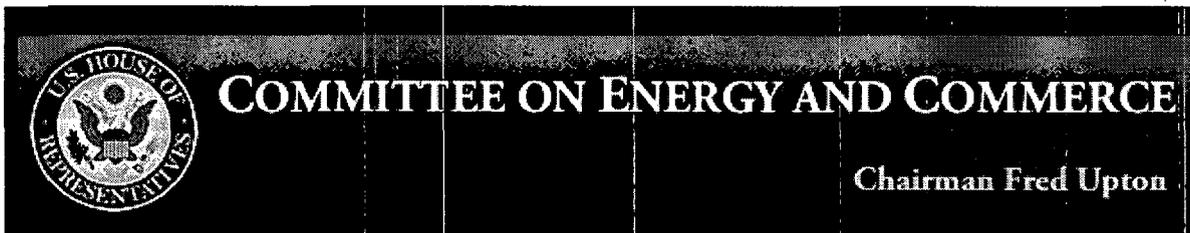
Thanks so much for calling me – sorry to interrupt your weekend!

Amy

From: McCarthy, David [mailto:David.McCarthy@mail.house.gov]
Sent: Sunday, March 13, 2011 12:59 PM
To: Powell, Amy
Subject: Fw: Upton Statement on Status of Nuclear Reactors in Japan After Earthquake Damage

Sent using BlackBerry

From: Energy and Commerce News
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Subject: Upton Statement on Status of Nuclear Reactors in Japan After Earthquake Damage



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WASHINGTON, DC – Congressman Fred Upton (R-MI), chairman of the U.S. House Committee on Energy and Commerce, issued the following statement today in response to ongoing reports about the damage to Japanese nuclear facilities after a historic earthquake and tsunami hit the country on Friday:

“Our first priority is the safety of the Japanese people as they assess the damage and work to recover from this terrible natural disaster, and I support the President in his effort to provide assistance to the Japanese government and its people. I understand the Nuclear Regulatory Commission technical staff have offered support to help mitigate damage to the reactors, and our experts are closely monitoring developments at the Fukushima Daiichi nuclear power plant and other affected facilities. As we extend our thoughts and prayers to those affected by this historic earthquake and the damage it wrought, we will carefully continue to assess and examine the situation.

“The details of this tragedy are still unfolding. The head of the Nuclear Regulatory Commission is scheduled to testify before the Energy and Commerce Committee next week, and we will use that opportunity to explore what is known in the early aftermath of the damage to Japanese nuclear facilities, as well as to reiterate our unwavering commitment to the safety of U.S. nuclear sites.”

###



From: Powell, Amy
Sent: Sunday, March 13, 2011 1:09 PM
To: andy.zach@mail.house.gov
Subject: Catching up from NRC

Hi Andy –

I am actually in the NRC's Operations Center now, wrapping up my shift in the next hour. In case you have not seen them, here is a link to the most recent press release that NRC issued yesterday:
<http://www.nrc.gov/reading-rm/doc-collections/news/2011/11-045.pdf> Several other, going back to Fri, are posted at <http://www.nrc.gov/reading-rm/doc-collections/news/2011/>

Amy

From: Powell, Amy
Sent: Sunday, March 13, 2011 1:19 PM
To: Schmidt, Rebecca
Subject: Re: Oral statement

I'm listening in on a meeting he is holding now in ET. He is in jeans and a fleece, so my guess is not TV. I do understand that WH is crafting its press release from NRC writing (Eliot on it).

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Schmidt, Rebecca
To: Powell, Amy
Sent: Sun Mar 13 13:17:21 2011
Subject: Re: Oral statement

We can piece something together tomorrow. Is he doing press today?

From: Powell, Amy
To: Schmidt, Rebecca
Sent: Sun Mar 13 13:13:43 2011
Subject: Oral statement

Are you taking a shot at the oral statement or do you want me to start it tonight? We will probably have more later once it is daylight in Japan and both of NRC's experts are there (one arrived this morning, one is still en route). Marty came by twice to ask how it was going, could he see it. I told him that there was no way that we'd have anything today for anyone to look at but that OCA had it as a to do.

From: Powell, Amy
Sent: Sunday, March 13, 2011 1:53 PM
To: Hiland, Patrick
Subject: Potential Hill Qs
Attachments: Potential hearing Qs form Hill.docx

Pat –

In between the raindrops today, I came up with the attached questions that could be put to the Chairman at Wed's hearing. The existing lists seemed to capture a number of the technical ones that would be expected.

Amy

There is a known faultline near the Diablo Canyon nuclear power plant and another potential one that USGS, NRC and the State of California have been working to characterize for at least two years. How will the events in Japan with their nuclear power plants impact the NRC's consideration of Diablo Canyon's relicensing?

Are US nuclear plants built to withstand an earthquake and tsunami of the magnitude experienced last week in Japan?

What do we need to do in the US to safeguard our plants for a natural disaster of this magnitude?

What level earthquake can the plants in California withstand? What height tsunami wave?

From: Pace, Patti
Sent: Sunday, March 13, 2011 2:17 PM
To: Powell, Amy
Subject: RE: Call with Sen Carper

Will do. Thanks!

Patti Pace
Assistant to Chairman Gregory B. Jaczko
U.S. Nuclear Regulatory Commission
301-415-1820 (office)
301-415-3504 (fax)

From: Powell, Amy
Sent: Sunday, March 13, 2011 2:16 PM
To: Pace, Patti
Cc: Schmidt, Rebecca; Batkin, Joshua; Coggins, Angela
Subject: Call with Sen Carper

Patti, want to reach out to Erin on a time tomorrow morning?

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Haynes, Laura (Carper) <Laura_Haynes@carper.senate.gov>
To: Powell, Amy; Ghent, Bill (Carper) <Bill_Ghent@carper.senate.gov>; Wisler, Laura (Carper) <Laura_Wisler@carper.senate.gov>; Walls, Erin (Carper) <Erin_Walls@carper.senate.gov>
Sent: Sun Mar 13 14:13:05 2011
Subject: Re: Offer of call with NRC Chairman Jaczko

I think a call tomorrow morning would be good - Laura and Erin can we find a time? This is high priority.

Laura Haynes
Office of U.S. Senator Tom Carper
Sent using BlackBerry

From: Powell, Amy [mailto: Amy.Powell@nrc.gov]
Sent: Sunday, March 13, 2011 10:33 AM
To: Haynes, Laura (Carper)
Subject: Offer of call with NRC Chairman Jaczko

Hi Laura -

If it would be helpful, Chairman Jaczko is available and more than willing to have a call with TC today or tomorrow about our activities related to Japan. Let me know and we can set it up.

Amy

From: Pace, Patti
Sent: Sunday, March 13, 2011 2:19 PM
To: Walls, Erin (Carper)
Cc: Powell, Amy
Subject: Time for phone call tomorrow

Hi Erin,

Chairman Jaczko will be available at Senator Carper's convenience tomorrow morning. Just let me know a time and we will make it work.

Thanks!

Patti Pace
Assistant to Chairman Gregory B. Jaczko
U.S. Nuclear Regulatory Commission
301-415-1820 (office)
301-415-3504 (fax)

From: Powell, Amy
Sent: Sunday, March 13, 2011 2:53 PM
To: Batkin, Joshua; Schmidt, Rebecca
Subject: USAID call

Nothing remarkable - mostly Armed Services and Homeland Security committees staff. They are going to hold these interagency calls every day this week.

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Pace, Patti
Sent: Sunday, March 13, 2011 3:41 PM
To: Powell, Amy
Subject: RE: From TC's office

That will work. Shall I write back directly to Laura to confirm whether they want to initiate the call or vice versa?

Thanks

Patti Pace
Assistant to Chairman Gregory B. Jaczko
U.S. Nuclear Regulatory Commission
301-415-1820 (office)
301-415-3504 (fax)

From: Powell, Amy
Sent: Sunday, March 13, 2011 3:27 PM
To: Pace, Patti
Subject: From TC's office

FYI
Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Wisler, Laura (Carper) <Laura_Wisler@carper.senate.gov>
To: Haynes, Laura (Carper) <Laura_Haynes@carper.senate.gov>; Powell, Amy; Ghent, Bill (Carper) <Bill_Ghent@carper.senate.gov>; Walls, Erin (Carper) <Erin_Walls@carper.senate.gov>
Sent: Sun Mar 13 15:00:55 2011
Subject: Re: Offer of call with NRC Chairman Jaczko

There is time once TC gets on the train tomorrow. 9:15a would be great, as it is a 9:08a train.

From: Haynes, Laura (Carper)
Sent: Sunday, March 13, 2011 02:13 PM
To: 'Amy.Powell@nrc.gov' <Amy.Powell@nrc.gov>; Ghent, Bill (Carper); Wisler, Laura (Carper); Walls, Erin (Carper)
Subject: Re: Offer of call with NRC Chairman Jaczko

I think a call tomorrow morning would be good - Laura and Erin can we find a time? This is high priority.

Laura Haynes
Office of U.S. Senator Tom Carper
Sent using BlackBerry

From: Powell, Amy [mailto:Amy.Powell@nrc.gov]
Sent: Sunday, March 13, 2011 10:33 AM
To: Haynes, Laura (Carper)
Subject: Offer of call with NRC Chairman Jaczko

Hi Laura –

If it would be helpful, Chairman Jaczko is available and more than willing to have a call with TC today or tomorrow about our activities related to Japan. Let me know and we can set it up.

Amy

From: Schmidt, Rebecca
Sent: Sunday, March 13, 2011 4:19 PM
To: Riley (OCA), Timothy; Shane, Raeann; Powell, Amy; Droggitis, Spiros; Dacus, Eugene; Weil, Jenny; Decker, David
Subject: Re: OCA EOC staffing into Tuesday

Thanks. I hope we will be out of crisis mode sometime tomorrow

From: Riley (OCA), Timothy
To: Schmidt, Rebecca; Shane, Raeann; Powell, Amy; Droggitis, Spiros; Dacus, Eugene; Weil, Jenny; Decker, David
Sent: Sun Mar 13 16:15:05 2011
Subject: OCA EOC staffing into Tuesday

Here is the current schedule for EOC. Please let me know if there are any corrections

Sun – 9pm-7am – Gene
Mon – 7am-2pm – Raeann
Mon – 2pm-9pm – Amy
Mon – 9pm-7am – Tim
Tues – 7am-2pm - Spiros

From: Pace, Patti
Sent: Sunday, March 13, 2011 4:26 PM
To: Powell, Amy
Cc: Batkin, Joshua; Coggins, Angela; Schmidt, Rebecca
Subject: RE: Call/briefing with Sen. Boxer and Bettina today?

Hi Amy,

Tomorrow would be better. The Chairman's schedule is flexible in the morning except for the call we have (mostly) confirmed with Senator Carper at 9:15AM.

Thanks,

Patti Pace
Assistant to Chairman Gregory B. Jaczko
U.S. Nuclear Regulatory Commission
301-415-1820 (office)
301-415-3504 (fax)

-----Original Message-----

From: Powell, Amy
Sent: Sunday, March 13, 2011 4:12 PM
To: Pace, Patti
Subject: Re: Call/briefing with Sen. Boxer and Bettina today?

Thank you!
Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

----- Original Message -----

From: Pace, Patti
To: Powell, Amy; Coggins, Angela; Schmidt, Rebecca; Batkin, Joshua
Sent: Sun Mar 13 16:11:10 2011
Subject: RE: Call/briefing with Sen. Boxer and Bettina today?

Hi Amy,

The Chairman, Josh and Angela are all engaged on a conference call right now. I will check in as soon as the call is over and let you know what they say.

Thanks,

Patti Pace
Assistant to Chairman Gregory B. Jaczko
U.S. Nuclear Regulatory Commission
301-415-1820 (office)
301-415-3504 (fax)

-----Original Message-----

From: Powell, Amy
Sent: Sunday, March 13, 2011 3:55 PM
To: Coggins, Angela; Pace, Patti; Schmidt, Rebecca; Batkin, Joshua
Subject: Call/briefing with Sen. Boxer and Bettina today?

Bettina just asked that if Sen Boxer could be available, would a "briefing" be possible. Does GBJ have any time to speak with both of them on the line? Would tomorrow be better? I sense that she'd be ok either way. Let me know.

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Powell, Amy
Sent: Sunday, March 13, 2011 5:18 PM
To: Pace, Patti; Batkin, Joshua; Coggins, Angela; Schmidt, Rebecca
Subject: Re: Boxer revisited

According to Bettina, here are Sen Boxer's questions verbatim:

-are those reactors being cooled?

-Has radiation escaped, how much, what are the implications?
(I answered this for Bettina from press release, blog item)

-What is the worst case scenario right now? What is most likely outcome?
(I mentioned to Bettina that we are not speculating and reiterated our focus)

-Can radiation reach Hawaii or the west coast, other parts of the us? (Again, I answered for B from press release/blog) If so should we be distributing iodide? What does the iodide do? (Answered second part)

what are the implications for us nuclear operations/standards.-

Also she needs a clear overview - she wants the Senator to hear from a non- NEI source what has happened.

I'll go back again on timing.

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

----- Original Message -----

From: Pace, Patti
To: Powell, Amy; Batkin, Joshua; Coggins, Angela; Schmidt, Rebecca
Sent: Sun Mar 13 17:12:56 2011
Subject: RE: Boxer revisited

Hi Amy,

Chairman Jaczko said he would like to do this call sooner rather than later. He also asked for some talking points if you have an idea of the questions she might ask. If you email text to me I can format and print for him. Please let me know what time may work. I can conference together up to 4 lines so I can tie in the Chairman, Senator Boxer, Bettina, and one other (as long as the call happens when the Chairman is here.) Otherwise, we can go through the HOO to have more people on the call.

Thanks,

thanks

Patti Pace
Assistant to Chairman Gregory B. Jaczko
U.S. Nuclear Regulatory Commission
301-415-1820 (office)
301-415-3504 (fax)

-----Original Message-----

From: Powell, Amy
Sent: Sunday, March 13, 2011 4:55 PM
To: Batkin, Joshua; Coggins, Angela; Schmidt, Rebecca
Cc: Pace, Patti
Subject: Boxer revisited

I just gave Patti a heads up: I just spoke to Bettina, who said that the Sen may want 5-10 minutes on the phone with GBJ. She is flying back to DC as early as 5am PST tomorrow morning, so tomorrow is now less okay than earlier... Any chance on this?

Bettina also expressed, kindly, her concern that NEI is "saturating" members with info that may/may not be accurate. The Senator would rather hear from GBJ.

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Powell, Amy
Sent: Sunday, March 13, 2011 5:26 PM
To: Batkin, Joshua; Coggins, Angela; Schmidt, Rebecca
Subject: FYI for Boxer call

FYI: Bettina has said a number of times that NRC should have a strong Hill presence on this. She will likely raise it with GBJ.

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Pace, Patti
Sent: Sunday, March 13, 2011 5:26 PM
To: Powell, Amy; Batkin, Joshua; Coggins, Angela; Schmidt, Rebecca
Subject: RE: Boxer revisited

Hi Amy,

The Chairman says that he is willing to talk to whoever is available in the next hour. If it is just Bettina, he will be happy to speak to her.

Thanks,

Patti Pace
Assistant to Chairman Gregory B. Jaczko
U.S. Nuclear Regulatory Commission
301-415-1820 (office)
301-415-3504 (fax)

-----Original Message-----

From: Powell, Amy
Sent: Sunday, March 13, 2011 5:25 PM
To: Pace, Patti; Batkin, Joshua; Coggins, Angela; Schmidt, Rebecca
Subject: Re: Boxer revisited

Bettina think that she can do it in the next hour. She is checking with Sen B and will be back with a time, best phone number.

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

----- Original Message -----

From: Pace, Patti
To: Powell, Amy; Batkin, Joshua; Coggins, Angela; Schmidt, Rebecca
Sent: Sun Mar 13 17:12:56 2011
Subject: RE: Boxer revisited

Hi Amy,

Chairman Jaczko said he would like to do this call sooner rather than later. He also asked for some talking points if you have an idea of the questions she might ask. If you email text to me I can format and print for him. Please let me know what time may work. I can conference together up to 4 lines so I can tie in the Chairman, Senator Boxer, Bettina, and

one other (as long as the call happens when the Chairman is here.) Otherwise, we can go through the HOO to have more people on the call.

Thanks,

thanks

Patti Pace
Assistant to Chairman Gregory B. Jaczko
U.S. Nuclear Regulatory Commission
301-415-1820 (office)
301-415-3504 (fax)

-----Original Message-----

From: Powell, Amy
Sent: Sunday, March 13, 2011 4:55 PM
To: Batkin, Joshua; Coggins, Angela; Schmidt, Rebecca
Cc: Pace, Patti
Subject: Boxer revisited

I just gave Patti a heads up: I just spoke to Bettina, who said that the Sen may want 5-10 minutes on the phone with GBJ. She is flying back to DC as early as 5am PST tomorrow morning, so tomorrow is now less okay than earlier... Any chance on this?

Bettina also expressed, kindly, her concern that NEI is "saturating" members with info that may/may not be accurate. The Senator would rather hear from GBJ.

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Powell, Amy
Sent: Sunday, March 13, 2011 5:47 PM
To: Batkin, Joshua; Coggins, Angela; Schmidt, Rebecca
Subject: More from DOE re: briefing

DOE says WH is now saying Tuesday more likely for SENR briefing. When it happens, Pete Lyons and Tom D'Agostino will be the briefers from DOE. Think about who you think NRC should have (if you agree that we should support this).

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

----- Original Message -----

From: Lane, Jeff <laneje@Hq.Doe.Gov>
To: Powell, Amy
Sent: Sun Mar 13 17:14:14 2011
Subject: Re: Briefing

Now WH is saying Tuesday is more likely. Stay tuned

----- Original Message -----

From: Powell, Amy <Amy.Powell@nrc.gov>
To: Lane, Jeff
Sent: Sun Mar 13 14:18:06 2011
Subject: Re: Briefing

What time - do we know yet?

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

----- Original Message -----

From: Lane, Jeff <laneje@Hq.Doe.Gov>
To: Powell, Amy
Sent: Sun Mar 13 14:12:59 2011
Subject: Briefing

It nows looks like there will be one big interagency briefing tomorrow for leadership staff and key committee staff.
Would someone from NRC be available to join?

From: Nouri, Ali (Webb) <Ali_Nouri@webb.senate.gov>
Sent: Sunday, March 13, 2011 5:53 PM
To: Powell, Amy
Subject: Re: Japan nuclear issues

Got it. Thanks, Amy!

----- Original Message -----

From: Powell, Amy [mailto: Amy.Powell@nrc.gov]
Sent: Sunday, March 13, 2011 05:49 PM
To: Nouri, Ali (Webb)
Subject: Re: Japan nuclear issues

Betty Cook at USAID - 703-971-0025 I don't have a State leg affairs contact, but Betty might.

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

----- Original Message -----

From: Nouri, Ali (Webb) <Ali_Nouri@webb.senate.gov>
To: Powell, Amy
Sent: Sun Mar 13 12:34:40 2011
Subject: Re: Japan nuclear issues

Amy,
If you have those, would you also tell me who the appropriate USAID and State Dep. Contacts are? Thanks!

----- Original Message -----

From: Powell, Amy [mailto: Amy.Powell@nrc.gov]
Sent: Sunday, March 13, 2011 12:29 PM
To: Nouri, Ali (Webb)
Subject: RE: Japan nuclear issues

Hi Ali -

I am actually in the NRC's Operations Center now. I've asked our staff to add you to any updates. Here is a link to the most recent press release that NRC issued yesterday: <http://www.nrc.gov/reading-rm/doc-collections/news/2011/11-045.pdf> Several other, going back to Fri, are posted at <http://www.nrc.gov/reading-rm/doc-collections/news/2011/>

Thanks, Amy

-----Original Message-----

From: Nouri, Ali (Webb) [mailto: Ali_Nouri@webb.senate.gov]

Sent: Sunday, March 13, 2011 12:20 PM

To: Powell, Amy

Subject: Japan nuclear issues

Hi Amy,

Hope this finds you well, considering all that is happening.

Just wanted to let you know that my boss is following the situation very closely (given his nuclear energy interests and chairmanship of the east asia subcommittee on SFRC).

I don't know what the extent of NRC involvement will be, but please let us know if we can help out. And if you're sending updates or anything like the sort please add me to those.

Thanks and hope to see you soon,

Ali

From: Powell, Amy
Sent: Sunday, March 13, 2011 8:30 PM
To: 'Bettina_Poirier@epw.senate.gov'
Subject: Still on for tonight's call?

Importance: High

Our Headquarters Operations Center is ready for you and the Senator to call in for Chairman Jaczko. Call 301-816-5100 and ask for Chairman Jaczko's bridgeline dedicated for this call.

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Pace, Patti
Sent: Sunday, March 13, 2011 8:32 PM
To: Wisler, Laura (Carper)
Cc: Ghent, Bill (Carper); Walls, Erin (Carper); Haynes, Laura (Carper); Powell, Amy
Subject: RE: Phone Call Confirmation

Laura,

Please use 301-415-1820. We will get the Chairman on the line right away.

Thanks for your help!

Patti Pace
Assistant to Chairman Gregory B. Jaczko
U.S. Nuclear Regulatory Commission
301-415-1820 (office)
301-415-3504 (fax)

From: Wisler, Laura (Carper) [mailto:Laura_Wisler@carper.senate.gov]
Sent: Sunday, March 13, 2011 8:31 PM
To: Pace, Patti
Cc: Ghent, Bill (Carper); Walls, Erin (Carper); Haynes, Laura (Carper); Powell, Amy
Subject: Re: Phone Call Confirmation

Patti,

What is the best number for me to connect the Senator through to?

Thanks so much!

Laura

From: Pace, Patti [mailto:Patti.Pace@nrc.gov]
Sent: Sunday, March 13, 2011 04:03 PM
To: Wisler, Laura (Carper)
Cc: Ghent, Bill (Carper); Walls, Erin (Carper); Haynes, Laura (Carper); Powell, Amy <Amy.Powell@nrc.gov>
Subject: Phone Call Confirmation

Hi Laura,

Chairman Jaczko will be available to speak with Senator Carper tomorrow at 9:15AM. Would you like to initiate the call to our office when Senator Carper is available?

Many thanks,

Patti Pace
Assistant to Chairman Gregory B. Jaczko
U.S. Nuclear Regulatory Commission
301-415-1820 (office)

301-415-3504 (fax)

From: Wisler, Laura (Carper) <Laura_Wisler@carper.senate.gov>
To: Haynes, Laura (Carper) <Laura_Haynes@carper.senate.gov>; Powell, Amy; Ghent, Bill (Carper) <Bill_Ghent@carper.senate.gov>; Walls, Erin (Carper) <Erin_Walls@carper.senate.gov>
Sent: Sun Mar 13 15:00:55 2011
Subject: Re: Offer of call with NRC Chairman Jaczko

There is time once TC gets on the train tomorrow. 9:15a would be great, as it is a 9:08a train.

From: Haynes, Laura (Carper)
Sent: Sunday, March 13, 2011 02:13 PM
To: 'Amy.Powell@nrc.gov' <Amy.Powell@nrc.gov>; Ghent, Bill (Carper); Wisler, Laura (Carper); Walls, Erin (Carper)
Subject: Re: Offer of call with NRC Chairman Jaczko

I think a call tomorrow morning would be good - Laura and Erin can we find a time? This is high priority.

Laura Haynes
Office of U.S. Senator Tom Carper
Sent using BlackBerry

From: Powell, Amy [mailto:Amy.Powell@nrc.gov]
Sent: Sunday, March 13, 2011 10:33 AM
To: Haynes, Laura (Carper)
Subject: Offer of call with NRC Chairman Jaczko

Hi Laura -

If it would be helpful, Chairman Jaczko is available and more than willing to have a call with TC today or tomorrow about our activities related to Japan. Let me know and we can set it up.

Amy

From: Powell, Amy
Sent: Sunday, March 13, 2011 8:49 PM
To: Batkin, Joshua; Coggins, Angela; Pace, Patti
Subject: FYI re: Sen Boxer

Bettina profusely apologized for all the starts and stops... asked that to get passed onto GBJ...

Amy Powell

Associate Director

Office of Congressional Affairs

U. S. Nuclear Regulatory Commission

Phone: 301-415-1673

Sent from my Blackberry

From: Powell, Amy
Sent: Sunday, March 13, 2011 9:18 PM
To: Batkin, Joshua; Coggins, Angela; Loyd, Susan; Ross-Lee, MaryJane; Schmidt, Rebecca
Subject: Questions from Sen Boxer

Here are the Qs referenced on our 9pm call - several were addressed and answered by NRC's last press release and blog posting, others are speculative:

- Are those reactors being cooled?
- Has radiation escaped, how much, what are the implications?
- What is the worst case scenario right now? What is most likely outcome?
- Can radiation reach Hawaii or the west coast, other parts of the us? If so should we be distributing iodide?
- what are the implications for us nuclear operations/standards?

Also, expressed interest in a summary, overview of what's happened (# of plants involved, status) - it's in the media but would like to have info from us.

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Powell, Amy
Sent: Sunday, March 13, 2011 10:28 PM
To: Batkin, Joshua; Schmidt, Rebecca
Subject: Ltr tomorrow from Sens. Boxer, Carper

In our many conversations today, Bettina mentioned that they will likely have a ltr, cosigned with Sen Carper, to us tomorrow probing into Japan, reactors. She will likely at some point want to hear our views of what the scope and key questions should be.

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Pace, Patti
Sent: Sunday, March 13, 2011 10:48 PM
To: Powell, Amy
Subject: Re: Monday morning

Ok, I might have to call out to Bettina then once Senator Boxer calls in. I can't bridge two incoming lines together like the hoo can. Let's talk in the AM, I'm heading to bed. Thanks!

Patti Pace
U.S. Nuclear Regulatory Commission
(301) 415-1820

----- Original Message -----

From: Powell, Amy
To: Pace, Patti
Sent: Sun Mar 13 22:45:26 2011
Subject: Re: Monday morning

No, they will not be together. Two separate calls.

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

----- Original Message -----

From: Pace, Patti
To: Powell, Amy
Sent: Sun Mar 13 22:43:38 2011
Subject: Re: Monday morning

Amy, sounds good. Will Bettina and Sen Boxer already be on the phone together when they call in? Thx Patti Pace U.S. Nuclear Regulatory Commission
(301) 415-1820

----- Original Message -----

From: Powell, Amy
To: Batkin, Joshua; Pace, Patti
Cc: Schmidt, Rebecca; Coggins, Angela
Sent: Sun Mar 13 22:23:17 2011
Subject: Monday morning

Patti, thanks for all of your help today! Here is what the morning is scheduled to be re: Congressional calls:

915am: Sen Carper

930am: Sen Boxer (10 min - she'll be in an airport...) and Bettina Poirier

10am (tent - waiting for final confirmation) Rep. Waxman (he may invite Reps. Green and Rush as well)

Patti, I will ask Sen. Boxer and Bettina to call in on 301-415-1820

Thanks again

Amy

Amy Powell

Associate Director

Office of Congressional Affairs

U. S. Nuclear Regulatory Commission

Phone: 301-415-1673

Sent from my Blackberry

From: Haynes, Laura (Carper) <Laura_Haynes@carper.senate.gov>
Sent: Sunday, March 13, 2011 11:40 PM
To: Powell, Amy; Schmidt, Rebecca
Subject: AP1000?

I see that Markey wants to suspend the AP1000 design because "one of NRC's most senior staff warned that the containment structure for this design would not be able to withstand a strong earthquake."

Tomorrow morning, can you we please talk about these claims and other claims he made in regards to emergency response? Thanks!

Laura Haynes
Office of U.S. Senator Tom Carper
Sent using BlackBerry

From: Powell, Amy
Sent: Monday, March 14, 2011 6:41 AM
To: Hayden, Elizabeth; Brenner, Eliot
Cc: Harrington, Holly; Schmidt, Rebecca
Subject: Re: Chairman's Qs and As

The reactor safety team in the HOO has been compiling a number of Q and As for a variety of audiences re: the situation in Japan. OCA does not have them yet but will check status this am and share.

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Hayden, Elizabeth
To: Brenner, Eliot
Cc: Harrington, Holly; Powell, Amy
Sent: Sun Mar 13 23:59:42 2011
Subject: Chairman's Qs and As

It would be helpful if we could get a complete set of the Chairman's Qs and As that have been prepared for the Wed. hearing.

From: Schmidt, Rebecca
Sent: Monday, March 14, 2011 6:55 AM
To: Powell, Amy
Subject: Re: Monday

Sure

----- Original Message -----

From: Powell, Amy
To: Schmidt, Rebecca
Sent: Mon Mar 14 06:42:42 2011
Subject: Monday

I'll be in by 8am.

I told the SLS mtg folks that I will likely not be doing the presentation today given continuing ops ctr coverage (I'm currently scheduled for 2-9). You okay with that?

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Poirier, Bettina (EPW) <Bettina_Poirier@epw.senate.gov>
Sent: Monday, March 14, 2011 6:56 AM
To: Powell, Amy
Cc: Pace, Patti
Subject: Re: Addendum: Call w/Chairman Jaczko

228 6004. ill email if I can call with she and I on.

----- Original Message -----

From: Powell, Amy [mailto: Amy.Powell@nrc.gov]
Sent: Sunday, March 13, 2011 10:53 PM
To: Poirier, Bettina (EPW)
Cc: Pace, Patti <Patti.Pace@nrc.gov>
Subject: Addendum: Call w/Chairman Jaczko

Bettina - slight change in logistics. Senator Boxer should still call in on 301-415-1820 to go into Chairman Jaczko at 930am tomorrow. However to engage you on the call, we will then need to call you. What is the best number for you tomorrow at 930am? I've cc'ed Patti Pace in Chairman Jaczko's office who will make all this magic happen...

Thanks
Amy

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

----- Original Message -----

From: Powell, Amy
To: 'Bettina_Poirier@epw.senate.gov' <Bettina_Poirier@epw.senate.gov>
Sent: Sun Mar 13 22:44:45 2011
Subject: Call w/Chairman Jaczko

Hello again -

Ok, I believe we've worked out the schedule for a call with Sen. Boxer and you at 930am EST Monday morning. Please call the Chairman's office at 301-415-1820 and they will put the Senator and you right through.

Thanks
Amy

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission

Phone: 301-415-1673

Sent from my Blackberry

From: Droggitis, Spiros
Sent: Monday, March 14, 2011 7:51 AM
To: Belmore, Nancy
Subject: FW: Schedule for Ops Center -- OCA participation
Attachments: RE: Schedule for Ops Center -- OCA participation; RE: Schedule for Ops Center -- OCA participation

From: Droggitis, Spiros
Sent: Saturday, March 12, 2011 3:41 PM
To: Shane, Raeann; Schmidt, Rebecca; Dacus, Eugene; Decker, David; Powell, Amy; Riley (OCA), Timothy
Cc: Brenner, Eliot; Hayden, Elizabeth
Subject: RE: Schedule for Ops Center -- OCA participation

I can do Tues. am

You got it. Right now we have:

Sun – 9pm-7am – Gene
Mon – 7am-2pm – Raeann
Mon – 2pm-9pm – open
Mon – 9pm-7am – Tim
Tues – 7am-2pm - Spiros

From: Shane, Raeann
Sent: Saturday, March 12, 2011 3:31 PM
To: Schmidt, Rebecca; Dacus, Eugene; Droggitis, Spiros; Decker, David; Powell, Amy; Riley (OCA), Timothy
Cc: Brenner, Eliot; Hayden, Elizabeth
Subject: Re: Schedule for Ops Center -- OCA participation

I will take Mon 7am to 2 If it's still open

From: Schmidt, Rebecca
To: Schmidt, Rebecca; Shane, Raeann; Dacus, Eugene; Droggitis, Spiros; Decker, David; Powell, Amy; Riley (OCA), Timothy
Cc: Brenner, Eliot; Hayden, Elizabeth
Sent: Sat Mar 12 12:48:01 2011
Subject: RE: Schedule for Ops Center -- OCA participation

The Ops Center has to check a box so I need volunteers to man the following hours:

Sun night 9pm – 7am Monday morning
Mon 7am – 2PM
Mon 2pm – 9 pm
Mon 9 pm – Tues 7am
Tues 7am to 2pm

First come, first serve!!!

From: Schmidt, Rebecca

Sent: Friday, March 11, 2011 5:08 PM

To: Shane, Raeann; Dacus, Eugene; Schmidt, Rebecca; Droggitis, Spiros; Decker, David; Powell, Amy; Riley (OCA), Timothy

Cc: Batkin, Joshua; Brenner, Eliot; Hayden, Elizabeth

Subject: Schedule for Ops Center -- OCA participation

Thanks for all your help. Here is a schedule for our participation at the Ops Center:

Friday

Raeann 10:00 am to 10:00 pm

Gene 10:00 pm to 7:00 am

Saturday

Becky 7:00 am to 2:00 pm

Spiros 2:00 pm to 9:00 pm

David 9:00 pm to 7:00 am

Sunday

Amy 7:00 am to 2:00 pm

Tim 2:00pm to 9:00pm

We will figure out if we need to cycle again later in the weekend. Also, I will send the list of who we are sending the press releases to in my next email

From: Powell, Amy
Sent: Monday, March 14, 2011 8:41 AM
To: Shane, Raeann
Subject: RE: Distribution list

Well, I waited a while before I signed up to see if anyone took it. Jenny is itching to get into the rotation but...

From: Shane, Raeann
Sent: Monday, March 14, 2011 8:37 AM
To: Powell, Amy
Subject: RE: Distribution list

Oh man. I bet you are. Can't Decker or somebody take your shift? I think 2 days back to back down here is too much. Even though we are not "doing" much, it is so emotionally draining. Although it is hard to get away from it even when not down here. I deliberately did not watch the news yesterday and I'm glad I didn't. From reading the NEI and Japan stuff that was coming over the blackberry it did not sound that bad. I should have known.

From: Powell, Amy
Sent: Monday, March 14, 2011 8:33 AM
To: Shane, Raeann
Subject: RE: Distribution list

OK – I'm on tap to relieve you so I will try to come over a little early for turn-over. Yesterday wore me out (7am – 2pm then an evening of calls with Josh, Sen. Boxer's staff, and Chairman's office), so I am walking wounded...

From: Shane, Raeann
Sent: Monday, March 14, 2011 8:30 AM
To: Powell, Amy
Subject: RE: Distribution list

Just listening to all that is going on. Amazing. Never thought I would see this. I will have to run out of here at 2:00 to get home for a tree person to give me an estimate (reason I took the early shift). If this keeps up I will probably shift over to afternoons and leave 7:00am to people who like the dark ☺. Although traffic was much easier.

From: Powell, Amy
Sent: Monday, March 14, 2011 8:21 AM
To: Shane, Raeann
Subject: Distribution list

I think that our list is still hosed up. I am comparing now and will send out a corrected version. How are you?

Amy Powell
Associate Director
U. S. Nuclear Regulatory Commission
Office of Congressional Affairs
Phone: 301-415-1673

From: Powell, Amy
Sent: Monday, March 14, 2011 8:45 AM
To: Tallarico, Alison
Cc: Johns, Nancy
Subject: RE: FYI re: Monday's SLS mtg

Hi Alison _ I just tried your line then realized that you may not be at your desk today. I apologize, but I am going to have to cancel presenting at today's SLS meeting. We are still staffing the Ops Center Liaison Team, as we have throughout the weekend; my next shift is scheduled for 2pm. Those not in the Ops Center for us are fielding Congressional calls and preparing for Wednesday hearing. Again, I apologize but this was certainly unforeseen. We'd be glad to present at the next opportunity.

Amy

Amy Powell
Associate Director
U. S. Nuclear Regulatory Commission
Office of Congressional Affairs
Phone: 301-415-1673

-----Original Message-----

From: Tallarico, Alison
Sent: Monday, March 14, 2011 7:53 AM
To: Powell, Amy
Cc: Johns, Nancy
Subject: RE: FYI re: Monday's SLS mtg

Thanks for letting me know, Amy, and we'll just wait to hear from you.

-----Original Message-----

From: Powell, Amy
Sent: Saturday, March 12, 2011 9:59 PM
To: Tallarico, Alison
Subject: FYI re: Monday's SLS mtg

Alison -

FYI, given the events in Japan, I now am tentatively scheduled to staff the liaison team in the Ops Ctr from 2pm - 9pm on Monday. I'll keep you posted, but this may pre-empt my presentation and attendance at the SLS mtg. I will try to arrange a Plan B, but our office has been involved around the clock since 10am Fri. Thanks for your understanding. I'll be in touch tomorrow.

Amy Powell
Associate Director

Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Pace, Patti
Sent: Monday, March 14, 2011 8:56 AM
To: Schmidt, Rebecca; Powell, Amy
Cc: Batkin, Joshua; Coggins, Angela
Subject: RE: Call today with Sen. Inhofe?

Hi Becky,

As far as I know, the Chairman is planning to be back in the office for the calls at 9:15a, 9:30a, and 10:00a. However, he is still in the SCIF for an 8:00AM briefing that has not yet ended. Josh is with him. I will let you know as soon as they check in.

Thanks,

Patti Pace
Assistant to Chairman Gregory B. Jaczko
U.S. Nuclear Regulatory Commission
301-415-1820 (office)
301-415-3504 (fax)

-----Original Message-----

From: Schmidt, Rebecca
Sent: Monday, March 14, 2011 8:52 AM
To: Pace, Patti; Powell, Amy
Cc: Batkin, Joshua; Coggins, Angela
Subject: Re: Call today with Sen. Inhofe?

Are the 915 et all calls in the ops center or his office?

----- Original Message -----

From: Pace, Patti
To: Powell, Amy
Cc: Batkin, Joshua; Schmidt, Rebecca; Coggins, Angela
Sent: Mon Mar 14 08:48:04 2011
Subject: RE: Call today with Sen. Inhofe?

Yes, the Chairman could be available then. Thanks!

Patti Pace
Assistant to Chairman Gregory B. Jaczko
U.S. Nuclear Regulatory Commission
301-415-1820 (office)
301-415-3504 (fax)

-----Original Message-----

From: Powell, Amy

Sent: Monday, March 14, 2011 8:46 AM
To: Pace, Patti
Cc: Batkin, Joshua; Schmidt, Rebecca; Coggins, Angela
Subject: Call today with Sen. Inhofe?

Just heard back from Sen. Inhofe's staff - could GBJ do a 5 or 5:15 call with the Senator today?

Amy

From: Powell, Amy
Sent: Monday, March 14, 2011 9:03 AM
To: Belmore, Nancy; Quesenberry, Jeannette
Cc: Schmidt, Rebecca
Subject: OCA staff in Ops Center

Good morning –

FYI: We've been rotating folks in the Ops Center's Liaison team 24/7 since Friday. Here is the current schedule:

Sun – 9pm-7am – Gene
Mon – 7am-2pm – Raeann
Mon – 2pm-9pm – Amy
Mon – 9pm-7am – Tim
Tues – 7am-2pm – Spiros

Amy

Amy Powell
Associate Director
U. S. Nuclear Regulatory Commission
Office of Congressional Affairs
Phone: 301-415-1673

From: Powell, Amy
Sent: Monday, March 14, 2011 9:11 AM
To: Pace, Patti; Schmidt, Rebecca
Cc: Coggins, Angela
Subject: RE: Still no word from the Chairman or Josh

Just talked to Angela – sounds as though the Chairman is still on the interagency coordination call. Want to try to move it to 10:30am?

From: Pace, Patti
Sent: Monday, March 14, 2011 9:05 AM
To: Powell, Amy; Schmidt, Rebecca
Cc: Coggins, Angela
Subject: Still no word from the Chairman or Josh

At what point should we contact Senator Carper's office and reschedule?

Thanks,

Patti Pace
Assistant to Chairman Gregory B. Jaczko
U.S. Nuclear Regulatory Commission
301-415-1820 (office)
301-415-3504 (fax)

From: Pace, Patti
Sent: Monday, March 14, 2011 9:23 AM
To: Powell, Amy
Subject: RE: FYI re: CARPER

Laura Haynes still called at 9:15AM with Senator Carper on the line. I explained to them why the Chairman was unavailable. Senator Carper seemed ok and just asked Laura Haynes to work on getting it rescheduled. *SIGH* Sorry. Now I am starting to worry about the 9:30AM call with Senator Boxer...

Patti Pace
Assistant to Chairman Gregory B. Jaczko
U.S. Nuclear Regulatory Commission
301-415-1820 (office)
301-415-3504 (fax)

From: Powell, Amy
Sent: Monday, March 14, 2011 9:12 AM
To: Pace, Patti
Subject: FYI re: CARPER
Importance: High

You probably know this but just in case, Laura Wisler seems to have been leading this call for his office.
Let me know what happens and I'll call the other Laura to let her know (she was planning to staff the call)

Thanks,
Amy

From: Wisler, Laura (Carper) [mailto:Laura_Wisler@carper.senate.gov]
Sent: Monday, March 14, 2011 8:40 AM
To: Haynes, Laura (Carper); Powell, Amy; Ghent, Bill (Carper); Walls, Erin (Carper)
Subject: Re: Offer of call with NRC Chairman Jaczko

Does anyone need to staff this call?

From: Haynes, Laura (Carper)
Sent: Sunday, March 13, 2011 02:13 PM
To: 'Amy.Powell@nrc.gov' <Amy.Powell@nrc.gov>; Ghent, Bill (Carper); Wisler, Laura (Carper); Walls, Erin (Carper)
Subject: Re: Offer of call with NRC Chairman Jaczko

I think a call tomorrow morning would be good - Laura and Erin can we find a time? This is high priority.

Laura Haynes
Office of U.S. Senator Tom Carper
Sent using BlackBerry

From: Powell, Amy [mailto:Amy.Powell@nrc.gov]
Sent: Sunday, March 13, 2011 10:33 AM

To: Haynes, Laura (Carper)

Subject: Offer of call with NRC Chairman Jaczko

Hi Laura –

If it would be helpful, Chairman Jaczko is available and more than willing to have a call with TC today or tomorrow about our activities related to Japan. Let me know and we can set it up.

Amy

From: Powell, Amy
Sent: Monday, March 14, 2011 9:33 AM
To: Caputo, Annie (EPW)
Subject: RE: Briefing for JMI

Yes, by phone. Just let me know which time works better. Thanks!

-----Original Message-----

From: Caputo, Annie (EPW) [mailto:Annie_Caputo@epw.senate.gov]
Sent: Monday, March 14, 2011 9:23 AM
To: Powell, Amy
Subject: Re: Briefing for JMI

By phone?

----- Original Message -----

From: Powell, Amy [mailto:Amy.Powell@nrc.gov]
Sent: Monday, March 14, 2011 09:05 AM
To: Caputo, Annie (EPW)
Subject: RE: Briefing for JMI

Either one will work for the Chairman - just let me know and we'll lock it in.

-----Original Message-----

From: Caputo, Annie (EPW) [mailto:Annie_Caputo@epw.senate.gov]
Sent: Monday, March 14, 2011 8:45 AM
To: Powell, Amy
Subject: Briefing for JMI

Can the Chairman do a 5:00 or 5:15 with Sen. Inhofe?

From: Powell, Amy
Sent: Monday, March 14, 2011 9:43 AM
To: 'Annie_Caputo@epw.senate.gov'; 'Wendi_Price@inchofe.senate.gov'
Cc: Pace, Patti
Subject: Re: Just heard from JMI

Thanks Annie - Wendi, I've cc'ed Patti Pace who holds Chairman Jaczko's schedule. Let us know what would work best.

Thanks
Amy

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

----- Original Message -----

From: Caputo, Annie (EPW) <Annie_Caputo@epw.senate.gov>
To: Price, Wendi (Inchofe) <Wendi_Price@inchofe.senate.gov>; Powell, Amy
Sent: Mon Mar 14 09:38:33 2011
Subject: RE: Just heard from JMI

Chairman Jaczko can be available at 5:00 or 5:15 by phone. Wendi, what time do you prefer? I'm cc'ing Amy Powell the Deputy Director for NRC Congressional Affairs so you two can exchange contact info.

Annie

-----Original Message-----

From: Price, Wendi (Inchofe)
Sent: Monday, March 14, 2011 8:33 AM
To: VanMark, Ruth (EPW); Caputo, Annie (EPW); Catanzaro, Mike (EPW); Dempsey, Matt (EPW); Jackson, Ryan (Inchofe)
Subject: Re: Just heard from JMI

Can we do this around 5 or 515?

----- Original Message -----

From: VanMark, Ruth (EPW)
Sent: Monday, March 14, 2011 08:22 AM
To: Caputo, Annie (EPW); Catanzaro, Mike (EPW); Dempsey, Matt (EPW); Price, Wendi (Inchofe); Jackson, Ryan (Inchofe)
Subject: Just heard from JMI

He want an NRC briefing. Understand he doesn't get in until 4ish today.

From: Powell, Amy
Sent: Monday, March 14, 2011 9:51 AM
To: Decker, David; Schmidt, Rebecca
Subject: Re: EPW Request for a Briefing on Japan Before Wednesday's Hearing

Thanks - we're working on a briefing strategy now. I'll get back to Kathy.

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Decker, David
To: Powell, Amy; Schmidt, Rebecca
Sent: Mon Mar 14 09:37:11 2011
Subject: EPW Request for a Briefing on Japan Before Wednesday's Hearing

Kathy just called to say that EPW wants a briefing on Japan before the Wednesday morning hearing with Energy and Commerce.

From: Powell, Amy
Sent: Monday, March 14, 2011 10:10 AM
To: Schmidt, Rebecca
Subject: Phone calls update

Sen. Carper is able to call at 10:45am – Patti is trying to make that work.

Sen. Inhofe will call at 5:15pm

Re: Sen. Boxer, Bettina is going to try to get her flight schedule to see if a call during a layover is possible. If not, Bettina would like a call and GBJ is open to that.

Amy Powell
Associate Director
U. S. Nuclear Regulatory Commission
Office of Congressional Affairs
Phone: 301-415-1673

From: Pace, Patti
Sent: Monday, March 14, 2011 10:48 AM
To: Powell, Amy
Subject: RE: Rescheduling Call Today

OK, I will follow up.

Patti Pace
Assistant to Chairman Gregory B. Jaczko
U.S. Nuclear Regulatory Commission
301-415-1820 (office)
301-415-3504 (fax)

From: Powell, Amy
Sent: Monday, March 14, 2011 10:48 AM
To: Pace, Patti
Subject: RE: Rescheduling Call Today

I'm on an interagency call and can't break away...

From: Pace, Patti
Sent: Monday, March 14, 2011 10:47 AM
To: Powell, Amy
Subject: FW: Rescheduling Call Today

Will you reach out to Senator Boxer's office I guess??

Patti Pace
Assistant to Chairman Gregory B. Jaczko
U.S. Nuclear Regulatory Commission
301-415-1820 (office)
301-415-3504 (fax)

From: Haynes, Laura (Carper) [mailto:Laura_Haynes@carper.senate.gov]
Sent: Monday, March 14, 2011 10:46 AM
To: Pace, Patti; Walls, Erin (Carper); Wisler, Laura (Carper)
Cc: Powell, Amy
Subject: RE: Rescheduling Call Today

TC is running late

From: Pace, Patti [mailto:Patti.Pace@nrc.gov]
Sent: Monday, March 14, 2011 10:09 AM
To: Walls, Erin (Carper); Haynes, Laura (Carper); Wisler, Laura (Carper)
Cc: Powell, Amy
Subject: RE: Rescheduling Call Today

Hi Erin,

Yes, 10:45AM this morning will work. We will expect the call then.

Thanks,

Patti Pace
Assistant to Chairman Gregory B. Jaczko
U.S. Nuclear Regulatory Commission
301-415-1820 (office)
301-415-3504 (fax)

From: Walls, Erin (Carper) [mailto:Erin_Walls@carper.senate.gov]
Sent: Monday, March 14, 2011 10:06 AM
To: Pace, Patti; Haynes, Laura (Carper); Wisler, Laura (Carper)
Cc: Powell, Amy
Subject: RE: Rescheduling Call Today

Hi Patti,

Is there any chance the Chairman is free at 10:45 am this morning? Senator Carper will be in between meetings and could call at 10:45.

Thanks,
Erin

From: Pace, Patti [mailto:Patti.Pace@nrc.gov]
Sent: Monday, March 14, 2011 9:29 AM
To: Walls, Erin (Carper); Haynes, Laura (Carper); Wisler, Laura (Carper)
Cc: Powell, Amy
Subject: RE: Rescheduling Call Today

Hi Erin,

Yes, please initiate the call to 301-415-1820 at 3:00pm.

Thank you!

Patti Pace
Assistant to Chairman Gregory B. Jaczko
U.S. Nuclear Regulatory Commission
301-415-1820 (office)
301-415-3504 (fax)

From: Walls, Erin (Carper) [mailto:Erin_Walls@carper.senate.gov]
Sent: Monday, March 14, 2011 9:26 AM
To: Haynes, Laura (Carper); Pace, Patti; Wisler, Laura (Carper)
Cc: Powell, Amy
Subject: Re: Rescheduling Call Today

Yes, 3:00pm today will work for a call. Can Senator Carper call the Chairman at 3:00? Should we use the same number?

Thanks,
Erin

From: Haynes, Laura (Carper)
Sent: Monday, March 14, 2011 09:21 AM
To: Pace, Patti <Patti.Pace@nrc.gov>; Wisler, Laura (Carper)
Cc: Powell, Amy <Amy.Powell@nrc.gov>; Walls, Erin (Carper)
Subject: RE: Rescheduling Call Today

I'm adding Erin to this email chain.

From: Pace, Patti [mailto:Patti.Pace@nrc.gov]
Sent: Monday, March 14, 2011 9:21 AM
To: Wisler, Laura (Carper); Haynes, Laura (Carper)
Cc: Powell, Amy
Subject: Rescheduling Call Today

Dear Laura and Laura,

I am so sorry about the last minute rescheduling. Laura Wisler indicated that 3:00PM might be the next opportunity when Senator Carper is available for the call, and that time works for Chairman Jaczko.

If Senator Carper is available earlier than 3:00pm please let me know and I will do everything I can to make it work.

Thanks so much,

Patti Pace
Assistant to Chairman Gregory B. Jaczko
U.S. Nuclear Regulatory Commission
301-415-1820 (office)
301-415-3504 (fax)

From: Pace, Patti
Sent: Monday, March 14, 2011 10:56 AM
To: Powell, Amy; Poirier, Bettina (EPW)
Cc: Powell, Amy
Subject: RE: Call w/Chairman Jaczko, Sne. Boxer

Bettina,

11:00AM will work, in fact the Chairman is available now if Senator Boxer can speak now. Please advise.

Thanks,

Patti Pace
Assistant to Chairman Gregory B. Jaczko
U.S. Nuclear Regulatory Commission
301-415-1820 (office)
301-415-3504 (fax)

-----Original Message-----

From: Powell, Amy
Sent: Monday, March 14, 2011 10:37 AM
To: Poirier, Bettina (EPW)
Cc: Pace, Patti
Subject: Call w/Chairman Jaczko, Sne. Boxer
Importance: High

Bettina - I think that will work. I've cc'ed Pattu Pace, Chairman Jaczko's scheduler, to confirm and provide logistics.

Thanks,
Amy

-----Original Message-----

From: Poirier, Bettina (EPW) [mailto:Bettina_Poirier@epw.senate.gov]
Sent: Monday, March 14, 2011 10:23 AM
To: Powell, Amy
Subject: Re: Addendum: Call w/Chairman Jaczko

Could we do 11 with greg and our boss.

----- Original Message -----

From: Powell, Amy [mailto:Amy.Powell@nrc.gov]
Sent: Sunday, March 13, 2011 10:53 PM
To: Poirier, Bettina (EPW)
Cc: Pace, Patti <Patti.Pace@nrc.gov>
Subject: Addendum: Call w/Chairman Jaczko

Bettina - slight change in logistics. Senator Boxer should still call in on 301-415-1820 to go into Chairman Jaczko at 930am tomorrow. However to engage you on the call, we will then need to call you. What is the best number for you tomorrow at 930am? I've cc'ed Patti Pace in Chairman Jaczko's office who will make all this magic happen...

Thanks
Amy

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

----- Original Message -----

From: Powell, Amy
To: 'Bettina_Poirier@epw.senate.gov' <Bettina_Poirier@epw.senate.gov>
Sent: Sun Mar 13 22:44:45 2011
Subject: Call w/Chairman Jaczko

Hello again -

Ok, I believe we've worked out the schedule for a call with Sen. Boxer and you at 930am EST Monday morning. Please call the Chairman's office at 301-415-1820 and they will put the Senator and you right through.

Thanks
Amy

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Poirier, Bettina (EPW) <Bettina_Poirier@epw.senate.gov>
Sent: Monday, March 14, 2011 10:57 AM
To: Powell, Amy
Subject: Re: Call w/Chairman Jaczko, Sne. Boxer

Still ok if I call separately

----- Original Message -----

From: Powell, Amy [mailto:Amy.Powell@nrc.gov]
Sent: Monday, March 14, 2011 10:38 AM
To: Poirier, Bettina (EPW)
Subject: RE: Call w/Chairman Jaczko, Sne. Boxer

301-415-1820

-----Original Message-----

From: Poirier, Bettina (EPW) [mailto:Bettina_Poirier@epw.senate.gov]
Sent: Monday, March 14, 2011 10:38 AM
To: Powell, Amy
Subject: Re: Call w/Chairman Jaczko, Sne. Boxer

Can you resend best number.

----- Original Message -----

From: Powell, Amy [mailto:Amy.Powell@nrc.gov]
Sent: Monday, March 14, 2011 10:37 AM
To: Poirier, Bettina (EPW)
Cc: Pace, Patti <Patti.Pace@nrc.gov>
Subject: Call w/Chairman Jaczko, Sne. Boxer

Bettina - I think that will work. I've cc'ed Pattu Pace, Chairman Jaczko's scheduler, to confirm and provide logistics.

Thanks,
Amy

-----Original Message-----

From: Poirier, Bettina (EPW) [mailto:Bettina_Poirier@epw.senate.gov]
Sent: Monday, March 14, 2011 10:23 AM
To: Powell, Amy
Subject: Re: Addendum: Call w/Chairman Jaczko

Could we do 11 with greg and our boss.

----- Original Message -----

From: Powell, Amy [mailto:Amy.Powell@nrc.gov]
Sent: Sunday, March 13, 2011 10:53 PM
To: Poirier, Bettina (EPW)
Cc: Pace, Patti <Patti.Pace@nrc.gov>

Subject: Addendum: Call w/Chairman Jaczko

Bettina - slight change in logistics. Senator Boxer should still call in on 301-415-1820 to go into Chairman Jaczko at 930am tomorrow. However to engage you on the call, we will then need to call you. What is the best number for you tomorrow at 930am? I've cc'ed Patti Pace in Chairman Jaczko's office who will make all this magic happen...

Thanks
Amy

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

----- Original Message -----

From: Powell, Amy
To: 'Bettina_Poirier@epw.senate.gov' <Bettina_Poirier@epw.senate.gov>
Sent: Sun Mar 13 22:44:45 2011
Subject: Call w/Chairman Jaczko

Hello again -

Ok, I believe we've worked out the schedule for a call with Sen. Boxer and you at 930am EST Monday morning. Please call the Chairman's office at 301-415-1820 and they will put the Senator and you right through.

Thanks
Amy

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Dedrick, Kathy (EPW) <Kathy_Dedrick@epw.senate.gov>
Sent: Monday, March 14, 2011 10:57 AM
To: Powell, Amy
Cc: Decker, David
Subject: Briefing

Amy,

I know you've been in touch with Bettina, but I wanted to make sure you both know we'd like to get the NRC up to the Hill as soon as possible to provide a briefing on the situation in Japan. We'd like to make sure all the facts are getting out. I know you all have a hearing on Wednesday, but we'd like to do it before then. Let me know what you're able to do, I know staff is stretched thin. Thanks for all your help.

-Kathy

Kathy Dedrick
Committee on Environment and Public Works
410 Dirksen Senate Office Building
Washington, D.C. 20510
Phone: 202-224-8832
Fax: 202-224-1273

From: Dedrick, Kathy (EPW) <Kathy_Dedrick@epw.senate.gov>
Sent: Monday, March 14, 2011 11:38 AM
To: Powell, Amy

Can you tell me when the interagency briefing might be? I've heard from ENR it might be tomorrow at noon?

Kathy Dedrick
Committee on Environment and Public Works
410 Dirksen Senate Office Building
Washington, D.C. 20510
Phone: 202-224-8832
Fax: 202-224-1273

From: Pace, Patti
Sent: Monday, March 14, 2011 11:42 AM
To: Wise, Kathi (Barrasso); Powell, Amy
Subject: RE: Call with Sen. Barrasso, Chairman Jaczko

Kathi,

Thanks, that would be great. Things are changing rapidly here, I will let you know as soon as possible if the Chairman's schedule changes. The best number to dial in will be the number below.

Thanks,

Patti Pace
Assistant to Chairman Gregory B. Jaczko
U.S. Nuclear Regulatory Commission
301-415-1820 (office)
301-415-3504 (fax)

From: Wise, Kathi (Barrasso) [mailto:Kathi_Wise@Barrasso.senate.gov]
Sent: Monday, March 14, 2011 11:35 AM
To: Pace, Patti; Powell, Amy
Subject: RE: Call with Sen. Barrasso, Chairman Jaczko

That works – shall we call you?

From: Pace, Patti [mailto:Patti.Pace@nrc.gov]
Sent: Monday, March 14, 2011 11:34 AM
To: Powell, Amy; Wise, Kathi (Barrasso)
Subject: RE: Call with Sen. Barrasso, Chairman Jaczko

Hi Kathi,

Would 3:30pm work? That appears clear at the moment.

Thanks

Patti Pace
Assistant to Chairman Gregory B. Jaczko
U.S. Nuclear Regulatory Commission
301-415-1820 (office)
301-415-3504 (fax)

From: Powell, Amy
Sent: Monday, March 14, 2011 11:24 AM
To: Wise, Kathi (Barrasso)
Cc: Pace, Patti
Subject: Call with Sen. Barrasso, Chairman Jaczko

Hi Kathi –

Thanks for your e-mail. I have cc'ed patti Pace who holds the Chairman's calendar so that she can tell you what might work today.

Thanks!
Amy

Amy Powell
Associate Director
U. S. Nuclear Regulatory Commission
Office of Congressional Affairs
Phone: 301-415-1673

From: Wise, Kathi (Barrasso) [mailto:Kathi_Wise@Barrasso.senate.gov]
Sent: Monday, March 14, 2011 11:22 AM
To: Powell, Amy
Subject: FW: PPhone call

Hi Amy – thanks for the offer to have Commissioner Jaczko speak with Sen. Barrasso. Can you tell me when he is available today? Sen. Barrasso arrives Dulles about 2, so could give him a call between about 2:20 and 3:00 from his cell – unless he would need to use a land-line for the call. If so, then he could call after 3 – what works?

Kathi Wise
Executive Assistant
Senator John Barrasso
202-224-6441
202-224-1724 (fax)

Barrasso.senate.gov
[Sign up for Senator Barrasso's newsletter](#)

From: Powell, Amy
Sent: Monday, March 14, 2011 11:47 AM
To: Schmidt, Rebecca
Subject: Re: Speaking at a congressional briefing on eq safety

She is our seismic guru
Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Schmidt, Rebecca
To: Powell, Amy
Sent: Mon Mar 14 11:39:23 2011
Subject: FW: Speaking at a congressional briefing on eq safety

Who is Annie Krammerer?

From: Burnell, Scott
Sent: Monday, March 14, 2011 10:47 AM
To: Shane, Raeann; Powell, Amy; Schmidt, Rebecca; Kammerer, Annie
Cc: Brenner, Eliot
Subject: FW: Speaking at a congressional briefing on eq safety

OCA is better guidance at this point, please work with them.

From: Kammerer, Annie
Sent: Monday, March 14, 2011 10:46 AM
To: Burnell, Scott
Subject: FW: Speaking at a congressional briefing on eq safety

Scott,

The American Geophysical Union is setting up a congressional briefing on thursday and are asking me to participate. Please to talk to the right people and advise as to whether this is a good opportunity or something I should advise.

Thanks.

From: Linda Rowan [mailto:rowan@agiweb.org]
Sent: Monday, March 14, 2011 10:43 AM
To: Kammerer, Annie
Subject: Speaking at a congressional briefing on eq safety

Hi Annie,
Would you be able to consider a 10 minute talk on Honshu EQ for a congressional briefing on Thursday, March 17 at 9 am or Monday, March 21 (time TBD)?

AGU and AGI would sponsor very simple food and drink. We are searching for a room and possible member interest in intros. Everything is tentative. This would be a widely attended event open to the public and following all congressional rules.

We would have a USGS, NOAA and perhaps FEMA speaker in addition to you. We would ask you to speak about earthquake and tsunami based safety for nuclear power plants.

Linda

Linda Rowan
Director of Government Affairs
American Geological Institute
4220 King St
Alexandria VA 22302
703-379-2480 x228
www.agiweb.org/gap
twitter.com/agigap
skype: rowan-gap

From: Dedrick, Kathy (EPW) <Kathy_Dedrick@epw.senate.gov>
Sent: Monday, March 14, 2011 12:00 PM
To: Shane, Raeann
Cc: Weil, Jenny; Schmidt, Rebecca; Powell, Amy
Subject: RE: SONGS, Diablo Canyon

Can you provide any specifics on how these two plants were designed to withstand earthquakes and tsunamis?

From: Shane, Raeann [mailto:Raeann.Shane@nrc.gov]
Sent: Monday, March 14, 2011 11:32 AM
To: Dedrick, Kathy (EPW)
Cc: Weil, Jenny; Schmidt, Rebecca; Powell, Amy
Subject: RE: SONGS, Diablo Canyon

Kathy,

The short answer is that both SONGS and Diablo Canyon are pressurized water reactors while the Japanese reactors that are having problems are boiling water reactors, so no, they are not the same design. We are working on a list of US reactors that are similar and I'll send it to you when it is done.

Raeann

From: Dedrick, Kathy (EPW) <Kathy_Dedrick@epw.senate.gov>
To: Weil, Jenny
Sent: Mon Mar 14 10:58:46 2011
Subject: SONGS, Diablo Canyon

Jenny,

Can you tell me if the reactors at SONGS and Diablo Canyon have a design similar to that having problems in Japan? I'm not sure if you all have put together a list of all the plants that are similar, but I've heard there are 23 to 26 in the US that are similar.

Thank you.

-Kathy

Kathy Dedrick
Committee on Environment and Public Works
410 Dirksen Senate Office Building
Washington, D.C. 20510
Phone: 202-224-8832
Fax: 202-224-1273

From: Shane, Raeann
Sent: Monday, March 14, 2011 12:23 PM
To: Repko, Mary Frances; Powell, Amy
Cc: Schmidt, Rebecca; Droggitis, Spiros; Riley (OCA), Timothy; Decker, David; Dacus, Eugene
Subject: RE: NRC Congressional Affairs contacts, coverage regarding Japanese earthquake and tsunami issues

Mary Frances:

Our schedule for the next 2 days:

Mon – 7am-2pm – Raeann Shane
Mon – 2pm-5pm - David Decker
Mon – 5pm-9pm – Amy Powell
Mon – 9pm-7am – Tim Riley
Tues – 7am-2pm – Spiros Droggitis

Congressional Affairs direct line in the OPS center is 301-816-5209.
The main line for the OPS center is 301-816-5100 and they can transfer you if we do not answer our direct line.
You can also call our 301-415-1776 line during the day.

From: Repko, Mary Frances [mailto:Mary.Frances.Repko@mail.house.gov]
Sent: Monday, March 14, 2011 9:30 AM
To: Powell, Amy
Cc: Shane, Raeann; Schmidt, Rebecca; Droggitis, Spiros; Riley (OCA), Timothy; Decker, David; Dacus, Eugene
Subject: RE: NRC Congressional Affairs contacts, coverage regarding Japanese earthquake and tsunami issues

Thanks Amy, This was really helpful, may we get a schedule for the next few days, and remind me how Members call into the Ops Center if they need to do so? - Mary Frances

From: Powell, Amy [mailto:Amy.Powell@nrc.gov]
Sent: Friday, March 11, 2011 7:02 PM
To: Powell, Amy
Cc: Shane, Raeann; Schmidt, Rebecca; Droggitis, Spiros; Riley (OCA), Timothy; Decker, David; Dacus, Eugene
Subject: NRC Congressional Affairs contacts, coverage regarding Japanese earthquake and tsunami issues
Importance: High

Hi all –

In the event that it is needed, NRC's Office of Congressional Affairs is planning to have staff available in the NRC's Operations Center through the weekend as the agency continues to track Japanese earthquake and tsunami issues. Here is the schedule for who will be available and when:

Friday, March 11th

Raeann Shane	until 10:00 pm
Eugene "Gene" Dacus	10:00 pm to 7:00 am

Saturday, March 12th

Rebecca "Becky" Schmidt	7:00 am to 2:00 pm
-------------------------	--------------------

Spiros Droggitis
David Decker

2:00 pm to 9:00 pm
9:00 pm to 7:00 am

Sunday, March 13th

Amy Powell
Tim Riley

7:00 am to 2:00 pm
2:00pm to 9:00pm

I've cc'ed all of our NRC Congressional Affairs staff on this schedule so that you have their e-mail addresses. If this changes at any point in the weekend, we will notify you.

Amy

Amy Powell
Associate Director
U. S. Nuclear Regulatory Commission
Office of Congressional Affairs
Phone: 301-415-1673

From: Powell, Amy
Sent: Monday, March 14, 2011 1:06 PM
To: Schmidt, Rebecca
Subject: Fw: FROM CQ Briefing

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Rothschild, Trip
To: Powell, Amy; Burns, Stephen
Sent: Mon Mar 14 13:05:44 2011
Subject: FROM CQ Briefing

The most powerful pro-nuke Republican in the House, Energy and Commerce Chairman Fred Upton, said he would summon the head of the Nuclear Regulatory Commission to a hearing this week to press him for assurances about the safety of American nuclear sites.

From: Powell, Amy
Sent: Monday, March 14, 2011 1:09 PM
To: Cook, Bette (DCHA/AA)
Subject: RE: Room for more staffers on the line?

OK – I am going to let NRC's oversight committee staff (Senate EPW and House E&C, staff to the Chairs and Rankings) know about this call.

Thanks,
Amy

From: Cook, Bette (DCHA/AA) [mailto:bcook@usaid.gov]
Sent: Monday, March 14, 2011 12:59 PM
To: Powell, Amy
Subject: RE: Room for more staffers on the line?

We still have 100 lines; I believe that will accommodate the staff if those within the Administration gather in one place to call in rather than individually. That is what we do here at USAID and we encourage it with other agencies. I'm trying to expand the lines, but cannot do it for today's call. Thanks.

Bette

From: Powell, Amy [mailto:Amy.Powell@nrc.gov]
Sent: Monday, March 14, 2011 12:37 PM
To: Cook, Bette (DCHA/AA)
Subject: Room for more staffers on the line?

Hi Bette –

Can today's dial-in accommodate more Hill staffers on the line?

Thanks,
Amy

Amy Powell
Associate Director
U. S. Nuclear Regulatory Commission
Office of Congressional Affairs
Phone: 301-415-1673

From: Kammerer, Annie
Sent: Monday, March 14, 2011 1:13 PM
To: Schmidt, Rebecca; Burnell, Scott; Shane, Raeann; Powell, Amy
Cc: Brenner, Eliot
Subject: RE: Speaking at a congressional briefing on eq safety

OK. Will do.

From: Schmidt, Rebecca
Sent: Monday, March 14, 2011 1:04 PM
To: Kammerer, Annie; Burnell, Scott; Shane, Raeann; Powell, Amy
Cc: Brenner, Eliot
Subject: RE: Speaking at a congressional briefing on eq safety

Tell them no then. I just don't want anyone from the NRC briefing staff that are not our oversight staff first.

From: Kammerer, Annie
Sent: Monday, March 14, 2011 1:01 PM
To: Schmidt, Rebecca; Burnell, Scott; Shane, Raeann; Powell, Amy
Cc: Brenner, Eliot
Subject: RE: Speaking at a congressional briefing on eq safety

I'm not sure what that answer means. Should I just say no, or should I say I'll get back to them?

BTW, the USGS is confirmed to do this, so it appears something will happen.

From: Schmidt, Rebecca
Sent: Monday, March 14, 2011 12:56 PM
To: Kammerer, Annie; Burnell, Scott; Shane, Raeann; Powell, Amy
Cc: Brenner, Eliot
Subject: RE: Speaking at a congressional briefing on eq safety

Annie,

I would hold off until we get a federal team together to brief our staffers. Thanks for asking.

From: Kammerer, Annie
Sent: Monday, March 14, 2011 10:47 AM
To: Burnell, Scott; Shane, Raeann; Powell, Amy; Schmidt, Rebecca
Cc: Brenner, Eliot
Subject: RE: Speaking at a congressional briefing on eq safety

OK. OCA, please advise.

From: Burnell, Scott
Sent: Monday, March 14, 2011 10:47 AM
To: Shane, Raeann; Powell, Amy; Schmidt, Rebecca; Kammerer, Annie
Cc: Brenner, Eliot
Subject: FW: Speaking at a congressional briefing on eq safety

OCA is better guidance at this point, please work with them.

From: Kammerer, Annie
Sent: Monday, March 14, 2011 10:46 AM
To: Burnell, Scott
Subject: FW: Speaking at a congressional briefing on eq safety

Scott,

The American Geophysical Union is setting up a congressional briefing on thursday and are asking me to participate. Please to talk to the right people and advise as to whether this is a good opportunity or something I should advise.

Thanks.

From: Linda Rowan [mailto:rowan@agiweb.org]
Sent: Monday, March 14, 2011 10:43 AM
To: Kammerer, Annie
Subject: Speaking at a congressional briefing on eq safety

Hi Annie,

Would you be able to consider a 10 minute talk on Honshu EQ for a congressional briefing on Thursday, March 17 at 9 am or Monday, March 21 (time TBD)?

AGU and AGI would sponsor very simple food and drink. We are searching for a room and possible member interest in intros. Everything is tentative. This would be a widely attended event open to the public and following all congressional rules.

We would have a USGS, NOAA and perhaps FEMA speaker in addition to you. We would ask you to speak about earthquake and tsunami based safety for nuclear power plants.

Linda

Linda Rowan
Director of Government Affairs
American Geological Institute
4220 King St
Alexandria VA 22302
703-379-2480 x228
www.agiweb.org/gap
twitter.com/agigap
skype: rowan-gap

From: Powell, Amy
Sent: Monday, March 14, 2011 1:19 PM
To: Shane, Raeann
Subject: Question re: radiation

Do we have such a list at this point?

From: Edwards, Isaac (Energy) [mailto:Isaac_Edwards@energy.senate.gov]
Sent: Monday, March 14, 2011 1:18 PM
To: Powell, Amy
Subject: RE: monitoring

Does the NRC have a list of what radioactive elements were released?

From: Powell, Amy [mailto:Amy.Powell@nrc.gov]
Sent: Monday, March 14, 2011 12:59 PM
To: Edwards, Isaac (Energy)
Subject: Re: monitoring

You bet - we'll keep you in the loop.

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Edwards, Isaac (Energy) <Isaac_Edwards@energy.senate.gov>
To: Powell, Amy
Sent: Mon Mar 14 12:58:01 2011
Subject: monitoring

Amy – thank you for your voice message. If there are any updates on the path/projection of the radiation, as well as potential harm, could you please keep me updated?

Thanks
Isaac

From: Blair, Rob <Rob.Blair@mail.house.gov>
Sent: Monday, March 14, 2011 1:24 PM
To: Powell, Amy
Cc: Levin, Joseph
Subject: Questions about affected Japanese reactors

Thanks – answers if you can, but, as I said, this must be second to your work supporting the Japanese.

Rob

Questions about affected Japanese nuclear reactors

1. Fukushima Daiichi Unit 1 used the GE BWR-3 reactor design with Mark I containment. What reactor and containment designs are used at all 11 nuclear plants that were shut down following the earthquake last week, including all Fukushima Daiichi and Daini reactors?
2. When were each of these designs made, and when were each of these units constructed?
3. For each reactor and containment design used, what reactors in the United States use the same designs, and when were they built?

From: Pace, Patti
Sent: Monday, March 14, 2011 1:34 PM
To: Price, Wendi (Inhofe); Powell, Amy; Caputo, Annie (EPW)
Subject: RE: Just heard from JMI

Hi Wendi,

Yes, 6:00PM will work tonight. I will update the Chairman's calendar.

Thanks!

Patti Pace
Assistant to Chairman Gregory B. Jaczko
U.S. Nuclear Regulatory Commission
301-415-1820 (office)
301-415-3504 (fax)

-----Original Message-----

From: Price, Wendi (Inhofe) [mailto:Wendi_Price@inhofe.senate.gov]
Sent: Monday, March 14, 2011 1:33 PM
To: Pace, Patti; Powell, Amy; Caputo, Annie (EPW)
Subject: RE: Just heard from JMI

Patti - Senator Inhofe's flight has been delayed. Could we do this call at 6:00pm?

Wendi

-----Original Message-----

From: Pace, Patti [mailto:Patti.Pace@nrc.gov]
Sent: Monday, March 14, 2011 10:06 AM
To: Price, Wendi (Inhofe); Powell, Amy; Caputo, Annie (EPW)
Subject: RE: Just heard from JMI

Hi Wendi,

The best phone number to use will be 301-415-1820.

Thanks for your assistance!

Patti Pace
Assistant to Chairman Gregory B. Jaczko
U.S. Nuclear Regulatory Commission
301-415-1820 (office)
301-415-3504 (fax)

-----Original Message-----

From: Price, Wendi (Inhofe) [mailto:Wendi_Price@inhofe.senate.gov]
Sent: Monday, March 14, 2011 10:03 AM
To: Powell, Amy; Caputo, Annie (EPW)
Cc: Pace, Patti
Subject: RE: Just heard from JMI

Hi Ladies - Senator Inhofe can make the call to Chairman Jaczko at 5:15 today. What is the best number for him to call?

Thanks,

Wendi

-----Original Message-----

From: Powell, Amy [mailto:Amy.Powell@nrc.gov]
Sent: Monday, March 14, 2011 9:43 AM
To: Caputo, Annie (EPW); Price, Wendi (Inhofe)
Cc: Pace, Patti
Subject: Re: Just heard from JMI

Thanks Annie - Wendi, I've cc'ed Patti Pace who holds Chairman Jaczko's schedule. Let us know what would work best.

Thanks

Amy

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

----- Original Message -----

From: Caputo, Annie (EPW) <Annie_Caputo@epw.senate.gov>
To: Price, Wendi (Inhofe) <Wendi_Price@inhofe.senate.gov>; Powell, Amy
Sent: Mon Mar 14 09:38:33 2011
Subject: RE: Just heard from JMI

Chairman Jaczko can be available at 5:00 or 5:15 by phone. Wendi, what time do you prefer? I'm cc'ing Amy Powell the Deputy Director for NRC Congressional Affairs so you two can exchange contact info.

Annie

-----Original Message-----

From: Price, Wendi (Inhofe)
Sent: Monday, March 14, 2011 8:33 AM
To: VanMark, Ruth (EPW); Caputo, Annie (EPW); Catanzaro, Mike (EPW); Dempsey, Matt (EPW); Jackson, Ryan (Inhofe)
Subject: Re: Just heard from JMI

Can we do this around 5 or 515?

----- Original Message -----

From: VanMark, Ruth (EPW)

Sent: Monday, March 14, 2011 08:22 AM

To: Caputo, Annie (EPW); Catanzaro, Mike (EPW); Dempsey, Matt (EPW); Price, Wendi (Inhofe); Jackson, Ryan (Inhofe)

Subject: Just heard from JMI

He want an NRC briefing. Understand he doesn't get in until 4ish today.

From: Decker, David.
Sent: Monday, March 14, 2011 1:42 PM
To: Powell, Amy; Shane, Raeann
Cc: Schmidt, Rebecca
Subject: RE: Questions from Rob Blair

I have info to answer part of Q1 (the Fukushima Daiichi 6 reactors), but none of the other plants. This could be a bit lengthy in terms of getting the info. Maybe Nathan Sanfillipo in EDO (who does NRR stuff) might have some sources.

From: Powell, Amy
Sent: Monday, March 14, 2011 1:31 PM
To: Decker, David; Shane, Raeann
Cc: Schmidt, Rebecca
Subject: Questions from Rob Blair

Rob Blair from House E&W Approps has some technical questions below. He would like them in advance of their hearing tomorrow with Sec Chu, but completely understands if we are swamped and need to focus elsewhere. Any low hanging fruit here?

1. Fukushima Daiichi Unit 1 used the GE BWR-3 reactor design with Mark I containment. What reactor and containment designs are used at all 11 nuclear plants that were shut down following the earthquake last week, including all Fukushima Daiichi and Daini reactors? (sounds similar to a question earlier this am)
2. When were each of these designs made, and when were each of these units constructed? (anything on the IAEA site or TEPCO that we can point him to)
3. For each reactor and containment design used, what reactors in the United States use the same designs, and when were they built? (is it only the 6 GE BWR 3 with Mark 1? Would Info Digest be somewhere to point him?)
4. What does NRC require as far as electricity supply and back up (diesel generators, batteries, etc.)?

I sent this to both of you since we are about to have a shift change – let me know how heavy a lift this is. I would say that his most pressing question is #4.

Thanks,
Amy

Amy Powell
Associate Director
U. S. Nuclear Regulatory Commission
Office of Congressional Affairs
Phone: 301-415-1673

From: Powell, Amy
Sent: Monday, March 14, 2011 1:47 PM
To: Batkin, Joshua; Schmidt, Rebecca
Cc: Coggins, Angela
Subject: RE: Let's do Bill Borchardt

OK - I'll find him after the USAID call for the Hill staff with Marty

-----Original Message-----

From: Batkin, Joshua
Sent: Monday, March 14, 2011 1:46 PM
To: Powell, Amy; Schmidt, Rebecca
Cc: Coggins, Angela
Subject: Let's do Bill Borchardt

For the big interagency hill briefing tomorrow

Joshua C. Batkin
Chief of Staff
Chairman Gregory B. Jaczko
(301) 415-1820

From: Powell, Amy
Sent: Monday, March 14, 2011 2:07 PM
To: Shane, Raeann
Subject: Fw: Nuclear Plants in Europe Are Delayed

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Droggitis, Spiros
To: Schmidt, Rebecca; Powell, Amy
Sent: Mon Mar 14 14:06:39 2011
Subject: Nuclear Plants in Europe Are Delayed

<http://www.nytimes.com/2011/03/15/business/global/15euronuke.html>

From: Pace, Patti
Sent: Monday, March 14, 2011 2:15 PM
To: Powell, Amy; Schmidt, Rebecca
Cc: Belmore, Nancy
Subject: Update - Congressional Calls Today - Meeting tomorrow

Importance: High

Hi,

Things are changing and I want to make sure that you have the most up to date info on calls today:

3:00p – Senator Carper

3:30p – Senator Barrasso

4:00p – (or later?) Senator Boxer

6:00p – Senator Inhofe (flight delay)

Also, I confirmed with Congressman Whitfield's office to change their meeting tomorrow at 3:30p to a phone meeting instead of a face to face meeting. Our office to initiate the call.

Thanks,

Patti Pace
Assistant to Chairman Gregory B. Jaczko
U.S. Nuclear Regulatory Commission
301-415-1820 (office)
301-415-3504 (fax)

From: Ordal, Paul (EPW) <Paul_Ordal@epw.senate.gov>
Sent: Monday, March 14, 2011 2:51 PM
To: Pace, Patti
Cc: Powell, Amy
Subject: RE: Call w/Chairman Jaczko, Sne. Boxer

I am aiming to catch her after her plane lands at DCA at 4pm. It is currently expected to arrive on time so the call could happen sometime shortly after 4pm.

Thanks so much for your flexibility and help with this.

-----Original Message-----

From: Pace, Patti [mailto:Patti.Pace@nrc.gov]
Sent: Monday, March 14, 2011 2:45 PM
To: Ordal, Paul (EPW)
Cc: Powell, Amy
Subject: RE: Call w/Chairman Jaczko, Sne. Boxer

Thanks. The Chairman will be unavailable between 4:30p - 5:00, and also 6:00p - 6:15p. Other than that we could make a call work after 4:00pm. Do you have a sense of what time after 4p in particular may work for Senator Boxer? Thanks so much for your assistance.

Patti Pace
Assistant to Chairman Gregory B. Jaczko
U.S. Nuclear Regulatory Commission
301-415-1820 (office)
301-415-3504 (fax)

-----Original Message-----

From: Ordal, Paul (EPW) [mailto:Paul_Ordal@epw.senate.gov]
Sent: Monday, March 14, 2011 2:43 PM
To: Pace, Patti
Cc: Powell, Amy
Subject: RE: Call w/Chairman Jaczko, Sne. Boxer

We will just call-in on a single line after 4pm. I will dial your office number.

Thanks, Patti.

-----Original Message-----

From: Pace, Patti [mailto:Patti.Pace@nrc.gov]
Sent: Monday, March 14, 2011 11:56 AM
To: Ordal, Paul (EPW)
Cc: Powell, Amy
Subject: RE: Call w/Chairman Jaczko, Sne. Boxer

Hi Paul,

Calling through our Emergency OPS center (301-816-5100) is the best way to do it if Bettina still needs to call in from a separate line. If that will not be the case after 4pm, then you could call directly in to our office (phone number below.) I don't have the ability to patch to separate incoming lines into one call. I can conference people together, but I need to dial out to the other lines from here. Please let me know what you think we will need.

Thanks

Patti Pace
Assistant to Chairman Gregory B. Jaczko
U.S. Nuclear Regulatory Commission
301-415-1820 (office)
301-415-3504 (fax)

-----Original Message-----

From: Ordal, Paul (EPW) [mailto:Paul_Ordal@epw.senate.gov]
Sent: Monday, March 14, 2011 11:31 AM
To: Pace, Patti
Subject: RE: Call w/Chairman Jaczko, Sne. Boxer

We tried to connect a few minutes ago but the senator was just getting on her connecting flight to DC.

I told them Chairman that we would try again this afternoon (after 4pm). Should I call the Ops Center number again (301-816-5100)?

Thanks.

-----Original Message-----

From: Ordal, Paul (EPW)
Sent: Monday, March 14, 2011 11:00 AM
To: 'Patti.Pace@nrc.gov'
Subject: RE: Call w/Chairman Jaczko, Sne. Boxer

Good morning, Patti.

I am going to connect Senator Boxer to this number when her flight lands (which is currently delayed by about 10-15 minutes).

Can Bettina dial in separately to that same number so she can be on the call too?

-----Original Message-----

From: Poirier, Bettina (EPW)
Sent: Monday, March 14, 2011 10:57 AM
To: 'Patti.Pace@nrc.gov'; 'Amy.Powell@nrc.gov'
Cc: Ordal, Paul (EPW)
Subject: Re: Call w/Chairman Jaczko, Sne. Boxer

11-11:40 on the ground on a layover. Then after 4

----- Original Message -----

From: Pace, Patti [mailto:Patti.Pace@nrc.gov]
Sent: Monday, March 14, 2011 10:49 AM

To: Powell, Amy <Amy.Powell@nrc.gov>; Poirier, Bettina (EPW)
Subject: RE: Call w/Chairman Jaczko, Sne. Boxer

Hi Bettina,

I am no longer certain the Chairman will be available at 11:00AM. Things are changing pretty quickly this morning. Can you give me a sense of Senator Boxer's window of availability this morning? Sorry!

Thanks,

Patti Pace
Assistant to Chairman Gregory B. Jaczko
U.S. Nuclear Regulatory Commission
301-415-1820 (office)
301-415-3504 (fax)

-----Original Message-----

From: Powell, Amy
Sent: Monday, March 14, 2011 10:37 AM
To: Poirier, Bettina (EPW)
Cc: Pace, Patti
Subject: Call w/Chairman Jaczko, Sne. Boxer
Importance: High

Bettina - I think that will work. I've cc'ed Patti Pace, Chairman Jaczko's scheduler, to confirm and provide logistics.

Thanks,
Amy

-----Original Message-----

From: Poirier, Bettina (EPW) [mailto:Bettina_Poirier@epw.senate.gov]
Sent: Monday, March 14, 2011 10:23 AM
To: Powell, Amy
Subject: Re: Addendum: Call w/Chairman Jaczko

Could we do 11 with greg and our boss.

----- Original Message -----

From: Powell, Amy [mailto:Amy.Powell@nrc.gov]
Sent: Sunday, March 13, 2011 10:53 PM
To: Poirier, Bettina (EPW)
Cc: Pace, Patti <Patti.Pace@nrc.gov>
Subject: Addendum: Call w/Chairman Jaczko

Bettina - slight change in logistics. Senator Boxer should still call in on 301-415-1820 to go into Chairman Jaczko at 930am tomorrow. However to engage you on the call, we will then need to call you. What is the best number for you tomorrow at 930am? I've cc'ed Patti Pace in Chairman Jaczko's office who will make all this magic happen...

Thanks
Amy

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

----- Original Message -----

From: Powell, Amy
To: 'Bettina_Poirier@epw.senate.gov' <Bettina_Poirier@epw.senate.gov>
Sent: Sun Mar 13 22:44:45 2011
Subject: Call w/Chairman Jaczko

Hello again -

Ok, I believe we've worked out the schedule for a call with Sen. Boxer and you at 930am EST Monday morning. Please call the Chairman's office at 301-415-1820 and they will put the Senator and you right through.

Thanks
Amy

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Pace, Patti
Sent: Monday, March 14, 2011 3:03 PM
To: Haynes, Laura (Carper); Walls, Erin (Carper); Reilly, Jim (Carper)
Cc: Powell, Amy
Subject: RE: Rescheduling Call Today

Yes, confirm 3:15p will for the call. He has a hard stop at 3:30pm. Thanks!

Patti Pace
Assistant to Chairman Gregory B. Jaczko
U.S. Nuclear Regulatory Commission
301-415-1820 (office)
301-415-3504 (fax)

From: Haynes, Laura (Carper) [mailto:Laura_Haynes@carper.senate.gov]
Sent: Monday, March 14, 2011 3:01 PM
To: Pace, Patti; Walls, Erin (Carper); Reilly, Jim (Carper)
Cc: Powell, Amy
Subject: RE: Rescheduling Call Today

Can we push back 15mins?

From: Pace, Patti [mailto:Patti.Pace@nrc.gov]
Sent: Monday, March 14, 2011 2:14 PM
To: Walls, Erin (Carper); Reilly, Jim (Carper)
Cc: Haynes, Laura (Carper); Powell, Amy
Subject: RE: Rescheduling Call Today

Dear Erin,

Chairman Jaczko will be available for a 3:00PM call.

Thanks,

Patti Pace
Assistant to Chairman Gregory B. Jaczko
U.S. Nuclear Regulatory Commission
301-415-1820 (office)
301-415-3504 (fax)

From: Walls, Erin (Carper) [mailto:Erin_Walls@carper.senate.gov]
Sent: Monday, March 14, 2011 1:57 PM
To: Pace, Patti; Reilly, Jim (Carper)
Cc: Haynes, Laura (Carper)
Subject: RE: Rescheduling Call Today

Yes. Thank you. That works.

From: Pace, Patti [mailto:Patti.Pace@nrc.gov]
Sent: Monday, March 14, 2011 1:54 PM
To: Walls, Erin (Carper)
Cc: Haynes, Laura (Carper)
Subject: RE: Rescheduling Call Today

Hi Erin,

Chairman Jaczko should mostly likely be back from the White House by 3:00pm. Can I confirm once I know he is on his way back and available for a 3p call?

Thanks,

Patti Pace
Assistant to Chairman Gregory B. Jaczko
U.S. Nuclear Regulatory Commission
301-415-1820 (office)
301-415-3504 (fax)

From: Walls, Erin (Carper) [mailto:Erin_Walls@carper.senate.gov]
Sent: Monday, March 14, 2011 1:31 PM
To: Pace, Patti
Subject: RE: Rescheduling Call Today

Is 3:00 pm still open?

Thanks,
Erin

From: Pace, Patti [mailto:Patti.Pace@nrc.gov]
Sent: Monday, March 14, 2011 10:57 AM
To: Wisler, Laura (Carper); Haynes, Laura (Carper); Walls, Erin (Carper)
Cc: Powell, Amy; Reilly, Jim (Carper)
Subject: RE: Rescheduling Call Today

Unfortunately Chairman Jaczko is no longer available. He will be available again starting at 11:15a. Please advise of Senator Carper's next window of opportunity.

Thanks,

Patti Pace
Assistant to Chairman Gregory B. Jaczko
U.S. Nuclear Regulatory Commission
301-415-1820 (office)
301-415-3504 (fax)

From: Wisler, Laura (Carper) [mailto:Laura_Wisler@carper.senate.gov]
Sent: Monday, March 14, 2011 10:49 AM
To: Pace, Patti; Haynes, Laura (Carper); Walls, Erin (Carper)
Cc: Powell, Amy; Reilly, Jim (Carper)
Subject: RE: Rescheduling Call Today

Jim is actually staffing TC today and would know best.

From: Pace, Patti [mailto:Patti.Pace@nrc.gov]
Sent: Monday, March 14, 2011 10:48 AM
To: Haynes, Laura (Carper); Walls, Erin (Carper); Wisler, Laura (Carper)
Cc: Powell, Amy
Subject: RE: Rescheduling Call Today

Hi Laura,

Any sense of how delayed he may be? Thanks!

Patti Pace
Assistant to Chairman Gregory B. Jaczko
U.S. Nuclear Regulatory Commission
301-415-1820 (office)
301-415-3504 (fax)

From: Haynes, Laura (Carper) [mailto:Laura_Haynes@carper.senate.gov]
Sent: Monday, March 14, 2011 10:46 AM
To: Pace, Patti; Walls, Erin (Carper); Wisler, Laura (Carper)
Cc: Powell, Amy
Subject: RE: Rescheduling Call Today

TC is running late

From: Pace, Patti [mailto:Patti.Pace@nrc.gov]
Sent: Monday, March 14, 2011 10:09 AM
To: Walls, Erin (Carper); Haynes, Laura (Carper); Wisler, Laura (Carper)
Cc: Powell, Amy
Subject: RE: Rescheduling Call Today

Hi Erin,

Yes, 10:45AM this morning will work. We will expect the call then.

Thanks,

Patti Pace
Assistant to Chairman Gregory B. Jaczko
U.S. Nuclear Regulatory Commission
301-415-1820 (office)
301-415-3504 (fax)

From: Walls, Erin (Carper) [mailto:Erin_Walls@carper.senate.gov]
Sent: Monday, March 14, 2011 10:06 AM
To: Pace, Patti; Haynes, Laura (Carper); Wisler, Laura (Carper)
Cc: Powell, Amy
Subject: RE: Rescheduling Call Today

Hi Patti,

Is there any chance the Chairman is free at 10:45 am this morning? Senator Carper will be in between meetings and could call at 10:45.

Thanks,

Erin

From: Pace, Patti [mailto:Patti.Pace@nrc.gov]
Sent: Monday, March 14, 2011 9:29 AM
To: Walls, Erin (Carper); Haynes, Laura (Carper); Wisler, Laura (Carper)
Cc: Powell, Amy
Subject: RE: Rescheduling Call Today

Hi Erin,

Yes, please initiate the call to 301-415-1820 at 3:00pm.

Thank you!

Patti Pace
Assistant to Chairman Gregory B. Jaczko
U.S. Nuclear Regulatory Commission
301-415-1820 (office)
301-415-3504 (fax)

From: Walls, Erin (Carper) [mailto:Erin_Walls@carper.senate.gov]
Sent: Monday, March 14, 2011 9:26 AM
To: Haynes, Laura (Carper); Pace, Patti; Wisler, Laura (Carper)
Cc: Powell, Amy
Subject: Re: Rescheduling Call Today

Yes, 3:00pm today will work for a call. Can Senator Carper call the Chairman at 3:00? Should we use the same number?

Thanks,
Erin

From: Haynes, Laura (Carper)
Sent: Monday, March 14, 2011 09:21 AM
To: Pace, Patti <Patti.Pace@nrc.gov>; Wisler, Laura (Carper)
Cc: Powell, Amy <Amy.Powell@nrc.gov>; Walls, Erin (Carper)
Subject: RE: Rescheduling Call Today

I'm adding Erin to this email chain.

From: Pace, Patti [mailto:Patti.Pace@nrc.gov]
Sent: Monday, March 14, 2011 9:21 AM
To: Wisler, Laura (Carper); Haynes, Laura (Carper)
Cc: Powell, Amy
Subject: Rescheduling Call Today

Dear Laura and Laura,

I am so sorry about the last minute rescheduling. Laura Wisler indicated that 3:00PM might be the next opportunity when Senator Carper is available for the call, and that time works for Chairman Jaczko.

If Senator Carper is available earlier than 3:00pm please let me know and I will do everything I can to make it work.

Thanks so much,

Patti Pace
Assistant to Chairman Gregory B. Jaczko
U.S. Nuclear Regulatory Commission
301-415-1820 (office)
301-415-3504 (fax)

From: Schmidt, Rebecca
Sent: Monday, March 14, 2011 3:23 PM
To: Sosa, Belkys
Subject: Re: hearing book -- Wed hearing

Correct

From: Sosa, Belkys
To: Schmidt, Rebecca; Nieh, Ho; Sharkey, Jeffrey; Bubar, Patrice
Cc: Powell, Amy
Sent: Mon Mar 14 15:21:48 2011
Subject: RE: hearing book -- Wed hearing

Becky, the Wed hearing is still only with the Chairman, Commissioners are not expected to attend correct?

Thanks,
Belkys

From: Schmidt, Rebecca
Sent: Monday, March 14, 2011 1:29 PM
To: Nieh, Ho; Sharkey, Jeffrey; Bubar, Patrice; Sosa, Belkys
Cc: Powell, Amy
Subject: hearing book -- Wed hearing

We have a budget hearing book prepared for you all that we started Friday. Obviously, the focus of the hearing has moved to the Japanese earthquake. I would prefer to hold this budget material and give it to you for the next budget hearing that is scheduled at the end of the month. Is that ok with everyone? I can give it to you, but it is sorta useless for the hearing.....

From: Powell, Amy
Sent: Monday, March 14, 2011 3:28 PM
To: Borchardt, Bill
Cc: Schmidt, Rebecca; Batkin, Joshua; Taylor, Renee; Virgilio, Martin
Subject: Interagency briefing for Congressional leadership and committee staff

Bill –

Thanks for supporting the interagency briefing that the White House is coordinating. The target time is NOON tomorrow, however I will keep you posted on what I hear from their Legislative Affairs staff.

Thanks,
Amy

Amy Powell
Associate Director
U. S. Nuclear Regulatory Commission
Office of Congressional Affairs
Phone: 301-415-1673

From: Powell, Amy
Sent: Monday, March 14, 2011 4:04 PM
To: Cook, Bette (DCHA/AA)
Cc: Haynes, Laura (Carper)
Subject: Additional Senate contact for USAID notification list

Hi again Bette –

Laura Haynes (cc'ed here) from Sen. Carper's office asked to be added to your distribution list.

Thanks,
Amy

Amy Powell
Associate Director
U. S. Nuclear Regulatory Commission
Office of Congressional Affairs
Phone: 301-415-1673

From: Powell, Amy
Sent: Monday, March 14, 2011 4:07 PM
To: Batkin, Joshua; Pace, Patti
Cc: Schmidt, Rebecca; Coggins, Angela
Subject: Call with Rep. Larsen this week?

Would your boss be willing to have a call with Rep. Larsen (D-WA) this week? In addition to being from a West Coastal state, he is on House Budget, HASC (very engaged on relief efforts, and T&I (Hazardous materials subcommittee). Post-hearing?

Amy Powell
Associate Director
U. S. Nuclear Regulatory Commission
Office of Congressional Affairs
Phone: 301-415-1673

From: Ordal, Paul (EPW) <Paul_Ordal@epw.senate.gov>
Sent: Monday, March 14, 2011 4:52 PM
To: Powell, Amy
Subject: Tuesday Congressional briefing?

Bettina Poirier told me that there is going to be an inter-agency briefing for Senate Leadership and Committee staff tomorrow at noon regarding the situation in Japan.

Do you know any details about this?

If so, is there some way that we can be included in the email distribution list for these briefings?

Thanks!

-Paul

Paul M. Ordal
U.S. Senate Committee on Environment and Public Works
Senator Barbara Boxer, Chairman
202-224-8832
202-224-1273 FAX



Please consider the environment before printing this e-mail

From: Pace, Patti
Sent: Monday, March 14, 2011 5:09 PM
To: Powell, Amy; Batkin, Joshua
Cc: Schmidt, Rebecca; Coggins, Angela
Subject: RE: Call with Rep. Larsen this week?

Hi Amy,

Josh had a quick second to discuss this with the boss. He said it would be ok to set up a call after the hearing. Let me know when you need my assistance.

Thanks!

Patti Pace
Assistant to Chairman Gregory B. Jaczko
U.S. Nuclear Regulatory Commission
301-415-1820 (office)
301-415-3504 (fax)

From: Powell, Amy
Sent: Monday, March 14, 2011 4:07 PM
To: Batkin, Joshua; Pace, Patti
Cc: Schmidt, Rebecca; Coggins, Angela
Subject: Call with Rep. Larsen this week?

Would your boss be willing to have a call with Rep. Larsen (D-WA) this week? In addition to being from a West Coastal state, he is on House Budget, HASC (very engaged on relief efforts, and T&I (Hazardous materials subcommittee). Post-hearing?

Amy Powell
Associate Director
U. S. Nuclear Regulatory Commission
Office of Congressional Affairs
Phone: 301-415-1673

From: Powell, Amy
Sent: Monday, March 14, 2011 5:20 PM
To: Batkin, Joshua; Pace, Patti
Cc: Bovol, Rochelle; Schmidt, Rebecca; Decker, David; Coggins, Angela; Brenner, Eliot; Belmore, Nancy; Quesenberry, Jeannette; Taylor, Renee
Subject: 9:30am for Wednesday's House Energy & Commerce Subcommittees hearing
Importance: High

Please note that Wednesday's joint hearing with two House Energy and Commerce subcommittees is scheduled to begin at **9:30am** in Rayburn 2123. This is an earlier start than typical, so I wanted to flag that for folks.

Amy

Amy Powell
Associate Director
U. S. Nuclear Regulatory Commission
Office of Congressional Affairs
Phone: 301-415-1673

From: Powell, Amy
Sent: Monday, March 14, 2011 6:02 PM
To: Schmidt, Rebecca
Subject: RE: Have we done any phone calls

9am

-----Original Message-----

From: Schmidt, Rebecca
Sent: Monday, March 14, 2011 6:01 PM
To: Powell, Amy
Subject: Re: Have we done any phone calls

What time is hearing prep tomorrow?

----- Original Message -----

From: Powell, Amy
To: Schmidt, Rebecca
Sent: Mon Mar 14 17:59:00 2011
Subject: RE: Have we done any phone calls

Not other than fielding the many Qs today. The biggest Qs appear to be status of Japanese reactors, can this happen here (are our reactors earthquake/tsunami safe), and how will this change NRC's practice/regs/plans?

-----Original Message-----

From: Schmidt, Rebecca
Sent: Monday, March 14, 2011 5:56 PM
To: Powell, Amy
Subject: Have we done any phone calls

To staff about hearing questions?

From: Batkin, Joshua
Sent: Monday, March 14, 2011 6:52 PM
To: Schmidt, Rebecca; Powell, Amy
Subject: Re: travel?

Good. Amy's here now.

Joshua C. Batkin
Chief of Staff
Chairman Gregory B. Jaczko
(301) 415-1820

From: Schmidt, Rebecca
To: Batkin, Joshua; Powell, Amy
Sent: Mon Mar 14 18:50:54 2011
Subject: Re: travel?

We got the request earlier for her to go but didn't mention the chr. We sent to Region IV. Maybe elmo? I'm on beeltway

From: Batkin, Joshua
To: Schmidt, Rebecca; Powell, Amy
Sent: Mon Mar 14 18:47:48 2011
Subject: Fw: travel?

Umm. Can you come up for me to call him back and push back?

Joshua C. Batkin
Chief of Staff
Chairman Gregory B. Jaczko
(301) 415-1820

From: Clapp, Doug (Appropriations) <Doug_Clapp@appro.senate.gov>
To: Batkin, Joshua
Sent: Mon Mar 14 18:45:44 2011
Subject: travel?

Can we talk in the morning? Senator Feinstein is looking to visit San Onofre or Diablo Canyon next Tuesday, March 22. She would like Chairman Jaczko to accompany her to discuss preparedness. Any chance he is free for a trip to CA?

From: Powell, Amy
Sent: Monday, March 14, 2011 6:57 PM
To: Schmidt, Rebecca
Subject: Re: travel?

That was not Doug - that was two State office staffers. We're calling Doug now.

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Schmidt, Rebecca
To: Batkin, Joshua; Powell, Amy
Sent: Mon Mar 14 18:50:54 2011
Subject: Re: travel?

We got the request earlier for her to go but didn't mention the chr. We sent to Region IV. Maybe elmo? I'm on beelway

From: Batkin, Joshua
To: Schmidt, Rebecca; Powell, Amy
Sent: Mon Mar 14 18:47:48 2011
Subject: Fw: travel?

Umm. Can you come up for me to call him back and push back?

Joshua C. Batkin
Chief of Staff
Chairman Gregory B. Jaczko
(301) 415-1820

From: Clapp, Doug (Appropriations) <Doug_Clapp@appro.senate.gov>
To: Batkin, Joshua
Sent: Mon Mar 14 18:45:44 2011
Subject: travel?

Can we talk in the morning? Senator Feinstein is looking to visit San Onofre or Diablo Canyon next Tuesday, March 22. She would like Chairman Jaczko to accompany her to discuss preparedness. Any chance he is free for a trip to CA?

From: Powell, Amy
Sent: Monday, March 14, 2011 7:36 PM
To: Cook, Bette (DCHA/AA)
Subject: RE: Clarifying status of tomorrow's 2pm call

OK – thanks. I was unclear on that point as we left the call. We'll plan to be on at 2pm.

Thanks,
Amy

Amy Powell
Associate Director
U. S. Nuclear Regulatory Commission
Office of Congressional Affairs
Phone: 301-415-1673

From: Cook, Bette (DCHA/AA) [mailto:bcook@usaid.gov]
Sent: Monday, March 14, 2011 7:03 PM
To: Powell, Amy
Subject: RE: Clarifying status of tomorrow's 2pm call

No, the 1 pm briefing on the Hill is for key staff of the Leadership and Congressional committees. We don't want to cancel the daily call that reaches many more staff and is greatly appreciated, according to the many messages I am receiving. So please continue to call in. FYI -- I just referred a staffer to you who had a follow-up question for Martin and forwarded the message as well.

Bette

From: Powell, Amy [mailto:Amy.Powell@nrc.gov]
Sent: Monday, March 14, 2011 6:37 PM
To: Cook, Bette (DCHA/AA)
Subject: Clarifying status of tomorrow's 2pm call

Hi Bette –

With the interagency briefing tomorrow at 1pm, that will cancel tomorrow's 2pm call, correct?

Thanks,
Amy

Amy Powell
Associate Director
U. S. Nuclear Regulatory Commission
Office of Congressional Affairs
Phone: 301-415-1673

From: Powell, Amy
Sent: Monday, March 14, 2011 7:39 PM
To: Cook, Bette (DCHA/AA)
Subject: RE: NRC contact

Thanks – we know Chris. I e-mailed him in follow up.

Thanks,
Amy

From: Cook, Bette (DCHA/AA) [mailto:bcook@usaid.gov]
Sent: Monday, March 14, 2011 7:07 PM
To: Powell, Amy
Subject: FW: NRC contact

Amy – FYI.

From: Cook, Bette (DCHA/AA)
Sent: Monday, March 14, 2011 6:39 PM
To: 'Beck, Chris'
Subject: RE: NRC contact

Chris, the NRC rep was Martin Virgilio, Dep Exec Dir for Reactor and Preparedness. I don't have his e-mail address, however, as I work thru the Congressional Relations office of NRC. Amy Powell of that agency may be reached at Amy.Powell@nrc.gov Hope this is helpful. -- Bette

From: Beck, Chris [mailto:Chris.Beck@mail.house.gov]
Sent: Monday, March 14, 2011 2:17 PM
To: Cook, Bette (DCHA/AA)
Subject: NRC contact

Hi Bette,

I am on the conference call and may have some follow up questions for the NRC representative. I believe his name was Martin but I didn't catch the name. Can you send me name and contact information please?

Thank you,
cb

Chris Beck, Ph.D.
Subcommittee Director
Cybersecurity, Infrastructure Protection, and Security Technologies
House Committee on Homeland Security
(202) 226-2616
chris.beck@mail.house.gov

From: Schmidt, Rebecca
Sent: Monday, March 14, 2011 7:42 PM
To: Batkin, Joshua; Pace, Patti
Cc: Powell, Amy
Subject: Fw: Possible hearing Thursday

Want to try for wednesday afternoon since he will be on the hill?

From: Dedrick, Kathy (EPW) <Kathy_Dedrick@epw.senate.gov>
To: Schmidt, Rebecca
Cc: Powell, Amy; Ordal, Paul (EPW) <Paul_Ordal@epw.senate.gov>
Sent: Mon Mar 14 19:20:27 2011
Subject: RE: Possible hearing Thursday

This would be a briefing for Committee members, not a formal hearing. It could be any day this week, and Thursday morning not work because we have a hearing. Can you let me and Paul know what times might work for the Chairman and Paul can see if those times work for Senator Boxer?

From: Schmidt, Rebecca [mailto:Rebecca.Schmidt@nrc.gov]
Sent: Monday, March 14, 2011 5:05 PM
To: Dedrick, Kathy (EPW)
Cc: Powell, Amy
Subject: Possible hearing Thursday

Chr. talked to Chr. Boxer and Bettina at 4:00. They talked about EPW having a hearing on Thursday of this week. The Chairman or his representative will be available. Let me know what you hear or give me a call when you get a chance

From: Ohly, John <John.Ohly@mail.house.gov>
Sent: Monday, March 14, 2011 7:48 PM
To: Powell, Amy
Subject: RE: Question

Amy,

Thank you for the prompt response. Let's hope this can be resolved safely.

Regards
John

Ps. Happy to chat re due date...

From: Powell, Amy [mailto:Amy.Powell@nrc.gov]
Sent: Monday, March 14, 2011 7:35 PM
To: Ohly, John
Subject: RE: Question

Hi John –

It's been hectic, as we are still staffing our Ops Center 24-7. Glad to help with what I can – here are two press releases (one that just came out) that describe what we're doing. In short, we are part of the USAID effort. We have two boiling water reactor experts with the Embassy now and another group of technical experts en route.

<http://www.nrc.gov/reading-rm/doc-collections/news/2011/11-045.pdf>
<http://www.nrc.gov/reading-rm/doc-collections/news/2011/11-047.pdf>

All of our press releases are at <http://www.nrc.gov/reading-rm/doc-collections/news/2011/> - they started coming out Friday. We'll add you to the update list.

May need to talk with you about relief on the due date of your boss' ltr...
Amy

From: Ohly, John [mailto:John.Ohly@mail.house.gov]
Sent: Monday, March 14, 2011 7:24 PM
To: Powell, Amy
Subject: Question

Amy,

I know you must be getting bombarded right now so I apologize for adding to the pile.

I will try to be concise and also understand if you cannot get back to me immediately.

I just want to be sure we have accurate information on a couple questions regarding the situation in Japan:

- 1) What is the NRC's role/responsibility in responding to this incident? Aside from the two BWR experts sent over, what specific steps is NRC taking (or could NRC take if asked) to assist in response?

- 2) I realize it may be too early to be asking this question, but are there specific differences in regulations/requirements for US facilities that could have mitigated damage in this situation (ie facility requirements for protection of generator diesel fuel or back-up systems?)

Again, I apologize for contributing to what must be an unbearable load and I do not expect immediate response.

Kind Regards,
John

From: Virgilio, Martin
Sent: Monday, March 14, 2011 8:04 PM
To: Powell, Amy; Weber, Michael
Cc: Schmidt, Rebecca; Virgilio, Martin
Subject: Re: 2pm calls daily with USAID, Hill staff

Amy

Let's plan on it. 2pm in the ops center.

Marty

From: Powell, Amy
To: Virgilio, Martin; Weber, Michael
Cc: Schmidt, Rebecca
Sent: Mon Mar 14 19:42:47 2011
Subject: 2pm calls daily with USAID, Hill staff

Mike and Marty,

For the duration of this week, USAID is coordinating conference calls to provide updates to Congressional staff from the federal partners working on efforts to assist and monitor events in Japan. Marty joined me today (thank you); these calls will continue through Friday, **each day at 2pm**. Would one of you (I understand that you are alternating schedules a bit to spot each other) be available through the end of the week for these calls? We can hold them in the Ops Ctr to make it easier for you.

Please let me know – thanks!

Amy

Amy Powell
Associate Director
U. S. Nuclear Regulatory Commission
Office of Congressional Affairs
Phone: 301-415-1673

From: Powell, Amy
Sent: Monday, March 14, 2011 8:13 PM
To: Baran, Jeff
Subject: RE: Letter

OK - thanks

From: Baran, Jeff [mailto:Jeff.Baran@mail.house.gov]
Sent: Monday, March 14, 2011 8:06 PM
To: Powell, Amy
Subject: RE: Letter

Thanks. I'll be away from my desk much of the day tomorrow (at a markup), but if you email me when you have a time that works, I should be able to step away and take that call.

Jeff

From: Powell, Amy [mailto:Amy.Powell@nrc.gov]
Sent: Monday, March 14, 2011 8:04 PM
To: Baran, Jeff
Subject: RE: Letter

Thanks Jeff –

Sorry I did not get back to you tonight. In addition to the interagency updates tomorrow, I will try to set a call with you, me, and one of our tech staff. I do have your questions in front of folks now so hopefully that helps as well.

AP

From: Baran, Jeff [mailto:Jeff.Baran@mail.house.gov]
Sent: Monday, March 14, 2011 7:05 PM
To: Powell, Amy
Subject: Letter

Hi Amy,

Just wanted to give you a heads up that Reps. Waxman, Rush, DeGette, and Markey sent the attached letter to Chairmen Upton, Whitfield, and Stearns earlier today.

Also, any chance I can get a Japan update sometime tomorrow?

Thanks,

Jeff

From: Pace, Patti
Sent: Monday, March 14, 2011 8:21 PM
To: Powell, Amy
Subject: RE: Prep information for Rep. Whitfield?

Awesome, thanks!

Patti Pace
Assistant to Chairman Gregory B. Jaczko
U.S. Nuclear Regulatory Commission
301-415-1820 (office)
301-415-3504 (fax)

From: Powell, Amy
Sent: Monday, March 14, 2011 8:20 PM
To: Pace, Patti
Cc: Gibbs, Catina
Subject: RE: Prep information for Rep. Whitfield?

Hi bio is attached (also in his hearing prep book that came up Fri). This is another pre-hearing call, so his budget talking points as well as his ever-growing Japan folder that he has been using on today's calls are the background.

From: Pace, Patti
Sent: Monday, March 14, 2011 8:16 PM
To: Powell, Amy
Cc: Gibbs, Catina
Subject: Prep information for Rep. Whitfield?

Hi Amy,

Could you have someone send or bring up background information for Congressman Whitfield tomorrow?

Thanks!

Patti Pace
Assistant to Chairman Gregory B. Jaczko
U.S. Nuclear Regulatory Commission
301-415-1820 (office)
301-415-3504 (fax)

From: Powell, Amy
Sent: Tuesday, March 15, 2011 5:55 AM
To: Schmidt, Rebecca
Subject: Coverage

I had a chance to ask Josh about us and the Ops Ctr. He agreed that overnight makes no sense. Even the Ops Ctr guy (Jeff Temple) suggested last night that OCA and State Liaison not staff overnight, but instead have someone "on call." I think we could thus shift w/o a pushback.

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Powell, Amy
Sent: Tuesday, March 15, 2011 6:22 AM
To: Schmidt, Rebecca
Subject: 6am Comm TA call

Forgot to mention that I took the 6am Comm ta call with the HOO. Our guys on the ground assume from the facts (but no confirmation from Japan) that containment has failed at Daiichi Unit 2. Winds have shifted back toward Tokyo, but are forecast to go out to sea by tomorrow am. I'm going to have some coffee then head in.

Amy Powell

Associate Director

Office of Congressional Affairs

U. S. Nuclear Regulatory Commission

Phone: 301-415-1673

Sent from my Blackberry

From: Powell, Amy
Sent: Tuesday, March 15, 2011 7:30 AM
To: Schmidt, Rebecca
Subject: NRC in media

Good Morning America referenced NRC and our involvement at least 4 times. It also said that NRC said it would take any radiation 6-10 days to reach west coast. If we can put that much out in the media, we need more to the Hill. Josh mentioned TPs and QandA that may be ready to share today. Hope so.

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Powell, Amy
Sent: Tuesday, March 15, 2011 9:06 AM
To: Droggitis, Spiros
Subject: I think

we just did a total circle on these Q&As and it's back to Scott! Sigh...

Amy Powell
Associate Director
U. S. Nuclear Regulatory Commission
Office of Congressional Affairs
Phone: 301-415-1673

From: Powell, Amy
Sent: Tuesday, March 15, 2011 9:28 AM
To: Schmidt, Rebecca
Subject: FW: NRC Chairman meeting with EPW senators
Importance: High

Looks like meeting with the Senators, not staff. 3:30pm tomorrow – let's raise this at the 10:30am, should it happen.

From: Ordal, Paul (EPW) [mailto:Paul_Ordal@epw.senate.gov]
Sent: Tuesday, March 15, 2011 9:27 AM
To: Pace, Patti; Powell, Amy
Cc: Detric, Kathy (EPW)
Subject: NRC Chairman meeting with EPW senators

Kathy told me that Chairman Jaczko is going to be on the Hill on Wednesday afternoon.

Would he be available at 3:30pm to meet with Senators Boxer, Inhofe, Carper and other EPW members if we can get everyone together?

Paul M. Ordal
U.S. Senate Committee on Environment and Public Works
Senator Barbara Boxer, Chairman
202-224-8832
202-224-1273 FAX



Please consider the environment before printing this e-mail

From: Powell, Amy
Sent: Tuesday, March 15, 2011 9:46 AM
To: Brenner, Eliot
Cc: Schmidt, Rebecca
Subject: RE: AV at tomorrow's hearing

Just talked to Christine Kundrat (who called about this yesterday) – she is going to get with Danita on the number of people and send me a list of the people in case it helps with access for the Committee to have them (the Committee tells me that as is well, but I can send a list just in case if that lowers blood pressure).

From: Brenner, Eliot
Sent: Tuesday, March 15, 2011 9:21 AM
To: Powell, Amy
Subject: RE: AV at tomorrow's hearing

However many av people it takes to screw in a lightbulb.

From: Powell, Amy
Sent: Tuesday, March 15, 2011 9:13 AM
To: Brenner, Eliot
Subject: FW: AV at tomorrow's hearing

FYI – I was trying to keep this one out of your hair, but I got Beth's out of office and I would imagine Holly is sleeping (I hope). Media services is looking to know how many people you need to record (audio and video) of tomorrow's hearing...

From: Powell, Amy
Sent: Tuesday, March 15, 2011 9:07 AM
To: Harrington, Holly
Cc: Hayden, Elizabeth
Subject: AV at tomorrow's hearing

Hi Holly –

Yesterday, I spoke with Christine, at your request, in multimedia services about where and when the hearing would be, time, talked with the Committee about access, etc. This morning, Danita left a VM asking me how many people we will need for the recording. Would you or someone else in OPA be able to step her through that? I don't have any idea about that level of detail. Her number is 415-5166 I'm cc'ing Beth in case you are getting well-deserved rest and this needs to be redirected.

Amy Powell
Associate Director
U. S. Nuclear Regulatory Commission
Office of Congressional Affairs
Phone: 301-415-1673

From: Powell, Amy
Sent: Tuesday, March 15, 2011 10:02 AM
To: Basile, Caroline
Cc: Decker, David
Subject: RE: Question from NRC

Yes, thanks. If he cannot reach me, he can call David Decker at 301-415-1693.

Thanks so much,
Amy

From: Basile, Caroline [mailto:Caroline.Basile@mail.house.gov]
Sent: Tuesday, March 15, 2011 10:00 AM
To: Powell, Amy
Subject: RE: Question from NRC

Amy,

I hope all is well with you – I imagine the last few days have been rather hectic. I will have our press assistant Andrew give you a call to go over all the details. Is 301. 415. 1673 the best number?

Best,
Caroline

From: Powell, Amy [mailto:Amy.Powell@nrc.gov]
Sent: Tuesday, March 15, 2011 9:52 AM
To: Basile, Caroline
Subject: Question from NRC

Hi again Caroline!

Question for you about tomorrow's hearing in Rayburn 2123: our public affairs office would like to record and photograph at the hearing. Is there a list that their names need to be on to do so? Also, how early can they get into the room to set up?

Thanks,
Amy

Amy Powell
Associate Director
U. S. Nuclear Regulatory Commission
Office of Congressional Affairs
Phone: 301-415-1673

From: Owens, Tyler (Appropriations) <Tyler_Owens@appro.senate.gov>
Sent: Tuesday, March 15, 2011 10:18 AM
To: Decker, David; Powell, Amy
Subject: RE: Request

Thanks, David!

From: Decker, David [mailto:David.Decker@nrc.gov]
Sent: Tuesday, March 15, 2011 10:18 AM
To: Owens, Tyler (Appropriations); Powell, Amy
Subject: RE: Request

Tyler,
I'll get your question out and see if I can get some information for you.

David

From: Owens, Tyler (Appropriations) [mailto:Tyler_Owens@appro.senate.gov]
Sent: Tuesday, March 15, 2011 10:14 AM
To: Powell, Amy, Decker, David
Subject: Request
Importance: High

I know you are smashed right now, but do you have any information on required retrofits for the US reactor fleet? What retrofits has NRC required, and when? Are they required to retrofit as part of the permit renewal process? I would appreciate anything you could get us, and (again, cognizant of what's going on) as quickly as possible. I really appreciate everything you do!

-Tyler

From: Powell, Amy
Sent: Tuesday, March 15, 2011 10:38 AM
To: Lane, Jeff
Subject: RE: conference call

Yes

-----Original Message-----

From: Lane, Jeff [mailto:laneje@Hq.Doe.Gov]
Sent: Tuesday, March 15, 2011 10:26 AM
To: Powell, Amy
Subject: conference call

Will the NRC be on the 2:00 USAID conference call? I have logistical challenges with my folks and may not be able to join.

Jeff Lane
Assistant Secretary
Congressional and Intergovernmental Affairs Department of Energy
(202) 586-5450

From: Pace, Patti
Sent: Tuesday, March 15, 2011 10:41 AM
To: Powell, Amy
Cc: Batkin, Joshua
Subject: RE: NRC Chairman meeting with EPW senators

Amy,

Chairman Jaczko will be available at 3:30p tomorrow to meet with the EPW Committee members.

Thanks,

Patti Pace
Assistant to Chairman Gregory B. Jaczko
U.S. Nuclear Regulatory Commission
301-415-1820 (office)
301-415-3504 (fax)

From: Powell, Amy
Sent: Tuesday, March 15, 2011 10:38 AM
To: Pace, Patti
Cc: Batkin, Joshua
Subject: RE: NRC Chairman meeting with EPW senators

Talked to Josh – we'll give WH Leg Affairs a heads up

From: Pace, Patti
Sent: Tuesday, March 15, 2011 10:19 AM
To: Powell, Amy
Cc: Batkin, Joshua
Subject: FW: NRC Chairman meeting with EPW senators

Hi Amy,

Had a second to chat with Josh. He asked if you have gotten a read on this request from the WH Leg Affairs office?

Thanks,

Patti Pace
Assistant to Chairman Gregory B. Jaczko
U.S. Nuclear Regulatory Commission
301-415-1820 (office)
301-415-3504 (fax)

From: Ordal, Paul (EPW) [mailto:Paul_Ordal@epw.senate.gov]
Sent: Tuesday, March 15, 2011 9:58 AM
To: Pace, Patti; Powell, Amy
Subject: RE: NRC Chairman meeting with EPW senators

I know you are swamped but Senator Boxer is asking me to confirm that this meeting is scheduled.

Can we lock in 3:30pm on Wednesday?

From: Ordal, Paul (EPW)
Sent: Tuesday, March 15, 2011 9:27 AM
To: 'Pace, Patti'; 'Powell, Amy'
Cc: Dedrick, Kathy (EPW)
Subject: NRC Chairman meeting with EPW senators

Kathy told me that Chairman Jaczko is going to be on the Hill on Wednesday afternoon.

Would he be available at 3:30pm to meet with Senators Boxer, Inhofe, Carper and other EPW members if we can get everyone together?

Paul M. Ordal
U.S. Senate Committee on Environment and Public Works
Senator Barbara Boxer, Chairman
202-224-8832
202-224-1273 FAX



Please consider the environment before printing this e-mail

From: Pace, Patti
Sent: Tuesday, March 15, 2011 11:36 AM
To: Powell, Amy
Subject: Quick Opinion

Is it unrealistic to set up:

4:30p Burgess
4:45p Whitfield

Do you have a read on whether the Burgess call would wrap up in 15 minutes?

Thanks,

Patti Pace
Assistant to Chairman Gregory B. Jaczko
U.S. Nuclear Regulatory Commission
301-415-1820 (office)
301-415-3504 (fax)

From: Powell, Amy
Sent: Tuesday, March 15, 2011 11:40 AM
To: Stevens, Amanda
Cc: Decker, James
Subject: RE: Mtg w/Rep Burgess

You bet – will your boss be at tomorrow's hearing?

From: Stevens, Amanda [mailto:Amanda.Stevens@mail.house.gov]
Sent: Tuesday, March 15, 2011 11:30 AM
To: Powell, Amy
Cc: Decker, James
Subject: RE: Mtg w/Rep Burgess

She and I are working on it now!! Thank you for the quick turn around on this request!
Amanda

Amanda R. Stevens
Scheduler/Office Manager
Michael C Burgess, MD
2241 Rayburn HOB*
Washington, DC 20515
202-225-7772
FAX 202-225-2919
**Please note change of DC Address*

From: Powell, Amy [mailto:Amy.Powell@nrc.gov]
Sent: Tuesday, March 15, 2011 11:30 AM
To: Stevens, Amanda
Cc: Decker, James
Subject: RE: Mtg w/Rep Burgess

Hi Amanda –

If you have not already, you will be hearing soon from Patti Pace, who holds Chairman Jaczko's schedule, about setting up a phone call with Rep. Burgess for later today.

Thanks
Amy

Amy Powell
Associate Director
U. S. Nuclear Regulatory Commission
Office of Congressional Affairs
Phone: 301-415-1673

From: Stevens, Amanda [mailto:Amanda.Stevens@mail.house.gov]
Sent: Monday, March 14, 2011 4:22 PM
To: Powell, Amy
Cc: Decker, James
Subject: Mtg w/Rep Burgess

Amy-Good Afternoon! I hope this email finds you well! I received your contact information from the House Energy & Commerce Cmte on which Dr. Burgess serves on the Subcmte on Energy & Power. Dr. Burgess would like to request a meeting w/NRC regarding Japan. I was told you might be able to help facilitate this request.

I look forward to hearing from you.

Thank you, Amanda

Amanda R. Stevens
Scheduler/Office Manager
Michael C Burgess, MD
2241 Rayburn HOB*
Washington, DC 20515
202-225-7772
FAX 202-225-2919

**Please note change of DC Address*

From: Powell, Amy
Sent: Tuesday, March 15, 2011 12:11 PM
To: Powell, Amy
Subject: NRC REVISED PRESS RELEASE - NRC Sends Additional Experts to Assist Japan
Attachments: 11-048R (2).docx

We had a few bouncebacks when our staff in the Ops Center sent this along, so I am passing it along to you from my desk.

Thanks,
Amy

Amy Powell
Associate Director
U. S. Nuclear Regulatory Commission
Office of Congressional Affairs
Phone: 301-415-1673

REVISED: NRC SENDS ADDITIONAL EXPERTS TO ASSIST JAPAN

The NRC has sent nine additional experts to Tokyo to provide assistance as requested by the Japanese government. Acting as part of a U.S. Agency for International Development assistance team, the NRC has dispatched the experts to Tokyo to provide assistance as requested by the Japanese government.

The first members of the team left the United States Monday evening and were due to arrive in Tokyo Wednesday afternoon. The team includes additional reactor experts, international affairs professional staffers, and a senior manager from one of the NRC's four operating regions.

The team members come from the NRC's headquarters in Rockville, Md., and from offices in King of Prussia, Pa., Chattanooga, Tenn., and Atlanta. The team has been instructed to: conduct all activities needed to understand the status of efforts to safely shut down the Japanese reactors; better understand the potential impact on people and the environment of any radioactivity releases; if asked, provide technical advice and support through the U.S. ambassador for the Japanese government's decision making process; and draw on NRC-headquarters expertise for any other additional technical requirements. The team will be in communication with the Japanese regulator, the U.S. Embassy, NRC headquarters, and other government stakeholders as appropriate.

The team is led by Charles A. Casto, deputy regional administrator of the NRC's Center of Construction Inspection, based in NRC's office in Atlanta. Casto has worked in the commercial nuclear power industry at three different nuclear power plants, including Browns Ferry, which has three boiling water reactors, operated by the Tennessee Valley Authority in Alabama. He has also worked as a licensed reactor operator and operator instructor. Casto will provide a single point of contact for the U.S. Ambassador in Japan on nuclear reactor issues.

The two reactor experts sent Saturday to Japan will participate as members of this assistance team.

Note To Editors: Revision reflects an additional team member, there are now a total of 11 NRC staffers on the assistance team.

###

News releases are available through a free *listserv* subscription at the following Web address: <http://www.nrc.gov/public-involve/listserver.html>. The NRC homepage at www.nrc.gov also offers a SUBSCRIBE link. E-mail notifications are sent to subscribers when news releases are posted to NRC's website.

From: Droggitis, Spiros
Sent: Tuesday, March 15, 2011 12:36 PM
To: Powell, Amy; Schmidt, Rebecca
Cc: Decker, David
Subject: RE: Chairman JaczkoQA7_031511.docx

Check with Father Scott before you do.

From: Powell, Amy
Sent: Tuesday, March 15, 2011 12:35 PM
To: Droggitis, Spiros; Schmidt, Rebecca
Cc: Decker, David
Subject: RE: Chairman JaczkoQA7_031511.docx

OK, I'll take this latest, blessed version down for this afternoon's meetings.

From: Droggitis, Spiros
Sent: Tuesday, March 15, 2011 12:33 PM
To: Schmidt, Rebecca; Powell, Amy
Subject: FW: Chairman JaczkoQA7_031511.docx

From: Taylor, Robert
Sent: Tuesday, March 15, 2011 12:27 PM
To: Decker, David; Droggitis, Spiros
Cc: Burnell, Scott
Subject: Chairman JaczkoQA7_031511.docx

As requested. Scott can confirm that these were blessed by the Ops Center ET.

Questions and Answers for Chairman Jaczko

March 11, 2011 Japan Earthquake/Tsunami Aftermath
As of 11:30 a.m. 3/15/2011

1. What is the NRC doing about the emergencies at the nuclear power plants in Japan? Are you sending staff over there?

Public Answer: We are closely following events in Japan, working with other agencies of the federal government, and have been in direct contact with our counterparts in that country. We have sent a total of 11 staff to Tokyo in response to the Japanese government's request for assistance. Two of those NRC staff members, knowledgeable about boiling water reactors, are already in Japan participating in the USAID team.

Additional technical, non-public information:

We are taking the knowledge that the staff has about the design of the US nuclear plants and we are applying this knowledge to the Japan situation. For example, this includes calculations of severe accident mitigation that have been performed. Tony Ulses and Jim Trapp are in-country. Team led by Chuck Casto enroute from various locations.

2. What's going to happen following the hydrogen explosions everyone's seen from the video footage?

Public Answer: The NRC is aware of the Japanese efforts to stabilize conditions at the affected reactors, and those actions are in line with what would be done in the United States. The NRC continues to monitor information on the status of the reactor core, the reactor vessel and the containment structure – all three areas are important to controlling the situation and protecting the public.

Additional technical, non-public information:

The explosions affected the secondary containment buildings for Units 1 and 3 of the reactor plant. The primary containment was unaffected by the explosion. This does expose the spent fuel pools to atmosphere but should not affect the integrity of the spent fuel pool. With the integrity of the Secondary Containment breached it is more essential to maintain Primary Containment intact.

To provide additional protection to Primary Containment, US reactors of the containment type similar to Fukushima Unit 1 installed a hardened vent line from primary containment directly to the vent stack. A hardened vent provides a release path which would prevent an overpressurization of containment as experienced at Fukushima Unit One. Venting from the hardened vent is typically a manual operation that is controlled by the Emergency Operating Procedures as a last resort to protect the containment from failure. This vent path can be directly from the upper containment or from the torus (the preferred vent path due to scrubbing effect of the torus water).

3. What should be done to protect people in Alaska, Hawaii and the West Coast from radioactive fallout?

Public Answer: The NRC continues to believe that the type and design of the Japanese reactors, combined with how events have unfolded, will prevent radiation at harmful levels from reaching U.S. territory.

Additional technical, non-public information: NRC is working with DHS, EPA and other federal partners to ensure monitoring equipment for confirmatory readings is properly positioned, based on meteorological and other relevant information.

Questions and Answers developed by Rob Taylor

4. Can this happen here i.e. an earthquake that significantly damages a nuclear power plant? Are the Japanese plants similar to U.S. plants?

Public Answer: All U.S. nuclear power plants are built to withstand environmental hazards, including earthquakes and tsunamis. Even those plants that are located in areas with low and moderate seismic activity are designed for safety in the event of such a natural disaster. The NRC requires that safety-significant structures, systems, and components be designed to take into account even very rare and extreme seismic and tsunami events.

The Japanese facilities are similar in design to several US facilities.

Additional technical, non-public information:

Currently operating reactors were designed using a "deterministic" or "maximum credible earthquake" approach. Seismic hazard for the new plants is determined using a much more robust probabilistic seismic hazard assessment approach that explicitly addresses uncertainty and very rare events, as described in RG1.208. The NRC requires that adequate margin beyond the design basis ground shaking levels is assured. The NRC further enhances seismic safety for beyond-design-basis events through the use of a defense-in-depth approach.

In addition, the NRC periodically reviews the seismic risk at operating reactors when information may have changed. Over the last few years the NRC has undertaken a program called Generic Issue 199, which is focused on assessing hazard for plants in the central and eastern US using the latest techniques (developed in part during reviews of Western U.S. plants) and determining the possible risk implications of any increase in the anticipated ground shaking levels. This program will help us assure that the plants are safe under exceptionally rare and extreme ground motions that represent beyond-design-basis events.

5. What would U.S. plants do in this situation?

Public Answer: The NRC requires plant designs to include multiple and diverse safety systems, and plants must test their emergency preparedness capabilities on a regular basis. Plant operators are very capable of responding to significant events. In addition, NRC regulations require plants to have plans in place that would allow them to mitigate even "worst case scenarios".

Since 9/11, we have implemented requirements for licensees to have additional response capabilities for extreme situations.

Additional technical, non-public information:

U.S. nuclear plants have procedures in place to address a variety of accident scenarios, including abnormal operating procedures, emergency operating procedures, severe accident management guidelines and emergency plans. Additionally, the NRC activates Incident Response centers in Headquarters and individual Regions as necessary for the event to provide technical monitoring and support.

The NRC is capable of providing access to many external agencies (i.e., FEMA, Homeland Security, Military, etc.) to provide any additional help that individual plant sites may need. Additionally, the NRC has access to real-time plant information through the ERDS System for each site in the US and can monitor the status anytime.

6. Are U.S. power plants designed to withstand tsunamis?

Public Answer: Yes. Plants are built to withstand a variety of environmental hazards. Those plants that might face a threat from tsunami are required to withstand large waves and the maximum and minimum wave heights at the intake structure (which varies by plant.)

Additional, technical, non-public information:

Tsunami have been considered in the design of US nuclear plants since the publication of Regulatory Guide 1.59 in 1977, although the approaches that were used for design of the existing plants varied significantly. Nuclear plants are designed to withstand flooding from not only tsunami, but also hurricane and storm surge; therefore there is often significant margin against tsunami flooding. However, it should be noted that Japanese experience has shown that drawdown can be a significant problem. Drawdown was not generally analyzed in the past.

Currently the US NRC has a tsunami research program that is focused on developing modern hazard assessment techniques and additional guidance through cooperation with the National Oceanic and Atmospheric Administration and the United States Geological Survey. This has already lead to several technical reports and an update to NUREG 0-800. The NOAA and USGS contractors are also assisting with NRO reviews of tsunami hazard. A new regulatory guide on tsunami hazard assessment is currently planned in the office of research, although it is not expected to be available in draft form until 2012.

7. What happens when/if a plant "melts down"?

Public Answer: In short, nuclear power plants in the United States are designed to be safe. To prevent the release of radioactive material, there are multiple barriers between the radioactive material and the environment, including the fuel cladding, the heavy steel reactor vessel itself and the containment building, usually a heavily reinforced structure of concrete and steel several feet thick.

Additional, technical, non-public information:

The melted core may melt through the bottom of the vessel and flow onto the concrete containment floor. The core may melt through the containment liner and release radioactive material to the environment.

8. Why is KI administered during nuclear emergencies?

Public Answer: KI – potassium iodide – is one of the protective measures that might be taken in a radiological emergency in this country. A KI tablet will saturate the thyroid with non radioactive iodine and prevent the absorption of radioactive iodine that could be part of the radioactive material mix of radionuclides in a release. KI does not prevent exposure from these other radionuclides.

Additional, technical non-public information.

There are a range of protective measures that we use ... the most effective is evacuation. Local government officials are responsible for determining the best means to protect their public. KI is another means for protection but evacuation and sheltering are the primary means that are used.

9. Was there any damage to U.S. reactors from either the earthquake or the resulting tsunami?

Public Answer: No

Additional, technical non-public information: Diablo Canyon Units 1 and 2 were the only US plants to declare any type of an emergency classification. The site entered an "unusual event" based on a tsunami warning from the State, NOAA, NWS, Coast Guard or System Dispatcher following the Japanese earthquake. They have since exited the "unusual event" declaration, based on a downgrade to a tsunami advisory.

10. Has this incident changed the NRC perception about earthquake risk?

Public Answer: There has been no change in the NRC's perception of earthquake hazard (i.e. ground shaking levels) for US nuclear plants. As is prudent, the NRC will certainly be looking closely at this incident and the effects on the Japanese nuclear power plant in the future to see if any changes are necessary to NRC regulations.

Additional, technical, non-public information.

We expect that there would be lessons learned, etc. It appears that the sites did not have any critical damage due to the earthquake from the fact that the emergency diesel generators initially responded to provide power to the site. The tsunami and consequential site flooding was responsible for the complete loss of power to the site, including the diesel generators which resulted in a Station Blackout.

11. Will this incident affect new reactor licensing?

Public Answer: It is not appropriate to hypothesize on such a future scenario at this point.

Additional, technical non-public information:

This event could potentially call into question the NRC's seismic requirements which could require the staff to re-evaluate the staff's approval of the AP1000 and ESBWR design and certifications.

12. What magnitude earthquake are US plants designed to?

Public Answer: Each plant is designed to a ground-shaking level that is appropriate for its location, given the possible earthquake sources that may affect the site and its tectonic environment. Ground shaking is a function of both the magnitude of an earthquake and the distance from the fault plane to the site. The probabilistic approaches currently used by the NRC account for a large number of different magnitudes.

Additional, technical non-public information:

In the past, "deterministic" or "scenario based" analyses were used to determine ground shaking (seismic hazard) levels. Now a probabilistic method is used that accounts for all possible earthquakes coming from all possible sources (including background seismicity) and the likelihood that each particular hypothetical earthquake occurs.

13. How many US reactors are located in active earthquake zones (and which reactors)?

Public Answer: Although we often think of the US as having "active" and "non-active" earthquake zones, earthquakes can actually happen almost anywhere. Seismologists typically separate the US into low, moderate, and high seismicity zones. The NRC requires that every plant is designed for site-specific ground motions that are appropriate for their location. In addition, the NRC has specified a minimum ground shaking level to which the plants must be designed.

Additional, technical non-public information: No additional.

14. How many reactors are along coastal areas that could be affected by a tsunami (and which ones)?

Public Answer: Many plants are located in coastal areas that could theoretically be affected by tsunami. Two plants, Diablo Canyon and San Onofre, are on the Pacific Coast, which is known to have tsunami hazard. There are also two plants on the Gulf Coast, South Texas and Crystal River. There are many plants on the Atlantic Coast or on rivers that may be affected by a tidal bore. These include St. Lucie, Turkey Point, Brunswick, Oyster Creek, Millstone, Pilgrim, Seabrook, Calvert Cliffs, Salem/Hope Creek, and Surry. Tsunami on the Gulf and Atlantic Coasts occur, but are very rare. Generally the flooding anticipated from hurricane storm surge exceeds the flooding expected from a tsunami for plants on the Atlantic and Gulf Coast.

Additional, technical non-public information: None

15. How many U.S. plants have designs similar to the affected Japanese reactors (and which ones)?

Public answer: Thirty-five of the 104 operating nuclear power plants in the U.S. are boiling water reactors (BWRs), as are the reactors at Fukushima. Twenty-three of the U.S. BWRs have the same Mark I containment as the Fukushima reactors.

Four of the U.S. BWRs are early designs which are similar to Fukushima Unit 1.

Nineteen U.S. BWRs are similar to Fukushima Unit 3.

Additional Information

Fukushima Unit 1 is a BWR-3 with a Mark 1 containment similar to Oyster Creek, Nine Mile Point Unit 1, and Dresden Units 2 and 3.

Fukushima Unit 3 is a BWR-4 with a Mark 1 containment and a Reactor Core Isolation Cooling (RCIC) system. The remaining 31 U.S. BWRs use a Reactor Core Isolation Cooling (RCIC) system instead of an isolation condenser. Nineteen of those 31 reactors have a Mark 1 containment, while the remainder are more recent designs.

16. What resources are the Japanese asking for?

The Japanese have formally requested equipment needed to cool the reactor fuel. This includes such things as pumps, fire hoses, portable generators, and diesel fuel. The NRC is coordinating with General Electric, which has plant design specifications, to ensure any equipment provided will be capable of meeting the needs of the Japanese.

17. What should the American public know about the incident in Japan?

The events unfolding in Japan are the result of a catastrophic series of natural disasters. These include the fifth largest earthquake in recorded history and the resulting devastating tsunami. Despite these unique circumstances, the Japanese appear to have taken reasonable actions to mitigate the event and protect the surrounding population. Since the beginning of the event, the NRC has continuously manned its Operations Center in Rockville, MD in order to gather and examine all available information as part of the effort to analyze the event and understand its implications both for Japan and the United States.

18. What could you say about the dangers to the American public from our nuclear plants?

As the events in Japan continue to unfold, the NRC is focused on supporting the Japanese government and people in bringing this crisis to closure in the safest manner possible. The NRC remains convinced that U.S. nuclear power plants are designed and operated in a manner that protects public health and safety. The time will come, after this crisis is behind us, to evaluate what, if any, changes are needed at U.S. nuclear power plants. We will assess all the available information and, as we have done with previous natural disasters, such as the 2007 earthquake in the Sea of Japan and the 2004 tsunami in the Indian Ocean, evaluate whether enhancements to U.S. nuclear power plants are warranted.

19. What happens next in Japan? How long will it take to assess the damage to the reactors?

The current focus is ensuring that adequate cooling of the reactor fuel at each of the affected Japanese reactors is established and maintained. In the days, weeks, and months that follow, there will be adequate time to assess the damage and determine next steps.

20. Compare this incident to the Three Mile Island. What are the similarities?

The events at Three Mile Island in 1979 were the result of an equipment malfunction that resulted in the loss of cooling water to the reactor fuel. Subsequent operator actions compounded the malfunction ultimately resulting in the partial core meltdown. While details are still developing, the events in Japan appear to be the result of an earthquake and subsequent tsunami that knocked out electrical power to emergency safety systems designed to cool the reactor fuel. In both events the final safety barrier, the containment building, contained the majority of the radioactivity preventing its release to the environment.

21. Why did the seawater fail to cool the reactor?

Based on information available to the NRC, it appears that the seawater has been effective at providing some cooling for the reactor. While it appears that some fuel damage has occurred, there will be plenty of time once this crisis is resolved to determine the effectiveness of the measures taken in response to this event.

22. If Chernobyl was a 7 and Three Mile Island was a 5, when does this event move from the 4 level?

The International Atomic Energy Agency (IAEA) rates nuclear events in accordance with its International Nuclear and Radiological Event Scale (INES). IAEA has assigned the events in Japan an INES rating of 4, "Accident with Local Consequences." This rating is subject to change as events unfold and additional information becomes available. INES classifies nuclear accidents based on the radiological effects on people and the environment and the status of barriers to the release of radiation. IAEA determinations regarding the INES rating of events are made independently.

Three Mile Island was assigned an INES rating of 5, "Accident with Wider Consequences," due to the severed damage to the reactor core.

23. Are any Americans in danger – armed forces, citizens in Tokyo?

The NRC, in consultation with the White House and U.S. Embassy, has advised United States citizens in Japan to follow the protective measures recommended by the Japanese government. These measures appear to be consistent with steps the United States would take. The Department of Defense has personnel trained in radiation protective measures and is responsible for providing guidance to U.S. armed forces. Inquiries regarding U.S. citizens in Japan should be directed to the State Department, Consular Services at 202-647-7004.

24. What is the worst case scenario for the plant?

In a nuclear emergency, the most important action is ensure the core is covered with water to provide cooling to remove any heat from the fuel rods. Without adequate cooling, the fuel rods will melt. Should the final containment structure fail, radiation from these melting fuel rods would be released to the atmosphere and additional protective measures may be necessary, depending on factors such as prevailing wind patterns.

25. As time goes on, does the chance for a meltdown increase?

Not necessarily. Each passing hour the fuel rods will become cooler. If adequate cooling can be established and maintained, the risk of a meltdown will be mitigated.

26. Is our battery backup power less effective than the Japanese?

No. US regulations do not specify the length of time that you need to have the batteries operate following a loss of offsite power (most sites plan to have battery backup capability for 8 hours). Instead, the amount of time is dependent on the site recovery strategy and is based on

providing sufficient capacity to assure that the core is cooled and containment integrity and other vital functions are maintained in the event of postulated accidents.

27. Are we providing additional KI to the Japanese?

We have not been asked to provide KI.

28. What are US plants required to have for backup power? More than what the Japanese reactors did?

US plants need to meet 10 CFR 50 Appendix A criterion 17. Reactor units must have 2 independent power supplies. All US (except Oconee) plants have diesels and battery backup systems. Most of the US plants with diesels have two diesels per unit and those that have only one dedicated diesel have a swing diesel available. The regulations do not specify the length of time that you need to have the diesels and batteries operate following a loss of offsite power (most sites plan to run the diesels for multiple days and have battery backup capability for 8 hours). Instead the amount of time is dependent on the site recovery strategy and is based on providing sufficient capacity to assure that the core is cooled and containment integrity and other vital functions are maintained in the event of postulated accidents.

[[[Japanese regulations to follow from OIP.]]]

29. Some in the media and in Hill briefings are suggesting that Mark 1 containment is flawed. What are the concerns about this type of containment? Are the US plants with this safe?

BWR Mark I containments have relatively small volumes in comparison with PWR containments. This makes the BWR Mark I containment relatively more susceptible to containment failure given a core meltdown severe enough to (1) fail the reactor vessel and also (2) severe enough so that the core melt reaches the containment boundary. On the positive side, BWRs have more ways of adding water to the core than PWRs. This includes 2 water injection sources which do not rely on AC electric power. These systems include Reactor Core Isolation Cooling (RCIC) and High pressure coolant injection (HPCI).

The NRC considers BWRs with Mark I containment designs to be safe.

30. Any quick-hit info about how the Southeast Reactors performed during Katrina? What damage did the flood water do? Any power loss?

The reactors performed as designed. Waterford was the most impacted while River Bend also experienced some effects.

Waterford 3 (near New Orleans, LA) did not have damage to any safety equipment during, or shortly after Katrina. They shut down on August 28, 2005, in advance of the hurricane strike. The flooding did affect local infrastructure, including communications and power distribution. However, the plant successfully used their emergency diesel generators to furnish plant power. Access was maintained to the plant throughout the event. On September 9, 2005, after a comprehensive review by FEMA and the NRC, the plant was authorized to restart.

River Bend Station (30 miles north of Baton Rouge, LA) did not experience damage to any safety related equipment and only minimal damage to emergency planning equipment (one siren) during and after Hurricane Katrina. The station reduced power to 70 percent core thermal power on August 28, 2005, due to reduced electrical grid loads. Access was maintained to the plant throughout the event. On September 2, 2005, the plant returned to 100% power.

Also, in 1992 the eye of Hurricane Andrew, a category 5 hurricane, passed directly over the Turkey Point nuclear plant. The plant was shut down prior to the hurricane making landfall and an assessment of the plant following the hurricane demonstrated that the plant sustained very little damage and all of the safety equipment was intact. (Most of the damage was to the security fences being blown down).

31. With NRC moving to design certification, at what point is seismic capability tested – during design or modified to be site-specific? If in design, what strength seismic event must these be built to withstand?

The regulations related to seismic requirements are contained in 10 CFR 50 Appendix A criterion 2.

During design certification, vendors propose a seismic design in terms of a ground motion spectrum for their nuclear facility. This spectrum is called a standard design response spectrum and is developed so that the proposed nuclear facility can be sited at most locations in the central and eastern United States. The vendors show that this design ground motion is suitable for a variety of different subsurface conditions such as hard rock, deep soil, or shallow soil over rock. Combined License and Early Site Permits applicants are required to develop a site specific ground motion response spectrum that takes into account all of the earthquakes in the region surrounding their site as well as the local site geologic conditions. Applicants estimate the ground motion from these postulated earthquakes to develop seismic hazard curves. These seismic hazard curves are then used to determine a site specific ground motion response spectrum that has a maximum annual likelihood of 1×10^{-4} of being exceeded. This can be thought of as a ground motion with a 10,000 year return period. This site specific ground motion response spectrum is then compared to the standard design response spectrum for the proposed design. If the standard design ground motion spectrum envelopes the site specific ground motion spectrum then the site is considered to be suitable for the proposed design. If the standard design spectrum does not completely envelope the site specific ground motion spectrum, then the COL applicant must do further detailed structural analysis to show that the design capacity is adequate. Margin beyond the standard design and site specific ground motions must also be demonstrated before fuel loading can begin.

From: Schmidt, Rebecca
Sent: Tuesday, March 15, 2011 12:38 PM
To: Powell, Amy
Subject: Re: Chairman JaczkoQA7_031511.docx

Send to david. He is reordering

From: Powell, Amy
To: Droggitis, Spiros; Schmidt, Rebecca
Cc: Decker, David
Sent: Tue Mar 15 12:35:27 2011
Subject: RE: Chairman JaczkoQA7_031511.docx

OK, I'll take this latest, blessed version down for this afternoon's meetings.

From: Droggitis, Spiros
Sent: Tuesday, March 15, 2011 12:33 PM
To: Schmidt, Rebecca; Powell, Amy
Subject: FW: Chairman JaczkoQA7_031511.docx

From: Taylor, Robert
Sent: Tuesday, March 15, 2011 12:27 PM
To: Decker, David; Droggitis, Spiros
Cc: Burnell, Scott
Subject: Chairman JaczkoQA7_031511.docx

As requested. Scott can confirm that these were blessed by the Ops Center ET.

From: Powell, Amy
Sent: Tuesday, March 15, 2011 12:51 PM
To: Coggins, Angela; Schmidt, Rebecca
Cc: Batkin, Joshua
Subject: RE: Quick question...

Will it make the letters stop? I am about to forward you all a new one... signed with Rep. Capps

-----Original Message-----

From: Coggins, Angela
Sent: Tuesday, March 15, 2011 12:42 PM
To: Schmidt, Rebecca; Powell, Amy
Cc: Batkin, Joshua
Subject: Quick question...

Do we have call set up with Markey yet? Could be good to try to organize that late afternoon/evening.

Angela Coggins
Policy Director
Office of Chairman Gregory B Jaczko
US Nuclear Regulatory Commission
angela.coggins@nrc.gov/301-415-1828

From: Powell, Amy
Sent: Tuesday, March 15, 2011 1:10 PM
To: Belmore, Nancy
Subject: RE: Do you want to be included in the van for tomorrow?

What time is it leaving?

From: Belmore, Nancy
Sent: Tuesday, March 15, 2011 1:04 PM
To: Powell, Amy; Decker, David
Subject: Do you want to be included in the van for tomorrow?

Nancy Belmore
Office of Congressional Affairs
U.S. Nuclear Regulatory Commission
nancy.belmore@nrc.gov
301-415-1776

From: Schmidt, Rebecca
Sent: Tuesday, March 15, 2011 1:11 PM
To: Powell, Amy
Subject: Re: Tomorrow

No

From: Powell, Amy
To: Schmidt, Rebecca
Sent: Tue Mar 15 13:09:11 2011
Subject: Tomorrow

Nancy just asked David if he wants to ride in the van – given that the focus will not be budget, do we need to drag him down?

From: Schmidt, Rebecca
Sent: Tuesday, March 15, 2011 1:04 PM
To: Powell, Amy
Subject: Re: Confusion

The briefing started. I will ask him at 200

From: Powell, Amy
To: Schmidt, Rebecca
Sent: Tue Mar 15 13:02:05 2011
Subject: Confusion

Two RES staff – Jennifer Uhle and Charlie Tinkler pinged Renee Taylor so that they could come down for the meeting on the Hill today. They were not going to leave until 1:30pm. We are trying to figure out if Bill wants them at tonight's 5pm with the Chairman or for tomorrow's hearing and meeting. If you can get any clarity from Bill, that would be great. Where did he want them to go?

Amy Powell
Associate Director
U. S. Nuclear Regulatory Commission
Office of Congressional Affairs
Phone: 301-415-1673

From: Schmidt, Rebecca
Sent: Tuesday, March 15, 2011 1:18 PM
To: Powell, Amy
Subject: Re: 18th floor

Yes

From: Powell, Amy
To: Schmidt, Rebecca
Sent: Tue Mar 15 13:16:49 2011
Subject: 18th floor

Should I do an e-mail up to the 18th floor to hit the highlights of tomorrow? I'd rather wait, but with all of the to-do on the OEDO floor about it, they are going to hear about it...

Amy Powell
Associate Director
U. S. Nuclear Regulatory Commission
Office of Congressional Affairs
Phone: 301-415-1673

From: Batkin, Joshua
Sent: Tuesday, March 15, 2011 1:38 PM
To: Powell, Amy; Coggins, Angela
Cc: Schmidt, Rebecca; Pace, Patti
Subject: Re: Sen. Feinstein, trip to CA plant(s)

Ok, now I want to go.

Joshua C. Batkin
Chief of Staff
Chairman Gregory B. Jaczko
(301) 415-1820

From: Powell, Amy
To: Batkin, Joshua; Coggins, Angela
Cc: Schmidt, Rebecca; Pace, Patti
Sent: Tue Mar 15 13:36:29 2011
Subject: RE: Sen. Feinstein, trip to CA plant(s)

Got it. We'll also need to, I think, check with Mr. Szabo, as the Senator will be traveling in her private plane. Ideally, she'd like the group on board.

From: Batkin, Joshua
Sent: Tuesday, March 15, 2011 1:35 PM
To: Powell, Amy; Coggins, Angela
Cc: Schmidt, Rebecca; Pace, Patti
Subject: Re: Sen. Feinstein, trip to CA plant(s)

No. Need to talk to gbj first later today. I told Doug you wouldn't be able to get back to him until tonight.

Joshua C. Batkin
Chief of Staff
Chairman Gregory B. Jaczko
(301) 415-1820

From: Powell, Amy
To: Batkin, Joshua; Coggins, Angela
Cc: Schmidt, Rebecca; Pace, Patti
Sent: Tue Mar 15 13:33:25 2011
Subject: Sen. Feinstein, trip to CA plant(s)

Doug Clapp called. Sen. Feinstein still wants to make the trip to at least one (if not both) CA plants either Monday or Tuesday of this week. Doug said that it looks as though she will want a Commissioner (he won on not pulling GBJ) and a technical person (would this still be Elmo or is there a DBT-type expert, how do we determine risk – earthquake, fire, flood). If possible, he'd like to lock down who is going by this afternoon. I told him I was more confident about by tomorrow am... Any chance you and Belkys got to talk?

Amy Powell
Associate Director
U. S. Nuclear Regulatory Commission

Office of Congressional Affairs
Phone: 301-415-1673

From: Powell, Amy
Sent: Tuesday, March 15, 2011 2:04 PM
To: Pace, Patti; Schmidt, Rebecca; Batkin, Joshua; Coggins, Angela
Cc: Belmore, Nancy; Quesenberry, Jeannette
Subject: RE: Phone Calls Today and Tomorrow

Thanks Patti –

On the call from Rep. Burgess, if you call 202-248-5004 or 202-248-5005, it will ring into the NRC's office within the suite. Just did a test run with the staff there (I owe her chocolate)...

AP

From: Pace, Patti
Sent: Tuesday, March 15, 2011 1:44 PM
To: Schmidt, Rebecca; Powell, Amy; Batkin, Joshua; Coggins, Angela
Cc: Belmore, Nancy; Quesenberry, Jeannette
Subject: Phone Calls Today and Tomorrow

Hello,

Here is what we have arranged for today and tomorrow:

Today:

4:00p – Congressman Markey

Our office to initiate to 202-225-2836

4:30p – Congressman Burgess

NOTE: Congressman Burgess would like to initiate to GBJ. His office will call me at X1820, **to what number should I transfer him at the Hill office?**

4:45p – Congressman Whitfield

Our office to initiate to Congressman Whitfield, 202-225-3115

Wednesday March 16th

2:40p – Congressman Larsen

Our office to initiate to 202-226-9714

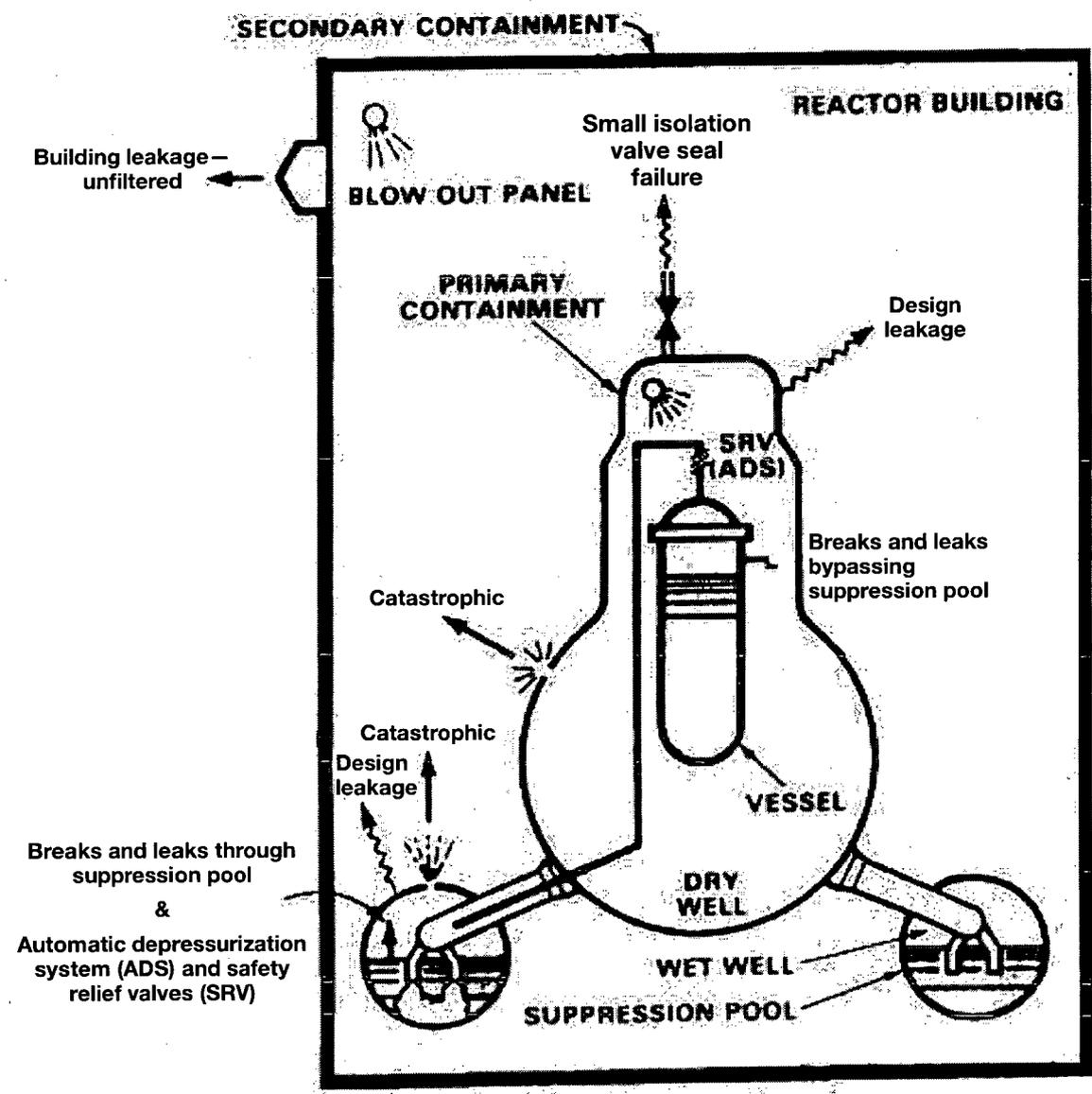
Thanks!

Patti Pace
Assistant to Chairman Gregory B. Jaczko
U.S. Nuclear Regulatory Commission
301-415-1820 (office)
301-415-3504 (fax)

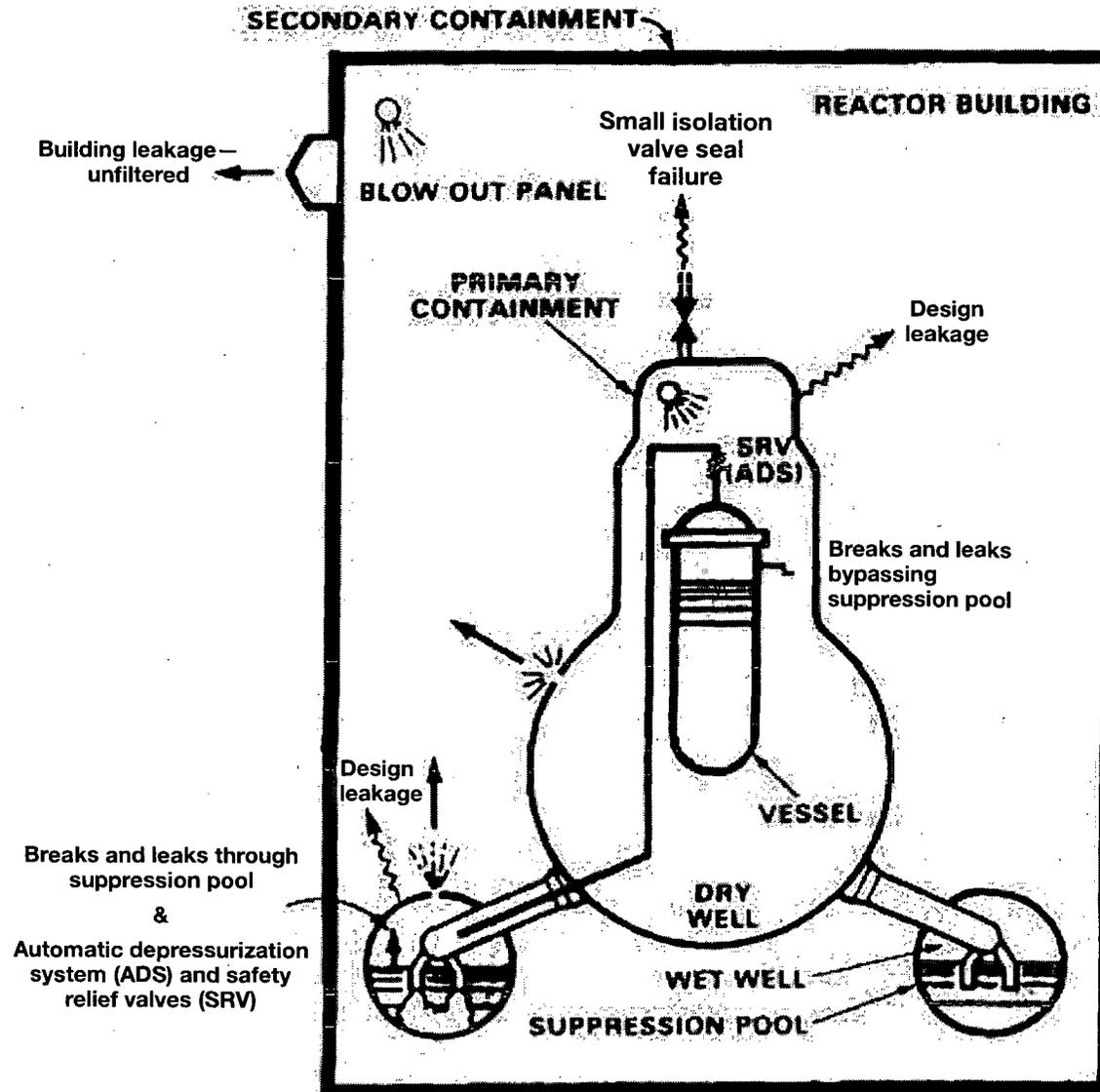
From: Decker, David
Sent: Tuesday, March 15, 2011 2:46 PM
To: Powell, Amy; Schmidt, Rebecca
Subject: BWR Release Pathways Charts
Attachments: BWR Release pathways_original.pdf, BWR Release Pathways_Simplified.pdf

Here are the two versions of the BWR release pathways chart. The "simplified" version is the latest version.

Mark I Containment Release Pathways Simplified



Mark I Containment Release Pathways Simplified



From: Powell, Amy
Sent: Tuesday, March 15, 2011 2:52 PM
To: Quesenberry, Jeannette
Cc: Dacus, Eugene; Schmidt, Rebecca; Belmore, Nancy
Subject: FW: Letter from Congresswoman Lowey
Attachments: Letter to NRC on Indian Point 3.15.11.pdf

Another incoming – please get to SECY.

Thanks
Amy

From: Miller, Dana [mailto:Dana.Miller@mail.house.gov]
Sent: Tuesday, March 15, 2011 2:41 PM
To: Powell, Amy
Subject: Letter from Congresswoman Lowey

Amy,

Attached please find a letter from Congresswoman Lowey regarding natural disasters and the threat to the Indian Point Nuclear Facility in New York. It was mailed to the Chairman earlier today. Please feel free to let me know if you have any questions.

Thanks!

Dana Miller
Legislative Assistant
Office of Congresswoman Nita Lowey
2365 Rayburn House Office Building
Washington, DC 20515
(202) 225-6506

Please sign up to receive [News From Nita](#), Congresswoman Lowey's weekly electronic newsletter.

AN/157

COMMITTEE ON APPROPRIATIONS



SUBCOMMITTEES:
RANKING MEMBER,
STATE, FOREIGN OPERATIONS, AND
RELATED PROGRAMS

LABOR, HEALTH AND HUMAN SERVICES,
AND EDUCATION

HOMELAND SECURITY

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Congress of the United States
18th District, New York

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Chairman Gregory B. Jaczko
U.S. Nuclear Regulatory Commission
Mail Stop O-16G4
Washington, DC 20555-0001

March 15, 2011

Dear Chairman Jaczko:

The tragedy in Japan and the threat of meltdowns at the Fukushima Daiichi Nuclear Power Station shine a new light on the need for the heightened evaluation of nuclear power plants within high-population areas. Following the Japan tragedy, it is imperative that the NRC evaluate all possible threats, including terrorism, natural disasters, and the challenges that must be met in developing safety standards and evacuation procedures while determining the re-licensing of the Indian Point Nuclear Facility in Buchanan, New York.

A 2008 study by seismologists at the Columbia University Lamont-Doherty Earth Observatory found that earthquakes in the New York metropolitan area are common and that risks are particularly high due to infrastructure and high population. A 3.9 magnitude earthquake occurred in the Atlantic Ocean approximately 80 miles off Long Island as recently as November 30, 2010. In fact, there have been five earthquakes in the same area in the past two decades, including a 4.7 magnitude earthquake in 1992.

The Ramapo Seismic Zone is a particular threat because the zone passes within two miles of Indian Point. The Ramapo Seismic Zone includes the Dobbs Ferry fault in Westchester, which generated a 4.1 magnitude earthquake in 1985. The Columbia University study suggests that this pattern of subtle but active faults increases the risk to the New York City area and that an earthquake with a magnitude of 7.0 on the Richter scale is within reach. Disturbingly, Entergy measures the risk of an earthquake near Indian Point to be between 1.0 and 3.0 on the Richter scale, despite evidence to the contrary.

As our nation stands ready to assist the Japanese to calm this potential nuclear meltdown and disaster, we must not let the same mistakes happen on our shores. The NRC should study Indian Point's risk of and ability to sustain a disaster, including the impact of earthquakes and hurricanes, as well as collateral impacts such as loss of power, inability to cool reactors, and emergency evacuation routes. The NRC should evaluate how a similar incident in the New York metropolitan area could be further complicated due to a dramatically higher population and the effectiveness of proposed evacuation routes. We simply cannot allow those who live in the New York metropolitan area to be susceptible to such risks.

Sincerely,

Nita M. Lowey
Member of Congress

From: Schmidt, Rebecca
Sent: Tuesday, March 15, 2011 3:25 PM
To: Brenner, Eliot
Subject: Fw: Updated information for the Chairman
Attachments: image001.jpg

Another--2 documents

From: Pace, Patti
To: Powell, Amy; Schmidt, Rebecca
Cc: Belmore, Nancy
Sent: Tue Mar 15 15:17:37 2011
Subject: RE: Updated information for the Chairman

Amy,

Both are marked OOU - not sure if that matters. Is there a fax number I could send them to or does that come in to the main office staff? I think the priority would be the two page talking points, the other update is likely already in the book you are carrying from the HOO. Sorry we didn't receive this before you left.

Thanks,

Patti Pace
Assistant to Chairman Gregory B. Jaczko
U.S. Nuclear Regulatory Commission
301-415-1820 (office)
301-415-3504 (fax)

From: Powell, Amy
Sent: Tuesday, March 15, 2011 3:14 PM
To: Pace, Patti; Schmidt, Rebecca
Cc: Belmore, Nancy
Subject: Re: Updated information for the Chairman

Becky is on the Hill and I am at the Metro stand. I will see if the office staff there can help.
Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Pace, Patti
To: Schmidt, Rebecca
Cc: Belmore, Nancy; Powell, Amy
Sent: Tue Mar 15 15:12:35 2011
Subject: FW: Updated information for the Chairman

Hi Becky,

If possible, could you please print these items for the Chairman to use during his Congressional calls today?

Many thanks,

Patti Pace
Assistant to Chairman Gregory B. Jaczko
U.S. Nuclear Regulatory Commission
301-415-1820 (office)
301-415-3504 (fax)

From: LIA07 Hoc
Sent: Tuesday, March 15, 2011 3:04 PM
To: Jaczko, Gregory
Cc: Batkin, Joshua; Pace, Patti; Bradford, Anna; Mroz (Sahm), Sara
Subject: RE: Updated information for the Chairman

Sir,

In reference to numbers 1 and 2 below, please find attached the latest talking points and Status Update. Please let me know if you have any questions or concerns.

Thank you,

Jim Anderson
Office of Nuclear Security and Incident Response
US Nuclear Regulatory Commission
james.anderson@nrc.gov
LIA07.HOC@nrc.gov (Operations Center)

From: HOO Hoc
Sent: Tuesday, March 15, 2011 11:08 AM
To: PMT01 Hoc; RST01 Hoc; LIA01 Hoc; LIA02 Hoc; LIA04 Hoc; LIA07 Hoc; LIA11 Hoc; LIA12 Hoc; Gott, William; Marshall, Jane; McDermott, Brian; Morris, Scott; Thorp, John
Subject: FW: Updated information for the Chairman

Headquarters Operations Officer
U.S. Nuclear Regulatory Commission
Phone: 301-816-5100
Fax: 301-816-5151
email: hoo.hoc@nrc.gov
secure e-mail: hoo@nrc.sgov.gov



From: Bradford, Anna
Sent: Tuesday, March 15, 2011 11:05 AM

To: HOO Hoc; ET07 Hoc
Cc: Pace, Patti
Subject: Updated information for the Chairman

Hello,

The Chairman requests that the most up-to-date information be provided to him later today (times noted below) for the following three items:

1. The attached talking points (as of 3:00 pm today). Please email it directly to him at that time, with a cc: to Josh Batkin, Patti Pace, and myself.
2. The latest SitRep report (as of 3:00 pm today). Please email it directly to him at that time, with a cc: to Josh Batkin, Patti Pace, and myself.
3. Two hardcopies of the briefing book that is here in the Chairman's office. Please come and update the copies in the Chairman's office by 2:00 pm today.

Please confirm. Let me know if you have questions. Thanks.

Anna Bradford
Policy Advisor for Nuclear Materials
Office of Chairman Jaczko
U.S. Nuclear Regulatory Commission
301-415-1827

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CONTROLLED INFORMATION~~

NRC Talking Points- Current as of 3/15/11, 3:00 PM EDT

- The NRC believes the Japanese response and protective actions are comparable to how the NRC would respond.
 - We advise Americans in Japan to follow the guidance of Japanese officials.
- 6.1 Aftershock near Hamaoka: no damage to reactors
 - 5 reactors: 2 are decommissioned; 1 shutdown; 2 operating

Reactor Status

- Fukushima Daiichi Units 1 - 6

Unit 1

- Core damage from insufficient cooling water caused by loss of offsite power and onsite diesel generators following tsunami
- Sea water being injected
- Hydrogen explosion from overheated fuel-water reaction damaged reactor building
- Containment described as "functional"
- Stable core cooling
- Spent fuel pool level unknown
- High radiation levels reduced to 600 microsieverts/hr (60 millirem/ hr) at 2:30 am EDT (March 15) at site gate

Unit 2

- Core damage from insufficient cooling water caused by loss of offsite power and onsite diesel generators following tsunami
- Sea water being injected
- Core cooling not stable
- Loud sound near containment building caused concern that containment integrity is not assured
 - As of 7:30 AM EDT, March 15, all indication is that containment is intact
- Pressure reports of RPV 0.6 MPA
 - Power: IAEA as of 0900 UTC on March 15
- Spent fuel pool level unknown
- High radiation levels reduced to 600 microsieverts/hr (60 millirem/ hr) at 2:30 am EDT (March 15) at site gate
- 7:30 AM EDT (March 15), Unit 2 thought to be in better shape than previously thought

Unit 3

- Core damage from insufficient cooling water caused by loss of offsite power and onsite diesel generators following tsunami
- Sea water being injected.
- Hydrogen explosion from overheated fuel-water reaction damaged reactor building
- Containment described as "functional"
- Core cooling believed to be stable
- No spent fuel pool information
- High radiation levels reduced to 600 microsieverts/hr (60 millirem/hr) at 2:30 am EDT (March 15) at site gate

Unit 4

- Generator lube oil fire in reactor building; IAEA reports that fire out at 2200 EDT, March 14

- Hi radiation dose rates (40R/hr; 40 cSv/ hr) measured between Units 3 and 4, source may be Unit 4 spent fuel pool
- Possible water loss from pool
- High radiation levels reduced to 600 microsieverts/hr (60 Mr/hr) at 2:30 am EDT (March 15) at site gate
- Units 5 - 6 stable
- Reactor spent fuel pool level unknown
- Other Japanese Nuclear Sites:
 - Fukushima Daini Units 1 - 4: As of 7:15 am on March 15 (Japan), Tepco press release reports reactors in cold shutdown and offsite power available.
 - Onagawa Units 1 - 3: shutdown, stable, turbine building basement fire extinguished.
 - Kashiwazaki Kariwa Nuclear Power Station (Advanced Reactors): Units 1, 5, 6, 7: normal operation / Units 2 to 4: regular outage
- Forecast meteorological data for the 24 hour period indicates wind shifting offshore.

General Talking Points

- Tepco and US Forces in Japan (USFJ) are working together to allocate firefighting and heavy equipment capable of pumping seawater from the ocean into containment.
 - A list of additional equipment to provide for accident mitigation has been developed by NRC and provided to USAID.
- Disaster Assistance Response Team arrived Sunday:
 - Two NRC team members are in Tokyo working with Ambassador Roos and getting direct information from Japanese officials.
 - Nine additional NRC experts were dispatched to support the Ambassador and Japanese government.
- NRC continues coordination with other Federal agencies and outreach to Congress and States.
- Press releases with message for US citizens: No harmful levels of radiation expected to reach US. Japanese protective action recommendations consistent with US. US citizens in Japan should follow Japanese government directions.
- NRC continues to develop projections of the accident's progression, dose estimates and Q&As, including those addressing the safety of reactors in operation in the US.

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CONTROLLED INFORMATION—~~

From: Powell, Amy
Sent: Tuesday, March 15, 2011 3:29 PM
To: 'Alexander_McDonough@reid.senate.gov'
Subject: Re: spent fuel storage in ISFSIs

You bet!

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: McDonough, Alexander (Reid) <Alexander_McDonough@reid.senate.gov>
To: Powell, Amy
Sent: Tue Mar 15 14:39:33 2011
Subject: RE: spent fuel storage in ISFSIs

Thanks Amy.

Alex McDonough | U.S. Senate Majority Leader Harry Reid

From: Powell, Amy [mailto: Amy.Powell@nrc.gov]
Sent: Tuesday, March 15, 2011 2:34 PM
To: McDonough, Alexander (Reid)
Subject: RE: spent fuel storage in ISFSIs

Here is a web link with the regs related to storage: <http://www.nrc.gov/waste/spent-fuel-storage/regs-guides-comm.html>

AP

From: McDonough, Alexander (Reid) [mailto: Alexander_McDonough@reid.senate.gov]
Sent: Tuesday, March 15, 2011 12:49 PM
To: Powell, Amy
Subject: spent fuel storage in ISFSIs

Hi Amy – Do you have any good fact sheets on NRC ISFSI safety/security that you can send? Thanks
Alex

From: Powell, Amy
Sent: Tuesday, March 15, 2011 3:29 PM
To: Batkin, Joshua; Schmidt, Rebecca
Subject: Contact from Sen. Reid's office

FYI, Alex passed along the email and contact info below. I can fill you in when I see you.

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: McDonough, Alexander (Reid) <Alexander_McDonough@reid.senate.gov>
To: Powell, Amy
Sent: Tue Mar 15 14:34:47 2011
Subject: Fukushima reactor

Hi Amy - See below. The contact is Ken Wing, and his phone #s are 011 65 9856 1997 and 1 (831) 239-3269.

Message follows:

Hey Evan, I hear that Japan is asking for US experts. My husband, Ken Wing, designed the safety systems for the Fukushima reactor for GE. He was telling me exactly what was happening in the reactor as soon as they said they might be venting gas, which is exactly what they have figured out now was/is happening. I don't know how to tell the government how to get in touch with him, if they want to, but maybe you or Harry do. He is in Singapore. His phone numbers are 011 65 9856 1997 and 1 (831) 239-3269.

From: Schmidt, Rebecca
Sent: Tuesday, March 15, 2011 3:53 PM
To: Pace, Patti
Subject: Re: Clarification on calls

We are both at the hill office

From: Pace, Patti
To: Schmidt, Rebecca; Powell, Amy
Cc: Coggins, Angela
Sent: Tue Mar 15 15:52:02 2011
Subject: RE: Clarification on calls

Hi Amy and Becky,

Are either of you available to talk to the Chairman in advance of the call with Congressman Markey? I just tried calling the Hill office and it seems like maybe you are both still enroute? Please advise.

Thanks,

Patti Pace
Assistant to Chairman Gregory B. Jaczko
U.S. Nuclear Regulatory Commission
301-415-1820 (office)
301-415-3504 (fax)

From: Schmidt, Rebecca
Sent: Tuesday, March 15, 2011 3:50 PM
To: Pace, Patti; Powell, Amy
Cc: Coggins, Angela
Subject: Re: Clarification on calls

Patti., does he want to do the murderboard from his house too? We could call

From: Pace, Patti
To: Powell, Amy
Cc: Schmidt, Rebecca; Coggins, Angela
Sent: Tue Mar 15 15:44:03 2011
Subject: RE: Clarification on calls

Amy,

The Chairman just called in and advised that he might make the calls from his house. So, what I can do is conference you in first and then place calls out to the Hill so you and Becky can listen.

I confirmed he received the updated talking points on his blackberry. Is there anything else he needs for the calls?

Also, this means the 5:00pm is likely to start late. Sorry!

Patti Pace
Assistant to Chairman Gregory B. Jaczko
U.S. Nuclear Regulatory Commission
301-415-1820 (office)
301-415-3504 (fax)

From: Powell, Amy
Sent: Tuesday, March 15, 2011 3:34 PM
To: Pace, Patti
Subject: Clarification on calls
Importance: High

When it says "our office will initiate" you actually mean Becky or I will call from the NRC Hill office to the Members, correct?

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Pace, Patti
To: Schmidt, Rebecca; Powell, Amy; Batkin, Joshua; Coggins, Angela
Cc: Belmore, Nancy; Quesenberry, Jeannette
Sent: Tue Mar 15 13:43:51 2011
Subject: Phone Calls Today and Tomorrow

Hello,

Here is what we have arranged for today and tomorrow:

Today:

4:00p – Congressman Markey
Our office to initiate to 202-225-2836

4:30p – Congressman Burgess
NOTE: Congressman Burgess would like to initiate to GBJ. His office will call me at X1820, **to what number should I transfer him at the Hill office?**

4:45p – Congressman Whitfield
Our office to initiate to Congressman Whitfield, 202-225-3115

Wednesday March 16th

2:40p – Congressman Larsen
Our office to initiate to 202-226-9714

Thanks!

Patti Pace

Assistant to Chairman Gregory B. Jaczko
U.S. Nuclear Regulatory Commission
301-415-1820 (office)
301-415-3504 (fax)

From: Neimeyer, Sarah (Durbin) <Sarah_Neimeyer@durbin.senate.gov>
Sent: Tuesday, March 15, 2011 4:22 PM
To: Powell, Amy
Cc: Hunt, Jasmine (Durbin)
Subject: Daily briefings on Japan

Can you add Jasmine and I to your list for daily updates? Thanks, Sarah

Sarah C. Neimeyer
Senior Domestic Policy Advisor
U.S. Senator Richard J. Durbin

202/224-3650

From: Droggitis, Spiros
Sent: Tuesday, March 15, 2011 4:53 PM
To: Dacus, Eugene
Cc: Powell, Amy
Subject: RE: Will the hearing tomorrow be Webcast (Ostendorff's office wants to know)?

Yes, at 9:30.

From: Dacus, Eugene
Sent: Tuesday, March 15, 2011 4:52 PM
To: Droggitis, Spiros
Cc: Powell, Amy
Subject: RE: Will the hearing tomorrow be Webcast (Ostendorff's office wants to know)?

I don't know

From: Droggitis, Spiros
Sent: Tuesday, March 15, 2011 3:09 PM
To: Dacus, Eugene
Subject: FW: Will the hearing tomorrow be Webcast (Ostendorff's office wants to know)?

9:30

From: Decker, David
Sent: Tuesday, March 15, 2011 1:14 PM
To: Belmore, Nancy
Cc: OCA Distribution
Subject: RE: Will the hearing tomorrow be Webcast (Ostendorff's office wants to know)?

HERE'S WHAT I'VE TOLD THE PEOPLE WHO'VE ASKED (NOT SURE WHY THIS IS ALL CAPS):

TO ACCESS A WEBCAST OF THE HEARING TOMORROW, GO TO:

[HTTP://ENERGYCOMMERCE.HOUSE.GOV](http://ENERGYCOMMERCE.HOUSE.GOV), THEN CLICK ON COMMITTEE ACTIONS, THEN HEARINGS, THEN WATCH HEARINGS LIVE. COMMITTEE MEMBERSHIP IS BELOW (I HIGHLIGHTED THE PEOPLE I AM EAGER TO SEE TALK IN RED):

HEARING

The FY2012 Department of Energy and Nuclear Regulatory Commission Budgets

March 16, 2011

The Subcommittee on Energy and Power and the Subcommittee on Environment and the Economy have scheduled a joint hearing on Wednesday, March 16, 2011, at 9:30 a.m. in 2123 Rayburn House Office Building. The hearing is entitled "The FY2012 Department of Energy and Nuclear Regulatory Commission Budgets."

Background Memo

Witness List

The Honorable Steven Chu
Secretary
U.S. Department of Energy

The Honorable Gregory Jaczko
Chairman
U.S. Nuclear Regulatory Commission

Additional Witnesses to be Announced

From: Belmore, Nancy
Sent: Tuesday, March 15, 2011 1:09 PM
To: Decker, David
Subject: Will the hearing tomorrow be Webcast (Ostendorff's office wants to know)?

Nancy Belmore
Office of Congressional Affairs
U.S. Nuclear Regulatory Commission
nancy.belmore@nrc.gov
301-415-1776

From: Schmidt, Rebecca
Sent: Tuesday, March 15, 2011 4:54 PM
To: Dacus, Eugene
Subject: Re: Info for Commissioners

We provided a few tables and some Q and A but we didn't put anything else together. The ops center team put the chr's book together.

From: Dacus, Eugene
To: Schmidt, Rebecca
Sent: Tue Mar 15 16:51:08 2011
Subject: RE: Info for Commissioners

No. a lady named Mary Ann something. I don't know her. She's sitting in with the Exec Team. I just asked her who made the request and she said Amy.

From: Schmidt, Rebecca
Sent: Tuesday, March 15, 2011 4:46 PM
To: Dacus, Eugene
Subject: Re: Info for Commissioners

Did angela from chr's office ask you to do this?

From: Dacus, Eugene
To: Powell, Amy; Schmidt, Rebecca
Sent: Tue Mar 15 16:43:51 2011
Subject: Info for Commissioners

I've been asked if I have or can access the information that was given to Bill Borchardt in prep for his briefings today. Did we provide it and, if so, where can I get copies? I'm told this needs to get to the commissioners.

From: Powell, Amy
Sent: Tuesday, March 15, 2011 4:58 PM
To: Droggitis, Spiros
Subject: Re: Will the hearing tomorrow be Webcast (Ostendorff's office wants to know)?

That kind of day...

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Droggitis, Spiros
To: Powell, Amy
Sent: Tue Mar 15 16:56:50 2011
Subject: RE: Will the hearing tomorrow be Webcast (Ostendorff's office wants to know)?

Don't worry about it. Gene asked me what time the hearing was. I sent him David's email with 9:30 and he must have thought I was asking the question in the Subject line. Oh, boy!

From: Powell, Amy
Sent: Tuesday, March 15, 2011 4:55 PM
To: Dacus, Eugene; Droggitis, Spiros
Cc: Decker, David
Subject: Re: Will the hearing tomorrow be Webcast (Ostendorff's office wants to know)?

I thought David answered the mail on this. Yes, the hearing will be Webcast on the House Energy and Commerce Committee's Web site. I believe the "all caps" email in this chain provides a link.

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Dacus, Eugene
To: Droggitis, Spiros
Cc: Powell, Amy
Sent: Tue Mar 15 16:52:04 2011
Subject: RE: Will the hearing tomorrow be Webcast (Ostendorff's office wants to know)?

I don't know

From: Droggitis, Spiros
Sent: Tuesday, March 15, 2011 3:09 PM

To: Dacus, Eugene

Subject: FW: Will the hearing tomorrow be Webcast (Ostendorff's office wants to know)?

9:30

From: Decker, David

Sent: Tuesday, March 15, 2011 1:14 PM

To: Belmore, Nancy

Cc: OCA Distribution

Subject: RE: Will the hearing tomorrow be Webcast (Ostendorff's office wants to know)?

HERE'S WHAT I'VE TOLD THE PEOPLE WHO'VE ASKED (NOT SURE WHY THIS IS ALL CAPS):

TO ACCESS A WEBCAST OF THE HEARING TOMORROW, GO TO:

[HTTP://ENERGYCOMMERCE.HOUSE.GOV](http://ENERGYCOMMERCE.HOUSE.GOV), THEN CLICK ON COMMITTEE ACTIONS, THEN HEARINGS, THEN WATCH HEARINGS LIVE. COMMITTEE MEMBERSHIP IS BELOW (I HIGHLIGHTED THE PEOPLE I AM EAGER TO SEE TALK IN RED):

HEARING

The FY2012 Department of Energy and Nuclear Regulatory Commission Budgets

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[Background Memo](#)

Witness List

The Honorable Steven Chu

Secretary

U.S. Department of Energy

The Honorable Gregory Jaczko

Chairman

U.S. Nuclear Regulatory Commission

Additional Witnesses to be Announced

From: Belmore, Nancy

Sent: Tuesday, March 15, 2011 1:09 PM

To: Decker, David

Subject: Will the hearing tomorrow be Webcast (Ostendorff's office wants to know)?

Nancy Belmore
Office of Congressional Affairs
U.S. Nuclear Regulatory Commission
nancy.belmore@nrc.gov
301-415-1776

From: Pace, Patti
Sent: Tuesday, March 15, 2011 5:04 PM
To: Powell, Amy
Subject: RE: Dream is alive!

Amy, just tried to call in and didn't get an answer on either line. Chairman will be at Hill office by 5:20p. How would you like to handle Burgess at 6p? thanks!

Patti Pace
Assistant to Chairman Gregory B. Jaczko
U.S. Nuclear Regulatory Commission
301-415-1820 (office)
301-415-3504 (fax)

-----Original Message-----

From: Powell, Amy
Sent: Tuesday, March 15, 2011 4:59 PM
To: Pace, Patti
Subject: Re: Dream is alive!

The two numbers that I gave you earlier should ring directly into our office. We can do another test as soon as this call ends.

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

----- Original Message -----

From: Pace, Patti
To: Powell, Amy
Sent: Tue Mar 15 16:57:10 2011
Subject: RE: Dream is alive!

I haven't had a chance to ask him...I will as soon as they hang up.

Do you guys have a direct line that I could have Cong. Burgess call in to at 6p? He is at a markup and needs to dial out at 6p. If not, I will stay. Just don't tell Josh. :)

Thanks,

Patti Pace
Assistant to Chairman Gregory B. Jaczko
U.S. Nuclear Regulatory Commission
301-415-1820 (office)

301-415-3504 (fax)

-----Original Message-----

From: Powell, Amy

Sent: Tuesday, March 15, 2011 4:52 PM

To: Pace, Patti

Subject: Dream is alive!

Yeah! Is he still planning to come here for the murderboard?

Amy Powell

Associate Director

Office of Congressional Affairs

U. S. Nuclear Regulatory Commission

Phone: 301-415-1673

Sent from my Blackberry

From: Droggitis, Spiros
Sent: Tuesday, March 15, 2011 5:18 PM
To: Powell, Amy
Subject: RE: Just in case

CQ – just sent it to you. They are calling it a hearing

From: Powell, Amy
Sent: Tuesday, March 15, 2011 5:17 PM
To: Droggitis, Spiros
Subject: Re: Just in case

Where did you find this posted?

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Droggitis, Spiros
To: Schmidt, Rebecca; Powell, Amy
Sent: Tue Mar 15 17:11:42 2011
Subject: Just in case

New: **Nuclear Crisis in Japan**

Senate Environment and Public Works Committee (Chairwoman Boxer, D-Calif.) will hold a briefing on the ongoing crisis associated with nuclear power facilities in Japan, including potential ramifications for the United States. 3:30 p.m., 406 Dirksen

From: Powell, Amy
Sent: Tuesday, March 15, 2011 5:54 PM
To: 'Amanda.Stevens@mail.house.gov'; Pace, Patti
Subject: Re: Phone Call Today

Amanda, I am at that phone now, so whenever you are ready, we'll make this happen.

Amy

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Stevens, Amanda <Amanda.Stevens@mail.house.gov>
To: Pace, Patti
Cc: Powell, Amy
Sent: Tue Mar 15 17:52:05 2011
Subject: RE: Phone Call Today

Thank you ladies!
Amanda

Amanda R. Stevens
Scheduler/Office Manager
Michael C Burgess, MD
2241 Rayburn HOB*
Washington, DC 20515
202-225-7772
FAX 202-225-2919
**Please note change of DC Address*

From: Pace, Patti [mailto:Patti.Pace@nrc.gov]
Sent: Tuesday, March 15, 2011 5:16 PM
To: Stevens, Amanda
Cc: Powell, Amy
Subject: RE: Phone Call Today

Hi Amanda,

The best number for Congressman Burgess to call into at 6:00PM is: 202-248-5004

Amy Powell will assist in connecting the Chairman and Congressman Burgess.

I have copied Amy above if you need to reach her before 6pm.

Many thanks for your assistance!

Patti Pace
Assistant to Chairman Gregory B. Jaczko
U.S. Nuclear Regulatory Commission
301-415-1820 (office)
301-415-3504 (fax)

From: Stevens, Amanda [mailto:Amanda.Stevens@mail.house.gov]
Sent: Tuesday, March 15, 2011 4:36 PM
To: Pace, Patti
Subject: RE: Phone Call Today

Dr. Burgess is down at cmte mark up so he will be making the call off the hearing. It would be best for us to call, or use a conference call line.

Amanda R. Stevens
Scheduler/Office Manager
Michael C Burgess, MD
2241 Rayburn HOB*
Washington, DC 20515
202-225-7772
FAX 202-225-2919

**Please note change of DC Address*

From: Pace, Patti [mailto:Patti.Pace@nrc.gov]
Sent: Tuesday, March 15, 2011 4:34 PM
To: Stevens, Amanda
Subject: RE: Phone Call Today

Amanda,

Thanks for your help - I'm so sorry for the late change. Confirming for 6:00PM tonight. Would it be possible for our office to initiate the call at 6:00PM?

Thanks,

Patti Pace
Assistant to Chairman Gregory B. Jaczko
U.S. Nuclear Regulatory Commission
301-415-1820 (office)
301-415-3504 (fax)

From: Powell, Amy
Sent: Tuesday, March 15, 2011 5:54 PM
To: 'Paul_Ordal@epw.senate.gov'
Cc: 'Bettina_Poirier@epw.senate.gov'
Subject: Re: Tomorrow's EPW Committee briefing

Absolutely -

Amy

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Ordal, Paul (EPW) <Paul_Ordal@epw.senate.gov>
To: Powell, Amy
Cc: Poirier, Bettina (EPW) <Bettina_Poirier@epw.senate.gov>
Sent: Tue Mar 15 17:47:41 2011
Subject: Tomorrow's EPW Committee briefing

Amy,

Could Dr. Jaczko give a brief statement (2-3 mins) before the senators start asking him questions at tomorrow's briefing?

Thanks.

-Paul

Paul M. Ordal
U.S. Senate Committee on Environment and Public Works
Senator Barbara Boxer, Chairman
202-224-8832
202-224-1273 FAX



Please consider the environment before printing this e-mail

From: Pace, Patti
Sent: Tuesday, March 15, 2011 6:23 PM
To: Batkin, Joshua; Coggins, Angela; Powell, Amy; Schmidt, Rebecca
Subject: EPW Committee Briefing Details

From the Senate EPW Website:

Full Committee Briefing on Nuclear Plant Crisis in Japan and Implications for the United States
Wednesday, March 16, 2011
03:30 PM EDT

EPW Hearing Room - 406 Dirksen

SPEAKERS: Dr. Gregory B. Jaczko, Chairman, Nuclear Regulatory Commission; Mr. Anthony Pietrangelo, Sr. Vice President and Chief Nuclear Officer at the Nuclear Energy Institute; Dr. Edwin Lyman, Senior Scientist for Global Security at the Union of Concerned Scientists

Patti Pace
Assistant to Chairman Gregory B. Jaczko
U.S. Nuclear Regulatory Commission
301-415-1820 (office)
301-415-3504 (fax)

From: Dacus, Eugene
Sent: Tuesday, March 15, 2011 6:27 PM
To: Powell, Amy; Schmidt, Rebecca
Subject: RE: Info for Commissioners

Roger

From: Powell, Amy
Sent: Tuesday, March 15, 2011 6:16 PM
To: Dacus, Eugene; Schmidt, Rebecca
Subject: Re: Info for Commissioners

This is all set - Josh just showed me that Angela Coggins in his office got those talking points up to him.

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Dacus, Eugene
To: Powell, Amy; Schmidt, Rebecca
Sent: Tue Mar 15 16:43:51 2011
Subject: Info for Commissioners

I've been asked if I have or can access the information that was given to Bill Borchardt in prep for his briefings today. Did we provide it and, if so, where can I get copies? I'm told this needs to get to the commissioners.

From: Schmidt, Rebecca
Sent: Tuesday, March 15, 2011 7:22 PM
To: Sharkey, Jeffrey; Nieh, Ho; Sosa, Belkys; Bubar, Patrice
Cc: Powell, Amy
Subject: Info for hearing

I believe you all received the Q and As which OPA and OCA put together for the Chairman in preparation for the hearing tomorrow. The oral testimony is not finalized yet but I will get it to you before the hearing. We didn't really put any books together on japan.

From: Schmidt, Rebecca
Sent: Tuesday, March 15, 2011 8:02 PM
To: Drogitis, Spiros
Subject: Fw: daily call

Be aware they might call tomorrow am. Raeann should be in and help get the answers. I tried to put her off

From: Haynes, Laura (Carper) <Laura_Haynes@carper.senate.gov>
To: Schmidt, Rebecca
Sent: Tue Mar 15 19:55:34 2011
Subject: RE: daily call

Annie, Kathy and Brian and I would like to do something. So no way we can do a quick call in the morning? It doesn't have to be very long – we could just have it 15-20mins.

From: Schmidt, Rebecca [mailto:Rebecca.Schmidt@nrc.gov]
Sent: Tuesday, March 15, 2011 7:54 PM
To: Haynes, Laura (Carper)
Subject: Re: daily call

Can we skip tomorrow since we have the 330 briefing/hearing?

From: Haynes, Laura (Carper) <Laura_Haynes@carper.senate.gov>
To: Schmidt, Rebecca
Sent: Tue Mar 15 15:13:38 2011
Subject: RE: daily call

Sorry – meant 5pm for tomorrow and rest of the week.

From: Schmidt, Rebecca [mailto:Rebecca.Schmidt@nrc.gov]
Sent: Tuesday, March 15, 2011 3:12 PM
To: Haynes, Laura (Carper)
Subject: Re: daily call

Sure. Let me figure out a way to get this organized--we will find someone to be there to give you the info on the spot. We have a hearing tomorrow but maybe thursday?

From: Haynes, Laura (Carper) <Laura_Haynes@carper.senate.gov>
To: Schmidt, Rebecca
Cc: Powell, Amy
Sent: Tue Mar 15 14:43:05 2011
Subject: daily call

I'm requesting a daily call every morning on Japan to review what is known and what we need to worry about. I feel some of my questions have been lost and I know you all are very busy. This way I can try to get my questions to you at one time and hopefully not email you a million times during the day. I would like to ask Annie, Kathy and Brian to the call. I was thinking 9:30am. Does that work?

Laura Haynes
Legislative Assistant
Office of U.S. Senator Tom Carper
Phone: (202) 224-2441
Email: laura_haynes@carper.senate.gov

From: Haynes, Laura (Carper) <Laura_Haynes@carper.senate.gov>
Sent: Tuesday, March 15, 2011 8:07 PM
To: Schmidt, Rebecca
Subject: RE: daily call

Oh I was thinking the hearing got moved – forgot that we had the member briefing in the afternoon.

Just us randomly calling and asking questions is not going to work. I want to be provided with a run down on what the NRC knows everyday – but I'm fine starting that Thursday since we have the briefing tomorrow. We have a subcom hearing on Thursday morning – so it will either have to be at 9am or afternoon. Just let me know what works. Thanks!

From: Schmidt, Rebecca [mailto:Rebecca.Schmidt@nrc.gov]
Sent: Tuesday, March 15, 2011 8:01 PM
To: Haynes, Laura (Carper)
Subject: Re: daily call

We have the energy and commerce hearing tomorrow morning. We still have an OCA person in the ops center. They could get answers for you right away. Call the ops center tomorrow and ask for spiros. The line is 301 816 5100

From: Haynes, Laura (Carper) <Laura_Haynes@carper.senate.gov>
To: Schmidt, Rebecca
Sent: Tue Mar 15 19:55:34 2011
Subject: RE: daily call

Annie, Kathy and Brian and I would like to do something. So no way we can do a quick call in the morning? It doesn't have to be very long – we could just have it 15-20mins.

From: Schmidt, Rebecca [mailto:Rebecca.Schmidt@nrc.gov]
Sent: Tuesday, March 15, 2011 7:54 PM
To: Haynes, Laura (Carper)
Subject: Re: daily call

Can we skip tomorrow since we have the 330 briefing/hearing?

From: Haynes, Laura (Carper) <Laura_Haynes@carper.senate.gov>
To: Schmidt, Rebecca
Sent: Tue Mar 15 15:13:38 2011
Subject: RE: daily call

Sorry – meant 5pm for tomorrow and rest of the week.

From: Schmidt, Rebecca [mailto:Rebecca.Schmidt@nrc.gov]
Sent: Tuesday, March 15, 2011 3:12 PM
To: Haynes, Laura (Carper)
Subject: Re: daily call

Sure. Let me figure out a way to get this organized--we will find someone to be there to give you the info on the spot. We have a hearing tomorrow but maybe thursday?

From: Haynes, Laura (Carper) <Laura_Haynes@carper.senate.gov>
To: Schmidt, Rebecca
Cc: Powell, Amy
Sent: Tue Mar 15 14:43:05 2011
Subject: daily call

I'm requesting a daily call every morning on Japan to review what is known and what we need to worry about. I feel some of my questions have been lost and I know you all are very busy. This way I can try to get my questions to you at one time and hopefully not email you a million times during the day. I would like to ask Annie, Kathy and Brian to the call. I was thinking 9:30am. Does that work?

Laura Haynes
Legislative Assistant
Office of U.S. Senator Tom Carper
Phone: (202) 224-2441
Email: laura_haynes@carper.senate.gov

From: Powell, Amy
Sent: Tuesday, March 15, 2011 8:49 PM
To: Coggins, Angela; Batkin, Joshua; Bradford, Anna
Subject: Re: Japanese-Rx-Incident addtl questions - March-14-2011 doc.docx

If Rob's stuff is still going through ET review, I proposed sending the ones OCA received early this afternoon (a bit later than Anna's or perhaps we just got them later?). OCA organized them by general topic to make it easier for GBJ to review, so there is at least that difference. ?

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Coggins, Angela
To: Powell, Amy; Batkin, Joshua; Bradford, Anna
Sent: Tue Mar 15 20:39:29 2011
Subject: Fw: Japanese-Rx-Incident addtl questions - March-14-2011 doc.docx

Amy, see anna's email from a minute ago. You might want to share the updates Q and As.

Angela Coggins
Policy Director
Office of Chairman Gregory B Jaczko
US Nuclear Regulatory Commission
angela.coggins@nrc.gov/301-415-1828

From: Taylor, Robert
To: Coggins, Angela
Cc: Harrington, Holly; McIntyre, David; Schmidt, Rebecca; Powell, Amy
Sent: Tue Mar 15 20:29:17 2011
Subject: Japanese-Rx-Incident addtl questions - March-14-2011 doc.docx

Angela,

We have done our best to incorporate your questions into the Chairman's Q&As that were developed earlier today and provided to OCA. The updated set of Q&As is undergoing ET review and we will hopefully have it to you in the near future. The attached provides a roadmap of where we believe the responses can be found. A few questions fell into the broader "After this event is over, we will determine what changes need to be made in the US" message. I did not directly incorporate them, but you can see a draft response in the attached.

Regarding the third question about past events, I did not try to evaluate all of the events you listed. I would propose sticking to the party line, in that, "The NRC routinely reassess its regulatory requirements in light of new operating experience and plant events."

Regards,
Rob

c) what station blackout type concerns should be explored for US plants given the experience (as we understand it) in Japan?

See response to Chairman Q&A #18

d) other

3. What process is the NRC staff in with respect to reviewing safety of existing US reactors?

See Chairman Question #33

4. With respect to licensing actions under review (new and operating), what considerations should be given to the Japanese reactor events and through what process?

See Chairman Question #33

5. What process is the Commission in with respect to providing direction to the staff on any inspections of existing US reactors (including their design basis) and any direction on new reactor license applications?

See Chairman Question #33

6. What does history tell us about how the Commission may consider proceeding going forward:

- a. Three Mile Island
- b. Chernobyl
- c. Browns Ferry fire
- d. Davis Besse
- e. 9/11
- f. Other?

From: Bradford, Anna
Sent: Tuesday, March 15, 2011 8:38 PM
To: Coggins, Angela; Batkin, Joshua; Powell, Amy; Schmidt, Rebecca
Subject: Re: Congressional activities tomorrow

The ones I sent were current as of 11 am this morning - not sure if they've been updated since then?

----- Original Message -----

From: Coggins, Angela
To: Batkin, Joshua; Powell, Amy; Schmidt, Rebecca
Cc: Bradford, Anna
Sent: Tue Mar 15 20:29:20 2011
Subject: Re: Congressional activities tomorrow

Anna forwarded the Q and A's already.
Angela Coggins
Policy Director
Office of Chairman Gregory B Jaczko
US Nuclear Regulatory Commission
angela.coggins@nrc.gov/301-415-1828

----- Original Message -----

From: Batkin, Joshua
To: Powell, Amy; Schmidt, Rebecca
Cc: Coggins, Angela; Bradford, Anna
Sent: Tue Mar 15 20:26:33 2011
Subject: Re: Congressional activities tomorrow

Great - thank you and please get them OPA's Qs and As document and the opening statement tonight. Thanks!

Joshua C. Batkin
Chief of Staff
Chairman Gregory B. Jaczko
(301) 415-1820

----- Original Message -----

From: Powell, Amy
To: Bubar, Patrice; Sharkey, Jeffry; Nieh, Ho; Sosa, Belkys; Batkin, Joshua
Cc: Schmidt, Rebecca; Coggins, Angela
Sent: Tue Mar 15 20:12:52 2011
Subject: Congressional activities tomorrow

Hi all -

As you might imagine, it has been a hectic few days. I want to follow up on what Josh shared with you at your CoS staff meeting about Hill happenings tomorrow:

-House Energy and Commerce Committee, Subcommittees on Energy and Power, Environment and the Economy will hold their planned hearing with Sec. Chu and Chairman Jaczko at 930am. While FY12 budget may come up, the focus will largely be on events in Japan. As Becky mentioned, the written testimony was not changed given the timeline. We are working now to finalize the oral statement.

-Senate EPW, in a bit of an unusual occurrence, is holding a public briefing with Chairman Jaczko at 330pm tomorrow. This was just arranged today. Sen. Boxer, as Chairman, called the meeting; Sen. Inhofe and Sen. Carper are confirmed to attend but I am sure attendance from the Committee will be strong.

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Powell, Amy
Sent: Tuesday, March 15, 2011 8:56 PM
To: Batkin, Joshua; Coggins, Angela
Cc: Schmidt, Rebecca; Brenner, Eliot
Subject: Re: Report: Surgeon General Recommends KI as a Precaution for West Coast Residents

Got that - be nice if NEI had not made it their headline... NEI updates are all over the Hill, so the walk-back may be uphill for a while.

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Batkin, Joshua
To: Powell, Amy; Coggins, Angela
Cc: Schmidt, Rebecca; Brenner, Eliot
Sent: Tue Mar 15 20:52:37 2011
Subject: Re: Report: Surgeon General Recommends KI as a Precaution for West Coast Residents

WH was/is walking that story from late afternoon back.

Joshua C. Batkin
Chief of Staff
Chairman Gregory B. Jaczko
(301) 415-1820

From: Powell, Amy
To: Batkin, Joshua; Coggins, Angela
Cc: Schmidt, Rebecca
Sent: Tue Mar 15 20:50:30 2011
Subject: Fw: Report: Surgeon General Recommends KI as a Precaution for West Coast Residents

NEI's most recent "update"... not helpful
Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: NEIGA@nei.org <NEIGA@nei.org>
To: Powell, Amy
Sent: Tue Mar 15 20:34:53 2011
Subject: Report: Surgeon General Recommends KI as a Precaution for West Coast Residents



This is posted on the Drudge Report:

U.S. Surgeon General Supports Buying KI as Precaution for West Coast Residents

**The fear that a nuclear cloud could float from the shores of Japan to the shores of California has some people making a run on iodine tablets.

**Pharmacists across California report being flooded with requests.

Counter to state and county officials who Tuesday tried to keep people calm by saying that getting the pills wasn't necessary, U.S. Surgeon General Regina Benjamin supported the idea as a worthy "precaution."

NBC Bay Area reporter Damian Trujillo asked her about the run on tablets and Dr. Benjamin said although she wasn't aware of people stocking up, she did not think that would be an overreaction. She said it was right to be prepared.

On the other side of the issue is Kelly Huston of the California Emergency Management Agency. Huston said state officials, along with the Nuclear Regulatory Commission and the California Energy Commission, were monitoring the situation and said people don't need to buy the pills.

"Even if we had a radiation release from Diablo Canyon (in San Luis Obispo County), iodide would only be issued to people living within a 10-mile radius of the plant," Huston added.

Santa Clara County's public health officer Dr. Martin Fenstersheib told the Mercury News he also does not recommend getting the tablets, adding some people can be severely allergic to the iodine.

"There is no reason for doing it," Fenstersheib told the paper.

Either way, the pills are hard to get. eBay prices have skyrocketed.

NEI Message:

In 2001, the NRC revised its emergency planning regulations for nuclear power reactors to provide states the option to use potassium iodide (KI) tablets as a secondary protective measure for the public. KI would supplement evacuation and sheltering in the event of a nuclear reactor accident.

If taken within several hours of exposure to radioactive iodine, KI can protect the thyroid gland. KI does not protect any other part of the body, nor does it protect against any other radioactive element.

[1] U.S. Nuclear Regulatory Commission final rule, "Consideration of Potassium Iodide in Emergency Plans" (66 Federal Register 5427, Jan. 19, 2001).

[2] Under the U.S. Department of Homeland Security's National Response Plan, a nuclear plant security event classified at the alert level or higher is an incident of national significance. Federal

resources may be made available to assist with emergency response if state and local resources are overwhelmed.

Click [here](#) to unsubscribe



From: Haynes, Laura (Carper) <Laura_Haynes@carper.senate.gov>
Sent: Tuesday, March 15, 2011 9:32 PM
To: Schmidt, Rebecca; Droggitis, Spiros
Cc: Powell, Amy
Subject: Re: daily call

Spiros, I would like some clarity on the Japan spent fuel rod issues and radiation exposure. Becky says you will be left behind - so I'll be calling you in the morning. Thanks.

Laura Haynes
Office of U.S. Senator Tom Carper
Sent using BlackBerry

From: Schmidt, Rebecca [mailto:Rebecca.Schmidt@nrc.gov]
Sent: Tuesday, March 15, 2011 08:00 PM
To: Haynes, Laura (Carper)
Subject: Re: daily call

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Sent: Tuesday, March 15, 2011 3:12 PM
To: Haynes, Laura (Carper)
Subject: Re: daily call

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To: Schmidt, Rebecca
Cc: Powell, Amy
Sent: Tue Mar 15 14:43:05 2011
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Laura Haynes
Legislative Assistant
Office of U.S. Senator Tom Carper
Phone: (202) 224-2441
Email: laura_haynes@carper.senate.gov

From: Powell, Amy
Sent: Tuesday, March 15, 2011 9:48 PM
To: Batkin, Joshua; Schmidt, Rebecca; Coggins, Angela
Subject: RE: ORAL STATEMENT

Not too late and will do.

From: Batkin, Joshua
Sent: Tuesday, March 15, 2011 9:48 PM
To: Powell, Amy; Schmidt, Rebecca; Coggins, Angela
Subject: Re: ORAL STATEMENT

Good. If its not too late You could say meet with commissioners to "meet on the current status and begin a discussion of how we will systematically and methodically review information from the events in Japan."

Joshua C. Batkin
Chief of Staff
Chairman Gregory B. Jaczko
(301) 415-1820

From: Powell, Amy
To: Batkin, Joshua; Schmidt, Rebecca
Sent: Tue Mar 15 21:39:31 2011
Subject: ORAL STATEMENT

Ta-da – I am going to e-mail Doug about Sen. Feinstein, then send this along to Committee, WH, and the 18th floor. That gives you all a few minutes to scream stop...

STATEMENT
BY GREGORY B. JACZKO, CHAIRMAN
UNITED STATES NUCLEAR REGULATORY COMMISSION
TO THE
HOUSE COMMITTEE ON ENERGY AND COMMERCE
SUBCOMMITTEES ON ENERGY AND POWER, ENVIRONMENT AND THE ECONOMY
MARCH 16, 2011

Mr. Chairmen, Ranking Members Rush and Green, and Members of the Subcommittees, I am honored to appear before you today on behalf of the U.S. Nuclear Regulatory Commission. Given the events that are unfolding overseas, my opening remarks will focus on the crisis in Japan, and I have additional information on the Fiscal Year 2012 budget that I have submitted for the record.

I would first like to offer my condolences to all those affected by the earthquake and tsunami in Japan over the last few days. My heart goes out to those who have been dealing with the aftermath of these natural disasters.

I want to publicly acknowledge the tireless efforts, professionalism and dedication of the NRC staff in reacting to the events in Japan. This is just another example from my 6 ½ years on the Commission of the dedication of the NRC staff to the mission of protection of public health and safety. The American people can be proud of the commitment and dedication within the Federal workforce, exemplified by our staff every day.

While the NRC regulates the safe and secure commercial uses of radioactive materials in the United States, we also interact with nuclear regulators from around the world. Since Friday, the NRC's headquarters Operations Center has been operating on a 24-hour basis to monitor events unfolding at nuclear power plants in Japan. Since the earthquake hit northeastern Japan last Friday, some reactors at the Fukushima No. 1 plant have lost their cooling functions, leading to hydrogen explosions and rises in radiation levels. Two NRC experts on boiling-water reactors have already been deployed to Japan as part of a U.S. International Agency for International Development team, and they are currently in Tokyo. Since then, the Japanese government has formally asked for assistance from the United States as it continues to respond to the situation. Another NRC team is scheduled to land today.

Within the U.S., the NRC has been coordinating its efforts with other Federal agencies as part of the government response to the situation. This includes monitoring radioactive releases and predicting their path. Given the thousands of miles between Japan and the United States, Hawaii, Alaska, the U.S. Territories and the West Coast are not expected to experience any harmful levels of radioactivity.

Examining all available information is part of the effort to analyze the event and understand its implications both for Japan and the United States. The NRC has been working with several agencies to assess recent seismic research for the central and eastern part of the

country. That work continues to indicate that the U. S. public remains safe; we will continue to work to maintain that level of protection.

U.S. nuclear power plants are built to withstand environmental hazards, including earthquakes and tsunamis. Even those plants located outside of areas with extensive seismic activity are designed for safety in the event of such a natural disaster. The NRC requires that safety-significant structures, systems, and components be designed to take into account the most severe natural phenomena historically reported for the site and surrounding area. The NRC then adds a margin for error to account for the historical data's accuracy. This means that U.S. nuclear power plants are designed to be safe based on historical data from the area's maximum credible earthquake.

The NRC remains attentive to any information that can be applied to U.S. reactors. Our focus is always on keeping plants in this country safe and secure. As this immediate crisis in Japan comes to an end, we will look at whatever information we can gain from the event and see if there are changes we need to make to our own system. I intend to meet with my colleagues on the Commission within the next few days to discuss ways in which we can systematically review this information. In the meantime, we continue to oversee and monitor plants to ensure that U. S. reactors remain safe.

The NRC will continue to monitor the situation and provide updates via press releases and our public blog. The NRC also stands ready to offer further technical assistance as needed. We hope that this situation will be resolved soon so that Japan can begin to recover from this terrible tragedy.

From: Powell, Amy
Sent: Tuesday, March 15, 2011 9:48 PM
To: Batkin, Joshua; Sosa, Belkys; Sharkey, Jeffrey; Bubar, Patrice; Nieh, Ho
Cc: Coggins, Angela; Bradford, Anna; Schmidt, Rebecca
Subject: Q&A's provided to Chairman at hearing prep meeting
Attachments: Chairman JaczkoQA7_031511.docx

Hi all –

Attached are the Q&As that were provided to Chairman Jaczko at his hearing prep meeting tonight. Content-wise, I believe that these are the same as what Anna provided to you earlier today. OCA organized the Qs by subject matter to make quick reference easier.

I will send the prepared text for his oral statement shortly.

Amy

Amy Powell
Associate Director
U. S. Nuclear Regulatory Commission
Office of Congressional Affairs
Phone: 301-415-1673

**Questions and Answers for Chairman Jaczko
March 11, 2011 Japan Earthquake/Tsunami Aftermath**

What is the Situation in Japan?

What is the NRC doing about the emergencies at the nuclear power plants in Japan? Are you sending staff over there?

Public Answer: We are closely following events in Japan, working with other agencies of the federal government, and have been in direct contact with our counterparts in that country. We have sent a total of 11 staff to Tokyo in response to the Japanese government's request for assistance. Two of those NRC staff members, knowledgeable about boiling water reactors, are already in Japan participating in the USAID team.

Additional technical, non-public information:

We are taking the knowledge that the staff has about the design of the US nuclear plants and we are applying this knowledge to the Japan situation. For example, this includes calculations of severe accident mitigation that have been performed. Tony Ulses and Jim Trapp are in-country. Team led by Chuck Casto enroute from various locations.

What resources are the Japanese asking for?

The Japanese have formally requested equipment needed to cool the reactor fuel. This includes such things as pumps, fire hoses, portable generators, and diesel fuel. The NRC is coordinating with General Electric, which has plant design specifications, to ensure any equipment provided will be capable of meeting the needs of the Japanese.

Are we providing additional KI to the Japanese?

We have not been asked to provide KI.

What should the American public know about the incident in Japan?

The events unfolding in Japan are the result of a catastrophic series of natural disasters. These include the fifth largest earthquake in recorded history and the resulting devastating tsunami. Despite these unique circumstances, the Japanese appear to have taken reasonable actions to mitigate the event and protect the surrounding population. Since the beginning of the event, the NRC has continuously manned its Operations Center in Rockville, MD in order to gather and examine all available information as part of the effort to analyze the event and understand its implications both for Japan and the United States.

Are any Americans in danger – armed forces, citizens in Tokyo?

The NRC, in consultation with the White House and U.S. Embassy, has advised United States citizens in Japan to follow the protective measures recommended by the Japanese government. These measures appear to be consistent with steps the United States would take. The Department of Defense has personnel trained in radiation protective measures and is responsible for providing guidance to U.S.

armed forces. Inquiries regarding U.S. citizens in Japan should be directed to the State Department, Consular Services at 202-647-7004.

What's going to happen following the hydrogen explosions everyone's seen from the video footage?

Public Answer: The NRC is aware of the Japanese efforts to stabilize conditions at the affected reactors, and those actions are in line with what would be done in the United States. The NRC continues to monitor information on the status of the reactor core, the reactor vessel and the containment structure – all three areas are important to controlling the situation and protecting the public.

Additional technical, non-public information:

The explosions affected the secondary containment buildings for Units 1 and 3 of the reactor plant. The primary containment was unaffected by the explosion. This does expose the spent fuel pools to atmosphere but should not affect the integrity of the spent fuel pool. With the integrity of the Secondary Containment breached it is more essential to maintain Primary Containment intact.

To provide additional protection to Primary Containment, US reactors of the containment type similar to Fukushima Unit 1 installed a hardened vent line from primary containment directly to the vent stack. A hardened vent provides a release path which would prevent an overpressurization of containment as experienced at Fukushima Unit One. Venting from the hardened vent is typically a manual operation that is controlled by the Emergency Operating Procedures as a last resort to protect the containment from failure. This vent path can be directly from the upper containment or from the torus (the preferred vent path due to scrubbing effect of the torus water).

Why did the seawater fail to cool the reactor?

Based on information available to the NRC, it appears that the seawater has been effective at providing some cooling for the reactor. While it appears that some fuel damage has occurred, there will be plenty of time once this crisis is resolved to determine the effectiveness of the measures taken in response to this event.

If Chernobyl was a 7 and Three Mile Island was a 5, when does this event move from the 4 level?

The International Atomic Energy Agency (IAEA) rates nuclear events in accordance with its International Nuclear and Radiological Event Scale (INES). IAEA has assigned the events in Japan an INES rating of 4, "Accident with Local Consequences." This rating is subject to change as events unfold and additional information becomes available. INES classifies nuclear accidents based on the radiological effects on people and the environment and the status of barriers to the release of radiation. IAEA determinations regarding the INES rating of events are made independently.

Three Mile Island was assigned an INES rating of 5, "Accident with Wider Consequences," due to the severed damage to the reactor core.

What is the worst case scenario for the plant?

In a nuclear emergency, the most important action is ensure the core is covered with water to provide cooling to remove any heat from the fuel rods. Without adequate cooling, the fuel rods will melt. Should the final containment structure fail, radiation from these melting fuel rods would be released to the

atmosphere and additional protective measures may be necessary, depending on factors such as prevailing wind patterns.

As time goes on, does the chance for a meltdown increase?

Not necessarily. Each passing hour the fuel rods will become cooler. If adequate cooling can be established and maintained, the risk of a meltdown will be mitigated.

What happens next in Japan? How long will it take to assess the damage to the reactors?

The current focus is ensuring that adequate cooling of the reactor fuel at each of the affected Japanese reactors is established and maintained. In the days, weeks, and months that follow, there will be adequate time to assess the damage and determine next steps.

Is There Any Direct Impact to US?

What should be done to protect people in Alaska, Hawaii and the West Coast from radioactive fallout?

Public Answer: The NRC continues to believe that the type and design of the Japanese reactors, combined with how events have unfolded, will prevent radiation at harmful levels from reaching U.S. territory.

Additional technical, non-public information: NRC is working with DHS, EPA and other federal partners to ensure monitoring equipment for confirmatory readings is properly positioned, based on meteorological and other relevant information.

Was there any damage to U.S. reactors from either the earthquake or the resulting tsunami?

Public Answer: No

Additional, technical non-public information: Diablo Canyon Units 1 and 2 were the only US plants to declare any type of an emergency classification. The site entered an "unusual event" based on a tsunami warning from the State, NOAA, NWS, Coast Guard or System Dispatcher following the Japanese earthquake. They have since exited the "unusual event" declaration, based on a downgrade to a tsunami advisory.

Could it Happen Here?

Could an earthquake in the US significantly damage a nuclear power plant? Are the Japanese plants similar to U.S. plants?

Public Answer: All U.S. nuclear power plants are built to withstand environmental hazards, including earthquakes and tsunamis. Even those plants that are located in areas with low and moderate seismic activity are designed for safety in the event of such a natural disaster. The NRC requires that safety-significant structures, systems, and components be designed to take into account even very rare and extreme seismic and tsunami events.

The Japanese facilities are similar in design to several US facilities.

Additional technical, non-public information:

Currently operating reactors were designed using a "deterministic" or "maximum credible earthquake" approach. Seismic hazard for the new plants is determined using a much more robust probabilistic seismic hazard assessment approach that explicitly addresses uncertainty and very rare events, as described in RG1.208. The NRC requires that adequate margin beyond the design basis ground shaking levels is assured. The NRC further enhances seismic safety for beyond-design-basis events through the use of a defense-in-depth approach.

In addition, the NRC periodically reviews the seismic risk at operating reactors when information may have changed. Over the last few years the NRC has undertaken a program called Generic Issue 199, which is focused on assessing hazard for plants in the central and eastern US using the latest techniques (developed in part during reviews of Western U.S. plants) and determining the possible risk implications of any increase in the anticipated ground shaking levels. This program will help us assure that the plants are safe under exceptionally rare and extreme ground motions that represent beyond-design-basis events.

What would U.S. plants do in this situation?

Public Answer: The NRC requires plant designs to include multiple and diverse safety systems, and plants must test their emergency preparedness capabilities on a regular basis. Plant operators are very capable of responding to significant events. In addition, NRC regulations require plants to have plans in place that would allow them to mitigate even "worst case scenarios".

Since 9/11, we have implemented requirements for licensees to have additional response capabilities for extreme situations.

Additional technical, non-public information:

U.S. nuclear plants have procedures in place to address a variety of accident scenarios, including abnormal operating procedures, emergency operating procedures, severe accident management guidelines and emergency plans. Additionally, the NRC activates Incident Response centers in Headquarters and individual Regions as necessary for the event to provide technical monitoring and support.

The NRC is capable of providing access to many external agencies (i.e., FEMA, Homeland Security, Military, etc.) to provide any additional help that individual plant sites may need. Additionally, the NRC has access to real-time plant information through the ERDS System for each site in the US and can monitor the status anytime.

Are U.S. power plants designed to withstand tsunamis?

Public Answer: Yes. Plants are built to withstand a variety of environmental hazards. Those plants that might face a threat from tsunami are required to withstand large waves and the maximum and minimum wave heights at the intake structure (which varies by plant.)

Additional, technical, non-public information:

Tsunami have been considered in the design of US nuclear plants since the publication of Regulatory Guide 1.59 in 1977, although the approaches that were used for design of the existing plants varied

significantly. Nuclear plants are designed to withstand flooding from not only tsunami, but also hurricane and storm surge; therefore there is often significant margin against tsunami flooding. However, it should be noted that Japanese experience has shown that drawdown can be a significant problem. Drawdown was not generally analyzed in the past.

Currently the US NRC has a tsunami research program that is focused on developing modern hazard assessment techniques and additional guidance through cooperation with the National Oceanic and Atmospheric Administration and the United States Geological Survey. This has already lead to several technical reports and an update to NUREG 0-800. The NOAA and USGS contractors are also assisting with NRO reviews of tsunami hazard. A new regulatory guide on tsunami hazard assessment is currently planned in the office of research, although it is not expected to be available in draft form until 2012.

How many reactors are along coastal areas that could be affected by a tsunami (and which ones)?

Public Answer: Many plants are located in coastal areas that could theoretically be affected by tsunami. Two plants, Diablo Canyon and San Onofre, are on the Pacific Coast, which is known to have tsunami hazard. There are also two plants on the Gulf Coast, South Texas and Crystal River. There are many plants on the Atlantic Coast or on rivers that may be affected by a tidal bore. These include St. Lucie, Turkey Point, Brunswick, Oyster Creek, Millstone, Pilgrim, Seabrook, Calvert Cliffs, Salem/Hope Creek, and Surry. Tsunami on the Gulf and Atlantic Coasts occur, but are very rare. Generally the flooding anticipated from hurricane storm surge exceeds the flooding expected from a tsunami for plants on the Atlantic and Gulf Coast.

Additional, technical non-public information: None

What magnitude earthquake are US plants designed to?

Public Answer: Each plant is designed to a ground-shaking level that is appropriate for its location, given the possible earthquake sources that may affect the site and its tectonic environment. Ground shaking is a function of both the magnitude of and earthquake and the distance from the fault plane to the site. The probabilistic approaches currently used by the NRC account for a large number of different magnitudes.

Additional, technical non-public information:

In the past, "deterministic" or "scenario based" analyses were used to determine ground shaking (seismic hazard) levels. Now a probabilistic method is used that accounts for all possible earthquakes coming from all possible sources (including background seismicity) and the likelihood that each particular hypothetical earthquake occurs.

How many US reactors are located in active earthquake zones (and which reactors)?

Public Answer: Although we often think of the US as having "active" and "non-active" earthquake zones, earthquakes can actually happen almost anywhere. Seismologists typically separate the US into low, moderate, and high seismicity zones. The NRC requires that every plant is designed for site-specific ground motions that are appropriate for their location. In addition, the NRC has specified a minimum ground shaking level to which the plants must be designed.

Additional, technical non-public information: No additional.

Has this incident changed the NRC perception about earthquake risk?

Public Answer: There has been no change in the NRC's perception of earthquake hazard (i.e. ground shaking levels) for US nuclear plants. As is prudent, the NRC will certainly be looking closely at this incident and the effects on the Japanese nuclear power plant in the future to see if any changes are necessary to NRC regulations.

Additional, technical, non-public information.

We expect that there would be lessons learned, etc. It appears that the sites did not have any critical damage due to the earthquake from the fact that the emergency diesel generators initially responded to provide power to the site. The tsunami and consequential site flooding was responsible for the complete loss of power to the site, including the diesel generators which resulted in a Station Blackout.

How many U.S. plants have designs similar to the affected Japanese reactors (and which ones)?

Public answer: Thirty-five of the 104 operating nuclear power plants in the U.S. are boiling water reactors (BWRs), as are the reactors at Fukushima. Twenty-three of the U.S. BWRs have the same Mark I containment as the Fukushima reactors.

Four of the U.S. BWRs are early designs which are similar to Fukushima Unit 1.

Nineteen U.S. BWRs are similar to Fukushima Unit 3.

Additional Information

Fukushima Unit 1 is a BWR-3 with a Mark 1 containment similar to Oyster Creek, Nine Mile Point Unit 1, and Dresden Units 2 and 3.

Fukushima Unit 3 is a BWR-4 with a Mark 1 containment and a Reactor Core Isolation Cooling (RCIC) system. The remaining 31 U.S. BWRs use a Reactor Core Isolation Cooling (RCIC) system instead of an isolation condenser. Nineteen of those 31 reactors have a Mark 1 containment, while the remainder are more recent designs.

What could you say about the dangers to the American public from our nuclear plants?

As the events in Japan continue to unfold, the NRC is focused on supporting the Japanese government and people in bringing this crisis to closure in the safest manner possible. The NRC remains convinced that U.S. nuclear power plants are designed and operated in a manner that protects public health and safety. The time will come, after this crisis is behind us, to evaluate what, if any, changes are needed at U.S. nuclear power plants. We will assess all the available information and, as we have done with previous natural disasters, such as the 2007 earthquake in the Sea of Japan and the 2004 tsunami in the Indian Ocean, evaluate whether enhancements to U.S. nuclear power plants are warranted.

Compare this incident to the Three Mile Island. What are the similarities?

The events at Three Mile Island in 1979 were the result of an equipment malfunction that resulted in the loss of cooling water to the reactor fuel. Subsequent operator actions compounded the malfunction

ultimately resulting in the partial core meltdown. While details are still developing, the events in Japan appear to be the result of an earthquake and subsequent tsunami that knocked out electrical power to emergency safety systems designed to cool the reactor fuel. In both events the final safety barrier, the containment building, contained the majority of the radioactivity preventing its release to the environment.

Is our battery backup power less effective than the Japanese?

No. US regulations do not specify the length of time that you need to have the batteries operate following a loss of offsite power (most sites plan to have battery backup capability for 8 hours). Instead, the amount of time is dependent on the site recovery strategy and is based on providing sufficient capacity to assure that the core is cooled and containment integrity and other vital functions are maintained in the event of postulated accidents.

What are US plants required to have for backup power? More than what the Japanese reactors did?

US plants need to meet 10 CFR 50 Appendix A criterion 17. Reactor units must have 2 independent power supplies. All US (except Oconee) plants have diesels and battery backup systems. Most of the US plants with diesels have two diesels per unit and those that have only one dedicated diesel have a swing diesel available. The regulations do not specify the length of time that you need to have the diesels and batteries operate following a loss of offsite power (most sites plan to run the diesels for multiple days and have battery backup capability for 8 hours). Instead the amount of time is dependent on the site recovery strategy and is based on providing sufficient capacity to assure that the core is cooled and containment integrity and other vital functions are maintained in the event of postulated accidents.

Some in the media and in Hill briefings are suggesting that Mark 1 containment is flawed. What are the concerns about this type of containment? Are the US plants with this safe?

BWR Mark I containments have relatively small volumes in comparison with PWR containments. This makes the BWR Mark I containment relatively more susceptible to containment failure given a core meltdown severe enough to (1) fail the reactor vessel and also (2) severe enough so that the core melt reaches the containment boundary. On the positive side, BWRs have more ways of adding water to the core than PWRs. This includes 2 water injection sources which do not rely on AC electric power. These systems include Reactor Core Isolation Cooling (RCIC) and High pressure coolant injection (HPCI).

The NRC considers BWRs with Mark I containment designs to be safe.

Will this incident affect new reactor licensing?

Public Answer: It is not appropriate to hypothesize on such a future scenario at this point.

Additional, technical non-public information:

This event could potentially call into question the NRC's seismic requirements which could require the staff to re-evaluate the staff's approval of the AP1000 and ESBWR design and certifications.

With NRC moving to design certification, at what point is seismic capability tested – during design or modified to be site-specific? If in design, what strength seismic event must these be built to withstand?

The regulations related to seismic requirements are contained in 10 CFR 50 Appendix A criterion 2.

During design certification, vendors propose a seismic design in terms of a ground motion spectrum for their nuclear facility. This spectrum is called a standard design response spectrum and is developed so that the proposed nuclear facility can be sited at most locations in the central and eastern United States.

The vendors show that this design ground motion is suitable for a variety of different subsurface conditions such as hard rock, deep soil, or shallow soil over rock. Combined License and Early Site Permits applicants are required to develop a site specific ground motion response spectrum that takes into account all of the earthquakes in the region surrounding their site as well as the local site geologic conditions. Applicants estimate the ground motion from these postulated earthquakes to develop seismic hazard curves. These seismic hazard curves are then used to determine a site specific ground motion response spectrum that has a maximum annual likelihood of 1×10^{-4} of being exceeded. This can be thought of as a ground motion with a 10,000 year return period. This site specific ground motion response spectrum is then compared to the standard design response spectrum for the proposed design. If the standard design ground motion spectrum envelopes the site specific ground motion spectrum then the site is considered to be suitable for the proposed design. If the standard design spectrum does not completely envelope the site specific ground motion spectrum, then the COL applicant must do further detailed structural analysis to show that the design capacity is adequate. Margin beyond the standard design and site specific ground motions must also be demonstrated before fuel loading can begin.

Emergency Preparedness Information

What happens when/if a plant “melts down”?

Public Answer: In short, nuclear power plants in the United States are designed to be safe. To prevent the release of radioactive material, there are multiple barriers between the radioactive material and the environment, including the fuel cladding, the heavy steel reactor vessel itself and the containment building, usually a heavily reinforced structure of concrete and steel several feet thick.

Additional, technical, non-public information:

The melted core may melt through the bottom of the vessel and flow onto the concrete containment floor. The core may melt through the containment liner and release radioactive material to the environment.

Why is KI administered during nuclear emergencies?

Public Answer: KI – potassium iodide – is one of the protective measures that might be taken in a radiological emergency in this country. A KI tablet will saturate the thyroid with non radioactive iodine and prevent the absorption of radioactive iodine that could be part of the radioactive material mix of radionuclides in a release. KI does not prevent exposure from these other radionuclides.

Additional, technical non-public information.

There are a range of protective measures that we use ... the most effective is evacuation. Local government officials are responsible for determining the best means to protect their public. KI is another means for protection but evacuation and sheltering are the primary means that are used.

Other Topics

Any quick-hit info about how the Southeast Reactors performed during Katrina? What damage did the flood water do? Any power loss?

The reactors performed as designed. Waterford was the most impacted while River Bend also experienced some effects.

Waterford 3 (near New Orleans, LA) did not have damage to any safety equipment during, or shortly after Katrina. They shut down on August 28, 2005, in advance of the hurricane strike. The flooding did affect local infrastructure, including communications and power distribution. However, the plant successfully used their emergency diesel generators to furnish plant power. Access was maintained to the plant throughout the event. On September 9, 2005, after a comprehensive review by FEMA and the NRC, the plant was authorized to restart.

River Bend Station (30 miles north of Baton Rouge, LA) did not experience damage to any safety related equipment and only minimal damage to emergency planning equipment (one siren) during and after Hurricane Katrina. The station reduced power to 70 percent core thermal power on August 28, 2005, due to reduced electrical grid loads. Access was maintained to the plant throughout the event. On September 2, 2005, the plant returned to 100% power.

Also, in 1992 the eye of Hurricane Andrew, a category 5 hurricane, passed directly over the Turkey Point nuclear plant. The plant was shut down prior to the hurricane making landfall and an assessment of the plant following the hurricane demonstrated that the plant sustained very little damage and all of the safety equipment was intact. (Most of the damage was to the security fences being blown down).

From: Powell, Amy
Sent: Tuesday, March 15, 2011 9:50 PM
To: Batkin, Joshua
Subject: RE: ORAL STATEMENT

Take out the "within next few days"? sounds like a long time to wait to talk about status

From: Batkin, Joshua
Sent: Tuesday, March 15, 2011 9:48 PM
To: Powell, Amy; Schmidt, Rebecca; Coggins, Angela
Subject: Re: ORAL STATEMENT

Good. If its not too late You could say meet with commissioners to "meet on the current status and begin a discussion of how we will systematically and methodically review information from the events in Japan."

Joshua C. Batkin
Chief of Staff
Chairman Gregory B. Jaczko
(301) 415-1820

From: Powell, Amy
To: Batkin, Joshua; Schmidt, Rebecca
Sent: Tue Mar 15 21:39:31 2011
Subject: ORAL STATEMENT

Ta-da – I am going to e-mail Doug about Sen. Feinstein, then send this along to Committee, WH, and the 18th floor. That gives you all a few minutes to scream stop...

Tracking:

From: Powell, Amy
Sent: Tuesday, March 15, 2011 10:26 PM
To: Bubar, Patrice
Subject: RE: Background information - I have a question

Hi Patty –

I think that my e-mails tonight catch us up following the runaway train of the past few days.

Hope you are well,
AP

From: Bubar, Patrice
Sent: Tuesday, March 15, 2011 2:45 PM
To: Powell, Amy
Subject: Background information - I have a question

Hi Amy. I hesitate to even ask this question as I know you are extremely busy but Commissioner Magwood would like us to prepare background information on the current NRC requirements for earthquakes, tsunamis, B.5.b, etc.

We are getting started on that.

Is that information being compiled by the staff in preparation for the Hearing tomorrow?

Patty Bubar
Chief of Staff
Office of Commissioner William D. Magwood
U.S. Nuclear Regulatory Commission
301-415-1895

From: Powell, Amy
Sent: Tuesday, March 15, 2011 10:49 PM
To: Weil, Jenny
Cc: Schmidt, Rebecca
Subject: FW: CA trip next week

FYI - I hope to talk to Doug Clapp and get more info tomorrow, but wanted you to know that this is in the works.

-----Original Message-----

From: Batkin, Joshua
Sent: Tuesday, March 15, 2011 10:46 PM
To: Collins, Elmo; Borchardt, Bill
Cc: Schmidt, Rebecca; Powell, Amy
Subject: CA trip next week

Elmo, it looks like Senator Feinstein, the new chairman of our Senate Appropriations subcommittee, is going to go to Diablo and/or SONGS next week (Tuesday?). Commissioner Apostolakis is going to fly out to join her. If your schedule allows it and Bill blesses it, would you be able to join them? OCA has the lead to arrange. Thank you, Josh

Joshua C. Batkin
Chief of Staff
Chairman Gregory B. Jaczko
(301) 415-1820

From: Powell, Amy
Sent: Wednesday, March 16, 2011 5:55 AM
To: Schmidt, Rebecca
Subject: Fw: commission meeting outline.docx
Attachments: commission meeting outline.docx

FYI
Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Virgilio, Martin
To: Borchardt, Bill
Cc: Weber, Michael; Leeds, Eric; Dorman, Dan; Miller, Chris; Lewis, Robert; Doane, Margaret; Powell, Amy; Wiggins, Jim; Casto, Chuck; Brenner, Eliot; Muessle, Mary; Andersen, James; Wittick, Brian; Grobe, Jack; Evans, Michele; Ash, Darren
Sent: Wed Mar 16 03:29:05 2011
Subject: FW: commission meeting outline.docx

Bill

Last night the Chairman briefed the Commissioners on the status of the events in Japan and NRC's response. During that meeting the Commissioners suggested NRC hold a Commission meeting either this week or next on the events and the Chairman agreed to the meeting.

Attached is a draft outline for that meeting. We believe this outline could also be used as a tool for organizing a presentation for Congressional Briefings and interactions with the media. We acknowledge the ambitious nature of the outline and the fact that we might not be ready to speak to each of the issues if the Commission meeting is held this week.

Marty

Commission Meeting Outline

NRC Response to Core Damage Accident in Japan

Current Status of Fukushima Daiichi

- Reactors
- Spent Fuel Pools

Consequence Projections

NRC Response Objectives

- Support of US Citizens in Japan
- Support of the Japanese Government
- Advance Our Understanding of Safety and Risk

NRC Response Actions

- In Japan
- At HQ

US Government Response

- NRC Partners and Stakeholders

Challenges to Success in the Response

- Information
- Coordination

Situation Assessment For US Reactors and Applicants (JCO)

- External Events
- Severe Accidents

Path Forward and Priorities

- Near Term Actions
 - In Support of Response
- Longer Term Actions
 - Lessons Learned From this Event
 - Resolution of GSI 19

From: Powell, Amy
Sent: Wednesday, March 16, 2011 7:58 AM
To: Bradford, Anna
Subject: Re: Prepared text of NRC Chairman Jaczko's oral statement

Probably both, but House Energy and Commerce website for sure
Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Bradford, Anna
To: Powell, Amy
Sent: Wed Mar 16 07:47:05 2011
Subject: RE: Prepared text of NRC Chairman Jaczko's oral statement

Do you know if it will be televised or online?

Anna Bradford
Policy Advisor for Nuclear Materials
Office of Chairman Jaczko
U.S. Nuclear Regulatory Commission
301-415-1827

From: Powell, Amy
Sent: Wednesday, March 16, 2011 5:56 AM
To: Bradford, Anna
Subject: Fw: Prepared text of NRC Chairman Jaczko's oral statement

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Powell, Amy
To: Sharkey, Jeffrey; Bubar, Patrice; Sosa, Belkys; Nieh, Ho; Batkin, Joshua
Cc: Coggins, Angela; Schmidt, Rebecca
Sent: Tue Mar 15 22:03:44 2011
Subject: Prepared text of NRC Chairman Jaczko's oral statement

Hi all –

Attached is the prepared text for Chairman Jaczko's oral statement tomorrow at the House Energy and Commerce subcommittees' hearing. We will work from the same text to open the Senate EPW public briefing that afternoon.

Amy

Amy Powell
Associate Director
U. S. Nuclear Regulatory Commission
Office of Congressional Affairs
Phone: 301-415-1673

From: Haynes, Laura (Carper) <Laura_Haynes@carper.senate.gov>
Sent: Wednesday, March 16, 2011 9:50 AM
To: Droggitis, Spiros; Schmidt, Rebecca
Cc: Powell, Amy; Shane, Raeann
Subject: Re: daily call

Will call in 15

Laura Haynes
Office of U.S. Senator Tom Carper
Sent using BlackBerry

From: Droggitis, Spiros [mailto:Spiros.Droggitis@nrc.gov]
Sent: Wednesday, March 16, 2011 08:06 AM
To: Haynes, Laura (Carper); Schmidt, Rebecca <Rebecca.Schmidt@nrc.gov>
Cc: Powell, Amy <Amy.Powell@nrc.gov>; Shane, Raeann <Raeann.Shane@nrc.gov>
Subject: RE: daily call

Laura: It would really be helpful if you could call Raeann at 301-415-1776 with your questions and we could try to get back to you as soon as we can. Thanks, Spiros

From: Haynes, Laura (Carper) [mailto:Laura_Haynes@carper.senate.gov]
Sent: Tuesday, March 15, 2011 9:32 PM
To: Schmidt, Rebecca; Droggitis, Spiros
Cc: Powell, Amy
Subject: Re: daily call

Spiros, I would like some clarity on the Japan spent fuel rod issues and radiation exposure. Becky says you will be left behind - so I'll be calling you in the morning. Thanks.

Laura Haynes
Office of U.S. Senator Tom Carper
Sent using BlackBerry

From: Schmidt, Rebecca [mailto:Rebecca.Schmidt@nrc.gov]
Sent: Tuesday, March 15, 2011 08:00 PM
To: Haynes, Laura (Carper)
Subject: Re: daily call

We have the energy and commerce hearing tomorrow morning. We still have an OCA person in the ops center. They could get answers for you right away. Call the ops center tomorrow and ask for spiros. The line is 301 816 5100

From: Haynes, Laura (Carper) <Laura_Haynes@carper.senate.gov>
To: Schmidt, Rebecca
Sent: Tue Mar 15 19:55:34 2011
Subject: RE: daily call

Annie, Kathy and Brian and I would like to do something. So no way we can do a quick call in the morning? It doesn't have to be very long – we could just have it 15-20mins.

From: Schmidt, Rebecca [mailto:Rebecca.Schmidt@nrc.gov]
Sent: Tuesday, March 15, 2011 7:54 PM
To: Haynes, Laura (Carper)
Subject: Re: daily call

Can we skip tomorrow since we have the 330 briefing/hearing?

From: Haynes, Laura (Carper) <Laura_Haynes@carper.senate.gov>
To: Schmidt, Rebecca
Sent: Tue Mar 15 15:13:38 2011
Subject: RE: daily call

Sorry – meant 5pm for tomorrow and rest of the week.

From: Schmidt, Rebecca [mailto:Rebecca.Schmidt@nrc.gov]
Sent: Tuesday, March 15, 2011 3:12 PM
To: Haynes, Laura (Carper)
Subject: Re: daily call

Sure. Let me figure out a way to get this organized--we will find someone to be there to give you the info on the spot. We have a hearing tomorrow but maybe thursday?

From: Haynes, Laura (Carper) <Laura_Haynes@carper.senate.gov>
To: Schmidt, Rebecca
Cc: Powell, Amy
Sent: Tue Mar 15 14:43:05 2011
Subject: daily call

I'm requesting a daily call every morning on Japan to review what is known and what we need to worry about. I feel some of my questions have been lost and I know you all are very busy. This way I can try to get my questions to you at one time and hopefully not email you a million times during the day. I would like to ask Annie, Kathy and Brian to the call. I was thinking 9:30am. Does that work?

Laura Haynes
Legislative Assistant
Office of U.S. Senator Tom Carper
Phone: (202) 224-2441
Email: laura_haynes@carper.senate.gov

From: Wilbur, Tom <Tom.Wilbur@mail.house.gov>
Sent: Wednesday, March 16, 2011 10:13 AM
To: Powell, Amy
Subject: RE: Thanks from NRC

No problem. Just let me know.

-----Original Message-----

From: Powell, Amy [mailto:Amy.Powell@nrc.gov]
Sent: Wednesday, March 16, 2011 9:58 AM
To: Wilbur, Tom
Subject: Thanks from NRC

Tom - thanks for making a computer available. I should know within the next 15-20 minutes or so what we need.

Thanks!

Amy

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Powell, Amy
Sent: Wednesday, March 16, 2011 11:11 AM
To: Batkin, Joshua
Subject: Chu on spent fuel storage

FYI, Chu tried to speak on Waste Confidence (so so); went on to say dry cask is much safer than pools

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Powell, Amy
Sent: Wednesday, March 16, 2011 11:27 AM
To: 'Kathy_Dedrick@epw.senate.gov'
Subject: FYI

Becky called Bettina but FYI - House E&C will recess after Second Chu, and reconvene at 130pm with Chr Jaczko. 330 will be tight and we'll stay in touch.

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Poirier, Bettina (EPW) <Bettina_Poirier@epw.senate.gov>
Sent: Wednesday, March 16, 2011 12:45 PM
To: Powell, Amy
Subject: Re: Update from NRC

Thank you amy. The chairman would really like greg there but wanted to ensure a backup.

----- Original Message -----

From: Powell, Amy [mailto: Amy.Powell@nrc.gov]
Sent: Wednesday, March 16, 2011 12:43 PM
To: Poirier, Bettina (EPW)
Cc: Schmidt, Rebecca <Rebecca.Schmidt@nrc.gov>
Subject: Update from NRC

Bettina -

Bill Borchardt, NRC's Executive Director for Operations, is available and prepared to step in if needed. However, we've told House E&C that we have a stop to get the Chairman to EPW at 330. Committee staff believes that we'll make it and the Chairman will make it. However, we are prepared either way.

Amy

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Pace, Patti
Sent: Wednesday, March 16, 2011 1:31 PM
To: Johnston, Kim
Cc: Powell, Amy
Subject: RE: Phone Call Request

Dear Kim,

Unfortunately we need to postpone today's scheduled call for the Chairman and Rep. Larsen. The start of Chairman Jaczko's testimony in front of the joint House Energy and Commerce Subcommittees was pushed back to 1:30pm. I will be in touch regarding rescheduling, apologies for the unexpected change! If Amy has already alerted you apologies for the duplicate message.

Thanks,

Patti Pace
Assistant to Chairman Gregory B. Jaczko
U.S. Nuclear Regulatory Commission
301-415-1820 (office)
301-415-3504 (fax)

From: Johnston, Kim [mailto:Kimberly.Johnston@mail.house.gov]
Sent: Tuesday, March 15, 2011 12:12 PM
To: Pace, Patti
Subject: RE: Phone Call Request

Yes. Please call my direct line and I will connect you to Rick.

202.226.9714.

Thanks again for all of your help.

Best,
kim

From: Pace, Patti [mailto:Patti.Pace@nrc.gov]
Sent: Tuesday, March 15, 2011 11:52 AM
To: Johnston, Kim
Subject: RE: Phone Call Request

Hi Kim,

Yes, the Chairman could be available from 2:40p – 3:00p tomorrow, Wednesday March 16th. Shall we initiate the call to your office?

Thanks,

Patti Pace
Assistant to Chairman Gregory B. Jaczko
U.S. Nuclear Regulatory Commission

301-415-1820 (office)

301-415-3504 (fax)

From: Johnston, Kim [mailto:Kimberly.Johnston@mail.house.gov]

Sent: Tuesday, March 15, 2011 11:46 AM

To: Pace, Patti

Subject: RE: Phone Call Request

Can we do the call at 2:40?

From: Pace, Patti [mailto:Patti.Pace@nrc.gov]

Sent: Tuesday, March 15, 2011 11:23 AM

To: Johnston, Kim

Subject: Phone Call Request

Good Morning,

I am following up on your conversation with Amy Powell in our Congressional Affairs office. Unfortunately, we are not able to find time for a call today. However, the Chairman has availability tomorrow between 2p – 3p. Would Congressman Larsen be available for a phone call during that hour tomorrow?

Thanks,

Patti Pace

Assistant to Chairman Gregory B. Jaczko

U.S. Nuclear Regulatory Commission

301-415-1820 (office)

301-415-3504 (fax)

From: Pace, Patti
Sent: Wednesday, March 16, 2011 1:33 PM
To: Powell, Amy
Subject: RE: postponing Larsen call

Trust me – no toe stepping would have happened! We are all pulled in a million directions today! Hope you are doing okay. Thanks

Patti Pace
Assistant to Chairman Gregory B. Jaczko
U.S. Nuclear Regulatory Commission
301-415-1820 (office)
301-415-3504 (fax)

From: Powell, Amy
Sent: Wednesday, March 16, 2011 1:32 PM
To: Pace, Patti
Subject: Re: postponing Larsen call

I had not and would not have stepped on your toes that way. Thanks for getting with Kim.

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Pace, Patti
To: Powell, Amy
Sent: Wed Mar 16 12:54:13 2011
Subject: postponing Larsen call

Hi Amy-

Have you already been in touch with Larsen's office? If not, I will follow up right away.

Thanks,

Patti Pace
Assistant to Chairman Gregory B. Jaczko
U.S. Nuclear Regulatory Commission
301-415-1820 (office)
301-415-3504 (fax)

Subject: US
Start: Wed 3/16/2011 2:00 PM
End: Wed 3/16/2011 2:30 PM
Recurrence: (none)
Organizer: Powell, Amy

From: Shane, Raeann
Sent: Wednesday, March 16, 2011 2:03 PM
To: Riley (OCA), Timothy; Droggitis, Spiros
Subject: are you sending press release or are we?

Raeann Shane
Sr. Intergovernmental and External Affairs Officer
Office of Congressional Affairs
U.S. NRC
301-415-1699
rms2@nrc.gov

From: Powell, Amy
Sent: Wednesday, March 16, 2011 2:34 PM
To: Quesenberry, Jeannette; Belmore, Nancy
Cc: Riley (OCA), Timothy; Droggitis, Spiros
Subject: Fw: Letter to the Chairman from Congressman Dennis J. Kucinich
Attachments: Letter ot Chairman Jaczko re Daiichi lessons.pdf

Please get to SECY for processing. Thanks

Amy
Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Edgerton, Vic <Vic.Edgerton@mail.house.gov>
To: Powell, Amy
Sent: Wed Mar 16 14:30:02 2011
Subject: Letter to the Chairman from Congressman Dennis J. Kucinich

Dear Amy,

Please find attached a letter to the Chairman from Congressman Dennis J. Kucinich. Please feel free to contact me with any questions.

Best,

Vic

Vic Edgerton, MPH, MEM
Chief of Staff
Congressman Dennis J. Kucinich
(202) 225-5871

DENNIS J. KUCINICH
10TH DISTRICT, OHIO

2445 RAYBURN HOUSE OFFICE BUILDING
WASHINGTON, D.C. 20515
(202) 225-5871

14400 DETROIT AVENUE
LAKEWOOD, OHIO 44107
(216) 228-8850

PARMATOWN MALL
7904 DAY DRIVE
PARMA, OH 44129
(440) 845-2707



Congress of the United States
House of Representatives

www.kucinich.house.gov

RANKING MEMBER
SUBCOMMITTEE ON REGULATORY AFFAIRS,
STIMULUS OVERSIGHT AND GOVERNMENT
SPENDING

COMMITTEE ON OVERSIGHT AND
GOVERNMENT REFORM

COMMITTEE ON EDUCATION AND THE
WORKFORCE

March 16, 2011

The Honorable Gregory B. Jaczko
Chairman
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Dear Chairman Jaczko:

As the situation in Japan forces us to reconsider our definition of “unlikely,” I am writing to request a detailed description of the specific actions the NRC will take to ensure measures are taken to provide a level of protection of public health and the environment for all Americans that exceeds the level of protection provided at the failing Japanese nuclear power plants like Fukushima Daiichi. A briefing to Members of Congress in which you explain the actions should accompany the report.

Specific safety issues addressed should include, but not be limited to a history of plant operator malfeasance and/or ineptitude; the flaws in the Mark I reactor design; the risks posed by earthquakes and tsunamis, floods, power outages, fires and intentional aircraft crashes; and the specific criteria for revoking or denying a license to operate.

As the Ranking Member of the Subcommittee on Regulatory Affairs, Stimulus Oversight and Government Spending of the Committee on Oversight and Government Reform, I look forward to hearing how the NRC will act swiftly to learn important lessons from the tragedy in Japan.

Operators of nuclear power plants with demonstrated poor safety records should not be allowed to continue to put the public at risk. Though there are several examples of companies whose past performance has shown that they should not be operating a nuclear power plant, the story of Davis-Besse, operated by FirstEnergy Nuclear Operating Company (FirstEnergy) is instructive.

On June 9, 1985, FirstEnergy allowed a 12-minute interruption in the feedwater flow to the steam generators, which was cited as a “potential catastrophe.” In 2002, Davis-Besse’s reactor head corroded nearly all the way through because it was “weakened by years of neglect.” A former NRC top safety official, Harold Denton, stated in 2004 that these two incidents represent the nuclear “industry’s second and third-lowest points after Three Mile Island.”

FirstEnergy’s employees tried to conceal the truth about the 2002 incident from the NRC using “tricks, schemes, or devices . . . to deliberately mislead” the agency. David Uhlmann, chief of the Justice Department’s environmental crimes section, said that FirstEnergy showed “brazen

arrogance” and “breached the public trust” by withholding information about the reactor head incident. Federal prosecutors described the reactor head incident “as one of the biggest cover-ups in U.S. nuclear history.”

FirstEnergy paid a record fine of \$33.45 million as a result of its actions. Of that amount, a record \$28 million was the fine that First Energy paid “to avoid being criminally prosecuted for lying to the government about the dangerous condition of Davis-Besse’s old reactor head,” according to then-U.S. Attorney Greg White in 2006.

The total fine was merely 1% of FirstEnergy’s profits in 2004. While these may have been record fines, they were a mere slap on the wrist for FirstEnergy, creating little incentive to protect the public. This conduct is the product of an inveterate, corrupt culture of long standing deceit and corner-cutting on safety. With such an abysmal record, they, and other nuclear power plant operating companies with poor performance records should not be allowed to continue to operate nuclear power plants.

As you know, I have repeatedly called for the denial of FirstEnergy’s application to continue to operate Davis-Besse beyond its designed life span. Until there is adequate accountability, incentives to place profits before safety will persist.

The Fukushima Daiichi plant that is currently considered to pose the greatest threat to human health uses the General Electric Mark I reactor design. The Mark I has been criticized by NRC staff and others for failing to perform one of its primary functions: containing radiation in the event of a problem with the reactor.

The three explosions at Daiichi reactors 1, 2 and 3 that released radioactive substances have illuminated this design flaw. The U.S. has nuclear power plants with the Mark I design in Alabama, Georgia, Illinois, Iowa, Michigan, Minnesota, Nebraska, New Jersey, New York, North Carolina, Pennsylvania, and Vermont. Most are operating at or past their design life and most have recently received 20-year extensions of their operating license.

The Fukushima Daiichi power plant was supposedly designed to withstand extreme events such as earthquakes and tsunamis. It failed, and the success of efforts to prevent meltdowns at Fukushima Daiichi power plant, Tokai nuclear power plant, and Onagawa power plant have yet to be determined.

The NRC must review the ability of all nuclear power plants in the U.S. to withstand multiple simultaneous events that could wipe out entire redundancy systems. Plants on or near earthquake faults like San Onofre in Southern California and Perry on Lake Erie in Ohio are particularly vulnerable.

In the New York Times Monday, Michael W. Golay, professor of nuclear science and engineering at Massachusetts Institute of Technology, said, “Utilizing cost-benefit judgments, every nation with nuclear power has set the strongest earthquake that its nuclear plants must survive intact considerably below the level of the Japanese earthquake.” We must do better than

to rely on a safety standard which has demonstrated that it would bring us to the brink of a nuclear catastrophe.

Other ongoing safety issues at nuclear power plants in the U.S. pose risks similar to those at the Japanese nuclear power plants. Power outages or floods could cripple primary and secondary core cooling systems. Widespread fire protection deficiencies have not been rectified. Most nuclear power plants in the U.S. remain vulnerable to an intentional aircraft crash. Each of these vulnerabilities merits serious scrutiny.

Bringing our nuclear power plants up to a more suitable safety standard will be expensive. The new reality created by the Japanese nuclear reactors will force us to re-imagine what is possible and, therefore, what must be done. Professor Golay summarized the false choice that exists in the prevailing attitude about nuclear power safety options:

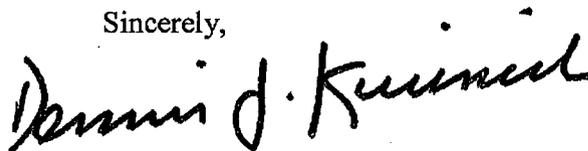
In considering the nuclear hazards of strong earthquakes, it's useful to note the results of a study, which I led from 2001 to 2004, for Tokyo Electric Power Company. The study addressed whether to devote resources to provide robust public protection from nuclear risks that could arise in the event of strong earthquakes or to focus such efforts and researches on the direct effects of the earthquake.

We concluded that any earthquake strong enough to damage the reactor, and thus expose the public to harmful radiation, would be much more dangerous to the public in its direct effects, and that it would be more beneficial to devote efforts and resources to general preparedness.

When the choice is between building a reactor that can survive a major earthquake and preparing the public for a major release, the latter wins. This a false choice about ways to direct scarce resources that facilitates profit for a select few, while placing enormous risks on the rest of us. If the citizens of the U.S. and the world cannot be adequately protected from the risks of nuclear power, then nuclear power should not continue to exist and we should turn to cleaner, safer alternatives.

If you have questions, please do not hesitate to contact me.

Sincerely,

A handwritten signature in black ink that reads "Dennis J. Kucinich". The signature is written in a cursive, slightly slanted style.

Dennis J. Kucinich
Member of Congress

From: Powell, Amy
Sent: Wednesday, March 16, 2011 4:52 PM
To: Brenner, Eliot
Cc: Schmidt, Rebecca
Subject: Boxer-Feinstein ltr
Attachments: Boxer Feinstein LETTER.pdf

In case you get questions, here is 'tis

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Lee, Katie(EPW) <katie_lee@epw.senate.gov>
To: Powell, Amy; Schmidt, Rebecca; Batkin, Joshua
Cc: Cope, Grant (EPW) <Grant_Cope@epw.senate.gov>; Dedrick, Kathy (EPW) <Kathy_Dedrick@epw.senate.gov>
Sent: Wed Mar 16 16:47:19 2011
Subject: Boxer-Feinstein Letter to Chairman Gregory Jaczko

Katie Lee
Majority Staff
U.S. Senate Environment and Public Works Committee
410 Dirksen Senate Office Building
Washington, DC 20510
202.224.8832
202.224.1273 (Fax)

United States Senate

WASHINGTON, DC 20510

March 16, 2011

The Honorable Gregory Jaczko
Chairman
U. S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Dear Chairman Jaczko:

The unfolding nuclear disaster in Japan has raised questions about the safety of nuclear power plants here in the U.S. As Senators from California, we are particularly interested in the safety of San Onofre Nuclear Generating Station, located in San Clemente, and the Diablo Canyon Nuclear Power Plant near San Luis Obispo, both of which are near earthquake faults.

Roughly 424,000 live within 50 miles of the Diablo Canyon and 7.4 million live within 50 miles of San Onofre Nuclear Generating Station. Although many safety measures have been taken to address potential hazards associated with these facilities, we need to ensure that the risk is fully evaluated.

For example, a 2008 California Energy Commission report presented very clear warnings of potential threats at both of these plants. This report found that the San Onofre plant could experience "larger and more frequent earthquakes" than the maximum 7.0 magnitude earthquake predicted when the plant was designed. It is our understanding that the NRC has not taken action to address these warnings in the report. It is also our understanding that the 2008 report found that there is an additional fault near the Diablo Canyon plant that should be taken into consideration as part of NRC's relicensing process. We want to know if the NRC will address all of the threats, including seismic threats, described in the 2008 report at these facilities.

We ask that the Nuclear Regulatory Commission (NRC) perform a thorough inspection at these two plants to evaluate their safety and emergency preparedness plans.

In addition, we ask the NRC to answer the questions below regarding plant design and operations, type of reactor, and preparedness to withstand an earthquake or tsunami and other potential threats.

Plant Design and Operations

1. What changes to the design or operation of these facilities have improved safety at the plants since they began operating in the mid-1980s?
2. What emergency notification systems have been installed at California nuclear power plants? Has there ever been a lapse of these systems during previous earthquakes or emergencies?
3. What safety measures are in place to ensure continued power to California reactors in the event of an extended power failure?

Type of Reactor

1. What are the differences and similarities between the reactors being used in California (pressurized water reactors) and those in Japan (boiling water reactors), as well as the facilities used to house the reactors, including the standards to which they were built and their ability to withstand natural and manmade disasters?

Earthquakes and Tsunamis

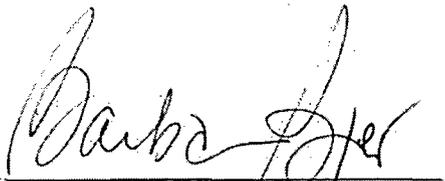
1. We have been told that both Diablo Canyon and San Onofre Nuclear Generating Station are designed to withstand the maximum credible threat at both plants, which we understand to be much less than the 9.0 earthquake that hit Japan. What assumptions have you made about the ability of both plants to withstand an earthquake or tsunami? Given the disaster in Japan, what are our options to provide these plants with a greater margin for safety?
2. Have new faults been discovered near Diablo Canyon or San Onofre Nuclear Generating Station since those plants began operations? If so, how have the plants been modified to account for the increased risk of an earthquake? How will the NRC consider information on ways to address risks posed by faults near these plants that is produced pursuant to state law or recommendations by state agencies during the NRC relicensing process?

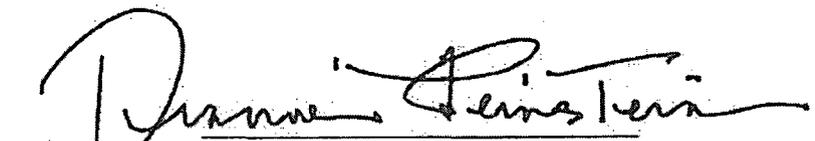
3. What are the evacuation plans for both plants in the event of an emergency? We understand that Highway 1 is the main route out of San Luis Obispo, what is the plan for evacuation of the nearby population if an earthquake takes out portions of the highway and a nuclear emergency occurs simultaneously?
4. What is the NRC's role in monitoring radiation in the event of a nuclear accident both here and abroad? What is the role of EPA and other federal agencies?
5. What monitoring systems currently are in place to track potential impacts on the U.S., including California, associated with the events in Japan?
6. Which federal agency is leading the monitoring effort and which agencies have responsibility for assessing human health impacts? What impacts have occurred to date on the health or environment of the U.S. or are currently projected or modeled in connection with the events in Japan?
7. What contingency plans are in place to ensure that the American public is notified in the event that hazardous materials associated with the events in Japan pose an imminent threat to the U.S.?

The NRC was created in the mid-1970s specifically to ensure the protection of public health and safety with regard to civilian nuclear power. The Commission plays an essential role ensuring that we learn from nuclear accidents and near misses. We hope you agree that we must identify whatever lessons are to be learned from the disaster in Japan in order to make facilities in the United States as safe as possible.

We look forward to working with you to ensure the safety of our nation's nuclear power plants and to make the changes necessary to ensure a nuclear tragedy does not occur in this country.

Sincerely,


Barbara Boxer


Dianne Feinstein

From: Clapp, Doug (Appropriations) <Doug_Clapp@appro.senate.gov>
Sent: Wednesday, March 16, 2011 5:51 PM
To: Powell, Amy
Subject: RE: Will call later

No worries.

-----Original Message-----

From: Powell, Amy [mailto: Amy.Powell@nrc.gov]
Sent: Wednesday, March 16, 2011 5:51 PM
To: Clapp, Doug (Appropriations)
Subject: Will call later

Sorry
Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Pace, Patti
Sent: Wednesday, March 16, 2011 6:31 PM
To: Powell, Amy
Cc: Coggins, Angela; Bradford, Anna
Subject: Details for Tonight Forthcoming from Eliot

Importance: High

Amy,

I made contact with Eliot. He is going to call you with information about what time the Chairman needs to leave the SCIF in 211 Hart for appearances on television shows tonight.

Josh advised that someone would need to come to the SCIF to deliver a message in person for them. Contact person Josh mentioned is Hayden Milberg.

If you get details, could you please share with me so that I can also alert Jonathan to be on standby?

Thanks

Patti Pace
Assistant to Chairman Gregory B. Jaczko
U.S. Nuclear Regulatory Commission
301-415-1820 (office)
301-415-3504 (fax)

From: Powell, Amy
Sent: Wednesday, March 16, 2011 7:31 PM
To: Schmidt, Rebecca; Batkin, Joshua
Cc: Coggins, Angela
Subject: Fw: Senate Staff Briefing on Friday - ENR and EPW Committees

EPW staff briefing Fri - details below

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Ordal, Paul (EPW) <Paul_Ordal@epw.senate.gov>
To: Powell, Amy
Cc: Poirier, Bettina (EPW) <Bettina_Poirier@epw.senate.gov>; Dedrick, Kathy (EPW) <Kathy_Dedrick@epw.senate.gov>
Sent: Wed Mar 16 19:29:01 2011
Subject: Senate Staff Briefing on Friday - ENR and EPW Committees

Amy,

Thanks for your assistance today.

The Senate Energy and Natural Resources Committee asked us to host a joint briefing for our LAs about the situation in Japan. They are having Dr. Pete Lyons, Acting Assistant Secretary for Nuclear Energy at DoE come to brief ENR and EPW staff.

We are aiming for 9:30am in Dirksen 406. Would Bill Borchardt be able to come from NRC?

Thanks.

-Paul

Paul M. Ordal
U.S. Senate Committee on Environment and Public Works
Senator Barbara Boxer, Chairman
202-224-8832
202-224-1273 FAX

 Please consider the environment before printing this e-mail

From: Powell, Amy
Sent: Wednesday, March 16, 2011 7:38 PM
To: Shane, Raeann
Subject: Re: AP1000 non-concurrence

I remember a conference call about the bill that David had with OIP, but fuzzy memory of written comments. I'll look in the am as well, but I remember David having this all the way...

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Shane, Raeann
To: Powell, Amy
Sent: Wed Mar 16 19:35:45 2011
Subject: FW: AP1000 non-concurrence

FYI, Laura had asked for this when I talked to her this morning. We also still owe her the comments on the bill. For some reason we can't find the ones that were sent last time. I think David is working on it but I'm not sure.....

From: Shane, Raeann
Sent: Wednesday, March 16, 2011 7:30 PM
To: 'Haynes, Laura (Carper)'
Subject: AP1000 non-concurrence

Laura:

Attached is the non-concurrence that was done on the AP1000.

Raeann

Raeann Shane
Sr. Intergovernmental and External Affairs Officer
Office of Congressional Affairs
U.S. NRC
301-415-1699
rms2@nrc.gov

From: Powell, Amy
Sent: Wednesday, March 16, 2011 7:56 PM
To: Schmidt, Rebecca
Subject: Wrap up on evening

He did several media spots - Japan continues to dispute his comment on th unit 4 spent fuel pool being dry. Begged off am shows.

Let's talk about the EPW request in the am.

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Powell, Amy
Sent: Wednesday, March 16, 2011 8:03 PM
To: 'Paul_Ordal@epw.senate.gov'
Cc: 'Bettina_Poirier@epw.senate.gov'; 'Kathy_Dedrick@epw.senate.gov'
Subject: Re: Senate Staff Briefing on Friday - ENR and EPW Committees

Hi Paul - I'm glad everything came together today.

Bill is in the Ops Center tonight, but I'll let you know in the am.

Thanks
Amy

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Ordal, Paul (EPW) <Paul_Ordal@epw.senate.gov>
To: Powell, Amy
Cc: Poirier, Bettina (EPW) <Bettina_Poirier@epw.senate.gov>; Dedrick, Kathy (EPW) <Kathy_Dedrick@epw.senate.gov>
Sent: Wed Mar 16 19:29:01 2011
Subject: Senate Staff Briefing on Friday - ENR and EPW Committees

Amy,

Thanks for your assistance today.

The Senate Energy and Natural Resources Committee asked us to host a joint briefing for our LAs about the situation in Japan. They are having Dr. Pete Lyons, Acting Assistant Secretary for Nuclear Energy at DoE come to brief ENR and EPW staff.

We are aiming for 9:30am in Dirksen 406. Would Bill Borchardt be able to come from NRC?

Thanks.

-Paul

Paul M. Ordal
U.S. Senate Committee on Environment and Public Works
Senator Barbara Boxer, Chairman
202-224-8832
202-224-1273 FAX

 Please consider the environment before printing this e-mail

AN/202

From: Powell, Amy
Sent: Thursday, March 17, 2011 1:45 PM
To: Batkin, Joshua; Schmidt, Rebecca; Brenner, Eliot
Cc: Loyd, Susan; Coggins, Angela
Subject: Sens. Boxer, Carper Urge NRC to Investigate Vulnerabilities of U.S. Nuclear Facilities in Wake of Recent Disaster in Japan

Press release from Sens. Boxer and Carper (there is a letter too)

From: Haynes, Laura (Carper) [mailto:Laura_Haynes@carper.senate.gov]
Sent: Thursday, March 17, 2011 1:44 PM
To: Powell, Amy
Subject: FW: Sens. Boxer, Carper Urge NRC to Investigate Vulnerabilities of U.S. Nuclear Facilities in Wake of Recent Disaster in Japan

Making sure you did get this

From: Kennedy, Mary Scott (Carper)
Sent: Thursday, March 17, 2011 12:36 PM
To: Carper ALL Staff
Subject: Sens. Boxer, Carper Urge NRC to Investigate Vulnerabilities of U.S. Nuclear Facilities in Wake of Recent Disaster in Japan



FOR RELEASE: March 17, 2011
CONTACT: Emily Spain (Carper) 202-224-2441
Mary Kerr or Kate Gilman (Boxer) 202-224-8832

Sens. Boxer, Carper Urge NRC to Investigate Vulnerabilities of U.S. Nuclear Facilities in Wake of Recent Disaster in Japan

WASHINGTON – Today, Senators Barbara Boxer (D-Calif.), Chairman of the Environment and Public Works Committee, and Tom Carper (D-Del.), Chairman of the Clean Air and Nuclear Safety Subcommittee, wrote to U.S. Nuclear Regulatory Commission (NRC) Chairman Gregory Jaczko to request that the NRC conduct a comprehensive investigation of all nuclear facilities in the United States to assess their capacity to withstand catastrophic natural or man-made disasters, in light of the nuclear disaster that continues to unfold in Japan.

The Senators asked the NRC to promptly supply the Environment and Public Works Committee with a full evaluation of the nation's domestic nuclear reactors, with special and immediate attention given to ones that share similar characteristics as the failing reactors in Japan, to ensure that they are as safe and resilient as possible, that worst case scenarios are examined and addressed and that personnel training and equipment for emergency responses are in place and up-to-date.

"Public safety is our top priority, and it is therefore vital that the Nuclear Regulatory Commission extensively investigate the risks posed to nuclear facilities in the United States as soon as possible," said Senators Boxer and Carper. "We believe it is important to assist Japan to ensure that the nuclear disaster is contained as quickly, safely and effectively as possible, and we will closely monitor the situation as it unfolds. We will also continue our oversight efforts, including holding hearings in the near future, to ensure that the nuclear energy industry and NRC regulators are adequately prepared to respond to unexpected disasters, whether they are the result of human or mechanical malfunctions, acts of nature or terrorist threats."

A copy of the letter to the U.S. Nuclear Regulatory Commission follows:

March 17, 2011

The Honorable Gregory Jaczko
Chairman
U. S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Dear Chairman Jaczko:

The loss of life and physical damage that Japan sustained in last week's devastating earthquake and subsequent destructive tsunami is catastrophic and heartbreaking. Our thoughts and prayers, as well as those of the American people, go out to all citizens of Japan and especially to the families of the thousands of disaster victims.

As this tragedy continues to unfold, we encourage the Nuclear Regulatory Commission and other U.S. agencies to continue to coordinate fully with the Japanese government to assess the status of public safety in light of the reactors' failures and to provide all technical assistance required.

The earthquake and tsunami that struck Japan are chilling reminders that we are all vulnerable to unexpected disasters, whether they are an act of nature or a terrorist attack. While we cannot predict with any certainty when or where the next major disaster will occur, we know that adequate preparation and response planning are absolutely vital to minimize injury, death, and destruction when it does happen.

As the Committee with oversight responsibilities on nuclear safety, we believe it is important to assist Japan to ensure that this nuclear disaster is contained as quickly and effectively as possible. For the long term, the multiple simultaneous failures of backup coolant systems at nuclear reactors in Japan are a clear warning that we must step up efforts to ensure that every precaution is taken to safeguard the American people from a similar incident at a U.S. nuclear facility.

Therefore, we call on the NRC to conduct a comprehensive investigation of all nuclear facilities in the United States to assess their capacity to withstand catastrophic natural or man-made disasters including scenarios that may be considered remote like the recent events in Japan. These domestic nuclear reactors must be fully evaluated to ensure that they are as safe and resilient as possible, that worst case scenarios are examined and addressed, and that personnel training and equipment for emergency responses are in place and up-to-

date. Special and immediate attention should be given to those U.S. nuclear reactors that share similar characteristics as the failing reactors in Japan, including similar designs or located near a coastline or seismic fault line.

In addition to updating the EPW Committee on a regular basis, we also request that the NRC supply information to the committee as soon as possible regarding the following issues:

1. Please identify all U.S. nuclear facilities subject to significant seismic activity and/or tsunamis.
2. U.S. nuclear power plants are designed to be safe based on historical data of the area's maximum credible threat (including earthquakes and tsunamis). What extra safety features does the NRC currently require for facilities that have a credible threat of an earthquake and/or tsunami? In light of the recent events in Japan, we would also like the NRC to re-examine the assumptions used to determine the maximum credible threat and suggest additional options that could provide a greater margin for safety at plants nationwide that might be subject to challenges similar to those currently being seen in Japan following the earthquake and tsunami.
3. Which U.S. nuclear power plants share similar design features with the affected Japanese reactor facilities? Do these facilities have design vulnerabilities that should be addressed to ensure their cooling systems do not fail when confronted by stresses including those similar to what we have seen in Japan following the earthquake and tsunami?
4. How comprehensive is the radiation monitoring system in Japan? Would the U.S. take a similar monitoring approach if a serious accident were to occur here? What increased risk is associated with exposure to mixed oxide fuel?
5. Given what has happened at the Japanese facilities, please describe how the NRC currently ensures the safety of spent fuel pools at U.S. facilities and identify additional steps the NRC could take to better address the vulnerabilities of spent fuel pools at plants in the U.S.
6. Has the NRC modeled what could happen if the U.S. had multiple nuclear accidents simultaneously? If so, how would the NRC respond to such a disaster?

Safety is always our number one priority, and therefore it is vital that the NRC immediately evaluate the risks posed to nuclear reactors in the United States. We look forward to working with you to ensure that the nuclear energy industry and NRC regulators are adequately prepared to prevent accidents and to fully address the risks of serious events in the future.

Sincerely yours,

Barbara Boxer
Chairman
Committee on Environment and Public Works

Tom Carper
Chairman
Subcommittee on Clean Air and Nuclear Safety

###

This email was sent from an unmonitored account. For inquiries, please contact the name(s) provided at the top of this release.

From: Powell, Amy
Sent: Thursday, March 17, 2011 2:16 PM
To: Shane, Raeann
Subject: Fw: When he is saying DOE assets for monitoring, is that NNSA or a different DOE entity?. Thanks

Do you know where within DOE?

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Edwards, Isaac (Energy) <Isaac_Edwards@energy.senate.gov>
To: Powell, Amy
Sent: Thu Mar 17 14:12:06 2011
Subject: When he is saying DOE assets for monitoring, is that NNSA or a different DOE entity? Thanks

From: Powell, Amy
Sent: Thursday, March 17, 2011 2:35 PM
To: 'isaac_edwards@energy.senate.gov'
Subject: Re: When he is saying DOE assets for monitoring, is that NNSA or a different DOE entity? Thanks

OK - I hope to have a sense after this.
Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Edwards, Isaac (Energy) <Isaac_Edwards@energy.senate.gov>
To: Powell, Amy
Sent: Thu Mar 17 14:34:18 2011
Subject: RE: When he is saying DOE assets for monitoring, is that NNSA or a different DOE entity? Thanks

Thanks – I had to get off the line for a 2:30 meeting. Let me know if something is possible today, otherwise I'll try to get as much info as I can tomorrow and summarize it for Sen. Murkowski.

From: Powell, Amy [mailto: Amy.Powell@nrc.gov].
Sent: Thursday, March 17, 2011 2:33 PM
To: Edwards, Isaac (Energy)
Subject: Re: When he is saying DOE assets for monitoring, is that NNSA or a different DOE entity? Thanks

I am not at table with him, but I am trying to get that clarified.

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Edwards, Isaac (Energy) <Isaac_Edwards@energy.senate.gov>
To: Powell, Amy
Sent: Thu Mar 17 14:12:06 2011
Subject: When he is saying DOE assets for monitoring, is that NNSA or a different DOE entity? Thanks

From: Powell, Amy
Sent: Thursday, March 17, 2011 3:00 PM
To: Edwards, Isaac (Energy)
Subject: RE: When he is saying DOE assets for monitoring, is that NNSA or a different DOE entity? Thanks

I believe it is the DOE RAP team which is out of NNSA. Still working on a call option...

From: Edwards, Isaac (Energy) [mailto:Isaac_Edwards@energy.senate.gov]
Sent: Thursday, March 17, 2011 2:12 PM
To: Powell, Amy
Subject: When he is saying DOE assets for monitoring, is that NNSA or a different DOE entity? Thanks

From: Powell, Amy
Sent: Thursday, March 17, 2011 3:04 PM
To: Bradford, Anna; Coggins, Angela
Subject: RE: Sen Murkowski, radiation modeling

K - heading to Ops Center for additional guidance. Thanks!

-----Original Message-----

From: Bradford, Anna
Sent: Thursday, March 17, 2011 3:01 PM
To: Powell, Amy; Coggins, Angela
Subject: RE: Sen Murkowski, radiation modeling

I don't know any particular names and neither does Michael. Michael suggests it be someone specifically familiar with this instance and the modeling results that we put out.

Anna Bradford
Policy Advisor for Nuclear Materials
Office of Chairman Jaczko
U.S. Nuclear Regulatory Commission
301-415-1827

-----Original Message-----

From: Powell, Amy
Sent: Thursday, March 17, 2011 2:25 PM
To: Coggins, Angela; Bradford, Anna
Subject: Sen Murkowski, radiation modeling

Anyone you would recommend talking by phone with Sen Murkowski re: how we do modeling for radiation?

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: McDonough, Alexander (Reid) <Alexander_McDonough@reid.senate.gov>
Sent: Thursday, March 17, 2011 3:30 PM
To: Powell, Amy
Subject: RE: can we talk

Perfect, thanks!

Alex McDonough | U.S. Senate Majority Leader Harry Reid

From: Powell, Amy [mailto:Amy.Powell@nrc.gov]
Sent: Thursday, March 17, 2011 3:30 PM
To: McDonough, Alexander (Reid)
Subject: RE: can we talk

Sure – let me get through one more meeting (quick I hope) then I'll call you

From: McDonough, Alexander (Reid) [mailto:Alexander_McDonough@reid.senate.gov]
Sent: Thursday, March 17, 2011 3:04 PM
To: Powell, Amy
Subject: can we talk

When you have a chance? Or please have somebody call who can talk about dry cask storage? Thanks!
202-224-1052

Alex

From: Ordal, Paul (EPW) <Paul_Ordal@epw.senate.gov>
Sent: Thursday, March 17, 2011 3:40 PM
To: Poirier, Bettina (EPW); Powell, Amy
Cc: Dedrick, Kathy (EPW)
Subject: RE: Senate Staff Briefing on Friday - ENR and EPW Committees

Amy,

The invitation was circulated to all Senate offices (Majority and Minority). The briefing will be for Senate staff only. Closed to press and non-Senate staff.

Thanks again for your assistance.

-Paul

From: Poirier, Bettina (EPW)
Sent: Thursday, March 17, 2011 11:01 AM
To: 'Amy.Powell@nrc.gov'; Ordal, Paul (EPW)
Cc: Dedrick, Kathy (EPW)
Subject: Re: Senate Staff Briefing on Friday - ENR and EPW Committees

Thank you. We will let enr know

From: Powell, Amy [mailto:Amy.Powell@nrc.gov]
Sent: Thursday, March 17, 2011 10:26 AM
To: Ordal, Paul (EPW)
Cc: Poirier, Bettina (EPW); Dedrick, Kathy (EPW)
Subject: RE: Senate Staff Briefing on Friday - ENR and EPW Committees

Bill will be there.

Thanks,
Amy

From: Ordal, Paul (EPW) [mailto:Paul_Ordal@epw.senate.gov]
Sent: Wednesday, March 16, 2011 7:29 PM
To: Powell, Amy
Cc: Poirier, Bettina (EPW); Dedrick, Kathy (EPW)
Subject: Senate Staff Briefing on Friday - ENR and EPW Committees

Amy,

Thanks for your assistance today.

The Senate Energy and Natural Resources Committee asked us to host a joint briefing for our LAs about the situation in Japan. They are having Dr. Pete Lyons, Acting Assistant Secretary for Nuclear Energy at DoE come to brief ENR and EPW staff.

We are aiming for 9:30am in Dirksen 406. Would Bill Borchardt be able to come from NRC?

Thanks.

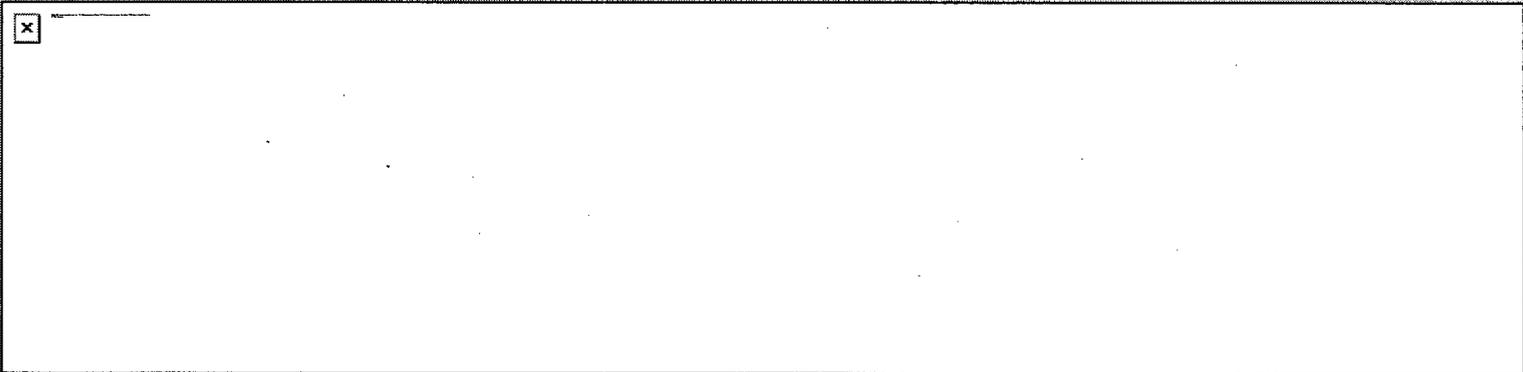
-Paul

Paul M. Ordal
U.S. Senate Committee on Environment and Public Works
Senator Barbara Boxer, Chairman
202-224-8832
202-224-1273 FAX



Please consider the environment before printing this e-mail

From: nuclearcurrents@nei.org
Sent: Thursday, March 17, 2011 6:26 PM
To: Powell, Amy
Subject: Special Edition: Japan Nuclear Situation -- Nuclear Currents: March 17, 2011



Thursday, March 17, 2011

Special Issue: Japan Nuclear Situation

"As we continue to monitor the events in Japan we wanted to focus this week's Nuclear Currents on some of the key statements made on the situation. We also encourage you to visit NEI's special web page – [Information on the Japanese Earthquake and Reactors in the Region](#) – for all the latest updates. We continue to send our heartfelt sympathy to the people of Japan and all those affected by this tragedy."

-Alex Flint,
Senior Vice President, Governmental Affairs

What's Being Said

"The U.S. nuclear industry appears to have learned a thing or two from how the oil and gas industry handled the aftermath of last year's Gulf of Mexico spill. As the drama over a possible nuclear meltdown in Japan continues to unfold, the U.S. nuclear industry has already been credited for being more transparent and aggressive in providing explanations and updates than the petroleum industry was in the early days after the April 20 blowout of BP's Macondo well."

[Nuclear industry learns from BP](#)
Politico, March 16

On the Hill

"Mitch McConnell of Kentucky, the Senate Republican leader, said that the United States should not overreact to the Japanese nuclear crisis by clamping down on the domestic industry indefinitely. 'I don't think right after a major environmental catastrophe is a very good time to be making American domestic policy,' Mr. McConnell said"

[U.S. Nuclear Industry Faces New Uncertainty](#)

NEI's Online Congressional Resource Guide

All the research information and news you need, just a click away:
www.nei.org/112thcongress

On Twitter

5PM Update: Reactor 5/6 generator working, harmful radiation not expected to reach US. More info:
<http://bit.ly/IARVfg>

[Follow Us on Twitter](#)

On NEI's Blog

The nuclear energy industry continues to be concerned about what is going on in Japan and has offered both technical and humanitarian support.

[Read more...](#)

AN/210

The New York Times, March 13

The Administration

President Barack Obama on Tuesday defended the use of nuclear energy despite the calamity in Japan where a nuclear power plant leaked radiation in the wake of a devastating earthquake and tsunami. ... The president said facilities in the U.S. are closely monitored and built to withstand earthquakes, even though nothing's failsafe."

[Obama defends use of nuclear energy despite calamity in Japan](#)

The Washington Post, March 15

"U.S. regulators should press ahead with approving construction licenses for new nuclear power plants despite Japan's nuclear crisis, President Barack Obama's top energy official said on Tuesday. Energy Secretary Steven Chu said lessons could be learned from Japan, where an earthquake-crippled nuclear power plant exploded and blasted radiation into the air, but that was not a reason to delay expansion in the United States."

[US energy chief: don't delay new nuclear plants](#)

Reuters, March 15

Nuclear Education

Please see [NEI's FAQ Sheet regarding the Japanese Nuclear Energy Situation](#)

and [Perspective on Radiation Releases and Emergency Planning at U.S. Nuclear Power Plants](#).

Your questions, comments, suggestions or any additions to the mailing list are welcome. We can be reached at NuclearCurrents@nei.org. We look forward to hearing from you.

For more information, visit www.nei.org.

Nikolaus W. Schoenherr
Legislative Coordinator



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From: Powell, Amy
Sent: Thursday, March 17, 2011 9:10 PM
To: 'Mitchell.Vakerics@mail.house.gov'
Subject: Follow up from NRC

Hi Mitch -

I received your contact info from Sarah Kirkwood in our Office of General Counsel. We have a distribution list re: our updates related to Japan - I've added you to that. We will be doing daily phone briefings as well - if you have not already, you will receive notice of these.

Thanks
Amy

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: McDonough, Alexander (Reid) <Alexander_McDonough@reid.senate.gov>
Sent: Thursday, March 17, 2011 9:11 PM
To: Powell, Amy
Subject: Re: Sorry

No worries. I just got your vm, and I'll try you tomorrow morning.

Alex McDonough | Senate Majority Leader Harry Reid

----- Original Message -----

From: Powell, Amy [mailto:Amy.Powell@nrc.gov]
Sent: Thursday, March 17, 2011 08:52 PM
To: McDonough, Alexander (Reid)
Subject: Sorry

Just left you a VM - I am so sorry. Mtgs multiplied on me this afternoon/evening. I'm in tomorrow at least until noon so give a call; I'll try you too.

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Belmore, Nancy
Sent: Friday, March 18, 2011 8:20 AM
To: OCA Distribution
Subject: Office Meeting is now scheduled for 2:30 this afternoon

Nancy Belmore
Office of Congressional Affairs
U.S. Nuclear Regulatory Commission
nancy.belmore@nrc.gov
301-415-1776

From: McDonough, Alexander (Reid) <Alexander_McDonough@reid.senate.gov>
Sent: Friday, March 18, 2011 9:41 AM
To: Powell, Amy
Subject: Re: Sorry

Amy, I still plan to call but do you have any info you can share about the condition/performance of the dry cask storage facility at Fukushima.

Alex McDonough | Senate Majority Leader Harry Reid

----- Original Message -----

From: Powell, Amy [mailto: Amy.Powell@nrc.gov]
Sent: Thursday, March 17, 2011 08:52 PM
To: McDonough, Alexander (Reid)
Subject: Sorry

Just left you a VM - I am so sorry. Mtgs multiplied on me this afternoon/evening. I'm in tomorrow at least until noon so give a call; I'll try you too.

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Powell, Amy
Sent: Friday, March 18, 2011 11:32 AM
To: Loyd, Susan
Cc: Schmidt, Rebecca; Decker, David
Subject: FW: Prepared text of NRC Chairman Jaczko's oral statement
Attachments: FINAL - GBJ oral statement 031611 .docx

Susan –

Attached is the prepared text for his oral statement on Wednesday. David Decker (cc'ed here) worked with the transcript that Eliot got to pull out his exact words from the House E&C hearing. I will forward that to you in a separate e-mail.

Amy

From: Powell, Amy
Sent: Tuesday, March 15, 2011 10:40 PM
To: Brenner, Eliot; Loyd, Susan
Cc: Schmidt, Rebecca; Batkin, Joshua
Subject: FW: Prepared text of NRC Chairman Jaczko's oral statement

Should have had you on here – sorry.

E – I ran out a “big print” version for GBJ for easy reading at the table that I’ll bring tomorrow.

From: Powell, Amy
Sent: Tuesday, March 15, 2011 10:04 PM
To: Sharkey, Jeffrey; Bubar, Patrice; Sosa, Belkys; Nieh, Ho; Batkin, Joshua
Cc: Coggins, Angela; Schmidt, Rebecca
Subject: Prepared text of NRC Chairman Jaczko's oral statement

Hi all –

Attached is the prepared text for Chairman Jaczko's oral statement tomorrow at the House Energy and Commerce subcommittees' hearing. We will work from the same text to open the Senate EPW public briefing that afternoon.

Amy

Amy Powell
Associate Director
U. S. Nuclear Regulatory Commission
Office of Congressional Affairs
Phone: 301-415-1673

STATEMENT
BY GREGORY B. JACZKO, CHAIRMAN
UNITED STATES NUCLEAR REGULATORY COMMISSION
TO THE
HOUSE COMMITTEE ON ENERGY AND COMMERCE
SUBCOMMITTEES ON ENERGY AND POWER, ENVIRONMENT AND THE ECONOMY
MARCH 16, 2011

Mr. Chairmen, Ranking Members Rush and Green, and Members of the Subcommittees, I am honored to appear before you today on behalf of the U.S. Nuclear Regulatory Commission. Given the events that are unfolding overseas, my opening remarks will focus on the crisis in Japan, and I have additional information on the Fiscal Year 2012 budget that I have submitted for the record.

I would first like to offer my condolences to all those affected by the earthquake and tsunami in Japan over the last few days. My heart goes out to those who have been dealing with the aftermath of these natural disasters.

I want to publicly acknowledge the tireless efforts, professionalism and dedication of the NRC staff in reacting to the events in Japan. This is just another example from my 6 ½ years on the Commission of the dedication of the NRC staff to the mission of protection of public health and safety. The American people can be proud of the commitment and dedication within the Federal workforce, exemplified by our staff every day.

While the NRC regulates the safe and secure commercial uses of radioactive materials in the United States, we also interact with nuclear regulators from around the world. Since Friday, the NRC's headquarters Operations Center has been operating on a 24-hour basis to monitor events unfolding at nuclear power plants in Japan. Since the earthquake hit northeastern Japan last Friday, some reactors at the Fukushima No. 1 plant have lost their cooling functions, leading to hydrogen explosions and rises in radiation levels. Two NRC experts on boiling-water reactors have already been deployed to Japan as part of a U.S. International Agency for International Development team, and they are currently in Tokyo. Since then, the Japanese government has formally asked for assistance from the United States as it continues to respond to the situation. Another NRC team is scheduled to land today.

Within the U.S., the NRC has been coordinating its efforts with other Federal agencies as part of the government response to the situation. This includes monitoring radioactive releases and predicting their path. Given the thousands of miles between Japan and the United States, Hawaii, Alaska, the U.S. Territories and the West Coast are not expected to experience any harmful levels of radioactivity.

Examining all available information is part of the effort to analyze the event and understand its implications both for Japan and the United States. The NRC has been working with several agencies to assess recent seismic research for the central and eastern part of the

country. That work continues to indicate that the U. S. public remains safe; we will continue to work to maintain that level of protection.

U.S. nuclear power plants are built to withstand environmental hazards, including earthquakes and tsunamis. Even those plants located outside of areas with extensive seismic activity are designed for safety in the event of such a natural disaster. The NRC requires that safety-significant structures, systems, and components be designed to take into account the most severe natural phenomena historically reported for the site and surrounding area. The NRC then adds a margin for error to account for the historical data's accuracy. This means that U.S. nuclear power plants are designed to be safe based on historical data from the area's maximum credible earthquake.

The NRC remains attentive to any information that can be applied to U.S. reactors. Our focus is always on keeping plants in this country safe and secure. As this immediate crisis in Japan comes to an end, we will look at whatever information we can gain from the event and see if there are changes we need to make to our own system. Within the next few days, I intend to meet with my colleagues on the Commission on the current status and to begin a discussion of how we will systematically and methodically review information from the events in Japan. In the meantime, we continue to oversee and monitor plants to ensure that U. S. reactors remain safe.

The NRC will continue to monitor the situation and provide updates via press releases and our public blog. The NRC also stands ready to offer further technical assistance as needed. We hope that this situation will be resolved soon so that Japan can begin to recover from this terrible tragedy.

From: Powell, Amy
Sent: Friday, March 18, 2011 12:19 PM
To: Batkin, Joshua; Schmidt, Rebecca
Cc: Coggins, Angela
Subject: FW: Markey letter to the Chairman
Attachments: 03-18-11EJMtoNRCworstcase.pdf

From: Freedhoff, Michal [mailto:Michal.Freedhoff@mail.house.gov]
Sent: Friday, March 18, 2011 10:28 AM
To: Decker, David; Weil, Jenny; Powell, Amy
Subject: Markey letter to the Chairman

Michal Ilana Freedhoff, Ph.D.
Policy Director
Office of Congressman Edward J. Markey (D-MA)
2108 Rayburn House Office Building
Washington, DC 20515
202-225-2836

Congress of the United States
House of Representatives
Washington, DC 20515-2107

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(508) 875-2900<http://markey.house.gov>

March 18, 2011

The Honorable Greg Jaczko
Chairman
Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, MD 20852

Dear Chairman Jaczko:

I write to request information regarding the Nuclear Regulatory Commission's (NRC's) current assessments of damage as well as an assessment of the potential worst-case consequences associated with the current nuclear emergency in Japan. As reports have noted, there has been some conflicting information regarding the status of the meltdowns and condition of the spent nuclear fuel ponds at the Fukushima Daiichi nuclear power plant.

As you know, focus of late has shifted to two questions: First, whether containment has been breached at any of the units, and second, whether there remains water (and if so how much) in the spent nuclear fuel ponds, especially in units 3 and 4. However, conflicting information is being provided by different parties.

For example, in your testimony in front of the House Energy and Commerce Committee on Wednesday, you indicated, with regard to unit 4, that you believed that "There is no water in the spent fuel pool and we believe that radiation levels are extremely high, which could possibly impact the ability to take corrective measures."

Following your statement, representatives from Tokyo Electric Power Company (TEPCO), the plant's operator stated that "We can't get inside to check, but we've been carefully watching the building's environs, and there has not been any particular problem," Hajime Motojuku, a spokesman for Tokyo Electric, said Thursday morning in Japan. After that, a spokesman for Japan's Nuclear and Industrial Safety Agency (NISA) said that, "Because we have been unable to go to the scene, we cannot confirm whether there is water left or not in the spent fuel pool at Reactor No. 4."¹ Later that evening, a press release issued by the Nuclear Energy Institute (NEI) stated that both TEPCO and NISA had refuted your statement, and that the spokesmen had stated that "the situation at

¹ <http://www.nytimes.com/2011/03/18/world/asia/18nuclear.html?pagewanted=2&hp>

Unit 4 has changed little during the day today and water remained in the fuel pool. However, both officials said that the reactor had not been inspected in recent hours.”²

A similar situation exists with respect to the extent of damage to the containment structures of units 2 and 3. Numerous press reports have speculated that the hydrogen explosions experienced at these units may have created a path for radioactive materials to escape containment. One of these reports³ states that officials have concluded that “the chambers surrounding units 2 and 3 now have been cracked, allowing radiation to escape.” During a conference call on March 17 with Congressional staff, NRC staff indicated that the NRC believes that there has been a breach in or damage to the primary and/or secondary containment structures in units 1, 2 and 3. Yet earlier that day, the NEI released a statement⁴ that said (in part), on the Fukushima Daiichi plant, that:

“The reactors at the Fukushima Daiichi plant are in stable condition and are being cooled with seawater, but workers at the plant continue efforts to add cooling water to fuel pools at reactors 3 and 4.... Reactor 2 is in stable condition with seawater injection continuing. The reactor’s primary containment may not have been breached, Tokyo Electric Power Co. and World Association of Nuclear Operators officials said on Thursday. Containment pressure is at 65 psig, an indication that containment has not been breached. Access problems at the site have delayed connection of a temporary cable to restore offsite electricity. The connection will provide power to the control rod drive pump, instrumentation, batteries, and power to the control room. Power has not been available at the site since the earthquake on March 11. Reactor 3 is in stable condition with seawater injection continuing. The primary containment is believed to be intact. Pressure in the containment has fluctuated due to venting of the reactor containment structure, but has been as high as 83 psig.”

The information that is being received on a daily basis by Congress is currently limited to daily emails from the State Department, which contains some information related to the nuclear crisis in addition to the earthquake and tsunami relief and consular information provided. This is supplemented by multiple daily emails from the NEI, which as the principal trade association for manufacturers of nuclear power-plants, equipment, nuclear fuel, and owners of utilities which own nuclear plants (including Tokyo Electric Power, which owns the Fukushima Daiichi plants), has a clear vested interest in providing a highly optimistic assessment of the situation.

Now that NRC staff is on the ground in Japan, it is my hope that it will be able to add to the information that is currently being provided to Congress and the public on a daily basis. While I appreciate the daily conference calls your staff has begun to hold, I

² NEI’s **Update 9:00pm March 16** Information on the Japanese Earthquake and Reactors in that Region

³ <http://www.voanews.com/english/news/asia/IAEA-Chief-Heads-to-Japan-to-Assess-Nuclear-Crisis-118105754.html>

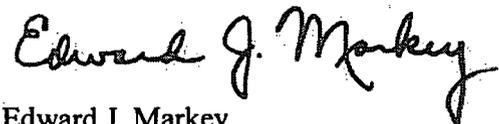
⁴ NEI’s Update 11:45am March 17 Information on the Japanese Earthquake and Reactors in that Region

believe that it is vitally important to all those who may be considering leaving the vicinity of the impacted reactors to be receiving accurate and unbiased written assessment of current conditions. It is also important that the American public fully understand the potential magnitude and timing associated with a worst-case core melt-down and radiation release or spent fuel fire. Members of Congress must also be kept similarly informed so that they can assist any of their constituents who may have family members currently in the impacted areas and so that they can continue their oversight efforts in assuring the safety of our domestic nuclear reactors. Consequently, I ask for your prompt response to the following questions:

- 1) I request that you please begin to provide Congress and the public with a daily "situation report" or other similar document that contains your staff's assessment of the conditions at the impacted reactors, the radiation readings at each unit, the status of efforts to halt the melt-downs and radiation releases from the spent-fuel storage areas, and any reports of radiation exposures experienced by those working at or located in the vicinity of the impacted reactors.
- 2) Please provide me with your assessment of the worst-case potential consequences (including the total radiation that could be released as well as the possible timing for such an event based on current situational awareness), for each of the Daiichi units regarding
 - a. The loss of water in the spent fuel cooling ponds and subsequent fire and/or release of radiation
 - b. A full core melt-down assuming that no further breaches in containment occur
 - c. A full core melt-down assuming that the containment structures are breached.

Thank you very much for your prompt attention to this matter. Please provide me with your initial response to question 1 by close of business on Monday March 21, 2011 and on an ongoing basis thereafter. Please provide me with your response to question 2 by Friday March 25, 2011. If you have any questions or concerns, please have your staff call Dr. Michal Freedhoff of my staff at 202-225-2836.

Sincerely,



Edward J. Markey

From: Droggitis, Spiros
Sent: Friday, March 18, 2011 12:41 PM
To: Schmidt, Rebecca
Subject: RE: OMG

Cathy is going to France and is not available. Cathy tells me that they have other plans for Dan - like going to Japan. Brian has already given me three days. Have not heard from Eric. I still don't have people signed up for tomorrow and Sunday. You may need to talk to Bill when you get back. Mike or Marty?

-----Original Message-----

From: Schmidt, Rebecca
Sent: Friday, March 18, 2011 12:34 PM
To: Droggitis, Spiros
Subject: OMG

Need to find a reason to swap out Brian. Don't want cathy for other reasons. Her name is out there on other issues. Don't need that to complicate briefings

From: Powell, Amy
Sent: Friday, March 18, 2011 12:47 PM
To: Schmidt, Rebecca
Subject: RE: OMG

Sounds like Greg Dotson, D's staff director.

-----Original Message-----

From: Schmidt, Rebecca
Sent: Friday, March 18, 2011 12:46 PM
To: Powell, Amy
Subject: Re: OMG

Don't know the name of other guy__bald with a goatee

----- Original Message -----

From: Powell, Amy
To: Schmidt, Rebecca; Droggitis, Spiros
Sent: Fri Mar 18 12:44:35 2011
Subject: RE: OMG

Thank goodness... Peter is Upton's O&I guy.

-----Original Message-----

From: Schmidt, Rebecca
Sent: Friday, March 18, 2011 12:40 PM
To: Droggitis, Spiros; Powell, Amy
Subject: Re: OMG

We are still on slide 4. Only 4 staffers--phil barnett, jeff, peter spenser and one other guy. All committee staff.

----- Original Message -----

From: Droggitis, Spiros
To: Schmidt, Rebecca
Sent: Fri Mar 18 12:38:14 2011
Subject: RE: OMG

Was Michal there? Amy wants to know.

-----Original Message-----

From: Schmidt, Rebecca
Sent: Friday, March 18, 2011 12:34 PM
To: Droggitis, Spiros
Subject: OMG

Need to find a reason to swap out Brian. Don't want cathy for other reasons. Her name is out there on other issues.
Don't need that to complicate briefings

From: Riley (OCA), Timothy
Sent: Friday, March 18, 2011 8:01 PM
To: Powell, Amy; Decker, David; Droggitis, Spiros; Dacus, Eugene; Weil, Jenny; Schmidt, Rebecca; Shane, Raeanni
Subject: REGION Distribution list as of 3/18/11

(Must be broken in two: there are 149 contacts on this list)

graham_smith@shelby.senate.gov; michael_chahinian@sessions.senate.gov; lance.seibenhener@mail.house.gov;
perrin_cooke@hagan.senate.gov; kara_weishaar@burr.senate.gov; blair.milligan@mail.house.gov;
carla_campbell@Demint.senate.gov; matt_rimkunas@lgraham.senate.gov; greg.thomas@mail.house.gov;
susie_perezquinn@billnelson.senate.gov; sara_decker@rubio.senate.gov; katharine.troller@mail.house.gov;
michael_chahinian@sessions.senate.gov; jennifer.warren@mail.house.gov; Sarah_Bell@chambliss.senate.gov;
norah.jones@mail.house.gov; jordan.moon@mail.house.gov; eric.love@mail.house.gov;
mark_brunner@warner.senate.gov; kate.macgregor@mail.house.gov; vanessa.cox@mail.house.gov;
lauren.williams@mail.house.gov; richard.vaughn@mail.house.gov; kate.roetzer@mail.house.gov;
hannah.walker@mail.house.gov; david.dailey@mail.house.gov; coby.dolan@mail.house.gov;
joshua.salpeter@mail.house.gov; keenan.austin@mail.house.gov; miguel.mendoza@mail.house.gov;
Michael_Quiello@isakson.senate.gov; david_dudik@corker.senate.gov; kara.allen@mail.house.gov;
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marylouise_wagner@levin.senate.gov; chris_adamo@stabenow.senate.gov; eldon_boes@harkin.senate.gov;
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seth.appleton@mail.house.gov; chris.brown@mail.house.gov; gary.marble@mail.house.gov;
david_reeploeg@cantwell.senate.gov; jaimie_shimek@murray.senate.gov; brianne.miller@mail.house.gov;
theresa_lavery@cornyn.senate.gov; troy_lyons@hutchison.senate.gov; eric.gustafson@mail.house.gov;
matt.johnson@mail.house.gov; erick_lutt@bennelson.senate.gov; alan.feyerherm@mail.house.gov;
bridget_petruczk@boxer.senate.gov; matthew_nelson@feinstein.senate.gov; shelly_abajian@feinstein.senate.gov;
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grant_colvin@bennet.senate.gov; jonathan.asher@mail.house.gov; emily_brunini@cochran.senate.gov;
susan_sweat@wicker.senate.gov; chorton@mail.house.gov; jonathan.birdsong@mail.house.gov;
nick_matiella@mccain.senate.gov; lucy_murfitt@kyl.senate.gov; glenn.miller@mail.house.gov;
rich.patrick@mail.house.gov; rachel.dresen@mail.house.gov; sandra.wiseman@mail.house.gov;
shilpa.rajan@mail.house.gov; tanner_johnson@landrieu.senate.gov; Garrett_Eucalitto@lieberman.senate.gov;
ali_nouri@webb.senate.gov; maria.bowie@mail.house.gov; molly.boyl@mail.house.gov;
norman.singleton@mail.house.gov; dave_berick@wyden.senate.gov; nils.tillstrom@mail.house.gov;
andrew.levert@mail.house.gov; mike_seyfert@roberts.senate.gov; aaron_popelka@moran.senate.gov;
joshua.lewis@mail.house.gov; eric.foss@mail.house.gov; lance.seibenhener@mail.house.gov;
tyler_stephens@chambliss.senate.gov; liz_hermsen@casey.senate.gov; richard_morgan@toomey.senate.gov;
gray_maxwell@cardin.senate.gov; teri_curtis@mikulski.senate.gov; john_jones@schumer.senate.gov;
jon.boughtin@mail.house.gov; danielle_rosengarten@lieberman.senate.gov; john.hollay@mail.house.gov;
mark.copeland@mail.house.gov; hal_connolly@menendez.senate.gov; jeremy_bratt@blumenthal.senate.gov;

lisa_hummon@coons.senate.gov; casey.murphy@mail.house.gov; doug.gramiak@mail.house.gov;
andrea.burgess@mail.house.gov; Michael.lger@mail.house.gov; justin.wein@mail.house.gov;
christopher_gahan@toomey.senate.gov; lauryn.schothorst@mail.house.gov; patrick_woodcock@snowe.senate.gov;
amy_carroll@collins.senate.gov; chellie.pingree@mail.house.gov; Bret.Kupfer@mail.house.gov;
john.buttarazzi@mail.house.gov; cate.benedetti@mail.house.gov; daniel_diorio@scottbrown.senate.gov;
karena_neubauer@kerry.senate.gov; mira.resnick@mail.house.gov; Trent_bauserman@shaheen.senate.gov;
john_easton@ayotte.senate.gov; kate.lynch@mail.house.gov; patrick.rothwell@mail.house.gov;
jake.kuhns@mail.house.gov; ali_peterson@leahy.senate.gov; mary.sprayregen@mail.house.gov;
blair.anderson@mail.house.gov; helen.dwight@mail.house.gov;

From: Powell, Amy
Sent: Friday, March 18, 2011 8:09 PM
To: Rhinehart Van Tassell, Melanie
Subject: Press release from NRC today
Attachments: 11-052.pdf

FYI, this is a press release that we issued today that may be helpful.

Also, our Web site at www.nrc.gov – on the home page – has a few links that may be helpful:

- Chairman Jaczko's testimony in front of joint House E&C subcommittees on Wednesday
- a link to docs related to NRC's Actions on Japan (includes all press releases since the Japanese events began)

I hope these help.

Amy

Amy Powell
Associate Director
U. S. Nuclear Regulatory Commission
Office of Congressional Affairs
Phone: 301-415-1673

From: Powell, Amy
Sent: Friday, March 18, 2011 8:11 PM
To: Schmidt, Rebecca; Droggitis, Spiros
Subject: Japan events link on NRC web site

Had not had a chance to see this – had you all? <http://www.nrc.gov/japan/japan-info.html>

Probably would not sate the Hill, but good to know it is out there.

Amy Powell
Associate Director
U. S. Nuclear Regulatory Commission
Office of Congressional Affairs
Phone: 301-415-1673

From: Schmidt, Rebecca
Sent: Friday, March 18, 2011 8:26 PM
To: Powell, Amy
Subject: Re: Call with House T&I re: possible hearing

I don't think so

From: Powell, Amy
To: Schmidt, Rebecca
Sent: Fri Mar 18 20:22:24 2011
Subject: FW: Call with House T&I re: possible hearing

Did this get turned off by David? Last I talked with him, he said "yeah the staff understands but wants NRC..."

From: Decker, David
Sent: Friday, March 18, 2011 11:43 AM
To: Powell, Amy
Cc: Schmidt, Rebecca; Belmore, Nancy; Riley (OCA), Timothy
Subject: RE: Call with House T&I re: possible hearing

I just spoke with Joanna from the subcommittee and she said their subcommittee (which oversees FEMA) was planning for their first hearing of the year. She said the first hearing is normally a broad overview of how FEMA is doing leading domestic preparedness and response to disasters. They plan to do that again, and are looking at Wednesday, March 30th at 10am for the hearing. There is nothing yet up on the committee/subcommittee web-site about the hearing that I saw.

The hearing will be comprised of two panels with the first panel being the head of FEMA and the Deputy Chief of the US Forest Service. Given everything going on in Japan they would like an NRC witness to provide info about the NRCs Emergency and Preparedness program for nuclear reactors. The second panel will be state and local officials.

From: Powell, Amy
Sent: Friday, March 18, 2011 10:23 AM
To: Decker, David
Cc: Schmidt, Rebecca; Belmore, Nancy
Subject: Call with House T&I re: possible hearing

David –

Would you please call this staffer back and learn what they are looking for from NRC and when a hearing would be?

Thanks,
Amy

From: Belmore, Nancy
Sent: Friday, March 18, 2011 9:54 AM
To: Powell, Amy
Cc: Schmidt, Rebecca
Subject: Return call

Joanna Hardy

House Transportation and Infrastructure Sub on Emergency Mgmt

202-225-3014

They are going to schedule a hearing on emergency response and would like a witness from NRC

Nancy Belmore

Office of Congressional Affairs

U.S. Nuclear Regulatory Commission

nancy.belmore@nrc.gov

301-415-1776

From: Schmidt, Rebecca
Sent: Friday, March 18, 2011 8:28 PM
To: Batkin, Joshua; Coggins, Angela
Cc: Powell, Amy; Droggitis, Spiros
Subject: Fw: Call with House T&I re: possible hearing

Here is another one. I will try to turn this one off

From: Decker, David
To: Schmidt, Rebecca
Sent: Fri Mar 18 11:50:55 2011
Subject: RE: Call with House T&I re: possible hearing

Yes – what they said they are looking for from NRC is to be ready to talk about what we've done to plan for, and respond to, a "major disaster".

From: Schmidt, Rebecca
Sent: Friday, March 18, 2011 11:45 AM
To: Decker, David; Powell, Amy
Cc: Belmore, Nancy; Riley (OCA), Timothy
Subject: Re: Call with House T&I re: possible hearing

Did she know that FEMA has primary responsibility

From: Decker, David
To: Powell, Amy
Cc: Schmidt, Rebecca; Belmore, Nancy; Riley (OCA), Timothy
Sent: Fri Mar 18 11:43:24 2011
Subject: RE: Call with House T&I re: possible hearing

I just spoke with Joanna from the subcommittee and she said their subcommittee (which oversees FEMA) was planning for their first hearing of the year. She said the first hearing is normally a broad overview of how FEMA is doing leading domestic preparedness and response to disasters. They plan to do that again, and are looking at Wednesday, March 30th at 10am for the hearing. There is nothing yet up on the committee/subcommittee web-site about the hearing that I saw.

The hearing will be comprised of two panels with the first panel being the head of FEMA and the Deputy Chief of the US Forest Service. Given everything going on in Japan they would like an NRC witness to provide info about the NRC's Emergency and Preparedness program for nuclear reactors. The second panel will be state and local officials.

From: Powell, Amy
Sent: Friday, March 18, 2011 10:23 AM
To: Decker, David
Cc: Schmidt, Rebecca; Belmore, Nancy
Subject: Call with House T&I re: possible hearing

David –

Would you please call this staffer back and learn what they are looking for from NRC and when a hearing would be?

Thanks,
Amy

From: Belmore, Nancy
Sent: Friday, March 18, 2011 9:54 AM
To: Powell, Amy
Cc: Schmidt, Rebecca
Subject: Return call

Joanna Hardy
House Transportation and Infrastructure Sub on Emergency Mgmt
202-225-3014
They are going to schedule a hearing on emergency response and would like a witness from NRC

Nancy Belmore
Office of Congressional Affairs
U.S. Nuclear Regulatory Commission
nancy.belmore@nrc.gov
301-415-1776

From: Powell, Amy
Sent: Friday, March 18, 2011 8:34 PM
To: Shane, Raeann
Subject: Radiation question from Rep. Burgess' staff

Would you please get in touch with James next Monday (or write him Sunday from Ops Center)?

Thanks
AP

From: Decker, James [mailto:James.Decker@mail.house.gov]
Sent: Thursday, March 17, 2011 3:43 PM
To: Powell, Amy
Subject: Follow-up from Hearing

Amy – thank you very much for facilitating the call between my boss and Chairman Jaczko Tuesday before the hearing. My boss asked me to reach out to you and see if the NRC has a position on the news stories surfacing now about people deboarding planes from Japan and testing positive for radiation. Does the NRC have any resources for this? Thank you for your help!

-James.
James Decker
Senior Legislative Counsel
Congressman Michael C. Burgess, M.D. (TX-26)
2241 Rayburn House Office Building
(202) 225-7772

From: Powell, Amy
Sent: Friday, March 18, 2011 9:15 PM
To: Edwards, Isaac (Energy)
Subject: RE: radiation tracking

I'm on travel to CA next week, but I've asked Raeann in our office to call you. She is a health physicist by training and will be on with the Ops Center this weekend (Sunday) for any updates. Sorry the briefing (and sounds like other interactions) did not get you what you needed.

From: Edwards, Isaac (Energy) [mailto:Isaac_Edwards@energy.senate.gov]
Sent: Friday, March 18, 2011 9:01 PM
To: Powell, Amy
Subject: Re: radiation tracking

Other than the EPA's Radnet, nobody seems willing to provide much info on what assets are available to track any radiation. Not very comforting or satisfying if that is what NNSA is using to develop a model.

From: Powell, Amy [mailto:Amy.Powell@nrc.gov]
Sent: Friday, March 18, 2011 08:36 PM
To: Edwards, Isaac (Energy)
Subject: RE: radiation tracking

Did you get what you needed from our briefing this morning?

From: Edwards, Isaac (Energy) [mailto:Isaac_Edwards@energy.senate.gov]
Sent: Thursday, March 17, 2011 10:49 AM
To: Powell, Amy; 'clarence.bishop@nnsa.doe.gov'
Subject: radiation tracking
Importance: High

Amy, Clarence – Sen. Murkowski has asked me to set up a briefing for her with the agencies who can best track any radiation plume coming from Japan. The New York Times has an article that says the plume will reach the Aleutians in Alaska sometime today (<http://www.nytimes.com/2011/03/17/science/17plume.html>) albeit in non-harmful amounts. As a result, the sooner this briefing can be done the better. Understanding that any amounts to reach the U.S. will likely be minimal, Sen. Murkowski wants a better understanding of how we are tracking it and whether the public is able to track it as well.

Thanks
Isaac

From: Schmidt, Rebecca
Sent: Friday, March 18, 2011 9:21 PM
To: Powell, Amy; Shane, Raeann
Cc: Droggitis, Spiros
Subject: Re: Sen. Murkowski's staff, radiation tracking

Didn't see him

From: Powell, Amy
To: Schmidt, Rebecca; Shane, Raeann
Cc: Droggitis, Spiros
Sent: Fri Mar 18 21:12:12 2011
Subject: Sen. Murkowski's staff, radiation tracking

Background: the end point of my chats with Isaac about this request was that Sen. Murkowski would talk to NNSA (fed lead per Weber), then Isaac would come to the DOE/NRC briefing with ENR and EPW briefing Fri am. From this response, unclear if he was even there this am – Becky, did you see him? Raeann, Isaac's direct line is (202) 224-7545 for any follow-up. It takes a lot to frustrate him, so this is a bit of a barometer check on this issue if he is there.

AP

From: Edwards, Isaac (Energy) [mailto:Isaac_Edwards@energy.senate.gov]
Sent: Friday, March 18, 2011 9:01 PM
To: Powell, Amy
Subject: Re: radiation tracking

Other than the EPA's Radnet, nobody seems willing to provide much info on what assets are available to track any radiation. Not very comforting or satisfying if that is what NNSA is using to develop a model.

From: Powell, Amy [mailto:Amy.Powell@nrc.gov]
Sent: Friday, March 18, 2011 08:36 PM
To: Edwards, Isaac (Energy)
Subject: RE: radiation tracking

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From: Edwards, Isaac (Energy) [mailto:Isaac_Edwards@energy.senate.gov]
Sent: Thursday, March 17, 2011 10:49 AM
To: Powell, Amy; 'clarence.bishop@nnsa.doe.gov'
Subject: radiation tracking
Importance: High

Amy, Clarence – Sen. Murkowski has asked me to set up a briefing for her with the agencies who can best track any radiation plume coming from Japan. The New York Times has an article that says the plume will reach the Aleutians in Alaska sometime today (<http://www.nytimes.com/2011/03/17/science/17plume.html>) albeit in non-harmful amounts. As a result, the sooner this briefing can be done the better. Understanding that any amounts

to reach the U.S. will likely to be minimal, Sen. Murkowski wants a better understanding of how we are tracking it and whether the public is able to track it as well.

Thanks
Isaac

From: Powell, Amy
Sent: Friday, March 18, 2011 9:28 PM
To: Schmidt, Rebecca
Subject: Re: Appropriators

No he did not. I did follow up to make sure he saw your email and why it's important - should also confirm focus for 3/31 hearing as it could (should) shift similarly...

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

----- Original Message -----

From: Schmidt, Rebecca
To: Powell, Amy
Sent: Fri Mar 18 21:25:13 2011
Subject: Fw: Appropriators

Never heard back from david-did he tell you anything?

----- Original Message -----

From: Schmidt, Rebecca
To: Decker, David
Cc: Powell, Amy
Sent: Fri Mar 18 09:37:41 2011
Subject: Appropriators

David--call milton or jim and ask if they want us to setup a call with appropriations staff about a reprogramming for japan. I know omb is wanting info.

AN/227

From: Decker, James <James.Decker@mail.house.gov>
Sent: Saturday, March 19, 2011 10:17 AM
To: Powell, Amy
Subject: Re: Follow-up from Hearing

Thank you for this, Amy! Have a good trip next week!

-James

From: Powell, Amy <Amy.Powell@nrc.gov>
To: Decker, James
Sent: Fri Mar 18 20:31:07 2011
Subject: RE: Follow-up from Hearing

Hi James –

I am glad that your boss and the Chairman were able to talk before the hearing. I look forward to working with you this session. What a week – I am so sorry that I am just now getting back to you. To answer your question about an NRC position, we don't. We are certainly working with DOE, EPA and others to monitor, model radiation related to Japan. As you have seen in recent press releases from NRC, all the available information continues to indicate Hawaii, Alaska, the U.S. Territories and the U.S. West Coast are not expected to experience any harmful levels of radioactivity. <http://www.nrc.gov/reading-rm/doc-collections/news/2011/11-050.pdf>

I am going to forward your e-mail to my colleague Raeann Shane to get in touch with you next week (I'll be on travel until Thursday). Again, I am sorry for the delay.

Amy

Amy Powell
Associate Director
U. S. Nuclear Regulatory Commission
Office of Congressional Affairs
Phone: 301-415-1673

From: Decker, James [mailto:James.Decker@mail.house.gov]
Sent: Thursday, March 17, 2011 3:43 PM
To: Powell, Amy
Subject: Follow-up from Hearing

Amy – thank you very much for facilitating the call between my boss and Chairman Jaczko Tuesday before the hearing. My boss asked me to reach out to you and see if the NRC has a position on the news stories surfacing now about people deboarding planes from Japan and testing positive for radiation. Does the NRC have any resources for this? Thank you for your help!

-James.
James Decker
Senior Legislative Counsel

Congressman Michael C. Burgess, M.D. (TX-26)
2241 Rayburn House Office Building
(202) 225-7772

From: Schmidt, Rebecca
Sent: Saturday, March 19, 2011 11:57 AM
To: 'Jonathan_Epstein@bingaman.senate.gov'
Subject: Re: Member brief

Thanks

----- Original Message -----

From: Epstein, Jonathan (Bingaman) <Jonathan_Epstein@bingaman.senate.gov>
To: Schmidt, Rebecca; Powell, Amy
Cc: Simon, Bob (Energy) <Bob_Simon@energy.senate.gov>
Sent: Sat Mar 19 11:54:27 2011
Subject: Re: Member brief

Tuesday March 29 most likely 0930

Sent from my BlackBerry Wireless Handheld - please excuse the typos

----- Original Message -----

From: Schmidt, Rebecca [mailto:Rebecca.Schmidt@nrc.gov]
Sent: Saturday, March 19, 2011 11:44 AM
To: Powell, Amy <Amy.Powell@nrc.gov>; Epstein, Jonathan (Bingaman)
Cc: Simon, Bob (Energy)
Subject: Re: Member brief

Jon,
What date?

----- Original Message -----

From: Powell, Amy
To: 'Jonathan_Epstein@bingaman.senate.gov' <Jonathan_Epstein@bingaman.senate.gov>
Cc: 'Bob_Simon@energy.senate.gov' <Bob_Simon@energy.senate.gov>; Schmidt, Rebecca
Sent: Sat Mar 19 11:42:17 2011
Subject: Re: Member brief

Thanks Jon - we're checking dates. Becky (cc'ed) here will be in touch.

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

----- Original Message -----

From: Epstein, Jonathan (Bingaman) <Jonathan_Epstein@bingaman.senate.gov>
To: Powell, Amy
Cc: Simon, Bob (Energy) <Bob_Simon@energy.senate.gov>; Campbell, Abigail (Energy) <Abigail_Campbell@energy.senate.gov>; 'laneje@Hq.Doe.Gov' <laneje@Hq.Doe.Gov>
Sent: Sat Mar 19 08:35:01 2011
Subject: Member brief

Amy - we are planning a member brief in our hearing room and would NRC to brief as part of it, details to follow but right now probably around 0930, Pete Lyon and someone from either UCS or NRDC. JE

Sent from my BlackBerry Wireless Handheld - please excuse the typos

From: Spencer, Peter <Peter.Spencer@mail.house.gov>
Sent: Saturday, March 19, 2011 4:56 PM
To: Powell, Amy
Subject: Re:

got that notice... Will try to

Sent from BlackBerry

----- Original Message -----

From: Powell, Amy <Amy.Powell@nrc.gov>
To: Spencer, Peter
Sent: Sat Mar 19 16:49:19 2011
Subject: Re:

Ah - we're going again tomorrow if you are able to call in.

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

----- Original Message -----

From: Spencer, Peter <Peter.Spencer@mail.house.gov>
To: Powell, Amy
Sent: Sat Mar 19 16:46:54 2011
Subject: Re:

No. Just missed call. FDA used to do transcripts (but I think that was for press calls)

Sent from BlackBerry

----- Original Message -----

From: Powell, Amy <Amy.Powell@nrc.gov>
To: Spencer, Peter
Sent: Sat Mar 19 16:32:20 2011
Subject: Re:

No - no transcript. Was there a point on which you need follow up?

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

----- Original Message -----

From: Spencer, Peter <Peter.Spencer@mail.house.gov>

To: Powell, Amy

Sent: Sat Mar 19 15:39:51 2011

Subject:

Will there be transcripts of conf calls re: japan incident?

Sent from BlackBerry

From: Schmidt, Rebecca
Sent: Sunday, March 20, 2011 9:53 AM
To: Powell, Amy
Cc: Droggitis, Spiros
Subject: RE: Info from CA Briefing 20 March 2011

Eliot just told me Chr on CSPAN at 10

From: Powell, Amy
Sent: Sunday, March 20, 2011 9:51 AM
To: Schmidt, Rebecca; Droggitis, Spiros
Subject: Info from CA Briefing 20 March 2011

Really sorry if this is a rerun, but did not want to assume. Note that new "worst case" dose calcs are being run for US.
Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: LIA01 Hoc
To: Andersen, James; Bates, Andrew; Brenner, Eliot; Bubar, Patrice; Camper, Larry; Castleman, Patrick; Chandrathil, Prema; Cheok, Michael; Dembek, Stephen; Doane, Margaret; Dricks, Victor; Franovich, Mike; Gott, William; Haney, Catherine; Hannah, Roger; Hart, Ken; Hayden, Elizabeth; Hipschman, Thomas; Howell, Linda; Jackson, Donald; Ledford, Joey; Lewis, Robert; Mamish, Nader; Marshall, Michael; Maupin, Cardelia; McConnell, Keith; Miller, Charles; Mitlyng, Viktoria; Moore, Scott; Nease, Rebecca; Nieh, Ho; Orders, William; Powell, Amy; Ramsey, Jack; Reddick, Darani; Reis, Terrence; Riemer, Kenneth; Screnci, Diane; Sheehan, Neil; Snodderly, Michael; Sollenberger, Dennis; Sosa, Belkys; Tschiltz, Michael; Uselding, Lara; Vietti-Cook, Annette; Whitney, James; McKenney, Christopher
Sent: Sun Mar 20 09:15:11 2011
Subject: Info from CA Briefing 20 March 2011

MARCH 20, 2011 0600 EDT

FUKUSHIMA DAI-ICHI

- Units 1, 2, and 3 reactors appear to be in a stable condition with seawater injection continuing.
- Containment integrity is believed to be intact on Units 1, 2, and 3.
- Water continues to be sprayed on the Unit 3 reactor building/spent fuel pool. TEPCO believes the Unit 3 pool can be completely refilled in about 7 more hours. Containment pressure has been reported as "increasing" ... TEPCO is monitoring and assesses that this is consistent with ongoing injection activities. NISA indicated that another release may be needed.
- The Japanese Self Defense Force plans to resume water injection to the Unit 4 spent fuel pool from the ground level today.
- Two diesel generators are running and supplying AC power to Units 5 and 6. A Unit 5 RHR pump, powered by one of the U-6 diesel generators was started and is providing cooling to the Unit 5 spent fuel.
- TEPCO is now installing high voltage cables from a nearby transmission line to Units 1&2. Priority is being given to restoring power to RHR and cooling water pumps. Power is expected to be restored to Unit 1&2 later today. The same kind of cables are planned to be extended to Units 3&4 (perhaps by Monday). DOE Secretary Chu requested update the status of power restoration in advance of his appearance on Sunday morning news programs. The Liaison Team provided an update to DOE.
- Dose rates around Units 3 and 4 are reducing [was 40 rem/hr, now 15 rem/hr]. Dose rates around Units 5 and 6 are 100 mRem/hr. Dose rates near the power block range from 1 to 5 Rem/hr. The site access gate was reading 60 mRem/hr (which is about 4000 feet from the plant). The winds continue to blow from the North West, so the plume is going out to the sea. A dose rate was recorded to be 12 mRem/Hr at a point 20 km inland from the plant. All other dose rates 20 to 40 km from the plant are marginally above background. It was reported that very low levels of radioactive materials were detected in spinach and milk. [Dose rate data provided by industry representatives.]
- Still awaiting results from NARAC on "bounding worst case" source term's potential effects on U.S. Pending these results, NRC's protective measures team has drafted a more realistic worst case source term that is still being evaluated. Forecast meteorological data for the next 48 hours indicate light wind oscillating on-shore during the day and off-shore at night.
- Participated in conference call with NRC Site Team, TEPCO reps, and INPO to discuss installation of the first train of emergency cooling equipment designed by Bechtel. TEPCO raised several issues regarding logistics for transporting this equipment to the site, equipment assembly, training etc. In addition, TEPCO also requested additional items including radiation monitoring equipment, protective gear, etc. We are working to address these issues on a high priority basis.
- No new overhead imagery has been received.

From: McDonough, Alexander (Reid) <Alexander_McDonough@reid.senate.gov>
Sent: Sunday, March 20, 2011 10:23 AM
To: Powell, Amy
Subject: Re: 2 follow-up items

Hi Amy- Thank you very much.

Alex McDonough | Senate Majority Leader Harry Reid

----- Original Message -----

From: Powell, Amy [mailto: Amy.Powell@nrc.gov]
Sent: Sunday, March 20, 2011 07:11 AM
To: McDonough, Alexander (Reid)
Subject: 2 follow-up items

Hi Alex - two quick follow-ups for you:

- 1) I passed the contact in Singapore that you forwarded on to our Reactor Safety Team in the Ops Center. This team has been collecting and vetting offers of assistance and potential assets. I understand that he will be contacted.
- 2) Preliminary visual inspection as of this am (EST) shows no damage to dry cask.

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Clapp, Doug (Appropriations) <Doug_Clapp@appro.senate.gov>
Sent: Sunday, March 20, 2011 11:16 AM
To: Powell, Amy
Subject: RE: Hearing

I'm on a United flight out of Dulles at 12:15. Arrive 3:20. On hearing, I'm thinking Greg and Pete Lyons on first panel followed by someone from NEI and some other NGO type on second panel.

-----Original Message-----

From: Powell, Amy [mailto:Amy.Powell@nrc.gov]
Sent: Sunday, March 20, 2011 11:06 AM
To: Clapp, Doug (Appropriations)
Subject: Re: Hearing

Got it - when do you head West? I arrive SF tomorrow around 4pm PST.

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Clapp, Doug (Appropriations) <Doug_Clapp@appro.senate.gov>
To: Powell, Amy
Sent: Sun Mar 20 11:04:53 2011
Subject: Re: Hearing

Japan and how applying to US.

From: Powell, Amy [mailto:Amy.Powell@nrc.gov]
Sent: Sunday, March 20, 2011 10:59 AM
To: Clapp, Doug (Appropriations)
Subject: Re: Hearing

Must ask the obvious: framed as "budget hearing" or specific to Japan only?

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Clapp, Doug (Appropriations) <Doug_Clapp@appro.senate.gov>
To: Batkin, Joshua; Powell, Amy
Sent: Fri Mar 18 16:59:47 2011
Subject: Hearing

Josh/Amy -

Please don't say anything to anyone, but considering a hearing late in the week of March 28. Imagining rifle shot hearing of Commissioner and Chu/Lyons. Maybe a couple talking heads on second panel. Can you very quietly look at his availability March 30/31? I have not mentioned this to Senator Feinstein. Thanks - Doug

From: Powell, Amy
Sent: Sunday, March 20, 2011 11:20 AM
To: Schmidt, Rebecca
Subject: More re: Sac

This just in from Doug (he included it in an email w/his travel schedule for the CA trip) - note focus is now on Lyons and not Chu:

- "Japan and how applying to US"

- "On hearing, I'm thinking Greg and Pete Lyons on first panel followed by someone from NEI and some other NGO type on second panel."

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

----- Original Message -----

From: Schmidt, Rebecca
To: Powell, Amy
Sent: Sun Mar 20 10:53:22 2011
Subject: Re: Sac

Is it all budget?

----- Original Message -----

From: Powell, Amy
To: Schmidt, Rebecca
Sent: Sun Mar 20 10:46:58 2011
Subject: Re: Sac

He is QUIETLY (ie has not mentioned to the Senator) looking at March 30 or 31 (no time). Wants Chr unless GBJ would want to delegate to another Cmr; asking DOE for Chu. There would be a panel 2, TBD (he did not throw out any names). He reached to Josh directly as well on this re: GBJ availability.

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

----- Original Message -----

From: Schmidt, Rebecca
To: Powell, Amy
Sent: Sun Mar 20 10:39:46 2011
Subject: Sac

Any more info from Doug Clapp about a hearing--still looking at march 30? Panel? Chr?

From: Powell, Amy
Sent: Sunday, March 20, 2011 12:53 PM
To: Schmidt, Rebecca
Subject: I agree completely

We'll trade one problem for another. Shelly applauding these Tues did not help...

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

----- Original Message -----

From: Schmidt, Rebecca
To: Batkin, Joshua; Powell, Amy
Cc: Brenner, Eliot; Loyd, Susan; Coggins, Angela
Sent: Sun Mar 20 12:15:08 2011
Subject: RE: Markey

Unless it is a clean copy, questions will come up about what was redacted

-----Original Message-----

From: Batkin, Joshua
Sent: Sunday, March 20, 2011 12:13 PM
To: Schmidt, Rebecca; Powell, Amy
Cc: Brenner, Eliot; Loyd, Susan; Coggins, Angela
Subject: Re: Markey

He's thinking making a redacted version of the sitreps public. Let's talk.

Joshua C. Batkin
Chief of Staff
Chairman Gregory B. Jaczko
(301) 415-1820

----- Original Message -----

From: Schmidt, Rebecca
To: Batkin, Joshua; Powell, Amy
Sent: Sun Mar 20 10:23:08 2011
Subject: RE: Markey

WE are on the hook to provide something. I talked to Angela about a variety of documents--SITREPs, one page summary Chr gets, talking points from OPA, Liaison team summary, or use public website info. None are ideal. Just hate to develop something else--we have a lot to do now.

-----Original Message-----

From: Batkin, Joshua

Sent: Sunday, March 20, 2011 10:19 AM

To: Schmidt, Rebecca; Powell, Amy

Subject: Markey

Wants our status updates made public?

Joshua C. Batkin

Chief of Staff

Chairman Gregory B. Jaczko

(301) 415-1820

From: Schmidt, Rebecca
Sent: Sunday, March 20, 2011 12:59 PM
To: Powell, Amy
Subject: RE: Summary of consortium meeting 3-19-2011.doc

Don't know

From: Powell, Amy
Sent: Sunday, March 20, 2011 12:52 PM
To: Schmidt, Rebecca
Subject: Re: Summary of consortium meeting 3-19-2011.doc

Thanks - is it public that this mtg happened?

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Schmidt, Rebecca
To: Droggitis, Spiros; Shane, Raeann
Cc: Powell, Amy
Sent: Sun Mar 20 12:28:48 2011
Subject: FW: Summary of consortium meeting 3-19-2011.doc

From: LIA06 Hoc
Sent: Sunday, March 20, 2011 12:26 PM
To: Borchardt, Bill; Johnson, Michael; Leeds, Eric; Haney, Catherine; Wiggins, Jim; Sheron, Brian; Weber, Michael; Virgilio, Martin; RST Communicator; RST01 Hoc; PMT01 Hoc; Miller, Charles; Ordaz, Vonna; Miller, Charles; Burns, Stephen; Doane, Margaret; Mamish, Nader; Batkin, Joshua; Brenner, Eliot; Dyer, Jim; Muessle, Mary; Casto, Chuck; Andersen, James; Schmidt, Rebecca; LIA06 Hoc; LIA08 Hoc
Subject: Summary of consortium meeting 3-19-2011.doc

Attached is a brief summary of yesterday's meeting to attendees and other key stakeholders.

This completes Task Tracker Record #: 1771

TBergman
LT Director

**NRC and “Industry Consortium” Meeting Summary
March 19, 2011**

On March 19, 2011, NRC staff and representatives of the U.S. nuclear industry held a non-public meeting to discuss U.S. Government (USG) and industry support to the Fukushima event in Japan. There was no discussion of regulatory matters with NRC licensees.

Bill Borchardt opened the meeting describing the NRC’s support to Japan in response to the Fukushima event. He described the NRC’s efforts to reach out to other USG agencies with the capability to handle the logistics and project management of the USG response. Bill last requested the industry establish industry-to-industry relationship to provide a coordinated industry effort to respond to the event.

Dr. Lyons (DOE) described the DOE’s on-the-ground support in Japan as about 40 people, mostly involved in measurement activities.

The industry’s activities and concerns were summarized by Bill Webster (INPO). He and others described industry communications and response to the event. Two concerns were expressed:

1. Needed to know which agency in the USG would lead the response.
2. If industry took a more active role, industry needed assurance that, if assistance and material were offered, that it would be used, and that they may need USG assistance in establishing some of the relationships necessary to make that happen. Industry representatives estimated it would be the middle of the week when they would have the framework for their response in place.

At the meeting, the following commitments were made:

1. Establishment of daily call with the NRC ET and the industry consortium, initially set to occur at 10:00am (EST).
2. INPO would provide an industry statement in advance of the March 21, 2011, public Commission Meeting on the Japanese event.
3. A conference call with between the NRC ET and industry consortium to discuss the US government lead agency role and other issues at 1400 (EST) on March 21, 2011.

From: Schmidt, Rebecca
Sent: Sunday, March 20, 2011 1:04 PM
To: Sheron, Brian
Cc: Powell, Amy; Shane, Raeann
Subject: # plants in earthquake zones

Jim Wiggins told me that he thought you had Annie put something together on # of plants within 50 miles from earthquake fault lines. Josh told me that the Chr wanted it prior to the Sunday morning talk shows. Jim thought it was a 3 zone chart. Can you email me a copy of it? Sen Boxer is expecting something and we hope this answers the mail.

From: Powell, Amy
Sent: Sunday, March 20, 2011 8:04 PM
To: Quesenberry, Jeannette
Subject: FW: Media clips for Cmr Apostolakis and Belkys Sosa

J – I am losing track, but I think you might be in first Monday. I did leave the stack of articles on Nancy's counter by the cake, thinking it would get noticed there by either one of you. I did that not to direct it to her but to have it out and obvious. Please take it and copy it if you are the first one to arrive.

Thanks,
Amy

From: Powell, Amy
Sent: Sunday, March 20, 2011 7:55 PM
To: Quesenberry, Jeannette; Belmore, Nancy
Cc: Schmidt, Rebecca
Subject: Media clips for Cmr Apostolakis and Belkys Sosa

Hello –

This is to whoever gets into the office first Monday morning ☺

I left a small stack of news articles related to Sens. Feinstein and Boxer's reactions to events in Japan that need to be copied, organized, and delivered to Cmr. Apostolakis' office Monday morning, ideally before the Commission's 9am meeting. A Post-It note with more details is attached to the stack. Please make sure Becky gets a copy of the materials as well, in case she is asked what was provided.

His office already has bios for both Senators as well as copies of the letters received last week from both Senators, as well as Sen. Boxer's joint letter with Sen. Carper.

Thanks,
Amy

Amy Powell
Associate Director
U. S. Nuclear Regulatory Commission
Office of Congressional Affairs
Phone: 301-415-1673

From: NEIGA@nei.org
Sent: Sunday, March 20, 2011 9:48 PM
To: Powell, Amy
Subject: UPDATE AS OF 8:30 P.M. EDT, SUNDAY, MARCH 20



This update appears on our website here:

<http://nei.cachefly.net/newsandevents/information-on-the-japanese-earthquake-and-reactors-in-that-region/>

UPDATE AS OF 8:30 P.M. EDT, SUNDAY, MARCH 20:

Fukushima Daiichi

Reactors 5 and 6 at the Fukushima Daiichi nuclear power plant are in cold shutdown, the International Atomic Energy Agency reports. This means that the reactors are in a safe mode, with cooling systems stable and under control, and with low temperatures and pressures.

When the quake struck, both reactors had been shut down for inspection and refueling, and had some fuel inside the reactor cores. Tokyo Electric Power Co. has been using a pair of diesel generators at reactor 6 to pump water through the reactors and to their used fuel pools.

An elite firefighting unit sprayed water over the spent fuel pool of reactor 3, Japan's Nuclear and Industrial Safety Agency reported.

Japan's NISA reported that TEPCO early this morning began pumping sea water into the used fuel pool at reactor 2.

The company is checking individual circuits as it prepares to restore offsite electricity to the reactor's main control room, where it will be able to check and monitor plant systems. To restore power to reactors 3 and 4, TEPCO is considering laying power cables to bypass a radiation contaminated area.

The March 11 earthquake was stronger than the Daiichi plant was designed to withstand, the Japan Atomic Industrial Forum reported. Maximum ground acceleration near reactor 3 was 507 centimeters per second squared – more than the plant's design reference values of 449.

Fukushima Daini

All four reactors at Fukushima Daini nuclear power plant are in cold shutdown with normal cooling.

Small amounts of radioactive iodine – less than a third of the safety limit – have been found in tap water in Tokyo and five other areas, the Japanese government reported. Earlier, radiation had been found in milk and spinach in areas near the reactor.

Click [here](#) to unsubscribe



From: Schmidt, Rebecca
Sent: Monday, March 21, 2011 6:09 AM
To: Virgilio, Martin; Weber, Michael; Powell, Amy
Cc: Borchardt, Bill; Wiggins, Jim; FOIA Response.hoc Resource
Subject: Re: USNRC Op Center Updates

I talked to josh yesterday and he was tlking about a redacted SITREP now. I will try to get a decision today

From: Virgilio, Martin
To: Weber, Michael; Powell, Amy; Schmidt, Rebecca
Cc: Borchardt, Bill; Wiggins, Jim; FOIA Response.hoc Resource
Sent: Mon Mar 21 05:29:56 2011
Subject: RE: USNRC Op Center Updates

Thanks, Mike

That would be better approach in that they would probably appreciate short and to the point bullets on one page.

Marty

From: Weber, Michael
Sent: Monday, March 21, 2011 5:06 AM
To: Virgilio, Martin; Powell, Amy; Schmidt, Rebecca
Cc: Borchardt, Bill; Wiggins, Jim; FOIA Response.hoc Resource
Subject: Response- USNRC Op Center Updates

Good morning, Marty. At the end of the day on Friday (1800), the Liaison Team began preparation of a one-page status sheet to be shared daily with the staffers, especially this week during the recess. This one pager would be in lieu of the Sit Rep (OUO and too detailed). Has this been cleared with the Chairman and is it ready for distribution by early afternoon today? It won't head off the quest for more detail, but it should help.

From: Virgilio, Martin
To: Powell, Amy; Schmidt, Rebecca
Cc: Weber, Michael; Borchardt, Bill; Wiggins, Jim
Sent: Mon Mar 21 04:45:34 2011
Subject: USNRC Op Center Updates

Becky/Amy

The Hill staffers participating on the 3 pm calls are now asking questions that are at level of detail beyond the information that our briefers have available to them. I understand that some of the questions asked this past weekend went to a level of detail that required the PMT involvement. Rather than distracting the PMT and RST, I suggest we be prepared to say, " we will have to get back to you."

I discussed this with the Chairman and he is comfortable with this approach. He suggest we consider sharing the NRC Emergency Operations Center Status Updates with the staffers. This is OUO and currently shared with a list of Feds. It is the information that supports the briefers.

I could see expanding the distribution list, but was interested in hearing from you before taking an action.

Marty

From: Droggitis, Spiros
Sent: Monday, March 21, 2011 6:28 AM
To: Powell, Amy
Subject: Re: NRC updates seismic Q&As

Tell me about it. Quite good. Safe trip.

From: Powell, Amy
To: Droggitis, Spiros; Schmidt, Rebecca
Sent: Sun Mar 20 22:24:17 2011
Subject: Re: NRC updates seismic Q&As

Days running together, thus the ref to Fri. Thanks! Hope the show was good!

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Droggitis, Spiros
To: Powell, Amy; Schmidt, Rebecca
Sent: Sun Mar 20 22:21:38 2011
Subject: Re: NRC updates seismic Q&As

It is dated yesterday. My guess is it was posted by the OPA folks at the Ops Center. No advance press release was issued as far as I can tell. I did suggest to Tim that he inform the Hill folks of our Japan link on our website as a good source of info. We'll take a look at all this tomorrow.

From: Powell, Amy
To: Droggitis, Spiros; Schmidt, Rebecca
Sent: Sun Mar 20 20:00:30 2011
Subject: NRC updates seismic Q&As

This is posted in the press releases portion of NRC's public Web site, but I do not recall seeing this Friday. Did it go out? If not, might be good to send out to The List.

NRC POSTS UPDATED SEISMIC QUESTIONS AND ANSWERS

The Nuclear Regulatory Commission has posted a series of updated seismic and tsunami questions and answers on its website. The Q&A provides basic information on earthquakes and tsunamis, details on U.S. nuclear power plant seismic design and an explanation of NRC's recent study on earthquake risk. The document is available at <http://www.nrc.gov/japan/faqs-related-to-japan.pdf>, and other NRC information related to the March 11 earthquake and tsunami is available at <http://www.nrc.gov/japan/japan-info.html>.

From: Powell, Amy
Sent: Monday, March 21, 2011 7:23 AM
To: Schmidt, Rebecca; Rothschild, Trip; Crockett, Steven
Subject: House oversight ltr

I have gotten all the feedback forwarded re: Mr. Issa's letter. His staff and I are tentatively planning to talk by phone this am. Given events in Japan and NRC's involvement, he is more than willing to work with us on time (same with House Science on their ltr). I will let you know how this goes.

Amy

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Powell, Amy
Sent: Monday, March 21, 2011 9:48 AM
To: Riley (OCA), Timothy
Cc: Schmidt, Rebecca; Droggitis, Spiros
Subject: Additions to Japan list

Please add John Ohly (john.ohly@mail.house.gov) and Erin Alexander Erin.Alexander@mail.house.gov to the Japan list (House Oversight and Gov't Reform)

Thanks

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Vakerics, Mitchell <Mitchell.Vakerics@mail.house.gov>
Sent: Monday, March 21, 2011 10:12 AM
To: Powell, Amy
Subject: RE: Follow up from NRC

Thanks Amy! I really appreciate your help here. Are you all just crazy over there?

Mitch

Mitch Vakerics | Legislative Counsel
Congresswoman Renee Ellmers (NC-2) | 202-225-4531 mitchell.vakerics@mail.house.gov | www.ellmers.house.gov

-----Original Message-----

From: Powell, Amy [mailto:Amy.Powell@nrc.gov]
Sent: Thursday, March 17, 2011 9:10 PM
To: Vakerics, Mitchell
Subject: Follow up from NRC

Hi Mitch -

I received your contact info from Sarah Kirkwood in our Office of General Counsel. We have a distribution list re: our updates related to Japan - I've added you to that. We will be doing daily phone briefings as well - if you have not already, you will receive notice of these.

Thanks
Amy

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Couret, Ivonne
Sent: Monday, March 21, 2011 10:27 AM
To: McIntyre, David; Brenner, Eliot; Hayden, Elizabeth; Janbergs, Holly; Harrington, Holly; Screnci, Diane; Sheehan, Neil; Chandrathil, Prema; Mitlyng, Viktoria; Dricks, Victor; Uselding, Lara; Taylor, Robert; Bonaccorso, Amy; Powell, Amy; Schmidt, Rebecca
Subject: NRC Dose Comparison Bar Chart
Attachments: factoid2-lrg.gif; factoid2-lrg.pdf

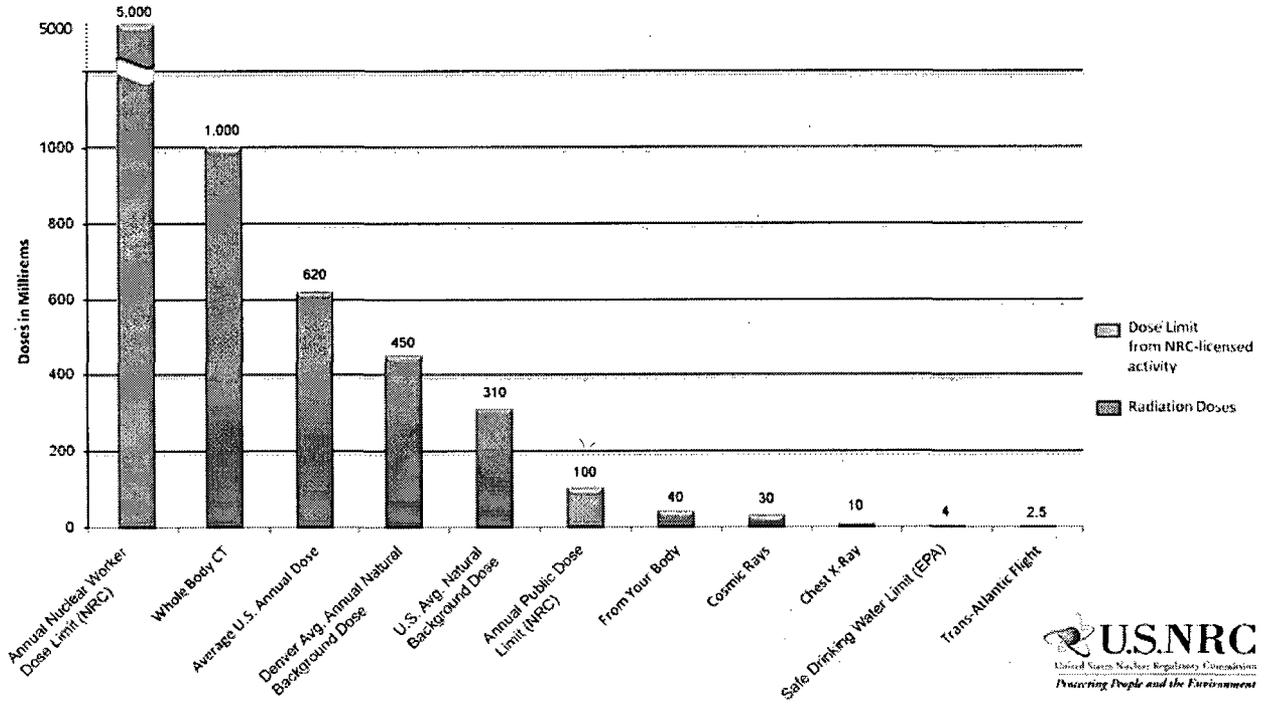
FYI if you need this....

Ivonne L. Couret
Public Affairs Officer
Office of Public Affairs
Media Desk
opa.resource@nrc.gov
301-415-8200

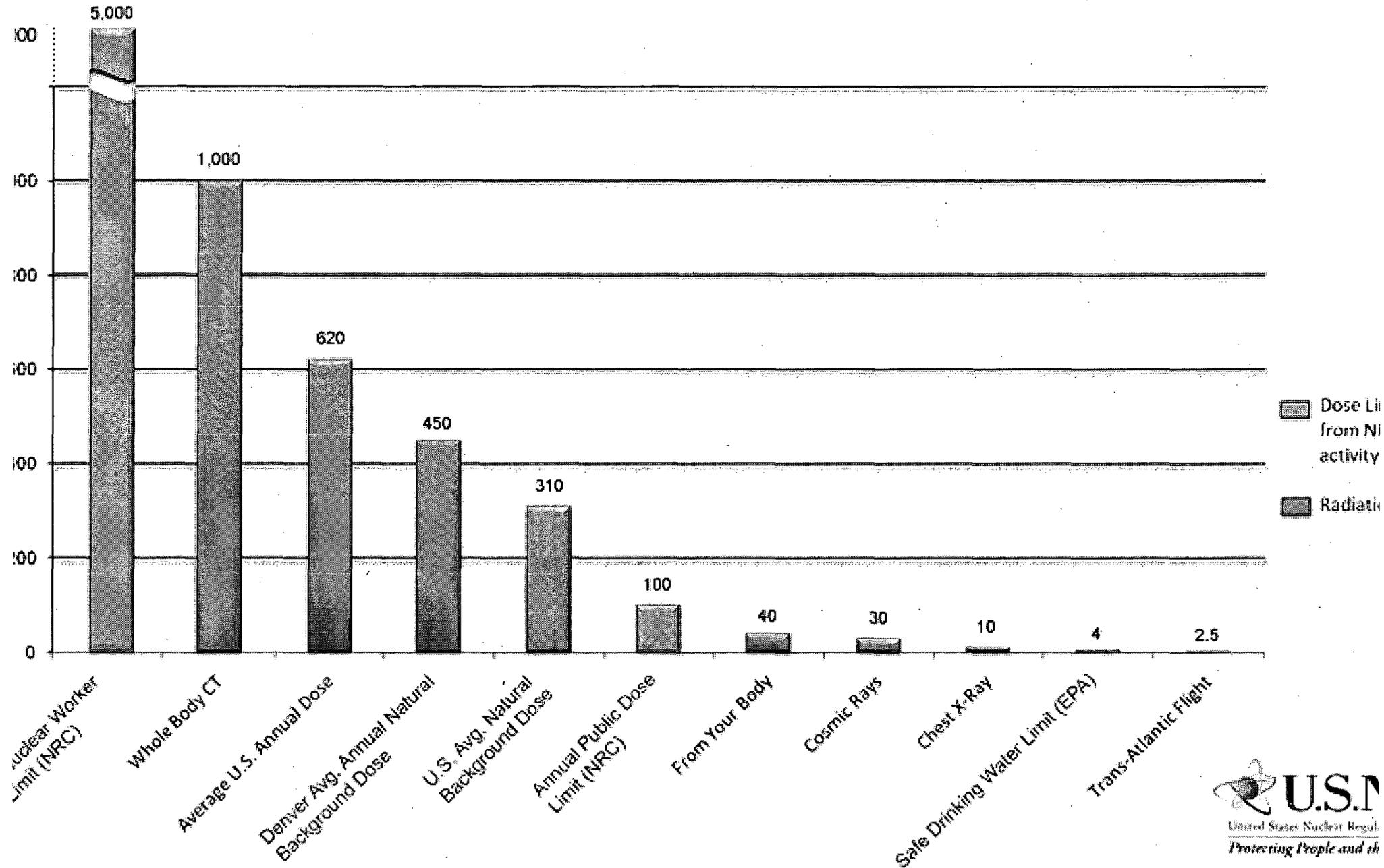
Visit our online photo gallery. Incorporate graphics and photographs to tell your story!
<http://www.nrc.gov/reading-rm/photo-gallery/>

2010-2011 Information Digest - Where you can find NRC Facts at a Glance
<http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1350/>

Radiation Doses and Regulatory Limits (in Millirems)



Radiation Doses and Regulatory Limits (in Millirems)



From: Belmore, Nancy
Sent: Monday, March 21, 2011 12:10 PM
To: Ronewicz, Lynn
Subject: RE: Tomorrow's 10:30 Strategic Acquisition Executive Steering Committee Meeting

OCA's point of contact is on official travel and will be unable to attend.

Nancy Belmore
Office of Congressional Affairs
U.S. Nuclear Regulatory Commission
nancy.belmore@nrc.gov
301-415-1776

From: Ronewicz, Lynn
Sent: Monday, March 21, 2011 12:02 PM
To: Garland, Stephanie; Hasan, Nasreen; Riner, Janet; Hudson, Sharon; Casby, Marcia; Walker, Dwight; Sprogeris, Patricia; Schwarz, Sherry; Cohen, Shari; Salus, Amy; Flory, Shirley; Veltri, Debra; Riddick, Nicole; Boyd, Lena; Crouch, Nicole; Higginbotham, Tina; Ross, Brenda; Thomas, Loretta; Moore, Mary; Daniels, Stanley; Dickey, Karen; Quesenberry, Jeannette; Cooper, Kiona; Matakas, Gina; ODaniell, Cynthia; Miles, Patricia; Lee, Pamela; Dubose, Sheila; Buckley, Patricia; Tomczak, Tammy; Owen, Lucy; Tannenbaum, Anita; Warner, MaryAnn; Belmore, Nancy; Akstulewicz, Brenda; Shannon, Valerie; Valloch, Karen; Penaherrera, Alicia; Mayberry, Theresa; Pulley, Deborah; Joosten, Sandy
Subject: Tomorrow's 10:30 Strategic Acquisition Executive Steering Committee Meeting
Importance: High

All,

Due to the many meetings and activities that have been scheduled in response to the Japan events, we would like to know by 2:00 p.m. today if your staff member is available to attend the Strategic Acquisition Executive Steering Committee meeting scheduled for tomorrow, Tuesday, from 10:30-11:30 a.m. The responses will assist us in determining whether to conduct the meeting or cancel it.

Thank you.

Lynn Ronewicz
Adm. Assistant to K. Greene/S. Stewart
ADM
301-492-3500
Location: TWB05-D33b
Mailstop: TWB05-E19M

From: Shane, Raeann
Sent: Monday, March 21, 2011 12:26 PM
To: Schmidt, Rebecca
Subject: RE: USNRC Op Center Updates

Yes, I'll take this one.

From: Schmidt, Rebecca
Sent: Monday, March 21, 2011 12:17 PM
To: Shane, Raeann
Subject: FW: USNRC Op Center Updates

Are you doing this one?

From: Leeds, Eric
Sent: Monday, March 21, 2011 7:59 AM
To: Virgilio, Martin; Powell, Amy; Schmidt, Rebecca
Cc: Weber, Michael; Borchardt, Bill; Wiggins, Jim
Subject: RE: USNRC Op Center Updates

The Congressional Staff also requested a meeting with the NRC to explain how radiological monitoring during an event would happen in the US – licensee, state and local, DOE (RAP &FRMAC), etc. I believe that OCA took that has an action to facilitate.

Eric J. Leeds, Director
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
301-415-1270

From: Virgilio, Martin
Sent: Monday, March 21, 2011 4:46 AM
To: Powell, Amy; Schmidt, Rebecca
Cc: Weber, Michael; Borchardt, Bill; Wiggins, Jim
Subject: USNRC Op Center Updates

Becky/Amy

The Hill staffers participating on the 3 pm calls are now asking questions that are at level of detail beyond the information that our briefers have available to them. I understand that some of the questions asked this past weekend went to a level of detail that required the PMT involvement. Rather than distracting the PMT and RST, I suggest we be prepared to say, " we will have to get back to you."

I discussed this with the Chairman and he is comfortable with this approach. He suggest we consider sharing the NRC Emergency Operations Center Status Updates with the staffers. This is OUO and currently shared with a list of Feds. It is the information that supports the briefers.

I could see expanding the distribution list, but was interested in hearing from you before taking an action.

Marty

From: Droggitis, Spiros
Sent: Monday, March 21, 2011 12:35 PM
To: OCA Distribution
Subject: FW: Prepared Remarks for Commission Meeting Monday, March 21, 2011
Attachments: 11-054.docx

Just sent this out to Japan distribution

From: Droggitis, Spiros
Sent: Monday, March 21, 2011 12:33 PM
To: Droggitis, Spiros
Subject: Prepared Remarks for Commission Meeting Monday, March 21, 2011

**PREPARED REMARKS FOR COMMISSION MEETING
MONDAY, MARCH 21, 2011**

Good morning. The Commission meets today to discuss the tragic events in Japan and consider possible actions we may take to verify the safety of the nuclear facilities that we regulate in the United States. This meeting will—without a doubt—be one of the most heavily watched meetings in the history of this agency.

People across the country and around the world who have been touched by the magnitude and scale of this disaster are closely following the events in Japan, and the repercussions in this country and in many other countries. I would first like to offer my condolences to all those who have been affected by the earthquake and tsunami in Japan. Our hearts go out to all who have been dealing with the aftermath of these natural disasters, and we are mindful of the long and difficult road they will face in recovering. We know that the people of Japan are resilient and strong, and we have every confidence that they will come through this difficult time and move forward, with resolve, to rebuild their vibrant country.

I believe I speak for all Americans when I say that we stand together with the people of Japan at this most difficult and challenging time. The NRC is a relatively small agency, with approximately 4000 staff, but we play a critical role in protecting the American people and the environment. We have inspectors who work full-time at every nuclear plant in the country, and we are proud to have world-class scientists, engineers and professionals representing nearly every discipline.

Since Friday, March 11, when the earthquake and tsunami struck, the NRC's headquarters Operations Center has been operating on a 24-hour basis to monitor and analyze events at nuclear power plants in Japan. At the request of the Japanese government, and through the United States Agency for International Development (USAID), the NRC sent a team of its technical experts to provide on-the-ground support, and we have been in continual contact with them. And, within the United States, the NRC has been working closely with other Federal agencies as part of our government's response to the situation.

We have a responsibility to the American people to undertake a systematic and methodical review of the safety of our own domestic nuclear facilities, in light of the natural disaster and the resulting nuclear emergency in Japan. Beginning to examine all available

information is an essential part of our effort to analyze the event and understand its impact on Japan and implications for the United States. Our focus is always on keeping plants and radioactive materials in this country safe and secure.

As this immediate crisis in Japan comes to an end, we will look at any information we can gain from the event and see if there are changes we need to make, to further protect the public. Together with my colleagues on the Commission, we will review the current status and identify the steps we will take to conduct that review. In the meantime, we will continue to oversee and monitor plants to ensure that U. S. reactors remain safe.

On behalf of the Commission, I want to thank all of our staff for maintaining their focus on our essential safety and security mission throughout these difficult days. I want to acknowledge their tireless efforts and their critical contributions to the U.S. response to assist Japan. In spite of the evolving situation, the long hours, and the intensity of efforts over the past week, staff has approached their responsibilities with dedication, determination and professionalism, and I am incredibly proud of their efforts.

The American people also can be proud of the commitment and dedication within the Federal workforce, which is exemplified by our staff every day. Before we begin our meeting with Mr. Borchardt's presentation, would any of my fellow Commissioners like to make opening comments?

###

News releases are available through a free *listserv* subscription at the following Web address: <http://www.nrc.gov/public-involve/listserver.html>. The NRC homepage at www.nrc.gov also offers a SUBSCRIBE link. E-mail notifications are sent to subscribers when news releases are posted to NRC's website.



NRC NEWS

U.S. NUCLEAR REGULATORY COMMISSION

Office of Public Affairs Telephone: 301/415-8200

Washington, D.C. 20555-0001

E-mail: opa.resource@nrc.gov Site: www.nrc.gov

Blog: <http://public-blog.nrc-gateway.gov>

No. 11-054

March 21, 2011

PREPARED REMARKS FOR COMMISSION MEETING MONDAY, MARCH 21, 2011

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###

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From: Batkin, Joshua
Sent: Monday, March 21, 2011 2:08 PM
To: Schmidt, Rebecca
Cc: Powell, Amy
Subject: RE: bettina-boxer question on earthquakes

Although we often think of the US as having “active” and “non-active” earthquake zones, earthquakes can actually happen almost anywhere. Seismologists typically separate the US into low, moderate, and high seismicity zones. The NRC requires that every nuclear plant be designed for site-specific ground motions that are appropriate for their locations. In addition, the NRC has specified a minimum ground motion level to which nuclear plants must be designed.

From: Schmidt, Rebecca
Sent: Monday, March 21, 2011 11:04 AM
To: Batkin, Joshua
Cc: Powell, Amy
Subject: bettina-boxer question on earthquakes

This is what I am going to send to her from the volume of info I got from Research. They said they gave this to you on Sunday for the CHR.

The NRC requires every plant to be designed for site-specific ground motions that are appropriate for the location. In addition, we add an additional margin for safety.

Seismologists typically separate the US into low, moderate and high seismicity zones. These zones are open to interpretation but a conservative interpretation—meaning larger zones—would include the following:

Our preliminary estimates include the following:

High Seismicity: Diablo Canyon, SONGS

Moderate Seismicity – Brunswick, Robinson, Summer, Vogtle, Hatch, Clinton, Watts Bar, Sequoya, North Anna

OK?

From: Droggitis, Spiros
Sent: Tuesday, March 22, 2011 2:43 PM
To: Shane, Raeann; Schmidt, Rebecca; Weil, Jenny; Decker, David; Powell, Amy; Riley (OCA), Timothy; Dacus, Eugene
Subject: RE: USAID Call

Good precedent.

From: LIA12 Hoc
Sent: Tuesday, March 22, 2011 2:41 PM
To: Shane, Raeann; Droggitis, Spiros; Schmidt, Rebecca; Weil, Jenny; Decker, David; Powell, Amy; Riley (OCA), Timothy; Dacus, Eugene
Subject: USAID Call

Participated in the daily 2:00 p.m. USAID congressional staff call. Jeff Temple provided update on NRC activities. There were no questions for the NRC. USAID announced that the frequency of the call will be reduced. The next call is scheduled for Thursday.

From: Powell, Amy
Sent: Monday, March 21, 2011 3:09 PM
To: Shane, Raeann
Subject: Re: Radiation question from Rep. Burgess' staff

Thanks once again!

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Shane, Raeann
To: Powell, Amy
Sent: Mon Mar 21 14:44:01 2011
Subject: FW: Radiation question from Rep. Burgess' staff

fyi

From: Shane, Raeann
Sent: Monday, March 21, 2011 2:44 PM
To: 'james.decker@mail.house.gov'
Subject: RE: Radiation question from Rep. Burgess' staff

James:

Amy Powell forwarded me your email as she will be on travel through Wednesday.

U.S. Customs and Border protection is the agency that would monitor planes, etc. I found some information on their website at the link below that may be helpful to you.

http://www.cbp.gov/xp/cgov/newsroom/news_releases/national/03172011_6.xml

Regards,
Raeann

From: Decker, James [mailto:James.Decker@mail.house.gov]
Sent: Thursday, March 17, 2011 3:43 PM
To: Powell, Amy
Subject: Follow-up from Hearing

Amy – thank you very much for facilitating the call between my boss and Chairman Jaczko Tuesday before the hearing. My boss asked me to reach out to you and see if the NRC has a position on the news stories surfacing now about people deboarding planes from Japan and testing positive for radiation. Does the NRC have any resources for this? Thank you for your help!

-James.
James Decker
Senior Legislative Counsel

Congressman Michael C. Burgess, M.D. (TX-26)
2241 Rayburn House Office Building
(202) 225-7772

From: Powell, Amy
Sent: Monday, March 21, 2011 3:15 PM
To: Schmidt, Rebecca
Subject: NEI updates

Do you get these? Healthy blurb about today's Comm

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: NEIGA@nei.org <NEIGA@nei.org>
To: Powell, Amy
Sent: Mon Mar 21 15:10:39 2011
Subject: UPDATE AS OF 1:30 P.M. EDT, MONDAY, MARCH 21



This update appears on our website here:

<http://nei.cachefly.net/newsandevents/information-on-the-japanese-earthquake-and-reactors-in-that-region/>

**UPDATE AS OF 1:30 P.M. EDT, MONDAY, MARCH 21:
Fukushima Daiichi**

Workers were making progress Monday to bring off-site power to the Fukushima Daiichi nuclear plant. External electricity has been connected to reactor 2, and work continued to energize the reactor's cooling systems. Reactors 5 and 6, and the used fuel pools at those reactors, were switched from backup diesel generators to the off-site power supply. Work also continued to establish electric service to reactors 3 and 4.

Spraying seawater into the spent fuel pools of reactors 3 and 4 and providing additional cooling water to fuel pool at reactor 2 continue to be a priority for TEPCO's recovery workers. Water spraying at the Daiichi site's common used fuel pool began Monday morning, the Nuclear and

Industrial Safety Agency said.

Nuclear Regulatory Commission Briefing

Bill Borchardt, the executive director for operations at the U.S. Nuclear Regulatory Commission, briefed the agency's commissioners Monday on the NRC's response to the Fukushima accident in Japan. Slides and prepared remarks are available on the NRC website.

"We have a responsibility to the American people to undertake a systematic and methodical review of the safety of our own domestic nuclear facilities, in light of the natural disaster and the resulting nuclear emergency in Japan," NRC Chairman Gregory Jaczko said at the briefing. "Beginning to examine all available information is an essential part of our effort to analyze the event and understand its impact on Japan and the implications for the United States."

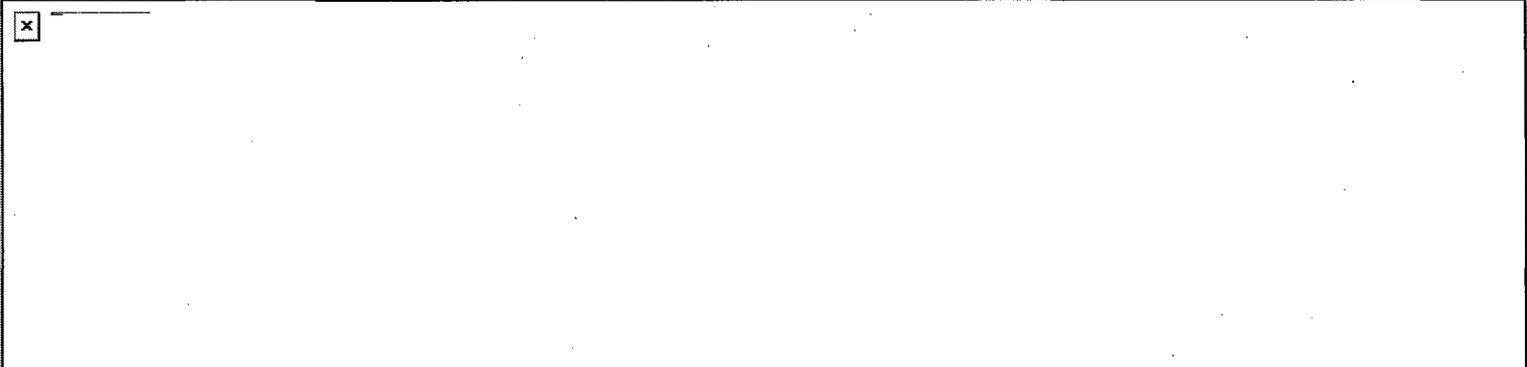
Click [here](#) to unsubscribe



From: Weil, Jenny
Sent: Monday, March 21, 2011 3:24 PM
To: OCA Distribution
Subject: Re: Where to direct questions on offsite emergency planning

If you get any questions on FEMA-related/emergency planning/FEMA/evacuation plans, please send them to Joseph.Anderson@nrc.gov and cc to Lisa.Wright@nrc.gov.

From: nuclearcurrents@nei.org
Sent: Thursday, March 31, 2011 5:47 PM
To: Powell, Amy
Subject: Science, not fear, should drive US energy policy -- Nuclear Currents: March 31, 2011



Thursday, March 31, 2011

Special Section: Japanese Nuclear Incident

We encourage you to visit NEI's special web page – [Information on the Japanese Earthquake and Reactors in the Region](#) – for all the latest updates on the Fukushima nuclear facilities.

What's Being Said

"Behind the gates and security checkpoints [at the Calvert Cliffs nuclear facility], workers express sadness for their counterparts in Japan and a determination to use the disaster to better prepare for a worse-case scenario. Training and procedures are the common refrain. The White House is 54 miles away."

[Band of Brothers: Together in Spirit](#)
The Wall Street Journal, March 25

"The President's plan to reduce America's reliance on imported oil is ambitious, but achievable. It's a great priority for our country, and the President is doing a good thing by focusing the public's attention on ways to make ourselves more secure and control our energy future. It's going to take a lot of concerted effort by Congress and our committee, but the course of action the President set for the country today makes a lot of sense."

[Bingaman on POTUS Outline for Energy Security](#)
United States Senate Committee on Energy and Natural Resources: Press Release, March 30

"Here's a provocative thought from the well-known British environmental activist George Monbiot: The crisis at Fukushima has converted me to the cause of nuclear power. I am no longer nuclear neutral, he wrote in *The Guardian*, where he writes a weekly column, I now support the technology."

[Environmentalist Monbiot Supports Nuclear Power](#)

NEI's Online Congressional Resource Guide

All the research information and news you need, just a click away:
www.nei.org/112thcongress

On Twitter

N_E_I NEI
CNN goes inside Indian Point's nuclear reactor, tours spent fuel pools:
<http://bit.ly/hmzqGt>

[Follow Us on Twitter](#)

On NEI's Blog

The German chancellor, Angela Merkel, has pledged to press ahead with a review of nuclear power's future in Germany after her coalition suffered a "very painful" defeat in a weekend state election

AN/254

National Public Radio, March 29

On The Hill

"Americans haven't experienced this kind of hysteria over nuclear power since the incident at Three Mile Island, in which there were no fatalities and which today safely produces clean energy and provides recreational space. Many hope to capitalize on public fear and build prejudice against the only large-scale, clean-air electricity source available for our future. Science, not fear, should be driving America's energy policies." says Rep. Brian Bilbray (CA-50)

[Nuclear power: Science, not fear, should drive America's energy policies](#)
San Diego Union-Tribune, March 27

"Sen. Dianne Feinstein (D-Calif.), who chairs the Appropriations Committee's energy panel, pressed Nuclear Regulatory Commission Chairman Gregory Jaczko at a hearing on the Japanese reactor disaster. 'It is clear that we lack a comprehensive national policy to address the nuclear fuel cycle,' said Feinstein, chairwoman of the Energy and Water subcommittee."

[Feinstein questions US nuke-fuel safety amid Japanese crisis](#)
The Hill, March 30

In the Nation

"Early on, Dr. Brenner said that Fukushima Daiichi would probably turn out to be similar to the 1979 Three Mile Island accident in the United States, which has never been found to have effects on public health. As conditions deteriorated at the Japanese plant, he said he thought the outcome would be somewhat worse than that at Three Mile Island, but not much worse."

[Countering Radiation Fears With Just the Facts](#)
The New York Times, March 26

"U.S. nuclear regulators on Friday removed a key hurdle facing Southern Co.'s bid to build two nuclear reactors near Augusta, Ga., saying the project doesn't pose environmental risks."

[New Reactors Clear Hurdle Amid Nuclear Review](#)
The Wall Street Journal, March 26

At the NRC

"The batteries that back up power at most U.S. nuclear plants are required to last about as long as the average cellphone battery -- four hours. The Nuclear Regulatory Commission says that's enough. The agency's critics say it's not. And those critics are pointing to the Fukushima Daiichi plant in Japan, which is teetering on the brink of meltdown because it lost power"

[Japan Disaster Raises Questions About Backup Power at U.S. Nuclear Plants](#)
The New York Times, March 24

"The head of the U.S. Nuclear Regulatory Commission met Japanese officials in Tokyo on Monday to assess the battle to contain the crisis at the stricken Fukushima nuclear plant, and offer U.S. support."

[U.S. nuclear regulator meets with Japanese officials](#)
Reuters, March 28

Nuclear Education

"Three weeks after a massive earthquake and tsunami crippled four nuclear reactors in Japan, Americans are displaying only a slight shift in their opinions on nuclear power, a new

dominated by Japan's nuclear crisis.

[Read more...](#)



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NEI is a founding reporter of
The Climate Registry, voluntarily
measuring and publicly reporting our
greenhouse gas emissions each year.

Harris Interactive/HealthDay poll shows. The U.S. public is almost equally divided on whether or not more nuclear power plants should be built on American soil, with 41 percent supporting the idea and 39 percent opposed. This represents only a slight change from three years ago, when 49 percent supported nuclear plants and 32 percent opposed them, according to a new Harris Interactive/HealthDay poll released today."

[Recent Crisis in Japan Has Had Little Impact on Americans' Views on Nuclear Power: Poll](#)
Harris Interactive, March 31

Your questions, comments, suggestions or any additions to the mailing list are welcome. We can be reached at NuclearCurrents@nei.org. We look forward to hearing from you.

For more information, visit www.nei.org.

Nikolaus W. Schoenherr
Legislative Coordinator

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From: Riley (OCA), Timothy
Sent: Monday, March 21, 2011 3:57 PM
To: Powell, Amy; Decker, David; Droggitis, Spiros; Dacus, Eugene; Weil, Jenny; Schmidt, Rebecca; Shane, Raeann
Subject: distribution list updates?

Please send me additional contact information for the Japan distribution list. I will update it shortly and send it out.

From: Leeds, Eric
Sent: Monday, March 21, 2011 4:32 PM
To: Dean, Bill; Lew, David; McCree, Victor; Wert, Leonard; Pederson, Cynthia; West, Steven; Howell, Art; Collins, Elmo
Cc: Johnson, Michael; Wiggins, Jim; Sheron, Brian; Virgilio, Martin; Brenner, Eliot; Hayden, Elizabeth; Schmidt, Rebecca; Powell, Amy; Grobe, Jack; Uhle, Jennifer; Evans, Michele; Holahan, Gary
Subject: FYI: Comm Team Sitrep

FYI – see below. Lots of progress. Lots more to do.

Eric J. Leeds, Director
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
301-415-1270

From: Nelson, Robert
Sent: Monday, March 21, 2011 3:51 PM
To: Leeds, Eric; Boger, Bruce; Glitter, Joseph
Cc: Meighan, Sean; Nguyen, Quynh; Markley, Michael; Oesterle, Eric; Thomas, Eric
Subject: FYI: Comm Team Sitrep

1. The biggest advancement was the public version of Annie Kemmerer's Qs & As. Our team had little to do with this other than to ask for it.
2. We added numerous documents to our NRR internal website: <http://portal.nrc.gov/edo/nrr/default.aspx>. I've communicated this update to our regional POCs.
3. I prepared & forwarded to Eric a recommended communication to all NRR staff regarding that web site. Our staff is hungry for info.
4. We completed our compilation of OBE, SSE, Max Flooding Level and Protection Level for all of the plants based on info in the FSARs. This info is readily available when needed.
5. We'll begin our screening of potentially sensitive licensing actions tomorrow. I'll inform you of the results.
6. We working on some additional Qs & As but we've been impacted by the AP FOIA and did not make as much progress as we had hoped.
7. I've asked OEDO for the file of the EDO's opening remarks from today's meeting. We don't want to wait for the transcript. This is another source of info for Qs & As. No response yet.

NELSON

From: Shane, Raeann
Sent: Monday, March 21, 2011 6:03 PM
To: Schmidt, Rebecca
Cc: Powell, Amy; Droggitis, Spiros; Dacus, Eugene
Subject: radiation modelling briefing

Becky:

I'm trying to decide who to open the briefing on radiation/plume modeling up to. I'm thinking oversight, including Senate Energy and Chris Griffin from Lieberman's office since he was the one who brought it up. I was supposed to talk to Peter Spencer about this tomorrow anyway, maybe this could kill that one too.

What do you think? The plan would be to set up a call this week rather than take somebody down there. Hopefully Don Cool.

Topics to cover:

- How we are getting our information
- How we would be getting our information if this were happening in the US
- What are Protective Action Guidelines and how are they used
- Who (which agency) is in charge of monitoring what
- What went into the calculations in the press release
 - How we would do it differently if the accident were happening in the US
- Contamination in Food/Milk/Water etc and what we would do
- Actions going forward
 - Likely to increase evacuation? Or Back off?

Raeann Shane
Sr. Intergovernmental and External Affairs Officer
Office of Congressional Affairs
U.S. NRC
301-415-1699
rms2@nrc.gov

From: Poirier, Bettina (EPW) <Bettina_Poirier@epw.senate.gov>
Sent: Monday, March 21, 2011 6:04 PM
To: Schmidt, Rebecca; Dedrick, Kathy (EPW)
Cc: Powell, Amy; Batkin, Joshua
Subject: RE: Earthquake info

We are looking for the low seismicity as well as location of each plants.

From: Schmidt, Rebecca [mailto:Rebecca.Schmidt@nrc.gov]
Sent: Monday, March 21, 2011 5:43 PM
To: Dedrick, Kathy (EPW); Poirier, Bettina (EPW)
Cc: Powell, Amy; Batkin, Joshua
Subject: Earthquake info

Press info – I talked to our Director of Public Affairs and will follow up with a call to you.

Earthquake info –

Although we often think of the US as having “active “ and non-active” earthquake zones, earthquakes can actually happen almost anywhere. Seismologists typically separate the US into low, moderate and high seismicity zones. The NRC requires that every nuclear plant be designed for site specific ground motions that are appropriate for their locations. In addition, the NRC has specified a minimum ground motion level to which nuclear plants must be designed. The designation of type of zone is open to interpretation but a conservative interpretation – meaning a larger zone—would include the following preliminary estimates:

High Seismicity—Diablo Canyon, SONGS

Moderate Seismicity – Brunswick, Robinson, Summer, Vogtle, Hatch, Clinton, Watts Bar, Sequoya, North Anna

I do not have a definition of High or Moderate but I wanted to get this to you now

From: NEIGA@nei.org
Sent: Monday, March 21, 2011 7:41 PM
To: Powell, Amy
Subject: UPDATE AS OF 5:40 P.M. EDT, MONDAY, MARCH 21



This update appears on our website here:

<http://nei.cachefly.net/newsandevents/information-on-the-japanese-earthquake-and-reactors-in-that-region/>

The following is our evening update on the Japan reactors. NEI will be providing updates at approximately 9:30 a.m., 1:30 p.m. and 6 p.m. EDT each day.

UPDATE AS OF 5:40 P.M. EDT, MONDAY, MARCH 21:

Japan's NHK broadcasting network reported that Tokyo Electric Power Co. confirmed that the March 11 earthquake and tsunami were beyond the Fukushima Daiichi plant's design standards.

TEPCO believes the tsunami that inundated the Fukushima Daiichi site was 14 meters high, the network said. The design basis tsunami for the site was 5.7 meters, and the reactors and backup power sources were located 10 to 13 meters above sea level. The company reported that the maximum earthquake for which the Fukushima Daiichi plants were designed was magnitude 8. The quake that struck March 11 was magnitude 9.

Smoke seen from Fukushima Daiichi reactor 3 on Monday subsided after about two hours. Water pressure and levels at the reactor were unchanged through the episode, as were radiation levels, the company said.

The site was temporarily cleared of workers after smoke rose from the secondary containment buildings that house reactors 2 and 3. The Nuclear and Industrial Safety Agency said the smoke from reactor 2 caused radiation levels downwind to rise for about three and a half hours.

TEPCO continues work to reconnect external power to all six reactors. Connections were made to the distribution line at reactor 1 and 2, and components and circuits at those reactors are being checked. Similar power connections have been made to reactors 5 and 6 and a diesel generator is providing power to a cooling pump for the used fuel pools. Power cable is being laid to reactor 4,

and power is expected to be restored to reactors 3 and 4 by Tuesday.

Japan's Chief Cabinet Secretary Yukio Edano announced that Prime Minister Kan has ordered the governors of four prefectures near Fukushima to restrict the shipment of spinach and "kakina," another leafy vegetable. The shipment of milk from Fukushima prefectures was also restricted. Edano said the order was a precautionary emergency measure.

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From: Collins, Elmo
Sent: Monday, March 21, 2011 7:56 PM
To: Powell, Amy
Subject: Fw: Response on today's Commission meeting

What we think we're doing

From: Leeds, Eric
To: Howell, Art
Cc: Collins, Elmo
Sent: Mon Mar 21 12:53:05 2011
Subject: Response on today's Commission meeting

Art –

Scroll down and you'll see the thoughts we're working on the near and long term effort for the Fukushima event. Very preliminary and we have not received Commission direction yet. I am aware that all the Commissioners have seen the list below. Hope this helps.

Eric J. Leeds, Director
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
301-415-1270

From: Virgilio, Martin
Sent: Monday, March 21, 2011 3:14 AM
To: Wiggins, Jim; Johnson, Michael; Leeds, Eric
Subject: Tasking Memo Under Development

FYI

From: Borchardt, Bill
Sent: Sunday, March 20, 2011 11:49 AM
To: Jaczko, Gregory
Cc: Weber, Michael; Virgilio, Martin; Muessle, Mary; Andersen, James
Subject: RE: Japan Follow-up

Chairman: will do

Mary: please have Jim and staff start on this.

From: Jaczko, Gregory
Sent: Sunday, March 20, 2011 11:37 AM
To: Borchardt, Bill
Subject: Fw: Japan Follow-up

Fyi. And can you draft up a tasking memo and a com that would accomplish each of these

From: Batkin, Joshua
To: Jaczko, Gregory
Sent: Sat Mar 19 18:50:50 2011
Subject: RE: Japan Follow-up

Chairman – attached is a revised version of Bill's plan that includes WCO/GEA language and WDM language.

Near Term Review:

- 90 day effort
- Evaluate currently available technical and operational information from the event to identify near term (or immediate) operational or regulatory issues affecting US operating reactors of all designs in areas such as protection against earthquake, tsunami, flooding, hurricanes; station blackout and a degraded ability to restore power; severe accident mitigation; and emergency preparedness.
- Develop recommendations for generic communications, orders, etc
- This would possibly include a 30 day quick look report
- Limited stakeholder involvement informed by, but independent of industry efforts
- Public report

Longer Term Review:

- Would start after we have sufficient technical information from Japan
- Evaluate all technical and policy issues to identify additional research, generic issues, changes to ROP, rulemakings, adjustments to the regulatory framework, etc that should be conducted by NRC
- Evaluate interagency issues (EP)
- Applicability to non-operating reactor facilities
- Substantive stakeholder involvement
- Public report

From: Powell, Amy
Sent: Monday, March 21, 2011 10:01 PM
To: Collins, Elmo
Subject: Fw: Earthquake info

FYI
Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Schmidt, Rebecca
To: Kammerer, Annie; Sheron, Brian
Cc: Powell, Amy
Sent: Mon Mar 21 21:09:09 2011
Subject: Fw: Earthquake info

So this what I sent and Sen Boxer's staff came back with three questions. First, they asked if all others plants fall in the low category. (I assume so but I thought I would check). Second, what is the definition of seismicity? Third, what are the definitions of high, moderate and low? Are there some scientific parameters? The Senator is touring Diablo Canyon tomorrow so I need an answer tomorrow morning.

From: Schmidt, Rebecca
To: Dedrick, Kathy (EPW) <Kathy_Dedrick@epw.senate.gov>; Bettina_poirier@epw.senate.gov <Bettina_poirier@epw.senate.gov>
Cc: Powell, Amy; Batkin, Joshua
Sent: Mon Mar 21 17:43:07 2011
Subject: Earthquake info

Press info – I talked to our Director of Public Affairs and will follow up with a call to you.

Earthquake info –

Although we often think of the US as having “active “ and non-active” earthquake zones, earthquakes can actually happen almost anywhere. Seismologists typically separate the US into low, moderate and high seismicity zones. The NRC requires that every nuclear plant be designed for site specific ground motions that are appropriate for their locations. In addition, the NRC has specified a minimum ground motion level to which nuclear plants must be designed. The designation of type of zone is open to interpretation but a conservative interpretation – meaning a larger zone—would include the following preliminary estimates:

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Moderate Seismicity – Brunswick, Robinson, Summer, Vogtle, Hatch, Clinton, Watts Bar, Sequoya, North Anna

I do not have a definition of High or Moderate but I wanted to get this to you now

From: Collins, Elmo
Sent: Monday, March 21, 2011 10:07 PM
To: Powell, Amy
Subject: Fw: Commission Meeting Slides and Notes
Attachments: Staff Slides for March 21 Meeting (Japanese Event).pptx

From: Virgilio, Martin
To: Collins, Elmo
Cc: Dean, Bill; Satorius, Mark; McCree, Victor
Sent: Mon Mar 21 21:11:33 2011
Subject: Commission Meeting Slides and Notes

Elmo

Per your request, attached are the slides and speaker notes Bill used in the Commission meeting. There was no script only these bullet points.

Marty

From: Virgilio, Martin
Sent: Monday, March 21, 2011 12:09 AM
To: OST01 HOC
Subject: FW: Commission Meeting Slides and Notes

From: Andersen, James
Sent: Sunday, March 20, 2011 6:11 PM
To: Borchardt, Bill
Cc: Leeds, Eric; Howe, Allen; Virgilio, Martin; Weber, Michael; Muessle, Mary
Subject: Commission Meeting Slides and Notes

Bill,

Attached are the latest and hopefully final version of the slides and speaking notes. As we discussed, the Chairman wanted one separate slide on radiological consequences and to delete the international slide. I have moved the discussion of radiological consequences to the spot where the international stuff was (Chairman office direction). The Chairman plans to discuss international cooperation some in his opening remarks.

I have also renamed the final bullet on the agenda slide to "path forward" so that it is consistent with the scheduling note.

I plan to be in the office at 6:00am tomorrow to make copies, and if needed, discuss any of the changes with you.

I apologize for the late changes, I have been asking the Chairman's office continuously over the past two days for comments.

Jim A.



Briefing on NRC Response to Recent Nuclear Events in Japan

Bill Borchardt
Executive Director for Operations
March 21, 2011

Agenda

- **Event Overview**
- **Immediate NRC Response**
- **Continuing NRC Response**
- **Health Effects of Radiation**
- **Domestic Reactor Safety**
- **Path Forward**

Event Overview

- **Discussion of initiating event**
- **Current status of reactors**
- **Current status of spent fuel pools**

Immediate NRC Response

- **Activated Operations Center**
- **Dispatched NRC experts to Japan**
- **Areas of focus**
- **Extensive outreach to stakeholders**

Continuing NRC Response

- **Operations Center**
- **Support U.S. response**
- **Provide assistance**
- **Mobilize resources**

Health Effects of Radiation

- **Offsite Doses**
- **Radiological Consequences**

Domestic Reactor Safety

- **NRC oversight of U.S. plant safety**
- **Continuous improvement based on operating experience**

NRC Activities – Near Term

- **Inspection Activities**
- **Generic Communications**
- **Immediate regulatory actions**

NRC Activities – Longer Term

- **Lessons learned and recommendations**
- **Regulatory actions, for example, to identify potential:**
 - **Research projects**
 - **Generic issues**
 - **Regulatory enhancements**

Conclusion

From: Powell, Amy
Sent: Tuesday, March 22, 2011 7:35 AM
To: Schmidt, Rebecca
Subject: Re: Earthquake info

Good to have options...

Trying to listen in on the Comm TA call in case there are any developments I should know.

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Schmidt, Rebecca
To: Sheron, Brian; Kammerer, Annie
Cc: Powell, Amy
Sent: Tue Mar 22 07:32:18 2011
Subject: RE: Earthquake info

I took one Geology class in college and grad school....I did figure out on my own CEUS meant Central United States!

From: Sheron, Brian
Sent: Tuesday, March 22, 2011 7:30 AM
To: Kammerer, Annie; Schmidt, Rebecca
Cc: Powell, Amy
Subject: RE: Earthquake info

Becky, when this dies down, I'd like to offer you a job as a seismic engineer, since by then you will obviously be an expert.....

From: Kammerer, Annie
Sent: Monday, March 21, 2011 10:16 PM
To: Schmidt, Rebecca; Sheron, Brian
Cc: Powell, Amy
Subject: RE: Earthquake info

We are working up a fact sheet. Currently it is has only basic information. But if you take a look at what is in the attached word file, the following information may make more sense to you.

*Yes, it is the staff's assessment that the rest fall into the low seismicity regions.

*These are really more accurately called areas of low seismic hazard, moderate seismic hazard, and high seismic hazard. Seismicity can be thought of as a combination of the level of seismic activity and the potential for large magnitude earthquakes. These two things together are key inputs in to seismic hazard assessments.

*There are not scientific parameters that are used and it is important to understand a few key points. First in the CEUS, the hazard does not come from mapped active faults. Rather it comes from seismic zones and background seismicity (earthquakes not tied to a fault). Also, there are multiple interpretations as to the extent of the seismic zones and their boundaries are not hard. So even if there was a particular ground motion amplitude that was used as the specific parameter, the location of the boundary would be subjective.

Please let me know if you have other questions.

I was expecting to get some data on tsunami design at Diablo today, if it comes in, I'll forward on.

Annie

From: Schmidt, Rebecca
Sent: Monday, March 21, 2011 9:09 PM
To: Kammerer, Annie; Sheron, Brian
Cc: Powell, Amy
Subject: Fw: Earthquake info

So this what I sent and Sen Boxer's staff came back with three questions. First, they asked if all others plants fall in the low category. (I assume so but I thought I would check). Second, what is the definition of seismicity? Third, what are the definitions of high, moderate and low? Are there some scientific parameters? The Senator is touring Diablo Canyon tomorrow so I need an answer tomorrow morning.

From: Schmidt, Rebecca
To: Dedrick, Kathy (EPW) <Kathy_Dedrick@epw.senate.gov>; Bettina_poirier@epw.senate.gov <Bettina_poirier@epw.senate.gov>
Cc: Powell, Amy; Batkin, Joshua
Sent: Mon Mar 21 17:43:07 2011
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I do not have a definition of High or Moderate but I wanted to get this to you now

This is very preliminary being compiled for a new fact sheet. We are awaiting better plots and are working on getting this information written up properly so that we can publish it as a fact sheet as soon as possible.

Some Key Points:

- Although we often think of the US as having “active” and “non-active” earthquake zones, earthquakes can actually happen almost anywhere. Seismologists typically separate the US into low, moderate, and high seismicity zones.
- The boundaries of the low, medium and high zones are not hard and are open to interpretation. Below we’ve pulled together a list based on the zones being on the larger side.
- While faults are often well mapped and characterized in active zones, such as the west. But there are very few mapped faults in the east, which doesn’t mean that there aren’t earthquakes. The most widely felt historical earthquakes in the US happened in the New Madrid seismic zone (clearly shown on figure 3, the hazard map). However, the fault has never been identified. In fact, most CEUS earthquakes are not tied to a known fault.
- The NRC requires that every nuclear plant be designed for site-specific ground motions that are appropriate for their locations. In addition, the NRC has specified a minimum ground motion level to which nuclear plants must be designed.



Figure 1: US Nuclear Plants overlain on a USGS National Seismic Hazard Map

As you can see the regions in the east are not well defined, so to say how many exactly are in moderate seismicity zone is challenging and open to interpretation. This is just one interpretation of where the zones are (and where the moderate hazard lies). There are scientifically viable alternate interpretations.

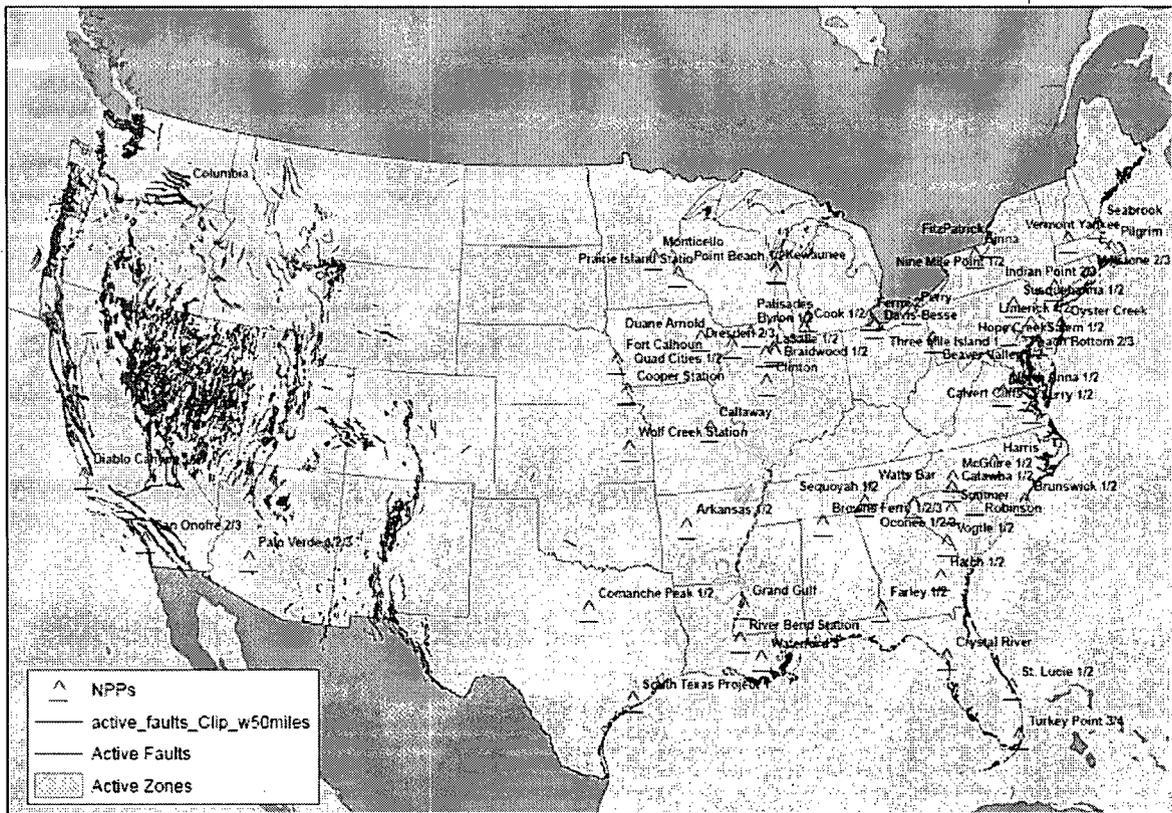


Figure 2: This figure shows mapped active faults and US Nuclear plants

As you can see, there are very few mapped faults in the east, which doesn't mean that there aren't earthquakes. The most widely felt historical earthquakes in the US happened in the New Madrid seismic zone (clearly shown on figure 3, the hazard map). However, the fault(s) is not shown here because we can't find it under all that Mississippi sand! You can (faintly) see the source on the figure. However, this is just one interpretation that was in our GIS maps. We will likely put nested "blobs" onto this figure to the widest and narrowest zone interpretations.

So if someone asks about plants being very near mapped active faults, there are two...but that doesn't mean that there isn't hazard elsewhere because in the central and eastern US the seismicity comes from "seismic zones" not faults.

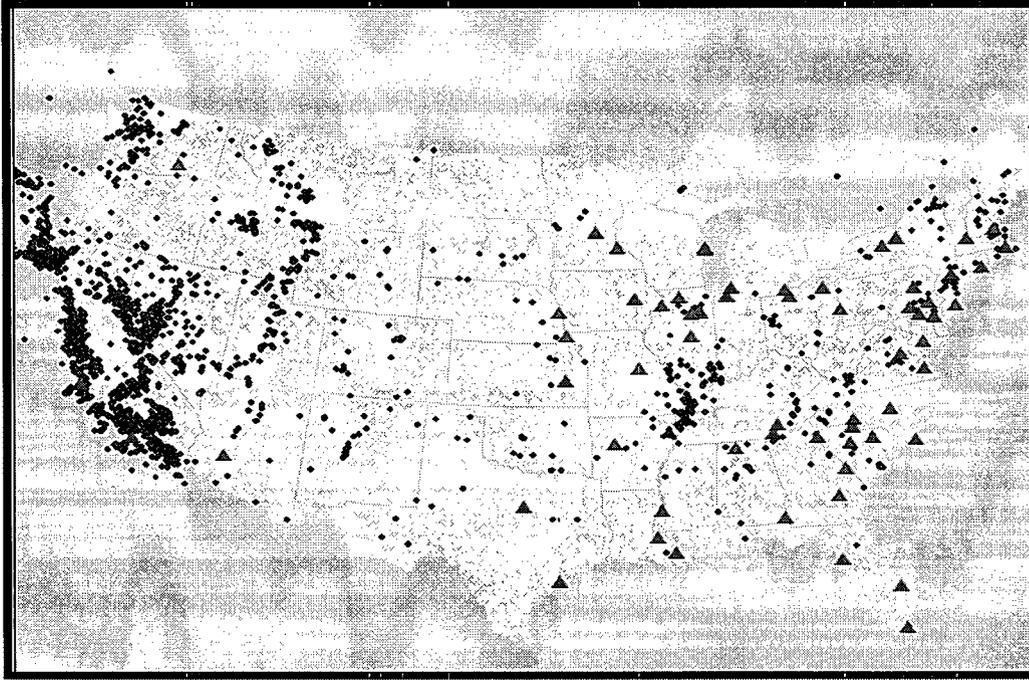


Figure 3: Earthquakes versus US Nuclear Plants

We are remaking a plot like this with more earthquakes (i.e a longer time period), this will speak to the fact that earthquakes occur everywhere, even where we don't have mapped faults.

This is the preliminary (and subjective) list from staff:

High Seismicity:

- Diablo Canyon
- SONGS

Moderate Seismicity:

Charleston Seismic Zone

- Brunswick
- Robinson
- Summer
- Vogtle
- Hatch (maybe depends on interpretation)

Wabash Valley Seismic Zone

- Clinton

East Tennessee Seismic Zone (a real point of contention)

- Watts Bar
- Sequoya

Central Virginia Seismic Zone

- North Anna

From: Powell, Amy
Sent: Tuesday, March 22, 2011 7:38 AM
To: Collins, Elmo
Cc: Schmidt, Rebecca
Subject: Q&A re: Diablo Canyon
Attachments: Diablo Canyon Q&As.docx

Elmo - FYI. Becky has been earning her seismology degree from Kammerer University in an effort to make our visit go smoothly...

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Kammerer, Annie
To: Schmidt, Rebecca; Sheron, Brian
Cc: Powell, Amy; Dricks, Victor; Uselding, Lara; Bensi, Michelle
Sent: Tue Mar 22 07:36:20 2011
Subject: RE: Earthquake info

Rebecca,

Attached, please see a Diablo Canyon-specific Q&A sheet that I pulled together out of information from the daily Seismic Q&A document.

I hope it helps with Boxer's visit.

Annie

From: Schmidt, Rebecca
Sent: Monday, March 21, 2011 9:09 PM
To: Kammerer, Annie; Sheron, Brian
Cc: Powell, Amy
Subject: Fw: Earthquake info

So this what I sent and Sen Boxer's staff came back with three questions. First, they asked if all others plants fall in the low category. (I assume so but I thought I would check). Second, what is the definition of seismicity? Third, what are the definitions of high, moderate and low? Are there some scientific parameters? The Senator is touring Diablo Canyon tomorrow so I need an answer tomorrow morning.

From: Schmidt, Rebecca
To: Dedrick, Kathy (EPW) <Kathy_Dedrick@epw.senate.gov>; Bettina_poirier@epw.senate.gov
<Bettina_poirier@epw.senate.gov>
Cc: Powell, Amy; Batkin, Joshua

Sent: Mon Mar 21 17:43:07 2011

Subject: Earthquake info

Press info – I talked to our Director of Public Affairs and will follow up with a call to you.

Earthquake info –

Although we often think of the US as having “active “ and non-active” earthquake zones, earthquakes can actually happen almost anywhere. Seismologists typically separate the US into low, moderate and high seismicity zones. The NRC requires that every nuclear plant be designed for site specific ground motions that are appropriate for their locations. In addition, the NRC has specified a minimum ground motion level to which nuclear plants must be designed. The designation of type of zone is open to interpretation but a conservative interpretation – meaning a larger zone—would include the following preliminary estimates:

High Seismicity—Diablo Canyon, SONGS

Moderate Seismicity – Brunswick, Robinson, Summer, Vogtle, Hatch, Clinton, Watts Bar, Sequoya, North Anna

I do not have a definition of High or Moderate but I wanted to get this to you now

What does the Japanese Earthquake Mean to Diablo Canyon?

1) Could an earthquake and tsunami the size of the one in Japan happen at Diablo Canyon?

No. This earthquake occurred on a "subduction zone", which is the type of tectonic region that produces the largest magnitude earthquake. A subduction zone is a tectonic plate boundary where one tectonic plate is pushed under another plate. Subduction zone earthquakes are also required to produce the kind of massive tsunami seen in Japan. In the continental US, the only subduction zone is the Cascadia subduction zone which lies off the coast of far northern California, Oregon and Washington. So, a continental earthquake and tsunami as large as in Japan could only happen there. Outside of the Cascadia subduction zone, earthquakes are not expected to exceed a magnitude of approximately 8.25; and that would only occur on the largest fault lines, such as the San Andreas fault, which is 50 miles away onshore.

2) What magnitude earthquake are currently operating US nuclear plants such as Diablo Canyon designed to?

Each reactor is designed for a different ground motion that is determined on a site-specific basis. Ground motion is a function of both the magnitude of an earthquake and the distance from the fault to the site; and it is ground motion that causes damage. So, Nuclear plants, and in fact all engineered structures, are actually designed based on ground motion levels, not earthquake magnitudes. The existing nuclear plants were designed based on a "deterministic" or "scenario earthquake" basis that accounted for the largest earthquakes expected in the area around the plant. The scenario earthquake at Diablo is a magnitude 7.5 on the Hosgri Fault 3 miles from the main plant. This earthquake results in a ground motion that has a peak ground acceleration of 0.75g, that is 75% of the acceleration of gravity.

3) Could the newly discovered Shoreline Fault produce a larger "Scenario Earthquake"?

The NRC's preliminary analyses indicate that the ground motions from the largest earthquakes expected on the smaller Shoreline Fault do not exceed the ground motions from the Hosgri Fault, for which the plant has already been analyzed and been found to be safe. NRC is currently reviewing the Final Report on the Shoreline Fault that was submitted to the NRC earlier this year. The NRC is performing an independent analysis of potential ground motions based the data contained in the report and other information. Much of the data on the Shoreline Fault comes from the USGS in Menlo Park.

4) Could Diablo Canyon withstand an earthquake of the magnitude of the Japanese earthquake?

It could withstand the ground shaking experienced by the Japanese nuclear plants. As discussed above, it is actually ground motions that structures, systems, and components "feel". We do not have direct recordings of ground motion at the Japanese reactors. However, we do have estimates of shaking that come from a ShakeMap produced by the the K-NET system. The ground motion at the Japanese nuclear reactors is believed to be somewhat smaller than the 0.75g peak ground acceleration that Diablo Canyon has been analyzed to. Do, Diablo Canyon could withstand the ground shaking experienced by the Fukushima plant.

In fact, the Fukushima plant also withstood the earthquake. In the hour or so after the earthquake the Fukushima plant's safety systems, including the diesel generators, performed as expected and effectively shut down the reactor. The cause of the problems at the plant stemmed from the loss of emergency power that appears to be the direct result of the subsequent tsunami, which far exceeded the design basis tsunami for the Fukushima plant.

5) Is Diablo Canyon's equipment vulnerable to tsunami?

Nuclear plants are designed to withstand protection against natural phenomena such as tsunami, earthquakes. Diablo Canyon's main plant is located above the flood level associated with tsunami. The intake structures and Auxiliary Sea Water System at Diablo canyon are designed for combination of tsunami and storm wave activity.

6) How do we know that the emergency diesel generators in Diablo Canyon and SONGS will not fail to operate like in Japan?

Emergency Diesel Generators (EDGs) are installed in a seismically qualified structure. Even if these EDGs did fail, plants can safely shutdown using station blackout power source law 10 CFR 50.63. In 1988 the NRC concluded that additional regulatory requirements were justified in order to provide further assurance that a loss of both offsite and onsite emergency ac power systems would not adversely affect public health and safety and the station blackout rule was enacted. Studies conducted by the NRC since this rule has been in effect confirms that the hardware and procedures that have been implemented to meet the station blackout requirements have resulted in significant risk reduction and have further enhanced defense-in-depth. However, we plan to carefully evaluate the lessons learned from the events in Japan to determine if enhancements to the station blackout rule are warranted.

7) Was there any damage to Diablo Canyon from either the earthquake or the resulting tsunami?

A small tsunami did hit the region around Diablo Canyon. There was no damage at the nuclear plant.

8) How do we know the evacuation routes in the region around Diablo Canyon are realistic?

FEMA reviews off-site evacuation plans formally every 2 years during a biennial emergency preparedness exercise. NRC evaluates on-site evacuation plans during the same exercise. Population studies are formally done every 10 years, and evacuation time estimates are re-evaluated at that time. FEMA reviews these evacuation plans, and will conclude their acceptability through a finding of "reasonable assurance" that the off-site facilities and infrastructure is capable of protecting public health and safety in the event of an emergency at DCNPP.

From: Schmidt, Rebecca
Sent: Tuesday, March 22, 2011 8:18 AM
To: Virgilio, Martin; Powell, Amy
Cc: Weber, Michael; Borchardt, Bill; Wiggins, Jim; Droggitis, Spiros
Subject: RE: USNRC Op Center Updates

Last I heard Josh was talking about redacted SITREPs. I think that is more informative to staffers than the liaison summary (draft one pager) or OPA talking points/press releases. We are already sending them the press releases and referring them to the public website.

From: Virgilio, Martin
Sent: Monday, March 21, 2011 4:46 AM
To: Powell, Amy; Schmidt, Rebecca
Cc: Weber, Michael; Borchardt, Bill; Wiggins, Jim
Subject: USNRC Op Center Updates

Becky/Amy

The Hill staffers participating on the 3 pm calls are now asking questions that are at level of detail beyond the information that our briefers have available to them. I understand that some of the questions asked this past weekend went to a level of detail that required the PMT involvement. Rather than distracting the PMT and RST, I suggest we be prepared to say, " we will have to get back to you."

I discussed this with the Chairman and he is comfortable with this approach. He suggest we consider sharing the NRC Emergency Operations Center Status Updates with the staffers. This is OOU and currently shared with a list of Feds. It is the information that supports the briefers.

I could see expanding the distribution list, but was interested in hearing from you before taking an action.

Marty

From: Powell, Amy
Sent: Tuesday, March 22, 2011 8:52 AM
To: 'Mitchell.Vakerics@mail.house.gov'
Subject: Re: Follow up from NRC

It is busy for sure - please let us know if you need anything!

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

----- Original Message -----

From: Vakerics, Mitchell <Mitchell.Vakerics@mail.house.gov>
To: Powell, Amy
Sent: Mon Mar 21 10:12:24 2011
Subject: RE: Follow up from NRC

Thanks Amy! I really appreciate your help here. Are you all just crazy over there?

Mitch

Mitch Vakerics | Legislative Counsel
Congresswoman Renee Ellmers (NC-2) | 202-225-4531 mitchell.vakerics@mail.house.gov | www.ellmers.house.gov

-----Original Message-----

From: Powell, Amy [mailto: Amy.Powell@nrc.gov]
Sent: Thursday, March 17, 2011 9:10 PM
To: Vakerics, Mitchell
Subject: Follow up from NRC

Hi Mitch -

I received your contact info from Sarah Kirkwood in our Office of General Counsel. We have a distribution list re: our updates related to Japan - I've added you to that. We will be doing daily phone briefings as well - if you have not already, you will receive notice of these.

Thanks
Amy

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Powell, Amy
Sent: Tuesday, March 22, 2011 10:35 AM
To: Schmidt, Rebecca; Droggitis, Spiros
Subject: Request from Mr. Markey's staff

Michal Freedhoff is asking for a copy of the proposal and Commission vote sheets. I am about to go "wheels up" in 10 minutes - may I hand off to you all?

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Freedhoff, Michal <Michal.Freedhoff@mail.house.gov>
To: Powell, Amy
Sent: Tue Mar 22 10:31:58 2011
Subject: 90 day report?

Hi Amy

Can I please have a copy of the charter of the 90 day review the Chairman requested, as well as copies of each Commissioner's vote on the plan? Who will be on the review panel, how does it report, etc?

Thanks
Michal

Michal Ilana Freedhoff, Ph.D.
Policy Director
Office of Congressman Edward J. Markey (D-MA)
2108 Rayburn House Office Building
Washington, DC 20515
202-225-2836

From: Powell, Amy
Sent: Tuesday, March 22, 2011 10:37 AM
To: 'michal.freedhoff@mail.house.gov'
Subject: Re: 90 day report?

You bet
Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Freedhoff, Michal <Michal.Freedhoff@mail.house.gov>
To: Powell, Amy
Sent: Tue Mar 22 10:36:31 2011
Subject: RE: 90 day report?

Thanks!

Michal Ilana Freedhoff, Ph.D.
Policy Director
Office of Congressman Edward J. Markey (D-MA)
2108 Rayburn House Office Building
Washington, DC 20515
202-225-2836

From: Powell, Amy [mailto: Amy.Powell@nrc.gov]
Sent: Tuesday, March 22, 2011 10:36 AM
To: Freedhoff, Michal
Subject: Re: 90 day report?

Hello from CA - I forwarded your email to Becky so that our office is aware of the request. I'm back in the office Thurs.

Thanks
Amy
Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Freedhoff, Michal <Michal.Freedhoff@mail.house.gov>
To: Powell, Amy
Sent: Tue Mar 22 10:31:58 2011
Subject: 90 day report?

Hi Amy

Can I please have a copy of the charter of the 90 day review the Chairman requested, as well as copies of each Commissioner's vote on the plan? Who will be on the review panel, how does it report, etc?

Thanks
Michal

Michal Ilana Freedhoff, Ph.D.
Policy Director
Office of Congressman Edward J. Markey (D-MA)
2108 Rayburn House Office Building
Washington, DC 20515
202-225-2836

From: Schmidt, Rebecca
Sent: Tuesday, March 22, 2011 11:34 AM
To: Powell, Amy
Subject: FW: NRC FAQ

-----Original Message-----

From: Schmidt, Rebecca
Sent: Tuesday, March 22, 2011 11:34 AM
To: 'Haynes, Laura (Carper)'
Cc: Droggitis, Spiros
Subject: RE: NRC FAQ

<http://www.nrc.gov/japan/japan-info.html>

We mentioned on the daily phone call last Saturday that our public web page was up and running with lots of info -- press releases, FAQs, links to other government agency websites etc. We will mention again today

-----Original Message-----

From: Haynes, Laura (Carper) [mailto:Laura_Haynes@carper.senate.gov]
Sent: Tuesday, March 22, 2011 10:38 AM
To: Schmidt, Rebecca
Cc: Powell, Amy
Subject: FW: NRC FAQ

Why am I getting this one pager from the NEI and not from the NRC?

-----Original Message-----

From: FLINT, Alex [mailto:af@nei.org]
Sent: Tuesday, March 22, 2011 10:04 AM
Subject: NRC FAQ

Please see the attached FAQ sheet.

This electronic message transmission contains information from the Nuclear Energy Institute, Inc. The information is intended solely for the use of the addressee and its use by any other person is not authorized. If you are not the intended recipient, you have received this communication in error, and any review, use, disclosure, copying or distribution of the contents of this communication is strictly prohibited. If you have received this electronic transmission in error, please notify the sender immediately by telephone or by electronic mail and permanently delete the original message.

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Sent through mail.messaging.microsoft.com



Frequently Asked Questions About the Japan Nuclear Crisis

“What Do I Need to Know to Protect Myself?”

1. Is there a danger of radiation making it to the United States?

In response to nuclear emergencies, the NRC works with other U.S. agencies to monitor radioactive releases and predict their path. The NRC continues to monitor information regarding wind patterns near the Japanese nuclear power plants. While it is possible U.S. radiation monitoring equipment will detect an increase, we do not expect harmful levels of radiation to reach the West Coast, Hawaii, Alaska, or U.S. territories in the Pacific.

2. Is the U.S. government tracking the radiation released from the Japanese plants?

Yes. A number of U.S. agencies are involved in monitoring and assessing radiation including the Environmental Protection Agency, Department of Energy, and NRC. Questions about the domestic monitoring effort should be addressed to the Department of Energy at 202-586-4940. The EPA has posted [information about its monitoring efforts](#).

3. Has the government set up radiation monitoring stations to track the release?

Yes. EPA is utilizing its existing nationwide radiation monitoring system, RadNet, to monitor continuously the nation's air. EPA also regularly monitors drinking water, milk and precipitation for environmental radiation. EPA has stated that it plans to work with its federal partners to deploy additional monitoring capabilities to parts of the western United States and U.S. territories.

4. The radiation “plume” seems to be going out to sea – what is the danger of it reaching Alaska? Hawaii? The west coast?

See response to Question 1.

5. Should I be taking potassium iodide (KI) or other protective measures?

At this time, the NRC does not believe protective measures are necessary in the United States. We do not expect any U.S. states or territories to experience harmful levels of radioactivity that would warrant taking protective measures. In the event circumstances change, U.S. residents should listen to the protective action decisions of their states and counties. These protective action decisions could include sheltering, evacuation, or

taking potassium iodide. The NRC will provide technical assistance to the states should they request it.

6. What are the risks to my children?

See response to Question 5.

7. My family has planned a vacation to Hawaii/Alaska/Seattle next week – is it safe to go, or should we cancel our plans?

The NRC does not expect that residents of the United States or its territories are at any risk of exposure to harmful levels of radiation resulting from the events in Japan. Any changes to travel are a personal decision. The NRC is not aware of any travel restrictions within the United States or its territories.

8. What are the short-term and long-term effects of exposure to radiation?

The NRC does not expect that residents of the United States or its territories are at any risk of exposure to harmful levels of radiation resulting from the events in Japan.

On a daily basis, people are exposed to naturally occurring sources of radiation, such as from the sun, and man-made radiation, such as medical X-rays. The resulting effects are dependent on the strength and type of radiation as well as the duration of exposure. See our [Fact Sheet](#) on the biological effects of radiation

9. I am traveling to Asia (not Japan). Should I adjust my travel plans to avoid flying through plume or being contaminated once on the ground?

You should consult the [State Department](#) for warnings or advisories on international travel.

10. What is the official agency to report radiation numbers and what is the public contact?

NRC regulations require nuclear power plants to report any radiation doses detected at the plant that could be harmful to the public. This would include doses that are generated by the plant or by an external source. During an event in the United States, it is the state's responsibility to provide protective action decisions for public health and safety. For this incident, the Japanese are responsible for reporting the public dose; nevertheless, should radiation doses be detected within the United States, it would still

be the state's responsibility to provide protective action decisions for public health and safety. For questions regarding the federal monitoring effort, contact the Department of Energy at 202-586-4940.

11. Where would I get IOSAT Potassium Iodide if my city should experience fallout from the Japanese nuclear disaster? Is this the right precaution or is there anything else that can be done to protect myself?

We do not expect any U.S. states or territories to experience harmful levels of radioactivity. As such, we do not believe that there is any need for residents of the United States to take potassium iodide. U.S. residents should listen to the protective action decisions by their states and counties. If necessary, protective action decisions could include actions such as sheltering, evacuating, or taking potassium iodide.

For more information on the use of potassium iodide, click [here](#).

Additional information is available from the [Food and Drug Administration](#).

12. My loved one is overseas, how do I find out if he or she is ok?

We are directing public inquiries with regard to concern for loved ones overseas to the State Department, Consular Services at 202-647-7004.

[updated 3/18/11, at 5:20 pm EDT]

G:\Crisis Communication\Japan Quake and Tsunami\FAQ What Do I Need To Know.docx

From: Powell, Amy
Sent: Tuesday, March 22, 2011 10:42 AM
To: Schmidt, Rebecca
Subject: Laura's email

FYI: NEI distributed our "how do I protect myself" one-pager - that is what Laura sent. It is also posted on the NRC Japan event page that was sent to the Japan list by Tim yesterday (I think it was yesterday and not over the weekend).

Amy Powell

Associate Director

Office of Congressional Affairs

U. S. Nuclear Regulatory Commission

Phone: 301-415-1673

Sent from my Blackberry

From: NEIGA@nei.org
Sent: Tuesday, March 22, 2011 10:56 AM
To: Powell, Amy
Subject: NEI Update for March 22 9:30 A.M. EDT



This update appears on our website here:

<http://nei.cachefly.net/newsandevents/information-on-the-japanese-earthquake-and-reactors-in-that-region/>

NEI will be providing updates at approximately 9:30 a.m., 1:30 p.m. and 6 p.m. EDT each day.

The following is an update of the status of the Fukushima reactors and ongoing work to restore cooling to the reactors and fuel pools.

Tokyo Electric Power Co. has reconnected external power supply at Fukushima Daiichi reactors 1, 2, 5 and 6. Offsite electricity is providing power to cooling pumps for the used fuel pools at reactors 5 and 6. Components and circuits at reactors 1 and 2 are being checked before power is restored to them. The company on Tuesday was installing cable at reactor 4 and power is expected to be restored at reactors 3 and 4 on Wednesday (Japan time).

TEPCO said the radiation level at the main gate at Fukushima Daiichi has declined from 33 millirem per hour to 25 millirem per hour.

Fire departments on Tuesday continued to pump water into the used fuel pools at reactors 3 and 4. Seawater is being pumped through a manually laid hose and sent to a water truck for continual spraying. Firefighters have sprayed a total of 3,600 tons of seawater, or about three times the pool's capacity, in recent days.

Japan's Chief Cabinet Secretary, Ukiyo Edano, reported the detection of low levels of iodine 131 and cesium 137 in seawater near the plant. There is no threat to human health, officials said.

Prime Minister Naoto Kan has ordered the governors of four prefectures (Fukushima, Ibaraki, Gunma and Tochigi) to suspend shipments of spinach and milk from specified areas. However, Kan said the levels of airborne radiation in those areas pose no risk to human health.

The Fukushima Daini reactors remain in safe condition today.

Click [here](#) to unsubscribe



From: Harrington, Holly
Sent: Tuesday, March 22, 2011 11:06 AM
To: Schmidt, Rebecca
Subject: RE: comment from the blog

Ah. Got it

From: Schmidt, Rebecca
Sent: Tuesday, March 22, 2011 10:06 AM
To: Harrington, Holly
Subject: RE: comment from the blog

No—if it was a state legislative meeting

From: Harrington, Holly
Sent: Tuesday, March 22, 2011 9:33 AM
To: Schmidt, Rebecca; Powell, Amy; Decker, David
Cc: Weil, Jenny
Subject: RE: comment from the blog

Likely we were not invited. But I want to be able to say that, if it's true. Invite would not have come through OCA?

From: Schmidt, Rebecca
Sent: Tuesday, March 22, 2011 9:30 AM
To: Powell, Amy; Harrington, Holly; Decker, David
Cc: Weil, Jenny
Subject: RE: comment from the blog

Holly—we were invited? Should check with FSME

From: Powell, Amy
Sent: Tuesday, March 22, 2011 9:28 AM
To: Harrington, Holly; Decker, David
Cc: Schmidt, Rebecca; Weil, Jenny
Subject: Re: comment from the blog

Holly - I'm including Becky and Jenny on this as neither David nor I are in the office.
Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Harrington, Holly
To: Powell, Amy; Decker, David
Sent: Tue Mar 22 09:26:57 2011
Subject: comment from the blog

This question was posted as a blog comment. Before I post it, I'd like to know how to answer:

On March 21, 2011, The California Senate Select Committee on Earthquake and Disaster Preparedness held hearings on the impact and lessons learned from the disaster in Japan. Southern California Edison (SONGS) and Pacific Gas and Electric (Diablo Canyon) made presentations and responded to questioning by Chair Corbett and members of the Committee. Numerous safety related issues were raised and the Commission's licensing process was impugned.

Why wasn't NRC represented at this important meeting?

From: Powell, Amy
Sent: Tuesday, March 22, 2011 12:23 PM
To: Droggitis, Spiros; Shane, Raeann
Subject: Re: Info Notice to plants

Perfect - thanks !

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

----- Original Message -----

From: Droggitis, Spiros
To: Powell, Amy; Shane, Raeann
Sent: Tue Mar 22 12:22:23 2011
Subject: RE: Info Notice to plants

Yes, on our Japan page:

<http://www.nrc.gov/japan/japan-info.html>

-----Original Message-----

From: Powell, Amy
Sent: Tuesday, March 22, 2011 12:21 PM
To: Shane, Raeann
Cc: Droggitis, Spiros
Subject: Info Notice to plants

I saw the press release on NRC's info notice to plants, but not the info notice. Is it out and public?

Thanks
AP
Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Powell, Amy
Sent: Tuesday, March 22, 2011 12:30 PM
To: 'Doug_Clapp@appro.senate.gov'
Subject: Info Notice to plants

This is now posted to the Japan events portion of NRC's Website - this is what Elmo referenced (as did our press release Fri) in the van:

<http://www.nrc.gov/reading-rm/doc-collections/gen-comm/info-notices/2011/ML110760432.pdf>

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Poirier, Bettina (EPW) <Bettina_Poirier@epw.senate.gov>
Sent: Tuesday, March 22, 2011 12:53 PM
To: Schmidt, Rebecca
Subject: Re: Earthquake info

Need to talk to you asap about this. What's the best number.

From: Schmidt, Rebecca [mailto:Rebecca.Schmidt@nrc.gov]
Sent: Tuesday, March 22, 2011 07:18 AM
To: Dedrick, Kathy (EPW); Poirier, Bettina (EPW)
Cc: Powell, Amy <Amy.Powell@nrc.gov>; Sosa, Belkys <Belkys.Sosa@nrc.gov>
Subject: FW: Earthquake info

OK, I had to ask—CEUS means Central United States—for all us political science majors out there.....The answers to your questions:

***Yes, it is the staff's assessment that the rest fall into the low seismicity regions.**

***These are really more accurately called areas of low seismic hazard, moderate seismic hazard, and high seismic hazard. Seismicity can be thought of as a combination of the level of seismic activity and the potential for large magnitude earthquakes. These two things together are key inputs in to seismic hazard assessments.**

***There are not scientific parameters that are used and it is important to understand a few key points. First in the CEUS, the hazard does not come from mapped active faults. Rather it comes from seismic zones and background seismicity (earthquakes not tied to a fault). Also, there are multiple interpretations as to the extent of the seismic zones and their boundaries are not hard. So even if there was a particular ground motion amplitude that was used as the specific parameter, the location of the boundary would be subjective.**

If you would like a briefing on the analysis, I would be happy to bring up the earthquake specialist with the seismic maps, overlaps of earthquakes etc. I know you are busy now, but maybe over Easter recess? Just let me know. Becky

From: Schmidt, Rebecca
Sent: Monday, March 21, 2011 9:09 PM
To: Kammerer, Annie; Sheron, Brian
Cc: Powell, Amy
Subject: Fw: Earthquake info

So this what I sent and Sen Boxer's staff came back with three questions. First, they asked if all others plants fall in the low category. (I assume so but I thought I would check). Second, what is the definition of seismicity? Third, what are the definitions of high, moderate and low? Are there some scientific parameters? The Senator is touring Diablo Canyon tomorrow so I need an answer tomorrow morning.

From: Schmidt, Rebecca
To: Dedrick, Kathy (EPW) <Kathy_Dedrick@epw.senate.gov>; Bettina_poirier@epw.senate.gov <Bettina_poirier@epw.senate.gov>
Cc: Powell, Amy; Batkin, Joshua

Sent: Mon Mar 21 17:43:07 2011

Subject: Earthquake info

Press info – I talked to our Director of Public Affairs and will follow up with a call to you.

Earthquake info –

Although we often think of the US as having “active “ and non-active” earthquake zones, earthquakes can actually happen almost anywhere. Seismologists typically separate the US into low, moderate and high seismicity zones. The NRC requires that every nuclear plant be designed for site specific ground motions that are appropriate for their locations. In addition, the NRC has specified a minimum ground motion level to which nuclear plants must be designed. The designation of type of zone is open to interpretation but a conservative interpretation – meaning a larger zone—would include the following preliminary estimates:

High Seismicity—Diablo Canyon, SONGS

Moderate Seismicity – Brunswick, Robinson, Summer, Vogtle, Hatch, Clinton, Watts Bar, Sequoya, North Anna

I do not have a definition of High or Moderate but I wanted to get this to you now

From: Schmidt, Rebecca
Sent: Tuesday, March 22, 2011 3:23 PM
To: McIntyre, David
Subject: FW: Earthquake info

From: Schmidt, Rebecca
Sent: Tuesday, March 22, 2011 5:28 AM
To: Kammerer, Annie
Subject: Re: Earthquake info

Thanks so much, Annie

From: Kammerer, Annie
To: Schmidt, Rebecca; Sheron, Brian
Cc: Powell, Amy
Sent: Mon Mar 21 22:16:20 2011
Subject: RE: Earthquake info

We are working up a fact sheet. Currently it has only basic information. But if you take a look at what is in the attached word file, the following information may make more sense to you.

*Yes, it is the staff's assessment that the rest fall into the low seismicity regions.

*These are really more accurately called areas of low seismic hazard, moderate seismic hazard, and high seismic hazard. Seismicity can be thought of as a combination of the level of seismic activity and the potential for large magnitude earthquakes. These two things together are key inputs in to seismic hazard assessments.

*There are not scientific parameters that are used and it is important to understand a few key points. First in the CEUS, the hazard does not come from mapped active faults. Rather it comes from seismic zones and background seismicity (earthquakes not tied to a fault). Also, there are multiple interpretations as to the extent of the seismic zones and their boundaries are not hard. So even if there was a particular ground motion amplitude that was used as the specific parameter, the location of the boundary would be subjective.

Please let me know if you have other questions.

I was expecting to get some data on tsunami design at Diablo today, if it comes in, I'll forward on.

Annie

From: Schmidt, Rebecca
Sent: Monday, March 21, 2011 9:09 PM
To: Kammerer, Annie; Sheron, Brian
Cc: Powell, Amy
Subject: Fw: Earthquake info

So this what I sent and Sen Boxer's staff came back with three questions. First, they asked if all others plants fall in the low category. (I assume so but I thought I would check). Second, what is the definition of seismicity? Third, what are the

definitions of high, moderate and low? Are there some scientific parameters? The Senator is touring Diablo Canyon tomorrow so I need an answer tomorrow morning.

From: Schmidt, Rebecca
To: Dedrick, Kathy (EPW) <Kathy_Dedrick@epw.senate.gov>; Bettina_poirier@epw.senate.gov <Bettina_poirier@epw.senate.gov>
Cc: Powell, Amy; Batkin, Joshua
Sent: Mon Mar 21 17:43:07 2011
Subject: Earthquake info

Press info – I talked to our Director of Public Affairs and will follow up with a call to you.

Earthquake info –

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Moderate Seismicity – Brunswick, Robinson, Summer, Vogtle, Hatch, Clinton, Watts Bar, Sequoya, North Anna

I do not have a definition of High or Moderate but I wanted to get this to you now

From: Powell, Amy
Sent: Tuesday, March 22, 2011 3:37 PM
To: Schmidt, Rebecca
Subject: Re: California Nuclear Plants Rated Highest Seismic Hazard

Just got asked about it by DF...
Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Schmidt, Rebecca
To: Powell, Amy
Sent: Tue Mar 22 15:32:41 2011
Subject: FW: California Nuclear Plants Rated Highest Seismic Hazard

From: McIntyre, David
Sent: Tuesday, March 22, 2011 3:31 PM
To: Schmidt, Rebecca
Subject: FW: California Nuclear Plants Rated Highest Seismic Hazard

As requested

From: Wald, Matthew [mailto:mattwald@nytimes.com]
Sent: Tuesday, March 22, 2011 2:53 PM
To: McIntyre, David
Subject: FW: California Nuclear Plants Rated Highest Seismic Hazard

From: McCray, Nathan (EPW) [mailto:Nathan_McCray@epw.senate.gov]
Sent: Tuesday, March 22, 2011 2:32 PM
Subject: California Nuclear Plants Rated Highest Seismic Hazard

For Immediate Release
March 22, 2011

Contact: Mary Kerr or Kate Gilman (EPW/Boxer): 202-224-8832
mary_kerr@epw.senate.gov or kate_gilman@epw.senate.gov

**U.S. Senate Committee on
Environment and Public Works**

NRC Informs Boxer That Two Nuclear Plants Are Rated Highest Seismic Hazard *Both plants in California*

Washington, DC – Senator Barbara Boxer (D-CA), Chairman of the Environment and Public Works Committee, has received new information from the Nuclear Regulatory Commission (NRC) indicating that two California nuclear plants are the only ones in the nation that are located in the highest seismic hazard areas. According to the NRC, its rating was based on “the level of seismic activity and the potential for large magnitude earthquakes.”

Senators Boxer said: **“New information about the severe seismic risk at the San Onofre Nuclear Generating Station and the Diablo Canyon Power Plant make clear that these two plants require immediate attention in light of the catastrophic events in Japan.”**

Senator Boxer and Senator Diane Feinstein (D-CA) sent a letter (attached) to the NRC asking detailed questions about the two California nuclear plants’ design and operation, type of reactors, and preparedness to withstand an earthquake or tsunami.

Senator Boxer added: **“Given this new information, the questions raised in the letter to the NRC deserve immediate attention.”**

###

The text of the letter is pasted below:

March 16, 2011

The Honorable Gregory Jaczko
Chairman
U. S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Dear Chairman Jaczko:

The unfolding nuclear disaster in Japan has raised questions about the safety of nuclear power plants here in the U.S. As Senators from California, we are particularly interested in the safety of San Onofre Nuclear Generating Station, located in San Clemente, and the Diablo Canyon Nuclear Power Plant near San Luis Obispo, both of which are near earthquake faults.

Roughly 424,000 live within 50 miles of the Diablo Canyon and 7.4 million live within 50 miles of San Onofre Nuclear Generating Station. Although many safety measures have been taken to address potential hazards associated with these facilities, we need to ensure that the risk is fully evaluated.

For example, a 2008 California Energy Commission report presented very clear warnings of potential threats at both of these plants. This report found that the San Onofre plant could experience “larger and more frequent earthquakes” than the maximum 7.0 magnitude earthquake predicted when the plant was designed. It is our understanding that the NRC has not taken action to address these warnings in the report. It is also our understanding that the 2008 report found that there is an additional fault near the Diablo Canyon plant that should be taken into consideration as part of NRC’s relicensing process. We want to know if the NRC will address all of the threats, including seismic threats, described in the 2008 report at these facilities.

Therefore we ask that the Nuclear Regulatory Commission (NRC) perform a thorough inspection at these two plants to evaluate their safety and emergency preparedness plans.

In addition, we ask the NRC to answer the questions below regarding plant design and operations, type of reactor, and preparedness to withstand an earthquake or tsunami and other potential threats.

Plant Design and Operations

1. What changes to the design or operation of these facilities have improved safety at the plants since they began operating in the mid-1980s?
2. What emergency notification systems have been installed at California nuclear power plants? Has there ever been a lapse of these systems during previous earthquakes or emergencies?
3. What safety measures are in place to ensure continued power to California reactors in the event of an extended power failure?

Type of Reactor

1. What are the differences and similarities between the reactors being used in California (pressurized water reactors) and those in Japan (boiling water reactors), as well as the facilities used to house the reactors, including the standards to which they were built and their ability to withstand natural and manmade disasters?

Earthquakes and Tsunamis

1. We have been told that both Diablo Canyon and San Onofre Nuclear Generating Station are designed to withstand the maximum credible threat at both plants, which we understand to be much less than the 9.0 earthquake that hit Japan. What assumptions have you made about the ability of both plants to withstand an earthquake or tsunami? Given the disaster in Japan, what are our options to provide these plants with a greater margin for safety?
2. Have new faults been discovered near Diablo Canyon or San Onofre Nuclear Generating Station since those plants began operations? If so, how have the plants been modified to account for the increased risk of an earthquake? How will the NRC consider information on ways to address risks posed by faults near these plants that is produced pursuant to state law or recommendations by state agencies during the NRC relicensing process?
3. What are the evacuation plans for both plants in the event of an emergency? We understand that Highway 1 is the main route out of San Luis Obispo, what is the plan for evacuation of the nearby population if an earthquake takes out portions of the highway and a nuclear emergency occurs simultaneously?
4. What is the NRC's role in monitoring radiation in the event of a nuclear accident both here and abroad? What is the role of EPA and other federal agencies?
5. What monitoring systems currently are in place to track potential impacts on the U.S., including California, associated with the events in Japan?
6. Which federal agency is leading the monitoring effort and which agencies have responsibility for assessing human health impacts? What impacts have occurred to date on the health or environment of the U.S. or are currently projected or modeled in connection with the events in Japan?
7. What contingency plans are in place to ensure that the American public is notified in the event that hazardous materials associated with the events in Japan pose an imminent threat to the U.S.?

The NRC was created in the mid-1970s specifically to ensure the protection of public health and safety with regard to civilian nuclear power. The Commission plays an essential role ensuring that we learn from nuclear accidents and near misses. We hope you agree that we must identify whatever lessons are to be learned from the disaster in Japan in order to make facilities in the United States as safe as possible.

We look forward to working with you to ensure the safety of our nation's nuclear power plants and to make the changes necessary to ensure a nuclear tragedy does not occur in this country.

Sincerely,

Senator Barbara Boxer
Chairman, Environment and Public Works Committee

Senator Dianne Feinstein
Chairman, Appropriations Subcommittee on Interior, Environment and Related Agencies

Nathan McCray
Majority Staff
U.S. Senate Committee on Environment and Public Works
410 Dirksen Senate Office Building
Washington, DC 20510
202-224-8832
202-224-1273 Fax

From: Freedhoff, Michal <Michal.Freedhoff@mail.house.gov>
Sent: Tuesday, March 22, 2011 3:42 PM
To: Schmidt, Rebecca; Powell, Amy
Subject: RE: Markey correspondence

Thanks - that is very helpful information and I appreciate the rapid response! I know you guys are slammed.
Michal

Michal Ilana Freedhoff, Ph.D.
Policy Director
Office of Congressman Edward J. Markey (D-MA)
2108 Rayburn House Office Building
Washington, DC 20515
202-225-2836

From: Schmidt, Rebecca [mailto:Rebecca.Schmidt@nrc.gov]
Sent: Tuesday, March 22, 2011 3:41 PM
To: Freedhoff, Michal; Powell, Amy
Subject: RE: Markey correspondence

Michal—The Boxer Feinstein letter has not been answered. I just provided info on earthquakes to them over the phone. They linked the two. I had a meeting today about all the letters we have that are stacked up. We are trying to get to them. The daily SITREP info that you requested should be coming to you tomorrow. We just got that worked out. We will email it to you. I believe it is OOU info. The other requests will be answered as soon as we can. Sorry I don't have a more definitive answer for you.

From: Freedhoff, Michal [mailto:Michal.Freedhoff@mail.house.gov]
Sent: Tuesday, March 22, 2011 3:32 PM
To: Powell, Amy; Schmidt, Rebecca
Subject: Markey correspondence

Hi

Just checking in on correspondence - my understanding is that the CA Senators received a response to some of their letters to you today. Do you have a sense for when we will get responses to our various missives as well as the 90 day report and Commission votes?

Thanks
Michal

Michal Ilana Freedhoff, Ph.D.
Policy Director
Office of Congressman Edward J. Markey (D-MA)
2108 Rayburn House Office Building
Washington, DC 20515
202-225-2836

From: NEIGA@nei.org
Sent: Tuesday, March 22, 2011 4:21 PM
To: Powell, Amy
Subject: NEI Member Update on Japan Situation 3-22-11



The following is an update of the Fukushima Daiichi accident and its implications for the United States.

According to the South Coast Air Quality Management District, which manages three radiation measurement areas for the U.S. Environmental Protection Agency, radiation levels in the United States have not exceeded natural background levels since before the earthquake and tsunami in Japan. These levels are thousands of times below any level that would result in public health impacts, the agency said.

In a CBS News survey of 1,022 Americans, 53 percent said they are no more fearful of a nuclear plant accident occurring in the United States than they were before the earthquake in Japan, while 44 percent said they are more fearful than they were before. The survey was conducted March 18-21.

A survey of 1,004 Americans by Pew Research Center for People and the Press found that 39% say they favor promoting the increased use of nuclear power while 52% are opposed. Last October, 47% favored promoting the increased use of nuclear power and the same percentage (47%) was opposed. The most recent survey was conducted March 17-20.

Fukushima Daiichi Update

Power cables have been attached to all reactors at Japan's Fukushima Daiichi nuclear plant, but the power distribution network at reactors 1 and 2 must be repaired before off-site electricity can be restored.

Click [here](#) to unsubscribe



From: Powell, Amy
Sent: Wednesday, March 23, 2011 9:25 AM
To: Schmidt, Rebecca
Subject: Susan's email

FYI, the written transcript of Monday's Commission mtg is posted on the Japan page. Btw that and GBJ's COM re: the review, she should be able to draft something high-level about Commission plans...

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Loyd, Susan
To: Schmidt, Rebecca; Powell, Amy
Cc: Coggins, Angela; Batkin, Joshua
Sent: Wed Mar 23 08:50:19 2011
Subject: Testimony for March 30 and 31.

Someone did deliver to me a copy of the House written testimony from March 16. Thank you for that. If I am going to work on drafting testimony for next week, I need some more info, as I really have none:

Which committees; which days?

Written Testimony:

- Can I just update the written testimony from March 16, since it was not used, plus talk to Jim Dyer to see if he needs to add anything about Japan-related funding request?
- Do I add a brief section onto the beginning of the written testimony that provides a status and summary of Japan?
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Oral Testimony:

- Can I get an electronic copy of the oral testimony from March 16 to provide some guidelines to me?
- Should the oral testimony be primarily about the budget, with a brief preface on Japan?
- How long should the oral testimony be?

Thanks.
S.

Susan K. Loyd
Communications Director
Office of the Chairman

U.S. Nuclear Regulatory Commission
Tele: 301-415-1838
Susan.Loyd@nrc.gov

From: Schmidt, Rebecca
Sent: Wednesday, March 23, 2011 9:27 AM
To: Powell, Amy
Subject: FW: Testimony for March 30 and 31.

From: Schmidt, Rebecca
Sent: Wednesday, March 23, 2011 9:11 AM
To: Loyd, Susan
Cc: Belmore, Nancy
Subject: RE: Testimony for March 30 and 31.

SAC—March 30 – topic -- Japan and lessons for the US

Written

1. Yes
2. Yes
3. Yes—Nancy, please send to Susan

Oral

1. It is posted on the public website from the transcript Eliot bought
2. Primarily Japan I think
3. 2 - 3 minutes

HAC – calling the staffer to see if the topic has changed

Written – probably very similar to SAC

Oral –Similar to SAC

Note—Chr has hearing prep today at 2:00 so it could all change depending on what he wants

From: Loyd, Susan
Sent: Wednesday, March 23, 2011 8:50 AM
To: Schmidt, Rebecca; Powell, Amy
Cc: Coggins, Angela; Batkin, Joshua
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S.

Susan K. Loyd
Communications Director
Office of the Chairman
U.S. Nuclear Regulatory Commission
Tele: 301-415-1838
Susan.Loyd@nrc.gov

From: Belmore, Nancy
Sent: Wednesday, March 23, 2011 9:34 AM
To: Loyd, Susan
Cc: Schmidt, Rebecca
Subject: FW: Testimony for March 30 and 31.
Attachments: Chairman Jaczko Oral Statement from Energy and Commerce Hearing.doc; NRC Chairman Jaczko Testimony for 031611 Hearing.docx

Susan,

Attached is written testimony from 3/16 and oral statement. If you need anything more, let us know.

*Nancy Belmore
Office of Congressional Affairs
U.S. Nuclear Regulatory Commission
nancy.belmore@nrc.gov
301-415-1776*

From: Schmidt, Rebecca
Sent: Wednesday, March 23, 2011 9:11 AM
To: Loyd, Susan
Cc: Belmore, Nancy
Subject: RE: Testimony for March 30 and 31.

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Oral

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Susan K. Loyd
Communications Director
Office of the Chairman
U.S. Nuclear Regulatory Commission
Tele: 301-415-1838
Susan.Loyd@nrc.gov

NUCLEAR REGULATORY COMMISSION
THE FISCAL YEAR 2012 DEPARTMENT OF ENERGY AND
NUCLEAR REGULATORY COMMISSION BUDGET

SPEAKER:
GREGORY B. JACZKO,
CHAIRMAN,
U.S. NUCLEAR REGULATORY COMMISSION

THURSDAY, MARCH 17, 2011

*Transcript by
Federal News Service
Washington, D.C.*

REPRESENTATIVE ED WHITFIELD (R-KY): OK. I'll call the hearing back into order. We took a recess because Commissioner, you had a – you were called away to the White House, I believe, for a meeting. And we completed with Secretary Chu. So everyone's already given their opening statement. So at this time, that we would recognize you for five minutes for your opening statement.

GREGORY B. JACZKO: Well, thank you, Mr. Chairman, and to you and the other chairmen of the two subcommittees and the ranking members Rush and Green, and members of the – other members of the subcommittee.

I'm honored to appear before you today on behalf of the U.S. Nuclear Regulatory Commission. And given the events that are unfolding overseas, my opening remarks will focus on the crisis in Japan. And I have additional information on the fiscal year 2012 budget that I have submitted for the record.

Of course, I'd be happy to answer questions on those matters. But I'll focus my testimony on the situation in Japan.

I would first like to offer my condolences to all those affected by the earthquake and tsunami in Japan over the last few days. My heart goes out to those who have been dealing with the aftermath of these natural disasters.

I want to publicly acknowledge the tireless efforts, professionalism and dedication of the NRC staff and other members of the federal family in reacting to the events in Japan. This is just another example from my six-and-a-half years on the commission of the dedication of the NRC staff to the mission of protecting public health and safety.

The American people can be proud of the commitment and dedication within the federal workforce exemplified by our staff every day. While the NRC regulates the safe and secure commercial use of radioactive materials in the United States, we also interact with nuclear regulators from around the world.

Since Friday, the NRC's headquarters' operations center has been operating on a 24-hour basis to monitor events unfolding in nuclear power plants in Japan. Since the earthquake hit northeastern Japan last Friday, some reactors at the Fukushima No. 1 plant have lost their cooling functions, leading to hydrogen explosion and rises in radiation levels.

Eleven NRC experts on boiling-water reactors have already been deployed to Japan as part of a U.S. International Agency for – International Development (ph) team. And they are currently in Tokyo.

Within the U.S., the NRC has been coordinating its efforts with other federal agencies as part of the government response to the situation. This includes monitoring radioactive releases and predicting their path. Given the thousands of miles between Japan and the United States, Hawaii, Alaska, the U.S. territories and the West Coast, we are not expected to experience any harmful levels of radioactivity.

Examining all available information is part of the effort to analyze the event and understand its implications both for Japan and the United States. The NRC has been working with several agencies to assist – to assess recent seismic research for the central and eastern part of the country. That work continues to indicate that the U.S. nuclear facilities remain safe. And we will continue to work to maintain that level of protection.

U.S. nuclear power plants are built to withstand environmental hazards, including earthquakes and tsunamis. Even those plants located outside of areas with extensive seismic activity are designed for safety in the event of such a natural disaster.

And the NRC requires that safety-significant structures, systems and components be designed to take into account the most severe natural phenomenon historically reported for the site and surrounding area. The NRC then adds a margin for error to account for the historical data's accuracy.

This basically means that U.S. nuclear power plants are designed to be safe based on historical data from the area's maximum credible earthquake. And the NRC remains attentive to any information that can be applied to U.S. reactors. Our focus is always on keeping plants in this country safe and secure.

As this immediate crisis in Japan comes to an end, we will look at whatever information we can gain from the event and see if there are changes we need to make to our own systems. Within the next few days, I intend to meet with my colleagues on the commission on the current status, and to begin a discussion of how we will systematically and methodically review information from the events in Japan.

In the meantime, we continue to oversee and monitor plants to ensure that the U.S. reactors remain safe. The NRC will continue to monitor the situation and provide updates via press releases and our public blog. The NRC also stands ready to offer further technical assistance as needed. We hope that this situation will be resolved soon so that Japan can begin to recover from this terrible tragedy.

I would like, if possible, to give you a brief update on what we believe the current status of the reactors in Japan is. There are essentially four reactors that we are currently monitoring as best we can. They are all at the Fukushima No. 1 site. Three of those reactors were operating at the time of the earthquake and were shut down following their normal procedures.

We believe that in general for these three reactors, they have suffered some degree of core damage from insufficient cooling caused ultimately by the loss of off-site power and the inability of the on-site diesel generators to operate successfully following the tsunami.

We also believe that for these three reactors, that sea water is being injected with reported stable cooling. The primary containment is described as functional.

Now, I would note that for unit No. 2 at this site, we are – we believe that core cooling is not stable. But also for that site, we believe at this time that primary containment is continuing to function. I would also note that for unit No. 2, we believe that the spent-fuel pool level is decreasing.

For unit No. 3, we believe that the spent-fuel pool integrity has been compromised, and that there has perhaps been a zirc-water interaction.

Now, in addition to the three reactors that were operating at the time of the incident, a fourth reactor is also right now under concern. This reactor was shut down at the time of the earthquake. What we believe at this time is that there has been a hydrogen explosion in this unit due to an uncovering of the fuel in the fuel pool.

We believe that secondary containment has been destroyed and there is no water in the spent-fuel pool. And we believe that radiation levels are extremely high, which could possibly impact the ability to take corrective measures.

For the two remaining units at this site, we have an IAEA report that the water level was down a little bit in this spent-fuel pool as well. And for the final reactor, we don't have any significant information at this time.

Recently, the NRC made a recommendation that based on the available information that we have, that for a comparable situation in the United States, we would recommend an evacuation to a much larger radius than has currently been provided in Japan. As a result of this recommendation, the ambassador in Japan has issued a statement to American citizens that we believe it is appropriate to evacuate to a larger distance up to approximately 50 miles.

The NRC is part of a larger effort that continues to provide assistance to Japan as requested. And we will continue our efforts to monitor the situation with the limited data that we have available. So that provides a general summary of where – of where the incident stands.

And with that, I would end my testimony and be happy to answer questions you may have. Thank you.

STATEMENT
BY GREGORY B. JACZKO, CHAIRMAN
UNITED STATES NUCLEAR REGULATORY COMMISSION
TO THE
HOUSE COMMITTEE ON ENERGY AND COMMERCE
SUBCOMMITTEES ON ENERGY AND POWER, ENVIRONMENT AND THE ECONOMY
MARCH 16, 2011

Mr. Chairmen, Ranking Members Rush and Green, and Members of the Subcommittees, I am honored to appear before you today to discuss the Fiscal Year (FY) 2012 budget request for the U. S. Nuclear Regulatory Commission (NRC) and to respond to any questions that you may have. During the past few weeks, I've had an opportunity to meet with a number of you and your staff. I appreciate these conversations and your interest in the NRC's work. I look forward to working with all of you as this session of Congress continues.

The NRC is an independent Federal agency established to license and regulate the Nation's civilian use of byproduct, source, and special nuclear materials to ensure adequate protection of public health and safety, promote the common defense and security, and protect the environment. Our critical mission entails broad responsibilities for the agency. The NRC currently licenses, inspects, and assesses the performance of 104 operating nuclear power plants, as well as many fuel cycle facilities and research and test reactors. Furthermore, nuclear materials are in use at thousands of hospitals, universities, and other locations around the country. Each of these facilities and materials users presents different challenges for the NRC and requires that the NRC develop and sustain a diverse array of regulatory capabilities. The safety and security of these facilities and materials is, and always will be, our number one priority.

The NRC's Safety goal is to ensure adequate protection of public health and safety and the environment. The agency's safety program objectives are to prevent the occurrence of any nuclear reactor accidents, inadvertent criticality events, acute radiation exposures resulting in fatalities, significant releases of radioactive materials and significant adverse environmental impacts. The Security goal is to ensure adequate protection in the secure use and management of radioactive materials. The security program objective is to prevent any instances in which licensed radioactive materials are used in a hostile manner in the United States.

The NRC can be proud of its strong track record and our recognition by the international community as a leader in regulating the nuclear industry. The Commission cannot give enough credit for the NRC's effectiveness as a regulator to the NRC's diverse, hard-working, talented, and dedicated staff. The Commission is continually impressed by their expertise, experience, diversity, and commitment to public service.

It is important that the NRC maintain our commitment to continuous improvement. That has long been a defining value of the NRC and a key to our success in meeting our important safety mission. We have a responsibility to the public to always try to do better – whether by planning and prioritizing to allow for more timely implementation of agency actions by licensees, *or by communicating more effectively to better engage stakeholders in agency decisions.*

We also, however, have an additional imperative, in light of the prevailing budgetary climate and the strong desire by many to see federal agencies do more with less. No matter the outcomes of these current budget decisions, the agency must continue focusing on the critical task of how to make the most efficient use of our funds. The NRC must ensure that we are in

the strongest possible position to efficiently and effectively use our financial resources to meet our mission.

In this area, as in many others, good process is the key to good outcomes. In accordance with the Government Performance and Results Act, the NRC is taking steps to improve our strategic planning and annual performance plans in order to achieve greater alignment of goals and performance across the agency. As part of the NRC's efforts to build a Strategic Acquisition Program, we are taking steps to ensure agency contracting initiatives are implemented in a more timely and efficient manner. We have resources dedicated to other business process improvements including the Transforming Assets into Business Solutions (TABS), a task force focused on identifying the most efficient, effective and cost-conscious manner for the NRC to accomplish its corporate support functions.

These initiatives allow us to fully meet our safety and security responsibilities while also effectively reviewing applications associated with a renewed interest in the construction of new nuclear power plants and applications to construct and operate facilities that are part of the nuclear fuel cycle. The NRC is actively reviewing 12 combined applications to construct and operate new nuclear power reactors. Five different reactor designs are referenced in these applications; the NRC is currently reviewing the design applications for certification. If these design certifications are approved they will be available to be referenced in future COL applications, and thereby make those reviews more straightforward. The NRC is also performing safety, security, and environmental reviews of facility applications, a uranium deconversion facility application, and applications for new uranium recovery facilities.

With these efforts as a backdrop, the agency has formulated its FY 2012 budget to support the agency's Safety and Security strategic goals and objectives.

Specifics of the FY 2012 Budget Request

The NRC's FY 2012 budget request is organized by business lines within our two program areas: (1) Nuclear Reactor Safety, and (2) Nuclear Materials and Waste Safety Programs. The NRC's proposed FY 2012 budget for both programs is \$1,038.1 million, including 3,981.0 full-time equivalents (FTE), which represents a decrease of \$28.7 million, including an increase of 0.8 FTE, when compared to the FY 2010 funding levels. The funding levels reflected above also support the Office of the Inspector General (OIG). The OIG FY 2012 proposed budget of \$10.9 million includes resources to carry out the Inspector General's mission to independently and objectively conduct audits and investigations to ensure the efficiency and integrity of NRC programs and operations and to promote cost-effective management.

Pursuant to the provisions of the Energy Policy Act of 2005, the NRC's FY 2012 budget provides for 90 percent fee recovery, less (1) appropriations from the Nuclear Waste Fund, (2) appropriations to implement Section 3166 of the Ronald W. Reagan National Defense Authorization Act for Fiscal Year 2005, (which pertain to waste incidental to reprocessing), and (3) appropriations to conduct generic homeland security activities. Accordingly, \$909.5 million of the FY 2012 budget would be recovered from fees assessed to NRC licensees and applicants. This would result in a net appropriation of \$128.6 million, which is a decrease of \$26.1 million in net appropriations when compared to the FY 2010 funding levels.

Nuclear Reactor Safety Program

The Nuclear Reactor Safety Program encompasses NRC efforts to license, regulate, and oversee civilian nuclear power, research, and test reactors in a manner that adequately protects public health and safety and the environment. This program also provides high assurance of the

physical security of facilities and protection against radiological sabotage. This program contributes to the NRC's Safety and Security goals through the activities of the Operating Reactors and New Reactors Business Lines, which regulate existing and new nuclear reactors to ensure their safe operation and physical security. Overall resources requested in the FY 2012 budget for the Nuclear Reactor Safety Program are \$800.8 million, including 3,032.9 FTE. This funding level represents an overall funding decrease of \$8.0 million, with an increase of 48.4 FTE when compared with FY 2010 funding levels.

Within this program, the Operating Reactors Business Line supports the licensing, oversight, rulemaking, research, international activities, generic homeland security, and event response associated with the safe and secure operation of 104 civilian nuclear power reactors and 31 research and test reactors. The FY 2012 budget request for operating reactors is \$521.3 million, including 2,064.4 FTE. This represents an overall funding decrease of \$20.5 million, including 26.3 FTE, when compared with FY 2010 funding levels. Examples of activities that the requested resources would support include the following:

- conduct technical review for 950 licensing actions, including complex actions such as license amendment requests from power reactor licensees adopting the requirements for performance standards for fire protection, often referred to as National Fire Protection Association (NFPA) 805
- review extended power uprate requests for increasing electric generating capacity and one improved standard technical specification conversion
- conduct 13 active, high- and medium-priority rulemaking activities
- conduct critical research and test reactor project management functions pertaining to license renewal application efforts, and applications to produce medical isotopes
- continue reviews of 12 license renewal applications
- conduct inspection activities for the 104 operating nuclear power reactors, including the component design-basis inspections, fire protection inspections, and generic issues inspections (approximately 100 per year)
- continue the Resident Inspector Pipeline Initiative to maintain an experienced and stable onsite inspection presence of qualified resident inspectors at the 104 nuclear power reactors

- conduct domestic and international security reviews and support for screening approximately 3,000 national and international operational events, with detailed evaluation of approximately 200 of those events
- carry out cyber security evaluations, as well as 24 force-on-force security inspections to complete a 3-year cycle for inspecting power reactors
- evaluate licensee emergency preparedness during biennial exercises

The resources within the Operating Reactors Business Line reflect a decrease in license renewal activities because of schedule changes, and the reduced number of applications that will be under review.

The New Reactors Business Line supports the licensing, oversight, rulemaking, research, international activities, and generic homeland security associated with the safe and secure development of new power reactors from design, site approval, and construction to operational status. The FY 2012 budget request for new reactors is \$279.5 million, including 968.6 FTE. This represents an overall funding increase of \$12.5 million, including 74.8 FTE, when compared with FY 2010 funding levels. Examples of activities that the requested resources will support include the following:

- perform licensing and hearing support for 15 combined licenses, including two new combined license applications during FY 2012
- certify one design certification amendment, continue licensing reviews, rulemaking, or both on five applications and begin pre-application review on a new design
- review two early site permit applications and begin review of one new application expected in FY 2012
- develop and implement the construction inspection program
- inspect the four reactors expected to be under construction
- continue licensing and oversight activities for the construction of Watts Bar Unit 2
- conduct 15 domestic and international vendor inspections of component manufacturing quality
- conduct pre-application activities for two small modular reactor designs
- perform an acceptance review and initiate a design certification review for one small modular reactor
- continue the implementation of the Next Generation Nuclear Plant licensing strategy, which was developed in accordance with the Energy Policy Act of 2005

- continue to develop the regulatory framework that integrates the use of risk insights into the review process and support the resolution of key policy and safety issues associated with small modular reactors

The New Reactors Business Line shows an increase primarily driven by construction oversight of two new potential reactors under construction (for a total of five) and by development of the workforce to support inspection of up to an additional six reactors in future years. In addition, resources increase to support the review of new advanced reactor applications, increased pre-application interactions with prospective applicants, and funding for the one-time build-out of a new Headquarters office building.

Nuclear Materials and Waste Safety Program

The Nuclear Materials and Waste Safety Program encompasses the NRC's responsibility to license, regulate, and oversee nuclear materials and waste in a manner that adequately protects public health and safety and the environment. This program's goal is to verify the safety and security of materials and waste and protection against radiological sabotage, theft, or diversion of nuclear materials. Through this program, the NRC regulates uranium processing and fuel facilities; research and pilot facilities; nuclear materials users (medical, industrial, research, and academic); spent fuel storage; spent fuel storage casks and transportation packaging; decontamination and decommissioning of facilities; and low-level and high-level radioactive waste.

Overall resources requested in the FY 2012 budget for the Nuclear Materials and Waste Safety Program are \$226.5 million, including 868.5 FTE. This funding level represents an overall funding decrease of \$20.7 million, including 49.6 FTE, when compared with FY 2010 funding levels.

Within this program, the Fuel Facilities Business Line supports licensing, oversight, rulemaking, research, international activities, generic homeland security, and event response associated with the safe and secure operation of various fuel facilities, such as conversion, enrichment, and fuel fabrication facilities, and nuclear fuel research and pilot facilities. The FY 2012 budget request for fuel facilities is \$55.2 million, including 226.5 FTE. This represents an overall funding increase of \$0.6 million, including 18.2 FTE, when compared with FY 2010 funding levels.

Examples of activities that the requested resources would support include the following:

- licensing and oversight activities associated with fuel facilities and licensees with greater than critical mass quantities of special nuclear material
- operation and maintenance of the Nuclear Material Management and Safeguards System database and the Nuclear Materials Information Program
- emergency preparedness, security, and licensee performance reviews
- licensing, certification, inspection, oversight, environmental reviews, research, adjudicatory, enforcement, allegation, and other regulatory activities associated with new and operating fuel facilities, including uranium conversion and enrichment and fuel fabrication
- completion of mandatory hearings on the uranium enrichment license applications for the AREVA centrifuge and General Electric-Hitachi laser enrichment facilities
- licensing review of the International Isotopes depleted uranium deconversion facility
- oversight of construction activities at the proposed Mixed Oxide (MOX) Fuel Fabrication Facility and commencement of construction of the AREVA, General Electric-Hitachi, and International Isotopes facilities

The Fuel Facilities Business Line resources increase to account for the significant construction activities planned at the MOX facility; the commencement of construction at the AREVA centrifuge and General Electric-Hitachi laser enrichment facilities, and the International Isotopes depleted uranium deconversion facility; and to reflect staffing required at resident inspector offices. Resources also increase to support rulemaking activities regarding the potential licensing of reprocessing facilities. These increases are offset by the completion of the licensing and environmental reviews of the AREVA and General Electric-Hitachi license applications, as well as the completion of the licensing and environmental reviews for the International Isotopes depleted uranium deconversion facility application.

The Nuclear Materials Users Business Line supports the licensing, oversight, rulemaking, research, international activities, generic homeland security, event response, and State, Tribal, and Federal program activities associated with the safe and secure possession, processing, handling, and use of nuclear materials for the many and diverse uses of these materials. Resources also support the National Materials Program and the Agreement State activities. The FY 2012 budget request for nuclear materials users is \$92.1 million, including 347.1 FTE. This represents an overall funding increase of \$0.4 million, including 9.1 FTE, when compared with FY 2010 funding levels. Examples of activities that the requested resources would support include the following:

- completion of 2,500 materials licensing actions and 1,000 routine health and safety inspections, including naturally occurring and accelerator-produced radioactive material and security inspections
- event evaluation, research, incident response, allegation, enforcement and investigations, and rulemaking activities to maintain the regulatory safety and security infrastructure needed to process and handle nuclear materials
- materials activities related to State, Tribal, and Federal programs, including oversight, technical assistance, regulatory development, and cooperative efforts
- operation of the National Source Tracking System, a secure, Web-based, nationalized central registry designed to enhance the accountability for radioactive sources
- development of the Integrated Source Management Portfolio, which consists of the National Source Tracking System, the Web-Based Licensing System, and the License Verification System
- reviews of 135–180 import/export of nuclear equipment and material license applications
- investigations into 45–55 allegations of materials-related wrongdoing

The Nuclear Materials Users Business Line resources increase slightly because of adjustments made within the business line to cover emergent activities. Overall, a slight increase resulted to address the workload associated with the implementation of the Integrated Source Management Portfolio major information technology system, which consists of the National Source Tracking System, the Web-Based Licensing System, and the License Verification System.

The Spent Fuel Storage and Transportation Business Line supports the licensing, oversight, rulemaking, research, event response, and international activities associated with the safe and secure storage of spent nuclear fuel and safe and secure transportation of radioactive materials. The FY 2012 budget request for spent fuel storage and transportation is \$41.2 million, including 152.4 FTE. This represents an overall funding increase of \$7.4 million, including 29.7 FTE, when compared with FY 2010 funding levels. Examples of activities that the requested resources would support include the following:

- review of license requests for site-specific independent spent fuel storage installations (ISFSIs), dual-purpose (storage and transport) casks, transportation security plans, and route approvals to support safe and secure domestic and international transportation of radioactive materials, regulatory requirements for full-core offload capability at operating reactor sites, and transfer of spent fuel to ISFSIs to support reactor decommissioning
- regulatory improvements to the proficiency and effectiveness of the licensing, inspection, and enforcement programs associated with storage and transportation of spent nuclear fuel
- inspection of storage cask and transportation package vendors, fabricators, and designers to ensure safety
- resolution of technical issues associated with allowance of burn-up credit for transportation and storage casks and the transportation and storage of high burn-up fuels (greater than 45 gigawatt-days/ metric tons of uranium)
- interaction with the International Atomic Energy Agency and other international regulators to inform the development of the regulatory framework for transportation of radioactive materials, long-term spent fuel and high-level waste storage, deferred transportation, and ultimate geologic disposal

The Spent Fuel Storage and Transportation Business Line resources would increase to develop the information necessary to evaluate extended long-term storage of radioactive material.

Resources are provided for a risk-informing gap study to identify methods, data, decision criteria, and regulatory actions that are needed to implement a regulatory framework for very long-term (more than 120 years) dry spent fuel storage that is enhanced by risk insights.

Resources will also support a scoping study for a generic environmental impact statement for ensuring protection of the environment from such spent fuel storage. Resources will also be provided to conduct research on technical issues associated with this storage, and to coordinate

with international partners on options for harmonizing international standards for certification of transport packages and licensing of storage cask designs.

The Decommissioning and Low-Level Waste Business Line supports the licensing, oversight, rulemaking, research, and international activities associated with the safe and secure removal of a nuclear facility from service and reduction of residual radioactivity to a level that permits release of the property and termination of the NRC license. The FY 2012 budget request for decommissioning and low-level waste is \$37.9 million, including 142.6 FTE. This represents an overall funding decrease of \$0.3 million, including 7.6 FTE, when compared with FY 2010 funding levels. Examples of activities that the requested resources would support include the following:

- project management and technical reviews for decommissioning activities for 10 power reactors, 10 decommissioning research and test reactors, 24 decommissioning materials facilities, 21 inactive Title I decommissioning, 11 Title II decommissioning, uranium recovery facilities, and five sites that are under general license with the U.S. Department of Energy (DOE)
- interfaces with licensees, applicants, Federal and State agencies, the public, other stakeholders, and Native American Tribal governments
- 8 environmental reviews and 11 safety reviews (hearings included) in support of licensing and oversight of uranium recovery facilities
- oversight of certain DOE waste determination activities and plans for waste incidental to reprocessing consistent with the NRC's responsibilities in the Ronald W. Reagan National Defense Authorization Act for Fiscal Year 2005

The Decommissioning and Low-Level Waste Business Line resources decrease reflect a refocusing of long-term waste research activities and adjustments made to the contract, travel, and training needs and other carryover balances for waste incidental to reprocessing work.

The High-Level Waste Repository Business Line supports activities associated with DOE's Yucca Mountain geologic repository application. This activity terminates in FY 2011. No resources are requested in FY 2012 for this business line.

In the FY 2012 budget structure, the New Fuel Facilities and Operating Fuel Facilities Business Lines were merged into the Fuel Facilities Business Line.

Mr. Chairmen, Ranking Members, and Members of the Subcommittees, this concludes my formal testimony on the NRC's FY 2012 budget request. On behalf of the Commission, thank you for the opportunity to appear before you. I look forward to continuing to work with you to advance the NRC's important safety mission. I would be pleased to respond to any questions that you may have. Thank you.

From: Powell, Amy
Sent: Wednesday, March 23, 2011 9:52 AM
To: Collins, Elmo
Subject: Re: This Morning's Reports on Japan

Thanks - much easier to read without the redundancies. Tell Linda that I still talk about my meals at Olenjack's when I came to Arlington!

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Collins, Elmo
To: Powell, Amy
Sent: Wed Mar 23 09:41:08 2011
Subject: Fw: This Morning's Reports on Japan

I find these more informative

From: Howell, Linda
To: Collins, Elmo
Cc: Howell, Art
Sent: Wed Mar 23 09:17:30 2011
Subject: This Morning's Reports on Japan

Good Morning! Thought I'd give you a summary in a format that you can read by Blackberry.

Plant Status:

U1 – Core is damaged, extent undetermined. RCS pressure is 26 psig. RPV level ~1/2 top of fuel. Fire trucks being used to spray core with seawater and second injection path through feedwater line established. Primary containment functional, drywell pressure 22 psig. Secondary Containment lost during H2 explosion. SFP water level unknown, time margin to uncover fuel 127 days (292 bundles in pool). Offsite power line connected to U1, restoration attempts ongoing.

U2 – Core is damaged, extent undetermined. RPV level ~1/2 top of fuel. RCS pressure 0 psig, fire truck providing seawater to recirc line to cool core. Primary containment damaged, pressure 15.9 psig. Overnight steam was observed from reactor building and TEPCO has noted that primary containment may have been breached. Secondary containment opening enlarged to reduce H2 buildup. SFP was reported as full from TEPCO, but NRC team reports time margin to uncovering fuel as 39 days (587 bundles in pool). Offsite power restored to load-side panel, condition of pump motors and instrumentation being evaluated.

U3 – Core is damaged, extent undetermined. RPV level ~1/2 top of fuel. RCS pressure 0-5 psig, fire truck providing seawater to recirc line to cool core. Primary containment damaged, pressure at 14.5 psig. Secondary containment lost during H2 explosion, white smoke reported last night with black smoke rising from U3 early on 3/23 (U.S. date/time). TEPCO halted water spray operations and evacuated workers from the

area. Cause of smoke not yet determined. SFP water level undetermined and smoke was observed coming from the pool on 3/21. Smoke did subside. Time margin to uncovering fuel is estimated as 0 days (NRC team) (514 bundles). AC power restored to U3 CR (common CR with U4). Equipment available for operation not yet determined due to environmental conditions.

U4 – Core fully offloaded to SFP (1201 – 1330 bundles). SFP likely dry at some point and could have resulted in significant fuel damage. Some questions among experts about whether a zirc fire may have existed in portions of the pool for some period, but thermographic images received from Japan show no evidence of an ongoing zirc fire in the pool. Water overspray still ongoing periodically to provide fuel cooling. An external power cable has been connected to the power center.

U5 – Adequate RPV level and offsite power has been restored. RHR providing cooling to core and SFP.

U6 – Adequate RPV level and offsite power has been restored. RHR providing cooling to core and SFP.

One priority for TEPCO is to find alternative to use of seawater for cooling. TEPCO has briefed on its concern that saltwater buildup in the cores will interfere with cooling operations. TEPCO/Japan did request assistance with analysis of the impacts of salt buildup and DOE, NRC, GEH and INPO have provided input/assessments. The assessments align fairly well with primary differences being the timing of potential impacts on core cooling. The variance in these analyses are dependent on the flow rates used in the assessments. SECY, DOE was prepared to send an analysis to Japan concerning saltwater impacts, but NRC is working with DOE and other agencies to assure that a single perspective is provided to Japan rather than several different results.

Multiday dose monitoring onsite continues to indicate a decline, no new numeric information provided today. Met conditions are favorable with winds offshore until Mar 24. Japanese officials announced “high” levels of cesium-137 in soil samples collected 24 miles from the Fukushima complex. IAEA is sending a second monitoring team. The first IAEA team will focus on the Fukushima prefecture and the second team will focus on Tokyo.

Japanese officials have halted distribution of water, milk and several produce types from Fukushima and surrounding prefectures (4 total). US FDA has restricted imports from these prefectures. Japanese government has issued guidance to Tokyo residents that tap water should not be given to infants as iodine-131 levels are twice the acceptable level.

Radiation attributed to events at the Fukushima complex has been detected at IP2, Ginna, and Reykjavik (iodine-131).

The industry consortium just forming in the U.S. will conduct another conference call this morning. The group is reported to be making progress in identifying radiation monitoring and protective equipment that could be provided to Japan and is currently working to identify robotic equipment that could be shipped as well. DOE is evaluating these same resources that might be made available from the DOE labs.

A Deputies call will be conducted this morning with the primary focus on US protective action recommendations. There are varying opinions among the D/As about whether protective actions more restrictive than the EPA PAGs should be used for military personnel. (NRC is recommending use of the existing PAGs.)

The criteria for the “plausible bounding” scenario remain the same.

From: Schmidt, Rebecca
Sent: Wednesday, March 23, 2011 10:45 AM
To: Loyd, Susan
Cc: Powell, Amy
Subject: FW: Mar 31 hearing

Here you go—this is for the HAC on the 31st.

From: Schmidt, Rebecca
Sent: Wednesday, March 23, 2011 10:44 AM
To: 'Blair, Rob'
Subject: RE: Mar 31 hearing

Ok so our written and oral statements will be mostly budget with Japan inserted here and there

From: Blair, Rob [mailto:Rob.Blair@mail.house.gov]
Sent: Wednesday, March 23, 2011 10:43 AM
To: Schmidt, Rebecca
Cc: Powell, Amy
Subject: RE: Mar 31 hearing

Good morning, Rebecca. The topic is the FY12 budget request for NE and the NRC, but as I'm sure you've seen in every hearing, any topic may come up. I'd definitely have him ready for questions on Japan and Yucca, of course, in addition to specifics on the request.

Thanks - Rob

From: Schmidt, Rebecca [mailto:Rebecca.Schmidt@nrc.gov]
Sent: Wednesday, March 23, 2011 10:40 AM
To: Blair, Rob
Cc: Powell, Amy
Subject: Mar 31 hearing

Rob,

Just checking to see what the topic of the hearing really is—Japan, overall budget etc. We had prepared for overall budget but obviously things change. We are writing the statements and want to make sure we are on track. Whatever info you can share would be appreciated. Becky

From: Droggitis, Spiros
Sent: Wednesday, March 23, 2011 11:22 AM
To: Schmidt, Rebecca
Subject: RE: OPs Center --OCA

OK. Please try to get the status report out to the Hill before our 3:00 pm call. Don't you think? Tim can prepare the email for you to send the initial one out.

From: Schmidt, Rebecca
Sent: Wednesday, March 23, 2011 11:16 AM
To: Droggitis, Spiros
Subject: RE: OPs Center --OCA

Yes—now is fine

From: Droggitis, Spiros
Sent: Wednesday, March 23, 2011 11:02 AM
To: Schmidt, Rebecca
Cc: Powell, Amy
Subject: RE: OPs Center --OCA

Woohoo!!! When should I break this sad news to our Ops. Center friends?

From: Batkin, Joshua
Sent: Wednesday, March 23, 2011 10:54 AM
To: Schmidt, Rebecca; Coggins, Angela
Cc: Powell, Amy; Droggitis, Spiros
Subject: RE: OPs Center --OCA

k

From: Schmidt, Rebecca
Sent: Wednesday, March 23, 2011 9:26 AM
To: Batkin, Joshua; Coggins, Angela
Cc: Powell, Amy; Droggitis, Spiros
Subject: OPs Center --OCA

We are there through Friday 7-7. No one calls us there now.

I would like to move out of the Ops center Friday night .

Congressional staff can email us if needed.

If a crisis comes up, we can go back in.

Sending out the daily Sitrep info will help.

From: Droggitis, Spiros
Sent: Wednesday, March 23, 2011 11:45 AM
To: Schmidt, Rebecca
Subject: RE: OPs Center --OCA

Amy will be listed as the primary contact and the Congressional Affairs Officers as back-ups if it deals with their Regions. Amy should be able to field and disperse. That's what she does now.

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To: Droggitis, Spiros
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From: Taylor, Renee
Sent: Wednesday, March 23, 2011 12:00 PM
To: Schmidt, Rebecca
Cc: Landau, Mindy; Rihm, Roger; Powell, Amy
Subject: RE: March 29 Senate Energy Member Brief

Thank you I'll pass the information along.

From: Schmidt, Rebecca
Sent: Wednesday, March 23, 2011 11:59 AM
To: Taylor, Renee
Cc: Landau, Mindy; Rihm, Roger; Powell, Amy
Subject: March 29 Senate Energy Member Brief

Renee,

The Senate Energy Committee has accepted Bill as our representative for their Senator's briefing on Japan. Bill needs to know that. He will be on a panel with Pete Lyons. He needs a written statement and Mindy and Roger are already putting something together similar to Bill's Commission remarks. The meeting is Tuesday, March 29 at 10:00. Someone from OCA will go with him.

From: NEIGA@nei.org
Sent: Wednesday, March 23, 2011 12:04 PM
To: Powell, Amy
Subject: NEI Update March 23 11:00 AM EDT



The following is an update as of 11:00 AM EDT, March 23:

Workers continued efforts on Wednesday to restore offsite power to six reactors at the Fukushima Daiichi nuclear power plant. External power was available Wednesday at reactors 2, 3, 5 and 6, the Japan Atomic Industrial Forum said, but has not yet been reestablished to reactor safety systems.

The next step before fully connecting external power is to test and repair the equipment it will power. Cooling pumps for reactors 1 and 2 were covered by seawater and will require maintenance to bring them online. Tokyo Electric Power Co. is testing the cooling water pumps for reactor 3. External power was connected to the main control room at reactor 3 on Tuesday.

Reactors 5 and 6, which were shut down for maintenance at the time of the earthquake, are in safe shutdown.

“The earthquake and tsunami may have inflicted considerable damage in addition to knocking out electricity supplies,” the International Atomic Energy Agency said. “Since the extent of this damage (and therefore the extent of necessary repair) is unknown, it is not possible to accurately estimate a work schedule.”

Japanese authorities have detected high levels of radioactive cesium 137 in soil about 40 kilometers northwest of the Fukushima plant. Surveys of radioactive substances in soil at six locations found levels of cesium 137 that are 1,600 times typical for that area. Japan’s government is expanding offshore monitoring for radioactive nuclides to 30 kilometers.

Japanese authorities have advised Tokyo residents not to provide municipal drinking water to infants or use it in mixing powdered milk for infants because of abnormal levels of radioactive iodine (I-131) detected in the drinking water. One water sample (5,700 picocuries per liter) indicated approximately twice the Japanese government guideline and prompted the restriction for infants. In an emergency in the United States, state and local officials would closely monitor food and drinking water supplies and quarantine any contaminated supplies as needed to prevent public exposure. U.S. officials use pre-established guidelines for safe consumption of food and water set by the Food and

Drug Administration.

The U.S. Department of Energy has released the first radiation data from its aerial monitoring system and ground detectors in Japan. The department will update the data regularly.

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From: Droggitis, Spiros
Sent: Wednesday, March 23, 2011 2:27 PM
To: Powell, Amy
Subject: RE: OPs Center --OCA

Yes, more like 1-7 though. We've been doing 7-1 and 1-7.

From: Powell, Amy
Sent: Wednesday, March 23, 2011 2:24 PM
To: Droggitis, Spiros
Subject: Re: OPs Center --OCA

Great - I'm on that last shift, right? 2-7pm?

Thanks
Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Droggitis, Spiros
To: Powell, Amy; Schmidt, Rebecca
Sent: Wed Mar 23 14:19:11 2011
Subject: RE: OPs Center --OCA

Starting at the end of the Friday afternoon shift, we are back on the call list. So if something comes up, they'll call down the list and we can best decide how to proceed.

From: Powell, Amy
Sent: Wednesday, March 23, 2011 1:42 PM
To: Droggitis, Spiros; Schmidt, Rebecca
Subject: Re: OPs Center --OCA

Never so glad to see a single letter...
Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Droggitis, Spiros
To: Schmidt, Rebecca
Cc: Powell, Amy
Sent: Wed Mar 23 11:01:59 2011
Subject: RE: OPs Center --OCA

Woohoo!!! When should I break this sad news to our Ops. Center friends?

From: Batkin, Joshua
Sent: Wednesday, March 23, 2011 10:54 AM
To: Schmidt, Rebecca; Coggins, Angela
Cc: Powell, Amy; Droggitis, Spiros
Subject: RE: OPs Center --OCA

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Sending out the daily Sitrep info will help.

From: Epstein, Jonathan (Bingaman) <Jonathan_Epstein@bingaman.senate.gov>
Sent: Wednesday, March 23, 2011 3:40 PM
To: Powell, Amy; Lyons, Peter; Bowen, Matt; 'laneje@Hq.Doe.Gov'; Crowell, Brad; Schmidt, Rebecca
Subject: FW: Updated Member Briefing Announcement (3/29)

From: Campbell, Abigail (Energy)
Sent: Wednesday, March 23, 2011 3:39 PM
To: Campbell, Abigail (Energy)
Subject: Updated Member Briefing Announcement (3/29)

Senate Committee on Energy and Natural Resources

Member Briefing

on

Recent Events at Japan's Fukushima Daiichi Reactor Complex

**Tuesday, March 29, 2011
10:00 a.m., in 366 Senate Dirksen Office Building**

This briefing will provide an update for Committee Members and their staff on the recent events at the Tokyo Electric Power Company's Fukushima Daiichi reactor complex due to the earthquake and tsunami that occurred on March 11, 2011, with questions and answers to follow.

Panel I

Dr. Peter Lyons
Acting Assistant Secretary
Office of Nuclear Energy
U.S. Department of Energy

Mr. Bill Borchardt
Executive Director for Operations
Nuclear Regulatory Commission

Panel II

Mr. David Lochbaum
Nuclear Power Project
Union of Concerned Scientists

Mr. Anthony R. Pietrangelo
Senior Vice President and Chief Nuclear Officer
Nuclear Energy Institute

The briefing will be open to the public. For further information please contact Jonathan Epstein at Jonathan_Epstein@energy.senate.gov or Isaac Edwards at Isaac_Edwards@energy.senate.gov.

For Press Inquiries please contact Bill Wicker at 4-5243 or Rosemarie Calabro at 4-5039.

Abigail Campbell
United States Senate
Committee on Energy & Natural Resources
Abigail_Campbell@energy.senate.gov
(202) 224-4971

From: Haynes, Laura (Carper) <Laura_Haynes@carper.senate.gov>
Sent: Wednesday, March 23, 2011 3:59 PM
To: Droggitis, Spiros
Subject: RE: Daily status report

Oh no worries – just thought it would save you all time and was answering the question of whether we had the doc or not

From: Droggitis, Spiros [mailto:Spiros.Droggitis@nrc.gov]
Sent: Wednesday, March 23, 2011 3:33 PM
To: Haynes, Laura (Carper)
Subject: Re: Daily status report

We only gave that report to our oversight and appropriations staffers and we open the call to a wider distribution. Hope you understand.

From: Haynes, Laura (Carper) <Laura_Haynes@carper.senate.gov>
To: Droggitis, Spiros
Sent: Wed Mar 23 15:26:56 2011
Subject: RE: Daily status report

Got it – thanks!

From: Droggitis, Spiros [mailto:Spiros.Droggitis@nrc.gov]
Sent: Wednesday, March 23, 2011 3:12 PM
To: Haynes, Laura (Carper)
Subject: Re: Daily status report

We don't know who calls into these calls so I guess this is for completeness.

From: Haynes, Laura (Carper) <Laura_Haynes@carper.senate.gov>
To: Droggitis, Spiros
Sent: Wed Mar 23 15:03:30 2011
Subject: FW: Daily status report

We have this document that he is reading from.

From: Schmidt, Rebecca [mailto:Rebecca.Schmidt@nrc.gov]
Sent: Wednesday, March 23, 2011 12:43 PM
To: Poirier, Bettina (EPW); Dedrick, Kathy (EPW); VanMark, Ruth (EPW); Caputo, Annie (EPW); Haynes, Laura (Carper); Clifford, Brian (Barrasso); michael.beckerman@mail.house.gov; jeff.baran@mail.house.gov; maryam.brown@mail.house.gov; JohnM@mail.house.gov; david.mccarthy@mail.house.gov; abigail.pinkele@mail.house.gov; taunja.berquam@mail.house.gov; Rob.Blair@mail.house.gov; Clapp, Doug (Appropriations); Apostolou, Carrie (Appropriations)
Cc: OCA Distribution
Subject: Daily status report

In an effort to keep you informed, attached please find the [NRC Emergency Operations Center Status Report Update](#) on the status of the Fukushima Daiichi and Fukushima Daini sites in Japan. Please keep in mind that

this report is based on NRC's current understanding of the ongoing situation in Japan and is marked "Official Use Only". We request that you treat the information accordingly. We intend to provide you this status report daily. Note there is limited distribution. Please let us know if you have any questions.

Rebecca Schmidt
Director of Congressional Affairs
Nuclear Regulatory Commission

From: Loyd, Susan
Sent: Wednesday, March 23, 2011 5:21 PM
To: Schmidt, Rebecca
Subject: RE: Testimony for March 30 and 31.

Ok. That certainly makes sense – Didn't want to overlook it, if it existed. Thanks.

Susan K. Loyd
Communications Director
Office of the Chairman
U.S. Nuclear Regulatory Commission
Tele: 301-415-1838
Susan.Loyd@nrc.gov

From: Schmidt, Rebecca
Sent: Wednesday, March 23, 2011 5:17 PM
To: Loyd, Susan
Subject: Re: Testimony for March 30 and 31.

Did he have any? Bill started and the chr jumped in right? I think he was going to use the same oral statement he used at the house hearing that got changed at the last minute and his on our website

From: Loyd, Susan
To: Schmidt, Rebecca
Cc: Belmore, Nancy
Sent: Wed Mar 23 17:03:52 2011
Subject: RE: Testimony for March 30 and 31.

I have found the testimony from HAC, posted on the web. And, have a copy of the oral statement prepared for the House subcommittees on March 16.

I don't have his oral statement or written statement for the March 16 Senate hearing, unless I am being dense? (Very possible at this point...) Could you provide that? Thanks.

Susan K. Loyd
Communications Director
Office of the Chairman
U.S. Nuclear Regulatory Commission
Tele: 301-415-1838
Susan.Loyd@nrc.gov

From: Schmidt, Rebecca
Sent: Wednesday, March 23, 2011 9:11 AM
To: Loyd, Susan
Cc: Belmore, Nancy
Subject: RE: Testimony for March 30 and 31.

SAC—March 30 – topic -- Japan and lessons for the US

Written

1. Yes
2. Yes
3. Yes—Nancy, please send to Susan

Oral

1. It is posted on the public website from the transcript Eliot bought
2. Primarily Japan I think
3. 2 - 3 minutes

HAC – calling the staffer to see if the topic has changed

Written – probably very similar to SAC

Oral –Similar to SAC

Note—Chr has hearing prep today at 2:00 so it could all change depending on what he wants

From: Loyd, Susan

Sent: Wednesday, March 23, 2011 8:50 AM

To: Schmidt, Rebecca; Powell, Amy

Cc: Coggins, Angela; Batkin, Joshua

Subject: Testimony for March 30 and 31.

Someone did deliver to me a copy of the House written testimony from March 16. Thank you for that. If I am going to work on drafting testimony for next week, I need some more info, as I really have none:

Which committees; which days?

Written Testimony:

- Can I just update the written testimony from March 16, since it was not used, plus talk to Jim Dyer to see if he needs to add anything about Japan-related funding request?
- Do I add a brief section onto the beginning of the written testimony that provides a status and summary of Japan?
- Can I get an electronic copy of the March 16 written testimony?

Oral Testimony:

- Can I get an electronic copy of the oral testimony from March 16 to provide some guidelines to me?
- Should the oral testimony be primarily about the budget, with a brief preface on Japan?
- How long should the oral testimony be?

Thanks.

S.

Susan K. Loyd
Communications Director
Office of the Chairman
U.S. Nuclear Regulatory Commission
Tele: 301-415-1838
Susan.Loyd@nrc.gov

From: Lewis, Antoinette
Sent: Wednesday, March 23, 2011 5:33 PM
To: Vietti-Cook, Annette; Baggett, Steven; Bates, Andrew; Batkin, Joshua; Blake, Kathleen; Bollwerk, Paul; Bozin, Sunny; Bradford, Anna; Brown, Theron; Bubar, Patrice; Bupp, Margaret; Burns, Stephen; Chairman Temp; Clark, Lisa; Coggins, Angela; Cordes, John; Crawford, Carrie; Cutchin, James; Davis, Roger; Fopma, Melody; Franovich, Mike; Gibbs, Catina; Hackett, Edwin; Hart, Ken; Harves, Carolyn; Hawkens, Roy; Hayden, Elizabeth; Henderson, Karen; Herr, Linda; Hipschman, Thomas; Hudson, Sharon; KLS Temp; Kock, Andrea; Lepre, Janet; Loyd, Susan; Mamish, Nader; Marshall, Michael; Mitchell, Reggie; Monninger, John; Moore, Scott; OCA Distribution; OPA Resource; Orders, William; Pace, Patti; Poole, Brooke; Rabideau, Peter; Reddick, Darani; Laufer, Richard; RidsEdoDraftSrmVote Resource; RidsOcaaMailCenter Resource; RidsOcfoMailCenter Resource; RidsOgcMailCenter Resource; RidsOigMailCenter Resource; RidsOipMailCenter Resource; Baval, Rochelle; Rothschild, Trip; Joosten, Sandy; Savoy, Carmel; Sharkey, Jeffrey; Shea, Pamela; Snodderly, Michael; Sosa, Belkys; Speiser, Herald; Svinicki, Kristine; Temp, WCO; Temp, WDM; Thoma, John; Warren, Roberta; Zorn, Jason; Temp, GEA; Apostolakis, George; Tadesse, Rebecca; Butler, Gail; Perry, Jamila; Doane, Margaret; Castleman, Patrick; Montes, David; Dhir, Neha; Adler, James; Jimenez, Patricia; Muessle, Mary; Nieh, Ho; Ostendorff, William; Warnick, Greg; Pearson, Laura; Lui, Christiana; Lisann, Elizabeth
Cc: Wright, Darlene; Lewis, Antoinette
Subject: (RESEND) SRM - COMGBJ-11-0002 - NRC Actions Following the Events in Japan
Attachments: SRM-CmGBJ11-0002.docx

CURRENT VERSION

(ML110820875)

In an effort to keep the NRC staff informed of Commission decisions in a timely manner, attached for your information are the Staff Requirements Memoranda (SRMs) signed by the Secretary on March 23, 2011. Please make additional distribution to interested staff members in your office.

If you have any questions, please give me a call on 415-1969.

March 23, 2011

MEMORANDUM TO: Chairman Jaczko

FROM: Annette Vietti-Cook, Secretary **/RA/**

SUBJECT: COMGBJ-11-0002 – NRC ACTIONS FOLLOWING THE EVENTS
IN JAPAN

This memorandum is to inform you that all Commissioners have concurred in your proposal regarding NRC actions following the events in Japan. The attached tasking memorandum provides staff direction on this issue.

This completes action on COMGBJ-11-0002.

Attachment:
As stated

cc: Commissioner Svinicki
Commissioner Apostolakis
Commissioner Magwood
Commissioner Ostendorff
EDO
OGC
OPA
OCA

March 23, 2011

MEMORANDUM TO: R. W. Borchardt
Executive Director for Operations

FROM: Chairman Jaczko /RA/

SUBJECT: TASKING MEMORANDUM – COMGBJ-11-0002 – NRC
ACTIONS FOLLOWING THE EVENTS IN JAPAN

The staff should establish a senior level agency task force to conduct a methodical and systematic review of our processes and regulations to determine whether the agency should make additional improvements to our regulatory system and make recommendations to the Commission for its policy direction. The review should address the following near term and then longer term objectives.

Near Term Review

- This task force should evaluate currently available technical and operational information from the events that have occurred at the Fukushima Daiichi nuclear complex in Japan to identify potential or preliminary near term/immediate operational or regulatory issues affecting domestic operating reactors of all designs, including their spent fuel pools, in areas such as protection against earthquake, tsunami, flooding, hurricanes; station blackout and a degraded ability to restore power; severe accident mitigation; emergency preparedness; and combustible gas control.
- The task force should develop recommendations, as appropriate, for potential changes to inspection procedures and licensing review guidance, and recommend whether generic communications, orders, or other regulatory requirements are needed.
- The task force efforts should be informed by some stakeholder input but should be independent of industry efforts.
- The report would be released to the public per normal Commission processes (including its transmission to the Commission as a Notation Vote Paper).

To ensure the Commission is both kept informed of these efforts and called upon to resolve any policy recommendations that surface, the task force should, at a minimum, be prepared to brief the Commission on a 30 day quick look report; on the status of the ongoing near term review at approximately the 60 day point; and then on the 90 day culmination of the near term efforts. Additional specific subject matter briefings and additional voting items that request Commission policy direction may also be added during the Commission's agenda planning meetings.

(EDO)

(SECY Suspense: 30, 60, & 90 days)

Longer Term Review

- The task force's longer term review should begin as soon as NRC has sufficient technical information from the events in Japan with the goal of no later than the completion of the 90 day near term report, and the task force should provide updates on the beginning of the longer term review at the 30 and 60 day status updates.
- This effort would include specific information on the sequence of events and the status of equipment during the duration of the event.
- The task force should evaluate all technical and policy issues related to the event to identify potential research, generic issues, changes to the reactor oversight process, rulemakings, and adjustments to the regulatory framework that should be conducted by NRC.
- The task force should evaluate potential interagency issues such as emergency preparedness.
- Applicability of the lessons learned to non-operating reactor and non-reactor facilities should also be explored.
- During the review, the task force should receive input from and interact with all key stakeholders.
- The task force should provide a report with recommendations, as appropriate, to the Commission within six months from the start of the evaluation for Commission policy direction.
- The report would be released to the public per normal Commission processes (including its transmission to the Commission as a Notation Vote Paper).
- Before beginning work on the longer term review, staff should provide the Commission with estimated resource impacts on other regulatory activities.
- The ACRS should review the report as issued in its final form and provide a letter report to the Commission.

(EDO)

(SECY Suspense: 9 months, if needed)

cc: Commissioner Svinicki
Commissioner Apostolakis
Commissioner Magwood
Commissioner Ostendorff
OGC
CFO
OCA
OPA
Office Directors, Regions, ACRS, ASLBP (via E-Mail)
PDR

From: Loyd, Susan
Sent: Wednesday, March 23, 2011 5:36 PM
To: Schmidt, Rebecca
Subject: RE: Testimony for March 30 and 31.

Ok. Thank you!

Susan K. Loyd
Communications Director
Office of the Chairman
U.S. Nuclear Regulatory Commission
Tele: 301-415-1838
Susan.Loyd@nrc.gov

From: Schmidt, Rebecca
Sent: Wednesday, March 23, 2011 5:32 PM
To: Loyd, Susan
Subject: Re: Testimony for March 30 and 31.

Nope. It was supposed to be a briefing

From: Loyd, Susan
To: Schmidt, Rebecca
Sent: Wed Mar 23 17:21:17 2011
Subject: RE: Testimony for March 30 and 31.

And, he did not submit written testimony to the Senate Comm?

Susan K. Loyd
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Sent: Wednesday, March 23, 2011 8:50 AM
To: Schmidt, Rebecca; Powell, Amy
Cc: Coggins, Angela; Batkin, Joshua
Subject: Testimony for March 30 and 31.

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S.

Susan K. Loyd
Communications Director
Office of the Chairman
U.S. Nuclear Regulatory Commission
Tele: 301-415-1838
Susan.Loyd@nrc.gov

From: Schmidt, Rebecca
Sent: Wednesday, March 23, 2011 7:26 PM
To: 'Kathy_Dedrick@epw.senate.gov'; Batkin, Joshua; Powell, Amy
Subject: Re: Plants to be Reviewed

This is not the same as the Presidents request to look at US plants in the lessons learned study

From: Dedrick, Kathy (EPW) <Kathy_Dedrick@epw.senate.gov>
To: Schmidt, Rebecca; Powell, Amy; Brenner, Eliot
Sent: Wed Mar 23 19:24:03 2011
Subject: Re: Plants to be Reviewed

We just want to be able to say CA plants will be reviewed too. The Chairman asked for that in her letter. This lists makes it sound like we aren't going to be reviewed at all.

From: Schmidt, Rebecca [mailto:Rebecca.Schmidt@nrc.gov]
Sent: Wednesday, March 23, 2011 07:21 PM
To: Dedrick, Kathy (EPW); Powell, Amy <Amy.Powell@nrc.gov>; Brenner, Eliot <Eliot.Brenner@nrc.gov>
Subject: Re: Plants to be Reviewed

Did josh mention it in the call? I wasn't there. I had gathered up all the earthquake experts in one room for a call with Bettina and she was on the phone with Josh. I can forward to public affairs and see if they have gotten the question

From: Dedrick, Kathy (EPW) <Kathy_Dedrick@epw.senate.gov>
To: Schmidt, Rebecca; Powell, Amy
Sent: Wed Mar 23 19:16:11 2011
Subject: RE: Plants to be Reviewed

We have a press call tonight.

From: Schmidt, Rebecca [mailto:Rebecca.Schmidt@nrc.gov]
Sent: Wednesday, March 23, 2011 7:15 PM
To: Dedrick, Kathy (EPW); Powell, Amy
Subject: Re: Plants to be Reviewed

Don't know. We will get back to you tomorrow. This was based on a study a few years ago

From: Dedrick, Kathy (EPW) <Kathy_Dedrick@epw.senate.gov>
To: Schmidt, Rebecca; Powell, Amy
Sent: Wed Mar 23 19:09:12 2011
Subject: Re: Plants to be Reviewed

Can we assure folks that CA plants will be reviewed too?

From: Schmidt, Rebecca [mailto:Rebecca.Schmidt@nrc.gov]
Sent: Wednesday, March 23, 2011 07:00 PM
To: Dedrick, Kathy (EPW); Powell, Amy <Amy.Powell@nrc.gov>
Subject: Re: Plants to be Reviewed

Kathy--it is based on new seismic risk not already known seismic risk like the plants in CA. Josh talked to Bettina about it yesterday to explain. I can have someone call you tomorrow if you like. All the plants are in the central or eastern part of the US because the fault lines are not as well known.

From: Dedrick, Kathy (EPW) <Kathy_Dedrick@epw.senate.gov>
To: Schmidt, Rebecca; Powell, Amy
Sent: Wed Mar 23 18:53:30 2011
Subject: Plants to be Reviewed

Can you tell me how you came up with the list of 27 plants to be reviewed and why CA's plants are not on it? I think Senator Boxer will want hers reviewed soon.

Thanks.

US NRC to check seismic risk of 27 nuke units; Indian Point first

Washington (Platts)--23Mar2011/1033 am EDT/1433 GMT

The US Nuclear Regulatory Commission will conduct a seismic risk assessment of Entergy's Indian Point plant in New York next year, the first of 27 reviews of nuclear power units at 17 plants, agency spokeswoman Beth Hayden said Tuesday.

Separately, NRC Chairman Gregory Jaczko "has personally committed to inspect Indian Point," located about 35 miles north of New York City, although "no date has not been determined" for the visit, Hayden said.

The NRC reported these nuclear units will receive the seismic review next year: Indian Point 2, Indian Point 3, Limerick 1, Limerick 2, Peach Bottom 2, Peach Bottom 3, Seabrook, Crystal River 3, Farley 1, Farley 2, North Anna 1, North Anna 2, Oconee 1, Oconee 2, Oconee 3, St. Lucie 1, St. Lucie 2, Sequoyah 1, Sequoyah 2, Summer, Watts Bar 1, Dresden 2, Dresden 3, Duane Arnold, Perry 1, River Bend and Wolf Creek.

The earthquake risk review is part of a new assessment NRC conducted based on 2008 revised US Survey data of seismic activity in the eastern and central US, said Scott Burnell, an NRC spokesman. The review pre-dated the earthquake and tsunami that wreaked havoc this month on the Fukushima nuclear stations.

Burnell categorized the findings as a "very broad brush indicator" that is not sufficient to determine the odds for earthquakes at a given nuclear reactor site.

The NRC is planning to send letters to plant operators late this year.

"The expectation is this analysis would show where plants could improve what already is an acceptable response to seismic events," Burnell said. The 27 units selected for review showed the largest increase in seismic risk from a 1980s-era USGS study, he said.

The Indian Point site was selected as the first to be inspected by NRC next year because the revised seismic data showed the largest increase in seismic risk increase from the previous study, Hayden said.

Senator Barbara Boxer, chairman of of the Senate Environment and Public Works Committee and Senator Dianne Feinstein, both Democrats, on March 16 wrote to Jaczko asking that NRC inspect both the Diablo Canyon and San Onofre nuclear units, saying they are concerned that the plants "are near earthquake faults."

New York Governor Andrew Cuomo, a Democrat, urged NRC to shut Indian Point during the past decade when he was the state's attorney general. Cuomo raised concerns about the two-unit plant's proximity to the Ramapo fault and its discharge of heated water into the Hudson River.

"It is essential that the NRC move quickly to answer the significant and long-standing safety questions surrounding Indian Point," Cuomo said in a statement Tuesday.

Entergy said in a statement Tuesday: "All citizens of New York need to have access to the pertinent facts regarding Indian Point. We strongly believe that knowing the facts will answer the public's questions and will also clearly demonstrate that this facility is safe -- designed with a margin of safety beyond the strongest earthquake anticipated in the area. Accordingly, Entergy welcomes Governor Cuomo's call for a review of Indian Point by the federal Nuclear Regulatory Commission and stands ready to assist."

From: NEIGA@nei.org
Sent: Wednesday, March 23, 2011 8:11 PM
To: Powell, Amy
Subject: NEI Update on Japan situation



The following is an update as of 7:00 pM EDT, March 23:

Commissioners at the U.S. Nuclear Regulatory Commission on Wednesday voted to launch a two-pronged review of U.S. nuclear power plant safety in the aftermath of the March 11 earthquake and tsunami and the resulting events at the Fukushima Daiichi nuclear power plant.

The commission supported the establishment of an agency task force that will conduct both short- and long-term analysis of the lessons that can be learned from the situation in Japan. The results of their work will be made public.

“The longer-term review will inform any permanent NRC regulation changes” that are needed, the NRC said. The commission said it expects that the task force can begin the long-term evaluation in no later than 90 days, and added that the task force should provide a report with recommended actions within six months of the beginning of that effort.

NRC inspectors at U.S. nuclear power plants will also support the task force’s short-term effort, supplemented as necessary by experts from the agency’s regional and headquarters offices, the NRC said.

“Examining all the available information from Japan is essential to understanding the event’s implications for the United States. We will perform a systematic and methodical review to see if there are changes that should be made to our programs and regulations to ensure protection of public health and safety,” NRC Chairman Gregory Jaczko said.

Fukushima Daiichi

Smoke seen coming from the reactor building at reactor 3 on at 4:20 p.m. on Wednesday (Japan time) “decreased significantly,” the International Atomic Energy Agency said. On Wednesday, smoke from reactor 3 caused the temporary evacuation of workers from reactors 3 and 4. Efforts are continuing to restore offsite electricity at reactors 1, 2, 3, and 4.

As reported earlier here, seawater injection continues to cool reactors 1, 2 and 3. Seawater is being sprayed into the reactor 3 spent fuel pool. Crews continued to use a truck to deliver high volumes of water into the spent fuel pool at reactor 4, IAEA said.

Click [here](#) to unsubscribe



From: Schmidt, Rebecca
Sent: Thursday, March 24, 2011 7:02 AM
To: Baval, Rochelle
Subject: Re: Two Hearings Next Week

Mike weber is testifying

From: Baval, Rochelle
To: Schmidt, Rebecca; Powell, Amy
Sent: Thu Mar 24 06:24:31 2011
Subject: RE: Two Hearings Next Week

We got a letter about a hearing for the Chairman at 10am on 3/30 – House Committee on Transportation and Infrastructure, Subcommittee on Economic Development. This is in addition to the two below, correct?

Rochelle

From: Schmidt, Rebecca
Sent: Wednesday, March 23, 2011 1:51 PM
To: Powell, Amy; Baval, Rochelle
Subject: RE: Two Hearings Next Week

I don't think the times are set yet but those two are the only chr ones

From: Powell, Amy
Sent: Wednesday, March 23, 2011 1:49 PM
To: Schmidt, Rebecca
Subject: Fw: Two Hearings Next Week

Would you have someone confirm for Rochelle? I've seen everything piecemeal on Bberry but not listed out everything yet... Thanks
Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Baval, Rochelle
To: Powell, Amy
Sent: Wed Mar 23 11:33:38 2011
Subject: Two Hearings Next Week

Amy,

I've got two hearings for the Chairman next week on the Commission calendar:

March 30th - Hearing: Japan at 10:00am - Senate Committee on Appropriations, Location TBD

March 31st - Hearing: FY 2012 Budget at 10:00am - House Committee on Appropriations – Energy and Water Subcommittee, Location TBD

Just wanted to make sure I have them correct.

Rochelle

From: Schmidt, Rebecca
Sent: Thursday, March 24, 2011 8:22 AM
To: Droggitis, Spiros
Subject: Re: Testimony

No

----- Original Message -----

From: Droggitis, Spiros
To: Schmidt, Rebecca
Sent: Thu Mar 24 08:11:38 2011
Subject: RE: Testimony

GBJ wants to talk to US ambassador in Japan and Chu. Any idea what's up?

-----Original Message-----

From: Schmidt, Rebecca
Sent: Thursday, March 24, 2011 7:42 AM
To: Droggitis, Spiros; Riley (OCA), Timothy
Subject: Testimony

I would like to see the final before it goes to the hill. I should be at region office by 1230

From: Powell, Amy
Sent: Thursday, March 24, 2011 9:49 AM
To: Clapp, Doug (Appropriations)
Subject: RE: Commission tasking to staff re: actions following events in Japan

Yes, the staff memo reflects the votes of the Commission on the original paper.

-----Original Message-----

From: Clapp, Doug (Appropriations) [mailto:Doug_Clapp@appro.senate.gov]
Sent: Thursday, March 24, 2011 9:46 AM
To: Powell, Amy
Subject: RE: Commission tasking to staff re: actions following events in Japan

So we ignore the memo from Jaczko to other commissioners and focus only on final wording of memo from Jaczko to Borchardt?

-----Original Message-----

From: Powell, Amy [mailto:Amy.Powell@nrc.gov]
Sent: Thursday, March 24, 2011 8:42 AM
To: Clapp, Doug (Appropriations); Nelson, Matthew (Feinstein)
Subject: Commission tasking to staff re: actions following events in Japan

Hopefully you saw our press release on this last night, as the final tasking to NRC staff re: actions following the events in Japan was wrapped up last evening. If not, it is posted here: <http://www.nrc.gov/reading-rm/doc-collections/news/2011/11-055.pdf>

Here is the Commission voting record on this review - the "Staff Requirements" link is the actual tasking memo to staff.

COMGBJ-11-0002 <<http://www.nrc.gov/reading-rm/doc-collections/commission/comm-secy/2011/2011-0002comgbj.pdf>>

NRC Actions Following the Events in Japan

03/21/2011

Staff Requirements <<http://www.nrc.gov/reading-rm/doc-collections/commission/comm-secy/2011/2011-0002comgbj-srm.pdf>> - NRC Actions Following the Events in Japan

03/23/2011

Commission Voting Record <<http://www.nrc.gov/reading-rm/doc-collections/commission/comm-secy/2011/2011-0002comgbj-vtr.pdf>> - NRC Actions Following the Events in Japan

I am back in the office today if you have more questions.

Amy Powell

Associate Director

U. S. Nuclear Regulatory Commission

Office of Congressional Affairs

Phone: 301-415-1673

From: Collins, Elmo
Sent: Thursday, March 24, 2011 10:02 AM
To: Powell, Amy
Subject: FW: Update on Fukushima and Japan Status 3-24

Importance: High

If you're interested

Lets chat when you can

Elmo

From: Howell, Linda
Sent: Thursday, March 24, 2011 8:48 AM
To: Collins, Elmo
Cc: Howell, Art
Subject: Update on Fukushima and Japan Status 3-24
Importance: High

Plant Status:

Restoration of off-site power for Units 1-4 is still in progress. Power distribution panels in U2 and U4 have been connected off-site electrical supply. Electrical water pumps for the U2 SFP are being tested. Lighting in the U3 CR has been restored and some instrumentation was recovered for U1, U2 and U4. Power has been restored to the U4 CR (question of whether this is a common CR with U3).

Identifying sources of fresh water for use in cooling operations continues to be a priority. Some conversion to fresh water for core cooling has occurred for U1 and U3. Fresh water is being used for SFP cooling for U3. Although substantial quantities of water has been used for core cooling, flow rates are in question.

The NRC team has reported that primary containment structures for U1, U2 and U3 are in question (primary containment damage was previously noted for U2 and U3).

U1 – Primary containment in question, secondary containment lost. RCS pressure is 54 psig. Additional water spray occurred overnight as RPV temperatures exceeded safety limits. RPV temperature reported as 243C and 229C at the feed water nozzle and bottom of RPV, respectively (down from 305C and 306C).

U2 – Primary containment damaged, secondary containment opening enlarged to reduce H2 buildup. Steam periodically reported coming from hole in secondary containment. RCS pressure 0 psig. Seawater still in use for cooling core and SFP. RPV temperatures at the feed water nozzle and bottom of RPV are stable at 102C and 109C, respectively. Cumulative amount of water sprayed is 58 t.

U3 – Primary containment damaged, secondary containment lost. RCS pressure 0 psig. Black smoke observed coming from U3 forced evacuation of workers from U3 and U4 for approximately 13 hrs. late on 3/23/2011. RPV temperatures have decreased to 80.7C and 185.4C at the feed water nozzle and bottom of RPV, respectively (down from 304.8C and 225.5C, respectively). Cumulative amount of water sprayed is 3927 t.

U4 – Periodic spraying of sea water on SFP for cooling. Cumulative amount of water sprayed is 535 t.

U5 – RHR pump failed after the switchover to external power. Ongoing work to replace motor or restore.

U.S. experts and representatives from TEPCO and NISA are scheduled to meet on March 25 to discuss the implications of salt accumulation and the SFPs.

Dose rates at the site have not changed appreciably (60 mR/hr to 15 R/hr). DOE's AMS identified low levels of radiation beyond a 25 mile ring to the north, west and south of the Fukushima complex. Winds are predicted to shift to the N-NE, out to sea. The Tokyo government lifted a ban on tap water for infants based on monitoring results at a water purification plant. Low levels of I-131, Cs-134 and Cs-137 have been identified at a number of NPPs in the U.S.

The five workers reported to have received lethal radiation doses have perished. Three workers were hospitalized on March 23 following exposure to high radiation levels. Two were seriously injured and the third was released. (The exact injury and doses received is not included in reporting but media has reported exposures to lower extremities.)

Australia, Hong Kong, Singapore and Canada have placed restrictions on importing food stuffs from the prefectures affected by radiation in Japan. (FDA has a ban in place for imports from 4 prefectures.)

The USAID team, UN Disaster Assessment and Coordination personnel and Japanese Ministry of Foreign Affairs are scheduled to visit the Miyagi Prefecture today.

Based on discussions yesterday, it is expected that the State Dept. will recommend to the White House that a team of relevant Federal agencies, including NRC, be assembled to quickly look at the applicable PAGs in the context of a potential periodic/long duration release in Japan and make any alternative recommendations as necessary.

A plausible bounding scenario for Tokyo was developed yesterday following discussions with NOE, NARAC and NRC. NARAC is running a new model for Tokyo that is based on the following assumptions:

- No SFP fires, but 50% loss of U3 SFP and 100% loss of U4 SFP
- Core damage in U1, U2 and U3 at 33%
- Design containment leakage rate (0.5% per day)
- Release period begins on March 15 and continues for 12 days
- Use of actual and forecast met data

Estimates of TEDE, thyroid dose, worker protection dose rate and total deposition in Japan will be calculated and provided to the Japanese govt.

NRC is working on development of a short term re-entry plan permitting retrieval of personal effects for U.S. citizens in Japan. NRC is also working with EPA and the White House to assign leadership to a single Federal agency that would incorporate EPA data and data received from U.S. plants into a comprehensive dose assessment for the U.S.

From: Powell, Amy
Sent: Thursday, March 24, 2011 10:45 AM
To: Loyd, Susan
Subject: RE: Info re Hearings

That's draft – we'll send you the FINAL (ie Commission changes incorporated) as well. Should wrap up early this afternoon.

Thanks,
Amy

From: Loyd, Susan
Sent: Thursday, March 24, 2011 10:43 AM
To: Powell, Amy
Subject: RE: Info re Hearings

I did receive the testimony prepared for Cyndi. Thanks.

Susan K. Loyd
Communications Director
Office of the Chairman
U.S. Nuclear Regulatory Commission
Tele: 301-415-1838
Susan.Loyd@nrc.gov

From: Powell, Amy
Sent: Thursday, March 24, 2011 10:37 AM
To: Loyd, Susan
Subject: RE: Info re Hearings

I did not forget – just trying to direct traffic toward four hearings...

March 30th: Senate Appropriations Committee, Subcommittee on Energy and Water
Focus: Japan and How It Applies to the US

March 31st: House Appropriations Committee, Subcommittee on Energy and Water
Focus: FY12 budget request

Toward the Senate Approps subcommittee testimony, I will have Time on our staff send you a copy of Cyndi Peterson's written testimony (once finalized) for a public meeting/field hearing tomorrow re: Japan. That may prove helpful in addition to GBJ's remarks from Monday's Commission meeting and the now-issued tasking to NRC staff (result of his COM).

More soon,
Amy

From: Loyd, Susan
Sent: Thursday, March 24, 2011 10:21 AM
To: Powell, Amy
Subject: Info re Hearings

Amy:

You were going to send me the specific names of the Committees for the Hearings next week. Thanks!
S.

Susan K. Loyd
Communications Director
Office of the Chairman
U.S. Nuclear Regulatory Commission
Tele: 301-415-1838
Susan.Loyd@nrc.gov

From: Freedhoff, Michal <Michal.Freedhoff@mail.house.gov>
Sent: Thursday, March 24, 2011 11:14 AM
To: Powell, Amy
Cc: Schmidt, Rebecca
Subject: RE: Commission voting on review following events in Japan

Thanks.
Michal

Michal Ilana Freedhoff, Ph.D.
Policy Director
Office of Congressman Edward J. Markey (D-MA)
2108 Rayburn House Office Building
Washington, DC 20515
202-225-2836

From: Powell, Amy [mailto:Amy.Powell@nrc.gov]
Sent: Thursday, March 24, 2011 10:58 AM
To: Freedhoff, Michal
Cc: Schmidt, Rebecca
Subject: Commission voting on review following events in Japan

Hi Michal –

You had asked to receive the paper, voting record, and outcome related to directing the NRC staff's review following events in Japan. Here are links to the complete record, now that voting and the staff tasking memo were completed last night:

COMGBJ-11-0002	NRC Actions Following the Events in Japan	03/21/2011
	Staff Requirements – NRC Actions Following the Events in Japan	03/23/2011
	Commission Voting Record – NRC Actions Following the Events in Japan	

Amy

Amy Powell
Associate Director
U. S. Nuclear Regulatory Commission
Office of Congressional Affairs
Phone: 301-415-1673

From: Droggitis, Spiros
Sent: Thursday, March 24, 2011 11:21 AM
To: Powell, Amy
Subject: RE: Tasking memo to NRC staff re: review following events in Japan

Not really.

From: Powell, Amy
Sent: Thursday, March 24, 2011 11:19 AM
To: Droggitis, Spiros
Subject: RE: Tasking memo to NRC staff re: review following events in Japan

OK, still think I needed to get our oversight folks the tasking memo given that it was already publicly posted. Thanks for the heads up that there may be more to come...

Things quiet there?

From: Droggitis, Spiros
Sent: Thursday, March 24, 2011 11:10 AM
To: Powell, Amy
Subject: RE: Tasking memo to NRC staff re: review following events in Japan

Tim got these questions from Congressman Kucinich's staff:

Press release: Review of plants in US. What is name of Taskforce?
Is the taskforce constituted? Who is on the team conducting the review of U.S. plants? How were they selected?

When I was chasing Josh around yesterday afternoon to get him to focus on the testimony, I overheard him say why not get two news cycles out of this, leading me to believe that the make up of team, charter, etc. would be announced today. I told Tim to hold off that something could be coming out today.

From: Powell, Amy
Sent: Thursday, March 24, 2011 10:51 AM
To: 'Annie_Caputo@epw.senate.gov'; Dedrick, Kathy (EPW); 'laura_haynes@carper.senate.gov'; brian_clifford@barrasso.senate.gov; Baran, Jeff; Dotson, Greg; Pinkele, Abigail; Marshall, John; McCarthy, David; maryam.brown@mail.house.gov; chris.sarley@mail.house.gov; Beckerman, Michael; Clapp, Doug (Appropriations); Apostolou, Carrie (Appropriations); Blair, Rob; 'taunja.berquam@mail.house.gov'
Subject: Tasking memo to NRC staff re: review following events in Japan

Below is a link to the tasking memo to NRC staff, following the Commission's vote, on proceeding with a review following the events in Japan:

<http://www.nrc.gov/reading-rm/doc-collections/commission/comm-secy/2011/2011-0002comgbj-srm.pdf>

The memo directs NRC staff to establish a senior level agency task force to conduct a methodical and systematic review of our processes and regulations to determine whether the agency should make additional improvements to our regulatory system and make recommendations to the Commission for its policy direction. The review should address the following near term and then longer term objectives.

The complete voting record leading to this memo is posted at <http://www.nrc.gov/reading-rm/doc-collections/commission/comm-secy/2011/>

Amy

Amy Powell
Associate Director
U. S. Nuclear Regulatory Commission
Office of Congressional Affairs
Phone: 301-415-1673

From: Droggitis, Spiros
Sent: Thursday, March 24, 2011 11:26 AM
To: LIA08 Hoc
Subject: FW: USAID Call

From: LIA12 Hoc
Sent: Tuesday, March 22, 2011 2:41 PM
To: Shane, Raeann; Droggitis, Spiros; Schmidt, Rebecca; Weil, Jenny; Decker, David; Powell, Amy; Riley (OCA), Timothy; Dacus, Eugene
Subject: USAID Call

Participated in the daily 2:00 p.m. USAID congressional staff call. Jeff Temple provided update on NRC activities. There were no questions for the NRC. USAID announced that the frequency of the call will be reduced. The next call is scheduled for Thursday.

From: Powell, Amy
Sent: Thursday, March 24, 2011 11:27 AM
To: Rihm, Roger
Subject: RE: Draft Statement for Bill's Tuesday Testimony

Committees only allow 5 minutes for oral statements. As a guide, Chairman's opening statement for 3/16 was 5 pages double-spaced.

Amy

From: Rihm, Roger
Sent: Thursday, March 24, 2011 11:25 AM
To: Powell, Amy
Subject: RE: Draft Statement for Bill's Tuesday Testimony

What length (double spaced pages) should I shoot for on the oral statement?

From: Powell, Amy
Sent: Thursday, March 24, 2011 11:23 AM
To: Rihm, Roger; Schmidt, Rebecca; Riley (OCA), Timothy
Cc: Landau, Mindy
Subject: RE: Draft Statement for Bill's Tuesday Testimony

Thanks Roger –

We will review from here before getting it up for Commission review. We will let you know if we have any concerns.

Thanks
Amy

From: Rihm, Roger
Sent: Thursday, March 24, 2011 11:21 AM
To: Schmidt, Rebecca; Powell, Amy; Riley (OCA), Timothy
Cc: Landau, Mindy
Subject: Draft Statement for Bill's Tuesday Testimony
Importance: High

Attached is our draft of Bill's "statement for the record" for Tuesday's appearance. It has been reviewed by Bill and others in OEDO. I plan to proceed to prepare a shorter oral statement from the attached. I anticipate that statement will include information on the current status of things in Japan that is not included here as events continue to evolve.

Should I assume you will take it from here? If so, please let me know if you have any major concerns as I will be proceeding to prepare the oral statement.

NRC Response to Recent Nuclear Events in Japan and the Continuing Safety of the U.S. Commercial Nuclear Reactor Fleet

The staff of the RC is deeply saddened by the tragedy in Japan. I and many of my colleagues on the NRC staff have had many years of very close and personal interaction with our regulatory counterparts and we would like to extend our condolences to them.

Introduction

The NRC is mindful that our primary responsibility is to ensure the adequate protection of the public health and safety of the American people. We have been very closely monitoring the activities in Japan and reviewing all available information. Review of this information, combined with our ongoing inspection and licensing oversight, allows us to conclude that the U.S. plants continue to operate safely. There has been no reduction in the licensing or oversight function of the NRC as it relates to any of the U.S. licensees.

We have a long history of conservative regulatory decision-making. We have been intelligently using risk insights to help inform our regulatory process, and, over more than 35 years of civilian nuclear power in this country, we have never stopped making improvements to plant designs as we learn from operating experience.

Notwithstanding the very high level of support being provided as a result of events in Japan, we continue to maintain our focus on our domestic responsibilities.

I'd like to begin with a brief overview of our immediate and continuing response. I then want to spend the bulk of my time discussing the reasons for our continuing confidence in the safety of the US commercial nuclear reactor fleet, and the path forward for the NRC in light of the events in Japan.

The NRC's immediate and Continuing Response to Events in Japan

On Friday, March 11th an earthquake hit Japan, resulting in the shutdown of more than 10 reactors. From what we know now, it appears that the reactors' response to the

earthquake went according to design. The ensuing tsunami, however, caused the loss of normal and emergency AC power to six units at the Fukushima Daiichi site; and it is those six units that have received the majority of our attention since that time. Units One, Two, and Three at that six unit site were in operation at the time. Units Four, Five, and Six were in previously scheduled outages.

Shortly after 4:00 AM on Friday, March 11th, the NRC Emergency Operations Center made the first call, informing NRC management of the earthquake and the potential impact on U.S. plants. We went into the monitoring mode at the Emergency Operations Center and the first concern for the NRC was possible impacts of the tsunami on U.S. plants and radioactive materials on the West Coast, and in Hawaii, Alaska, and U.S. Territories in the Pacific.

On that same day, Friday, March 11th, we began interactions with our Japanese regulatory counterparts and dispatched two experts to Japan to help at the embassy. By Monday, we had dispatched a total of 11 staff to Japan. We have subsequently rotated in additional staff to continue our on-the-ground assistance in Japan. The areas of focus for this team are: 1) to assist the Japanese government and respond to requests from our regulatory counterpart, NISA; 2) to support the U.S. ambassador and his understanding of the nuclear impacts of this event; and 3) to facilitate the information flow from Japan to the U.S. so that we can assess the implications for U.S. citizens and the U.S. reactor fleet in as timely a manner as possible.

We have an extensive range of stakeholders with whom we have ongoing interaction, including the White House, Congressional staff, our state regulatory counterparts, a number of other federal agencies, and the international regulatory bodies around the world.

The NRC response in Japan and our Emergency Operations Center continue 24/7. This has involved the efforts of over 250 NRC staff on a rotating basis. The entire agency is coordinating and pulling together in response to this event so that we can provide assistance in Japan while continuing the normal activities necessary to fulfill our domestic responsibilities.

Let me also just note here in concluding this section of my remarks that the U.S. government has an extensive network of radiation monitors across the country. Monitoring at nuclear power plants and EPA's system has not identified any radiation levels of concern in this country. In fact, natural background from things like rocks, the sun, and buildings, is 100,000 times more than doses attributed to any level that has been detected to date. We feel confident that there is no reason for concern in the United States regarding radioactive releases from Japan.

Continuing Confidence in the Safety of U.S. Nuclear Power Plants

I will now turn to the factors that assure us of ongoing domestic reactor safety. We have, since the beginning of the regulatory program in the United States, used a philosophy of Defense-in-Depth, which recognizes that nuclear reactors require the highest standards of design, construction, oversight, and operation, and does not rely on any single level of protection for public health and safety. We begin with designs for every individual reactor in this country that take into account site-specific factors and include a detailed evaluation for any natural event, such as earthquakes, tornadoes, hurricanes, floods, and tsunamis, as they relate to that site.

There are multiple physical barriers to fission product release at every reactor design, and beyond that, there are both diverse and redundant safety systems that are required to be maintained in operable condition and frequently tested to that ensure that the plant is in a high condition of readiness to respond to any scenario.

We've taken advantage of the lessons learned from previous operating experience, to implement a program of continuous improvement for the U.S. reactor fleet. We have learned from experience across a wide range of situations, including most significantly, the Three Mile Island accident in the late 1970s. As a result of those lessons learned, we have significantly revised emergency planning requirements and emergency operating procedures. We have addressed many human factors issues regarding how control room employees operate the

plant, we added new requirements for hydrogen control to help prevent explosions inside of containment, and we also created requirements for enhanced control room displays of the status of pumps and valves.

We have a post-accident sampling system that enables the monitoring of radioactive material release and possible fuel degradation. And, one of the most significant changes after Three Mile Island was expansion of the Resident Inspector Program, which has at least two full-time NRC inspectors on site at each facility who have unfettered access to all licensees' activities 24 hours a day, seven days a week.

As a result of operating experience and ongoing research programs, we have developed requirements for severe accident management guidelines. These are components and procedures developed to ensure that, in the event all of the above precautions failed and a severe accident occurred, the plant would still protect public health and safety. The requirements for severe accident management have been in effect for many years and are frequently evaluated by the NRC inspection program.

As a result of the events of September 11, 2001, we identified important pieces of equipment that, regardless of the cause of a significant fire or explosion at a plant, we want to have staged in advance, as well as new procedures and policies that would help deal with a severe situation.

Our program of continuous improvement based on operating experience will now include evaluation of the significant events in Japan and what we can learn from them. We already have begun enhancing inspection activities through temporary instructions to our inspection staff, including the resident inspectors and the region-based inspectors in our four Regional offices, to look at licensees' readiness to deal with both the design basis accidents and the beyond-design basis accidents.

We've also issued an information notice to the licensees to make them aware of the events in Japan, and the kinds of activities we believe they should be engaged in to verify their

readiness. Specifically, we have directed them to verify that their capabilities to mitigate conditions that result from severe accidents, including the loss of significant operational and safety systems, are in effect and operational. They are verifying the capability to mitigate a total loss of electric power to the nuclear plant. They also are verifying the capability to mitigate problems associated with flooding, and the impact of floods on systems both inside and outside of the plant. And, they are identifying the equipment that's needed for the potential loss of equipment due to seismic events appropriate for the site, because each site has its own unique seismic profiles. The information that we gather from this temporary inspection will be used to evaluate the industry's readiness for similar events, and will aid in our understanding of whether additional regulatory actions need to be taken in the immediate term.

The industry also is independently performing many verification activities at this time to confirm that all of these processes and procedures and rules that have been implemented are still valid.

Over the last 15 or 20 years, there have been a number of new rulemakings that have enhanced the domestic fleet's preparedness against some of the problems we are seeing in Japan. The station blackout rule requires every plant in this country to analyze what the plant response would be if it were to lose all alternating current so that it could respond using batteries for a period of time, and then have procedures in place to restore alternating current to the site and provide cooling to the core.

The hydrogen rule requires modifications to reduce the impacts of hydrogen generated for beyond-design basis events and core damage. There are equipment qualification rules that require equipment, including pumps and valves, to remain operable under the kinds of environmental temperature and radiation conditions that you would see under a design basis accident. And then, regarding the type of containment design used by the most heavily damaged plants in Japan, we have had a Boiling Water Reactor Mark I Containment Improvement Program since the late 1980s, which has required installation of

hardened vent systems for containment pressure relief, as well as enhanced reliability of the automatic depressurization system.

The final factor I want to mention with regard to our belief in the ongoing safety of the U.S. fleet is the emergency preparedness and planning requirements in place that provide ongoing training, testing, and evaluations of licensees' emergency preparedness programs. In coordination with our federal partner, FEMA, these activities include extensive interaction with state and local governments, as those programs are evaluated and tested on a periodic basis.

The Path Ahead

Beyond the initial steps to address the experience from the events in Japan, we have received direction from the Commission to establish a senior level agency task force to conduct a methodical and systematic review of our processes and regulations to determine whether the agency should make additional improvements to our regulatory system and make recommendations to the Commission for its policy direction. This activity will have both near-term and longer-term objectives.

For the near term effort, we are beginning a 90-day review. This review will evaluate all of the currently available information from the Japanese events to identify immediate or near-term operational or regulatory issues potentially affecting the 104 operating reactors in the U.S., including their spent fuel pools. Areas of investigation will include the ability to protect against natural disasters, response to station blackouts, severe accidents and spent fuel accident progression, radiological consequence analysis, and severe accident management issues regarding equipment. Over this 90-day period, we will develop recommendations, as appropriate, for changes to inspection procedures and licensing review guidance, and recommend whether generic communications, orders, or other regulatory requirements are needed.

This 90-day effort will include a 30-day Quick Look Report to the Commission to provide a snapshot of the regulatory response and the condition of the U.S. fleet based on

information we have available at that time. Preparing a Quick Look Report also will ensure that the Commission is both kept informed of ongoing efforts and prepared to resolve any policy recommendations that surface. I believe we will have limited stakeholder involvement in the first 30 days to accomplish this, but over the 90-day and longer-term efforts we will seek additional stakeholder input. These near-term activities will be carried out independent of any industry efforts that might be ongoing. At the end of the 90-day period, a report will be provided to the Commission.

The task force's longer-term review will begin as soon as the NRC has sufficient technical information from the events in Japan.

The task force will evaluate all technical and policy issues related to the event to identify additional potential research, generic issues, changes to the reactor oversight process, rulemakings, and adjustments to the regulatory framework that should be pursued by the NRC. We also expect to evaluate potential interagency issues, such as emergency preparedness, and examine the applicability of any lessons learned to non-operating reactors and materials licensees. We expect to seek input from all key stakeholders during this process. A report with appropriate recommendations will be provided to the Commission within 6 months of the start of this evaluation. Both the 90-day and final reports will be made publicly available in accordance with normal Commission processes.

Conclusion

In conclusion, I want to reiterate that we continue to make our domestic responsibilities for licensing and oversight of the U.S. licensees our top priority and that the U.S. plants continue to operate safely. In light of the events in Japan, there is a near-term evaluation of their relevance to the U.S. fleet underway, and we are continuing to gather together the information necessary for us to take a longer, more thorough look at the events in Japan and their lessons for us. Based on these efforts, we will take all appropriate actions necessary to ensure the continuing safety of the U.S. fleet.

From: Dedrick, Kathy (EPW) <Kathy_Dedrick@epw.senate.gov>
Sent: Thursday, March 24, 2011 11:57 AM
To: Powell, Amy -
Subject: IndyBay: Is the NRC abandoning California?

FYI--This is the kind of article I was mentioning this morning.

Is the NRC abandoning California?

by Ruth Stevens

Thursday, Mar 24th, 2011 3:11 AM

<http://www.indybay.org/newsitems/2011/03/24/18675478.php>

Early this week the NRC made a strong commitment to Governor Cuomo of New York to start their seismic safety review with reactors at Indian Plant. Cuomo has been concerned about the safety of that plant since at least 2007. As the state's attorney general he took the NRC to task for not inspecting Indian plant with an eye to the safety of the New York City metro area.

Yet California has two nuclear energy sites that lie in seismic zones that could generate much larger earthquakes than could happen at Indian plant. Nuclear power plants in Ohio, Florida, Pennsylvania and elsewhere, all places where earthquakes are far less likely to occur than on the California coast, are included in the published list of 27 reactors the NRC will investigate in their first round of reviews. Nuclear energy plants in California are notably absent from that list.

The Nuclear Regulatory Commission (NRC) is designed to be an independent regulator of commercially used nuclear power. The NRC is made up of five commissioners, nominated by the president and confirmed by the Senate to serve staggered five-year terms. No more than three commissioners can be from the same political party, similar to the selection process for the FCC.

After an earthquake and tsunami triggered nuclear power plant explosions in Japan, the NRC dispatched experts to provide advice and assistance in their effort to shut down the reactors. Now their task is to take a hard look at US nuclear reactors; many are of the same or similar design as the Japanese reactors in Fukushima Prefecture.

According to the Financial Times, NRC spokesperson Beth Hayden said that the US Nuclear Regulatory Commission will first conduct a seismic risk assessment of 27 nuclear power units at 17 plants. Platts.com named those 27 reactors. California reactors did NOT make the list.

The NRC reported these nuclear units will receive the seismic review next year: Indian Point 2, Indian Point 3, Limerick 1, Limerick 2, Peach Bottom 2, Peach Bottom 3, Seabrook, Crystal River 3, Farley 1, Farley 2, North Anna 1, North Anna 2, Oconee 1, Oconee 2, Oconee 3, St. Lucie 1, St. Lucie 2, Sequoyah 1, Sequoyah 2, Summer, Watts Bar 1, Dresden 2, Dresden 3, Duane Arnold, Perry 1, River Bend and Wolf Creek.

California senators Barbara Boxer and Dianne Feinstein were pro-active soon after the Japanese earthquake. They wrote to NRC chairman Gregory Jaczko asking that the NRC inspect both the Diablo Canyon and San Onofre nuclear units in California saying they are concerned because the plants are near earthquake faults.

Why is the NRC not putting California plants, in high seismic activity zones, on their first review list?

The Shoreline Fault, near San Luis Obispo's El Diablo Plant, could generate a 7.7 magnitude earthquake. San Francisco Bay Area residents are wondering why the NRC appears to have abandoned California. The densely populated Bay Area is only about 200 miles from El Diablo.

From: Lerner, Steve <Steve.Lerner@hq.doe.gov>
Sent: Thursday, March 24, 2011 1:16 PM
To: Powell, Amy
Cc: Crowell, Brad; Levy, Jonathan
Subject: FW: 2006 Sandia report on Risk-Informed Assessment of Degraded Containment Vessels

Follow Up Flag: Follow up
Flag Status: Completed

Amy—

This is a 2006 Report that was prepared by the Sandia National Laboratory for the Division of Fuel, Engineering and Radiological Research, Office of Nuclear Regulatory Research, NRC, H.R. Graves, III, NRC Project Manager. Would NRC want to take the lead on the House Energy and Commerce Committee request below?

Steve

From: Cassady, Alison [mailto:Alison.Cassady@mail.house.gov]
Sent: Wednesday, March 23, 2011 3:28 PM
To: Lerner, Steve
Subject: Sandia report

Steve,

Jeff Baran and I are interested in speaking with someone who can brief us on (a) any work related to Mark 1 containment units and their ability to withstand the types of events we are seeing in Japan; and (b) the Sandia report, entitled *Risk Informed Assessment of Degraded Containment Vessels*, and its conclusions about the Mark 1's vulnerability to containment failure in the event of a core-melt accident.

Can you help us out?

Thanks,

Alison Cassady

Alison Cassady
Senior Professional Staff
Committee on Energy and Commerce
Rep. Henry A. Waxman, Ranking Member
(202) 226-4659

From: Schmidt, Rebecca
Sent: Thursday, March 24, 2011 1:19 PM
To: Powell, Amy; Riley (OCA), Timothy
Subject: Fw: Chip's statement
Attachments: Statement of Charles Pardee (Exelon).pdf

From: Schmidt, Rebecca
To: Pederson, Cynthia
Sent: Thu Mar 24 13:17:46 2011
Subject: Fw: Chip's statement

Here is one statement

From: davidc.brown@exeloncorp.com <davidc.brown@exeloncorp.com>
To: Schmidt, Rebecca
Sent: Thu Mar 24 10:54:33 2011
Subject: Chip's statement

David C. Brown
Senior Vice President, Federal Government Affairs and Public Policy
Exelon Corporation
101 Constitution Ave. NW
Suite 400 East
Washington, DC 20001
(202) 347-0808
davidc.brown@exeloncorp.com

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**Statement of Charles Pardee
Chief Operating Officer
Exelon Generation Company**

Briefing on Nuclear Safety in Illinois

March 25, 2011

Senator Durbin, Senator Kirk, thank you for the opportunity to appear today on behalf of Exelon to discuss the safety of nuclear power plants in Illinois. Exelon has the largest fleet of nuclear power plants in the United States. We own and operate 17 reactors at 10 sites in three states, including each of the 11 operating reactors in Illinois. We also own two shut down reactors in Zion, Illinois, which are currently being decommissioned.

We have been following events in Japan closely since the historic earthquake and tsunami struck on March 11. Many of us at Exelon have both a professional and personal interest in the events unfolding there. Many of our employees, myself included, have been to Japan a number of times as part of international exchange programs to share operating experience. In fact, I was at the Fukushima Daiichi site just days before the earthquake struck. Our hearts go out to the Japanese people as they respond to the humanitarian crisis they are facing.

It is understandable that many Americans are asking if the events in Japan mean that nuclear power plants in the United States are unsafe. Let me assure you that we have

full confidence that our plants in Illinois and elsewhere are safe. I do not make that statement lightly. Our chairman, John Rowe, challenges us every day with the same question: have we learned anything today that would lead us to consider shutting down any of our plants?

I would like to make three primary points about the safety of Exelon's nuclear plants:

First, these plants were designed and licensed to withstand a variety of natural disasters, including earthquakes, floods, tornados, and, where appropriate, tsunamis. Plants are designed to withstand potential disasters based on the most extreme event known in their geographic location, with significant margin added on to that extreme event.

Second, safety systems and safety procedures at nuclear power plants are not frozen in time once a plant is built. In fact, safety is an issue that is constantly looked at by both the industry and regulators. We have undertaken extensive safety upgrades at our plants in the aftermath of the Three Mile Island incident, the 9/11 attacks, and other events.

Particular attention has been paid to putting systems in place to avoid a build up of hydrogen in containment areas -- the likely cause of explosions at the Japanese plants-- and to assuring multiple redundancy for backup power supplies in the event of a loss of offsite power, the precipitating factor in the loss of cooling water issues that have led to the most extensive damage at the Japanese plants.

Third, while it will take months, if not years, to fully understand what happened at the Japanese reactors, industry is not waiting to take action to incorporate lessons-learned from this event. Indeed, I firmly believe that the nuclear industry is unparalleled in its ability incorporate lessons-learned to ensure excellence in operations. There are two organizations -- the U.S.-based Institute of Nuclear Operations (INPO) and its international equivalent, the World Association of Nuclear Operators (WANO) -- that are devoted to ensuring excellence by sharing best practices, assessing and incorporating lessons-learned from events like this, and rigorously assessing plant performance to ensure sound operations.

Within days of the earthquake and tsunami, the industry issued directives to each of our plants to undertake a variety of actions to assure that seismic and safety-related equipment was in good material condition and to review our emergency response plans, including each plant's capability to manage a total loss of off-site power. These assessments are ongoing, and I am confident that both the industry and the Nuclear Regulatory Commission will have additional action items in the coming weeks and months to ensure our plants continue to operate safely.

Aside from the safety of nuclear reactors, I know that there are also concerns about the safety of spent fuel pools in light of the events in Japan. At Exelon's nuclear sites in Illinois, we have 8 spent fuel pools at 7 sites. These pools are located within each plant's secondary containment building. The pools at Dresden, LaSalle and Quad Cities are elevated, while the pools at Braidwood, Byron, Clinton and Zion are at or below grade

level. In addition to spent fuel pools, we utilize dry cask storage at 4 of our Illinois sites, with a fifth site beginning dry cask storage this summer. As I noted, our Zion units are shut down and are currently undergoing decommissioning. As part of this work, we expect all of the fuel at Zion to be removed from the spent fuel pool to dry casks within 3 or 4 years.

As with our reactors, we have taken a number of steps in the aftermath of Three Mile Island and 9/11 to bolster the security of spent fuel pools and to enhance our ability to respond to unanticipated events. Backup power systems, abundant on-site water supplies, and additional high-capacity pumps provide us with a defense-in-depth system to assure the safety of these pools.

Let me conclude by recognizing the dedicated employees of Exelon Nuclear. Safety is, and continues to be, our primary focus at Exelon, and we have thousands of employees working tirelessly every hour of every day to ensure that our plants operate safely and efficiently. We take immense pride in our operational record, and we never forget that our job is to operate our plants safely so we can keep the lights on for more than 13 million people across the country.

Thank you again for the opportunity to appear here today. I know that you have both toured Exelon plants in recent years, and we would certainly welcome you any time to come see the specific safety systems I have discussed.

###

From: Droggitis, Spiros
Sent: Thursday, March 24, 2011 3:55 PM
To: mary.frances.repko@mail.house.gov; 'laura_haynes@carper.senate.gov';
'michal.freedhoff@mail.house.gov'
Cc: Powell, Amy; Shane, Raeann; Sheron, Brian; Schmidt, Rebecca; Riley (OCA), Timothy
Subject: Follow up to phone call - Task Force

I understand the senior level task force is being assembled and a charter is being developed. The membership of the task force and the charter will be announced sometime next week.

From: Droggitis, Spiros
Sent: Friday, March 25, 2011 9:26 AM
To: Powell, Amy
Subject: Re: 3pm Congressional call

You may want to tell Raeann that Tim will cover the call since I had suggested that she cover it.

----- Original Message -----

From: Powell, Amy
To: Droggitis, Spiros
Sent: Fri Mar 25 06:42:35 2011
Subject: 3pm Congressional call

Does Nancy have the leader's passcode for the 3pm call? Who is scheduled to join us as the briefer?

FYI, Tim asked me if I'd like him to come in and take my Ops Ctr shift. I took him up on it. I'll have him do the call as well.

Did your sister get in ok?

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Powell, Amy
Sent: Friday, March 25, 2011 9:42 AM
To: Shane, Raeann
Subject: Re: Today's Congressional call

Annie Kamerer is probably the best seismic briefer, if she is in.

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

----- Original Message -----

From: Shane, Raeann
To: Powell, Amy
Sent: Fri Mar 25 09:40:47 2011
Subject: RE: Today's Congressional call

Just got a call from Curtis on Alexander's staff. He wants a phone briefing this morning on earthquake stuff for the hearing. I will try to find someone.

-----Original Message-----

From: Powell, Amy
Sent: Friday, March 25, 2011 9:37 AM
To: Shane, Raeann
Subject: Re: Today's Congressional call

Great - thanks. I trust your editing eye and would love to use it. I have a feeling that Volume 3 is going to rule my day, but testimony needs to move...

THANK YOU!

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

----- Original Message -----

From: Shane, Raeann
To: Powell, Amy
Sent: Fri Mar 25 09:36:04 2011

Subject: RE: Today's Congressional call

Love to NOT do the call.

-----Original Message-----

From: Powell, Amy

Sent: Friday, March 25, 2011 9:29 AM

To: Shane, Raeann

Subject: Today's Congressional call

I asked Tim to cover today's Congressional call since he will be in Ops Ctr. I did not know that Spiros had tapped you. I would prefer that you work with me on testimony unless you feel strongly about doing the call. Let me know.

Thanks

Amy

Amy Powell

Associate Director

Office of Congressional Affairs

U. S. Nuclear Regulatory Commission

Phone: 301-415-1673

Sent from my Blackberry

From: Powell, Amy
Sent: Friday, March 25, 2011 10:15 AM
To: Loyd, Susan
Subject: RE: Testimony for March 30 and 31

NO worries – lots of moving parts. I just got Josh's feedback that I needed on Bill's testimony, so we are good to go on that. Reviewing Mike Weber's on emergency preparedness now...

From: Loyd, Susan
Sent: Friday, March 25, 2011 10:14 AM
To: Powell, Amy
Subject: RE: Testimony for March 30 and 31

Sorry, I was mixed up.

Susan K. Loyd
Communications Director
Office of the Chairman
U.S. Nuclear Regulatory Commission
Tele: 301-415-1838
Susan.Loyd@nrc.gov

From: Powell, Amy
Sent: Friday, March 25, 2011 10:06 AM
To: Loyd, Susan; Batkin, Joshua; Coggins, Angela; Schmidt, Rebecca
Subject: Re: Testimony for March 30 and 31

To clarify, it is Bill Borchardt's testimony for 3/29 with Senate Energy that I sent your way for feedback yesterday. OCA just received Mike's EP testimony and is reviewing.

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Loyd, Susan
To: Batkin, Joshua; Coggins, Angela; Powell, Amy; Schmidt, Rebecca
Sent: Fri Mar 25 09:59:57 2011
Subject: Testimony for March 30 and 31

Hi:

- I have drafts ready for both the Oral and Written testimony for the March 31 House Approp's Hearing on Budget.
- I have a Written Testimony draft ready for the March 30 Senate Approp's Hearing on Japan.

- I need for you to read the testimonies and let me know ASAP if you see problems or if I have missed anything important. Jim Dyer said he prefers to handle the request for Japan-related funds in the Q&A at the House hearing, and not have it inserted into the prepared testimony.
- As soon as I get your feedback on the Senate Written Testimony, I will prepare an Oral Testimony for that hearing. Am not going to spend much time on that until I get your initial feedback on the Written Testimony draft, to make sure I am on track.
- Amy is on point to circulate all of these to the other Commission offices, so we are on a tight timeframe. Please get back to me ASAP. They all should be circulated on Monday.
- Also, Amy needs immediate feedback on the draft testimony for Mike Weber to use on Weds. She sent this to you yesterday.

Thanks!
Susan

Susan K. Loyd
Communications Director
Office of the Chairman
U.S. Nuclear Regulatory Commission
Tele: 301-415-1838
Susan.Loyd@nrc.gov

From: Powell, Amy
Sent: Friday, March 25, 2011 10:19 AM
To: Schmidt, Rebecca; Droggitis, Spiros
Subject: RE: Daily Plant Status Report 3/25/2011

Let me get the Senate Energy testimony moving upstairs and I will check Becky's original distribution on this, but I believe Becky you are correct about the 3 D's and 3 R's. I think Alison works with Jeff Baran, who was on your original distribution.

From: Schmidt, Rebecca
Sent: Friday, March 25, 2011 10:10 AM
To: Droggitis, Spiros; Powell, Amy
Subject: Re: Daily Plant Status Report 3/25/2011

Why can't she get it from someone on the list from energy and commerce? We gave it to 3 Rs and 3 Ds right?

From: Droggitis, Spiros
To: Schmidt, Rebecca; Powell, Amy
Sent: Fri Mar 25 09:52:34 2011
Subject: Fw: Daily Plant Status Report 3/25/2011

Here we go. I'll await your guidance.

From: Cassady, Alison <Alison.Cassady@mail.house.gov>
To: Droggitis, Spiros
Sent: Fri Mar 25 09:28:35 2011
Subject: RE: Daily Plant Status Report 3/25/2011

Can you please add me to your distribution list? Thanks.

Alison Cassady
Senior Professional Staff
Committee on Energy and Commerce
Rep. Henry A. Waxman, Ranking Member
(202) 226-3400

From: Droggitis, Spiros [mailto:Spiros.Droggitis@nrc.gov]
Sent: Friday, March 25, 2011 6:49 AM
To: 'spiros.droggitis@verizon.net'
Cc: Schmidt, Rebecca; Powell, Amy; Riley (OCA), Timothy; Dacus, Eugene; Shane, Raeann; Weil, Jenny; Decker, David
Subject: Daily Plant Status Report 3/25/2011

From: Powell, Amy
Sent: Friday, March 25, 2011 10:08 AM
To: Shane, Raeann
Subject: Re: NRC info

OK, that's not Annie K's expertise...

Who do you think?

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Shane, Raeann
To: Powell, Amy
Sent: Fri Mar 25 09:59:37 2011
Subject: FW: NRC info

fyi

From: Swager, Curtis (Alexander) [mailto:Curtis_Swager@alexander.senate.gov]
Sent: Friday, March 25, 2011 9:50 AM
To: Shane, Raeann
Subject: RE: NRC info

Raeann,

Per our phone conversation below are some specific points I would like to discuss in a phone call.

1. reactors in operation today design basis
 - o explanation of what it means
 - o listing of reactors and their design limits (specific reference to quake zones)
 - o ground acceleration numbers relative to magnitude to quake – is this possible?
1. Development of safety requirements over time
 - o INPO, NRC, technology, operations, capital improvements
 - o Mark I containment in U.S. versus what we know about Fukushima Daiichi

Thanks,

Curtis

From: Shane, Raeann [mailto:Raeann.Shane@nrc.gov]
Sent: Friday, March 25, 2011 9:35 AM

To: Swager, Curtis (Alexander)
Subject: NRC info

Curtis:

My contact info is below. We will try to get something set up this morning.

Raeann Shane
Sr. Intergovernmental and External Affairs Officer
Office of Congressional Affairs
U.S. NRC
301-415-1699
rms2@nrc.gov

From: Powell, Amy
Sent: Friday, March 25, 2011 10:41 AM
To: Schmidt, Rebecca
Subject: RE: USNRC Daily status report - Japan Nuclear Plant

I'm at my desk.

From: Schmidt, Rebecca
Sent: Friday, March 25, 2011 10:40 AM
To: Powell, Amy
Subject: Re: USNRC Daily status report - Japan Nuclear Plant

I talked to him

From: Powell, Amy
To: Schmidt, Rebecca; Droggitis, Spiros
Sent: Fri Mar 25 10:35:49 2011
Subject: RE: USNRC Daily status report - Japan Nuclear Plant

I just talked to Gene – he is calling you. He did not remember that it was limited distribution... went to Japan list...

From: Schmidt, Rebecca
Sent: Friday, March 25, 2011 10:29 AM
To: Powell, Amy; Droggitis, Spiros
Subject: Fw: USNRC Daily status report - Japan Nuclear Plant

??????

From: Epstein, Jonathan (Bingaman) <Jonathan_Epstein@bingaman.senate.gov>
To: Dacus, Eugene
Cc: Schmidt, Rebecca
Sent: Fri Mar 25 10:22:46 2011
Subject: RE: USNRC Daily status report - Japan Nuclear Plant

Eugene thanks, can you please ensure these come out daily, they are very helpful to me as I brief Jeff.

From: Dacus, Eugene [mailto:Eugene.Dacus@nrc.gov]
Sent: Friday, March 25, 2011 8:13 AM
Subject: USNRC Daily status report - Japan Nuclear Plant

Attached is the 3/25/11 NRC Japan Plant Condition Update.

Eugene Dacus
Sr. Congressional Affairs Officer
U.S. Nuclear Regulatory Commission
Office: 301-415-1697

Fax: 301-415-8571

E-mail: eugene.dacus@nrc.gov

From: Powell, Amy
Sent: Friday, March 25, 2011 11:19 AM
To: Batkin, Joshua; Sharkey, Jeffrey; Sosa, Belkys; Bubar, Patrice; Nieh, Ho
Cc: Schmidt, Rebecca; Riley (OCA), Timothy; Belmore, Nancy; Coggins, Angela
Subject: Testimony update
Attachments: Pederson written testimony final 3-21-2011.docx

Hi all –

Thank you for your quick turnaround on comments on the written statement that Cynthia Pederson, Deputy Regional Administrator in Region III, will present at this afternoon's public meeting hosted by Sens. Durbin and Kirk in Illinois. The final statement is attached.

Within the hour, OCA will be bringing up a draft statement for Bill Borchardt's appearance at the Senate Energy and Natural Resources Committee's public briefing on Tuesday, March 29, 2011. We will again need your cooperation for quick-turnaround comments on this. Thanks in advance for again working with us to get these statements ready.

Amy

Amy Powell
Associate Director
U. S. Nuclear Regulatory Commission
Office of Congressional Affairs
Phone: 301-415-1673

Written Testimony
Of
Cynthia Pederson
Deputy Regional Administrator, Region III, Lisle, IL
On behalf of the
US Nuclear Regulatory Commission

Senator Durbin and Senator Kirk, I'm honored to appear before you today on behalf of the U.S. Nuclear Regulatory Commission to address the continuing safety of the nuclear power plants in Illinois.

I would first like to offer my condolences to all those affected by the earthquake and tsunami in Japan. Our hearts go out to all those who have been dealing with the aftermath of these natural disasters, and we are mindful of the long and difficult road they will face in recovery. We know that the people of Japan are resilient and strong, and we have every confidence that they will come through this difficult time and move forward, with resolve, to rebuild their vibrant country. As an NRC employee, I am especially proud of the efforts of my colleagues who are providing technical assistance to Japan, to aid in their efforts to control a very challenging situation at the Fukushima plants. Since Friday, March 11, when the earthquake and tsunami struck, the NRC's headquarters' operations center has been substantially augmented in order to monitor and analyze events and to provide expert assistance and review. At the request of the Japanese government, and through the United States Agency for International Development (USAID), the NRC sent a team of more than 12 experts to provide on-the-ground support. Within the United States, the NRC has been working closely with other Federal agencies as part of our government's response to the situation.

Background to the NRC

The NRC is an independent federal agency, with approximately 4000 staff. We play a critical role in protecting public health and safety of the American people. We have inspectors who carry out duties full-time at every commercial operating nuclear power plant in the United States, and we have world-class scientists, engineers, and professionals who work together to assure that the nuclear material and nuclear power plants in our country are safe and secure. From the NRC resident inspectors, who work at and live near the reactors, to the dozens of region-based specialists, who visit the plants regularly to

assess emergency planning, security, maintenance, or engineering, there are about 225 people in NRC's Region III office in Lisle, Illinois; we are absolutely dedicated to making sure that the 24 reactors in the Midwest are safe.

The NRC carries out rigorous reviews to confirm that our nuclear plants are built and operated safely. All commercial U.S. nuclear power plants are designed and built to withstand sit-specific environmental hazards, including earthquakes, tornados, floods, and tsunamis. Even those plants located outside of areas with high seismic activity are designed for safety in the event of such a natural disaster.

The NRC requires that safety-significant structures, systems and components be designed to take into account the most severe natural phenomena historically reported for the site and surrounding area. The NRC requires an additional safety margin to provide added robustness. This basically means that U.S. nuclear power plants are designed to be safe based on historical data from the area's maximum credible earthquake, floods, tornadoes, and tsunamis.

Nuclear power plants in the U.S. are subject to strong safety oversight:

- Every reactor in this country is required by NRC regulation to be designed for natural events based upon the specific site where that reactor is located;
- There are multiple barriers to the release of radioactivity at every reactor;
- There are a wide range of diverse and redundant safety features in order to provide assurance of public health and safety;
- The NRC has a long regulatory history of conservative decision-making. We use sound risk insights to help inform our regulatory process, and have continued to require improvements to the plant design and operation as we learn from operating experience over the more than 35 years of civilian nuclear power in this country;
- Our regulatory process has been informed by lessons learned from previous significant events, such as Three Mile Island, Davis-Besse, and September 11th, 2001;
- We also have severe accident management guidelines, emergency operating procedures, and procedures and processes for mitigating scenarios such as large fires and explosions, regardless of the cause;
- Further, we have a station blackout rule which ensures an appropriate response to loss of power at a plant, and a hydrogen rule for reactors to prevent explosions within containment.

Reactor Safety

I would like to focus on the factors that go into assuring the NRC that domestic reactors are safe, including the nuclear reactors here in Illinois. The NRC has, since the beginning of the regulatory program in the United States, used a philosophy of Defense-in-Depth, which recognizes that nuclear operations require the highest standards of design, construction, oversight, and operation. But even with these high standards, the NRC will not rely on any one level of protection for maintaining public health and safety. So, the design for every single reactor in this country, after accounting for site-specific threats – such as earthquakes, tornadoes, hurricanes, floods, or tsunamis – also has multiple physical barriers to prevent radiation release. On top of this, there are diverse and redundant safety systems. NRC regulations require these safety systems be maintained in a state of readiness and frequently tested. It is my job, and that of the NRC, to ensure that they are. My inspectors and I are determined, exacting, and thorough in this pursuit. Should a very unlikely significant event occur, each plant has emergency preparedness plans which would be put into action. These plans are developed in cooperation with the NRC, FEMA, and State and local officials.

The NRC has always sought to learn from previous operating experience to review and amend our requirements as necessary – and we will continue to do so. The most significant nuclear event in this country was the Three Mile Island accident in 1979. As a result of lessons-learned from that event, changes were introduced across the spectrum of NRC's regulations. The NRC significantly revised emergency planning and emergency operating procedures. Many rules for control room operators were enhanced. We created requirements for enhanced indication of the status of pumps and valves. To further reduce the likelihood of any explosions inside of reactor containments, the NRC added new requirements for hydrogen control. The NRC introduced requirements for a post-accident sampling system that monitors for potential radioactive material release and possible fuel degradation.

One of the significant changes after Three Mile Island was the establishment of the Resident Inspector Program, which provides for the posting of at least two full-time NRC inspectors at each plant. These inspectors have unfettered access to all licensees' activities 24 hours a day, seven days a week; they also live in the community and have a direct stake in the safety of the facility.

Also as a result of operating experience and ongoing research programs, the NRC has developed requirements for severe accident management guidelines. These are programs that perform the “what if” scenario. What if all of this careful design work, all of these important procedures and practices and instrumentation all failed? What procedures, policies, training, and equipment should be in place to deal with the extremely unlikely scenario of a severe accident? These programs have been in effect for many years and are evaluated by the NRC.

As a result of the events of September 11, 2001, we further enhanced our requirements, and identified mitigation strategies intended to maintain or restore core cooling, containment, and spent fuel pool cooling capabilities under the circumstances associated with the explosions or fire. These enhancements and strategies are directly applicable to the kinds of very significant events that are taking place in Japan.

The NRC also has requirements related to what is termed “station blackout;” every plant in the country has to maintain a response for loss of power. A plant could respond by using batteries for a while, but must also have procedures and arrangements in place in order to restore power to the site and to provide cooling to the core. As I mentioned earlier, there’s a hydrogen rule to mitigate the impacts of hydrogen generated as a result of beyond-design basis events and core damage. There are equipment qualification rules that require indication equipment, pumps, and valves, to remain operable under the kinds of environmental temperature and radiation conditions that you would see under a design basis accident.

I also mentioned earlier very important emergency preparedness and planning requirements. In coordination with our federal partner, FEMA, and with state and local governments, these emergency preparedness programs are evaluated and tested on a yearly basis.

Local Concerns from events in Japan

Speaking directly to the containment design at Fukushima, which has received considerable attention in the press, the NRC has had a Mark I Containment Improvement Program since the very late 1980s. This initiative required the installation of fission-product scrubbing equipment, enhanced reliability of the automatic depressurization system, and new hardened vent systems for the containment cooling for all BWR Mark Is—including 4 units here in Illinois.

Another local issue I specifically want to address is regarding the spent fuel pools at Zion nuclear power plant and GE Morris facility. Both maintain cooling systems and closely monitor water levels and temperatures. The spent fuel at these facilities has been cooling in the pools for many years, allowing for the residual heat to dissipate significantly. At this point, there is not enough heat being generated in the GE spent fuel pool for the water to boil. At Zion, the fuel has also significantly cooled. .

Learning from Fukushima

Despite our confidence in the safety of U.S. reactors, more will be done. The Nuclear Regulatory Commission has issued an Information Notice to all currently operating U.S. nuclear power plants, describing the effects of the March 11 earthquake and tsunami on Japanese nuclear power plants. The notice provides a brief overview of how the earthquake and tsunami are understood to have disabled several key cooling systems at the Fukushima Daiichi nuclear power station, and also hampered efforts to return those systems to service. Based on the NRC's current understanding of the damage to the reactors and associated spent fuel pools as of Friday, March 18, 2011, the notice reflects the current belief that the combined effects of the March 11 earthquake and tsunami exceeded the Fukushima Daiichi plant's design limits. The notice also recounts the NRC's efforts, post-9/11, to enhance U.S. plants' abilities to cope with severe events, such as the loss of large areas of a site, including safety systems and power supplies. The NRC expects U.S. nuclear power plants will review the entire notice to determine how it applies to their facilities and consider actions, as appropriate.

Over the near term, the NRC will be enhancing our activities through additional inspection, utilizing the resident inspectors and the region-based inspectors in our four Regional offices to verify the readiness of licensees to deal with both design basis accidents and beyond-design basis accidents.

These additional inspections will focus on the capabilities to mitigate conditions that result from severe accidents, including the loss of significant operational and safety systems. NRC inspectors will be re-verifying the capability to mitigate a total loss of electric power to the nuclear plant. They will also re-verify the capability to mitigate problems associated with flooding, and the impact of floods on systems both inside and outside of the plant. And they will verify the equipment that is needed for the potential loss of equipment due to seismic events.

In the longer term, the NRC will be developing lessons-learned from the earthquake and tsunami in Japan. The Commission has directed the NRC staff to establish a senior level agency task force to conduct a methodical and systematic review of our processes and regulations to determine whether the agency should make additional improvements to our regulatory system and make recommendations to the Commission for its policy direction. This review will encompass domestic operating reactors of all designs, including their spent fuel pools, in areas such as protection against earthquake, tsunami, flooding, hurricanes; station blackout and a degraded ability to restore power; severe accident mitigation; emergency preparedness; and combustible gas control. The NRC will evaluate technical and policy issues to identify additional research, generic communications, changes to our reactor oversight program, potential new rulemakings, and adjustments to the regulatory framework that may warrant action by the NRC. This evaluation will then consider inter-agency issues and applicability of these lessons learned to other, non-reactor facilities. This will be a very substantial and lengthy undertaking, but in order to fully learn and appropriately respond to the lessons of the recent events in Japan, we must proceed methodically and systematically.

In conclusion, the NRC has full confidence that the current fleet of reactors and materials licensees are operated in a manner that protects the public health and safety and the environment. There are a number of immediate, short-term, and long-term evaluations that we are embarking upon with an aim to ensure the continued safety of U.S. facilities. After we have been able to thoroughly study and understand the events in Japan, we will apply the lessons learned to our domestic fleet of nuclear reactors and facilities. We are strongly committed to protecting public health and safety, and will take any additional actions needed to do so.

Thank you.

From: Weil, Jenny
Sent: Friday, March 25, 2011 12:59 PM
To: Powell, Amy; Droggitis, Spiros; Dacus, Eugene; Shane, Raeann; Riley (OCA), Timothy
Subject: Another add to the List

Please add Nebraska Senator Nelson's staffer Erick Lutt to the list:

erick_lutt@bennelson.senate.gov

Sent via BlackBerry
Jenny Weil
Congressional Affairs Officer
U.S. Nuclear Regulatory Commission
202-510-8694

From: Shane, Raeann
Sent: Friday, March 25, 2011 1:49 PM
To: Riley (OCA), Timothy; Droggitis, Spiros; Dacus, Eugene; Powell, Amy; Weil, Jenny
Subject: RE: USAID 2pm call schedule?

We did the call yesterday and they did not say anything about stopping them permanently

From: Riley (OCA), Timothy
Sent: Friday, March 25, 2011 1:41 PM
To: Shane, Raeann; Droggitis, Spiros; Dacus, Eugene; Powell, Amy; Weil, Jenny
Subject: USAID 2pm call schedule?

Does anyone know the status of the 2pm daily calls with USAID? Today's was cancelled and I know they had been tapering off; are we finally free of them?

Tim

From: Shane, Raeann
Sent: Friday, March 25, 2011 2:10 PM
To: Leeds, Eric
Cc: Powell, Amy
Subject: Hill Briefing Request

Importance: High

Eric:

We got a late request for a briefing.....Can you suggest someone who could do a phone briefing this afternoon for a staffer from Senator Alexander's Appropriations staff? He is looking for information as it relates to US plants that are similar to the Fukushima plants. Also, the "improvements" he wants info on are the things we have done to improve the Mark I containment design over time (at a high level). I know that Chairman has stated that we have made improvements to it, or required other things.

From: Swager, Curtis (Alexander) [mailto:Curtis_Swager@alexander.senate.gov]
Sent: Friday, March 25, 2011 9:50 AM
To: Shane, Raeann
Subject: RE: NRC info

Raeann,

Per our phone conversation below are some specific points I would like to discuss in a phone call.

1. reactors in operation today design basis
 - o explanation of what it means
 - o listing of reactors and their design limits (specific reference to quake zones)
 - o ground acceleration numbers relative to magnitude to quake – is this possible?
1. Development of safety requirements over time
 - o INPO, NRC, technology, operations, capital improvements
 - o Mark I containment in U.S. versus what we know about Fukushima Daiichi

Thanks,

Curtis

From: Shane, Raeann [mailto:Raeann.Shane@nrc.gov]
Sent: Friday, March 25, 2011 9:35 AM
To: Swager, Curtis (Alexander)
Subject: NRC info

Curtis:

My contact info is below. We will try to get something set up this morning.

Raeann Shane
Sr. Intergovernmental and External Affairs Officer

Office of Congressional Affairs
U.S. NRC
301-415-1699
rms2@nrc.gov

From: Powell, Amy
Sent: Friday, March 25, 2011 6:08 PM
To: Miller, Dana
Subject: RE: Follow up to your call
Attachments: image001.gif

You bet! I am so glad that the call went well. Have a great weekend –

Amy

From: Miller, Dana [mailto:Dana.Miller@mail.house.gov]
Sent: Friday, March 25, 2011 5:50 PM
To: Powell, Amy
Subject: RE: Follow up to your call

Hi Amy,

Thank you again for sending over the info and to you and Gene for your help in arranging the call. My boss was very pleased to speak with the Chairman and looks forward to his visit to Indian Point. One of the items agreed to on the call was that he would try to come up in the next six weeks, and I hope our offices can work together to make sure the visit is on a day when Congress is out of session so that the interested parties can attend.

Thanks again!

Dana Miller
Legislative Assistant
Office of Congresswoman Nita Lowey
2365 Rayburn House Office Building
Washington, DC 20515
(202) 225-6506

Please sign up to receive [News From Nita](#), Congresswoman Lowey's weekly electronic newsletter.

From: Powell, Amy [mailto:Amy.Powell@nrc.gov]
Sent: Friday, March 25, 2011 12:46 PM
To: Miller, Dana
Cc: Dacus, Eugene
Subject: Follow up to your call

Hi Dana –

Thanks for your call – it was good to “meet” you after hearing good things about you from Gene.

On the MSNBC.com editorial that I referenced, here is a link to that (I received it from our public affairs office moments before you called):
<http://www.dailytech.com/EDITORIAL+US+NRC+Confirms+MSNBCcom+Reporter+Mislead+Sensationalized+Nuclear+Story/article21170.htm>

Below my "signature" is information on the emergency planning zones or "EPZs," as well as some general Q&A info that may be helpful. More "FAQs" about emergency preparedness are posted at <http://www.nrc.gov/about-nrc/emerg-preparedness/faq.html>

I hope the call at 1:30pm goes well – I am so glad that the Chairman and your boss will have a chance to talk.

Amy

Amy Powell
Associate Director
U. S. Nuclear Regulatory Commission
Office of Congressional Affairs
Phone: 301-415-1673

.....

Emergency Planning Zones

To facilitate a preplanned strategy for protective actions during an emergency, there are two emergency planning zones (EPZs) around each nuclear power plant. The exact size and shape of each EPZ is a result of detailed planning which includes consideration of the specific conditions at each site, unique geographical features of the area, and demographic information. This preplanned strategy for an EPZ provides a substantial basis to support activity beyond the planning zone in the extremely unlikely event it would be needed.

The two EPZs are described as follows:

Plume Exposure Pathway EPZ

The plume exposure pathway EPZ has a radius of about 10 miles from the reactor site. Predetermined protective action plans are in place for this EPZ and are designed to avoid or reduce dose from potential exposure of radioactive materials. These actions include sheltering, evacuation, and the use of potassium iodide where appropriate. For more information, see [Typical 10-Mile Plume Exposure Pathway EPZ Map](#).

Ingestion Exposure Pathway EPZ

The ingestion exposure pathway EPZ has a radius of about 50 miles from the reactor site. Predetermined protective action plans are in place for this EPZ and are designed to avoid or reduce dose from potential ingestion of radioactive materials. These actions include a ban of contaminated food and water.

General Q&As

Who is responsible for emergency preparedness oversight?

The NRC is responsible for oversight of a nuclear facility's emergency preparedness, and FEMA is responsible for oversight of preparedness outside the nuclear facility's boundary. The NRC issues reactor operating licenses, which require an acceptable, integrated emergency plan (i.e., both onsite and offsite planning) that provides reasonable assurance that adequate protective measures can, and will, be taken in the event of a radiological emergency.

 TOP

What are the regulations governing emergency preparedness for nuclear reactors?

Emergency planning for the existing nuclear power plants, licensed under the 10 CFR Part 50 process, is evaluated under 10 CFR 50.47, Appendix E to Part 50, and includes the guidance in NUREG-0654/FEMA-REP-1, Rev. 1. For more information, see our [Regulations, Guidance, and Generic Communications](#) Web page.

OFFICE OF COMMISSIONER APOSTOLAKIS

ACTION ITEMS

ROUTING SLIP

SUBJECT: Draft Written Statement for Senate Energy and Natural Resources Committee Briefing	
RECEIVED DATE: March 25, 2011	
DUE DATE: March 25, 2011	
Belkys Sosa, EA	DATE:
Roger Davis, LA	DATE:
Steve Baggett, MA	DATE:
1 Mike Snodderly, RA	DATE:
Cmr Apostolakis	DATE:
Kathleen Blake, AA	DATE:
Carmel Savoy, AA	DATE:
NOTES:	
FILE:	

From: Virgilio, Martin
Sent: Saturday, April 30, 2011 12:26 PM
To: Andersen, James
Cc: Decker, David; Powell, Amy; Evans, Michele; Wiggins, Jim
Subject: RE: Congressman Markey Staffer Questions

Jim

I agree that it would be best if these Q's were directed to and coordinated by the op center. We need to be careful that with each response we include an appropriate disclaimer about the information we are providing in view of the limited access and unreliable instrumentation.

Marty

From: Andersen, James
Sent: Thursday, April 28, 2011 3:09 PM
To: Virgilio, Martin
Cc: Decker, David; Powell, Amy; Kotzalas, Margie
Subject: FW: Congressman Markey Staffer Questions

Marty, from a process perspective, I talked with Amy Powell, I think these types of questions should first go to the ops center, and then the op center staff decides if they need office help to address them. I think OCA is getting conflicting guidance which is driving them to send the questions to OEDO. Thanks for any clarification.

Jim A.

From: Decker, David
Sent: Thursday, April 28, 2011 2:22 PM
To: Kotzalas, Margie
Subject: Congressman Markey Staffer Questions

Margie,
I know these two questions on the situation in Japan might not be in your area, but any help in pointing me in the right direction would be really appreciated!

David

From: Freedhoff, Michal [mailto:Michal.Freedhoff@mail.house.gov]
Sent: Thursday, April 28, 2011 2:15 PM
To: Droggitis, Spiros
Cc: Decker, David; Freedhoff, Michal
Subject: Re: Daily Plant Status Report - 4/28/2011

Thanks

This document (the Daily Plant Status Report) has raised another question. So it seems like TEPCO believes that the highly radioactive water in unit 2 is coming from the suppression pool. In NRC staff's view, are there ways for water in the suppression pool to have gotten that highly radioactive in the absence of core material actually being out of the

pressure vessel? Could enough core material have gotten out of the pressure vessel through pathways other than a melt-through?

Finally, there are reports that radiation levels at unit 1 were measured to be very high by the robot. NRC staff previously told me that they did not believe that the radiation measurements inside unit 1 were reliable and additionally that no one thought there had been a breach in the unit 1 pressure vessel. Has NRC staff altered its views based on the new radiation readings?

Michal
Michal Ilana Freedhoff, Ph.D.
Policy Director
Office of Representative Edward J. Markey
2108 Rayburn House Office Building
Washington, DC 20515
202-225-2836

From: Powell, Amy
Sent: Friday, March 25, 2011 6:54 PM
To: Schmidt, Rebecca
Subject: Monday am - SAC

Carrie Apostolou and Tyler Owens asked for a meeting to go over NRC's role with USAID, the team in Japan, and questions that would be helpful in the hearing Wednesday. Josh and I are meeting them at 930am Monday.

AP

From: NEIGA@nei.org
Sent: Friday, March 25, 2011 9:28 PM
To: Powell, Amy
Subject: NEI Update on Japan Reactors



UPDATE AS OF 5 P.M. EDT, FRIDAY, MARCH 25:

Fresh water is being injected into the reactor pressure vessel at reactor 3 at Fukushima Daiichi nuclear power plant, Japan's Nuclear and Industrial Safety Agency said.

TEPCO said that radioactive materials discovered at the reactor 3 turbine building possibly came from water from the reactor system, not the spent fuel pool. TEPCO made that statement after collecting samples of contaminated water in the reactor 3 turbine building and conducting a gamma-emitting nuclide analysis of the sample. The reactor pressure and drywell pressure at reactor 3 remained stable on Friday, leading TEPCO to believe that "the reactor pressure vessel is not seriously damaged."

Cooling efforts at Reactor 1 already had switched back to fresh water cooling. Reactor 2 is still being injected with seawater, but is expected to switch to fresh water soon.

Tokyo Electric Power Co. said that crews continued spraying water into the used fuel storage pools at reactors 3 and 4 on Friday to keep the used uranium fuel rods safe. Also on Friday, the heat removal system at reactor 6 was switched to a permanent power supply, NISA added. TEPCO said it was assessing the radiation dose to two workers who were contaminated while laying cable in the turbine building of reactor 3. TEPCO said it had instructed its employees and contract workers to pay attention to their personal radiation dosimeter alarms and evacuate when necessary. On-site radiation monitoring at the Fukushima Daiichi nuclear power plant indicates that radiation dose rates continue to decrease, the International Atomic Energy Agency said.

Radiation Monitoring Update

Air and seawater sampling continues by the Japanese government. Measurements in the ocean were

taken 30 kilometers off-shore and 330 meters from the discharge points on March 23 and March 24. Results indicate concentrations of iodine-131 at 2,162 picocuries per liter and cesium-137 at approximately 703 picocuries per liter. Adult consumption of 1,000 picocuries (1 picocurie is one-trillionth of a curie) per liter concentration for 30 days will result in 24 millirem of radiation dose. For comparison, a typical dose from a chest x-ray is 10 millirem.

The concentrations found in the seawater samples are most likely “due to atmospheric fallout rather than just ocean currents,” IAEA said. Dilution is expected to rapidly decrease this surface contamination, IAEA added.

Iodine-131 was detected in drinking water in 13 prefectures and cesium-137 was detected in drinking water in six prefectures. All results remained below the limits set by the Japanese government, IAEA said. Iodine-131 levels in drinking water in Tokyo are now below limits for consumption by infants set by the Japanese authorities and restrictions have been lifted.

On March 25, the IAEA radiation monitoring team made additional measurements at distances from 34 to 62 kilometers from the Fukushima Daiichi nuclear power plant. At these locations, the radiation dose rate was at extraordinarily low levels, ranging from 0.073 millirem per hour to 0.88 millirem per hour.

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From: NEIGA@nei.org
Sent: Saturday, March 26, 2011 3:45 PM
To: Powell, Amy
Subject: NEI update on Japan situation



UPDATE AS OF 1:30 P.M. EDT, MARCH 26

The first of two U.S. Navy barges with fresh water is scheduled to arrive today at an area off the coast of the Fukushima nuclear power plant in Japan. Together, the barges will provide a total of 500,000 gallons of fresh water to help with cooling at the storm-damaged reactor. The barges have been cleaned of fuel in order to transport fresh water.

“[The two barges] can hold up to approximately 300,000 gallons of fresh water each,” said Lt. Cmdr. Michael Weatherford, operations officer to Command Fleet Activities Yososuka. However, “the maximum capacity is reduced to make the barges seaworthy for ocean travel.”

Tokyo Electric Power Co. reported on Saturday that lights were turned on in the main control room of reactor 2.

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From: Schmidt, Rebecca
Sent: Saturday, March 26, 2011 6:48 PM
To: Batkin, Joshua; Powell, Amy; Brenner, Eliot
Cc: Coggins, Angela; Bradford, Anna; Pace, Patti
Subject: Re: Materials

Well all the press Cuomo got with the seismic study, I would expect them to press the Chr for something. Do you have something to give the VT delegation? For Lautenberg, I would just try to talk about the study and that we are prepared to do the right thing. In the meantime gene can work his staff so he is more reasonable

----- Original Message -----

From: Batkin, Joshua
To: Schmidt, Rebecca; Powell, Amy; Brenner, Eliot
Cc: Coggins, Angela; Bradford, Anna; Pace, Patti
Sent: Sat Mar 26 18:40:59 2011
Subject: Re: Materials

Anything for the VY meeting?

Joshua C. Batkin
Chief of Staff
Chairman Gregory B. Jaczko
(301) 415-1820

----- Original Message -----

From: Schmidt, Rebecca
To: Batkin, Joshua; Powell, Amy; Brenner, Eliot
Cc: Coggins, Angela; Bradford, Anna
Sent: Sat Mar 26 17:15:50 2011
Subject: Re: Materials

He knows the stuff for wed--japan etc. I would go with the budget material-imaybe the justification book. That is smaller than the notebook full of stuff

----- Original Message -----

From: Batkin, Joshua
To: Schmidt, Rebecca; Powell, Amy; Brenner, Eliot
Cc: Coggins, Angela; Bradford, Anna
Sent: Sat Mar 26 17:11:28 2011
Subject: Materials

It is possible that GBJ will be leaving tonight or tomorrow morning for Japan, returning Tuesday afternoon. What is the best thing for him to take to read in preparation for the hearing?

Joshua C. Batkin
Chief of Staff
Chairman Gregory B. Jaczko
(301) 415-1820

From: Brenner, Eliot
Sent: Saturday, March 26, 2011 7:41 PM
To: Batkin, Joshua; Schmidt, Rebecca; Powell, Amy
Cc: Coggins, Angela; Bradford, Anna
Subject: Re: Materials

Easy to handle. Just want to be prepared for when it breaks.

Anyone going with him or is he flying solo? Commercial or military?

Eliot Brenner
Director, Office of Public Affairs
US Nuclear Regulatory Commission
Protecting People and the Environment
301 415 8200
C:240 888 2923
Sent from my Blackberry

----- Original Message -----

From: Batkin, Joshua
To: Brenner, Eliot; Schmidt, Rebecca; Powell, Amy
Cc: Coggins, Angela; Bradford, Anna
Sent: Sat Mar 26 19:27:50 2011
Subject: Re: Materials

Ok, let's work something up but we need to let State take the lead talking publicly about it. This is not an urgent trip based on any change in the status at the plant. It is quick because he needs to be back to testify and he's going to show our continuing support and solidarity with our Japanese colleagues, to touch base with our team, and to meet with the Ambassador Roos as well as Govt of Japan officials about the ongoing mitigation effort.

Joshua C. Batkin
Chief of Staff
Chairman Gregory B. Jaczko
(301) 415-1820

----- Original Message -----

From: Brenner, Eliot
To: Batkin, Joshua; Schmidt, Rebecca; Powell, Amy
Cc: Coggins, Angela; Bradford, Anna
Sent: Sat Mar 26 18:40:37 2011
Subject: RE: Materials

At the risk of stating the obvious, at some point, as a hedge on this getting out which it will, we'll need a few bullets on what prompted this impromptu flight to Afghanistan, I mean Tokyo, what he's doing there, if he's meeting with NISA, JNES, going to near the plant, etc.

-----Original Message-----

From: Batkin, Joshua
Sent: Saturday, March 26, 2011 6:22 PM

To: Brenner, Eliot; Schmidt, Rebecca; Powell, Amy
Cc: Coggins, Angela; Bradford, Anna
Subject: Re: Materials

Yes, it is low key. Up to embassy to decide on press.

Joshua C. Batkin
Chief of Staff
Chairman Gregory B. Jaczko
(301) 415-1820

----- Original Message -----

From: Brenner, Eliot
To: Batkin, Joshua; Schmidt, Rebecca; Powell, Amy
Cc: Coggins, Angela; Bradford, Anna
Sent: Sat Mar 26 17:17:29 2011
Subject: Re: Materials

Seismic QA, anything that gives background on EP and 50 miles, I have latest on seismic and could forward in about an hour.

Is this trip on QT?
Eliot Brenner
Director, Office of Public Affairs
US Nuclear Regulatory Commission
Protecting People and the Environment
301 415 8200
C:240 888 2923
Sent from my Blackberry

----- Original Message -----

From: Batkin, Joshua
To: Schmidt, Rebecca; Powell, Amy; Brenner, Eliot
Cc: Coggins, Angela; Bradford, Anna
Sent: Sat Mar 26 17:11:28 2011
Subject: Materials

It is possible that GBJ will be leaving tonight or tomorrow morning for Japan, returning Tuesday afternoon. What is the best thing for him to take to read in preparation for the hearing?

Joshua C. Batkin
Chief of Staff
Chairman Gregory B. Jaczko
(301) 415-1820

From: Droggitis, Spiros
Sent: Sunday, March 27, 2011 8:43 AM
To: Powell, Amy
Subject: Re: Daily Plant Status Report - 3/27/2011

Per Becky, only sent it to limited distribution.

From: Powell, Amy
To: Droggitis, Spiros
Sent: Sun Mar 27 07:45:42 2011
Subject: Re: Daily Plant Status Report - 3/27/2011

Thanks
Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Droggitis, Spiros
To: Droggitis, Spiros
Cc: Schmidt, Rebecca; Powell, Amy; Shane, Raeann; Riley (OCA), Timothy; Decker, David; Dacus, Eugene
Sent: Sun Mar 27 06:59:19 2011
Subject: Daily Plant Status Report - 3/27/2011

From: NEIGA@nei.org
Sent: Sunday, March 27, 2011 11:17 AM
To: Powell, Amy
Subject: NEI update on Japan situation as of 9:30 AM March 27



UPDATE AS OF 9:30 A.M. EDT, MARCH 27

Tokyo Electric Power Co. workers on Sunday were using pumps to remove highly contaminated water from the basement of the turbine building of reactors 1 and 2 at the Fukushima Daiichi nuclear power plant.

TEPCO also was preparing to remove water from the turbine building of reactor 3. Removal of the contaminated water is necessary to continue power restoration to the plant.

By Sunday, water injection to the pressure vessels at reactors 1, 2 and 3 had been switched from seawater to freshwater.

Off-site power has been restored to all units and work to connect equipment is ongoing. Progress is being slowed by high radiation levels and wet equipment.

TEPCO said that earlier reports of extremely high radiation levels measured in the water in the basement of the reactor 2 turbine building were inaccurate, according to news reports.

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E: NEIResponseCenter@nei.org
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From: Droggitis, Spiros
Sent: Sunday, March 27, 2011 1:02 PM
To: Powell, Amy
Subject: Re: Daily Plant Status Report - 3/27/2011

No news is good news, I guess.

Yes, just brought to the airport.

From: Powell, Amy
To: Droggitis, Spiros
Sent: Sun Mar 27 12:59:03 2011
Subject: Re: Daily Plant Status Report - 3/27/2011

Not to my knowledge - nothing beyond the twice-a-day calls alerting to the twice-a-day Comm TA calls.

Good visit with your sister?

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Droggitis, Spiros
To: Powell, Amy
Sent: Sun Mar 27 11:33:16 2011
Subject: Re: Daily Plant Status Report - 3/27/2011

Any "on call" calls from ops center? Email traffic has certainly died down.

From: Powell, Amy
To: Droggitis, Spiros
Sent: Sun Mar 27 07:45:42 2011
Subject: Re: Daily Plant Status Report - 3/27/2011

Thanks
Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Droggitis, Spiros

To: Droggitis, Spiros

Cc: Schmidt, Rebecca; Powell, Amy; Shane, Raeann; Riley (OCA), Timothy; Decker, David; Dacus, Eugene

Sent: Sun Mar 27 06:59:19 2011

Subject: Daily Plant Status Report - 3/27/2011

From: NEIGA@nei.org
Sent: Sunday, March 27, 2011 2:46 PM
To: Powell, Amy
Subject: NEI update as of 1:30 p.m. EDT, March 27



UPDATE AS OF 1:30 P.M. EDT, MARCH 27

U.S. Navy barges carrying 500,000 gallons of fresh water were nearing the Fukushima Daiichi nuclear power plant Sunday as workers continued to pump cooling water into reactors and spent fuel pools.

Beginning Friday, workers began to switch from sea water to fresh water to cool reactors 1, 2 and 3. The arrival of the barges will maintain the fresh water supply. Engineers are concerned that continued use of sea water will cause corrosion inside the reactors and hinder the cooling process.

Dose rates at the site boundary continued to range from 1 to 3 millirem per hour.

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From: Powell, Amy
Sent: Monday, March 28, 2011 5:44 AM
To: 'Carrie_Apostolou@appro.senate.gov'
Cc: 'Tyler_Owens@appro.senate.gov'
Subject: Re: Top 10 at-risk plants

No, we have not yet formally responded. We did provide her staff with seismicity info similar to what I sent you during this exchange.

See you soon!

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

----- Original Message -----

From: Apostolou, Carrie (Appropriations) <Carrie_Apostolou@appro.senate.gov>
To: Powell, Amy
Cc: Owens, Tyler (Appropriations) <Tyler_Owens@appro.senate.gov>
Sent: Sun Mar 27 18:10:44 2011
Subject: RE: Top 10 at-risk plants

Thank you, this is helpful. Has NRC responded to the Boxer/Feinstein letter re a special review of the 2 CA plants?
I look forward to seeing you tomorrow!

Thanks,
Carrie

-----Original Message-----

From: Powell, Amy [mailto: Amy.Powell@nrc.gov]
Sent: Sunday, March 27, 2011 3:48 PM
To: Apostolou, Carrie (Appropriations)
Cc: Owens, Tyler (Appropriations)
Subject: Re: Top 10 at-risk plants

Let me try to tease out a few things:

Last week, the Chairman, with full support of his colleagues on the Commission by vote, directed the NRC staff to establish a task force with an aggressive schedule for reporting back to the Commission on a review of US nuclear power plant safety and recommending if any additional NRC responses, such as Orders requiring immediate action by US plants, are warranted prior to an in-depth investigation of info from the events in Japan. This work will look fleet wide and at current regs.

SEPARATELY (and I think this has been blurred into the above direction to staff in some media coverage) over the last several years, NRC has been working to reassess nuclear plants in the central and eastern US for their vulnerability to earthquakes, using new seismic data developed by geologists. This study's preliminary work has shown that some plants

might have stronger ground motions than originally thought, although still within the plants' safety margins. These plants will do more research once more detailed analytical models are available later this year. This work will continue as planned. It was this ongoing work (referred to as "GI-199" or the CEUS study, short for "Central and Eastern United States") that spurred the misleading MSNBC.com report during the first week of the Japan events (the report that I referenced in my e-mail yesterday), suggesting some hierarchy of risk or ranking that we do not do.

On your Indian Point question, I think that it is accurate to say that Indian Point may be the plant in the most population area. As I recall, that drove a requirement in EPCRA 2005 that applied only to Indian Point (back-up sirens).

As for concerns about Watts Bar and Sequoyah, all units at those sites are in "Column I" of NRC's oversight scheme, meaning that there is no escalated oversight by the NRC. The most significant inspection findings for each plant during the previous 4 quarters are posted at http://www.nrc.gov/NRR/OVERSIGHT/ASSESS/pim_summary.html

I hope this helps - look forward to talking with you (and finally meeting you!) tomorrow morning.

Amy

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

----- Original Message -----

From: Apostolou, Carrie (Appropriations) <Carrie_Apostolou@appro.senate.gov>
To: Powell, Amy
Cc: Owens, Tyler (Appropriations) <Tyler_Owens@appro.senate.gov>
Sent: Sun Mar 27 09:04:06 2011
Subject: RE: Top 10 at-risk plants

Thanks. Is it accurate that NRC's review will start with 27 plants (which I had assumed were most at-risk)? I couldn't find any reference to this in NRC documents. If it is accurate, what is the basis of pursuing these plants first and please clarify the list of 27.

Does NRC agree that Indian Point in NY is highest risk plant given both potential for core damage in an earthquake and its proximity to NYC?

Can you clarify whether there are specific concerns with Watts Bar and Sequoyah facilities in TN that NRC has identified publicly?

Thanks.

-----Original Message-----

From: Powell, Amy [mailto: Amy.Powell@nrc.gov]
Sent: Saturday, March 26, 2011 8:04 PM
To: Apostolou, Carrie (Appropriations)
Cc: Owens, Tyler (Appropriations)
Subject: Re: Top 10 at-risk plants

Hi Carrie - we don't rank plants in such a way. There was an MSNBC.com article that suggested that we had a seismic-related ranking that stirred some press about a list that we do not have. Here is a link to an editorial posted that pushed back hard on that misleading piece:
<http://www.dailytech.com/EDITORIAL+US+NRC+Confirms+MSNBCcom+Reporter+Mislead+Sensationalized+Nuclear+Story/article21170.htm>

Regarding Watts-Bar and Sequoyah, those plants are in areas that are considered a "moderate" seismicity zone, along with 7 other plants. The 2 CA plants, as you might expect, are in "high" seismicity zones. The rest of the fleet fall into "low" seismicity zones. The NRC requires that every nuclear plant be designed for site-specific ground motions that are appropriate for their locations. If you would like more info on this, let me know.

I hope this helps. I'll be checking email through the weekend if this missed the mark.

AP

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

----- Original Message -----

From: Apostolou, Carrie (Appropriations) <Carrie_Apostolou@appro.senate.gov>

To: Powell, Amy

Cc: Owens, Tyler (Appropriations) <Tyler_Owens@appro.senate.gov>

Sent: Sat Mar 26 15:23:22 2011

Subject: Top 10 at-risk plants

Amy, can you send the list of the top 10 at-risk plants and if possible, reasons. I believe two TN plants (Watts Bar and Sequoyah) are in top 10. Thanks.

From: Powell, Amy
Sent: Monday, March 28, 2011 8:56 AM
To: Baval, Rochelle
Subject: Re: Two Hearings this Week

Just checked - both hearings are on the respective websites, but you have to select the subcommittee to get to it.

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Baval, Rochelle
To: Powell, Amy
Sent: Mon Mar 28 08:42:03 2011
Subject: Two Hearings this Week

Good Morning Amy,

I am still showing the two hearings for the Chairman this week on the Commission calendar, but I didn't find them listed on the Senate or House websites yet:

March 30th - Hearing: Japan at 10:00am - Senate Committee on Appropriations, Location TBD
March 31st - Hearing: FY 2012 Budget at 10:00am - House Committee on Appropriations – Energy and Water Subcommittee, Location TBD

Do you know if these are these still planned?

Rochelle

From: Bavol, Rochelle
Sent: Monday, March 28, 2011 9:18 AM
To: Powell, Amy
Cc: Schmidt, Rebecca
Subject: RE: Two Hearings this Week

Now I see them. Thanks very much!

Rochelle

From: Powell, Amy
Sent: Monday, March 28, 2011 8:45 AM
To: Bavol, Rochelle
Cc: Schmidt, Rebecca
Subject: Re: Two Hearings this Week

They are indeed still on. Note that the March 30th hearing is with the Senate Appropriations Subcommittee on Energy and Water (ie no the full Committee).

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Bavol, Rochelle
To: Powell, Amy
Sent: Mon Mar 28 08:42:03 2011
Subject: Two Hearings this Week

Good Morning Amy,

I am still showing the two hearings for the Chairman this week on the Commission calendar, but I didn't find them listed on the Senate or House websites yet:

March 30th - Hearing: Japan at 10:00am - Senate Committee on Appropriations, Location TBD
March 31st - Hearing: FY 2012 Budget at 10:00am - House Committee on Appropriations – Energy and Water Subcommittee, Location TBD

Do you know if these are these still planned?

Rochelle

From: Droggitis, Spiros
Sent: Monday, March 28, 2011 9:36 AM
To: Riley (OCA), Timothy
Subject: FW: [LIKELY_SPAM]Daily Plant Status Report - 3/28/2011

Could you please follow up on these too?

From: Freedhoff, Michal [mailto:Michal.Freedhoff@mail.house.gov]
Sent: Monday, March 28, 2011 9:13 AM
To: Droggitis, Spiros
Cc: Joseph, Avenel; Fischhoff, Ilya; Freedhoff, Michal
Subject: Re: [LIKELY_SPAM]Daily Plant Status Report - 3/28/2011

Good morning

Just thought I would check in to see if you had any more clarity on whether it was possible for these short-lived isotopes to be coming from the spent fuel pool. Additionally, does the NRC have confidence that the initial unit 2 measurements were in fact in error? Finally, I understand they've started to test for plutonium - any results yet?

Thanks
Michal
Michal Ilana Freedhoff, Ph.D.
Policy Director
Office of Representative Edward J. Markey
2108 Rayburn House Office Building
Washington, DC 20515
202-225-2836

Sent using BlackBerry

From: Droggitis, Spiros <Spiros.Droggitis@nrc.gov>
To: Droggitis, Spiros <Spiros.Droggitis@nrc.gov>
Cc: Schmidt, Rebecca <Rebecca.Schmidt@nrc.gov>; Powell, Amy <Amy.Powell@nrc.gov>; Shane, Raeann <Raeann.Shane@nrc.gov>; Riley (OCA), Timothy <Timothy.RileyOCA@nrc.gov>; Dacus, Eugene <Eugene.Dacus@nrc.gov>; Decker, David <David.Decker@nrc.gov>; Weil, Jenny <Jenny.Weil@nrc.gov>
Sent: Mon Mar 28 05:13:42 2011
Subject: [LIKELY_SPAM]Daily Plant Status Report - 3/28/2011

From: Dacus, Eugene
Sent: Monday, March 28, 2011 11:11 AM
To: PMT01 Hoc
Cc: Powell, Amy; Schmidt, Rebecca; Weil, Jenny; Riley (OCA), Timothy; Decker, David; Shane, Raeann; Droggitis, Spiros
Subject: Congressional Inquiry

The inquiry below came from Sen. Sanders' office. Please respond.

I have a quick question to relay from a constituent who lives near VY and is in Japan, and cognizant of the 50 mile radius NRC has warned to stay away from near the Fukushima plant. She asked about the 10 mile zone around VY where she said NRC has said in past there would never be a need to evacuate a broader radius than 10 miles, and is concerned about this. Have event in Japan changed NRC's thoughts in terms of safety in event of incident at VY?

Eugene Dacus
Sr. Congressional Affairs Officer
U.S. Nuclear Regulatory Commission
Office: 301-415-1697
Fax: 301-415-8571
E-mail: eugene.dacus@nrc.gov

From: Powell, Amy
Sent: Monday, March 28, 2011 12:14 PM
To: Schmidt, Rebecca
Subject: En route

W/your donuts.

JB had added an EPW mtg as well re: Japan, April hearing.

Mtg w/SAC went well. Couple of due outs.

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Powell, Amy
Sent: Monday, March 28, 2011 12:20 PM
To: 'Matthew_Nelson@feinstein.senate.gov'
Subject: Re: Commission tasking to staff re: actions following events in Japan

Not yet - next paper would be task force charter and personnel assigned which should follow this week.

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Nelson, Matthew (Feinstein) <Matthew_Nelson@feinstein.senate.gov>
To: Powell, Amy
Sent: Mon Mar 28 11:17:56 2011
Subject: RE: Commission tasking to staff re: actions following events in Japan

Amy

Do you have any more paper on this task force by chance?

Matt

From: Powell, Amy [mailto:Amy.Powell@nrc.gov]
Sent: Thursday, March 24, 2011 8:42 AM
To: Clapp, Doug (Appropriations); Nelson, Matthew (Feinstein)
Subject: Commission tasking to staff re: actions following events in Japan

Hopefully you saw our press release on this last night, as the final tasking to NRC staff re: actions following the events in Japan was wrapped up last evening. If not, it is posted here: <http://www.nrc.gov/reading-rm/doc-collections/news/2011/11-055.pdf>

Here is the Commission voting record on this review – the “Staff Requirements” link is the actual tasking memo to staff.

COMGBJ-11-0002	NRC Actions Following the Events in Japan	03/21/2011
	Staff Requirements – NRC Actions Following the Events in Japan	03/23/2011
	Commission Voting Record – NRC Actions Following the Events in Japan	

I am back in the office today if you have more questions.

Amy Powell
Associate Director
U. S. Nuclear Regulatory Commission
Office of Congressional Affairs

Phone: 301-415-1673

From: Batkin, Joshua
Sent: Monday, March 28, 2011 12:54 PM
To: Schmidt, Rebecca; Powell, Amy; Loyd, Susan; Bradford, Anna
Subject: japan statement

<http://japan.usembassy.gov/e/p/tp-20110328-72.html>

From: NEIGA@nei.org
Sent: Monday, March 28, 2011 1:23 PM
To: Powell, Amy
Subject: NEI update as of 10:30 a.m. EDT, March 28



UPDATE AS OF 10:30 A.M. EDT, MONDAY, MARCH 28

Radiation levels in the seawater near the Fukushima Daiichi nuclear power plant remained high on Monday, but dropped considerably from the levels reported on Sunday. Monday's sampling near the plant's south discharge outlet showed that radioactive iodine levels were 250 times normal, reduced significantly from 1,850 times normal.

Radiation dose rates also remained elevated in the turbine buildings of reactors 1, 2, 3 and 4. Tokyo Electric Power Co. on Monday said that workers had found similarly high radiation levels in water in drainage conduits outside reactors 1 and 2. The company said that rubble at reactor 3 prevented measures from being taken there on Monday.

TEPCO is pumping contaminated water from the basement of the turbine building at reactors 1 and 2 to the main condenser. The company also continued to pump fresh water into reactors 1, 2 and 3, using electrical-driven pumps rather than diesel-powered fire pumps.

Levels of radiation at the plant's main gate ranged from 12.5 millirems per hour to about 20 millirem per hour. The U.S. Nuclear Regulatory Commission's annual limit for occupational exposure is 5,000 millirem.

For more information about radiation, see NEI's Web page on health and radiation safety.

Nuclear Energy Institute
1776 I Street NW, Suite 400
Washington, DC 20006
www.nei.org
P: 202-739-8000
F: 202-785-4019
Emergency Off-Hours: 703-644-8805

E: NEIResponseCenter@nei.org
Twitter: <http://twitter.com/neiupdates>

From: Decker, David
Sent: Monday, March 28, 2011 2:26 PM
To: Powell, Amy; Schmidt, Rebecca
Subject: FW: RESPONSE - Draft Weber Testimony Sent to Commission
Attachments: Background for March 30 Congressional SubCommittee.docx

Here's some input from NSIR for Mike's use at the hearing. I'll put this in the G drive folder.

From: Milligan, Patricia
Sent: Monday, March 28, 2011 2:24 PM
To: Rihm, Roger; Weber, Michael; Decker, David
Cc: Landau, Mindy; Muessle, Mary; McDermott, Brian; Williams, Kevin
Subject: RE: RESPONSE - Draft Weber Testimony Sent to Commission

Attached is background information in support of the upcoming Congressional hearing. They are presented in the context of question and answer.

If you have additional questions, comments or request for additional information, let me know.

Thanks
Trish

From: Rihm, Roger
Sent: Monday, March 28, 2011 1:21 PM
To: Weber, Michael; Milligan, Patricia; Decker, David
Cc: Landau, Mindy; Muessle, Mary
Subject: RE: RESPONSE - Draft Weber Testimony Sent to Commission

Mike: Oral statements are generally limited to 5 minutes. The statement you have should be well within that limit.

Trish was going to put together a backgrounder for you. **Trish**, can you get it to Mike by COB today?

The only other background I am aware of is the "go-to book," which I assume you have. **David**, do you have anything else to offer Mike?

From: Weber, Michael
Sent: Monday, March 28, 2011 12:15 PM
To: Rihm, Roger
Cc: Landau, Mindy; Muessle, Mary
Subject: RESPONSE - Draft Weber Testimony Sent to Commission

Thanks, Roger. Is someone pulling together a master set of Q&As and background information for all the hearings? I would like to review this evening, if possible.

How long is my oral statement supposed to be? I'll need to work on this tonight, as well.

Please advise.

From: Rihm, Roger
Sent: Monday, March 28, 2011 12:03 PM
To: Weber, Michael
Cc: Landau, Mindy; Milligan, Patricia
Subject: Draft Weber Testimony Sent to Commission

Attached is OCA's slightly massaged version of Trish's draft that was sent (by OCA) to the Commission this morning for review.

Emergency Planning Zones

Q How did the NRC determine the size of the Emergency Planning Zones (EPZ) around nuclear power plants?

A. The NRC determined that no single accident sequence should be identified as the one for which to plan, rather it identified the bounds of the parameters for which planning is recommend based upon knowledge of potential consequences, timing, and release characteristics for a spectrum of accidents. Two planning zones were identified, The first, the 10 mile emergency planning zone, is where exposure would likely be from the plume and protective actions such as shelter and evacuation would be appropriate. Beyond that and out to 50 miles is the ingestion exposure pathway where exposure to radionuclides would likely be from ingestion of contaminated food/milk and surface water. ***These zones are not limits*** but rather provide for a comprehensive emergency planning framework that ***would allow expansion of the response efforts beyond the zones should conditions warrant.***

Q. Does the planning basis consider concurrent nuclear power plant accidents at the same site like what is happening in Japan?

A. NRC regulations (10 CFR 100.11) address multiple units on a single site in terms of the impact of one reactor on another:

(1) *If the reactors are independent* to the extent that an accident in one reactor would not initiate an accident in another, the size of the exclusion area, low population zone and population center distance shall be fulfilled with respect to each reactor individually. The envelopes of the plan overlay of the areas so calculated shall then be taken as their respective boundaries.

(2) *If the reactors are interconnected* to the extent that an accident in one reactor could affect the safety of operation of any other, the size of the exclusion area, low population zone and population center distance shall be based upon the assumption that all interconnected reactors emit their postulated fission product releases simultaneously. This requirement may be reduced in relation to the degree of coupling between reactors, the probability of concomitant accidents and the probability that an individual would not be exposed to the radiation effects from simultaneous releases. The applicant would be expected to justify to the satisfaction of the Commission the basis for such a reduction in the source term.

Q. The loss of offsite power appears to be a possible common failure that would link multiple units on one site. Will that impact the emergency planning basis for those multi-unit sites? How will the NRC address this in light of the events happening in Japan?

A. The NRC, as part of its overall safety review, will examine the issues related to loss of offsite power and impacts on public health and safety.

Evacuation to 50 miles in Japan

Q. Why did the NRC decide to recommend evacuation out to 50 miles for U.S. citizens in Japan?

- A. The decision to **expand** evacuation to 50 miles was made for a number of reasons:
- There was limited and conflicting information coming out of Japan regarding the events occurring at the Fukushima-1 site.
 - The NRC based its assessment of the conditions at Fukushima-1 – Units 1, 2, and 3 appeared to have suffered significant damage as a result of hydrogen explosions; Unit 4 was in a refueling outage and its entire core had been transferred to the spent fuel pool only 3 months earlier so the fuel was fresh.
 - Radiation monitors showed significantly elevated readings in some areas of the plant site which would challenge plant crews attempting to stabilize the plant.
 - There were indications from analysis of some offsite contamination smears that fuel damage had occurred.
 - There was no indication that the workers were going to be able to stabilize the plant in the very near term.
 - The winds were rapidly shifting from blowing out to sea to blowing back onto land.

Q. Would the NRC make a similar evacuation recommendation in the United States?

A. NRC regulations and guidance state that the emergency planning zones provide the basis for expansion should conditions warrant such expansion.

Q. How did the NRC develop its computer projections that supported the evacuation decision?

A. The NRC uses the RASCAL computer code for offsite dose projections. The RASCAL computer program contains information about U.S. reactor design types, release pathways from the plant to the environment, radionuclide source term and

meteorology. However RASCAL is not able to consider concurrent multiple plant failures. To approximate the events unfolding at Fukushima-1, the staff developed a "super core" model that included the three operating reactors and the spent fuel pool. This "super core" was run in RASCAL and doses were predicted to exceed the PAGs well beyond the 10 mile EPZ and even beyond the 30 kilometer sheltering zone recommended by the Japanese authorities. Subsequent aerial monitoring by DOE fixed wing aircraft monitoring shows elevated dose rates out beyond 25 miles.

Q. Will the NRC make changes to RASCAL to consider multiple unit events?

A. The NRC will evaluate changes to its programs, methods and models after the safety review has been conducted.

Q. Did the NRC consult the Department of Energy or the Nuclear Energy Institute for assistance in developing the protective action recommendation?

A. The NRC staff performed the analysis and made the recommendation based on the best, albeit limited, information available at the time. The NRC shared its calculations and assumptions with the Department of Energy.

Potassium Iodide

Q. What is the current status of the NRC KI distribution program?

A. Twenty three states out of 33 eligible states receive KI from the NRC. Each state has developed its own distribution plan applicable to the needs of the site and surrounding population.

Q. Will the NRC continue to distribute KI?

A. The NRC will continue to make KI available to states with populations in the 10 mile EPZs as needed

Q. Will the NRC expand its distribution out to 20 miles in accordance with the BioShield Act of 2002, Section 127 which required distribution to 20 miles?

A. The NRC believes its current protective action regimens provide for protection of public health and safety. The NRC will provide KI in accordance with its regulations and guidance.

Q. Did the NRC recommend that U.S. citizens in Japan take potassium iodide?

A. No, the NRC did not recommend KI use for U.S. citizens in Japan.

Q. Has the NRC recommended KI use for west coast States?

A. No, the NRC does not recommend KI use for residents of west coast States. The NRC continues to believe, based on all available information, that harmful levels of radiation will not reach U.S. territories.

License Renewal and EP

Q. Why doesn't the NRC consider emergency planning as part of its license renewal?

A. The programs for emergency planning and preparedness at nuclear power plants apply to all operating facilities and will continue to apply to facilities with renewed licenses. Through its standards and required exercise, the NRC reviews existing emergency preparedness plans throughout the life of any facility, keeping up with changing demographics and other site-related factors. The NRC will continue to review emergency planning if a license extension is granted as part of its routine reactor oversight program. As a result, the NRC has determined that there is no need for a special review of emergency planning issues in the context of an environmental review for license renewal as it is reviewed routinely

From: Powell, Amy
Sent: Monday, March 28, 2011 3:52 PM
To: Schmidt, Rebecca; Batkin, Joshua
Cc: Decker, David
Subject: Heads up re: likely questions from SAC Energy and Water

FYI, Doug Clapp just send an initial (partial) list of potential questions for Wednesday's SAC Energy and Water hearing - see below...

Amy

-----Original Message-----

From: Clapp, Doug (Appropriations) [mailto:Doug_Clapp@appro.senate.gov]
Sent: Monday, March 28, 2011 2:59 PM
To: Powell, Amy
Subject: FW: this is what i have so far

Don't know what Matt will add but these are draft questions I've done up. When I have final list of questions I will send to you but unlikely to be until late tomorrow so wanted to give you early heads up.

-----Original Message-----

From: Clapp, Doug (Appropriations)
Sent: Monday, March 28, 2011 2:53 PM
To: Nelson, Matthew (Feinstein)
Subject: this is what i have so far

FIRST PANEL QUESTIONS

Failure of IAEA to Lead and Provide Information:

Chairman Jaczko, there has been significant confusion created by conflicting information and inadequate information coming out of Japan. Clearly the nature of the nuclear crisis creates most of this confusion, but some attribute a portion of the problem to the utility and Japanese government.

The rest of the world is left to sift through conflicting information and conduct remote independent radiation monitoring to try to assess the situation. This appears to be a problem.

- * Does the International Atomic Energy Agency have a role to play in assuring governments adequately share information?
- * Does the IAEA have a role in assuring international assessments of radiation levels?
- * Do you feel the international community is better prepared since Chernobyl, and if so, how has that been demonstrated with the event at Daiichi?

NAS Study on Spent Fuel

Chairman Jaczko, in 2006 a National Academy of Sciences committee completed a report requested by the NRC and Department of Homeland Security related to safety of spent nuclear fuel. Matt Bunn of Harvard wrote an op-ed this past week that two recommendations from that NAS report were to 1) put old fuel next to new fuel in the spent fuel pools, and 2) add sprayers over the pools in case cooling water was lost for whatever reason. He says the NRC did not implement these recommendations.

- * Can you tell me if Mr. Bunn is correct, and if so, why the NRC did not implement these two safety recommendations made by the NAS report?
- * Are there other suggestions from the NAS, or other entities, that the NRC has not implemented that you are willing to reconsider in light of events at Daiichi?

Independent Assessment of Nuclear Power Safety in the United States

Chairman Jaczko, I want to thank you and the people of your agency for the hard work and long hours many of you have been putting in since March 11. I further want to say that I believe the women and men of your agency work hard every day to keep our power plants safe. So, in no way do I want you or the workforce of the NRC to take this question as a slight.

- * Do you believe there is value in having an independent assessment of nuclear power safety in the United States?

Design Basis Reassessment

Chairman Jaczko, in the past four years there has been earthquakes in Japan that have exceeded the design basis for nuclear plants in the vicinity of the earthquakes.

- * How confident are you that our design basis for U.S. plants is sufficient?
- * Why were the Japanese so wrong on their assumptions of the possible maximum earthquake and tsunami events?

Relicensing not including seismic and tsunami

Chairman Jaczko, I understand from my trip to Diablo Canyon that the relicensing process does not include a review of seismic and tsunami threats. Rather that relicensing is focused more on the aging of materials and equipment. The plant operators and NRC personnel on the trip explained that seismic and tsunami issues are considered on a continuing basis and thus do not need to be part of the relicensing.

I find this a little confusing. I understand relicensing should consider aging of materials and equipment as 20 to 40 years have passed since the initial license. But our information relative to seismic and tsunami threats has also changed over this time.

- * If seismic and tsunami issues are not considered during relicensing, what guarantee do we have that the NRC is adequately considering these issues at any other time?
- * If not considered during relicensing, does the burden fall to the federal government to prove there is a need to modify the license due to seismic or tsunami information or does that burden get put on the plant operator?

From: Powell, Amy
Sent: Monday, March 28, 2011 4:06 PM
To: Loyd, Susan
Subject: RE: Status of written testimony for Senate Approps

IS the written draft that you sent to Becky and me at 3:30pm okay to circulate the 18th floor after we do a read-through (which we are doing now)?

From: Loyd, Susan
Sent: Monday, March 28, 2011 4:05 PM
To: Powell, Amy
Subject: RE: Status of written testimony for Senate Approps

Wow...sounds like I am almost done on the written! YAY! The oral testimony I have prepared is too long, though, given Feinstein's direction for 5 min. I'll have to do heroic cutting. Do we need to circulate the oral testimony to the 18th floor too?

I also have a draft prepared for Thurs, for written and oral, and we will attack that next. Thanks, Amy.

Susan K. Loyd
Communications Director
Office of the Chairman
U.S. Nuclear Regulatory Commission
Tele: 301-415-1838
Susan.Loyd@nrc.gov

From: Powell, Amy
Sent: Monday, March 28, 2011 3:58 PM
To: Loyd, Susan
Cc: Batkin, Joshua; Schmidt, Rebecca
Subject: RE: Status of written testimony for Senate Approps

Yes, OCA will circulate the draft to the Commission offices, work with Chairman's office on edits/changes, and get the final (including copies) down to the Senate Approps Energy and Water Subcommittee. The Subcommittee staff is aware that this will be delivered tomorrow.

Amy

From: Loyd, Susan
Sent: Monday, March 28, 2011 3:01 PM
To: Powell, Amy
Cc: Batkin, Joshua
Subject: RE: Status of written testimony for Senate Approps

Am working on the last little changes. I saw a letter from Feinstein saying the Subcommittee should have the testimony by 5:00 pm today, single spaced. Does your office provide the 50 copies we are supposed to have for Weds?

Susan K. Loyd
Communications Director

Office of the Chairman
U.S. Nuclear Regulatory Commission
Tele: 301-415-1838
Susan.Loyd@nrc.gov

From: Powell, Amy
Sent: Monday, March 28, 2011 2:25 PM
To: Loyd, Susan
Cc: Schmidt, Rebecca
Subject: Status of written testimony for Senate Approps

Hi Susan –

We saw some e-mail traffic indicating that Josh had changes to your draft written testimony for Wednesday's Senate Approps Energy and Water Subcommittee hearing. Do you have a revised draft at this point?

Thanks,
Amy

Amy Powell
Associate Director
U. S. Nuclear Regulatory Commission
Office of Congressional Affairs
Phone: 301-415-1673

From: Droggitis, Spiros
Sent: Monday, March 28, 2011 4:37 PM
To: Batkin, Joshua
Subject: RE: Press Gaggle by Press Secretary Jay Carney and Deputy National Security Advisor Denis McDonough

Very. And better than predecessor.

From: Batkin, Joshua
Sent: Monday, March 28, 2011 4:36 PM
To: Droggitis, Spiros
Subject: RE: Press Gaggle by Press Secretary Jay Carney and Deputy National Security Advisor Denis McDonough

Thanks. He's good.

From: Droggitis, Spiros
Sent: Monday, March 28, 2011 3:29 PM
To: Batkin, Joshua
Subject: FW: Press Gaggle by Press Secretary Jay Carney and Deputy National Security Advisor Denis McDonough

From: Weil, Jenny
Sent: Monday, March 28, 2011 2:19 PM
To: Schmidt, Rebecca; Powell, Amy; Droggitis, Spiros
Subject: FW: Press Gaggle by Press Secretary Jay Carney and Deputy National Security Advisor Denis McDonough

A question from WH press corps at today's briefing.

From: White House Press Office
To: Weil, Jenny
Subject: Press Gaggle by Press Secretary Jay Carney and Deputy National Security Advisor Denis McDonough

THE WHITE HOUSE
Office of the Press Secretary

For Immediate Release

March 28, 2011

PRESS GAGGLE BY
PRESS SECRETARY JAY CARNEY
AND DEPUTY NATIONAL SECURITY ADVISOR DENIS McDONOUGH

James S. Brady Press Briefing Room

11:36 A.M. EDT

Q NRC Chairman Jaczko is in Japan right now. Do you have any information? Was he instructed by the White House to go there in any capacity?

MR. CARNEY: I know that he is in Japan, but I don't have his -- I mean, it's an independent agency, so I don't believe he was instructed by the White House. But obviously I think the fact that he's there reflects the intense engagement between the NRC and its Japanese counterparts, the number of experts the NRC has had in Japan, trying to assist our allies there. And the fact that the chairman is there, I think, reflects that commitment.

Q May I follow up on that?

MR. CARNEY: Yes.

Q Thank you, Jay. So on the situation in Japan, what's the latest assessment by the administration on the situation on the ground? About a week ago the situation seemed to be -- stopped getting worse, but now Japanese officials are now saying that there may be a leaking from a core of a reactor. Is the situation deteriorating again, or what's your sense of that?

And secondly, on the ripple effect of the Japan earthquake on the U.S. economy or the world economy, a week ago General Motors announced that they laid off 59 people because of the disruption of the parts from Japan. What's your sense of the impact of the earthquake on the U.S. economy and the world economy?

MR. CARNEY: Let me take the economic question first. We continue to believe that while this is a very serious situation and has immediate impacts economically, that the -- we have great confidence in the resiliency of the Japanese people and the strength of its economy and believe that Japan will recover, and that is good for -- obviously for Japan but also for all of its trading partners and for the United States.

On the issue specifically with the reactors, I think the NRC is better suited -- or the Department of Energy -- to get into the specifics. What I can tell you is we obviously monitor it a lot very closely from here. The President gets constant updates. Our national security team is focused on this, continues to be focused on it. And we are aware of the fact that while the world's attention has shifted to other areas, that the situation in Japan remains serious. And that's why we have committed so many resources to helping the Japanese in any way that we can with that problem.

END

12:23 P.M. EDT

From: Shane, Raeann
Sent: Monday, March 28, 2011 5:19 PM
To: Batkin, Joshua; Powell, Amy
Subject: RE: 50 Mile EPZ justification response

Thanks Josh. These are good. I especially like the part about "hypothetical but not unreasonable" assumptions.

From: Batkin, Joshua
Sent: Monday, March 28, 2011 5:09 PM
To: Powell, Amy; Shane, Raeann
Subject: FW: 50 Mile EPZ justification response

From: LIA08 Hoc
Sent: Monday, March 28, 2011 11:56 AM
To: Franovich, Mike; Orders, William; Snodderly, Michael; Castleman, Patrick; Marshall, Michael; Batkin, Joshua; Hipschman, Thomas
Cc: LIA06 Hoc
Subject: FW: 50 Mile EPZ justification response

Attached for your info is an email sent by the Ops Center Liaison Team to Mr. Takashi regarding questions he raised about the 50 mile evacuation recommendation we made for US Citizens in Japan. Please let me know if you have any questions or would like additional information about this.

Jeff Temple
Response Program Manager
Liaison Team/Interagency Response Team/Corporate Support Response Team
301-816-5185

From: LIA03 Hoc
Sent: Monday, March 28, 2011 11:07 AM
To: takashi.inutsuka@mofa.go.jp
Cc: Doane, Margaret; Mamish, Nader; LIA02 Hoc; LIA08 Hoc; Borchardt, Bill; LIA03 Hoc
Subject: 50 Mile EPZ justification response

On behalf of Bill Borchardt, we are responding to your questions:

1. In the NRC NEWS, March 16, 2011, there are attachments of the results of two sets of computer calculations. One, 15 March 2010 02:51am (EDT), has a hypothetical, single-reactor site, 2350 MWT, Boiling Water Reactor. On the other hand, 16 March 2010 12:24pm (EDT), has a hypothetical, four-reactor site. But in these attachments there is no detailed assumption for calculations about

- (1) the power and type of reactor for the four-reactor site,
- (2) weather, wind direction and speed, and the status of the problem at the reactors (for example: Source Term).

Q1: Are these sentences correct?

A1: These sentences are correct. Although the press release identified one of the computer calculations being based on a hypothetical four-reactor site, the source term used in the calculation was the approximate activity available for release from one reactor and two spent fuel pools.

Q2: Have you ever explained these detailed assumptions to the public?

A2: The assumptions have been generally described in press releases, interviews, and congressional testimony.

Q3: Could you explain the relation between the number of Total EDE and 1rem (PAGs)? For example 8.1rem (15 March calculation) and 9.9rem (16 March calculation), 50 mi, and 1rem? Could you also explain the relation between the number of Thyroid CDE and 5rem (PAGs)? For example 23rem (15 March calculation) and 48rem (16 March calculation), 50 mi, and 5rem? Is there no need to calculate this for distances greater than 50 mi?

A3: As stated in the press release, these two computer calculations are hypothetical, rough estimates that would not necessarily characterize an actual release. Although the calculation references have TEDE and CDE doses exceeding PAGs beyond 50 miles, these were only two of several cases run. Given that other cases projected PAG doses less than 50 miles and there would be time to extend our recommendations beyond 50 miles, if necessary, the 50 mile recommendation was considered appropriate to protect US citizens.

2. At the White House Regular Briefing, March 17, 2011, Chairman Jaczko said, "We have a team of 11, some of our best technical experts in Tokyo, and they are working with counterparts from the utility in Tokyo as well as other individuals with the government. So that is one of the sources. We are collecting data from as many places as we can to make the best judgments we can with the information available. But I would stress that this is a very difficult situation. There is often conflicting information. And so we made what we thought was a prudent decision."

Q4: Does this statement accurately reflect the NRC's decisionmaking process that led to the recommendation (50 miles)?

A4: Yes.

Q5: Did NRC have evidence to suggest that radiation levels around Fukushima were higher than what Japanese officials had said?

A5: No. The NRC had very limited radiation level information at this time. The computer calculations and subsequent protective action decisions were based on conservative assumptions based on limited information and the deteriorating state of several reactors and spent fuel pools.

3. At the meeting of NRC, March 21, 2011, you said, "the situation that led to the 50 mile guidance in Japan was based upon what we understood and still believe had existed that there were degraded conditions in two spent-fuel pools at the site and, in all likelihood, some core damage in three of the reactor units. Based on the situation as we understood it at that time, we thought it was prudent to provide the recommendation to the ambassador to evacuate out to 50 miles in Japan."

Q6: Does this statement accurately reflect the NRC's decisionmaking process that led to the recommendation (50 miles)?

A6: Yes.

Q7: There are some differences on the basis for making recommendation between 1. and 3. Could you explain the basis for making the recommendation (50 miles) again?

A7: The comments made by NRC Chairman Jaczko and Mr. Borchardt were consistent in that seriously degrading conditions at several Daiichi units supported a need to take pre-emptive protective action. The computer calculations helped to provide perspective on possible impacts.

Q8: I understand the recommendation is prudent. How do you define "prudent" in the assumptions for your calculations? in the decision about the distance?

A8: Since communications were limited and there was a large degree of uncertainty about plant conditions at the time, it was difficult to accurately assess the radiological hazard. Computer models used meteorological model data appropriate for the Fukushima Daiichi vicinity. Source terms were based on hypothetical, but not unreasonable estimates of fuel damage, containment, and other release conditions. Subsequent modeling can be correlated with the ground deposition as observed in flyover and other monitoring data. Therefore, prudent (reasonable conservative protective actions made with a predictive approach to limit radiation exposure to US citizens) can be substantiated based on the conditions present and the information known at the time.

If you have additional questions please contact Mr. Borchardt at the email address above.

From: Powell, Amy
Sent: Monday, March 28, 2011 5:45 PM
To: Borchardt, Bill
Cc: Schmidt, Rebecca
Subject: Likely questions from Sen. Bingaman tomorrow

Importance: High

Bill –

Here are the questions Sen. Bingaman's staff provided for him to ask you tomorrow (of course, the Senator may well ad-lib)...

1. Mr. Borchardt – can you please explain what were the parameters or data the NRC used to determine a 50 km evacuation zone for U.S. citizens?
2. Mr. Borchardt – how many U.S. reactors are of the basic design at Fukushima and of those how many are scheduled for re-licensing?
3. Mr. Borchardt – the NRC is licensing several new reactors that contain “passive” safety features – can you please describe these and what advantages they offer relative to the boiling water reactors at Fukushima I.
4. Mr. Borchardt – what limits reactor operators in the U.S. from moving spent fuel from the ponds to dry cask storage at a faster rate?

Amy

Amy Powell
Associate Director
U. S. Nuclear Regulatory Commission
Office of Congressional Affairs
Phone: 301-415-1673

From: Powell, Amy
Sent: Monday, March 28, 2011 5:51 PM
To: Epstein, Jonathan (Bingaman); Schmidt, Rebecca
Subject: RE: qs

Thanks so much Jon!

From: Epstein, Jonathan (Bingaman) [mailto:Jonathan_Epstein@bingaman.senate.gov]
Sent: Monday, March 28, 2011 5:28 PM
To: Powell, Amy; Schmidt, Rebecca
Subject: qs

not that he ever asks mine but here they are

1. Mr. Borhardt – can you please explain what were the parameters or data the NRC used to determine a 50 km evacuation zone for U.S. citizens?
2. Mr. Borhardt – how many U.S. reactors are of the basic design at Fukushima and of those how many are scheduled for re-licensing?
3. Mr. Borhardt – the NRC is licensing several new reactors that contain “passive” safety features – can you please describe these and what advantages they offer relative to the boiling water reactors at Fukushima I.
4. Mr. Borhardt – what limits reactor operators in the U.S. from moving spent fuel from the ponds to dry cask storage at a faster rate?

From: Powell, Amy
Sent: Monday, March 28, 2011 5:55 PM
To: Batkin, Joshua
Subject: Advance possible Qs from SAC (Doug)

FYI - Becky sent to OEDO and OIP for input.

-----Original Message-----

From: Clapp, Doug (Appropriations) [mailto:Doug_Clapp@appro.senate.gov]
Sent: Monday, March 28, 2011 2:59 PM
To: Powell, Amy
Subject: FW: this is what i have so far

Don't know what Matt will add but these are draft questions I've done up. When I have final list of questions I will send to you but unlikely to be until late tomorrow so wanted to give you early heads up.

-----Original Message-----

From: Clapp, Doug (Appropriations)
Sent: Monday, March 28, 2011 2:53 PM
To: Nelson, Matthew (Feinstein)
Subject: this is what i have so far

FIRST PANEL QUESTIONS

Failure of IAEA to Lead and Provide Information:

Chairman Jaczko, there has been significant confusion created by conflicting information and inadequate information coming out of Japan. Clearly the nature of the nuclear crisis creates most of this confusion, but some attribute a portion of the problem to the utility and Japanese government.

The rest of the world is left to sift through conflicting information and conduct remote independent radiation monitoring to try to assess the situation. This appears to be a problem.

- * Does the International Atomic Energy Agency have a role to play in assuring governments adequately share information?
- * Does the IAEA have a role in assuring international assessments of radiation levels?
- * Do you feel the international community is better prepared since Chernobyl, and if so, how has that been demonstrated with the event at Daiichi?

NAS Study on Spent Fuel

Chairman Jaczko, in 2006 a National Academy of Sciences committee completed a report requested by the NRC and Department of Homeland Security related to safety of spent nuclear fuel. Matt Bunn of Harvard wrote an op-ed this past week that two recommendations from that NAS report were to 1) put old fuel next to new fuel in the spent fuel pools, and 2) add sprayers over the pools in case cooling water was lost for whatever reason. He says the NRC did not implement these recommendations.

- * Can you tell me if Mr. Bunn is correct, and if so, why the NRC did not implement these two safety recommendations made by the NAS report?
- * Are there other suggestions from the NAS, or other entities, that the NRC has not implemented that you are willing to reconsider in light of events at Daiichi?

Independent Assessment of Nuclear Power Safety in the United States

Chairman Jaczko, I want to thank you and the people of your agency for the hard work and long hours many of you have been putting in since March 11. I further want to say that I believe the women and men of your agency work hard every day to keep our power plants safe. So, in no way do I want you or the workforce of the NRC to take this question as a slight.

- * Do you believe there is value in having an independent assessment of nuclear power safety in the United States?

Design Basis Reassessment

Chairman Jaczko, in the past four years there has been earthquakes in Japan that have exceeded the design basis for nuclear plants in the vicinity of the earthquakes.

- * How confident are you that our design basis for U.S. plants is sufficient?
- * Why were the Japanese so wrong on their assumptions of the possible maximum earthquake and tsunami events?

Relicensing not including seismic and tsunami

Chairman Jaczko, I understand from my trip to Diablo Canyon that the relicensing process does not include a review of seismic and tsunami threats. Rather that relicensing is focused more on the aging of materials and equipment. The plant operators and NRC personnel on the trip explained that seismic and tsunami issues are considered on a continuing basis and thus do not need to be part of the relicensing.

I find this a little confusing. I understand relicensing should consider aging of materials and equipment as 20 to 40 years have passed since the initial license. But our information relative to seismic and tsunami threats has also changed over this time.

* If seismic and tsunami issues are not considered during relicensing, what guarantee do we have that the NRC is adequately considering these issues at any other time?

* If not considered during relicensing, does the burden fall to the federal government to prove there is a need to modify the license due to seismic or tsunami information or does that burden get put on the plant operator?

From: Powell, Amy
Sent: Monday, March 28, 2011 5:58 PM
To: Apostolou, Carrie (Appropriations)
Subject: RE: Lochbaum statement

Thanks Carrie – I appreciate it. The Chairman's testimony is, as required, circulating the Commission for comment so that we can deliver to you tomorrow afternoon.

Thank for the time today,
Amy

From: Apostolou, Carrie (Appropriations) [mailto:Carrie_Apostolou@appro.senate.gov]
Sent: Monday, March 28, 2011 3:12 PM
To: Powell, Amy
Subject: Lochbaum statement

In case you haven't seen Mr. Lochbaum's statement.



Union of Concerned Scientists

Citizens and Scientists for Environmental Solutions

Statement of David Lochbaum, Director – Nuclear Safety Project

Before the US Senate Energy and Natural Resources Committee

March 29, 2011

The Fukushima Dai-Ichi nuclear plant in Japan experienced a station blackout. A station blackout occurs when a nuclear power plant loses electrical power from all sources except that provided by onsite banks of batteries. The normal power supply comes from the plant's own main generator or from the electrical grid when the reactor is shut down. All the equipment needed to operate the plant on a daily basis as well as the emergency equipment needed during an accident can be energized by the normal power supply. When the normal power supply is lost, backup power is supplied from onsite emergency diesel generators. These generators provide electricity only to the smaller set of equipment needed to cool the reactor cores and maintain the containments' integrity during an accident.

At Fukushima, the earthquake caused the normal power supply to be lost. Within an hour, the tsunami caused the backup power supply to be lost. This placed the plant into a station blackout where the only source of power came from batteries. These batteries provided sufficient power for the valves and controls of the steam-driven system—called the reactor core isolation cooling system—that provided cooling water for the reactor cores on Units 1, 2, and 3. When those batteries were exhausted, there were no cooling systems for the reactor cores or the spent fuel pools. There are clear indications that the fuel in the reactor cores of units 1, 2, and 3 and some spent fuel pools has been damaged due to overheating.

Had either normal or backup power been restored before the batteries were depleted, we would not be here today discussing this matter. The prolonged station blackout resulted in the inability to cool the reactor cores in Units 1, 2, and 3, the spent fuel pools for all six units, and the consolidated spent fuel pool. There are lessons, learned at high cost in Japan, that can and should be applied to lessen the vulnerabilities at US reactors. And I cannot emphasize enough that the lessons from Japan apply to all US reactors, not just the boiling water reactors like those affected at Fukushima. None are immune to station blackout problems. All must be made less vulnerable to those problems.

As at Fukushima, US reactors are designed to cool the reactor core during a station blackout of only a fairly short duration. It is assumed that either the connection to an energized electrical grid or the repair of an emergency diesel generator will occur before the batteries are depleted. Eleven US reactors are designed to cope with a station blackout lasting eight hours, as were the reactors in Japan. Ninety-three of our reactors are designed to cope for only four hours. But unless the life of the on-site batteries is long enough to eliminate virtually any chance that the batteries would be depleted before power from another source is restored, one lesson from Fukushima is the need to provide workers with options for dealing with a station blackout lasting longer than the life of the on-site batteries. In other words, the moment that any US reactor enters a station blackout, response efforts should proceed along three parallel paths: (1) restoration of the electrical grid as soon as possible, (2) recovery of one or more emergency diesel generators as soon as possible, and (3) acquisition of additional batteries and/or temporary generators as soon as possible. If either of the first two paths leads to success, the station blackout ends and the re-energized safety systems can cool the reactor core and spent fuel pool. If the first two paths lead to failure, success on the third path will hopefully provide enough time for the first two paths to achieve belated success.

The timeline associated with the third path should determine whether the life of the on-site batteries is adequate or whether additional batteries should be required.. For example, the existing battery life may be sufficient when a reactor is located near a facility where temporary generators are readily available, such as the San Onofre nuclear plant in California, which is next to the US Marine base at Camp Pendleton. When a reactor is more remotely located, it may be necessary to add on-site batteries to increase the chance that the third path leads to success if the first two paths do not.

The second lesson from Fukushima is the need to address the vulnerability of spent fuel pools. At many US reactors, there is far more irradiated fuel in the spent fuel pool than in the reactor core. At all US reactors, the spent fuel pool is cooled by fewer and less reliable systems than are provided for the reactor core. At all US reactors, the spent fuel pool is housed in far less robust structures than surround the reactor core. This means that any release of radiation from the pool will not be as well contained as radiation released from the reactor core. It also means that spent fuel pools are more vulnerable to terrorist attack than is the reactor itself. More irradiated fuel that is less well protected and less well defended is an undue hazard. There are two measures to better manage this risk: (1) accelerate the transfer of spent fuel from spent fuel pools to dry cask storage, and (2) upgrade the guidelines for how to address an emergency and the operator training for spent fuel pool problems.

Currently, the US spent fuel storage strategy is to nearly fill the spent fuel pools to capacity and then to transfer fuel into dry cask storage to provide space for the new fuel discharged from the reactor core. This keeps the spent fuel pools nearly filled with irradiated fuel, thus maintaining the risk level about as high as possible. Added to that risk is the risk from dry casks stored onsite, which is less than that from the spent fuel pools but not zero.

A better strategy would be to reduce the inventory of irradiated fuel in the pools to the minimum amount, which would be only the fuel discharged from the reactor core within the past five years. Reducing the spent fuel stored in the pools would lower the risk in two ways. First, less irradiated fuel in the pools would generate a lower heat load. If cooling of the spent fuel pool was interrupted or water inventory was lost from the pool, the lower heat load would give workers more time to recover cooling and/or water inventory before overheating caused fuel damage. And second, if irradiated fuel in a spent fuel pool did become damaged, the amount of radioactivity released from the smaller amount of spent fuel would be significantly less than that released from a nearly full pool. Reducing the amount of irradiated fuel in spent fuel pools would significantly reduce the safety and security risks from a nuclear power plant.

Following the 1979 accident at Three Mile Island, reactor owners significantly upgraded emergency procedures and operator training.. Prior to that accident, procedures and training relied on the operators quickly and correctly diagnosing what had happened and taking steps to mitigate the consequences. If the operators mis-diagnosed the accident they faced, the guidelines could lead them to take the wrong steps for the actual accident in progress. The revamped emergency procedures and training would guide the operators' response to an abnormally high pressure or an unusually low water level without undue regard for what caused the abnormalities. The revamped emergency procedures and training represent significant improvements over the pre-TMI days. But they apply only to reactor core accidents. No comparable procedures and training would help the operators respond to a spent fuel pool accident. It is imperative that comparable emergency procedures and training be provided for spent fuel pool accidents to supplement the significant gains in addressing reactor core accidents that were made following the TMI accident.

The Nuclear Regulatory Commission has announced a two-phase response plan to Fukushima; a 90-day quick look followed by a more in-depth review. If the past three decades have demonstrated anything, it's that the NRC will likely come up with a solid action plan to address problems revealed at Fukushima, but will be glacially slow in implementing those identified safety upgrades. A comprehensive action plan does little to protect Americans until its goals are achieved. We urge the US Congress to force the NRC to not merely chart a course to a safer place, but actually reach that destination as soon as possible.

From: Spencer, Peter <Peter.Spencer@mail.house.gov>
Sent: Monday, March 28, 2011 6:08 PM
To: Powell, Amy
Subject: RE: Follow up from NRC re: staff requirements memo on task force, info notice to licensees

thanks

From: Powell, Amy [mailto:Amy.Powell@nrc.gov]
Sent: Monday, March 28, 2011 6:01 PM
To: Spencer, Peter
Subject: RE: Follow up from NRC re: staff requirements memo on task force, info notice to licensees

Yes, either day

From: Spencer, Peter [mailto:Peter.Spencer@mail.house.gov]
Sent: Monday, March 28, 2011 5:00 PM
To: Powell, Amy
Subject: RE: Follow up from NRC re: staff requirements memo on task force, info notice to licensees

Thanks. Just in case I'm asked: is the availability issue next week covering both April 6 and April 7?

From: Powell, Amy [mailto:Amy.Powell@nrc.gov]
Sent: Monday, March 28, 2011 4:59 PM
To: Spencer, Peter
Subject: Follow up from NRC re: staff requirements memo on task force, info notice to licensees

Peter –

Here is the staff tasking memo that followed the Commission vote for staff to establish a senior management task force: <http://www.nrc.gov/reading-rm/doc-collections/commission/comm-secy/2011/2011-0002comgbi-srm.pdf> (as background, the Commission voting record is posted at <http://www.nrc.gov/reading-rm/doc-collections/commission/comm-secy/2011/2011-0002comgbi-vtr.pdf>; the original paper from Chairman Jaczko to his colleagues – which is what the vote was on – is posted at <http://www.nrc.gov/reading-rm/doc-collections/commission/comm-secy/2011/2011-0002comgbi.pdf>)

The Information Notice to plant licensees is posted at <http://www.nrc.gov/reading-rm/doc-collections/gen-comm/info-notices/2011/ML110760432.pdf>

Text of the NRC's March 18th press release on this notice appears below my "signature" in case it is helpful for context.

Amy

Amy Powell
Associate Director
U. S. Nuclear Regulatory Commission
Office of Congressional Affairs
Phone: 301-415-1673

NRC INFORMS U.S. NUCLEAR POWER PLANTS ON JAPAN EARTHQUAKE'S EFFECTS

The Nuclear Regulatory Commission has issued an Information Notice to all currently operating U.S. nuclear power plants, describing the effects of the March 11 earthquake and tsunami on Japanese nuclear power plants. The notice provides a brief overview of how the earthquake and tsunami are understood to have disabled several key cooling systems at the Fukushima Daiichi nuclear power station, and also hampered efforts to return those systems to service. The notice is based on the NRC's current understanding of the damage to the reactors and associated spent fuel pools as of Friday, March 18. The notice reflects the current belief that the combined effects of the March 11 earthquake and tsunami exceeded the Fukushima Daiichi plant's design limits. The notice also recounts the NRC's efforts, post-9/11, to enhance U.S. plants' abilities to cope with severe events, such as the loss of large areas of a site, including safety systems and power supplies. The NRC expects U.S. nuclear power plants will review the entire notice to determine how it applies to their facilities and consider actions, as appropriate.

From: Powell, Amy
Sent: Monday, March 28, 2011 7:12 PM
To: Apostolou, Carrie (Appropriations); Owens, Tyler (Appropriations); Schatte, Conrad (Alexander)
Subject: Follow-up items from NRC

Hi all –

Thanks for your time today. Here are a few of the “IOU’s” from our meeting:

1. Here is the staff tasking memo that followed the Commission vote for staff to establish a senior management task force: <http://www.nrc.gov/reading-rm/doc-collections/commission/comm-secy/2011/2011-0002comgbj-srm.pdf> (as background, the Commission voting record is posted at <http://www.nrc.gov/reading-rm/doc-collections/commission/comm-secy/2011/2011-0002comgbj-vtr.pdf>; the original paper from Chairman Jaczko to his colleagues – which is what the vote was on – is posted at <http://www.nrc.gov/reading-rm/doc-collections/commission/comm-secy/2011/2011-0002comgbj.pdf>)
2. The Information Notice to plant licensees is posted at <http://www.nrc.gov/reading-rm/doc-collections/gen-comm/info-notices/2011/ML110760432.pdf>. Text of the NRC’s March 18th press release on this notice appears below my “signature” in case it is helpful for context.
3. Here is a link to an org chart of the NRC: <http://www.nrc.gov/about-nrc/organization/nrcorg.pdf>. In the bottom left corner, you will see our four Regional Administrators. The Resident Inspectors at the plants report up through staff to the Regional Administrators. Here is another link to information about how the NRC is organized: <http://www.nrc.gov/about-nrc/organization.html>. I will get you number of Resident Inspectors tomorrow.

More to follow tomorrow.

Amy

Amy Powell
Associate Director
U. S. Nuclear Regulatory Commission
Office of Congressional Affairs
Phone: 301-415-1673

NRC INFORMS U.S. NUCLEAR POWER PLANTS ON JAPAN EARTHQUAKE’S EFFECTS

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From: NEIGA@nei.org
Sent: Monday, March 28, 2011 8:46 PM
To: Powell, Amy
Subject: NEI Update on Japan as of 7:00 pm EDT, March 28



UPDATE AS OF 7:00 P.M. EDT, MONDAY, MARCH 28

The International Atomic Energy Agency said that Japan's Nuclear and Industrial Safety Agency is planning a meeting with Tokyo Electric Power Co. to determine the origin of contaminated water in the turbine buildings at the Fukushima Daiichi nuclear power plant.

Contaminated water from the basement floor of the reactor 1 turbine building is being pumped into its main condenser. At reactor 2 that process has not begun because the steam condenser is full, IAEA said. Pumping contaminated water is being considered at reactors 3 and 4.

Three workers who received radiation exposure from standing in contaminated water were released today from the National Institute of Radiological Sciences, where they had been under observation. The level of localized exposure received by two of the workers is between 200 to 300 rem, lower than the previous estimate of 200 to 600 rem, IAEA said.

Radiation Monitoring Continues

Results from ocean monitoring stations up to 18 miles off the shoreline from the Fukushima Daiichi plant showed levels of iodine-131 at most locations were below federal limits. IAEA said results from four monitoring stations on March 26 showed iodine-131 concentrations were between 162 and 486 picocuries (1 picocurie is one-trillionth of a curie) per liter. Cesium-137 concentrations ranged from below the level of detection up to 432 picocuries per liter.

IAEA said that it is still too early to draw conclusions for expected concentrations in marine food, because the situation can change rapidly.

The latest sampling shows that drinking water in Fukushima and Ibaraki prefectures remain below the Japanese limits for the ingestion of drinking water by infants. Iodine-131 was reported in food samples taken from March 26 to March 27 in six prefectures (Fukushima, Gunma, Ibaraki, Niigata, Tochigi and Yamagata) in vegetables, strawberries and watermelon.

The U.S. Environmental Protection Agency identified trace amounts of radioactive isotopes at its 12 RadNet air monitor locations across the nation. The levels are extremely low and are far below levels that would be a public health concern. EPA's samples were captured by monitors in Alaska, Alabama, California, Hawaii, Idaho, Nevada and Washington state over the past week and sent to EPA scientists for detailed laboratory analysis.

For more information about radiation, see NEI's Web page on health and radiation safety. For detailed information on EPA's RadNet air monitor locations, click here.

New Videos

NEI has uploaded two more videos to its YouTube channel. The first video discusses the design and safe operation of a nuclear reactor and the second video discusses dry cask storage for spent fuel at nuclear energy plants. Both videos feature Everett Redmond, NEI's director of nonproliferation and fuel cycle policy.

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Twitter: <http://twitter.com/neiupdates>

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From: Droggitis, Spiros
Sent: Tuesday, March 29, 2011 7:21 AM
To: Ellmers, Glenn
Subject: RE: Testimony in NRC Reporter

I would kind of wait until you hear something from either Becky or Amy. They really have the lead on Congressional hearings.

From: Ellmers, Glenn
Sent: Tuesday, March 29, 2011 7:20 AM
To: Droggitis, Spiros
Subject: RE: Testimony in NRC Reporter

Got it. Thanks.

From: Droggitis, Spiros
Sent: Tuesday, March 29, 2011 7:20 AM
To: Ellmers, Glenn
Subject: RE: Testimony in NRC Reporter

<http://www.c-span.org/>

Looks like today's is, but that is before your publication. You may want to check it again tomorrow before you go to print.

From: Ellmers, Glenn
Sent: Tuesday, March 29, 2011 7:17 AM
To: Droggitis, Spiros
Subject: RE: Testimony in NRC Reporter

Ah, thanks. Glad I asked! Do we know anything about possible C-Span coverage?

From: Droggitis, Spiros
Sent: Tuesday, March 29, 2011 7:16 AM
To: Ellmers, Glenn; Schmidt, Rebecca; Powell, Amy
Subject: RE: Testimony in NRC Reporter

Glenn: At the risk of overstepping my bounds, this is what I have for this week. Becky/Amy can weigh in if anything needs adjustment:

Tuesday, March 29, 10:00 am,– Senate Energy and Natural Resources Committee
366 Dirksen Senate Office Building
Mr. Bill Borchardt: **Update on Fukushima**

Wednesday, March 30, 10:00 am, House Transportation and Infrastructure Subcommittee on Economic Development, Public Buildings, and Emergency Management
2253 Rayburn House Office Building
Mr. Mike Weber: **Emergency Management Programs**

Wednesday, March 30, 10:00 am, Senate Appropriations Energy and Water Subcommittee

138 Dirksen Senate Office Building
Chairman Jaczko: **Review of Nuclear Safety**

Thursday, March 31, 10:00 am, House Appropriations Energy and Water Subcommittee
2362B Rayburn House Office Building
Chairman Jaczko

From: Ellmers, Glenn
Sent: Tuesday, March 29, 2011 7:12 AM
To: Schmidt, Rebecca; Powell, Amy; Droggitis, Spiros
Subject: Testimony in NRC Reporter

Trip thought we should mention the various hearings in tomorrow's NRC Reporter, but I don't have all the information. Can someone help with this?

Senior Leadership Testifying to Congress This Week

The Chairman's return from his trip to Japan comes just in time for additional Congressional hearings on the situation in Japan and the NRC response. Today, Chairman Jaczko is testifying before the House Committee on _____, while EDO Bill Borchardt is testifying before the Senate Appropriations Subcommittee on Energy and Water. Tomorrow, Deputy EDO Michael Weber will be testifying before the House Appropriations Subcommittee on Energy and Water, while the Chairman will be back on Capitol Hill to testify before _____.

ANYTHING ELSE TO SAY?

Glenn Ellmers
Senior Communications Specialist, OEDO
301-415-0442
OWFN - 17F03
Mail stop: 016E15

From: Powell, Amy
Sent: Tuesday, March 29, 2011 7:57 AM
To: Droggitis, Spiros; Ellmers, Glenn; Schmidt, Rebecca
Subject: RE: Testimony in NRC Reporter

Thanks Spiros –

Glenn, the only thing that I would add is that the 3/31 hearing House Appropriations Energy and Water Subcommittee is focused on the FY12 budget.

Amy

From: Droggitis, Spiros
Sent: Tuesday, March 29, 2011 7:16 AM
To: Ellmers, Glenn; Schmidt, Rebecca; Powell, Amy
Subject: RE: Testimony in NRC Reporter

Glenn: At the risk of overstepping my bounds, this is what I have for this week. Becky/Amy can weigh in if anything needs adjustment:

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2362B Rayburn House Office Building
Chairman Jaczko

From: Ellmers, Glenn
Sent: Tuesday, March 29, 2011 7:12 AM
To: Schmidt, Rebecca; Powell, Amy; Droggitis, Spiros
Subject: Testimony in NRC Reporter

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and Water. Tomorrow, Deputy EDO Michael Weber will be testifying before the House Appropriations Subcommittee on Energy and Water, while the Chairman will be back on Capitol Hill to testify before _____ . ANYTHING ELSE TO SAY?

Glenn Ellmers
Senior Communications Specialist, OEDO
301-415-0442
OWFN - 17F03
Mail stop: 016E15

From: Batkin, Joshua
Sent: Tuesday, March 29, 2011 8:08 AM
To: Dorman, Dan; Brenner, Eliot
Cc: Monninger, John; Casto, Chuck; 'QuadeCP@state.gov'; Powell, Amy; Loyd, Susan
Subject: Re: Key messages for Senate hearing

That sounds right Dan. He will mainly focus on the support we're providing to Japan, why we think plants in the US are operating safely, and how we will conduct our lessons learned review. Don't think there will be any news except he will mention his trip over at a high level. Will be able to send you the text later today.

Joshua C. Batkin
Chief of Staff
Chairman Gregory B. Jaczko
(301) 415-1820

----- Original Message -----

From: Dorman, Dan
To: Batkin, Joshua; Brenner, Eliot
Cc: Monninger, John; Casto, Chuck; 'QuadeCP@state.gov' <QuadeCP@state.gov>
Sent: Tue Mar 29 00:17:38 2011
Subject: Key messages for Senate hearing

Josh and Eliot,

At our meeting this morning, the embassy press office was interested in any key messages or Qs and As related to testimony tomorrow at Senate Approps. I told them that while the hearing topic will be NRC's budget, I would be stunned if he gets no questions on the situation here. I further told them that I expect he will handle the questions deftly while sticking to key messages along the lines that we have some of our top experts working closely with our good friends in Japan to bring timely and thorough closure to this event while minimizing adverse impacts to people and the environment.

Folks here are mindful that the 50 mile decision and declaration of a dry pool coincided with his House Approps testimony. I told them I was not aware of any anticipated newsworthy items in tomorrow's hearing.

Nonetheless, they would be interested in any key messages you can share.

I have cc'd Christopher Quade, Assistant Press Attache here at the embassy so you have his e-mail. If you need to call him, his # is (03)3224-5300.

Dan

From: Harrington, Holly
Sent: Tuesday, March 29, 2011 9:02 AM
To: Brenner, Eliot; Droggitis, Spiros; Burnell, Scott; Hayden, Elizabeth
Subject: RE: From CQ Homeland Security page this morning

Trish has some stuff already prepared explaining why KI out to 20 is not necessary. She has to find it and polish it. I should have it by noon.

From: Brenner, Eliot
Sent: Tuesday, March 29, 2011 7:28 AM
To: Droggitis, Spiros; Harrington, Holly; Burnell, Scott; Hayden, Elizabeth
Subject: RE: From CQ Homeland Security page this morning

Thanks.

Holly, can you have Trish ready to take on the issue, or at least have something prepared that we can drop in the hopper, or put up on the website. That and yesterday's NY AG thing are areas where, in retrospect, we could have posted some rapid reaction material and cut down on our angst factor later in the day.

A thought.

From: Droggitis, Spiros
Sent: Tuesday, March 29, 2011 7:26 AM
To: Harrington, Holly; Brenner, Eliot; Burnell, Scott; Hayden, Elizabeth
Subject: FW: From CQ Homeland Security page this morning

FYI

From: Droggitis, Spiros
Sent: Tuesday, March 29, 2011 7:24 AM
To: OCA Distribution
Subject: From CQ Homeland Security page this morning

Rep. **Edward J. Markey**, D-Mass., will hold a news conference on **providing potassium iodide to the 20 mile radius of nuclear power plants. 2 p.m., House Triangle (Outside), Capitol**

From: Dacus, Eugene
Sent: Tuesday, March 29, 2011 10:10 AM
To: Powell, Amy
Subject: FW: Constituent Question

FYI

From: Springer, Darren (Sanders) [mailto:Darren_Springer@sanders.senate.gov]
Sent: Tuesday, March 29, 2011 10:08 AM
To: Dacus, Eugene
Subject: RE: Constituent Question

I think in addition to discussing decommissioning as planned, I would not be surprised to see some discussion about events in Japan and how they impact safety considerations at VY.

Darren M. Springer, Esq.
Senior Legislative Assistant,
Energy and Environment
Office of U.S. Senator Bernie Sanders
332 Dirksen Senate Office Building
(202) 224-5141
darren_springer@sanders.senate.gov

Visit Senator Sanders' Online Resources:

[Website](#) | [Facebook](#) | [Twitter](#) | [YouTube](#) | [Bernie Buzz](#)

From: Dacus, Eugene [mailto:Eugene.Dacus@nrc.gov]
Sent: Tuesday, March 29, 2011 9:51 AM
To: Springer, Darren (Sanders)
Subject: Re: Constituent Question

Darren,

Seems we've received this question more than a few times. Below is our reply posted on the NRC blog. If you need more, just let me know. By the way, I will be accompanying the Chairman to the meeting today with the delegation. I know VY is full of hot issues, but is there anything new on the plate since Sen. Sanders and the Chairman last spoke?

Gene

Whether by virtue of regular testing of sirens, mailings about emergency plans or possibly the receipt of potassium iodide (KI) pills, there are frequent reminders for those who live within a 10-mile radius of a U.S. nuclear power plant of the need to be ready should a significant event occur at the facility.

This area is known as the 10-mile Emergency Planning Zone (EPZ), and it is well established in federal regulations as the focal point of preparing for a severe accident at a reactor.

Some confusion has cropped up in the media and elsewhere recently regarding the size of EPZs in the wake of developments involving the Fukushima Daiichi reactors and spent fuel pools in Japan. The source of this confusion appears to stem from the NRC advisory on March 16th for American citizens who were within 50 miles of the plant to evacuate:
<http://pbadupws.nrc.gov/docs/ML1108/ML110800133.pdf>.

The advisory to evacuate to 50 miles was based on calculations done by NRC experts indicating releases from the three hobbled Japanese reactors and two fuel pools could – and a key word here is could – possibly exceed conservatively set safe radiation-exposure limits for the public. This advisory was made using limited data and conservative assumptions.

On its face, this recommendation seems to be at odds with the size used for American EPZs. In fact, it was consistent with the same kind of approach that would be used in the United States should a comparable, although extremely unlikely, event take place here.

In November 1976, a federal task force was formed to look at salient emergency planning issues for U.S. nuclear power plants. Out of that comprehensive evaluation came a recommendation that a 10-mile-radius EPZ would assure that “prompt and effective actions can be taken to protect the public in the event of an accident” at a plant. This was based on research showing the most significant impacts of an accident would be expected in the immediate vicinity of a plant and therefore any initial protective actions, such as evacuations or sheltering in place, should be focused there.

Put another way, the projected radiation levels would not be expected to exceed EPA protective action dose guidelines (1 rem to the body or 5 rem to the thyroid) beyond 10 miles under most accident scenarios.

That does not mean the protective actions could not expand beyond the 10-mile radius. Rather, emergency planners have always known such actions could be necessary if the situation warranted it. Indeed, U.S. nuclear power plants are required to consider and drill for the possibility of radiation releases that could have impacts up to 50 miles away, in addition to the required biennial exercises conducted in the vicinity of each nuclear power plant to assess implementation of the emergency plan within the 10-mile EPZ. Once every six years, each plant takes part in an exercise graded by the NRC and FEMA to demonstrate how it would handle such an event.

As the document [NUREG 0654/FEMA-REP-1](#) on emergency planning states “In a particular emergency, protective actions might well be restricted to a small part of the planning zone. On the other hand, for the worst possible accidents, protective actions would need to be taken outside the planning zones.” (This joint document is the basis for emergency planning around nuclear power plants and adds background to our regulations found in [10CFR 50.47](#).)

The Japanese have been confronted with extremely challenging circumstances wrought by a record earthquake followed by a massive tsunami. As the NRC carefully monitored developments there, the agency used the best information available to it to make a protective action recommendation to the U.S. Embassy in Tokyo for Americans within 50 miles of the six-reactor Japanese site, which was experiencing problems in four reactors and two spent fuel pools.

Were a similar accident to occur in the U.S., the response would be guided by the same considerations. But it is worth noting the United States has no nuclear complexes of this size.

Once the salient facts regarding the events at Fukushima Daiichi are made clear to the NRC, it intends to assess its own regulations and practices for any pertinent lessons learned that can be applied here. This will include an assessment of current emergency planning guidance and policy.

As the NRC carefully monitored developments there, the agency used the best information available to it to make a protective action recommendation.

More information on emergency planning for U.S. nuclear power plants is available on the NRC website at: <http://www.nrc.gov/about-nrc/emerg-preparedness.html>.

Eliot Brenner

Public Affairs Director

From: Springer, Darren (Sanders) [mailto:Darren_Springer@sanders.senate.gov]

Sent: Monday, March 28, 2011 10:39 AM

To: Dacus, Eugene

Subject: Constituent Question

Hi Gene,

I have a quick question to relay from a constituent who lives near VY and is in Japan, and cognizant of the 50 mile radius NRC has warned to stay away from near the Fukushima plant. She asked about the 10 mile zone around VY where she said NRC has said in past there would never be a need to evacuate a broader radius than 10 miles, and is concerned about this. Have event in Japan changed NRC's thoughts in terms of safety in event of incident at VY?

I will relay your full answer to her.

Thanks,

Darren

Darren M. Springer, Esq.
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Visit Senator Sanders' Online Resources:

[Website](#) | [Facebook](#) | [Twitter](#) | [You Tube](#) | [Bernie Buzz](#)

From: Powell, Amy
Sent: Tuesday, March 29, 2011 11:18 AM
To: Brown, Milton
Cc: Decker, David
Subject: FW: Additional Potential Question for the Chairman's Appropriations Hearings
Attachments: Chairman Additional Funding Q 3-29-11.docx

Milton –

This proposed response from George came to OCA while you and I were in the Chairman's meeting where you were asked to deliver the same. I wanted to make sure that you saw this.

Amy

Amy Powell
Associate Director
U. S. Nuclear Regulatory Commission
Office of Congressional Affairs
Phone: 301-415-1673

From: Smolik, George
Sent: Tuesday, March 29, 2011 8:25 AM
To: Decker, David
Cc: Powell, Amy; Golder, Jennifer; Peterson, Gordon; Allwein, Russell; Williams, Donald; Ojeda, Jennifer
Subject: Additional Potential Question for the Chairman's Appropriations Hearings

David,
Attached is an additional potential question and response regarding FY 2011/2012 funding requirements to be added to the Chairman's briefing materials for the upcoming appropriations hearings.
Please let me know if you have any questions.
George

Question:

Does the NRC have additional funding needs for FY 2011 and FY 2012?

Response:

The NRC is currently redirecting resources to support a team of its technical experts to provide on-the-ground assistance in Japan following the tragic events resulting from the earthquake and tsunami at the Fukushima Daiichi nuclear facility. In addition, the NRC's headquarters Operations Center has been operating on a 24-hour basis to monitor and analyze events at nuclear power plants in Japan. Overall, approximately 100 NRC staff members are involved in these operations. The cost of this resource intensive effort is approximately \$1 million per week, and is expected to continue for some time.

As the immediate crisis in Japan comes to an end, we will look at any information we can to gain experience from the event and see if there are any changes we need to make at our own domestic nuclear facilities to further protect public health and safety. Over the near term, we will be redirecting resources to enhance inspection activities through temporary instructions to our inspection staff, including the resident inspectors and the region-based inspectors in our four Regional offices, to look at the readiness to deal with both the design basis accidents and the beyond-design basis accidents. Our longer-term review will inform any permanent NRC regulation changes determined to be necessary. The cost of the lessons learned review from the nuclear events in Japan is expected to be less than \$5 million in FY 2011 and FY 2012.

If the NRC receives its FY 2011/FY 2012 requested funding levels, no supplemental funding will be necessary. The NRC will be able to meet the expected emergent workload needs of technical assistance and lessons learned through reprogramming of NRC funds.

From: Powell, Amy
Sent: Tuesday, March 29, 2011 11:48 AM
To: Clapp, Doug (Appropriations)
Subject: US Embassy statement

Here is a link to the Embassy statement that I referenced on my VM to you:

<http://japan.usembassy.gov/e/p/tp-20110328-72.html>

Talk to you soon,
AP

Amy Powell
Associate Director
U. S. Nuclear Regulatory Commission
Office of Congressional Affairs
Phone: 301-415-1673

From: Powell, Amy
Sent: Tuesday, March 29, 2011 11:53 AM
To: Apostolou, Carrie (Appropriations); Owens, Tyler (Appropriations); Schatte, Conrad (Alexander)
Subject: Embassy statement

Hi again –

Here is a link to the Embassy statement that was issued following Chairman Jaczko's visit (he arrives back in the US this morning) – we referenced it during our conversation yesterday:

<http://japan.usembassy.gov/e/p/tp-20110328-72.html>

Amy Powell
Associate Director
U. S. Nuclear Regulatory Commission
Office of Congressional Affairs
Phone: 301-415-1673

From: NEIGA@nei.org
Sent: Tuesday, March 29, 2011 12:10 PM
To: Powell, Amy
Subject: NEI update as of 11 a.m. EDT, March 29



UPDATE AS OF 11 A.M. EDT, TUESDAY, MARCH 29:

Japan's nuclear regulatory agency says Tokyo Electric Power needs to balance injecting cooling water into the reactors at the Fukushima Daiichi nuclear power plant and preventing contaminated water from seeping out, the Japan Atomic Industrial Forum reported Tuesday.

On Monday, TEPCO reported radiation levels of more than 100 rem per hour on the surface of puddles in the reactor 2 turbine building and in a trench outside the building. TEPCO is using sandbags to keep the water confined to the trench, a concrete channel that does not connect to the ocean. The trenches at reactors 1 and 3 are also at risk of overflowing and measures are being taken to contain the water.

The Nuclear and Industrial Safety Agency is awaiting the results of new Science Ministry tests for radioactivity beyond 20 kilometers from Fukushima Daiichi and new samples from TEPCO of the plant grounds.

On Monday, TEPCO discovered minute levels of plutonium in the soil at five locations at the site. The plutonium measured is as little as was in the environment in Japan following nuclear weapons testing during the Cold War and poses no health risk to humans.

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Twitter: <http://twitter.com/neiupdates>

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From: Decker, David
Sent: Tuesday, March 29, 2011 1:06 PM
To: Batkin, Joshua
Cc: Powell, Amy; Schmidt, Rebecca
Subject: (OUO) OIP Input on SAC Questions That May be Asked
Attachments: SAC QA.docx

Josh,

Attached is what OIP provided in response the "heads-up" questions that may be asked at tomorrow's hearing with the SAC Energy and Water. OIP wanted to make sure they also provided the paragraph below for context. EDO is also working on responses to the other parts of the "heads-up" questions.

David

Please note that one thing that is not covered in our responses is the Convention on Assistance in the Event of a Nuclear Accident or Radiological Emergency. A country has to make a formal request for assistance under this Convention in order for the IAEA to take a lead coordinating role. The Japanese have opted not to make such a request. It's important for the Chairman to know this technicality in the event of follow-up questions. We don't want to be critical of the Japanese - it's their sovereign decision to make. But we also need to be factually honest about the limitations of the IAEA's role.

Does the International Atomic Energy Agency have a role to play in assuring governments adequately share information?

The IAEA has an important role to play in facilitating the sharing of information between countries. During an emergency, the IAEA's Incident and Emergency Centre, or IEC, facilitates communication between first responders in member states. The IAEA sends teams of experts to countries to provide assistance, and its scientific staff conducts detailed analyses to interpret data.

Following an emergency, the IAEA should play the primary role in conducting lessons-learned exercises, including experts from around the world and assuring appropriate roles for government, industry and non-government representatives. The objective of this work is to ensure that crucial knowledge gained from any emergency is incorporated effectively into strategies to prevent similar circumstances in the future.

The IAEA has worked hard to facilitate information sharing and provide assistance requested to Japan. It has joined other international organizations, such as the World Health Organization, World Meteorological Organization, and the Comprehensive Test Ban Treaty Organization to coordinate and maximize multilateral assistance efforts. The IAEA has already identified areas for improvement and made positive changes, such as improving the timeliness of communication with Japan, and providing timely and informative briefings to member states and the public.

The IAEA faces challenges, however, in its ability to facilitate information-sharing in a crisis situation. The IAEA's ability to share information is dependent upon the information it is provided, both by the member state in need and by others offering their assistance, and by virtue of its constituency, it needs to communicate with all 152 member states. It is a country's sovereign decision to interact with the IAEA in a crisis situation, and all decisions must take into account the need to maintain domestic response efforts as the top priority.

We are urging the IAEA to collect and share as much information as possible, and Director General Amano recently noted that communication with Japanese authorities has improved with the arrival of IAEA staff in country. For our part, the NRC is working to share technical information with IAEA experts, and we are urging other members of the federal family, as well as industry, to provide the IAEA with specific details on the services, assistance and equipment the United States is able to provide if the Japanese require it.

Looking forward, we strongly support IAEA Director General Amano's Monday announcement to hold a high-level conference on the Fukushima events by this summer, and we hope it is the first of many steps in an organized IAEA plan to incorporate lessons learned into the Agency's technical work in the months and years ahead. I will be in Vienna for the Convention on Nuclear Safety Review Meeting next week and will be meeting with Director General Amano and other senior IAEA officials. Already there has been much discussion on how best to incorporate the events at Fukushima into our discussions and plans for the future.

Does the IAEA have a role in assuring international assessments of radiation levels?

There are certain activities that require a formal request for assistance from the country in need. The IAEA has sent two teams of radiation experts to Japan, to complement and validate the findings of Japanese experts who exercise the lead role in measuring radiation levels there. The IAEA is analyzing the data it receives from the Japanese and conducting modeling assessments, much like the NRC and its counterparts around the world are doing. As we are all relying on the same data, it is important for us to communicate regularly with one another about the results of our assessments. The IAEA is working with a variety of member states to share information and analyze radiation-related data.

Do you feel the international community is better prepared since Chernobyl and if so, how has that been demonstrated with the event at Daiichi?

The Fukushima crisis is still on-going, and as such it is not possible to make an accurate comparison at this point to Chernobyl in terms of the geographic, environmental, and human health impact. We have, however, noted a real improvement at Fukushima, compared to Chernobyl, in terms of information gathering and sharing

The international community has a significant number of resources at its disposal that were not available in 1986. The Chernobyl accident prompted an in-depth consideration of how national regulators, industry and other experts communicated during the event. As a result, the NRC and its regulatory counterparts have held hundreds of bilateral and multilateral exchanges, sharing information on a wide variety of technical subjects and improving safety worldwide. Chernobyl also gave way to a variety of multinational communication tools, some of which became law. The Convention on Nuclear Safety entered into force in 1999 after several years of Chernobyl-related negotiations.

Today, it has more than 70 contracting parties, including all countries operating nuclear power plants (note: if Iran starts up Bushehr, it will be the only exception to this). Under the Convention, contracting parties submit national reports on their nuclear safety programs and participate in a peer review process, culminating in a review meeting once every three years and receive important feedback and insights from peers. I will be leading the U.S. delegation to the Convention review meeting next week, and already there has been much discussion on how best to incorporate the events at Fukushima into our discussions and plans for the future.

The IAEA and the OECD/Nuclear Energy Agency also jointly maintain the Incident Reporting System database, which uses operating experience feedback to maintain and improve nuclear power plant safety. There are regulatory networks, such as the International Nuclear Regulators Association (INRA) Western European Nuclear Regulators Association (WENRA) Ibero-American Forum and Asian Nuclear Safety Network. The industry has also made significant efforts to promote communication worldwide. The Institute of Nuclear Power Operations (INPO) was initiated in the United States following the Three Mile Island accident, and today the World Association of Nuclear Operators (WANO) conducts inspections at nuclear power plants around the world and provides important feedback and guidance to operators from an industry perspective.

In addition to having much more comprehensive communication networks and resources at our disposal, important advances in technology have also been made since the mid 1980s. Some developments have led to a more effective cleanup process. Remote monitoring and

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instrumentation is more advanced and data can be transmitted in real time to scientific experts across the globe. Still, regardless of how advanced our technology becomes or how many safety systems are in place, we will strive to combat complacency in nuclear safety.

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From: Hipschman, Thomas
Sent: Tuesday, March 29, 2011 1:23 PM
To: Dacus, Eugene; Schmidt, Rebecca; Batkin, Joshua; Powell, Amy; Bradford, Anna; Warren, Roberta
Cc: Gibbs, Catina
Subject: RE: Can you

Also, Congress could always pass a law similar to the one requiring sirens at Indian Point, except this could require plants within a certain distance of metropolitan areas, or single unit sites without an operating reactor, or something like that

Thomas Hipschman
Policy Advisor for Reactors
Office of Chairman Gregory B. Jaczko
301-415-1832

-----Original Message-----

From: Dacus, Eugene
Sent: Tuesday, March 29, 2011 11:06 AM
To: Schmidt, Rebecca; Hipschman, Thomas; Batkin, Joshua; Powell, Amy; Bradford, Anna; Warren, Roberta
Cc: Gibbs, Catina
Subject: RE: Can you

Tom

Two things the delegations will be wanting to hear....

- Events in Japan and how they do/do not impact safety considerations at VY
- NRC's regulatory authority/ability to influence the SAFESTOR option at VY

-----Original Message-----

From: Schmidt, Rebecca
Sent: Tuesday, March 29, 2011 10:47 AM
To: Hipschman, Thomas; Batkin, Joshua; Powell, Amy; Dacus, Eugene; Bradford, Anna; Warren, Roberta
Cc: Gibbs, Catina
Subject: Re: Can you

They will press on decommissioning now. Is the chr ready to give the delegation something on decommissioning early?

----- Original Message -----

From: Hipschman, Thomas
To: Batkin, Joshua; Powell, Amy; Dacus, Eugene; Schmidt, Rebecca; Bradford, Anna; Warren, Roberta
Cc: Gibbs, Catina
Sent: Tue Mar 29 10:42:49 2011
Subject: RE: Can you

Patti has background info I put together for him on VY (summary attached), and working on NJ.

What's the purpose of the meetings?

Thomas Hipschman
Policy Advisor for Reactors
Office of Chairman Gregory B. Jaczko
301-415-1832

-----Original Message-----

From: Batkin, Joshua
Sent: Tuesday, March 29, 2011 10:32 AM
To: Powell, Amy; Dacus, Eugene; Schmidt, Rebecca; Bradford, Anna; Hipschman, Thomas; Warren, Roberta
Cc: Gibbs, Catina
Subject: Can you

Please work together to develop 3-4 points gbj should make in both meetings this pm and get them on a card for him?

Joshua C. Batkin
Chief of Staff
Chairman Gregory B. Jaczko
(301) 415-1820

From: Nelson, Matthew (Feinstein) <Matthew_Nelson@feinstein.senate.gov>
Sent: Tuesday, March 29, 2011 3:47 PM
To: Powell, Amy
Subject: RE: Commission tasking to staff re: actions following events in Japan

224-2745

From: Powell, Amy [mailto:Amy.Powell@nrc.gov]
Sent: Tuesday, March 29, 2011 3:37 PM
To: Nelson, Matthew (Feinstein)
Subject: RE: Commission tasking to staff re: actions following events in Japan

No, a formal response is still being prepared. Number where I can reach you?

Thanks,
Amy

From: Nelson, Matthew (Feinstein) [mailto:Matthew_Nelson@feinstein.senate.gov]
Sent: Tuesday, March 29, 2011 3:36 PM
To: Powell, Amy
Subject: RE: Commission tasking to staff re: actions following events in Japan

Has the commission responded to the Boxer Feinstein letter?

From: Powell, Amy [mailto:Amy.Powell@nrc.gov]
Sent: Monday, March 28, 2011 12:20 PM
To: Nelson, Matthew (Feinstein)
Subject: Re: Commission tasking to staff re: actions following events in Japan

Not yet - next paper would be task force charter and personnel assigned which should follow this week.

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Nelson, Matthew (Feinstein) <Matthew_Nelson@feinstein.senate.gov>
To: Powell, Amy
Sent: Mon Mar 28 11:17:56 2011
Subject: RE: Commission tasking to staff re: actions following events in Japan

Amy

Do you have any more paper on this task force by chance?

Matt

From: Powell, Amy [mailto: Amy.Powell@nrc.gov]
Sent: Thursday, March 24, 2011 8:42 AM
To: Clapp, Doug (Appropriations); Nelson, Matthew (Feinstein)
Subject: Commission tasking to staff re: actions following events in Japan

Hopefully you saw our press release on this last night, as the final tasking to NRC staff re: actions following the events in Japan was wrapped up last evening. If not, it is posted here: <http://www.nrc.gov/reading-rm/doc-collections/news/2011/11-055.pdf>

Here is the Commission voting record on this review – the “Staff Requirements” link is the actual tasking memo to staff.

COMGBJ-11-0002	NRC Actions Following the Events in Japan	03/21/2011
	Staff Requirements – NRC Actions Following the Events in Japan	03/23/2011
	Commission Voting Record – NRC Actions Following the Events in Japan	

I am back in the office today if you have more questions.

Amy Powell
Associate Director
U. S. Nuclear Regulatory Commission
Office of Congressional Affairs
Phone: 301-415-1673

From: Droggitis, Spiros
Sent: Tuesday, March 29, 2011 3:56 PM
To: Powell, Amy
Subject: FW: Q&As re: Japan
Attachments: Chairman JaczkoQA8_031511.docx

Even later

From: Powell, Amy
Sent: Wednesday, March 16, 2011 6:07 AM
To: Droggitis, Spiros; Dacus, Eugene; Decker, David; Weil, Jenny; Riley (OCA), Timothy; Shane, Raeann
Cc: Schmidt, Rebecca
Subject: Q&As re: Japan

Attached is a document of Q&A responses prepared by OPA and technical experts in the Ops Ctr. We CANNOT send this document in its entirety down to the Hill as is, but we can use it to respond to individual questions. I know that we "owe" answers to questions to a number of staffers. Please read through here and see if answers are provided to questions that came into you and get back to the requesting staff. This may also help those of you in the Ops Ctr with calls.

Questions that speculate about what could happen, compare Japan regs with US, and other speculative Qs are NOT included here. Just not the focus now.

Thanks
Amy

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Harrington, Holly
To: Coggins, Angela; Taylor, Robert
Cc: McIntyre, David; Schmidt, Rebecca; Powell, Amy
Sent: Tue Mar 15 21:51:03 2011
Subject: RE: Japanese-Rx-Incident addtl questions - March-14-2011 doc.docx

Angela, Amy, Becki – These are fully approved by relevant folks in the Op Center. For your use. I have not added to WebEOC yet as it's not clear these should also be used by others . . .

From: Coggins, Angela
Sent: Tuesday, March 15, 2011 8:36 PM
To: Taylor, Robert
Cc: Harrington, Holly; McIntyre, David; Schmidt, Rebecca; Powell, Amy
Subject: Re: Japanese-Rx-Incident addtl questions - March-14-2011 doc.docx

Thanks so much!! I appreciate all the effort!
Angela Coggins
Policy Director
Office of Chairman Gregory B Jaczko

From: Taylor, Robert
To: Coggins, Angela
Cc: Harrington, Holly; McIntyre, David; Schmidt, Rebecca; Powell, Amy
Sent: Tue Mar 15 20:29:17 2011
Subject: Japanese-Rx-Incident addtl questions - March-14-2011 doc.docx

Angela,

We have done our best to incorporate your questions into the Chairman's Q&As that were developed earlier today and provided to OCA. The updated set of Q&As is undergoing ET review and we will hopefully have it to you in the near future. The attached provides a roadmap of where we believe the responses can be found. A few questions fell into the broader "After this event is over, we will determine what changes need to be made in the US" message. I did not directly incorporate them, but you can see a draft response in the attached.

Regarding the third question about past events, I did not try to evaluate all of the events you listed. I would propose sticking to the party line, in that, "The NRC routinely reassess its regulatory requirements in light of new operating experience and plant events."

Regards,
Rob

Questions and Answers for Chairman Jaczko

Japan Earthquake/Tsunami Aftermath
As of 10 p.m. 3/15/2011

Current Status of Events in Japan

1. What damage was caused by the earthquake and/or tsunami at each of the Japanese plants?

On March 31st at approximately 2:46pm local time, a magnitude 8.9 earthquake occurred off the coast of Honshu, Japan. The earthquake knocked out offsite power to the three operating Fukushima Daiichi nuclear power plants (Units 1, 2 and 3). As designed, the nuclear reactors shutdown and on-site emergency diesel generators started up to power emergency safety systems that cool the reactor fuel. Subsequently, at approximately 3:41pm, a tsunami, resulting from the underwater earthquake, struck the site knocking out the emergency diesel generators. After depleting its battery power, the nuclear power plants lost the ability to provide cooling water to the reactor fuel. The best information currently available indicates that fuel damage has occurred Units 1, 2, and 3 but that the primary containment structures have remained intact and only limited releases of radiation have occurred.

2. What's going to happen following the hydrogen explosions everyone's seen from the video footage?

The NRC is monitoring the Japanese efforts to stabilize conditions at the affected reactors, and those actions are in line with what would be done in the United States. The NRC continues to monitor information on the status of the reactor core, the reactor vessel and the containment structure – all three areas are important to controlling the situation and protecting the public.

Additional technical information:

The explosions affected the secondary containment buildings for Units 1 and 3 of the reactor plant. The primary containment was unaffected by the explosion. This does expose the spent fuel pools to atmosphere but should not affect the integrity of the spent fuel pool. With the integrity of the Secondary Containment breached it is more essential to maintain Primary Containment intact.

To provide additional protection to Primary Containment, US reactors of the containment type similar to Fukushima Unit 1 installed a hardened vent line from primary containment directly to the vent stack. A hardened vent provides a release path which would prevent an overpressurization of containment as experienced at Fukushima Unit One. Venting from the hardened vent is typically a manual operation that is controlled by the Emergency Operating Procedures as a last resort to protect the containment from failure. This vent path can be directly from the upper containment or from the torus (the preferred vent path due to scrubbing effect of the torus water).

3. What happens when/if a plant "melts down"?

In short, nuclear power plants are designed to be safe. To prevent the release of radioactive material, there are multiple barriers between the radioactive material and the environment, including the fuel cladding, the heavy steel reactor vessel itself and the containment building, usually a heavily reinforced structure of concrete and steel several feet thick.

Additional technical information:

The melted core may melt through the bottom of the vessel and flow onto the concrete containment floor. The core may melt through the containment liner and release radioactive material to the environment.

4. What should the American public know about the incident in Japan?

The events unfolding in Japan are the result of a catastrophic series of natural disasters. These include the fifth largest earthquake in recorded history and the resulting devastating tsunami. Despite these unique circumstances, the Japanese appear to have taken reasonable actions to mitigate the event and protect the surrounding population. Since the beginning of the event, the NRC has continuously manned its Operations Center in Rockville, MD in order to gather and examine all available information as part of the effort to analyze the event and understand its implications both for Japan and the United States.

5. What happens next in Japan? How long will it take to assess the damage to the reactors?

The current focus is ensuring that adequate cooling of the reactor fuel at each of the affected Japanese reactors is established and maintained. In the days, weeks, and months that follow, there will be adequate time to assess the damage and determine next steps.

6. Why did the seawater fail to cool the reactor?

Based on information available to the NRC, it appears that the seawater has been effective at providing some cooling for the reactor. While it appears that some fuel damage has occurred, there will be plenty of time once this crisis is resolved to determine the effectiveness of the measures taken in response to this event.

7. If Chernobyl was a 7 and Three Mile Island was a 5, when does this event move from the 4 level?

The International Atomic Energy Agency (IAEA) rates nuclear events in accordance with its International Nuclear and Radiological Event Scale (INES). IAEA has assigned the events in Japan an INES rating of 4, "Accident with Local Consequences." This rating is subject to change as events unfold and additional information becomes available. INES classifies nuclear accidents based on the radiological effects on people and the environment and the status of barriers to the release of radiation. IAEA determinations regarding the INES rating of events are made independently.

Three Mile Island was assigned an INES rating of 5, "Accident with Wider Consequences," due to the severe damage to the reactor core.

8. What is the worst case scenario for the plant?

In a nuclear emergency, the most important action is to ensure the core is covered with water to provide cooling to remove any heat from the fuel rods. Without adequate cooling, the fuel rods will melt. Should the final containment structure fail, radiation from these melting fuel rods would be released to the atmosphere and additional protective measures may be necessary, depending on factors such as prevailing wind patterns.

9. As time goes on, does the chance for a meltdown increase?

Not necessarily. Each passing hour the fuel rods will become cooler. If adequate cooling can be established and maintained, the risk of a meltdown will be mitigated.

NRC Support/Response to the Events in Japan

10. What is the NRC doing about the emergencies at the nuclear power plants in Japan? Are you sending staff over there?

We are closely following events in Japan, working with other agencies of the federal government, and have been in direct contact with our counterparts in that country. We have sent a total of 11 staff to Tokyo

in response to the Japanese government's request for assistance. Two of those NRC staff members, knowledgeable about boiling water reactors, are already in Japan participating in the USAID team.

Additional technical information:

We are taking the knowledge that the staff has about the design of the US nuclear plants and we are applying this knowledge to the Japan situation. For example, this includes calculations of severe accident mitigation that have been performed. Tony Ulses and Jim Trapp are in-country. Team led by Chuck Casto is enroute from various locations.

11. What resources are the Japanese asking for?

The Japanese have formally requested equipment needed to cool the reactor fuel. This includes such things as pumps, fire hoses, portable generators, and diesel fuel. The NRC is coordinating with General Electric, which has plant design specifications, to ensure any equipment provided will be capable of meeting the needs of the Japanese.

12. Are we providing additional KI to the Japanese?

The Japanese government has requested KI from the United States. The NRC is working with our federal partners to support any requests of assistance.

Similarities/Impact on U.S. Nuclear Power Plants

**13. Can this happen here, i.e. an earthquake that significantly damages a nuclear power plant?
Are the Japanese plants similar to U.S. plants?**

All U.S. nuclear power plants are built to withstand environmental hazards, including earthquakes and tsunamis. Even those plants that are located in areas with low and moderate seismic activity are designed for safety in the event of such a natural disaster. The NRC requires that safety-significant structures, systems, and components be designed to take into account even very rare and extreme seismic and tsunami events.

The Japanese facilities are similar in design to several US facilities.

Additional technical information:

Currently, operating reactors were designed using a "deterministic" or "maximum credible earthquake" approach. Seismic hazard for the new plants is determined using a much more robust probabilistic seismic hazard assessment approach that explicitly addresses uncertainty and very rare events, as described in RG1.208. The NRC requires that adequate margin beyond the design basis ground shaking levels is assured. The NRC further enhances seismic safety for beyond-design-basis events through the use of a defense-in-depth approach.

In addition, the NRC periodically reviews the seismic risk at operating reactors when information may have changed. Over the last few years the NRC has undertaken a program called Generic Issue 199, which is focused on assessing hazard for plants in the central and eastern US using the latest techniques (developed in part during reviews of Western U.S. plants) and determining the possible risk implications of any increase in the anticipated ground shaking levels. This program will help us assure that the plants are safe under exceptionally rare and extreme ground motions that represent beyond-design-basis events.

14. What would U.S. plants do in this situation?

The NRC requires plant designs to include multiple and diverse safety systems, and plants must test their emergency preparedness capabilities on a regular basis. Plant operators are very capable of responding to significant events. In addition, NRC regulations require plants to have plans in place that would allow them to mitigate even "worst case scenarios".

Since 9/11, we have implemented requirements for licensees to have additional response capabilities for extreme situations.

Additional technical information:

U.S. nuclear plants have procedures in place to address a variety of accident scenarios, including abnormal operating procedures, emergency operating procedures, severe accident management guidelines and emergency plans. Additionally, the NRC activates Incident Response centers in Headquarters and individual Regions as necessary for the event to provide technical monitoring and support.

The NRC is capable of providing access to many external agencies (i.e., FEMA, Homeland Security, Military, etc.) to provide any additional help that individual plant sites may need. Additionally, the NRC has access to real-time plant information through the ERDS System for each site in the US and can monitor the status anytime.

15. Are U.S. power plants designed to withstand tsunamis?

Yes. Plants are built to withstand a variety of environmental hazards. Those plants that might face a threat from tsunami are required to withstand large waves and the maximum and minimum wave heights at the intake structure (which varies by plant.)

Additional technical information:

Tsunami have been considered in the design of US nuclear plants since the publication of Regulatory Guide 1.59 in 1977, although the approaches that were used for design of the existing plants varied significantly. Nuclear plants are designed to withstand flooding from not only tsunami, but also hurricane and storm surge; therefore there is often significant margin against tsunami flooding. However, it should be noted that Japanese experience has shown that drawdown can be a significant problem. Drawdown was not generally analyzed in the past.

Currently the US NRC has a tsunami research program that is focused on developing modern hazard assessment techniques and additional guidance through cooperation with the National Oceanic and Atmospheric Administration and the United States Geological Survey. This has already lead to several technical reports and an update to NUREG 0-800. The NOAA and USGS contractors are also assisting with NRO reviews of tsunami hazard. A new regulatory guide on tsunami hazard assessment is currently planned in the office of research, although it is not expected to be available in draft form until 2012.

16. Was there any damage to U.S. reactors from either the earthquake or the resulting tsunami?

No.

Additional technical information:

Diablo Canyon Units 1 and 2 were the only US plants to declare any type of an emergency classification. The site entered an "unusual event" based on a tsunami warning from the State, NOAA, NWS, Coast

Guard or System Dispatcher following the Japanese earthquake. They have since exited the "unusual event" declaration, based on a downgrade to a tsunami advisory.

17. What magnitude earthquake are US plants designed to?

Each plant is designed to a ground-shaking level that is appropriate for its location, given the possible earthquake sources that may affect the site and its tectonic environment. Ground shaking is a function of both the magnitude of the earthquake and the distance from the fault plane to the site. The probabilistic approaches currently used by the NRC account for a large number of different magnitudes.

Additional technical information:

In the past, "deterministic" or "scenario based" analyses were used to determine ground shaking (seismic hazard) levels. Now a probabilistic method is used that accounts for all possible earthquakes coming from all possible sources (including background seismicity) and the likelihood that each particular hypothetical earthquake occurs.

18. How many US reactors are located in active earthquake zones (and which reactors)?

Although we often think of the US as having "active" and "non-active" earthquake zones, earthquakes can actually happen almost anywhere. Seismologists typically separate the US into low, moderate, and high seismicity zones. The NRC requires that every plant is designed for site-specific ground motions that are appropriate for their location. In addition, the NRC has specified a minimum ground shaking level to which the plants must be designed.

19. How many reactors are along coastal areas that could be affected by a tsunami (and which ones)?

Many plants are located in coastal areas that could theoretically be affected by tsunami. Two plants, Diablo Canyon and San Onofre, are on the Pacific Coast, which is known to have a tsunami hazard. There are also two plants on the Gulf Coast, South Texas and Crystal River. There are many plants on the Atlantic Coast or on rivers that may be affected by a tidal bore. These include St. Lucie, Turkey Point, Brunswick, Oyster Creek, Millstone, Pilgrim, Seabrook, Calvert Cliffs, Salem/Hope Creek, and Surry. Tsunami on the Gulf and Atlantic Coasts occur, but are very rare. Generally the flooding anticipated from hurricane storm surge exceeds the flooding expected from a tsunami for plants on the Atlantic and Gulf Coast.

20. How many U.S. plants have designs similar to the affected Japanese reactors (and which ones)?

Thirty-five of the 104 operating nuclear power plants in the U.S. are boiling water reactors (BWRs), as are the reactors at Fukushima. Twenty-three of the U.S. BWRs have the same Mark I containment as the Fukushima reactors.

Four of the U.S. BWRs are early designs which are similar to Fukushima Unit 1.

Nineteen U.S. BWRs are similar to Fukushima Unit 3.

Additional technical information:

Fukushima Unit 1 is a BWR-3 with a Mark 1 containment similar to Oyster Creek, Nine Mile Point Unit 1, and Dresden Units 2 and 3.

Fukushima Unit 3 is a BWR-4 with a Mark 1 containment and a Reactor Core Isolation Cooling (RCIC) system. The remaining 31 U.S. BWRs use a Reactor Core Isolation Cooling (RCIC) system instead of an isolation condenser. Nineteen of those 31 reactors have a Mark 1 containment, while the remainder are more recent designs.

21. What could you say about the dangers to the American public from our nuclear plants?

As the events in Japan continue to unfold, the NRC is focused on supporting the Japanese government and people in bringing this crisis to closure in the safest manner possible. The NRC remains convinced that U.S. nuclear power plants are designed and operated in a manner that protects public health and safety. The time will come, after this crisis is behind us, to evaluate what, if any, changes are needed at U.S. nuclear power plants. We will assess all the available information and, as we have done with previous natural disasters, such as the 2007 earthquake in the Sea of Japan and the 2004 tsunami in the Indian Ocean, evaluate whether enhancements to U.S. nuclear power plants are warranted.

22. Compare this incident to the Three Mile Island. What are the similarities?

The events at Three Mile Island in 1979 were the result of an equipment malfunction that resulted in the loss of cooling water to the reactor fuel. Subsequent operator actions compounded the malfunction ultimately resulting in the partial core meltdown. While details are still developing, the events in Japan appear to be the result of an earthquake and subsequent tsunami that knocked out electrical power to emergency safety systems designed to cool the reactor fuel. In both events the final safety barrier, the containment building, contained the majority of the radioactivity preventing its release to the environment.

23. Is our battery backup power less effective than the Japanese?

We currently do not have sufficient information to compare the differences in design requirements and performance characteristics of nuclear-grade batteries in the U.S. and Japanese nuclear power plants. However, in the U.S., nuclear power plants utilize redundant nuclear-grade (i.e., Class 1E, safety-related) batteries that are designed and constructed using rigorous standards and are routinely tested in accordance to ensure adequate capacity and capability exists to perform their intended safety functions. These batteries are located in structures that can withstand natural phenomena such as earthquakes, tornadoes, tsunami, and floods in accordance with NRC regulations. For U.S. nuclear power plants, the typical design duty cycles for safety grade batteries range from 1-8 hrs.

24. What are US plants required to have for backup power? More than what the Japanese reactors did?

The NRC requires U.S. nuclear power plants need to have 2 independent power supplies. All US (except Oconee) plants have diesels and battery backup systems. Most of the U.S. plants with diesels have two diesels per unit and those that have only one dedicated diesel have a swing diesel available. The regulations do not specify the length of time that you need to have the diesels and batteries operate following a loss of offsite power (most sites plan to run the diesels for multiple days and have battery backup capability for 8 hours). Instead the amount of time is dependent on the site recovery strategy and is based on providing sufficient capacity to assure that the core is cooled and containment integrity and other vital functions are maintained in the event of postulated accidents.

25. Some in the media and in Hill briefings are suggesting that Mark 1 containment is flawed. What are the concerns about this type of containment? Are the US plants with this safe?

The NRC considers BWRs with Mark I containment designs to be safe. BWR Mark I containments have smaller volumes than PWR containments. This makes the BWR Mark I containment more susceptible to containment failure given a core meltdown severe enough to (1) fail the reactor vessel and also (2) severe enough so that the core melt reaches the containment boundary. However, BWRs have more

ways of adding water to the core than PWRs. This includes 2 water injection sources which do not rely on AC electric power. These systems include Reactor Core Isolation Cooling (RCIC) and High pressure coolant injection (HPCI).

26. Any quick-hit info about how the Southeast Reactors performed during Katrina? What damage did the flood water do? Any power loss?

The reactors performed as designed.

Additional technical information:

Waterford 3 (near New Orleans, LA) did not have damage to any safety equipment during, or shortly after Katrina. They shut down on August 28, 2005, in advance of the hurricane strike. The flooding did affect local infrastructure, including communications and power distribution. However, the plant successfully used their emergency diesel generators to furnish plant power. Access was maintained to the plant throughout the event. On September 9, 2005, after a comprehensive review by FEMA and the NRC, the plant was authorized to restart.

River Bend Station (30 miles north of Baton Rouge, LA) did not experience damage to any safety related equipment and only minimal damage to emergency planning equipment (one siren) during and after Hurricane Katrina. The station reduced power to 70 percent core thermal power on August 28, 2005, due to reduced electrical grid loads. Access was maintained to the plant throughout the event. On September 2, 2005, the plant returned to 100% power.

Also, in 1992 the eye of Hurricane Andrew, a category 5 hurricane, passed directly over the Turkey Point nuclear plant. The plant was shut down prior to the hurricane making landfall and an assessment of the plant following the hurricane demonstrated that the plant sustained very little damage and all of the safety equipment was intact. (Most of the damage was to the security fences being blown down).

Protecting U.S. Citizens

27. What should be done to protect people in Alaska, Hawaii and the West Coast from radioactive fallout?

The NRC continues to believe that the type and design of the Japanese reactors, combined with how events have unfolded, will prevent radiation at harmful levels from reaching U.S. territory.

Additional technical information:

NRC is working with DHS, EPA and other federal partners to ensure monitoring equipment for confirmatory readings is properly positioned, based on meteorological and other relevant information.

28. Why is KI administered during nuclear emergencies?

KI – potassium iodide – is one of the protective measures that might be taken in a radiological emergency in this country. A KI tablet will saturate the thyroid with non-radioactive iodine and prevent the absorption of radioactive iodine that could be part of the radioactive material mix of radionuclides in a release. KI does not prevent exposure from other radionuclides.

Additional technical information:

There are a range of protective measures that we use ... the most effective is evacuation. Local government officials are responsible for determining the best means to protect their public. KI is another means for protection but evacuation and sheltering are the primary means that are used.

29. Are any Americans in danger – armed forces, citizens in Tokyo?

The NRC, in consultation with the White House and U.S. Embassy, has advised United States citizens in Japan to follow the protective measures recommended by the Japanese government. These measures appear to be consistent with steps the United States would take. The Department of Defense has personnel trained in radiation protective measures and is responsible for providing guidance to U.S. armed forces. Inquiries regarding U.S. citizens in Japan should be directed to the State Department, Consular Services at 202-647-7004.

30. Has the government set up radiation monitoring stations to track the release?

The NRC understands that EPA is utilizing its existing nationwide radiation monitoring system, RadNet, to monitor continuously the nation's air and regularly monitors drinking water, milk and precipitation for environmental radiation. EPA has publicly stated its agreement with the NRC's assessment that we do not expect to see radiation at harmful levels reaching the U.S. from damaged Japanese nuclear power plants. Nevertheless, EPA has stated that it plans to work with its federal partners to deploy additional monitoring capabilities to parts of the western U.S. and U.S. territories.

31. It has been reported that the Japanese have expanded their protective actions out to 30km (~19 miles). Does the Japanese decision to expand their protective actions call into question NRC requirements for Emergency Planning Zones out to 10 miles?

The NRC remains confident that the EPZs around U.S. nuclear reactor plants are adequate to protect public health and safety during a nuclear accident. Nevertheless, the NRC will certainly be looking closely at this incident and the effects on the Japanese nuclear power plant in the future to see if any changes are necessary to NRC regulations.

Future NRC Actions/Evaluations

32. Has this incident changed the NRC perception about earthquake risk?

There has been no change in the NRC's perception of earthquake hazard (i.e. ground shaking levels) for U.S. nuclear power plants. As is prudent, the NRC will certainly be looking closely at this incident and the effects on the Japanese nuclear power plant in the future to see if any changes are necessary to NRC regulations.

Additional technical information:

We expect that there would be lessons learned, etc. It appears that the sites did not have any critical damage due to the earthquake from the fact that the emergency diesel generators initially responded to provide power to the site. The tsunami and consequential site flooding was responsible for the complete loss of power to the site, including the diesel generators which resulted in a Station Blackout.

33. Will this incident affect new reactor licensing?

It is not appropriate to hypothesize on such a future scenario at this point.

Additional technical information:

This event could potentially call into question the NRC's seismic requirements which could require the staff to re-evaluate the staff's approval of the AP1000 and ESBWR design and certifications.

34. How will the events in Japan impact ongoing NRC licensing actions such as power uprates and license renewals and NRC inspections at operating reactors?

The NRC remains committed to its mission to protect public health and safety. The NRC staff is dedicated to that mission and applies a strong safety and security focus to each of our licensing action reviews. The time will come, after this crisis is behind us, to evaluate what, if any, changes are needed. We will assess all the available information from this event and, as we have done with previous natural disasters, such as the 2007 earthquake in the Sea of Japan and the 2004 tsunami in the Indian Ocean, evaluate whether enhancements to our licensing processes or U.S. nuclear power plants are warranted. In the meantime, we will continue to implement our rigorous inspection and oversight activities at operating U.S. nuclear power plants. It would be premature to speculate about any potential changes to our inspection, licensing or oversight activities.

35. With NRC moving to design certification, at what point is seismic capability tested – during design or modified to be site-specific? If in design, what strength seismic event must these be built to withstand?

The regulations related to seismic requirements are contained in 10 CFR 50 Appendix A criterion 2.

During design certification, vendors propose a seismic design in terms of a ground motion spectrum for their nuclear facility. This spectrum is called a standard design response spectrum and is developed so that the proposed nuclear facility can be sited at most locations in the central and eastern United States. The vendors show that this design ground motion is suitable for a variety of different subsurface conditions such as hard rock, deep soil, or shallow soil over rock. Combined License and Early Site Permits applicants are required to develop a site specific ground motion response spectrum that takes into account all of the earthquakes in the region surrounding their site as well as the local site geologic conditions. Applicants estimate the ground motion from these postulated earthquakes to develop seismic hazard curves. These seismic hazard curves are then used to determine a site specific ground motion response spectrum that has a maximum annual likelihood of 1×10^{-4} of being exceeded. This can be thought of as a ground motion with a 10,000 year return period. This site specific ground motion response spectrum is then compared to the standard design response spectrum for the proposed design. If the standard design ground motion spectrum envelopes the site specific ground motion spectrum then the site is considered to be suitable for the proposed design. If the standard design spectrum does not completely envelope the site specific ground motion spectrum, then the COL applicant must do further detailed structural analysis to show that the design capacity is adequate. Margin beyond the standard design and site specific ground motions must also be demonstrated before fuel loading can begin.

From: Powell, Amy
Sent: Tuesday, March 29, 2011 3:59 PM
To: Dacus, Eugene
Subject: RE: Lautenberg letter

According to the Q&As from OPA, yes, Oyster Creek is it (similar design to Fukushima Unit 1)

From: Dacus, Eugene
Sent: Tuesday, March 29, 2011 3:49 PM
To: Powell, Amy
Subject: Re: Lautenberg letter

Is Oyster Creek the only Mark I in NJ?

Sent from NRC BlackBerry

Eugene Dacus
301-529-1557

From: Powell, Amy
To: Dacus, Eugene
Sent: Tue Mar 29 15:31:28 2011
Subject: RE: Lautenberg letter

Perfect – thanks!

From: Dacus, Eugene
Sent: Tuesday, March 29, 2011 3:29 PM
To: Powell, Amy
Subject: Re: Lautenberg letter

Got and showed it to him in the car

Sent from NRC BlackBerry

Eugene Dacus
301-529-1557

From: Powell, Amy
To: Dacus, Eugene
Sent: Tue Mar 29 15:09:19 2011
Subject: Lautenberg letter

FYI, I had not seen this one, but perhaps you did...

AP

FRANK R. LAUTENBERG

NEW JERSEY

COMMITTEES:

APPROPRIATIONS
COMMERCE, SCIENCE, AND
TRANSPORTATION
ENVIRONMENT AND
PUBLIC WORKS

United States Senate

WASHINGTON, DC 20510

March 22, 2011

Chairman Gregory B. Jaczko
U.S. Nuclear Regulatory Commission
Mail Stop O-16G4
Washington, D.C., 20555-0001

Dear Chairman Jaczko,

Thank you for briefing the Environment and Public Works Committee last week on the nuclear situation in Japan. Those events have raised concerns about the susceptibility of our own nuclear fleet, and it is imperative that we take all necessary action to prevent similar events in our country.

As you know, two of New Jersey's four nuclear facilities use the same General Electric boiling water reactor and Mark I containment system design as the Fukushima Daiichi Power Station in Japan. One of those facilities is the Oyster Creek Nuclear Generating Station, which is the nation's oldest commercial nuclear power generator and is located near the Atlantic Ocean.

In light of the new information coming from Japan, I request that you conduct a comprehensive review of the safety of the nuclear plants in New Jersey to determine whether any modifications are necessary to address risks newly identified as a result of the events in Japan. The review should also include a general reassessment of the suitability of the Mark I design for use at nuclear facilities. If during this review you become aware of shortcomings in the Nuclear Regulatory Commission's authority to require additional safeguards, please identify those.

Please keep my office updated on your progress in conducting this review. Thank you for your consideration of this request and for your work to ensure the safety and security of U.S. nuclear facilities.

Sincerely,



From: Dean, Bill
Sent: Tuesday, March 29, 2011 4:47 PM
To: Leeds, Eric; Lew, David; McCree, Victor; Wert, Leonard; Satorius, Mark; West, Steven; Reynolds, Steven; Howell, Art; Kennedy, Kriss
Cc: Virgilio, Martin; Weber, Michael; Brenner, Eliot; Hayden, Elizabeth; Schmidt, Rebecca; Powell, Amy; Nelson, Robert; Boger, Bruce; Grobe, Jack; Giitter, Joseph; Markley, Michael; Doane, Margaret; Mamish, Nader; Ruland, William; Cheok, Michael; Wiggins, Jim; Sheron, Brian; Uhle, Jennifer; Evans, Michele; Haney, Catherine; Kokajko, Lawrence; Meighan, Sean; Ellmers, Glenn; Muessle, Mary; Landau, Mindy; Roberts, Darrell; Clifford, James
Subject: Re: Heads up: NRR is prepared Fukushima Presentation

OUTSTANDING. Thanks. I just met with my team on preparing for our annual assessment meetings and suggested we embed our staff member who was working on a similar effort with Bob's team. Darrell should be discussing this with Bob shortly

Bill Dean
Regional Administrator
Region I, USNRC
Sent from NRC BlackBerry

From: Leeds, Eric
To: Dean, Bill; Lew, David; McCree, Victor; Wert, Leonard; Satorius, Mark; West, Steven; Reynolds, Steven; Howell, Art; Kennedy, Kriss
Cc: Virgilio, Martin; Weber, Michael; Brenner, Eliot; Hayden, Elizabeth; Schmidt, Rebecca; Powell, Amy; Nelson, Robert; Boger, Bruce; Grobe, Jack; Giitter, Joseph; Markley, Michael; Doane, Margaret; Mamish, Nader; Ruland, William; Cheok, Michael; Wiggins, Jim; Sheron, Brian; Uhle, Jennifer; Evans, Michele; Haney, Catherine; Kokajko, Lawrence; Meighan, Sean; Ellmers, Glenn; Muessle, Mary; Landau, Mindy
Sent: Tue Mar 29 14:30:35 2011
Subject: Heads up: NRR is prepared Fukushima Presentation

FYI – NRR is preparing a standard presentation for use by offices in various stakeholder forums. The presentation will be approximately 15 minutes and use a combination of pictures, graphics and slides, with accompanying bullets & key messages. Bob Nelson will pulse the regional POCs for any specific issues they would like to see included in backup/background slides. Of course the presentation can be modified to suit your needs. Our goal is to have the presentation to you by the end of the week (if not before).

We will be in touch.

Eric J. Leeds, Director
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
301-415-1270

From: Rihm, Roger
Sent: Tuesday, March 29, 2011 5:51 PM
To: Batkin, Joshua; Schmidt, Rebecca; Powell, Amy
Cc: Shane, Raeann; Muessle, Mary
Subject: Additional Hearing Materials
Attachments: RESPONSE - News Article on SOARCA

Mike Weber became aware earlier today of a new AP article on blackouts and asked the staff to provide him some additional information in advance of his hearing appearance tomorrow. He asked that we share this with the chairman should it come up at the Senate hearing. Attached is an email that includes the AP article in the body of the email and has staff additional information attached.

From: Powell, Amy
Sent: Tuesday, March 29, 2011 12:16 PM
To: OCA Distribution
Subject: FW: RESPONSE - News Article on SOARCA
Attachments: image001.png; image002.jpg

FYI – in case there are questions about this AP article. OEDO is working on a response to be used in hearing space, but may prove helpful to us in other ways as well.

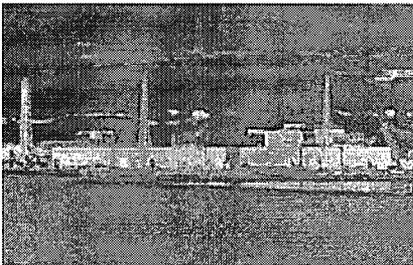
From: Weber, Michael
Sent: Tuesday, March 29, 2011 12:14 PM
To: Sheron, Brian
Cc: Virgilio, Martin; Leeds, Eric; Johnson, Michael; Wiggins, Jim; Rihm, Roger; Milligan, Patricia; Wittick, Brian; Brenner, Eliot; Hayden, Elizabeth; Schmidt, Rebecca; Powell, Amy; Muessele, Mary; Andersen, James; Bowman, Gregory
Subject: RESPONSE - News Article on SOARCA

Thanks, Brian. I'll need to be prepared to respond to this concern in tomorrow morning's hearing and the Chairman will need to be prepared to respond at his hearings tomorrow. Please work with OEDO staff (Roger Rihm/Brian Wittick) to ensure that we develop a short-response by COB today that we can use tomorrow in case this comes up.

David Lochbaum reported at this morning's hearing that 93 of the U.S. plants only had a 4-hour coping capacity for SBO. The rest could cope for 8 hours. Is this valid? Does this taken into consideration the B5b mitigating measures? Was SBO considered among the scenarios that resulted in the U.S. decision to establish the nominal exposure pathway EPZ at 10 miles?

AP IMPACT: Long blackouts pose risk to US reactors

 Associated Press



AP – Only Unit 2 is covered with white concrete housing, seen on left of an iron tower on right, at the stricken ...

By DINA CAPPIELLO, Associated Press Dina Cappiello, Associated Press – Tue Mar 29, 3:13 am ET

WASHINGTON – Long before the nuclear emergency in Japan, U.S. regulators knew that a power failure lasting for days at an American nuclear plant, whatever the cause, could lead to a radioactive leak. Even so, they

have only required the nation's 104 nuclear reactors to develop plans for dealing with much shorter blackouts on the assumption that power would be restored quickly.

In one nightmare simulation presented by the Nuclear Regulatory Commission in 2009, it would take less than a day for radiation to escape from a reactor at a Pennsylvania nuclear power plant after an earthquake, flood or fire knocked out all electrical power and there was no way to keep the reactors cool after backup battery power ran out. That plant, the Peach Bottom Atomic Power Station outside Lancaster, has reactors of the same older make and model as those releasing radiation at Japan's Fukushima Dai-ichi plant, which is using other means to try to cool the reactors.

And like Fukushima Dai-ichi, the Peach Bottom plant has enough battery power on site to power emergency cooling systems for eight hours. In Japan, that wasn't enough time for power to be restored. According to the International Atomic Energy Agency and the Nuclear Energy Institute trade association, three of the six reactors at the plant still can't get power to operate the emergency cooling systems. Two were shut down at the time. In the sixth, the fuel was removed completely and put in the spent fuel pool when it was shut down for maintenance at the time of the disaster. A week after the March 11 earthquake, diesel generators started supplying power to two other two reactors, Units 5 and 6, the groups said.

The risk of a blackout leading to core damage, while extremely remote, exists at all U.S. nuclear power plants, and some are more susceptible than others, according to an Associated Press investigation. While regulators say they have confidence that measures adopted in the U.S. will prevent or significantly delay a core from melting and threatening a radioactive release, the events in Japan raise questions about whether U.S. power plants are as prepared as they could and should be.

"We didn't address a tsunami and an earthquake, but clearly we have known for some time that one of the weak links that makes accidents a little more likely is losing power," said Alan Kolaczowski, a retired nuclear engineer who worked on a federal risk analysis of Peach Bottom released in 1990 and is familiar with the updated risk analysis.

Risk analyses conducted by the plants in 1991-94 and published by the commission in 2003 show that the chances of such an event striking a U.S. power plant are remote, even at the plant where the risk is the highest, the Beaver Valley Power Station in Pennsylvania.

These long odds are among the reasons why the United States since the late 1980s has only required nuclear power plants to cope with blackouts for four or eight hours, depending on the risk. That's about how much time batteries would last. After that, it is assumed that power would be restored. And so far, that's been the case.

Equipment put in place after the Sept. 11, 2001, terrorist attacks could buy more time. Otherwise, the reactor's radioactive core could begin to melt unless alternative cooling methods were employed. In Japan, the utility has tried using portable generators and dumped tons of seawater, among other things, on the reactors in an attempt to keep them cool.

A 2003 federal analysis looking at how to estimate the risk of containment failure said that should power be knocked out by an earthquake or tornado it "would be unlikely that power will be recovered in the time frame to prevent core meltdown."

In Japan, it was a one-two punch: first the earthquake, then the tsunami.

Tokyo Electric Power Co., the operator of the crippled plant, found other ways to cool the reactor core and so far avert a full-scale meltdown without electricity.

"Clearly the coping duration is an issue on the table now," said Biff Bradley, director of risk assessment for the Nuclear Energy Institute. "The industry and the Nuclear Regulatory Commission will have to go back in light of what we just observed and rethink station blackout duration."

David Lochbaum, a former plant engineer and nuclear safety director at the advocacy group Union of Concerned Scientists, put it another way: "Japan shows what happens when you play beat-the-clock and lose."

Lochbaum plans to use the Japan disaster to press lawmakers and the nuclear power industry to do more when it comes to coping with prolonged blackouts, such as having temporary generators on site that can recharge batteries.

A complete loss of electrical power, generally speaking, poses a major problem for a nuclear power plant because the reactor core must be kept cool, and back-up cooling systems — mostly pumps that replenish the core with water — require massive amounts of power to work.

Without the electrical grid, or diesel generators, batteries can be used for a time, but they will not last long with the power demands. And when the batteries die, the systems that control and monitor the plant can also go dark, making it difficult to ascertain water levels and the condition of the core.

One variable not considered in the NRC risk assessments of severe blackouts was cooling water in spent fuel pools, where rods once used in the reactor are placed. With limited resources, the commission decided to focus its analysis on the reactor fuel, which has the potential to release more radiation.

An analysis of individual plant risks released in 2003 by the NRC shows that for 39 of the 104 nuclear reactors, the risk of core damage from a blackout was greater than 1 in 100,000. At 45 other plants the risk is greater than 1 in 1 million, the threshold NRC is using to determine which severe accidents should be evaluated in its latest analysis.

The Beaver Valley Power Station, Unit 1, in Pennsylvania had the greatest risk of core melt — 6.5 in 100,000, according to the analysis. But that risk may have been reduced in subsequent years as NRC regulations required plants to do more to cope with blackouts. Todd Schneider, a spokesman for FirstEnergy Nuclear Operating Co., which runs Beaver Creek, told the AP that batteries on site would last less than a week.

In 1988, eight years after labeling blackouts "an unresolved safety issue," the NRC required nuclear power plants to improve the reliability of their diesel generators, have more backup generators on site, and better train personnel to restore power. These steps would allow them to keep the core cool for four to eight hours if they lost all electrical power. By contrast, the newest generation of nuclear power plant, which is still awaiting approval, can last 72 hours without taking any action, and a minimum of seven days if water is supplied by other means to cooling pools.

Despite the added safety measures, a 1997 report found that blackouts — the loss of on-site and off-site electrical power — remained "a dominant contributor to the risk of core melt at some plants." The events of Sept. 11, 2001, further solidified that nuclear reactors might have to keep the core cool for a longer period without power. After 9/11, the commission issued regulations requiring that plants have portable power supplies for relief valves and be able to manually operate an emergency reactor cooling system when batteries go out.

The NRC says these steps, and others, have reduced the risk of core melt from station blackouts from the current fleet of nuclear plants.

For instance, preliminary results of the latest analysis of the risks to the Peach Bottom plant show that any release caused by a blackout there would be far less rapid and would release less radiation than previously

thought, even without any actions being taken. With more time, people can be evacuated. The NRC says improved computer models, coupled with up-to-date information about the plant, resulted in the rosier outlook.

"When you simplify, you always err towards the worst possible circumstance," Scott Burnell, a spokesman for the Nuclear Regulatory Commission, said of the earlier studies. The latest work shows that "even in situations where everything is broken and you can't do anything else, these events take a long time to play out," he said. "Even when you get to releasing into environment, much less of it is released than actually thought."

Exelon Corp., the operator of the Peach Bottom plant, referred all detailed questions about its preparedness and the risk analysis back to the NRC. In a news release issued earlier this month, the company, which operates 10 nuclear power plants, said "all Exelon nuclear plants are able to safely shut down and keep the fuel cooled even without electricity from the grid."

Other people, looking at the crisis unfolding in Japan, aren't so sure.

In the worst-case scenario, the NRC's 1990 risk assessment predicted that a core melt at Peach Bottom could begin in one hour if electrical power on- and off-site were lost, the diesel generators — the main back-up source of power for the pumps that keep the core cool with water — failed to work and other mitigating steps weren't taken.

"It is not a question that those things are definitely effective in this kind of scenario," said Richard Denning, a professor of nuclear engineering at Ohio State University, referring to the steps NRC has taken to prevent incidents. Denning had done work as a contractor on severe accident analyses for the NRC since 1975. He retired from Battelle Memorial Institute in 1995.

"They certainly could have made all the difference in this particular case," he said, referring to Japan. "That's assuming you have stored these things in a place that would not have been swept away by tsunami."

From: Chang, Richard

Sent: Tuesday, March 29, 2011 7:35 AM

To: Schaperow, Jason; Tinkler, Charles; Santiago, Patricia; Ghosh, Tina; Armstrong, Kenneth

Subject: FYI- News Article on SOARCA

http://news.yahoo.com/s/ap/20110329/ap_on_re_us/us_us_japan_nuclear_blackouts_2

Richard Chang
Program Manager
RES/DSA/SPB
301-251-7980

From: Poirier, Bettina (EPW) <Bettina_Poirier@epw.senate.gov>
Sent: Tuesday, March 29, 2011 6:06 PM
To: Powell, Amy
Subject: Re: Citation

Thx

From: Powell, Amy [mailto:Amy.Powell@nrc.gov]
Sent: Tuesday, March 29, 2011 06:05 PM
To: Poirier, Bettina (EPW)
Subject: RE: Citation

Trying to track down now

From: Poirier, Bettina (EPW) [mailto:Bettina_Poirier@epw.senate.gov]
Sent: Tuesday, March 29, 2011 6:01 PM
To: Powell, Amy
Subject: Re: Citation

Let us know how this has applied here and status, do need it asap. Thanks as always.

From: Powell, Amy [mailto:Amy.Powell@nrc.gov]
Sent: Tuesday, March 29, 2011 05:59 PM
To: Dedrick, Kathy (EPW); Poirier, Bettina (EPW)
Subject: Citation

Per our chat:

Summary: Reorganization Plan No. 1 of 1980 strengthened the executive and administrative roles of the NRC Chairman, particularly in emergencies, transferring to the Chairman "all the functions vested in the Commission pertaining to an emergency concerning a particular facility or materials ... regulated by the Commission." This Reorganization Plan also provided that all policy formulation, policy-related rulemaking, and orders and adjudications would remain vested with the full Commission.

Click here for the full text of this legislation: ([full-text version](#))

Amy

Amy Powell
Associate Director
U. S. Nuclear Regulatory Commission
Office of Congressional Affairs
Phone: 301-415-1673

From: NEIGA@nei.org
Sent: Tuesday, March 29, 2011 6:34 PM
To: Powell, Amy
Subject: NEI Update on Japan situation as of 5 p.m. EDT, Tuesday, March 29



UPDATE AS OF 5:00 P.M. EDT, TUESDAY, MARCH 29:

Tokyo Electric Power Co. said that cooling water is being added to the spent storage fuel pools at reactor 2 and 3. Reactor 2 was using a temporary motor-driven pump and reactor 3 was using a truck to pump the freshwater into the fuel storage pools. The International Atomic Energy Agency said that plans are being made to begin pumping freshwater into the fuel storage pool at reactor 4 starting today.

IAEA said that 63 food samples taken March 24-29 in eight prefectures (Chiba, Fukushima, Gunma, Ibaraki, Miyagi, Niigata, Tochigi and Yamagata) were below regulatory limits set by the Japanese government for iodine-131, cesium-134 and cesium-137.

New analyses of seawater about 1,000 feet from the discharge point of reactor 1 through 4 show “a significant decrease” in radiation levels from March 26, IAEA said.

Readings for iodine-131 went from 2,000,000 picocuries (1 picocurie is one-trillionth of a curie) per liter on March 26 to 297,300 picocuries per liter on March 27. Readings for cesium-137 went from 324,324 picocuries per liter on March 26 to 51,351 picocuries per liter on March 27. IAEA said that radiation readings in seawater “will be quite variable in the near future depending on water discharge levels.”

Japan’s National Research Institute of Fishery Research has analyzed five fish samples from the port of Choshi in Chiba prefecture and found concentrations in the fish to be “far below any concern for fish consumption.” Four of five samples showed cesium-137 concentrations below the limit of detection. In the remaining sample, cesium-137 was found to be slightly above detectable levels.

IAEA said the situation was evolving, but that concentrations of radionuclides in seawater would

soon drop to lower values by dilution and that the levels in marine food would most likely not reach levels above regulatory limits set for consumption.

In the United States, [EPA's daily data summary](#) from its RadNet radiation air monitors across the U.S show typical fluctuations in background radiation levels as of 8:30 A.M. EDT. "The levels detected are far below levels of concern," EPA said.

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Click [here](#) to unsubscribe



From: Powell, Amy
Sent: Tuesday, March 29, 2011 6:54 PM
To: Poirier, Bettina (EPW); Dedrick, Kathy (EPW)
Subject: Additional citations, info

More follow up from your call:

Chairman as agency "spokesman": Atomic Energy Act established, Sec. 21 that the Chairman of the then-AEC "shall be the official spokesman of the Commission in its relations with the Congress, Government agencies, persons or the public..." In the Reorganization Act of 1974, AEA was updated to reflect the creation of NRC (from the AEC) and deems the NRC Chairman as official spokesperson in Section 201(a)(1)

Going back to the citation that I previously sent for the Reorganization Plan of 1980 re: emergency powers: In transmitting the Plan, President Carter stated:

"The [NRC's] ability to respond decisively and responsibly to any nuclear emergency must be fully ensured in advance. Experience has shown that the Commission as a whole cannot deal expeditiously with emergencies or communicate in a clear, unified voice to civil authorities or to the public. But present law prevents the Commission from delegating its emergency authority to any of its members. The Plan would correct this situation by specifically authorizing the Chairman to act for the Commission in an emergency."

Amy Powell
Associate Director
U. S. Nuclear Regulatory Commission
Office of Congressional Affairs
Phone: 301-415-1673

From: Bubar, Patrice
Sent: Tuesday, March 29, 2011 10:04 PM
To: Powell, Amy
Subject: Re: Checking in re: testimony for this week's hearings

Thank you for the reminder Amy. I imagine your life has been a bit stressful this week. Call me sometime - when you have a moment to catch up.

From: Powell, Amy
To: Batkin, Joshua; Nieh, Ho; Bubar, Patrice; Sharkey, Jeffrey; Sosa, Belkys
Cc: Schmidt, Rebecca; Bradford, Anna; Belmore, Nancy; Shane, Raeann; Decker, David
Sent: Tue Mar 29 10:07:48 2011
Subject: Checking in re: testimony for this week's hearings

Hi all –

First, thank you so much for working with our office to quickly provide comments on the draft testimonies that have been coming up to you since last week. Given the full dance card of hearings, we really appreciate it.

We are still waiting to hear from several offices on two sets of testimony that are due in final form to subcommittees today:

Senate Appropriations Subcommittee on Energy & Water – Nuclear Safety in Light of Events in Japan
OCA point of contact: David Decker

House Transportation & Infrastructure Subcommittee on Economic Development, Public Buildings, & Emergency Management – Emergency Preparedness & Management
OCA point of contact: Raeann Shane

One last item The *last* of the draft testimonies for the week was delivered to your office earlier this morning: the written testimony for Thursday's FY12 budget hearing with House Appropriations Subcommittee on Energy and Water. Save for the introductory paragraph, the text is the same as prepared for the March 16th House Energy and Commerce subcommittees' scheduled budget hearing and has received OMB clearance.

Thanks again for working with us on this compressed, jammed packed schedule.

Amy

Amy Powell
Associate Director
U. S. Nuclear Regulatory Commission
Office of Congressional Affairs
Phone: 301-415-1673

From: Powell, Amy
Sent: Wednesday, March 30, 2011 9:59 AM
To: Rihm, Roger
Subject: Final version of Bill's written statement
Attachments: FINAL March 29 Senate Energy written statement.docx

Just to make sure, here is the final written statement submitted to Senate Energy for their public briefing yesterday.

THANKS!
Amy

Amy Powell
Associate Director
U. S. Nuclear Regulatory Commission
Office of Congressional Affairs
Phone: 301-415-1673

**STATEMENT OF R. WILLIAM BORCHARDT
EXECUTIVE DIRECTOR FOR OPERATIONS
UNITED STATES NUCLEAR REGULATORY COMMISSION
TO THE COMMITTEE ON ENERGY AND NATURAL RESOURCES
UNITED STATES SENATE**

**NRC RESPONSE TO RECENT NUCLEAR EVENTS IN JAPAN AND THE CONTINUING
SAFETY OF THE U.S. COMMERCIAL NUCLEAR REACTOR FLEET**

MARCH 29, 2011

The staff of the U.S. Nuclear Regulatory Commission is deeply saddened by the tragedy in Japan. I and many of my colleagues on the NRC staff have had many years of very close and personal interaction with our regulatory counterparts and we would like to extend our condolences to them.

Introduction

The NRC is mindful that our primary responsibility is to ensure the adequate protection of the public health and safety of the American people. We have been very closely monitoring the activities in Japan and reviewing all currently available information. Review of this information, combined with our ongoing inspection and licensing oversight, allows us to say with confidence that the U.S. plants continue to operate safely. There has been no reduction in the licensing or oversight function of the NRC as it relates to any of the U.S. licensees.

We have a long history of conservative regulatory decision-making. We have been using risk insights to help inform our regulatory process, and, over more than 35 years of civilian nuclear power in this country, we have never stopped making improvements to our regulatory framework as we learn from operating experience.

Notwithstanding the very high level of support being provided to respond to events in Japan, we continue to maintain our focus on our domestic responsibilities.

I'd like to begin with a brief overview of our immediate and continuing response. I then want to spend the bulk of my time discussing the reasons for our confidence in the safety

of the U. S. commercial nuclear reactor fleet, and the path forward that we will take to ensure we learn any lessons we need to from events in Japan.

The NRC's immediate and Continuing Response to Events in Japan

On Friday, March 11th an earthquake hit Japan, resulting in the shutdown of more than 10 reactors. From what we know now, it appears possible that the reactors' response to the earthquake went according to design. The ensuing tsunami, however, appears to have caused the loss of normal and emergency AC power to the six units at the Fukushima Daiichi site; it is those six units that have received the majority of our attention since that time. Units One, Two, and Three at the site were in operation at the time of the earthquake. Units Four, Five, and Six were in previously scheduled outages.

Shortly after 4:00 AM EDT on Friday, March 11th, the NRC Emergency Operations Center made the first call, informing NRC management of the earthquake and the potential impact on U.S. plants. We went into the monitoring mode at the Emergency Operations Center and the first concern for the NRC was possible impacts of the tsunami on U.S. plants and radioactive materials on the West Coast, and in Hawaii, Alaska, and U.S. Territories in the Pacific.

On that same day, we began interactions with our Japanese regulatory counterparts and dispatched two experts to help at the U.S. embassy in Japan. By Monday, we had dispatched a total of 11 staff to Japan. We have subsequently rotated in additional staff to continue our on-the-ground assistance in Japan. The areas of focus for this team are: 1) to assist the Japanese government with technical support as part of the USAID response; and 2) to support the U.S. ambassador. While our focus now is on helping Japan in any way that we can, the experience will also help us assess the implications for U.S. citizens and the U.S. reactor fleet in as timely a manner as possible.

We have an extensive range of stakeholders with whom we have ongoing interaction,

including the White House, Congressional staff, our state regulatory counterparts, a number of other federal agencies, and international regulatory bodies around the world.

The NRC response in Japan and our Emergency Operations Center continue with the dedicated efforts of over 250 NRC staff on a rotating basis. The entire agency is coordinating and pulling together in response to this event so that we can provide assistance to Japan while continuing the normal activities necessary to fulfill our domestic responsibilities.

Let me also just note here in concluding this section of my remarks that the U.S. government has an extensive network of radiation monitors across this country. Monitoring equipment at nuclear power plants and in the U. S. Environmental Protection Agency's (EPA) system has not identified any radiation levels of concern in this country. In fact, natural background radiation from sources such as rocks, the sun, and buildings, is 100,000 times more than doses attributed to any level of the radiation from this event that has been detected in the U.S. to date. Therefore, we feel confident, based on current data, that there is no reason for concern in the United States regarding radioactive releases from Japan.

Continuing Confidence in the Safety of U.S. Nuclear Power Plants

I will now turn to the factors that assure us of ongoing domestic reactor safety. We have, since the beginning of the regulatory program in the United States, used a philosophy of Defense-in-Depth, which recognizes that nuclear reactors require the highest standards of design, construction, oversight, and operation, and does not rely on any single layer for protection of public health and safety. We begin with designs for every individual reactor in this country that take into account site-specific factors and include a detailed evaluation for any natural event, such as earthquakes, tornadoes, hurricanes, floods, and tsunamis, as they relate to that site.

There are multiple physical barriers to radiation in every reactor design. Additionally, there are both diverse and redundant safety systems that are required to be maintained in

operable condition and frequently tested to ensure that the plant is in a high condition of readiness to respond to any scenario.

We have taken advantage of the lessons learned from previous operating experience to implement a program of continuous improvement for the U.S. reactor fleet. We have learned from experience across a wide range of situations, including most significantly, the Three Mile Island accident in 1979. As a result of those lessons learned, we have significantly revised emergency planning requirements and emergency operating procedures. We have addressed many human factors issues regarding how control room employees operate the plant, added new requirements for hydrogen control to help prevent explosions inside of containment, and created requirements for enhanced control room displays of the status of pumps and valves.

The NRC has a post-accident sampling system that enables the monitoring of radioactive material release and possible fuel degradation. One of the most significant changes after Three Mile Island was expansion of the Resident Inspector Program, which has at least two full-time NRC inspectors on site at each nuclear power plant. These inspectors have unfettered access to all licensees' activities.

As a result of operating experience and ongoing research programs, we have developed requirements for severe accident management guidelines. These are components and procedures developed to ensure that, in the event all of the above precautions failed and a severe accident occurred, the plant would still protect public health and safety. The requirements for severe accident management have been in effect for many years and are frequently evaluated by the NRC inspection program.

As a result of the events of September 11, 2001, we identified important pieces of equipment that, regardless of the cause of a significant fire or explosion at a plant, we want licensees to have available and staged in advance, as well as new procedures, training requirements, and policies that would help deal with a severe situation.

Our program of continuous improvement based on operating experience will now include evaluation of the significant events in Japan as well as what we can learn from them. We already have begun enhancing inspection activities through temporary instructions to our inspection staff, including the resident inspectors and the region-based inspectors in our four Regional offices, to look at licensees' readiness to deal with both the design basis accidents and the beyond-design basis accidents. The information that we gather will be used to evaluate the industry's readiness for similar events, and will aid in our understanding of whether additional regulatory actions need to be taken in the immediate term.

We have also issued an information notice to the licensees to make them aware of the events in Japan, and the kinds of activities we believe they should be engaged in to verify their readiness. Specifically, we have requested them to verify that their capabilities to mitigate conditions that result from severe accidents, including the loss of significant operational and safety systems, are in effect and operational. Licensees are verifying the capability to mitigate a total loss of electric power to the nuclear plant. They also are verifying the capability to mitigate problems associated with flooding and the resulting impact on systems both inside and outside of the plant. Also, licensees are confirming the equipment that is needed is in place for the potential loss of equipment due to seismic events appropriate for the site, because each site has its own unique seismic profiles.

During the past 20 years, there have been a number of new rulemakings that have enhanced the domestic fleet's preparedness against some of the problems we are seeing in Japan. The "station blackout" rule requires every plant in this country to analyze what the plant response would be if it were to lose all alternating current so that it could respond using batteries for a period of time, and then have procedures in place to restore alternating current to the site and provide cooling to the core.

The hydrogen rule requires modifications to reduce the impacts of hydrogen

generated for beyond-design basis events and core damage. There are equipment qualification rules that require equipment, including pumps and valves, to remain operable under the kinds of environmental temperature and radiation conditions that you would see under a design basis accident. With regard to the type of containment design used by the most heavily damaged plants in Japan, the NRC has had a Boiling Water Reactor Mark I Containment Improvement Program since the late 1980s, which has required installation of hardened vent systems for containment pressure relief, as well as enhanced reliability of the automatic depressurization system.

The final factor I want to mention with regard to our belief in the ongoing safety of the U.S. fleet is the emergency preparedness and planning requirements in place that provide ongoing training, testing, and evaluations of licensees' emergency preparedness programs. In coordination with our federal partner, the Federal Emergency Management Administration (FEMA), these activities include extensive interaction with state and local governments, as those programs are evaluated and tested on a periodic basis.

The Path Ahead

Beyond the initial steps to address the experience from the events in Japan, the Chairman, with the full support of the Commission, directed the NRC staff to establish a senior level agency task force to conduct a methodical and systematic review of our processes and regulations to determine whether the agency should make additional improvements to our regulatory system and make recommendations to the Commission for its policy direction. This activity will have both near-term and longer-term objectives.

For the near term effort, we are beginning a 90-day review. This review will evaluate all of the currently available information from the Japanese events to identify immediate or near-term operational or regulatory issues potentially affecting the 104 operating reactors in the U.S., including their spent fuel pools. Areas of investigation will include the ability to

protect against natural disasters, response to station blackouts, severe accidents and spent fuel accident progression, radiological consequence analysis, and severe accident management issues regarding equipment. Over this 90-day period, we will develop recommendations, as appropriate, for changes to inspection procedures and licensing review guidance, and recommend whether generic communications, orders, or other regulatory requirements are needed.

This 90-day effort will include a 30-day "Quick Look Report" to the Commission to provide a snapshot of the regulatory response and the condition of the U.S. fleet based on information we have available at that time. Preparing a "Quick Look Report" will also ensure that the Commission is both kept informed of ongoing efforts and prepared to resolve any policy recommendations that surface. I believe we will have limited stakeholder involvement in the first 30 days to accomplish this. However over the 90-day and longer-term efforts we will seek additional stakeholder input. At the end of the 90-day period, a report will be provided to the Commission and to the public. The task force's longer-term review will begin as soon as the NRC has sufficient technical information from the events in Japan.

The task force will evaluate all technical and policy issues related to the event to identify additional potential research, generic issues, changes to the reactor oversight process, rulemakings, and adjustments to the regulatory framework that should be pursued by the NRC. We also expect to evaluate potential interagency issues, such as emergency preparedness, and examine the applicability of any lessons learned to non-operating reactors and materials licensees. We expect to seek input from stakeholders during this process. A report with appropriate recommendations will be provided to the Commission within 6 months of the start of this evaluation. Both the 90-day and final reports will be made publicly available in accordance with normal Commission processes.

Conclusion

In conclusion, I want to reiterate that we continue to make our domestic responsibilities for licensing and oversight of the U.S. licensees our top priority and that the U.S. plants continue to operate safely. In light of the events in Japan, there is a near-term evaluation of their relevance to the U.S. fleet underway, and we are continuing to gather the information necessary for us to take a longer, more thorough look at the events in Japan and their lessons for us. Based on these efforts, we will take all appropriate actions necessary to ensure the continuing safety of the U.S. fleet.

From: Powell, Amy
Sent: Wednesday, March 30, 2011 10:02 AM
To: Batkin, Joshua
Cc: Coggins, Angela
Subject: RE: Written testimony for HAC E&W tomorrow

I know her by reputation...

Thanks
AP

From: Batkin, Joshua
Sent: Wednesday, March 30, 2011 10:00 AM
To: Powell, Amy; Schmidt, Rebecca
Cc: Decker, David; Coggins, Angela
Subject: Re: Written testimony for HAC E&W tomorrow

Coggins

Joshua C. Batkin
Chief of Staff
Chairman Gregory B. Jaczko
(301) 415-1820

From: Powell, Amy
To: Batkin, Joshua; Schmidt, Rebecca
Cc: Decker, David
Sent: Wed Mar 30 09:42:09 2011
Subject: Written testimony for HAC E&W tomorrow

Three Comm offices offered no comments on the written testimony for HAC Energy and Water tomorrow (reminder: this is the testimony that is identical – save for the intro paragraph – to the FY12 budget testimony prepared for the 3/16 hearing with the House E&C subcommittees). KLS offered some comments, mostly on the GPRRA passage.

Could David run the KLS comments by someone in your office this morning to gauge whether or not the feedback should be incorporated?

Thanks
AP

Amy Powell
Associate Director
U. S. Nuclear Regulatory Commission
Office of Congressional Affairs
Phone: 301-415-1673

From: Decker, David
Sent: Wednesday, March 30, 2011 10:04 AM
To: Coggins, Angela; Batkin, Joshua; Powell, Amy; Schmidt, Rebecca
Subject: RE: Written testimony for HAC E&W tomorrow

Thanks Angela. I'll be up in a few minutes. -David

From: Coggins, Angela
Sent: Wednesday, March 30, 2011 10:02 AM
To: Batkin, Joshua; Powell, Amy; Schmidt, Rebecca
Cc: Decker, David
Subject: RE: Written testimony for HAC E&W tomorrow

I'm here. Come up whenever and I would be happy to take a look.

Angela B. Coggins
Policy Director
Office of Chairman Gregory B. Jaczko
U.S. Nuclear Regulatory Commission
301-415-1828/angela.coggins@nrc.gov

From: Batkin, Joshua
Sent: Wednesday, March 30, 2011 10:00 AM
To: Powell, Amy; Schmidt, Rebecca
Cc: Decker, David; Coggins, Angela
Subject: Re: Written testimony for HAC E&W tomorrow

Coggins

Joshua C. Batkin
Chief of Staff
Chairman Gregory B. Jaczko
(301) 415-1820

From: Powell, Amy
To: Batkin, Joshua; Schmidt, Rebecca
Cc: Decker, David
Sent: Wed Mar 30 09:42:09 2011
Subject: Written testimony for HAC E&W tomorrow

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Could David run the KLS comments by someone in your office this morning to gauge whether or not the feedback should be incorporated?

Thanks
AP

Amy Powell
Associate Director
U. S. Nuclear Regulatory Commission
Office of Congressional Affairs
Phone: 301-415-1673

From: Droggitis, Spiros
Sent: Wednesday, March 30, 2011 10:11 AM
To: Riley (OCA), Timothy
Cc: Schmidt, Rebecca; Powell, Amy
Subject: FW: Daily Plant Status Report - 3/30/2011

Tim: Could you please run this one by the Ops. Center? Thanks, Spiros

From: Haynes, Laura (Carper) [mailto:Laura_Haynes@carper.senate.gov]
Sent: Wednesday, March 30, 2011 10:09 AM
To: Droggitis, Spiros
Cc: Schmidt, Rebecca; Powell, Amy
Subject: RE: Daily Plant Status Report - 3/30/2011

I notice that the temperature at the FW nozzle for unit 1 has been rising over the past few days and is 250 degrees more than unit 3 – any thoughts on what might be happening there?

From: Droggitis, Spiros [mailto:Spiros.Droggitis@nrc.gov]
Sent: Wednesday, March 30, 2011 5:09 AM
To: Droggitis, Spiros
Cc: Schmidt, Rebecca; Powell, Amy; Shane, Raeann; Decker, David; Riley (OCA), Timothy; Weil, Jenny; Dacus, Eugene
Subject: Daily Plant Status Report - 3/30/2011

From: Droggitis, Spiros
Sent: Wednesday, March 30, 2011 10:12 AM
To: Haynes, Laura (Carper)
Cc: Schmidt, Rebecca; Powell, Amy
Subject: RE: Daily Plant Status Report - 3/30/2011

We'll check and get back to you. Thanks

From: Haynes, Laura (Carper) [mailto:Laura_Haynes@carper.senate.gov]
Sent: Wednesday, March 30, 2011 10:09 AM
To: Droggitis, Spiros
Cc: Schmidt, Rebecca; Powell, Amy
Subject: RE: Daily Plant Status Report - 3/30/2011

I notice that the temperature at the FW nozzle for unit 1 has been rising over the past few days and is 250 degrees more than unit 3 – any thoughts on what might be happening there?

From: Droggitis, Spiros [mailto:Spiros.Droggitis@nrc.gov]
Sent: Wednesday, March 30, 2011 5:09 AM
To: Droggitis, Spiros
Cc: Schmidt, Rebecca; Powell, Amy; Shane, Raeann; Decker, David; Riley (OCA), Timothy; Weil, Jenny; Dacus, Eugene
Subject: Daily Plant Status Report - 3/30/2011

From: Powell, Amy
Sent: Wednesday, March 30, 2011 10:14 AM
To: Spencer, Peter
Cc: Christian, Karen
Subject: RE: Hearing

Thanks Peter – I left you a VM this morning with more detail, but I should be able to confirm whether it will be Martin Virgilio (Deputy Executive Director for Operations, Reactors) or Eric Leeds (Director, Office of Nuclear Reactor Regulation) no later than tomorrow am.

Amy

Amy Powell
Associate Director
U. S. Nuclear Regulatory Commission
Office of Congressional Affairs
Phone: 301-415-1673

From: Spencer, Peter [mailto:Peter.Spencer@mail.house.gov]
Sent: Wednesday, March 30, 2011 9:16 AM
To: Powell, Amy
Cc: Christian, Karen
Subject: Hearing

Amy,

We'll be seeking to hold a Subcommittee on Oversight and Investigations hearing next Wednesday, to update Committee on U.S. government response to Fukushima Daiichi power plant incident, including plans for review of safety at U.S. plants.

Given the travel of Borchardt and Chairman Jaczko next week, your Deputy Exec director for reactor preparedness or Director, Office of Nuclear Reactor Regulation, may be the best to testify.

Let's nail down who will testify. I'll get back about any specific areas to cover in testimony beyond the updates on what's happening in Japan and in U.S. as result of incident.

More to come as this develops.

Thanks,
Peter

Peter L. Spencer
Majority Professional Staff
Oversight and Investigations
Committee on Energy and Commerce
U.S. House of Representatives
(202) 225-2927
peter.spencer@mail.house.gov

From: Droggitis, Spiros
Sent: Wednesday, March 30, 2011 10:28 AM
To: Haynes, Laura (Carper)
Subject: RE: Daily Plant Status Report - 3/30/2011
Attachments: Final - Written Testimony for SAC Energy and Water 3 30 11.docx

Today's testimony before Senate Appropriations subcommittee.

From: Haynes, Laura (Carper) [mailto:Laura_Haynes@carper.senate.gov]
Sent: Wednesday, March 30, 2011 10:09 AM
To: Droggitis, Spiros
Cc: Schmidt, Rebecca; Powell, Amy
Subject: RE: Daily Plant Status Report - 3/30/2011

I notice that the temperature at the FW nozzle for unit 1 has been rising over the past few days and is 250 degrees more than unit 3 – any thoughts on what might be happening there?

From: Droggitis, Spiros [mailto:Spiros.Droggitis@nrc.gov]
Sent: Wednesday, March 30, 2011 5:09 AM
To: Droggitis, Spiros
Cc: Schmidt, Rebecca; Powell, Amy; Shane, Raeann; Decker, David; Riley (OCA), Timothy; Weil, Jenny; Dacus, Eugene
Subject: Daily Plant Status Report - 3/30/2011

From: Powell, Amy
Sent: Wednesday, March 30, 2011 10:39 PM
To: Schmidt, Rebecca
Subject: Fw: BAM

?

FYI, I searched the shared drive for the Cardin agenda from his visit, but did not find it. Do you have a hard copy file?

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

----- Original Message -----

From: Batkin, Joshua
To: Schmidt, Rebecca; Powell, Amy
Sent: Wed Mar 30 21:16:06 2011
Subject: RE: BAM

Don't get me in trouble over this.... Who should they contact?

-----Original Message-----

From: Batkin, Joshua
Sent: Wednesday, March 30, 2011 12:14 PM
To: Schmidt, Rebecca; Powell, Amy; Brenner, Eliot
Cc: Pace, Patti
Subject: RE: BAM

Not confirmed yet but head's up that Senator Mikulski might want to visit HQ on the morning of April 18 for about 1 1/2 hours - the Chairman is here that day. Would probably want a briefing on the agency and on the Japan response, a tour of the ops center, maybe walk around and see people, maybe do an all hands, and then have a press component with the message being - "Senator visits NRC to get a briefing and thank employees for their hard work." Don't get spun up yet until we hear from her office if it's a go. In the meantime, can you please send me a template of what we did for Senator Cardin's visit and let me know who would you like her Energy LA to reach out to in OCA to discuss this if the Senator decides to do it?

Thanks,
Josh

-----Original Message-----

From: Schmidt, Rebecca
Sent: Wednesday, March 30, 2011 10:18 AM

To: Batkin, Joshua
Subject: BAM

Does she want to swing by ops center? when?

From: Powell, Amy
Sent: Wednesday, March 30, 2011 11:12 AM
To: Freedhoff, Michal
Subject: RE: Quick(?) Question

I had not heard any confusion on this point - checking with tech staff now.

-----Original Message-----

From: Freedhoff, Michal [mailto:Michal.Freedhoff@mail.house.gov]
Sent: Wednesday, March 30, 2011 11:02 AM
To: Powell, Amy
Subject: Quick(?) Question

Hi there

So both the CHairman (today) and Borchard yesterday claimed that US facilities are equipped w hydrogen recombiners to prevent explosions. We are hearing that these used to be required but no longer are - they may be still installed, but are not required to be maintained and may not be hooked up to power supply. Can you please clarify?

M
Michal Ilana Freedhoff, Ph.D.
Policy Director
Office of Representative Edward J. Markey
2108 Rayburn House Office Building
Washington, DC 20515
202-225-2836

Sent using BlackBerry

From: Powell, Amy
Sent: Wednesday, March 30, 2011 11:22 AM
To: Shane, Raeann
Subject: RE: NEW HEARING APRIL 6th: House Energy and Commerce, Subcommittee on Oversight and Investigations

Bill and GBJ are both in Vienna. Bill and GBJ tapped "Marty with Eric as back up." Time to coach would be good/ideal.

From: Shane, Raeann
Sent: Wednesday, March 30, 2011 11:21 AM
To: Powell, Amy
Subject: Re: NEW HEARING APRIL 6th: House Energy and Commerce, Subcommittee on Oversight and Investigations

Can't Borchard do it? Mike is doing better but it's rough. We need to do a better job coaching beforehand, they are not used to people taking potshots.

From: Powell, Amy
To: OCA Distribution
Sent: Wed Mar 30 10:41:46 2011
Subject: NEW HEARING APRIL 6th: House Energy and Commerce, Subcommittee on Oversight and Investigations

FYI, House Energy and Commerce Committee, Subcommittee on Oversight and Investigations will hold a hearing on Wednesday, April 6th on U.S. government response to Fukushima Daiichi power plant incident, including plans for review of safety at U.S. plants. Jeannette is working on profiles; Roger in OEDO is "refreshing" Bill Borchardt's statement from yesterday for use as written testimony. Either Marty Virgilio or Eric Leeds will be the NRC witness.

Amy Powell
Associate Director
U. S. Nuclear Regulatory Commission
Office of Congressional Affairs
Phone: 301-415-1673

From: Powell, Amy
Sent: Wednesday, March 30, 2011 12:36 PM
To: Riley (OCA), Timothy
Cc: Shane, Raeann
Subject: FW: trenches at fukushima

Here is Sen. Bingaman's staffer's request:

From: Epstein, Jonathan (Bingaman) [mailto:Jonathan_Epstein@bingaman.senate.gov]
Sent: Wednesday, March 30, 2011 10:01 AM
To: Powell, Amy
Cc: Shane, Raeann; Edwards, Isaac (Energy)
Subject: trenches at fukushima

Amy- can you ask around to see if staff has any diagrams of trenches / basements typical of Fukushima where the water is flooding?

It obviously does not have to be Fukushima but I assume these structures are somewhat common amongst other plants.

I would like to have something to show Jeff more as an example.

Thanks

From: Weil, Jenny
Sent: Wednesday, March 30, 2011 3:30 PM
To: Schmidt, Rebecca; Powell, Amy; Droggitis, Spiros
Subject: FW: Remarks by the President on America's Energy Security

Here's the actual remarks, including the line most of interest.

And I'm determined to ensure that it's safe. So in light of what's happened in Japan, **I've requested a comprehensive safety review by the Nuclear Regulatory Commission to make sure that all of our existing nuclear energy facilities are safe.** And we're going incorporate those conclusions and lessons from Japan in design and the building of the next generation of plants. But we can't simply take it off the table.

From: White House Press Office
Sent: Wednesday, March 30, 2011 3:25 PM
To: Weil, Jenny
Subject: Remarks by the President on America's Energy Security

THE WHITE HOUSE
Office of the Press Secretary

For Immediate Release

March 30, 2011

REMARKS BY THE PRESIDENT
ON AMERICA'S ENERGY SECURITY

Georgetown University
Washington, D.C.

11:36 A.M. EDT

THE PRESIDENT: Thank you so much. Thank you, everybody. (Applause.) Everybody, please have a seat. Please have a seat. It is wonderful to be back at Georgetown. (Applause.)

We've got a number of acknowledgements. First of all, I just want to thank President DeGioia for his outstanding leadership here, but also for his hospitality.

We also have here Secretary Steven Chu, my Energy Secretary. Where is Steven? There he is over there. (Applause.) Secretary Ken Salazar of the Interior Department. (Applause.) Secretary Tom Vilsack, our Agriculture Secretary. (Applause.) Ray LaHood, our Transportation

Secretary. (Applause.) Lisa Jackson, our EPA Administrator. (Applause.) Nancy Sutley, who is our Council on Environmental Quality director, right here. (Applause.)

A couple of great members of Congress -- Congressman Jay Inslee of Washington. Where's Jay? There he is over there. (Applause.) And Rush Holt of New Jersey is here. (Applause.) We've got -- he didn't bring the weather with him -- but the mayor of Los Angeles, Antonio Villaraigosa, is in the house. (Applause.) Mayor Scott Smith of Mesa, Arizona, is here. (Applause.)

And most importantly, the students of Georgetown University are in the house. (Applause.)

I want to start with a difficult subject: The Hoyas had a tough loss, Coach. (Laughter.) Coach is here, too, and I love Coach Thompson. I love his dad and the great tradition that they've had. (Applause.) And it turned out VCU was pretty good. (Laughter.) I had Georgetown winning that game in my bracket, so we're all hurting here. (Laughter.) But that's what next year is for.

We meet here at a tumultuous time for the world. In a matter of months, we've seen regimes toppled. We've seen democracy take root in North Africa and in the Middle East. We've witnessed a terrible earthquake, a catastrophic tsunami, a nuclear emergency that has battered one of our strongest allies and closest friends in the world's third-largest economy. We've led an international effort in Libya to prevent a massacre and maintain stability throughout the broader region. (Applause.)

And as Americans, we're heartbroken by the lives that have been lost as a result of these events. We're deeply moved by the thirst for freedom in so many nations, and we're moved by the strength and the perseverance of the Japanese people. And it's natural, I think, to feel anxious about what all of this means for us.

And one big area of concern has been the cost and security of our energy. Obviously, the situation in the Middle East implicates our energy security. The situation in Japan leads us to ask questions about our energy sources.

In an economy that relies so heavily on oil, rising prices at the pump affect everybody -- workers, farmers, truck drivers, restaurant owners, students who are lucky enough to have a car. (Laughter.) Businesses see rising prices at the pump hurt their bottom line. Families feel the pinch when they fill up their tank. And for Americans that are already struggling to get by, a hike in gas prices really makes their lives that much harder. It hurts.

If you're somebody who works in a relatively low-wage job and you've got to commute to work, it takes up a big chunk of your income. You may not be able to buy as many groceries. You may have to cut back on

medicines in order to fill up the gas tank. So this is something that everybody is affected by.

Now, here's the thing -- we have been down this road before. Remember, it was just three years ago that gas prices topped \$4 a gallon. I remember because I was in the middle of a presidential campaign. Working folks certainly remember because it hit a lot of people pretty hard. And because we were at the height of political season, you had all kinds of slogans and gimmicks and outraged politicians -- they were waving their three-point plans for \$2 a gallon gas. You remember that -- "drill, baby, drill"

-- and we were going through all that. (Laughter.) And none of it was really going to do anything to solve the problem. There was a lot of hue and cry, a lot of fulminating and hand-wringing, but nothing actually happened. Imagine that in Washington. (Laughter.)

The truth is, none of these gimmicks, none of these slogans made a bit of difference. When gas prices finally did fall, it was mostly because the global recession had led to less demand for oil. Companies were producing less; the demand for petroleum went down; prices went down. Now that the economy is recovering, demand is back up. Add the turmoil in the Middle East, and it's not surprising that oil prices are higher. And every time the price of a barrel of oil on the world market rises by \$10, a gallon of gas goes up by about 25 cents.

The point is the ups and downs in gas prices historically have tended to be temporary. But when you look at the long-term trends, there are going to be more ups in gas prices than downs in gas prices. And that's because you've got countries like India and China that are growing at a rapid clip, and as 2 billion more people start consuming more goods -- they want cars just like we've got cars; they want to use energy to make their lives a little easier just like we've got -- it is absolutely certain that demand will go up a lot faster than supply. It's just a fact.

So here's the bottom line: There are no quick fixes. Anybody who tells you otherwise isn't telling you the truth. And we will keep on being a victim to shifts in the oil market until we finally get serious about a long-term policy for a secure, affordable energy future.

We're going to have to think long term, which is why I came here, to talk to young people here at Georgetown, because you have more of a stake in us getting our energy policy right than just about anybody.

Now, here's a source of concern, though. We've known about the dangers of our oil dependence for decades. Richard Nixon talked about freeing ourselves from dependence on foreign oil. And every President since that time has talked about freeing ourselves from dependence on foreign oil. Politicians of every stripe have promised energy independence, but that promise has so far gone unmet.

I talked about reducing America's dependence on oil when I was running for President, and I'm proud of the historic progress that we've made over the last two years towards that goal, and we'll talk about that a little bit. But I've got to be honest. We've run into the same political gridlock, the same inertia that has held us back for decades.

That has to change. That has to change. We cannot keep going from shock when gas prices go up to trance when they go back down -- we go back to doing the same things we've been doing until the next time there's a price spike, and then we're shocked again. We can't rush to propose action when gas prices are high and then hit the snooze button when they fall again. We can't keep on doing that.

The United States of America cannot afford to bet our long-term prosperity, our long-term security on a resource that will eventually run out, and even before it runs out will get more and more expensive to extract from the ground. We can't afford it when the costs to our economy, our country, and our planet are so high. Not when your generation needs us to get this right. It's time to do what we can to secure our energy future.

And today, I want to announce a new goal, one that is reasonable, one that is achievable, and one that is necessary. When I was elected to this office, America imported 11 million barrels of oil a day. By a little more than a decade from now, we will have cut that by one-third. That is something that we can achieve. (Applause.) We can cut our oil dependence -- we can cut our oil dependence by a third.

I set this goal knowing that we're still going to have to import some oil. It will remain an important part of our energy portfolio for quite some time, until we've gotten alternative energy strategies fully in force. And when it comes to the oil we import from other nations, obviously we've got to look at neighbors like Canada and Mexico that are stable and steady and reliable sources. We also have to look at other countries like Brazil. Part of the reason I went down there is to talk about energy with the Brazilians. They recently discovered significant new oil reserves, and we can share American technology and know-how with them as they develop these resources.

But our best opportunities to enhance our energy security can be found in our own backyard -- because we boast one critical, renewable resource that the rest of the world can't match: American ingenuity. American ingenuity, American know-how.

To make ourselves more secure, to control our energy future, we're going to have to harness all of that ingenuity. It's a task we won't be finished with by the end of my presidency, or even by the end of the next presidency. But if we continue the work that we've already begun over the last two years, we won't just spark new jobs, industries and innovations -- we will leave your generation and future generations with a country that is safer, that is healthier, and that's more prosperous.

So today, my administration is releasing a Blueprint for a Secure Energy Future that outlines a comprehensive national energy policy, one that we've been pursuing since the day I took office. And cutting our oil dependence by a third is part of that plan.

Here at Georgetown, I'd like to talk in broad strokes about how we can achieve these goals.

Now, meeting the goal of cutting our oil dependence depends largely on two things: first, finding and producing more oil at home; second, reducing our overall dependence on oil with cleaner alternative fuels and greater efficiency.

This begins by continuing to increase America's oil supply. Even for those of you who are interested in seeing a reduction in our dependence on fossil fuels -- and I know how passionate young people are about issues like climate change -- the fact of the matter is, is that for quite some time, America is going to be still dependent on oil in making its economy work.

Now, last year, American oil production reached its highest level since 2003. And for the first time in more than a decade, oil we imported accounted for less than half of the liquid fuel we consumed. So that was a good trend. To keep reducing that reliance on imports, my administration is encouraging offshore oil exploration and production -- as long as it's safe and responsible.

I don't think anybody here has forgotten what happened last year, where we had to deal with the largest oil spill in [our] history. I know some of the fishermen down in the Gulf Coast haven't forgotten it. And what we learned from that disaster helped us put in place smarter standards of safety and responsibility. For example, if you're going to drill in deepwater, you've got to prove before you start drilling that you can actually contain an underwater spill. That's just common sense. And lately, we've been hearing folks saying, well, the Obama administration, they put restrictions on how oil companies operate offshore. Well, yes, because we just spent all that time, energy and money trying to clean up a big mess. And I don't know about you, but I don't have amnesia. I remember these things. (Laughter.) And I think it was important for us to make sure that we prevent something like that from happening again. (Applause.)

Now, today, we're working to expedite new drilling permits for companies that meet these higher standards. Since they were put in, we've approved 39 new shallow-water permits; we've approved seven deepwater permits in recent weeks. When it comes to drilling offshore, my administration approved more than two permits last year for every new well that the industry started to drill. So any claim that my administration is responsible for gas prices because we've "shut down" oil production, any claim like that is simply untrue. It might make for a useful sound bite, but it doesn't track with reality.

What is true is we've said if you're going to drill offshore you've got to have a plan to make sure that we don't have the kind of catastrophe that we had last year. And I don't think that there's anybody who should dispute that that's the right strategy to pursue.

Moreover, we're actually pushing the oil industry to take advantage of the opportunities that they've already got. Right now the industry holds tens of millions of acres of leases where they're not producing a single drop. They're just sitting on supplies of American energy that are ready to be tapped. That's why part of our plan is to provide new and better incentives that promote rapid, responsible development of these resources.

We're also exploring and assessing new frontiers for oil and gas development from Alaska to the Mid- and South Atlantic states, because producing more oil in America can help lower oil prices, can help create jobs, and can enhance our energy security, but we've got to do it in the right way.

Now, even if we increase domestic oil production, that is not going to be the long-term solution to our energy challenge. I give out this statistic all the time, and forgive me for repeating it again: America holds about 2 percent of the world's proven oil reserves. What that means is, is that even if we drilled every drop of oil out of every single one of the reserves that we possess -- offshore and onshore -- it still wouldn't be enough to meet our long-term needs. We consume about 25 percent of the world's oil. We only have 2 percent of the reserves. Even if we doubled U.S. oil production, we're still really short.

So the only way for America's energy supply to be truly secure is by permanently reducing our dependence on oil. We're going to have to find ways to boost our efficiency so we use less oil. We've got to discover and produce cleaner, renewable sources of energy that also produce less carbon pollution, which is threatening our climate. And we've got to do it quickly.

Now, in terms of new sources of energy, we have a few different options. The first is natural gas. Recent innovations have given us the opportunity to tap large reserves -- perhaps a century's worth of reserves, a hundred years worth of reserves -- in the shale under our feet. But just as is true in terms of us extracting oil from the ground, we've got to make sure that we're extracting natural gas safely, without polluting our water supply.

That's why I've asked Secretary Chu, my Energy Secretary, to work with other agencies, the natural gas industry, states, and environmental experts to improve the safety of this process. And Chu is the right guy to do this. He's got a Nobel Prize in physics. He actually deserved his Nobel Prize. (Laughter and applause.) And this is the kind of thing that he likes to do for fun on the weekend. (Laughter.) He goes into his garage and he tinkers around and figures out how to extract natural gas. (Laughter.)

I'm going to embarrass him further. (Laughter.) Last year, when we were trying to fill -- figure out how to close the cap, I sent Chu down to sit in the BP offices, and he essentially designed the cap that ultimately worked, and he drew up the specs for it and had BP build it, construct it. So this is somebody who knows what he's doing. (Applause.) So for those of you who are studying physics, it may actually pay off someday. (Laughter.)

But the potential for natural gas is enormous. And this is an area where there's actually been some broad bipartisan agreement. Last year, more than 150 members of Congress from both sides of the aisle produced legislation providing incentives to use clean-burning natural gas in our vehicles instead of oil. And that's a big deal. Getting 150 members of Congress to agree on anything is a big deal. And they were even joined by T. Boone Pickens, a businessman who made his fortune on oil, but who is out there making the simple point that we can't simply drill our way out of our energy problems.

So I ask members of Congress and all the interested parties involved to keep at it, pass a bill that helps us achieve the goal of extracting natural gas in a safe, environmentally sound way.

Now, another substitute for oil that holds tremendous promise is renewable biofuels -- not just ethanol, but biofuels made from things like switchgrass and wood chips and biomass.

If anybody doubts the potential of these fuels, consider Brazil. As I said, I was just there last week. Half of Brazil's vehicles can run on biofuels -- half of their fleet of automobiles can run on biofuels instead of petroleum. Just last week, our Air Force -- our own Air Force -- used an advanced biofuel blend to fly a Raptor 22 -- an F-22 Raptor faster than the speed of sound. Think about that. I mean, if an F-22 Raptor can fly at the speed of -- faster than the speed of sound on biomass, then I know the old beater that you've got, that you're driving around in -- (laughter) -- can probably do so, too. There's no reason why we can't have our cars do the same.

In fact, the Air Force is aiming to get half of its domestic jet fuel from alternative sources by 2016. And I'm directing the Navy and the Department of Energy and Agriculture to work with the private sector to create advanced biofuels that can power not just fighter jets, but also trucks and commercial airliners.

So there's no reason we shouldn't be using these renewable fuels throughout America. And that's why we're investing in things like fueling stations and research into the next generation of biofuels. One of the biggest problems we have with alternative energy is not just producing the energy, but also distributing it. We've got gas stations all around the country, so whenever you need gas you know you can fill up -- it doesn't matter where you are. Well, we've got to have that same kind of distribution network when it comes to our renewable energy sources so that when you are converting to a different kind of car that runs on a

different kind of energy, you're going to be able to have that same convenience. Otherwise, the market won't work; it won't grow.

Over the next two years, we'll help entrepreneurs break ground for four next-generation biorefineries -- each with a capacity of more than 20 million gallons per year. And going forward, we should look for ways to reform biofuels incentives to make sure that they're meeting today's challenges and that they're also saving taxpayers money.

So as we replace oil with fuels like natural gas and biofuels, we can also reduce our dependence by making cars and trucks that use less oil in the first place. Seventy percent of our petroleum consumption goes to transportation -- 70 percent. And by the way, so does the second biggest chunk of most families' budgets goes into transportation. And that's why one of the best ways to make our economy less dependent on oil and save folks more money is to make our transportation sector more efficient.

Now, we went through 30 years where we didn't raise fuel efficiency standards on cars. And part of what happened in the U.S. auto industry was because oil appeared relatively cheap, the U.S. auto industry decided we're just going to make our money on SUVs, and we're not going to worry about fuel efficiency. Thirty years of lost time when it comes to technology that could improve the efficiency of cars.

So last year, we established a groundbreaking national fuel efficiency standard for cars and trucks. We did this last year without legislation. We just got all the parties together and we got them to agree -- automakers, autoworkers, environmental groups, industry.

So that means our cars will be getting better gas mileage, saving 1.8 billion barrels of oil over the life of the program -- 1.8 billion. Our consumers will save money from fewer trips to the pump -- \$3,000 on average over time you will save because of these higher fuel efficiency standards. And our automakers will build more innovative products. Right now, there are even cars rolling off the assembly lines in Detroit with combustion engines -- I'm not talking about hybrids -- combustion engines that get more than 50 miles per gallon. So we know how to do it. We know how to make our cars more efficient.

But going forward, we're going to continue to work with the automakers, with the autoworkers, with states, to ensure the high-quality, fuel-efficient cars and trucks of tomorrow are built right here in the United States of America. That's going to be a top priority for us. (Applause.)

This summer, we're going to propose the first-ever fuel efficiency standards for heavy-duty trucks. And this fall, we'll announce the next round of fuel standards for cars that builds on what we've already done.

And by the way, the federal government is going to need to lead by example. The fleet of cars and trucks we use in the federal government is one of the largest in the country. We've got a lot of cars. And that's

why we've already doubled the number of alternative vehicles in the federal fleet. And that's why today I am directing agencies to purchase 100 percent alternative fuel, hybrid, or electric vehicles by 2015. All of them should be alternative fuel. (Applause.)

Going forward, we'll partner with private companies that want to upgrade their large fleets. And this means, by the way, that you students, as consumers or future consumers of cars, you've got to make sure that you are boosting demand for alternative vehicles. You're going to have a responsibility as well, because if alternative-fuel vehicles are manufactured but you guys aren't buying them, then folks will keep on making cars that don't have the same fuel efficiency. So you've got power in this process, and the decisions you make individually in your lives will say something about how serious we are when it comes to energy independence.

We've also made historic investments in high-speed rail and mass transit, because part of making our transportation sector cleaner and more efficient involves offering all Americans, whether they are urban, suburban, or rural, the choice to be mobile without having to get in a car and pay for gas.

Still, there are few breakthroughs as promising for increasing fuel efficiency and reducing our dependence on oil as electric vehicles. Soon after I took office, I set a goal of having one million electric vehicles on our roads by 2015. We've created incentives for American companies to develop these vehicles, and for Americans who want them to buy them.

So new manufacturing plants are opening over the next few years. And a modest \$2 billion investment in competitive grants for companies to develop the next generation of batteries for these cars has jumpstarted a big new American industry. Pretty soon, America will be home to 40 percent of global manufacturing capacity for these advanced batteries.

And for those of you who are wondering what that means, the thing that's been holding back electric vehicles is the battery that stores that electricity, that energy. And the more efficient, the more lightweight we can make those batteries, the easier it is to manufacture those cars at a competitive price.

And if we can have that industry here in the United States of America, that means jobs. If those batteries are made here, the cars are made here. Those cars are made here, we're putting Americans back to work.

Now, to make sure we stay on this goal we're going to need to do more -- by offering more powerful incentives to consumers, and by rewarding the communities that pave the way for the adoption of these vehicles.

Now, one other thing about electric cars -- and you don't need to talk to Chu about this -- it turns out electric cars run on electricity. (Laughter.) And so even if we reduce our oil dependency,

and we're producing all these great electric cars, we're going to have to have a plan to change the way we generate electricity in America so that it's cleaner and safer and healthier. We know that ushering in a clean energy economy has the potential of creating untold numbers of new jobs and new businesses right here in the United States. But we're going to have to think about how do we produce electricity more efficiently.

Now, in addition to producing it, we actually also have to think about making sure we're not wasting energy. I don't know how we're doing on the Georgetown campus, Mr. President, but every institution and every household has to start thinking about how are we reducing the amount of energy that we're using and doing it in more efficient ways.

Today, our homes and businesses consume 40 percent of the energy that we use, and it costs us billions of dollars in energy bills. Manufacturers that require large amounts of energy to make their products, they're challenged by rising energy costs. And so you can't separate the issue of oil dependence from the issue of how we are producing generally -- more energy generally.

And that's why we've proposed new programs to help Americans upgrade their homes and businesses and plants with new, energy-efficient building materials -- new lighting, new windows, new heating and cooling systems -- investments that will save consumers and business owners tens of billions of dollars a year, and free up money for investment and hiring and creating new jobs and hiring more workers and putting contractors to work as well.

The nice thing about energy efficiency is we already have the technology. We don't have to create something new. We just have to help businesses and homeowners put in place the installation, the energy-efficient windows, the energy-efficient lighting. They'll get their money back. You will save money on your electricity bill that pays for those improvements that you made, but a lot of people may not have the money up front, and so we've got to give them some incentives to do that.

And just like the fuels we use in our cars, we're going to have to find cleaner renewable sources of electricity. Today, about two-fifths of our electricity come from clean energy sources. But we can do better than that. I think that with the right incentives in place, we can double our use of clean energy. And that's why, in my State of the Union address back in January, I called for a new Clean Energy Standard for America: By 2035, 80 percent of our electricity needs to come from a wide range of clean energy sources -- renewables like wind and solar, efficient natural gas. And, yes, we're going to have to examine how do we make clean coal and nuclear power work.

Now, in light of the ongoing events in Japan, I want to just take a minute to talk about nuclear power. Right now, America gets about one-fifth of our electricity from nuclear energy. And it's important to recognize that nuclear energy doesn't emit carbon dioxide in the atmosphere. So those of us who are concerned about climate change, we've

got to recognize that nuclear power, if it's safe, can make a significant contribution to the climate change question.

And I'm determined to ensure that it's safe. So in light of what's happened in Japan, I've requested a comprehensive safety review by the Nuclear Regulatory Commission to make sure that all of our existing nuclear energy facilities are safe. And we're going to incorporate those conclusions and lessons from Japan in design and the building of the next generation of plants. But we can't simply take it off the table.

My administration is leading global discussions towards a new international framework in which all countries who are operating nuclear plants are making sure that they're not spreading dangerous nuclear materials and technology.

But more broadly, a clean energy standard can expand the scope of clean energy investments because what it does is it gives cutting-edge companies the certainty that they need to invest. Essentially what it does is it says to companies, you know what, you will have a customer if you're producing clean energy. Utilities, they need to buy a certain amount of clean energy in their overall portfolio, and that means that innovators are willing to make those big capital investments.

And we've got to start now because -- think about this -- in the 1980s, America was home to more than 80 percent of the world's wind capacity, 90 percent of the world's solar capacity. We were the leaders in wind. We were the leaders in solar. We owned the clean energy economy in the '80s. Guess what. Today, China has the most wind capacity. Germany has the most solar capacity. Both invest more in clean energy than we do, even though we are a larger economy and a substantially larger user of energy. We've fallen behind on what is going to be the key to our future.

Other countries are now exporting technology we pioneered and they're going after the jobs that come with it because they know that the countries that lead the 21st century clean energy economy will be the countries that lead the 21st century global economy.

I want America to be that nation. I want America to win the future. (Applause.)

So a clean energy standard will help drive private investment in innovation. But I want to make this point: Government funding will still be critical. Over the past two years, the historic investments my administration has made in clean and renewable energy research and technology have helped private sector companies grow and hire hundreds of thousands of new workers.

I've visited gleaming new solar arrays that are among the largest in the world. I've tested an electric vehicle fresh off the assembly line. I mean, I didn't really test it -- I was able to drive like five feet before Secret Service said to stop. (Laughter.) I've toured factories that used to be shuttered, where they're now building advanced

wind blades that are as long as 747s, and they're building the towers that support them. And I've seen the scientists that are searching for the next big breakthrough in energy. None of this would have happened without government support.

I understand we've got a tight fiscal situation, so it's fair to ask how do we pay for government's investment in energy. And as we debate our national priorities and our budget in Congress, we're going to have to make some tough choices. We're going to have to cut what we don't need to invest in what we do need.

Unfortunately, some folks want to cut critical investments in clean energy. They want to cut our research and development into new technologies. They're shortchanging the resources necessary even to promptly issue new permits for offshore drilling. These cuts would eliminate thousands of private sector jobs; it would terminate scientists and engineers; it would end fellowships for researchers, some who may be here at Georgetown, graduate students and other talent that we desperately need to get into this area in the 21st century. That doesn't make sense.

We're already paying a price for our inaction. Every time we fill up at the pump, every time we lose a job or a business to countries that are investing more than we do in clean energy, when it comes to our air, our water, and the climate change that threatens the planet that you will inherit -- we're already paying a price. These are costs that we are already bearing. And if we do nothing, the price will only go up.

So at moments like these, sacrificing these investments in research and development, in supporting clean energy technologies, that would weaken our energy economy and make us more dependent on oil. That's not a game plan to win the future. That's a vision to keep us mired in the past. I will not accept that outcome for the United States of America. We are not going to do that. (Applause.)

Let me close by speaking directly to the students here -- the next generation who are going to be writing the next great chapter in the American story. The issue of energy independence is one that America has been talking about since before your parents were your age, since before you were born. And you also happen to go to a school [in a town] that for a long time has suffered from a chronic unwillingness to come together and make tough choices. And so I forgive you for thinking that maybe there isn't much we can do to rise to this challenge. Maybe some of you are feeling kind of cynical or skeptical about whether we're actually going to solve this problem. But everything I have seen and experienced with your generation convinces me otherwise.

I think that precisely because you are coming of age at a time of such rapid and sometimes unsettling change, born into a world with fewer walls, educated in an era of constant information, tempered by war and economic turmoil -- because that's the world in which you're coming of age, I think you believe as deeply as any of our previous generations that America can change and it can change for the better.

We need that. We need you to dream big. We need you to summon that same spirit of unbridled optimism and that bold willingness to tackle tough challenges and see those challenges through that led previous generations to rise to greatness -- to save a democracy, to touch the moon, to connect the world with our own science and our own imagination.

That's what America is capable of. That's what you have to push America to do, and it will be you that pushes it. That history of ours, of meeting challenges -- that's your birthright. You understand that there's no problem out there that is not within our power to solve.

I don't want to leave this challenge for future Presidents. I don't want to leave it for my children. I don't want to leave it for your children. So, yes, solving it will take time and it will take effort. It will require our brightest scientists, our most creative companies. It will require all of us -- Democrats, Republicans, and everybody in between -- to do our part. But with confidence in America and in ourselves and in one another, I know this is a challenge that we will solve.

Thank you very much, everybody. God bless you. God bless the United States of America. (Applause.)

END

12:24 P.M. EDT

From: Powell, Amy
Sent: Wednesday, March 30, 2011 4:04 PM
To: Blair, Rob; 'taunja.berquam@mail.house.gov'; Levin, Joseph
Subject: Embassy statement re: Chairman Jaczko's trip to Japan

FYI, this is a short statement issued by the US Embassy-Japan following Chairman Jaczko's brief trip to Japan:
<http://japan.usembassy.gov/e/p/tp-20110328-72.html>

Chairman Jaczko returned to the US yesterday.

Sorry if this is a rerun and we already sent this to you via one of our other distributions.

AP

Amy Powell
Associate Director
U. S. Nuclear Regulatory Commission
Office of Congressional Affairs
Phone: 301-415-1673

From: Nelson, Matthew (Feinstein) <Matthew_Nelson@feinstein.senate.gov>
Sent: Wednesday, March 30, 2011 4:07 PM
To: Powell, Amy
Cc: Clapp, Doug (Appropriations); Christensen, Adam (Feinstein)
Subject: two technical questions

Follow Up Flag: Follow up
Flag Status: Flagged

Amy,

Senator Feinstein asked me the following technical questions. Could you help me get informed answers?

- Japan has now announced that reactors 1-4 will never operate again. In such a circumstance, why have they not begun cementing in the facilities to entomb the damaged reactors and pools?
- Japan has announced they will send the radioactive water from the basements and other locations either to the waste treatment facility or an offshore barge. What would be the logical next step? Is there a way to treat the water to remove the radioactivity? If so, what does that entail?

Thanks in advance for your feedback.

Matthew B. Nelson
Senator Dianne Feinstein (CA)
331 Hart Office Building
202-224-3841
202-228-3900 (fax)

From: Powell, Amy
Sent: Thursday, March 31, 2011 7:22 AM
To: Coggins, Angela
Subject: Michal

Still owe Michal a response on this Q - I did not hear back from Tom. I can go to the RST but wanted to first check with he who prepped the witness on the Q :)

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Powell, Amy
To: Hipschman, Thomas
Cc: Batkin, Joshua; Coggins, Angela
Sent: Wed Mar 30 11:09:58 2011
Subject: Question from Mr. Markey's staff - looking for clarification

Tom –

I can go to OEDO/NRR staff if needed, but wanted to run this by you first: Michal on Rep. Markey's staff is asking for clarification on NRC's requirements related to hydrogen, based on what she has heard from GBJ and Borchardt in hearings and then counterpoints from others. Here is the question/point for clarification:

"So both the CHairman (today) and Borchard yesterday claimed that US facilities are equipped w hydrogen recombiners to prevent explosions. We are hearing that these used to be required but no longer are - they may be still installed, but are not required to be maintained and may not be hooked up to power supply. Can you please clarify?"

Thanks,
Amy

Amy Powell
Associate Director
U. S. Nuclear Regulatory Commission
Office of Congressional Affairs
Phone: 301-415-1673

From: Batkin, Joshua
Sent: Thursday, March 31, 2011 8:16 AM
To: Schmidt, Rebecca; Powell, Amy
Subject: Re: BAM

Thanks I let me kniw if you find that cardin template

Joshua C. Batkin
Chief of Staff
Chairman Gregory B. Jaczko
(301) 415-1820

----- Original Message -----

From: Schmidt, Rebecca
To: Batkin, Joshua; Powell, Amy
Sent: Thu Mar 31 06:59:45 2011
Subject: Re: BAM

Me or amy

----- Original Message -----

From: Batkin, Joshua
To: Schmidt, Rebecca; Powell, Amy
Sent: Wed Mar 30 21:16:06 2011
Subject: RE: BAM

Don't get me in trouble over this.... Who should they contact?

-----Original Message-----

From: Batkin, Joshua
Sent: Wednesday, March 30, 2011 12:14 PM
To: Schmidt, Rebecca; Powell, Amy; Brenner, Eliot
Cc: Pace, Patti
Subject: RE: BAM

Not confirmed yet but head's up that Senator Mikulski might want to visit HQ on the morning of April 18 for about 1 1/2 hours - the Chairman is here that day. Would probably want a briefing on the agency and on the Japan response, a tour of the ops center, maybe walk around and see people, maybe do an all hands, and then have a press component with the message being - "Senator visits NRC to get a briefing and thank employees for their hard work." Don't get spun up yet until we hear from her office if it's a go. In the meantime, can you please send me a template of what we did for Senator Cardin's visit and let me know who would you like her Energy LA to reach out to in OCA to discuss this if the Senator decides to do it?

Thanks,
Josh

-----Original Message-----

From: Schmidt, Rebecca
Sent: Wednesday, March 30, 2011 10:18 AM
To: Batkin, Joshua
Subject: BAM

Does she want to swing by ops center? when?

From: Dacus, Eugene
Sent: Thursday, March 31, 2011 3:53 PM
To: PMT01 Hoc
Cc: Powell, Amy; Decker, David; Riley (OCA), Timothy; Weil, Jenny; Shane, Raeann; Droggitis, Spiros
Subject: Question on cooling techniques

The inquiry below came from Sen. Gillibrand's (NY) office. Please respond.

We received a call from a constituent regarding the cool-down efforts at the Dai'ichi reactors and wondered if liquid nitrogen could be used to cool them down more effectively. Obviously this is well-above my understanding of 1.) the physical situation with damaged facilities and 2.) the physics of using liquid nitrogen as a nuclear coolant, but I was hoping someone there, since I know NRC is assisting may be able to shed some light as to this as a tool to respond. I noticed that it was used in response to Chernobyl to try and protect waste from reaching the water table.

Eugene Dacus
Sr. Congressional Affairs Officer
U.S. Nuclear Regulatory Commission
Office: 301-415-1697
Fax: 301-415-8571
E-mail: eugene.dacus@nrc.gov

From: Schmidt, Rebecca
Sent: Thursday, March 31, 2011 7:11 PM
To: 'Peter.Spencer@mail.house.gov'
Subject: Re: Follow-up from NRC re: 4/6 hearing

Yes. He is a career civil servant, SES and one of three Deputy EDOs

From: Spencer, Peter <Peter.Spencer@mail.house.gov>
To: Schmidt, Rebecca
Sent: Thu Mar 31 18:52:15 2011
Subject: RE: Follow-up from NRC re: 4/6 hearing

Is that Virgilio's official title, described below? (for our memo and so forth)

From: Schmidt, Rebecca [mailto:Rebecca.Schmidt@nrc.gov]
Sent: Thursday, March 31, 2011 6:26 PM
To: Spencer, Peter; Powell, Amy
Subject: Re: Follow-up from NRC re: 4/6 hearing

The chr or his designee works well

From: Spencer, Peter <Peter.Spencer@mail.house.gov>
To: Powell, Amy
Cc: Schmidt, Rebecca
Sent: Thu Mar 31 18:12:18 2011
Subject: RE: Follow-up from NRC re: 4/6 hearing

Should we make invite to Chairman Jaczko or his designee or to Martin Virgilio?

From: Powell, Amy [mailto:Amy.Powell@nrc.gov]
Sent: Thursday, March 31, 2011 5:37 PM
To: Spencer, Peter
Cc: Schmidt, Rebecca
Subject: Re: Follow-up from NRC re: 4/6 hearing

Peter - I am out of the office tomorrow, but my Director Becky Schmidt (cc'ed here) will be in if you need to touch base re: the 4/6 hearing. She can be reached through 301-415-1776.

Amy

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Spencer, Peter <Peter.Spencer@mail.house.gov>
To: Powell, Amy
Sent: Thu Mar 31 08:41:25 2011
Subject: RE: Follow-up from NRC

Thanks. Hearing has been noticed. Should get invites out today. I will touch base either later today or early tomorrow ...

From: Powell, Amy [mailto: Amy.Powell@nrc.gov]
Sent: Thursday, March 31, 2011 8:37 AM
To: Spencer, Peter
Cc: Christian, Karen
Subject: Follow-up from NRC

Good morning Peter -

Martin Virgilio, NRC's Deputy Executive Director for Operations for Reactors, will be our witness on April 6th.

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Spencer, Peter <Peter.Spencer@mail.house.gov>
To: Powell, Amy
Cc: Christian, Karen <Karen.Christian@mail.house.gov>
Sent: Wed Mar 30 09:15:42 2011
Subject: Hearing

Amy,

We'll be seeking to hold a Subcommittee on Oversight and Investigations hearing next Wednesday, to update Committee on U.S. government response to Fukushima Daiichi power plant incident, including plans for review of safety at U.S. plants.

Given the travel of Borchardt and Chairman Jaczko next week, your Deputy Exec director for reactor preparedness or Director, Office of Nuclear Reactor Regulation, may be the best to testify.

Let's nail down who will testify. I'll get back about any specific areas to cover in testimony beyond the updates on what's happening in Japan and in U.S. as result of incident.

More to come as this develops.

Thanks,
Peter

Peter L. Spencer
Majority Professional Staff
Oversight and Investigations

Committee on Energy and Commerce
U.S. House of Representatives
(202) 225-2927
peter.spencer@mail.house.gov

From: Bubar, Patrice
Sent: Thursday, March 31, 2011 10:16 PM
To: Schmidt, Rebecca; Batkin, Joshua; Nieh, Ho; Sharkey, Jeffrey; Sosa, Belkys
Cc: Powell, Amy
Subject: Re: Potential hearing

Commissioner Magwood has no travel planned for those days.

From: Schmidt, Rebecca
To: Batkin, Joshua; Nieh, Ho; Bubar, Patrice; Sharkey, Jeffrey; Sosa, Belkys
Cc: Powell, Amy
Sent: Thu Mar 31 14:30:16 2011
Subject: Potential hearing

EPW is asking for the Commission's availability for a hearing the first week of May. According to the schedule, there is a quick look Japan Commission meeting scheduled for May 3. Would May 4 or 5 interfere with Commissioner travel plans?

From: Sharkey, Jeffry
Sent: Thursday, March 31, 2011 10:34 PM
To: Schmidt, Rebecca; Batkin, Joshua; Nieh, Ho; Bubar, Patrice; Sosa, Belkys
Cc: Powell, Amy
Subject: Re: Potential hearing

Commissioner Svinicki has no travel conflicts on either day.

Thanks,

Jeff

From: Schmidt, Rebecca
To: Batkin, Joshua; Nieh, Ho; Bubar, Patrice; Sharkey, Jeffry; Sosa, Belkys
Cc: Powell, Amy
Sent: Thu Mar 31 14:30:16 2011
Subject: Potential hearing

EPW is asking for the Commission's availability for a hearing the first week of May. According to the schedule, there is a quick look Japan Commission meeting scheduled for May 3. Would May 4 or 5 interfere with Commissioner travel plans?

From: NEIGA@nei.org
Sent: Friday, April 01, 2011 1:54 PM
To: Powell, Amy
Subject: NEI Update as of 12:30 p.m. EDT, Friday, April 1



UPDATE AS OF 12:30 P.M. EDT, FRIDAY, APRIL 1

Japan's nuclear safety agency has reprimanded Tokyo Electric Power Co. for not providing radiation monitors to all emergency workers at the Fukushima Daiichi nuclear power plant.

Each worker is supposed to have an individual radiation monitor, but some emergency teams have had to share monitors, the Japan Atomic Industrial Forum reported. TEPCO said that low-priority work will be suspended if employees do not have monitors.

TEPCO said that only 320 of the 5,000 radiation monitors were available after the earthquake and tsunami, JAIF said.

Radiation Found in Beef

Radiation that exceeds safety standards has been found in beef in Fukushima and three neighboring prefectures, JAIF reported. Radiation also was found in spinach and other vegetables grown in the area. Japan's health ministry said the beef and vegetables have not been shipped and are not on the market.

Fukushima Daiichi

A U.S. Navy barge containing freshwater to cool the reactors and used fuel pools at the Daiichi site has been towed to the pier. It will be connected to the pumps with hoses.

Meanwhile, injection of freshwater continues at reactors 1-3 and workers continue to spray fresh

water on the used fuel pools for reactors 1-4.

TEPCO is evaluating the use of a synthetic resin that would be sprayed over debris at the site to prevent the spread of radioactive dust.

Additional equipment, including the biggest concrete pump in the world, is being provided by U.S. companies. The pump's 70-meter boom can be controlled remotely. It has been in use at the Savannah River Site, helping build a U.S. government mixed oxide nuclear fuel plant. Concrete pumps are already in use at the site to assist with spraying water into the used fuel pools.

Fact Sheet Update

NEI has updated its fact sheet, "Nuclear Plants Designed and Constructed to Withstand Earthquakes."

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E: NEIResponseCenter@nei.org
Twitter: <http://twitter.com/neiupdates>

Click [here](#) to unsubscribe



From: Freedhoff, Michal <Michal.Freedhoff@mail.house.gov>
Sent: Friday, April 01, 2011 2:02 PM
To: Shane, Raeann; Powell, Amy
Subject: RE: questions about KI

I would also like to know how far from the site these individuals were, and additionally, what has been provided to military/govt personnel.

Thanks
Michal

Michal Ilana Freedhoff, Ph.D.
Policy Director
Office of Congressman Edward J. Markey (D-MA)
2108 Rayburn House Office Building
Washington, DC 20515
202-225-2836

From: Shane, Raeann [mailto:Raeann.Shane@nrc.gov]
Sent: Friday, April 01, 2011 2:01 PM
To: Freedhoff, Michal; Powell, Amy
Subject: RE: questions about KI

Hi Michal,

I know we gave KI to the NRC staff that has gone over there but I don't know if they were to take it before they went or to have it just in case. I will find out for you who has gotten what.

Raeann

From: Freedhoff, Michal [mailto:Michal.Freedhoff@mail.house.gov]
Sent: Friday, April 01, 2011 12:05 PM
To: Powell, Amy; Shane, Raeann
Subject: questions about KI

Hi there

I have a couple of questions on KI use in Japan. I'm aware that NRC recommended a 50 mile evacuation zone, but what has it done on KI for US residents and/or personnel who are stationed there. Who has been given KI - and how far away are those individuals from the site? And have they been told to take the dose yet?

Thanks
Michal

Michal Ilana Freedhoff, Ph.D.
Policy Director
Office of Congressman Edward J. Markey (D-MA)
2108 Rayburn House Office Building

Washington, DC 20515
202-225-2836

From: Droggitis, Spiros
Sent: Friday, April 01, 2011 1:06 PM
To: OCA Distribution
Subject: FW: CRS draft document on Japanese event - for your awareness
Attachments: CRS Report 110331 Japan reactor v2.pdf

Raeann: Were these the ones coordinated through you or did CRS go directly to Cyndi?

From: Jones, Cynthia
Sent: Friday, April 01, 2011 1:00 PM
To: Wiggins, Jim; Evans, Michele; Rothschild, Trip; Brenner, Eliot; Hayden, Elizabeth; Leeds, Eric; Boger, Bruce; Uhle, Jennifer; Sheron, Brian; Droggitis, Spiros; Merzke, Daniel; Virgilio, Martin; Weber, Michael; Burnell, Scott; McDermott, Brian; Morris, Scott
Subject: CRS draft document on Japanese event - for your awareness

FYI-

Last weekend amongst all the other requests, we (PMT and myself) were requested to review and assist the Congressional Research Service (CRS) on their draft document on the Japanese event. I just rec'd a copy from them, for your awareness.

The RST (Rx Safety Team) had no comments, but we had a lot, and I think it showed an improved production in this version. Please share with your staff (I already passed along to RST & PMT).

I expect that CRS will share with Congress shortly.

Cyndi

From: Jonathan Medalia [mailto:JMEDALIA@crs.loc.gov]
Sent: Friday, April 01, 2011 12:01 PM
To: Jones, Cynthia
Subject: RE: your phone message on CRS draft document

I'm updating the report to add an appendix with useful links, and of course have included a couple from NRC. Thanks again for your good work.

Jon

>>> "Jones, Cynthia" <Cynthia.Jones@nrc.gov> 4/1/2011 11:59 AM >>>
Thanks Jon

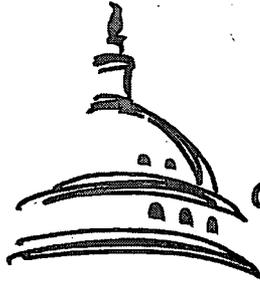
From: Jonathan Medalia [mailto:JMEDALIA@crs.loc.gov]
Sent: Thursday, March 31, 2011 6:31 PM
To: Jones, Cynthia
Cc: Sun, Casper; LIA06 Hoc; Hoc, PMT12
Subject: Re: your phone message on CRS draft document

Hi Cyndi, Casper, et al.,
Thanks for your comments on my report, Cyndi. I have worked through them and now have the report in good shape. I'll be in touch if I have further questions, but for now I think I'm ok. I've attached the report. You will notice

that I acknowledge assistance from NRC, which I greatly appreciate. I will update the report from time to time, so let me know if you have any thoughts, esp. things to add.

Best,
Jon

Jonathan Medalia, Ph.D.
Specialist in Nuclear Weapons Policy
Congressional Research Service
202-707-7632
jmedalia@crs.loc.gov



**Congressional
Research
Service**

The Japanese Nuclear Incident: Technical Aspects

Jonathan Medalia
Specialist in Nuclear Weapons Policy

March 31, 2011

Congressional Research Service

7-5700

www.crs.gov

R41728

CRS Report for Congress
Prepared for Members and Committees of Congress

Summary

Japan's nuclear incident has engendered much public and congressional concern about the possible impact of radiation on the Japanese public, as well as possible fallout on U.S. citizens. This report provides information on technical aspects of the nuclear incident, with reference to human health.

While some radioactive material from the Japanese incident may reach the United States, it appears most unlikely that this material will result in harmful levels of radiation. In traveling thousands of miles between the two countries, some radioactive material will decay, rain will wash some out of the air, and its concentration will diminish as it disperses.

Many atoms are stable; they remain in their current form indefinitely. Other atoms are unstable, or radioactive. They "decay" or "disintegrate," emitting energy through various forms of radiation. Each form has its own characteristics and potential for human health effects.

Nuclear reactors use uranium or mixed oxides (uranium oxide and plutonium oxide, or MOX) for fuel. Uranium and plutonium atoms fission, or split, releasing neutrons that cause additional fissions in a chain reaction, and also releasing energy. A nuclear reactor's core consists of fuel rods made of uranium or MOX encased in zirconium, and neutron-absorbing control rods that are removed or inserted to start or stop the chain reaction. This assembly is placed underwater to carry off excess heat. The incident at the Fukushima Daiichi Nuclear Power Plant prevented water from circulating in the core of several reactors, causing water to evaporate and temperature to rise. High heat could melt the fuel rods and lead to a release of radioactive material into the air.

When uranium and plutonium fission, they split into smaller atoms that are highly radioactive and generate much heat; indeed, fuel rods that have just been removed from a reactor are much more radioactive, and hotter, than fuel rods before they have been inserted into a reactor. After fuel rods can no longer efficiently produce energy, they are considered "spent" and are placed in cooling pools of water for several years to keep them from overheating while the most radioactive materials decay. A concern about the spent fuel pool at reactor 4 is that it may have lost most or all of its water, yet it has more fuel rods than pools at the other five reactors, as it contains all the active fuel rods that were temporarily removed from the reactor core in November 2010 to permit plant maintenance in addition to spent fuel rods.

A nuclear reactor cannot explode like an atomic bomb because the concentration of the type of uranium or plutonium that fissions easily is too low to support a runaway chain reaction, and a nuclear weapon requires one of two configurations, neither of which is present in a reactor.

Some types of radiation have enough energy to knock electrons off atoms, creating "ions" that are electrically charged and highly reactive. Ionizing radiation is thus harmful to living cells. It strikes people constantly, but in doses low enough to have negligible effect. A concern about the reactor incident is that it will release radioactive materials that pose a danger to human health. For example, cesium-137 emits gamma rays powerful enough to penetrate the body and damage cells. Ingesting iodine-131 increases the risk of thyroid cancer. Potassium iodide tablets protect the thyroid, but there is no need to take them absent an expectation of ingesting iodine-131.

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Introduction

The Japanese earthquake and tsunami of March 2011 caused extensive damage to the Fukushima Daiichi Nuclear Power Plant (NPP). This damage has released some radioactive materials, and there are widespread fears about the health effects of current and possible future releases. These fears, and public concern about radiation in general, have attracted the world's attention. This report presents scientific and technical aspects of these issues in order to provide a basis for understanding the risks associated with this event.

Could Harmful Levels of Fallout Reach the United States?¹

To monitor radiation in the United States, the Environmental Protection Agency (EPA) operates RadNet, which “is a national network of monitoring stations that regularly collect air, precipitation, drinking water, and milk samples for analysis of radioactivity. The RadNet network, which has stations in each state, has been used to track environmental releases of radioactivity from nuclear weapons tests and nuclear accidents.”² EPA has an online map of these stations,³ and provides updates on the results of its air monitoring as relates to the Japanese nuclear incident.⁴

Whether harmful levels of radioactive material from the incident reach the United States depends on many factors:

- **Particle size:** Tiny particles are more readily carried by the wind and can travel farther than large particles, which fall to Earth more rapidly.
- **Wind patterns.**
- **Amount of material released:** The more material released, the more likely some of it is to travel long distances.
- **Melt vs. burn:** If nuclear fuel rods (fresh or spent) melt and form a pool of very hot, highly radioactive liquid, that liquid might be contained by a containment structure. If it melts through that structure, it might contaminate groundwater. If the fuel rods burn, the fire would loft radioactive material into the air. The larger and hotter the fire, and the longer it burns, the more material would be injected into the air.
- **Travel time:** The longer radioactive material is in the air, the more of it will decay.
- **Distance:** The farther radioactive material travels, the greater the volume of air in which the material disperses, diluting it.

¹ This section was written by Jonathan Medalia, Specialist in Nuclear Weapons Policy, Foreign Affairs, Defense, and Trade Division.

² U.S. Environmental Protection Agency. “RadNet—Tracking Environmental Radiation Nationwide,” <http://www.epa.gov/narel/radnet/>.

³ U.S. Environmental Protection Agency. “RadNet Map View,” <https://cdxnode64.epa.gov/radnet-public/showMap.do>.

⁴ U.S. Environmental Protection Agency. “Japanese Nuclear Emergency: EPA’s Radiation Air Monitoring,” <http://www.epa.gov/japan2011/>.

- Rain and snow: Precipitation washes some particles out of the air.

The first four of these factors depend on circumstances; the other three would reduce the amount of material reaching the United States under any circumstances.

According to U.S. nuclear authorities, the reactor incident does not appear to pose an immediate threat to the United States. On March 13, the Nuclear Regulatory Commission (NRC) stated, "Given the thousands of miles between the two countries [United States and Japan], Hawaii, Alaska, the U.S. Territories and the U.S. West Coast are not expected to experience any harmful levels of radioactivity."⁵ On March 18, EPA and the Department of Energy stated that a monitoring station in Sacramento "today ... detected minuscule quantities of iodine isotopes and other radioactive particles that pose no health concern at the detected levels," and that between March 16 and 17, a detector in Washington state detected "trace amounts of Xenon-133, which is a radioactive noble gas produced during nuclear fission that poses no concern at the detected level."⁶ In a briefing to the Nuclear Regulatory Commission on March 21, Bill Borchardt, NRC Executive Director for Operations, said, "natural background from things like ... rocks, sun, buildings, is 100,000 times more than any level that has been detected to date. We feel confident in our conclusion that there is no reason for concern in the United States regarding radioactive releases from Japan."⁷ A press report of March 22 stated that equipment in Charlottesville, VA, detected radiation from the reactor incident, but that "health experts said that the plume's radiation had been diluted enormously in its journey of thousands of miles and that—at least for now, with concentrations so low—its presence will have no health consequences in the United States."⁸

It is useful to put these doses in perspective. Using the figure that natural sources provide 100,000 times the dose recorded in California and Washington state, it is possible to calculate a rough approximation of the dose from the Japanese incident, using the improbable assumption that the dose persists at the detected rate for an entire year. As discussed later, a report estimates that the average American receives a dose of 310 millirem (mrem) per year from natural sources. (Units of radiation dose are discussed under "Health Effects of Ionizing Radiation.") NRC requires its licensees to "limit maximum radiation exposure to individual members of the public" to 100 mrem per year. One one hundred thousandth of 310 mrem per year is a dose of 0.00310 mrem per year. At that rate, it would take 32,258 years to accumulate a dose of 100 mrem; over a 70-year lifespan, the cumulative dose at this rate would amount to 0.22 mrem.

⁵ U.S. Nuclear Regulatory Commission. "NRC Sees No Radiation at Harmful Levels Reaching U.S. from Damaged Japanese Nuclear Power Plants," press release no. 11-046, March 13, 2011, <http://pbadupws.nrc.gov/docs/ML1107/ML110720002.pdf>.

⁶ U.S. Department of Energy and Environmental Protection Agency. "Joint EPA/DOE Statement: Radiation Monitors Confirm That No Radiation Levels of Concern Have Reached the United States," press release, March 18, 2011, <http://www.energy.gov/news/10190.htm>.

⁷ U.S. Nuclear Regulatory Commission. "Briefing on NRC Response to Recent Nuclear Events in Japan," public meeting, March 21, 2011, p. 13, <http://www.nrc.gov/reading-rm/doc-collections/commission/tr/2011/20110321.pdf>.

⁸ William Broad, "Radiation over U.S. Is Harmless, Officials Say," *New York Times*, March 22, 2011, p. 6.

What Is Radiation?⁹

Many atoms are stable: they will remain in their current form indefinitely. Some atoms are unstable, or radioactive. They “decay” or “disintegrate,” often transforming into atoms of a different element, such as through emission of radiation, which permits the atom to reach a more stable state.¹⁰ The most common types of radiation emitted in decay, and their characteristics, are:

- Alpha particles are two protons plus two neutrons. They are electrically charged and massive by subatomic standards, and travel relatively slowly, so they lose energy quickly in matter. They travel only an inch in air, and are stopped by a sheet of paper or the dead outer layers of skin.
- Beta particles (an electron or positron¹¹) are electrically charged, so are readily absorbed by matter, but are much less massive than alpha particles or neutrons. Depending on their energy, some are stopped by outer layers of skin, while others can penetrate several millimeters. They can travel up to several feet in air.
- Neutrons are typically emitted by heavy atoms like uranium and plutonium. They have no electrical charge and may be highly penetrating, depending on their speed. They can travel tens of meters in air; energetic neutrons can penetrate the body. They can be slowed down by hydrogen-containing material like water.
- Gamma rays are photons released during radioactive decay. Photons may be thought of as packets of electromagnetic energy; radio waves, light, and x-rays are less-energetic photons. Gamma ray energies vary widely. Those of medium to high energies are highly penetrating and can travel hundreds of meters in air. Stopping them requires a thick layer of a dense material like lead.

Several measurements are useful in discussing radioactivity. Radioactivity is measured in units of curies (Ci), where $1 \text{ Ci} = 3.7 \times 10^{10}$ disintegrations per second, or becquerels (Bq), where $1 \text{ Bq} = 1$ disintegration per second. (The curie is widely used in the United States; the Becquerel is more widely used internationally.) Specific activity—curies per gram—measures how radioactive a material is. Half-life is the time for half the atoms in a mass of particular type of radioactive material to decay. Specific activity is inversely related to half-life. For example, radioactive iodine-131 is intensely radioactive. It has a specific activity of 124,000 curies per gram and a half-life of 8 days; in 10 half-lives (80 days), 99.9 percent of the iodine-131 created at a given time will have decayed. In contrast, uranium-235 has a specific activity of 0.000002 curies per gram and a half-life of 700 million years; it would take 7 billion years (10 half-lives) for 99.9 percent of it to decay.¹² According to Richard Firestone, staff scientist, Lawrence Berkeley

⁹ This section was written by Jonathan Medalia, Specialist in Nuclear Weapons Policy, Foreign Affairs, Defense, and Trade Division.

¹⁰ For descriptions of radiation, see Roger Eckhardt, “Ionizing Radiation—It’s Everywhere,” *Los Alamos Science*, no. 23, 1995, <http://www.fas.org/sgp/othergov/doe/lanl/00326627.pdf>, and U.S. Environmental Protection Agency, “Radiation: Ionizing and Non-Ionizing,” <http://www.epa.gov/radiation/understand/index.html>.

¹¹ A positron is a positively-charged electron.

¹² For data on half-lives and other characteristics of radionuclides, see Lawrence Berkeley National Laboratory, “Exploring the Table of Isotopes,” <http://ie.lbl.gov/education/isotopes.htm>, and U.S. Department of Energy, Office of Environmental Management. “Table B.1. Characteristics of important radionuclides,” http://www.orau.org/ptp/PTP%20Library/library/DOE/Misc/Table%20B_1_%20Characteristics%20of%20Important%20Radionuclides.htm.

National Laboratory, uranium-235 emits so little radiation that “holding a piece in the hand would cause negligible radiation exposure.”¹³

Energy released per decay is measured differently. A standard measure is the electron volt or, more commonly, thousands of electron volts (keV).¹⁴ The penetrating power of gamma rays, and thus their threat to human health, increases as their energy increases.

Each radioactive atom, or “radionuclide,” decays in a specific way. For example, when uranium-235 decays,¹⁵ it emits gamma rays, most of which are of 186 keV (a low energy) or less, and alpha particles; cesium-137 emits gamma rays, virtually all of which are of 662 keV, a medium energy, and beta particles. Each radionuclide that emits gamma rays does so in a unique pattern, or “spectrum,” of energies that is the primary characteristic used to identify many radionuclides.

Radioactivity and Nuclear Reactors^{16,17}

Some heavy atoms, such as uranium-235 and plutonium-239, “fission” when struck by a neutron. In fission, an atom typically (1) splits into two lighter atoms, called “fission products”; (2) releases two or three neutrons; and (3) emits vast quantities of radiation. Fission products are often highly radioactive, such as cesium-137, iodine-131, and strontium-90.

Uranium-235 and plutonium-239 can support a nuclear chain reaction: to oversimplify, one neutron fissions one atom, which releases two neutrons that fission two atoms, releasing four neutrons that fission four atoms, and so on. Neutrons thus drive chain reactions; this is a key concept for understanding nuclear reactors. A supercritical mass supports an increasing rate of fission; fission diminishes in a subcritical mass; and fission proceeds at a constant rate in a critical mass. In an atomic bomb, a supercritical mass of uranium or plutonium supports a chain reaction that proceeds in a tiny fraction of a second, releasing vast quantities of energy. A nuclear reactor is designed to maintain a constant rate of fission. If fission proceeds too quickly, it gets out of control, in which case the fuel rods generate so much heat that they melt. When control rods are inserted into the reactor core, individual atoms continue to fission but the chain reaction stops. Control rods typically contain boron or cadmium because they are efficient neutron absorbers. (Because boron absorbs neutrons, it was added to cooling water in the Fukushima Daiichi NPP incident to prevent inadvertent criticality.) Fission that proceeds at the desired rate releases energy over several years from one load of fuel. The energy heats water to generate steam that spins turbines to generate electricity.

¹³ Personal communication, March 30, 2011.

¹⁴ “An electron volt is a measure of energy. An electron volt is the kinetic energy gained by an electron passing through a potential difference of one volt.” Fermi National Accelerator Laboratory, “How Big Is an Electron Volt?,” <http://www-bd.fnal.gov/public/electronvolt.html>.

¹⁵ The number following the name of an element is the number of protons plus neutrons in the nucleus.

¹⁶ This section was written by Jonathan Medalia, Specialist in Nuclear Weapons Policy, Foreign Affairs, Defense, and Trade Division, and Mark Holt, Specialist in Energy Policy, Resources, Science, and Industry Division. See also CRS Report R41694, *Fukushima Nuclear Crisis*, by Richard J. Campbell and Mark Holt.

¹⁷ For the status of each reactor, see “Status of the Nuclear Reactors at the Fukushima Daiichi Power Plant,” *New York Times*, <http://www.nytimes.com/interactive/2011/03/16/world/asia/reactors-status.html>, and Japan, Nuclear and Industrial Safety Agency, <http://www.nisa.meti.go.jp/english/>.

A nuclear reactor cannot explode like an atomic bomb because the fuels and configurations differ. In nature, uranium is 99.3 percent uranium-238 and 0.7 percent uranium-235. Only the latter is “fissile,” that is, it will fission when struck by neutrons moving at relatively slow speeds. To make fuel for a bomb or a reactor, the fraction of uranium-235 must be increased through “enrichment.”¹⁸ An atomic bomb uses uranium enriched to about 90 percent uranium-235 (“highly enriched uranium,” HEU), while nuclear reactor fuel is typically enriched to less than 5 percent (“low enriched uranium,” LEU). LEU does not have enough uranium-235 to support a chain reaction of the sort found in an atomic bomb. In addition, a bomb must be configured in one of two ways to create a large enough mass to support a runaway chain reaction; reactors are arranged in an entirely different configuration.

A nuclear reactor uses pellets of LEU or mixed oxides (MOX, i.e., uranium oxide and plutonium oxide) for fuel. Fuel rods—thin zirconium tubes typically between 12 and 15 feet long—hold the fuel. According to one report,

Zirconium is the metal of choice in this application because it absorbs relatively few of the neutrons produced in a fission reaction and because the metal is highly resistant to both heat and chemical corrosion.

Low neutron absorption is vital to any structural material used in a nuclear reactor because large numbers of neutrons produced by the reaction must be free to interact simultaneously with all the nuclear fuel confined inside hundreds of fuel rods. This interaction sustains the necessary chain reaction throughout the reactor’s core.¹⁹

Even with control rods fully inserted to halt the nuclear chain reaction, the radioactive decay of the fuel rods (primarily from fission products) generates heat, which must be dissipated. At the Fukushima Daiichi NPP, cooling was done by pumping cool water into the reactor. If the heat is not dissipated, the rods become so hot that they melt or burn. A fire would loft particles of radioactive material into the air. If fuel rods become too hot, their zirconium cladding may also react with water and produce hydrogen. The Fukushima Daiichi NPP primary containments used inert nitrogen gas to preclude hydrogen ignition. However, the operators had to vent the primary containment to relieve pressure, introducing hydrogen into the secondary containment, which is believed to have caused the explosions at reactor units 1-3.²⁰ This explains the urgency of the efforts to keep the fuel rods cool, and why the reactors suffered major damage when backup cooling systems failed.

In order to cool the fuel rods, personnel have been spraying huge amounts of seawater into the reactors and spent fuel pools. However, when seawater boils away from the heat of the fuel rods, it leaves behind large quantities of salt.

The big question is how much of that salt is still mixed with water, and how much now forms a crust on the reactors’ uranium fuel rods. Chemical crusts on uranium fuel rods have been a problem for years at nuclear plants.

¹⁸ For information on the enrichment process, see U.S. Nuclear Regulatory Commission. “Fact Sheet on Uranium Enrichment,” May 15, 2009, <http://www.nrc.gov/reading-rm/doc-collections/fact-sheets/enrichment.html>.

¹⁹ “Zirconium: Covering for Fuel Rods,” *New York Times*, June 9, 1995, <http://www.nytimes.com/1995/06/09/nyregion/zirconium-covering-for-fuel-rods.html>.

²⁰ Information provided by Nuclear Regulatory Commission, personal communication, March 25, 2011.

Crusts insulate the rods from the water and allow them to heat up. If the crusts are thick enough, they can block water from circulating between the fuel rods. As the rods heat up, their zirconium cladding can ignite, which may cause the uranium inside to melt and release radioactive material.²¹

To alleviate this problem, workers have begun using fresh water instead of seawater.²²

As the fuel fissions in a reactor, the fraction of fission products in fuel rods increases. When the ratio of fission products to fissile material rises to the point at which a fuel rod can no longer efficiently maintain a chain reaction, it is referred to as spent fuel. “Spent” seems to imply that the fuel has been used up, and is therefore less dangerous, than fresh uranium fuel, but this is not necessarily the case. When fuel rods are first removed from a nuclear reactor, they have a high level of short-lived radionuclides, unlike new fuel rods, so they are intensely radioactive. This radioactivity generates intense heat, so spent fuel rods are placed in pools of water to cool them, typically for several years, until most of the short-lived radionuclides decay. The water also provides shielding against any radioactive release into the air, and the spent fuel pools have no hardened containment structure that would protect against radiation release. If a pool is drained, the fuel rods would heat up, melt, and perhaps burn. This possibility led to concern about the spent fuel rods at Fukushima Daiichi NPP reactor 4:

The spent fuel pools can be even more dangerous than the active fuel rods, as they are not contained in thick steel containers like the reactor core. As they are exposed to air, the zirconium metal cladding on the rods can catch fire, and a deadly mix of radioactive elements can spew into the atmosphere. ...

According to Tokyo Electric [Power Company]’s data, the spent fuel pool at the No. 4 reactor contains 548 fuel assemblies that were in use at the reactor until last November, when they were moved to the storage pool on the site. That means that the fuel rods were only recently taken out of active use and that their potential to burn and release radioactivity is higher than spent fuel in storage for a longer period.²³

Another danger comes from the potential release of plutonium from the MOX fuel used at reactor 3. Even very small amounts of plutonium, if inhaled, can potentially cause lung cancer. This explains the concern about that reactor, as it is the only one that uses MOX fuel, although irradiation of uranium fuel also creates plutonium. Water is being pumped into the spent fuel pools at the Fukushima Daiichi NPP reactors as well to cool the fuel rods and prevent additional radiation release.

²¹ Keith Bradsher, “New Problems at Japanese Plant Subdue Optimism and Present a Risky Agenda,” *New York Times*, March 24, 2011, p. 11.

²² David Nakamura and Steven Mufson, “Japan Urges More to Evacuate,” *Washington Post*, March 26, 2011, p. 1, and “Nuclear Energy—Crisis in Japan,” *New York Times*, update of March 30, 2011.

²³ David Sanger, Matthew Wald, and Hiroko Tabuchi, “U.S. Sees ‘Extremely High’ Radiation Level at Plant, Focusing on Spent Fuel’s Impact,” *New York Times*, March 17, 2011, p. 13.

Health Effects of Ionizing Radiation²⁴

Humans are continuously exposed to significant amounts of ionizing radiation from various naturally occurring and manmade sources. Because of its relatively high energy level, ionizing radiation is capable of producing significant biological change. Ionizing radiation gets its name from the fact that it causes ionization—ejection of electrons—when it interacts with atoms in the molecules that constitute cells and tissue. This process creates charged, often unstable, and highly reactive entities. The ensuing reactions may result in permanent molecular damage. Radiation disrupts cell division, which is why the most sensitive tissues are those in which cells frequently divide, such as skin, hair, bone marrow (where precursor cells give rise to new blood cells), and the cells that line the stomach and small intestine. Ionizing radiation may also damage DNA in chromosomes, resulting in mutations that are responsible for long-term effects such as the development of cancer.

Sources of Radiation Exposure

Naturally occurring sources of ionizing radiation to which all humans are exposed include cosmic radiation from outer space and terrestrial radiation from radioactive materials in rock deposits and soil. The Earth's atmosphere acts as a shield against cosmic radiation, so exposure levels increase with altitude (especially when flying). The most important source of terrestrial exposure is the inhalation of radon, which is produced by the radioactive decay of naturally occurring uranium.

In the United States, radiation exposure as a result of medical practice has increased significantly over the past 25 years as a result of the growing use of CT scans and nuclear medicine procedures to diagnose and treat disease. Other manmade sources of radiation account for a relatively small fraction of the U.S. population's total exposure. Those sources include consumer products (e.g., cigarettes, building materials, appliances); industrial, security, educational, and research activities, including nuclear power generation; and various types of occupational exposure.

Measuring Exposure: Absorbed Dose v. Equivalent Dose

Human exposure is measured by the amount of energy that ionizing radiation deposits in a unit mass of tissue. This is called the *absorbed dose*. The international unit for the absorbed dose is the gray (Gy), which replaced an earlier unit of dose, the rad (short for "radiation absorbed dose"). One gray equals 100 rad. The biological impact of ionizing radiation, however, depends not just on the absorbed dose (i.e., the amount of energy absorbed) but on the type of radiation. For example, an alpha particle is more damaging to biological tissue than a beta particle or gamma radiation because of its mass, electrical charge, and slow speed. Alpha particles lose their energy much more densely along the relatively short path they travel through biological tissue. Thus, 1 Gy of alpha radiation is more harmful than 1 Gy of beta or gamma radiation.

Radiation scientists use another quantity, called *equivalent dose*, which allows them to measure all types of exposure on an equal basis. Equivalent dose is equal to the absorbed dose multiplied by a factor that takes into account the relative effectiveness of each type of radiation to cause harm. For beta particles and gamma radiation, the factor is set at 1; that is, the absorbed dose

²⁴ This section was written by Jonathan Medalia, Specialist in Nuclear Weapons Policy, Foreign Affairs, Defense, and Trade Division, and C. Stephen Redhead, Specialist in Health Policy, Domestic Social Policy Division.

equals the equivalent dose. For alpha particles the factor is set at 20, which means that the equivalent dose is 20 times the absorbed dose. This reflects the fact that alpha radiation is more harmful than beta and gamma radiation. The international unit for the equivalent dose is the sievert (Sv). So, 1 Sv of alpha radiation to the lung would create the same risk of lung cancer as 1 Sv of beta radiation. The sievert is a large unit relative to common exposures, so the more common unit is the millisievert (mSv), which is one-thousandth of a sievert. The sievert replaced an earlier unit of equivalent dose, the rem, which is still widely used in the United States. One sievert = 100 rem; 1 mSv = 100 millirem (mrem).

The National Council on Radiation Protection and Measurement (NCRP) estimates that the *average annual equivalent dose* to an individual in the United States is 6.2 mSv (620 mrem).²⁵ Of that amount, 3.1 mSv (310 mrem) is from natural background sources, primarily inhalation of radon and its decay products, and 3.0 mSv (300 mrem) is from diagnostic and therapeutic medical procedures. The remaining 0.1 mSv (10 mrem) is from consumer products, industrial activities, and occupational exposure, among other sources. For comparison, the radiation dose from a jet airplane flight is 0.5 millirems (mrem) per hour in the air; from a chest x-ray, 6 mrem; and from living at an altitude of one mile, about 50 mrem/year.²⁶ **Table 1** shows various doses and their health consequences or regulatory limits.

²⁵ National Council on Radiation Protection and Measurement, "Ionizing Radiation Exposure of the Population of the United States," report no. 160, 2009.

²⁶ American Nuclear Society, "Radiation Dose Chart," <http://www.ans.org/pi/resources/dosechart/>. This interactive chart permits the user to adjust values to find an approximation of his or her total annual dose.

Table I. Radiation Dose Levels

Dose, mSv	Dose, rem	Source	Comments
1/yr	0.1/yr	(2)	NRC requires its licensees to "limit maximum radiation exposure to individual members of the public" to this level.
6.2/yr	0.62/yr	(1)	Average U.S. individual's total effective radiation dose in 2006; half is from natural background and half is from medical uses and other human activities.
20	2	(7)	Federal Emergency Management Agency and Environmental Protection Agency recommend relocating the public from an area if the expected dose in the first year after a radiological incident is above this level.
50/yr	5/yr	(2)	NRC requires its licensees to "limit occupational radiation exposure to adults working with radioactive materials" to this level.
100	10	(6)	A National Research Council committee defines "low dose" of certain types of ionizing radiation, such as gamma rays, as this level or below.
0-250	0-25	(3)	For an "acute" (i.e., received over a short time) whole-body external dose of ionizing radiation, "No detectable clinical effects; small increase in risk of delayed cancer and genetic effects."
250	25	(4)	Japan raised the permitted dose for emergency workers at the Fukushima Daiichi NPP from 100 mSv/10 rem to this level.
500	50	(5)	For an acute whole-body external dose of ionizing radiation, "blood count changes."
1,000-2,000	100-200	(3)	For an acute whole-body external dose of ionizing radiation, "Minimal symptoms; nausea and fatigue with possible vomiting; reduction in [certain white blood cells], with delayed recovery."
2,000-3,000	200-300	(3)	For an acute whole-body external dose of ionizing radiation, "Nausea and vomiting on first day; following latent period of up to 2 weeks, symptoms (loss of appetite and general malaise) appear but are not severe; recovery likely in about 3 months unless complicated by previous poor health."
3,200-3,600	320-360	(5)	Half the population exposed to an acute whole-body external dose of ionizing radiation will die within 60 days despite receiving minimal supportive care.
3,500-5,000	350-500	(2)	NRC believes that half the population receiving this dose in a few hours or less would die within 30 days.
8,000	800	(5)	100% mortality, despite best available treatment, for people receiving this external dose of whole-body ionizing radiation.

Sources: (1) National Council on Radiation Protection and Measurement, "Ionizing Radiation Exposure of the Population of the United States," report no. 160, 2009, p. 11. (2) U.S. Nuclear Regulatory Commission. "Fact Sheet on Biological Effects of Radiation," January 2011, <http://www.nrc.gov/reading-rm/doc-collections/fact-sheets/bio-effects-radiation.html>, and 10 CFR 20. (3) Dade Moeller, *Environmental Health*, revised edition, Cambridge, Harvard University Press, 1997, p. 250. (4) Keith Bradsher and Hiroko Tabuchi, "50 Workers Bravely Stay at Troubled Japan Reactors," *New York Times*, March 16, 2011. (5) Princeton University, Environmental Health and Safety. "Open Source Radiation Safety Training, Module 3: Biological Effects," <http://web.princeton.edu/sites/ehs/osradtraining/biologicaleffects/page.htm>, adapted from National Council on Radiation Protection and Measurements, Report No. 98, "Guidance on Radiation Received in Space Activities," Bethesda, MD, 1989. (6) National Research Council, Committee to Assess Health Risks from Exposure to Low Levels of Ionizing Radiation, "Health Risks from Exposure to Low Levels of Ionizing Radiation," BEIR [Biological Effects of Ionizing Radiation] VII Phase 2, p. 2, http://www.nap.edu/openbook.php?record_id=11340&page=1 and click on PDF Summary. (7) U.S. Environmental Protection Agency. Office of Radiation Programs. *Manual of Protective Action Guides and Protective Actions for Nuclear Incidents*, revised 1991 (second printing, May 1992), p. 4-4, <http://www.epa.gov/radiation/docs/er/400-r-92-001.pdf>, and Federal Emergency Management Agency, "Planning Guidance for Protection and Recovery Following Radiological Dispersal Device (RDD) and Improvised Nuclear Device (IND) Incidents," 73 *Federal Register* 45034, August 1, 2008.

External v. Internal Exposure: Effective Dose

The health risks of ionizing radiation can occur as a result of both external and internal exposure. External exposure is almost exclusively from radioactive material that emits gamma radiation, which is very penetrating and, at higher energies, can only be stopped by a thick layer of lead or concrete. External sources of gamma radiation produce a whole-body exposure. Importantly, the level of exposure to gamma radiation falls off sharply with distance from the source. Cesium-137 (¹³⁷Cs), which has a half-life of 30 years, is the most common source of gamma radiation from nuclear weapons tests and reactor accidents.

Alpha and beta particles outside the body are typically not a source of external exposure. Alpha particles travel only a few centimeters through the air and cannot penetrate clothing or the outermost dead layer of skin. Beta particles, composed of electrons or positrons, can travel at most several feet through the air and penetrate to the live layer of skin causing burns (as happened to workers at Chernobyl). But they too are blocked by radiation suits.

Internal radiation exposure occurs through the inhalation of airborne radioactive material or the ingestion of contaminated food and drink. The potential for harm depends on the type and quantities of radioactive material taken in and the length of time they remain in the body. As already noted, isotopes that emit alpha particles present a greater hazard than those that emit beta particles and gamma radiation. In addition, the fate of the radioactive material depends on its chemical identity. For example, Strontium-90 (⁹⁰Sr), which is chemically similar to calcium and emits beta particles, accumulates in bone and can cause leukemia and bone cancer.

Iodine-131 (¹³¹I), another beta emitter, tends to accumulate in the thyroid gland, where it is used in the synthesis of thyroid hormones. Beta radiation from iodine-131 damages the surrounding cells and increase the risk of non-malignant thyroid disease and thyroid cancer. Iodine-131 from radioactive fallout accumulates on grass and leafy crops and becomes concentrated in the milk of cows and goats that feed on the contaminated vegetation. Children who drink the contaminated milk are especially at risk because they are still growing and their thyroid glands are very active. However, iodine-131 has a half-life of only 8 days, so it decays relatively quickly on the ground, in the food chain, and in the body.

Iodine-131 posed the most important health risk following the incident at the Chernobyl nuclear power plant in 1986. According to the International Atomic Energy Agency:

The main consequence of the Chernobyl accident is thyroid cancer in children, some of whom were not yet born at the time of the accident. Following the vapour [sic] explosion and fire at the Chernobyl reactor, radioactive iodine was released and spread in the surrounding area. Despite measures taken, children in southern Belarus and northern Ukraine, were exposed to radiation in the weeks following the accident, particularly by consuming milk from pastured cows and leafy vegetables that had been contaminated with radioactive iodine.²⁷

Unlike whole-body external exposures, the exposure from ingested or inhaled radioactive material is often limited to certain parts of the body or even specific organs. Radiation scientists

²⁷ International Atomic Energy Agency, "Thyroid Cancer Effects in Children," staff report, August 2005, <http://www.iaea.org/newscenter/features/chernobyl-15/thyroid.shtml>.

are able to calculate a whole-body equivalent dose, or *effective dose*, for partial-body exposures. These amounts can be summed with external exposure to calculate a total dose.

Acute Health Effects v. Long-Term Cancer Risk

The health effects of ionizing radiation exposure depend on the total dose and dose rate. Radiation health experts distinguish between (1) acute, or short-term, effects such as radiation sickness that are associated with relatively high doses over a short period; and (2) long-term effects such as increased lifetime cancer risk that result from chronic exposure to low-levels of radiation. Short-term health effects are typically seen in workers and others in close proximity to nuclear weapons tests and accidents, while the long-term cancer risks apply to the general population. Scientists calculate the cancer risk from radiation exposure using data from epidemiological and other studies, such as those following the health outcomes of the Japanese atomic bomb survivors. According to the International Commission on Radiological Protection (ICRP), the lifetime risk of contracting a fatal cancer from chronic exposure to low-level radiation exposure is 0.05 per sievert, or 1 in 20 per sievert (i.e., 1 in 2,000 per rem). The ICRP and NCRP both recommend an annual exposure limit of 1 mSv (100 mrem) for members of the general population. An individual that received that much annual exposure over a 70-year lifetime (a total of 70 mSv, or 7 rem) would, as a result, have an increased risk of cancer death of approximately 1 in 300.

Table 1 summarizes the health effects of exposure to various acute doses of ionizing radiation. For comparison, the table also includes the current exposure standards for the general public and workers, and the average background radiation exposure in the United States.

Potassium Iodide

There is considerable interest in potassium iodide (also referred to by its chemical formula, KI) tablets to protect against thyroid cancer. These tablets contain non-radioactive iodine-127, the same type used in iodized table salt, to saturate the thyroid with iodine. Once the thyroid is saturated, it cannot absorb more of any isotope of iodine, including iodine-131. As a result, potassium iodide tablets, taken shortly *before* exposure to iodine-131, offer protection from thyroid cancer. The protection is of limited duration, however, and potassium iodide protects only the thyroid only against radioactive iodine. It does not protect against any other radioactive material or against radiation in general. Nor is there value in taking potassium iodide as a precautionary measure unless iodine-131 is expected to be present. As the next section of this report discusses, the amount of radioactive material that has reached the United States from the Japanese nuclear reactor incident is minuscule. Accordingly, the website of the Centers for Disease Control and Prevention, accessed on March 22, said, "At this time, CDC does not recommend that people in the United States take KI or iodine supplements in response to the nuclear power plant explosions in Japan. You should only take KI on the advice of emergency management officials, public health officials, or your doctor. There are health risks associated with taking KI."²⁸ Further, "Some general side effects caused by KI may include intestinal upset, allergic reactions (possibly severe), rashes, and inflammation of the salivary glands."²⁹

²⁸ U.S. Department of Health and Human Services. Centers for Disease Control and Prevention. "Emergency Preparedness and Response: Radiation and Potassium Iodide (KI)," <http://www.bt.cdc.gov/radiation/japan/ki.asp>.

²⁹ U.S. Department of Health and Human Services. Centers for Disease Control and Prevention. "Emergency (continued...)"

The Japanese Situation

Understanding dose and its health effects casts light on the Japanese situation. The (U.S.) Committee to Assess Health Risks from Exposure to Low Levels of Ionizing Radiation of the National Research Council reported on the health risks from a certain type of radiation that includes gamma rays and x-rays. It considered doses below about 100 mSv (10 rem) to be low doses. The committee found that many factors “make it difficult to characterize the effects of ionizing radiation at low levels,” and that “at doses less than 40 times the average yearly background exposure (100 mSv), statistical limitations make it difficult to evaluate cancer risk in humans.” To develop an estimate of risk, the committee constructed a “lifetime risk model [that] predicts that approximately 1 person in 100 would be expected to develop cancer (solid cancer or leukemia) from a dose of 0.1 Sv [10 rem] above background.” For comparison, about 42 percent of the population will be diagnosed with cancer in their lifetimes.³⁰ At Fukushima Daiichi NPP,

The workers are being asked to make escalating—and perhaps existential—sacrifices that so far are being only implicitly acknowledged: Japan’s Health Ministry said Tuesday that it was raising the legal limit on the amount of radiation exposure to which each worker could be exposed, to 250 millisieverts from 100 millisieverts, five times the maximum exposure permitted for nuclear plant workers in the United States.

The change means that workers can now remain on site longer, the ministry said. “It would be unthinkable to raise it further than that, considering the health of the workers,” the health minister, Yoko Komiyama, said at a news conference.³¹

An acute dose of 250 mSv (25 rem) is the upper threshold at which dose is unlikely to cause noticeable health effects, but it increases the risk of cancer. Based on the National Research Council report, 25 of 1,000 people would be expected to develop solid cancers or leukemia as a result of receiving this dose. Workers exposed to this dose will probably not be allowed to be exposed to additional radiation above background for at least a year to give their bodies time to repair cell damage.

Beyond the Fukushima Daiichi NPP, the external doses reported fall far below the low-dose threshold of the U.S. Nuclear Regulatory Commission (NRC). Japan’s Ministry of Education, Culture, Sports, Science and Technology reported dose readings from 80 monitoring stations between 25 and 60 km from the Fukushima Daiichi NPP.³² On March 20, almost all the readings were less than 15 microsieverts per hour. (One millisievert = 1,000 microsieverts; 1 microsievert = 0.1 millirem.) At a rate of 15 microsieverts per hour, it would take 278 days to accumulate a dose of 10 rem. At the highest rate reported, 110 microsieverts per hour, it would take 38 days to accumulate that dose. Staying inside an uncontaminated building would reduce exposure

(...continued)

Preparedness and Response: Potassium Iodide (KI),” <http://emergency.cdc.gov/radiation/ki.asp#med>.

³⁰ National Research Council. Committee to Assess Health Risks from Exposure to Low Levels of Ionizing Radiation. *Health Risks from Exposure to Low Levels of Ionizing Radiation*, Washington, National Academies Press, 2006, pp. 1, 2, 7, 8, http://www.nap.edu/openbook.php?record_id=11340&page=1, and click on “pdf summary.”

³¹ Keith Bradsher and Hiroko Tabuchi, “50 Workers Bravely Stay at Troubled Japan Reactors,” *New York Times*, March 16, 2011.

³² Japan. Ministry of Education, Sports, Culture, Science and Technology (MEXT), “Readings at Monitoring Post out of 20 Km Zone of Fukushima Dai-ichi NPP [Nuclear Power Plant],” news release, as of 19:00 March 20, 2011, http://www.mext.go.jp/component/english/_icsFiles/afieldfile/2011/03/20/1303972_2019.pdf.

considerably, and short-lived radionuclides like iodine-131 (half-life, 8 days) would decay significantly during a month or more, sharply reducing the dose they produce. On the other hand, a larger release of radionuclides would be expected to increase dose, and cesium-137 (half-life, 30 years) decays much more slowly than iodine-131, so it would contribute to dose for many decades.

Given the increase in thyroid cancer as a result of the Chernobyl disaster, a major concern in Japan is minimizing the risk of thyroid cancer. This is especially important for children. At Chernobyl, as noted earlier, ingestion of radioactive iodine-131 resulted mainly from drinking milk from cows that ate contaminated feed, and from eating leafy greens. Accordingly, Japanese authorities have tested spinach, other vegetables, and milk for iodine-131, and found elevated levels. In response, on March 23 Prime Minister Naoto Kan restricted the distribution and consumption of spinach, cabbage, broccoli, and other vegetables in Fukushima Prefecture, and restricted the distribution of fresh raw milk and parsley produced in Ibaraki Prefecture.³³ In addition, authorities have reportedly found traces of radioactive iodine in drinking water in Tokyo. On March 23,

Ei Yoshida, head of water purification for the Tokyo water department, said ... that infants in Tokyo and surrounding areas should not drink tap water. He said iodine-131 had been detected in water samples at a level of 210 becquerels per liter, about a quart. The recommended limit for infants is 100 becquerels per liter. For adults, the recommended limit is 300 becquerels. ... The Health Ministry said in a statement that it was unlikely that there would be negative consequences to infants who did drink the water, but that it should be avoided if possible and not be used to make infant formula.³⁴

However, by March 24 the level was reported to be 79 becquerels per liter, and by March 27 had diminished to the point where two readings showed no radiation and one showed 27 becquerels per liter.³⁵

Author Contact Information

Jonathan Medalia
Specialist in Nuclear Weapons Policy
jmedalia@crs.loc.gov, 7-7632

³³ Japan. Policy Planning and Communication Division. Inspection and Safety Division. Department of Food Safety. "Restriction of Distribution and/or Consumption of Foods Concerned in Fukushima and Ibaraki Prefectures (in Relation to the Accident at Fukushima Nuclear Power Plant)," March 23, 2011, <http://www.mhlw.go.jp/stf/houdou/2r98520000015wun-att/2r98520000015xym.pdf>.

³⁴ David Jolly and Denise Grady, "Tokyo Says Radiation in Water Puts Infants at Risk," *New York Times*, March 23, 2010.

³⁵ David Jolly, "Radiation in Tokyo's Water Has Dropped, Japan Says," *New York Times*, March 24, 2011, and David Jolly, Hiroko Tabuchi, and Keith Bradsher, "High Radiation Found in Water at Japan Plant," *New York Times*, March 28, 2011, p. 11.

Acknowledgments

The Nuclear Regulatory Commission provided technical comments on this report.

From: Shane, Raeann
Sent: Friday, April 01, 2011 1:41 PM
To: Droggitis, Spiros
Subject: RE: CRS draft document on Japanese event - for your awareness

They went through me. I asked them yesterday to send us a copy of it, Cyndi beat me to the punch....

From: Droggitis, Spiros
Sent: Friday, April 01, 2011 1:06 PM
To: OCA Distribution
Subject: FW: CRS draft document on Japanese event - for your awareness

Raeann: Were these the ones coordinated through you or did CRS go directly to Cyndi?

From: Jones, Cynthia
Sent: Friday, April 01, 2011 1:00 PM
To: Wiggins, Jim; Evans, Michele; Rothschild, Trip; Brenner, Eliot; Hayden, Elizabeth; Leeds, Eric; Boger, Bruce; Uhle, Jennifer; Sheron, Brian; Droggitis, Spiros; Merzke, Daniel; Virgilio, Martin; Weber, Michael; Burnell, Scott; McDermott, Brian; Morris, Scott
Subject: CRS draft document on Japanese event - for your awareness

FYI-

Last weekend amongst all the other requests, we (PMT and myself) were requested to review and assist the Congressional Research Service (CRS) on their draft document on the Japanese event. I just rec'd a copy from them, for your awareness.

The RST (Rx Safety Team) had no comments, but we had a lot, and I think it showed an improved production in this version. Please share with your staff (I already passed along to RST & PMT).

I expect that CRS will share with Congress shortly.

Cyndi

From: Jonathan Medalia [mailto:JMEDALIA@crs.loc.gov]
Sent: Friday, April 01, 2011 12:01 PM
To: Jones, Cynthia
Subject: RE: your phone message on CRS draft document

I'm updating the report to add an appendix with useful links, and of course have included a couple from NRC. Thanks again for your good work.
Jon

>>> "Jones, Cynthia" <Cynthia.Jones@nrc.gov> 4/1/2011 11:59 AM >>>
Thanks Jon

From: Jonathan Medalia [mailto:JMEDALIA@crs.loc.gov]
Sent: Thursday, March 31, 2011 6:31 PM
To: Jones, Cynthia

Cc: Sun, Casper; LIA06 Hoc; Hoc, PMT12

Subject: Re: your phone message on CRS draft document

Hi Cyndi, Casper, et al.,

Thanks for your comments on my report, Cyndi. I have worked through them and now have the report in good shape. I'll be in touch if I have further questions, but for now I think I'm ok. I've attached the report. You will notice that I acknowledge assistance from NRC, which I greatly appreciate. I will update the report from time to time, so let me know if you have any thoughts, esp. things to add.

Best,

Jon

Jonathan Medalia, Ph.D.

Specialist in Nuclear Weapons Policy

Congressional Research Service

202-707-7632

jmedalia@crs.loc.gov

From: Droggitis, Spiros
Sent: Friday, April 01, 2011 2:46 PM
To: Droggitis, Spiros
Cc: OCA Distribution
Subject: Press Release: NRC Appoints Task Force Members and Approves Charter for Review of Agency's Response to Japan Nuclear Event
Attachments: 11-062.docx



NRC NEWS

U.S. NUCLEAR REGULATORY COMMISSION

Office of Public Affairs

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E-mail: opa.resource@nrc.gov Site: www.nrc.gov

Blog: <http://public-blog.nrc-gateway.gov>

No. 11-062

April 1, 2011

NRC APPOINTS TASK FORCE MEMBERS AND APPROVES CHARTER FOR REVIEW OF AGENCY'S RESPONSE TO JAPAN NUCLEAR EVENT

The Nuclear Regulatory Commission has named six senior managers and staff to its task force for examining the agency's regulatory requirements, programs, processes, and implementation in light of information from the Fukushima Daiichi site in Japan, following the March 11 earthquake and tsunami.

The task force will be led by Dr. Charles Miller, Director of the NRC's Office of Federal and State Materials and Environmental Management Programs. Other task force members are Daniel Dorman, Deputy Director of the Office of Nuclear Material Safety and Safeguards (NMSS); Jack Grobe, Deputy Director of the Office of Nuclear Reactor Regulation (NRR); Gary Holahan, Deputy Director of the Office of New Reactors (NRO); Nathan Sanfilippo, Executive Technical Assistant, Office of the Executive Director for Operations; and Amy Cabbage, Team Leader, NRO.

"The task force will talk to agency technical experts and gather information to conduct a comprehensive review of the information from the events at the Fukushima Daiichi nuclear complex and make recommendations for any improvements needed to our regulatory system," Miller said. "We plan to provide our observations, conclusions and recommendations in a written report that will be made public approximately 90 days after we start our review."

According to the charter, the task force will conduct a near-term review and identify topics for assessment for a longer term review. Initially, the task force will identify potential near-term actions that affect U.S. power reactors, including their spent fuel pools. Areas to be reviewed include station blackout (loss of all A/C power for a reactor), external events that could lead to a prolonged loss of cooling, plant capabilities for preventing or dealing with such circumstances, and emergency preparedness. The task force will draw from ongoing NRC inspections to verify availability of plant equipment, procedures, and other resources currently required for dealing with such events. The task force will also gather information from domestic and international sources while remaining independent of any industry initiatives.

The task force expects to develop recommendations for Commission consideration on whether it should require immediate enhancements at U.S. reactors and any changes to NRC regulations, inspection procedures, and licensing processes.

On May 12 and June 16, the task force plans to brief the Commission in public meetings on the status of the review. Recommendations will be reported in a July 19 Commission meeting, which will be open to the public. The report will also be made available to the public. The task force charter, at the end of this release, will also be available through the NRC's ADAMS electronic document database by entering ML11089A045 under the "Simple Search" tab on this webpage: <http://wba.nrc.gov:8080/ves/>.

Biographical information for the task force members is provided below.

Charles L. Miller has worked at NRC since 1980, has served as the Director of the Office of Federal and State Materials and Environmental Management Programs since 2006. He has held various management positions in offices dealing with safety of nuclear reactors, waste and materials, including nuclear medicine. Miller received a bachelor's degree in engineering from Widener University, a master's and doctorate in chemical engineering from the University of Maryland, and is a registered professional engineer licensed in the District of Columbia.

Daniel H. Dorman has 20 years of service with the NRC and has served as the Deputy Director of the Office of Nuclear Material Safety and Safeguards. During his career at NRC, Dorman also worked in the offices of NRR, Nuclear Regulatory Research (RES), and Nuclear Security and Incident Response (NSIR). Prior to joining the NRC, Dorman served in the U.S. Navy's nuclear power program. He received a bachelor's degree in naval architecture and marine engineering from the Webb Institute of Naval Architecture.

Jack Grobe has worked for the NRC for over 30 years and has served as the Deputy Office Director for Engineering in NRR since 2007. He started as an inspector in the NRC regional office outside Chicago, Illinois, and moved up to chair a number of task force groups including the Davis-Besse Oversight Panel following discovery of the reactor vessel head corrosion and Nuclear Security Special Projects to enhance reactor capabilities to deal with fires or explosions caused by potential malevolent acts. Grobe has a master's degree in bionucleonics and a bachelor's degree in nuclear engineering, both from Purdue University.

Gary M. Holahan has 35 years of service with the NRC and has served as the Deputy Director for NRO since 2006. During his career at the NRC, Holahan has worked in a number of technical and management positions, including nine years as the Director of NRR's Division of Systems Safety and Analysis, and in the Chairman's office where he covered NRC reactor and research programs. Holahan's assignments have also included the Three Mile Island Lessons Learned Task Force, the post-9/11 development of security advisories and orders, and the U.S. - Canada Blackout Report. Mr. Holahan received a bachelor's degree in physics from Manhattan College and a master's degree in nuclear engineering from the Catholic University of America.

Nathan T. Sanfilippo has worked for the NRC for nine years and has served as an Executive Technical Assistant in the Office of the Executive Director for Operations since May 2010. Prior to his current position, he worked in NRR, NRO, and NSIR on nuclear power plants performance assessment, emergency preparedness inspections, new reactor licensing, and aircraft attack mitigation measures. Sanfilippo earned a bachelor's degree in materials science and

engineering and a minor in global business strategies from the Pennsylvania State University, as well as a certificate in legislative studies from the Government Affairs Institute at Georgetown University.

Amy E. Cabbage has worked at the NRC for 22 years and currently serves in NRO as a team leader. Cabbage has extensive experience working on boiling-water reactor system reviews and as the lead project manager for the Economic Simplified Boiling Water Reactor (ESBWR) Design Certification. Cabbage received a bachelor's degree in mechanical engineering from the University of Virginia.

###

News releases are available through a free *listserv* subscription at the following Web address: <http://www.nrc.gov/public-involve/listserver.html>. The NRC homepage at www.nrc.gov also offers a SUBSCRIBE link. E-mail notifications are sent to subscribers when news releases are posted to NRC's website.

CHARTER FOR THE NUCLEAR REGULATORY COMMISSION TASK FORCE TO CONDUCT A NEAR-TERM EVALUATION OF THE NEED FOR AGENCY ACTIONS FOLLOWING THE EVENTS IN JAPAN

Objective

The objective of this task force is to conduct a methodical and systematic review of relevant NRC regulatory requirements, programs, and processes, and their implementation, to recommend whether the agency should make near-term improvements to our regulatory system. This task force will also identify a framework and topics for review and assessment for the longer-term effort.

Scope

The task force review will include the following:

- a. A near-term review to:
 - Evaluate currently available technical and operational information from the events that have occurred at the Fukushima Daiichi nuclear complex in Japan to identify potential or preliminary near-term/immediate operational or regulatory actions affecting domestic reactors of all designs, including their spent fuel pools. The task force will evaluate, at a minimum, the following technical issues and determine priority for further examination and potential agency action:
 - External event issues (e.g. seismic, flooding, fires, severe weather)
 - Station blackout
 - Severe accident measures (e.g., combustible gas control, emergency operating procedures, severe accident management guidelines)
 - 10 CFR 50.54 (hh)(2) which states, "Each licensee shall develop and implement guidance and strategies intended to maintain or restore core cooling, containment, and spent fuel pool cooling capabilities under the circumstances associated with loss of large areas of the plant due to explosions or fire, to include strategies in the following areas: (i) Fire fighting; (ii) Operations to mitigate fuel damage; and (iii) Actions to minimize radiological release." Also known as B.5.b.
 - Emergency preparedness (e.g., emergency communications, radiological protection, emergency planning zones, dose projections and modeling, protective actions)

Develop recommendations, as appropriate, for potential changes to NRC's regulatory requirements, programs, and processes, and recommend whether generic communications, orders, or other regulatory actions are needed.

- b. Recommendations for the content, structure, and estimated resource impact for the longer-term review.

Coordination and Communications

The near-term task force will:

- Solicit stakeholder input as appropriate, but remain independent of industry efforts.
- Coordinate and cooperate where applicable with other domestic and international efforts reviewing the events in Japan for additional insights.
- Provide recommendations to the Commission for any immediate policy issues identified prior to completion of the near-term review.
- Provide recommendations to program offices for any immediate actions not involving policy issues, prior to completion of the near-term review.
- Identify resource implications of near-term actions.
- Consider information gained from Temporary Instruction 2515/183, "Followup to the Fukushima Daiichi Nuclear Station Fuel Damage Events."
- Develop a communications plan.
- Update and brief internal stakeholders, as appropriate.

Expected Product and Schedule

The task force will provide its observations, conclusions, and recommendations in the form of a written report to the Deputy Executive Director for Reactor and Preparedness Programs at the completion of the 90-day near-term review.

During the development of its report, the task force will brief the Commission on the status of the review at approximately the 30- and 60-day points.

The report will be transmitted to the Commission via a SECY paper, and the task force will brief the Commission on the results of the near-term effort at approximately the 90-day point. The report will be released to the public via normal Commission processes.

The task force will recommend a framework for a longer-term review as a part of the near-term report. The longer-term review will begin as soon as the NRC has sufficient technical information from the events in Japan (with a goal of beginning by the end of the near-term review).

Staffing

The task force will consist of the following members:

Leader	Charles Miller	FSME
Senior Managers	Daniel Dorman	NMSS
	Jack Grobe	NRR
	Gary Holahan	NRO
Senior Staff	Amy Cabbage	NRO
	Nathan Sanfilippo	OEDO
Administrative Assistant	Cynthia Davidson	OGC

Additional task force members will be added as needed. For the near-term review, other staff members may be consulted on a part-time basis.

EDO Interface

The task force will keep agency leadership informed on the status of the effort and provide early identification of significant findings. The task force will report to Martin J. Virgilio, Deputy Executive Director for Reactor and Preparedness Programs.

From: Jackson, Deborah
Sent: Friday, April 01, 2011 3:34 PM
To: Moore, Scott; Andersen, James; Schmidt, Rebecca
Cc: Weber, Michael; Brock, Kathryn; Piccone, Josephine; Virgilio, Martin; Lewis, Robert; Cool, Donald
Subject: RE: Committee staff requesting Don Cool.

Scott,

I just returned from the Operations Center. Don is aware of the request and will be available.

Thanks,
Debbie

-----Original Message-----

From: Moore, Scott
Sent: Friday, April 01, 2011 3:13 PM
To: Andersen, James; Schmidt, Rebecca
Cc: Weber, Michael; Brock, Kathryn; Piccone, Josephine; Virgilio, Martin; Lewis, Robert; Cool, Donald; Jackson, Deborah
Subject: RE: Committee staff requesting Don Cool

Thanks, Jim. We note the Committee's request. Don will add value to the testimony. Debbie Jackson, FSME/DILR's Deputy Director, is going to the Operations Center now to let Don know (he's on the 3-11 shift this evening) and so that he can make any necessary arrangements to participate.

Scott
x7875

-----Original Message-----

From: Andersen, James
Sent: Friday, April 01, 2011 2:45 PM
To: Moore, Scott; Lewis, Robert
Cc: Weber, Michael; Brock, Kathryn; Piccone, Josephine; Virgilio, Martin
Subject: FW: Committee staff requesting Don Cool

Scott/Rob, note the committee's request to have Don Cool at the hearing on Wednesday with Marty Virgilio.

Jim Andersen
Deputy AO, TBPM, OEDO
415-1725

From: Borchardt, Bill
Sent: Friday, April 01, 2011 1:12 PM
To: Schmidt, Rebecca
Subject: RE: Committee staff requesting Don Cool

Ok with me

From: Schmidt, Rebecca

Sent: Friday, April 01, 2011 12:49 PM

To: Borchardt, Bill

Subject: Committee staff requesting Don Cool

To sit next to Marty when he testifies on Wednesday. He impressed the staff on the daily phone calls and they are asking for him to discuss the radiation levels and decisionmaking on the 50 mile radius. Is that ok with you? I know it is kinda odd protocol wise, but I don't have a problem with it.

From: Weber, Michael
Sent: Friday, April 01, 2011 4:04 PM
To: Andersen, James
Cc: Brock, Kathryn; Piccone, Josephine; Virgilio, Martin; Moore, Scott; Schmidt, Rebecca; Powell, Amy; Lewis, Robert
Subject: RESPONSE - Committee staff requesting Don Cool

Sounds great! Don is quite a resource. He is an excellent PMT Director. Marty will benefit from having someone like Don there as a resource. I had Trish Milligan and Howard Benowitz with me at Wednesday's House hearing.

-----Original Message-----

From: Andersen, James
Sent: Friday, April 01, 2011 2:45 PM
To: Moore, Scott; Lewis, Robert
Cc: Weber, Michael; Brock, Kathryn; Piccone, Josephine; Virgilio, Martin
Subject: FW: Committee staff requesting Don Cool

Scott/Rob, note the committee's request to have Don Cool at the hearing on Wednesday with Marty Virgilio.

Jim Andersen
Deputy AO, TBPM, OEDO
415-1725

From: Borchardt, Bill
Sent: Friday, April 01, 2011 1:12 PM
To: Schmidt, Rebecca
Subject: RE: Committee staff requesting Don Cool

Ok with me

From: Schmidt, Rebecca
Sent: Friday, April 01, 2011 12:49 PM
To: Borchardt, Bill
Subject: Committee staff requesting Don Cool

To sit next to Marty when he testifies on Wednesday. He impressed the staff on the daily phone calls and they are asking for him to discuss the radiation levels and decisionmaking on the 50 mile radius. Is that ok with you? I know it is kinda odd protocol wise, but I don't have a problem with it.

From: Shane, Raeann
Sent: Friday, April 01, 2011 5:33 PM
To: Spencer, Peter
Cc: Christian, Karen
Subject: RE: followup

Peter:

I talked to Don Cool and he told me that his title has changed from the Org. Chart that I had seen and he is now Sr. Advisor, Radiation Safety and International Liaison.

The relevant guidance documents for emergency response are EPA-400 (link below) and NUREG-0654 and NUREG-0396.

<http://www.epa.gov/rpdweb00/docs/er/400-r-92-001.pdf>

<http://www.nrc.gov/reading-rm/doc-collections/nureqs/staff/sr0654/>

<http://www.nrc.gov/reading-rm/doc-collections/nureqs/staff/sr0396/>

Keep in mind that these documents apply to NRC licensees in the US. The EPA-400 is the main document. I'm hoping to have something on the RASCAL by Monday.

Raeann

From: Spencer, Peter [mailto:Peter.Spencer@mail.house.gov]
Sent: Thursday, March 31, 2011 3:29 PM
To: Shane, Raeann
Cc: Christian, Karen
Subject: RE: followup

Thank you. I appreciate your efforts to be responsive, but I need more information.

1. Can you point to the specific emergency response guidelines (and sections of guidelines) used to determine the 50 mile evacuation limit?
2. Please supply the specific assumptions fed into the computer model results that were provided with the press release. I get all the caveats, I'm asking for the actual assumptions. We can deal over here with how to handle any technical data you provide.

Thanks so much, Peter

From: Shane, Raeann [mailto:Raeann.Shane@nrc.gov]
Sent: Thursday, March 31, 2011 2:30 PM
To: Spencer, Peter
Subject: RE: followup

Peter:

In response to your questions,

1. Dr. Donald A. Cool, is a Sr. Level Advisor for Health Physics, Office of Federal and State Materials and Environmental Management Programs. During the NRC's response to the Japanese event he is serving as a Director of the Protective Measures Team. He was directly involved with the dose modeling.

2. From the Protective Measures Team:

Although the press release identified one of the computer calculations being based on a hypothetical four-reactor site, the source term used in the calculation was the approximate activity available for release from one reactor and two spent fuel pools.

As stated in the press release, these two computer calculations are hypothetical, rough estimates that would not necessarily characterize an actual release. Although the calculation references have TEDE and CDE doses exceeding PAGs beyond 50 miles, these were only two of several cases run. Given that other cases projected PAG doses less than 50 miles and there would be time to extend our recommendations beyond 50 miles, if necessary, the 50 mile recommendation was considered appropriate to protect US citizens.

The NRC had very limited radiation level information at this time. The computer calculations and subsequent protective action decisions were based on conservative assumptions based on limited information and the deteriorating state of several reactors and spent fuel pools.

Seriously degrading conditions at several Daiichi units supported a need to take pre-emptive protective action. The computer calculations helped to provide perspective on possible impacts.

Since communications were limited and there was a large degree of uncertainty about plant conditions at the time, it was difficult to accurately assess the radiological hazard. Computer models used meteorological model data appropriate for the Fukushima Daiichi vicinity. Source terms were based on hypothetical, but not unreasonable estimates of fuel damage, containment, and other release conditions. Subsequent modeling can be correlated with the ground deposition as observed in flyover and other monitoring data. Therefore, prudent (reasonable conservative protective actions made with a predictive approach to limit radiation exposure to US citizens) can be substantiated based on the conditions present and the information known at the time.

3. The attached Fact Sheet on Emergency Preparedness should have the information you are looking for.

If you need anything else please let me know. Things have settled down here a little so I should be able to provide a faster response.

Best regards,
Raeann

From: Spencer, Peter [mailto:Peter.Spencer@mail.house.gov]

Sent: Thursday, March 24, 2011 2:08 PM

To: Shane, Raeann

Cc: Christian, Karen

Subject: followup

Raeann,

Thank you for setting up the call today, the context and explanations were very helpful. By way of follow-up and as discussed:

1. What is Dr. Dan Cool's position in the agency, and role, if any, in the dose modeling?

2. Please supply the assumptions fed into the computer model.

3. Can you point to the specific emergency response guidelines (and sections of guidelines) used to determine the 50 mile evacuation limit? I have an EPA PAG from 1992, but I'm not sure if this is the same document you refer to; also, the NUREG 0728 rev 4 doesn't seem to address the issue of evacuation communication; is there a document that does?

Thanks,

Peter

Peter L. Spencer
Majority Professional Staff
Oversight and Investigations
Committee on Energy and Commerce
U.S. House of Representatives
(202) 225-2927
peter.spencer@mail.house.gov

From: Schmidt, Rebecca
Sent: Friday, April 01, 2011 6:56 PM
To: Sharkey, Jeffrey
Subject: Re: EPW possible hearing

Thanks

From: Sharkey, Jeffrey
To: Schmidt, Rebecca; Batkin, Joshua; Nieh, Ho; Bubar, Patrice; Sosa, Belkys
Cc: Powell, Amy
Sent: Fri Apr 01 18:04:25 2011
Subject: RE: EPW possible hearing

Commissioner Svinicki is in town that week.

From: Schmidt, Rebecca
Sent: Friday, April 01, 2011 2:48 PM
To: Batkin, Joshua; Nieh, Ho; Bubar, Patrice; Sharkey, Jeffrey; Sosa, Belkys
Cc: Powell, Amy
Subject: EPW possible hearing

EPW is looking at the week of May 16th now since the Japan Commission meeting moved to May 12th. Will your Commissioner be available the week of May 16th?

From: Schmidt, Rebecca
Sent: Friday, April 01, 2011 6:58 PM
To: Batkin, Joshua
Cc: Powell, Amy
Subject: Re: Do you have the summary of the japan situation we discussed for senator boxer.
Many thanks

Josh--what are you talking about?

----- Original Message -----

From: Batkin, Joshua
To: Schmidt, Rebecca; Powell, Amy; Coggins, Angela
Sent: Fri Apr 01 17:42:03 2011
Subject: Fw: Do you have the summary of the japan situation we discussed for senator boxer. Many thanks

What are we going to do for this?

Joshua C. Batkin
Chief of Staff
Chairman Gregory B. Jaczko
(301) 415-1820

----- Original Message -----

From: Poirier, Bettina (EPW) <Bettina_Poirier@epw.senate.gov>
To: Batkin, Joshua
Sent: Fri Apr 01 17:12:47 2011
Subject: Do you have the summary of the japan situation we discussed for senator boxer. Many thanks

-----Original Message-----

From: Batkin, Joshua [mailto:Joshua.Batkin@nrc.gov]
Sent: Thursday, March 31, 2011 12:05 PM
To: Dedrick, Kathy (EPW); Poirier, Bettina (EPW)
Subject: He

Just testified before house appropriations that we provided the unredacted SER to Issa and that he disagreed.

Joshua C. Batkin
Chief of Staff
Chairman Gregory B. Jaczko
(301) 415-1820

From: Marshall Shield <corp@myshield.us>
Sent: Saturday, April 02, 2011 11:52 AM
To: Droggitis, Spiros; Powell, Amy; Schmidt, Rebecca
Subject: Nuclear Task Force Disaster Support
Attachments: Nuclear Task Force Disaster Support.docx

Hello Spiros, Amy & Rebecca
This is my 1st Draft
Please contact me
I MUST be sent to Japan: TODAY!

Worldwide Nuclear Plant's

Complete Support

- Advisory
- Consultants
- Training

Prepare: Before a natural
disaster strikes

During: Complete shut
down – to 'Safe'

After: Restore complete

- ⊕ Automation
- ⊕ Computers
- ⊕ Cooling

24/7
Standby

Natural Disasters ~ To Survive: Support

- What the owners/operators/engineers must do to protect their nuclear plants, so they can survive a natural disaster
- Instant response team to support them, available 24/7, anywhere on Planet Earth
- Steps to recover: Power/Computers/Cooling
- Schedule/Steps to provide proper shut down to stable conditions
- Importance to have backup power/water pumps online: 24/7
 - These back up units have to be protected, to preclude their destruction during a natural disaster
- Operations/turnover from disaster situation to shut down/standby
- Source for all hardware/software/systems to help any troubled reactor
- To provide instant support (During Disaster Support) via the fastest transportation available
- Training for Owners*Operators*Engineers*Technicians to ensure a faster/proper recovery process

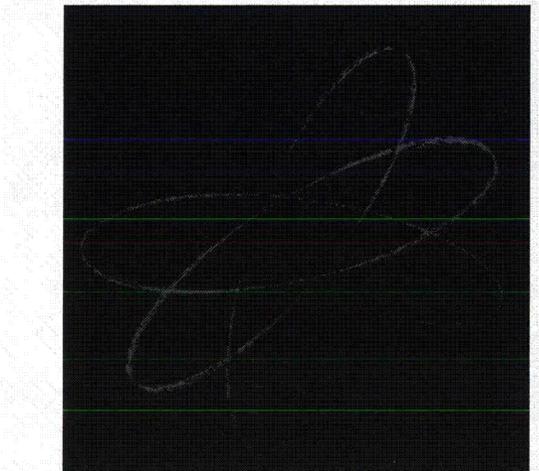
Marshall F. Shield

1202 So. 3rd St. Ste. 5
Mount Vernon, WA 98273-4973

360-336-3057 Office • corp@myshield.us Email

MARSHALL FABIAN SHIELD

WORLD-WIDE NUCLEAR DISASTER PLANS



World Disaster – Nuclear Plants Survival and a request for a Task Force to support/advise/consult all nuclear plant owners/operators/engineers around the world. This handbook is available in all languages for the countries that have/will have nuclear power plants, which includes the procedures described here:

- The owners/operators/engineers must protect their nuclear plants, so they can survive a natural disaster
- Instant response team to support them, available 24/7, anywhere on Planet Earth
- Steps to recover:
 - Power/Computers/Cooling
- Schedule/Steps to provide proper shut down to stable conditions
- Importance to have backup power/water pumps online: 24/7
- These back up units have to be protected, to preclude their destruction during a natural disaster
- Operations/turnover from disaster situation to shut down/standby
- Source for all hardware/software/systems to help any troubled reactor
- To provide instant support (During Disaster Support) via the fastest transportation available
- Training for Owners*Operators*Engineers*Technicians to ensure a faster/proper recovery process

To supply Instant world wide support
To ensure reactors never again go into a
Critical meltdown status!

How many nuclear accidents have
taken place? Could they have all been
stopped before a melt-down?

Who is responsible for the safety of
the Plants/Reactors/Pool:
Personnel/Employees and families
that live in the area surrounding the
reactors?

The owners
The Operators
The Engineers
The Technicians'

Are all responsible!

What has been taking place with
Nuclear disasters has to be stopped!

Nuclear Task Forces MUST be
allowed into any Reactor in the
World to HELP!

NUCLEAR RESPONSE TEAM CONTACT
AVAILABLE AT ALL REACTORS IN THE
WORLD. TO BE SAVED-DISPLAYED AT ALL
REACTOR CONTROL ROOMS

Complete contact information:

Nuclear Response Team

Address

Phone

Fax

Email

Experts:

Nuclear*Computers*Sensors**Monitoring
Electrical*Plumbing*Mechanics

Response time to support a nuclear
accident/disaster

Source for all backup equipment:

Diesel Power Generators

Diesel Water Pumps

All equipment, etc.

Available in all Languages'

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New Engineering projects to save reactors
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flooding & Tidal Waves

Marshall F. Shield
1202 So. 3rd St. Ste. 5
Mount Vernon, Washington USA 98273
Office: 360-336-3057 PST USA
Cellular: 360-661-7041
E: corp@myshield.us

From: NEIGA@nei.org
Sent: Saturday, April 02, 2011 2:16 PM
To: Powell, Amy
Subject: NEI Update as of 12 p.m. EDT, Saturday, April 2



UPDATE AS OF 12:00 P.M. EDT, SATURDAY, APRIL 2

Recovery efforts continue at the Fukushima Daiichi nuclear plant in Japan, as aid pours in from the international nuclear community in the form of technical expertise, protective equipment for workers, storage tanks for contaminated water and other measures.

Today, Tokyo Electric Power Co. (TEPCO) said it has identified one likely source of contaminated water reaching the Pacific Ocean, accounting for some of the radiation readings in seawater samples taken over the past several days. The crack is in a two-meter-deep concrete "pit," or trench, that contains power cables near the reactor 2 water intake. Water measuring between 10 and 20 centimeters deep was found in the pit with radiation levels of more than 1,000 milliSieverts per hour. TEPCO plans to pour concrete to patch the crack while continuing to search for other potential leak paths.

The Nuclear Industrial and Safety Agency says iodine-131 will be diluted in seawater and does not pose a threat to the public. Additionally, iodine-131 has a short half-life—about eight days—and will decay to harmless levels fairly quickly. (See NEI's fact sheet to learn more about the health impacts of iodine-131.)

The Japan Atomic Industrial Forum said TEPCO is obtaining a "massive, hollow floating platform" from Shizuoka City and will use it to store contaminated water from the Fukushima site. The float can store up to 18,000 tons of water. Meanwhile TEPCO and the Japanese government are working to identify safe methods for transporting and storing contaminated water.

NRC Forms Task Force to Review U.S. Safety Measures

The U.S. Nuclear Regulatory Commission announced April 1 that it has formed a task force to identify any potential near-term actions that affect U.S. nuclear power plants, including their used fuel pools. This is part of the NRC's 90-day review of U.S. safety measures in light of what is known to date about the March 11 earthquake and tsunami. The review will encompass station blackout (loss of all offsite electrical power for a reactor), external events that would lead to a prolonged loss of cooling, plant capabilities for preventing or dealing with such circumstances and emergency preparedness. The task force will provide status reports in public meetings May 12 and June 16 and recommendations at a July 19 public meeting.

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Twitter: <http://twitter.com/neiupdates>

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From: Powell, Amy
Sent: Monday, April 04, 2011 6:52 AM
To: Schmidt, Rebecca
Subject: Fw: Nuclear Task Force Disaster Support
Attachments: Nuclear Task Force Disaster Support.docx

What is this? You and I both had email from him Fri too.

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Marshall Shield <corp@myshield.us>
To: Powell, Amy
Sent: Fri Apr 01 17:42:45 2011
Subject: Nuclear Task Force Disaster Support

Amy
I must be sent to Japan TODAY!

From: Powell, Amy
Sent: Monday, April 04, 2011 7:14 AM
To: Schmidt, Rebecca
Subject: Re: Do you have the summary of the japan situation we discussed for senator boxer.
Many thanks

? Only doc we "owed" that I recall was the emergency power, reorg act, which I sent. She's getting daily status...

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

----- Original Message -----

From: Schmidt, Rebecca
To: Batkin, Joshua
Cc: Powell, Amy
Sent: Fri Apr 01 18:58:20 2011
Subject: Re: Do you have the summary of the japan situation we discussed for senator boxer. Many thanks

Josh--what are you talking about?

----- Original Message -----

From: Batkin, Joshua
To: Schmidt, Rebecca; Powell, Amy; Coggins, Angela
Sent: Fri Apr 01 17:42:03 2011
Subject: Fw: Do you have the summary of the japan situation we discussed for senator boxer. Many thanks

What are we going to do for this?

Joshua C. Batkin
Chief of Staff
Chairman Gregory B. Jaczko
(301) 415-1820

----- Original Message -----

From: Poirier, Bettina (EPW) <Bettina_Poirier@epw.senate.gov>
To: Batkin, Joshua
Sent: Fri Apr 01 17:12:47 2011
Subject: Do you have the summary of the japan situation we discussed for senator boxer. Many thanks

-----Original Message-----

From: Batkin, Joshua [mailto:Joshua.Batkin@nrc.gov]
Sent: Thursday, March 31, 2011 12:05 PM
To: Dedrick, Kathy (EPW); Poirier, Bettina (EPW)
Subject: He

Just testified before house appropriations that we provided the unredacted SER to Issa and that he disagreed.

Joshua C. Batkin
Chief of Staff
Chairman Gregory B. Jaczko
(301) 415-1820

From: Schmidt, Rebecca
Sent: Monday, April 04, 2011 7:34 AM
To: Rothschild, Trip
Subject: FW: Testimony
Attachments: Testimony_April6_2011_Rev2 -DPR edits.docx

This is rough but what do you guys think?

From: Marshall, Jane
Sent: Sunday, April 03, 2011 12:29 PM
To: Rihm, Roger; Schmidt, Rebecca
Cc: McDermott, Brian
Subject: Testimony

Here is the testimony with additional information on the incident response program changes that resulted from the TMI experience. If you have any questions, please let me know.

From: Schmidt, Rebecca
Sent: Monday, April 04, 2011 11:41 AM
To: Rothschild, Trip
Subject: FW: Emergency

-----Original Message-----

From: Schmidt, Rebecca
Sent: Monday, April 04, 2011 8:47 AM
To: Powell, Amy; Coggins, Angela; Batkin, Joshua
Subject: FW: Emergency

Response to Annie.....although I called her and told her over the phone, she wanted it in writing.

-----Original Message-----

From: Schmidt, Rebecca
Sent: Monday, April 04, 2011 8:46 AM
To: 'Caputo, Annie (EPW)'
Subject: RE: Emergency

Section 3 of the Reorganization Plan No.1 of 1980 provides the Chairman with substantial additional authority during an emergency. This does not require an "official designation of an emergency." The Commission and staff understand how this authority is executed. The Operations Center went into monitoring mode on March 11th at approximately 0946 in response to the possible impact on the West Coast plants due to potentially high waves. The Chairman has been exercising his emergency authority since that time. The agency will return to a non-emergency status when the situation warrants.

From: Powell, Amy
Sent: Monday, April 04, 2011 10:05 AM
To: Belmore, Nancy
Cc: Schmidt, Rebecca; Shane, Raeann
Subject: April 6th Hearing Notice: House Energy & Commerce, Oversight and Investigations Subcommittee
Attachments: Scan.pdf

Subcommittee staff sent the attached hearing notice on Thursday, but I have not yet seen the letter of invitation. Becky or Raeann may have received it Friday? The attached provides the time (9am on April 6th) and location (2322 Rayburn).

Amy

FRED LIPTON, MICHIGAN
CHAIRMAN

HENRY A. WAXMAN, CALIFORNIA
RANKING MEMBER

ONE HUNDRED TWELFTH CONGRESS
Congress of the United States
House of Representatives
COMMITTEE ON ENERGY AND COMMERCE
2125 RAYBURN HOUSE OFFICE BUILDING
WASHINGTON, DC 20515-6115

Majority (202) 225-2927
Minority (202) 225-3641

March 30, 2011

Committee on Energy and Commerce
Subcommittee on Oversight and Investigations

HEARING NOTICE

The Subcommittee on Oversight and Investigations has scheduled a hearing on Wednesday, April 6, 2011, at 9:00 a.m. in 2322 Rayburn House Office Building. The hearing is entitled "The U.S. Government Response to the Nuclear Power Plant Incident in Japan." Witnesses will be by invitation only.

A bipartisan staff briefing for this hearing will be held on Tuesday, April 5, 2011, at 2:00 p.m. in 2322 Rayburn House Office Building. The Republican staff briefing will follow immediately after the bipartisan briefing in 2322 Rayburn. The Democratic staff briefing will follow immediately after the bipartisan briefing in 2218 Rayburn.

If you have any questions concerning this hearing, please contact Peter Spencer or Karen Christian at extension 5-2927.


CLIFF STEARNS
CHAIRMAN

The Committee on Energy and Commerce endeavors to make its facilities accessible to persons with disabilities. If you are in need of special accommodations, or have any questions regarding special accommodations generally, please contact the Committee in advance of the scheduled event (4 business days notice is requested) at (202) 225-2927; TTY# (202) 225-1904; or 2125 Rayburn House Office Building.

From: Powell, Amy
Sent: Monday, April 04, 2011 12:37 PM
To: Batkin, Joshua; Sharkey, Jeffrey; Bubar, Patrice; Nieh, Ho; Sosa, Belkys
Cc: Schmidt, Rebecca
Subject: Written testimonies, statement for last week's Congressional hearings, resumption of "Congressional News You Can Use"
Attachments: FINAL March 29 Senate Energy written statement.docx; Testimony_EPP_March 30 2011 - final.docx; Final - NRC Written Testimony for 033111 Hearing.docx; Final - Written Testimony for SAC Energy and Water 3 30 11.docx

Hi all –

Attached are the final written testimonies submitted for the Congressional hearings in which NRC participated last week. We had more hearings last week than we had all of last fiscal year! To recap, these hearings were:

Wednesday, March 30, House Transportation and Infrastructure Subcommittee on Economic Development, Public Buildings, and Emergency Management
Emergency management, response by Federal agencies
NRC witness: Mike Weber

Wednesday, March 30, Senate Appropriations Energy and Water Subcommittee
Nuclear safety in light of events in Japan
NRC witness: Chairman Jaczko

Thursday, March 31, House Appropriations Energy and Water Subcommittee
FY12 Budget Request
NRC witness: Chairman Jaczko

Additionally, Bill Borchardt participated in a public briefing for members of the Senate Energy and Natural Resources Committee on Tuesday, March 29. His final written statement for this event is attached.

As you might expect, more hearings are on the horizon. This week, Marty Virgilio will testify before the House Energy and Commerce Committee, Subcommittee on Oversight and Investigations on Wednesday, April 6th on "US Government Response to the Nuclear Power Plant Incident in Japan." The draft testimony is currently up with your offices for review and comment. Thanks so much for working with us once again on a quick-turnaround request.

On April 12th, the Senate Environment and Public Works Committee plans to hold a hearing with Chairman Jaczko as a witness to update them on events in Japan and the US government response. Per Becky's recent e-mail to you exploring dates for your Commissioners, EPW is also planning to have the full Commission in for a hearing in May.

This week, OCA will resume distributing "Congressional News You Can Use" with an expanded edition to capture activities since the beginning of the events in Japan and as well as a look ahead. We look forward to resuming the typical weekly production and distribution of the News.

Amy

Amy Powell
Associate Director
U. S. Nuclear Regulatory Commission

Office of Congressional Affairs
Phone: 301-415-1673

**STATEMENT OF R. WILLIAM BORCHARDT
EXECUTIVE DIRECTOR FOR OPERATIONS
UNITED STATES NUCLEAR REGULATORY COMMISSION
TO THE COMMITTEE ON ENERGY AND NATURAL RESOURCES
UNITED STATES SENATE**

**NRC RESPONSE TO RECENT NUCLEAR EVENTS IN JAPAN AND THE CONTINUING
SAFETY OF THE U.S. COMMERCIAL NUCLEAR REACTOR FLEET**

MARCH 29, 2011

The staff of the U.S. Nuclear Regulatory Commission is deeply saddened by the tragedy in Japan. I and many of my colleagues on the NRC staff have had many years of very close and personal interaction with our regulatory counterparts and we would like to extend our condolences to them.

Introduction

The NRC is mindful that our primary responsibility is to ensure the adequate protection of the public health and safety of the American people. We have been very closely monitoring the activities in Japan and reviewing all currently available information. Review of this information, combined with our ongoing inspection and licensing oversight, allows us to say with confidence that the U.S. plants continue to operate safely. There has been no reduction in the licensing or oversight function of the NRC as it relates to any of the U.S. licensees.

We have a long history of conservative regulatory decision-making. We have been using risk insights to help inform our regulatory process, and, over more than 35 years of civilian nuclear power in this country, we have never stopped making improvements to our regulatory framework as we learn from operating experience.

Notwithstanding the very high level of support being provided to respond to events in Japan, we continue to maintain our focus on our domestic responsibilities.

I'd like to begin with a brief overview of our immediate and continuing response. I then want to spend the bulk of my time discussing the reasons for our confidence in the safety

of the U. S. commercial nuclear reactor fleet, and the path forward that we will take to ensure we learn any lessons we need to from events in Japan.

The NRC's immediate and Continuing Response to Events in Japan

On Friday, March 11th an earthquake hit Japan, resulting in the shutdown of more than 10 reactors. From what we know now, it appears possible that the reactors' response to the earthquake went according to design. The ensuing tsunami, however, appears to have caused the loss of normal and emergency AC power to the six units at the Fukushima Daiichi site; it is those six units that have received the majority of our attention since that time. Units One, Two, and Three at the site were in operation at the time of the earthquake. Units Four, Five, and Six were in previously scheduled outages.

Shortly after 4:00 AM EDT on Friday, March 11th, the NRC Emergency Operations Center made the first call, informing NRC management of the earthquake and the potential impact on U.S. plants. We went into the monitoring mode at the Emergency Operations Center and the first concern for the NRC was possible impacts of the tsunami on U.S. plants and radioactive materials on the West Coast, and in Hawaii, Alaska, and U.S. Territories in the Pacific.

On that same day, we began interactions with our Japanese regulatory counterparts and dispatched two experts to help at the U.S. embassy in Japan. By Monday, we had dispatched a total of 11 staff to Japan. We have subsequently rotated in additional staff to continue our on-the-ground assistance in Japan. The areas of focus for this team are: 1) to assist the Japanese government with technical support as part of the USAID response; and 2) to support the U.S. ambassador. While our focus now is on helping Japan in any way that we can, the experience will also help us assess the implications for U.S. citizens and the U.S. reactor fleet in as timely a manner as possible.

We have an extensive range of stakeholders with whom we have ongoing interaction,

including the White House, Congressional staff, our state regulatory counterparts, a number of other federal agencies, and international regulatory bodies around the world.

The NRC response in Japan and our Emergency Operations Center continue with the dedicated efforts of over 250 NRC staff on a rotating basis. The entire agency is coordinating and pulling together in response to this event so that we can provide assistance to Japan while continuing the normal activities necessary to fulfill our domestic responsibilities.

Let me also just note here in concluding this section of my remarks that the U.S. government has an extensive network of radiation monitors across this country. Monitoring equipment at nuclear power plants and in the U. S. Environmental Protection Agency's (EPA) system has not identified any radiation levels of concern in this country. In fact, natural background radiation from sources such as rocks, the sun, and buildings, is 100,000 times more than doses attributed to any level of the radiation from this event that has been detected in the U.S. to date. Therefore, we feel confident, based on current data, that there is no reason for concern in the United States regarding radioactive releases from Japan.

Continuing Confidence in the Safety of U.S. Nuclear Power Plants

I will now turn to the factors that assure us of ongoing domestic reactor safety. We have, since the beginning of the regulatory program in the United States, used a philosophy of Defense-in-Depth, which recognizes that nuclear reactors require the highest standards of design, construction, oversight, and operation, and does not rely on any single layer for protection of public health and safety. We begin with designs for every individual reactor in this country that take into account site-specific factors and include a detailed evaluation for any natural event, such as earthquakes, tornadoes, hurricanes, floods, and tsunamis, as they relate to that site.

There are multiple physical barriers to radiation in every reactor design. Additionally, there are both diverse and redundant safety systems that are required to be maintained in

operable condition and frequently tested to ensure that the plant is in a high condition of readiness to respond to any scenario.

We have taken advantage of the lessons learned from previous operating experience to implement a program of continuous improvement for the U.S. reactor fleet. We have learned from experience across a wide range of situations, including most significantly, the Three Mile Island accident in 1979. As a result of those lessons learned, we have significantly revised emergency planning requirements and emergency operating procedures. We have addressed many human factors issues regarding how control room employees operate the plant, added new requirements for hydrogen control to help prevent explosions inside of containment, and created requirements for enhanced control room displays of the status of pumps and valves.

The NRC has a post-accident sampling system that enables the monitoring of radioactive material release and possible fuel degradation. One of the most significant changes after Three Mile Island was expansion of the Resident Inspector Program, which has at least two full-time NRC inspectors on site at each nuclear power plant. These inspectors have unfettered access to all licensees' activities.

As a result of operating experience and ongoing research programs, we have developed requirements for severe accident management guidelines. These are components and procedures developed to ensure that, in the event all of the above precautions failed and a severe accident occurred, the plant would still protect public health and safety. The requirements for severe accident management have been in effect for many years and are frequently evaluated by the NRC inspection program.

As a result of the events of September 11, 2001, we identified important pieces of equipment that, regardless of the cause of a significant fire or explosion at a plant, we want licensees to have available and staged in advance, as well as new procedures, training requirements, and policies that would help deal with a severe situation.

Our program of continuous improvement based on operating experience will now include evaluation of the significant events in Japan as well as what we can learn from them. We already have begun enhancing inspection activities through temporary instructions to our inspection staff, including the resident inspectors and the region-based inspectors in our four Regional offices, to look at licensees' readiness to deal with both the design basis accidents and the beyond-design basis accidents. The information that we gather will be used to evaluate the industry's readiness for similar events, and will aid in our understanding of whether additional regulatory actions need to be taken in the immediate term.

We have also issued an information notice to the licensees to make them aware of the events in Japan, and the kinds of activities we believe they should be engaged in to verify their readiness. Specifically, we have requested them to verify that their capabilities to mitigate conditions that result from severe accidents, including the loss of significant operational and safety systems, are in effect and operational. Licensees are verifying the capability to mitigate a total loss of electric power to the nuclear plant. They also are verifying the capability to mitigate problems associated with flooding and the resulting impact on systems both inside and outside of the plant. Also, licensees are confirming the equipment that is needed is in place for the potential loss of equipment due to seismic events appropriate for the site, because each site has its own unique seismic profiles.

During the past 20 years, there have been a number of new rulemakings that have enhanced the domestic fleet's preparedness against some of the problems we are seeing in Japan. The "station blackout" rule requires every plant in this country to analyze what the plant response would be if it were to lose all alternating current so that it could respond using batteries for a period of time, and then have procedures in place to restore alternating current to the site and provide cooling to the core.

The hydrogen rule requires modifications to reduce the impacts of hydrogen

generated for beyond-design basis events and core damage. There are equipment qualification rules that require equipment, including pumps and valves, to remain operable under the kinds of environmental temperature and radiation conditions that you would see under a design basis accident. With regard to the type of containment design used by the most heavily damaged plants in Japan, the NRC has had a Boiling Water Reactor Mark I Containment Improvement Program since the late 1980s, which has required installation of hardened vent systems for containment pressure relief, as well as enhanced reliability of the automatic depressurization system.

The final factor I want to mention with regard to our belief in the ongoing safety of the U.S. fleet is the emergency preparedness and planning requirements in place that provide ongoing training, testing, and evaluations of licensees' emergency preparedness programs. In coordination with our federal partner, the Federal Emergency Management Administration (FEMA), these activities include extensive interaction with state and local governments, as those programs are evaluated and tested on a periodic basis.

The Path Ahead

Beyond the initial steps to address the experience from the events in Japan, the Chairman, with the full support of the Commission, directed the NRC staff to establish a senior level agency task force to conduct a methodical and systematic review of our processes and regulations to determine whether the agency should make additional improvements to our regulatory system and make recommendations to the Commission for its policy direction. This activity will have both near-term and longer-term objectives.

For the near term effort, we are beginning a 90-day review. This review will evaluate all of the currently available information from the Japanese events to identify immediate or near-term operational or regulatory issues potentially affecting the 104 operating reactors in the U.S., including their spent fuel pools. Areas of investigation will include the ability to

protect against natural disasters, response to station blackouts, severe accidents and spent fuel accident progression, radiological consequence analysis, and severe accident management issues regarding equipment. Over this 90-day period, we will develop recommendations, as appropriate, for changes to inspection procedures and licensing review guidance, and recommend whether generic communications, orders, or other regulatory requirements are needed.

This 90-day effort will include a 30-day "Quick Look Report" to the Commission to provide a snapshot of the regulatory response and the condition of the U.S. fleet based on information we have available at that time. Preparing a "Quick Look Report" will also ensure that the Commission is both kept informed of ongoing efforts and prepared to resolve any policy recommendations that surface. I believe we will have limited stakeholder involvement in the first 30 days to accomplish this. However over the 90-day and longer-term efforts we will seek additional stakeholder input. At the end of the 90-day period, a report will be provided to the Commission and to the public. The task force's longer-term review will begin as soon as the NRC has sufficient technical information from the events in Japan.

The task force will evaluate all technical and policy issues related to the event to identify additional potential research, generic issues, changes to the reactor oversight process, rulemakings, and adjustments to the regulatory framework that should be pursued by the NRC. We also expect to evaluate potential interagency issues, such as emergency preparedness, and examine the applicability of any lessons learned to non-operating reactors and materials licensees. We expect to seek input from stakeholders during this process. A report with appropriate recommendations will be provided to the Commission within 6 months of the start of this evaluation. Both the 90-day and final reports will be made publicly available in accordance with normal Commission processes.

Conclusion

In conclusion, I want to reiterate that we continue to make our domestic responsibilities for licensing and oversight of the U.S. licensees our top priority and that the U.S. plants continue to operate safely. In light of the events in Japan, there is a near-term evaluation of their relevance to the U.S. fleet underway, and we are continuing to gather the information necessary for us to take a longer, more thorough look at the events in Japan and their lessons for us. Based on these efforts, we will take all appropriate actions necessary to ensure the continuing safety of the U.S. fleet.

WRITTEN STATEMENT
BY GREGORY B. JACZKO, CHAIRMAN
UNITED STATES NUCLEAR REGULATORY COMMISSION
TO THE
APPROPRIATIONS COMMITTEE
SUBCOMMITTEE ON ENERGY AND WATER
UNITED STATES SENATE
MARCH 30, 2011

Chairman Feinstein, Ranking Member Alexander, and Members of the Subcommittee, I appreciate the opportunity to appear before you to address the response of the United States Nuclear Regulatory Commission (NRC) to the recent tragic events in Japan. People across the country and around the world who have been touched by the magnitude and scale of this disaster are closely following the events in Japan and the repercussions in this country and in other countries.

I traveled to Japan over the past weekend, and just returned yesterday. I wanted to convey a message of support and cooperation to our Japanese counterparts there and to assess the current situation. I also met with senior Japanese government and TEPCO officials, and consulted with our NRC team of experts who are in Japan as part of our assistance effort.

I would first like to reiterate my condolences to all those who have been affected by the earthquake and tsunami in Japan. Our hearts go out to all who have been dealing with the aftermath of these natural disasters, and we are mindful of the long and difficult road they will face in recovering. We know that the people of Japan are resilient and strong, and we have every confidence that they will come through this horrific time and move forward, with resolve, to

rebuild their vibrant country. Our agency stands together with the people of Japan at this most difficult and challenging time.

The NRC is an independent agency, with approximately 4000 staff. We play a critically important role in protecting the American people and the environment. Our agency sets the rules by which commercial nuclear power plants operate, and nuclear materials are used in thousands of academic, medical and industrial settings in the United States. We have at least two resident inspectors who work full-time at every nuclear plant in the country, and we are proud to have world-class scientists, engineers and professionals representing nearly every discipline.

Since Friday, March 11, when the earthquake and tsunami struck, the NRC's headquarters 24-hour Emergency Operations Center has been fully activated, with staffing augmented to monitor and analyze events at nuclear power plants in Japan. At the request of the Japanese government, and through the United States Agency for International Development (USAID), the NRC sent a team of its technical experts to provide on-the-ground support, and we have been in continual contact with them. Within the United States, the NRC has been working closely with other Federal agencies as part of our government's response to the situation.

During these past several weeks, our staff has remained focused on our essential safety and security mission. I want to recognize their tireless efforts and their critical contributions to the U.S. response to assist Japan. In spite of the evolving situation, the long hours, and the intensity of efforts over the past week, NRC staff has approached their responsibilities with dedication, determination and professionalism, and I am incredibly proud of their efforts. The American people also can be proud of the commitment and dedication within the Federal workforce, which is exemplified by our staff every day.

The NRC's primary responsibility is to ensure the adequate protection of the public health and safety of the American people. Toward that end, we have been very closely monitoring the activities in Japan and reviewing all currently available information. Review of this information, combined with our ongoing inspection and licensing oversight, gives us confidence that the U.S. plants continue to operate safely. To date, there has been no reduction in the licensing or oversight function of the NRC as it relates to any of the U.S. licensees.

Our agency has a long history of conservative regulatory decision-making. We have been intelligently using risk insights to help inform our regulatory process, and, for more than 35 years of civilian nuclear power in this country, we have never stopped requiring improvements to plant designs, and modifying our regulatory framework as we learn from operating experience.

Despite the very high level of support being provided by the NRC in response to the events in Japan, we continue to remain focused on our domestic responsibilities.

I'd like to begin with a brief overview of our immediate and continuing response to the events in Japan. I then want to further discuss the reasons for our continuing confidence in the safety of the U. S. commercial nuclear reactor fleet, and the path forward for the NRC in order to learn all the lessons we can, in light of these events.

On Friday, March 11th, an earthquake hit Japan, resulting in the shutdown of more than 10 reactors. The ensuing tsunami appears to have caused the loss of normal and emergency alternating current power to the six unit Fukushima Daiichi site. It is those six units that have received the majority of our attention since that time. Units One, Two, and

Three were in operation at the time of the earthquake. Units Four, Five, and Six were in previously scheduled outages.

Shortly after 4:00 AM EDT on Friday, March 11th, the NRC Emergency Operations Center made the first call, informing NRC management of the earthquake and the potential impact on U.S. plants. We went into the monitoring mode at our Emergency Operations Center, and the NRC's first concern was possible impacts of the tsunami on U.S. plants and radioactive materials on the West Coast, and in Hawaii, Alaska, and U. S. Territories in the Pacific. We were in communication with licensees and NRC resident inspectors at Diablo Canyon Power Plant and San Onofre Nuclear Generating Station in California, and the Radiation Control Program Directors for California, Washington, Oregon and Hawaii.

On that same day, we began interactions with our Japanese regulatory counterparts and dispatched two experts to Japan to help at the U.S. embassy in Tokyo. By Monday, March 14, we had dispatched a total of 11 NRC staff to provide technical support to the American embassy and the Japanese government. We have subsequently rotated in additional staff to continue our on-the-ground assistance in Japan. The areas of focus for this team are: 1) to assist the Japanese government and respond to requests from our Japanese regulatory counterparts; and 2) to support the U. S. ambassador and the U.S. government assistance effort.

On Wednesday, March 16, we collaborated with other U. S. government agencies and decided to advise American citizens to evacuate within a 50-mile range around the plant. This decision was a prudent course of action and would be consistent with what we would do under similar circumstances in the United States. This evacuation range was predicated on a combination of the information that we had available at the time, which indicated the possibility that reactor cores and spent fuel pools may have been compromised, and hypothetical

calculations of the approximate activity available for release from one reactor and two spent-fuel pools at a four-reactor site.

We have an extensive range of stakeholders with whom we have ongoing interaction regarding the Japan situation, including the White House, Congressional staff, our state regulatory counterparts, a number of other federal agencies, and international regulatory bodies around the world.

The NRC response in Japan and our Emergency Operations Center continue with the dedicated efforts of over 250 NRC staff on a rotating basis. The entire agency is coordinating and working together in response to this event so that we can provide assistance to Japan while continuing the vital activities necessary to fulfill our domestic responsibilities.

It is important to note that the U. S. government has an extensive network of radiation monitors across this country. Monitoring at nuclear power plants and the U. S. Environmental Protection Agency's (EPA) system has not identified any radiation levels that effect public health and safety in this country. In fact, natural background radiation from sources such as rocks, the sun, and buildings, is 100,000 times more than doses attributed to any level that has been detected in the U.S. to date. Therefore, based on current data, we feel confident that there is no reason for concern in the United States regarding radioactive releases from Japan.

There are many factors that assure us of ongoing domestic reactor safety. We have, since the beginning of the regulatory program in the United States, used a philosophy of Defense-in-Depth, which recognizes that nuclear reactors require the highest standards of design, construction, oversight, and operation, and does not rely on any single layer of protection for public health and safety. Designs for every individual reactor in this country take into account site-specific factors and include a detailed evaluation for natural events, such as

earthquakes, tornadoes, hurricanes, floods, and tsunamis, as they relate to that site.

There are multiple physical barriers to radiation in every reactor design. Additionally, there are both diverse and redundant safety systems that are required to be maintained in operable condition and frequently tested to ensure that the plant is in a high condition of readiness to respond to any situation.

We have taken advantage of the lessons learned from previous operating experience to implement a program of continuous improvement for the U. S. reactor fleet. We have learned from experience across a wide range of situations, including most significantly, the Three Mile Island accident in 1979. As a result of those lessons learned, we have significantly revised emergency planning requirements and emergency operating procedures. We have addressed many human factors issues regarding how control room employees operate the plant, added new requirements for hydrogen control to help prevent explosions inside of containment, and created requirements for enhanced control room displays of the status of pumps and valves.

The NRC has a post-accident sampling system that enables the monitoring of radioactive material release and possible fuel degradation. One of the most significant changes after Three Mile Island was an expansion of the Resident Inspector Program, which now has at least two full-time NRC inspectors on site at each nuclear power plant. These inspectors have unfettered access to all licensees' activities related to nuclear safety and security.

As a result of operating experience and ongoing research programs, we have developed requirements for severe accident management guidelines. These are components and procedures developed to ensure that, in the event all of the above-described precautions failed and a severe accident occurred, the plant would still protect

public health and safety. The requirements for severe accident management have been in effect for many years and are frequently evaluated by the NRC inspection program.

As a result of the events of September 11, 2001, we identified important pieces of equipment that, regardless of the cause of a significant fire or explosion at a plant, the NRC requires licensees to have available and staged in advance, as well as new procedures and policies to help deal with a severe situation.

Our program of continuous improvement, based on operating experience, will now include evaluation of the significant events in Japan and what we can learn from them. We already have begun enhancing inspection activities through temporary instructions to our inspection staff, including the resident inspectors and the region-based inspectors in our four Regional offices, to look at licensees' readiness to deal with both design-basis accidents and beyond-design-basis accidents.

We have also issued an information notice to licensees to make them aware of the events in Japan, and the kinds of activities we believe they should be engaged in to verify their readiness. It is expected that licensees review the information related to their capabilities to mitigate conditions that result from severe accidents, including the loss of significant operational and safety systems, to ensure that they are in effect and operational.

During the past 20 years, there have been a number of new rulemakings that have enhanced the domestic fleet's preparedness against some of the problems we are seeing in Japan. The "station blackout" rule requires every plant in this country to analyze what the plant response would be if it were to lose all alternating current so that it could respond using batteries for a period of time, and then have procedures in place to restore alternating current to the site and provide cooling to the core.

The hydrogen rule requires modifications to reduce the impacts of hydrogen generated for beyond-design-basis events and core damage. There are equipment qualification rules that require equipment, including pumps and valves, to remain operable under the kinds of environmental temperature and radiation conditions that you would see under a design-basis accident.

With regard to the type of containment design used by the most heavily damaged plants in Japan, the NRC has had a Boiling Water Reactor Mark I Containment Improvement Program since the late 1980s. This program required installation of hardened vent systems for containment pressure relief, as well as enhanced reliability of the automatic depressurization system.

A final factor that underpins our belief in the ongoing safety of the U. S. fleet is the emergency preparedness and planning requirements in place that provide ongoing training, testing, and evaluations of licensees' emergency preparedness programs. In coordination with our federal partner, the Federal Emergency Management Administration (FEMA), these activities include extensive interaction with state and local governments, as those programs are evaluated and tested on a periodic basis.

Along with our confidence in the safety of U.S. nuclear power plants, our agency has a responsibility to the American people to undertake a systematic and methodical review of the safety of our domestic facilities, in light of the natural disaster and the resulting nuclear situation in Japan.

Examining all available information is an essential part of the effort to analyze the event and understand its impact on Japan and its implications for the United States. Our focus is always on keeping nuclear plants and radioactive materials in this country safe and secure.

On Monday, March 21, my colleagues on the Commission and I met to review the status of the situation in Japan and identify the steps needed to conduct that review. We consequently decided to establish a senior level agency task force to conduct a comprehensive review of our processes and regulations to determine whether the agency should make additional improvements to our regulatory system, and to make recommendations to the Commission for its policy direction.

The review will be conducted in both a short-term and a longer-term timeframe. The short-term review has already begun, and the task force will brief the Commission at 30, 60 and 90 day intervals, to identify potential or preliminary near-term operational or regulatory issues. The task force then will undertake a longer-term review as soon as NRC has sufficient information from the events in Japan. That longer-term review will be completed in six months from the beginning of the evaluation.

The task force will evaluate all technical and policy issues related to the event to identify additional potential research, generic issues, changes to the reactor oversight process, rulemakings, and adjustments to the regulatory framework that may warrant action by the NRC. We also expect to evaluate potential interagency issues, such as emergency preparedness, and examine the applicability of any lessons learned to non-operating reactors and materials licensees. We expect to seek input from all key stakeholders during this process. A report with appropriate recommendations will be provided to the Commission within six months of the start of this evaluation. Both the 90-day and final reports will be made

publicly available.

In conclusion, I want to reiterate that we continue to make our domestic responsibilities for licensing and oversight of the U.S. licensees our top priority and that the U.S. plants continue to operate safely. In light of the events in Japan, there will be a near-term evaluation of their relevance to the U.S. fleet, and we are continuing to gather the information necessary to take a longer, more comprehensive and thorough look at the events in Japan and their lessons for us. Based on these efforts, we will take all appropriate actions necessary to ensure the continuing safety of the American people.

Chairman Feinstein, Ranking Member Alexander, and Members of the Subcommittee, on behalf of the Commission, thank you for the opportunity to appear before you. I look forward to continuing to work with you to advance the NRC's important safety mission.

STATEMENT
BY GREGORY B. JACZKO, CHAIRMAN
UNITED STATES NUCLEAR REGULATORY COMMISSION
TO THE
HOUSE COMMITTEE ON APPROPRIATIONS
SUBCOMMITTEE ON ENERGY AND WATER
MARCH 31, 2011

Mr. Chairman, Ranking Member, and Members of the Subcommittee, I am honored to appear before you today to discuss the Fiscal Year (FY) 2012 budget request for the U. S. Nuclear Regulatory Commission (NRC) and to respond to any questions that you may have. Since this session of Congress began, I've had an opportunity to meet with a number of you and your staff. I appreciate these conversations and your interest in the NRC's work. I look forward to working with all of you.

The NRC is an independent Federal agency established to license and regulate the Nation's civilian use of byproduct, source, and special nuclear materials to ensure adequate protection of public health and safety, promote the common defense and security, and protect the environment. Our critical mission entails broad responsibilities for the agency. The NRC currently licenses, inspects, and assesses the performance of 104 operating nuclear power plants, as well as many fuel cycle facilities and research and test reactors. Furthermore, nuclear materials are in use at thousands of hospitals, universities, and other locations around the country. Each of these facilities and materials users presents different challenges for the NRC and requires that the NRC develop and sustain a diverse array of regulatory capabilities. The safety and security of these facilities and materials is, and always will be, our number one priority.

The NRC's safety goal is to ensure adequate protection of public health and safety and the environment. The agency's safety program objectives are to prevent the occurrence of any nuclear reactor accidents, inadvertent criticality events, acute radiation exposures resulting in fatalities, significant releases of radioactive materials and significant adverse environmental impacts. Our security goal is to ensure adequate protection in the secure use and management of radioactive materials. The security program objective is to prevent any instances in which licensed radioactive materials are used in a hostile manner in the United States.

The NRC can be proud of its strong track record and our recognition by the international community as a leader in regulating the nuclear industry. The Commission cannot give enough credit for the NRC's effectiveness as a regulator to the NRC's diverse, hard-working, talented, and dedicated staff. The Commission is continually impressed by their expertise, experience, diversity, and commitment to public service.

It is important that the NRC maintain our commitment to continuous improvement. That has long been a defining value of the NRC and a key to our success in meeting our important safety mission. We have a responsibility to the public to always try to do better – whether by planning and prioritizing to allow for more timely implementation of agency actions by licensees, or by communicating more effectively to better engage stakeholders in agency decisions.

We also, however, have an additional imperative, in light of the prevailing budgetary climate and the strong desire by many to see federal agencies do more with less. No matter the outcomes of these current budget decisions, the agency must continue focusing on the critical task of how to make the most efficient use of our funds. The NRC must ensure that we are in

the strongest possible position to efficiently and effectively use our financial resources to meet our mission.

In this area, as in many others, good process is the key to good outcomes. In accordance with the GPRA Modernization Act of 2010, the NRC is taking steps to improve our strategic planning and annual performance plans in order to achieve greater alignment of goals and performance across the agency. As part of the NRC's efforts to build a Strategic Acquisition Program, we are taking steps to ensure agency contracting initiatives are implemented in a more timely and efficient manner. We have resources dedicated to other business process improvements including the Transforming Assets into Business Solutions (TABS), a task force focused on identifying the most efficient, effective, and cost-conscious manner for the NRC to accomplish its corporate support functions.

These initiatives allow us to fully meet our safety and security responsibilities while also effectively reviewing applications associated with a renewed interest in the construction of new nuclear power plants and applications to construct and operate facilities that are part of the nuclear fuel cycle. The NRC is actively reviewing 12 combined applications to construct and operate new nuclear power reactors. Five different reactor designs are referenced in these applications; the NRC is currently reviewing the design applications for certification. If these design certifications are approved, they will be available to be referenced in future COL applications, and thereby make those reviews more straightforward. The NRC is also performing safety, security, and environmental reviews of facility applications, a uranium deconversion facility application, and applications for new uranium recovery facilities.

With these efforts as a backdrop, the agency has formulated its FY 2012 budget to support the agency's Safety and Security strategic goals and objectives.

Specifics of the FY 2012 Budget Request

The NRC's FY 2012 budget request is organized by business lines within our two program areas: (1) Nuclear Reactor Safety, and (2) Nuclear Materials and Waste Safety Programs. The NRC's proposed FY 2012 budget for both programs is \$1,038.1 million, including 3,981.0 full-time equivalents (FTE), which represents a decrease of \$28.7 million, including an increase of 0.8 FTE, when compared to the FY 2010 funding levels. The funding levels reflected above also support the Office of the Inspector General (OIG). The OIG FY 2012 proposed budget of \$10.9 million includes resources to carry out the Inspector General's mission to independently and objectively conduct audits and investigations to ensure the efficiency and integrity of NRC programs and operations and to promote cost-effective management.

Pursuant to the provisions of the Energy Policy Act of 2005, the NRC's FY 2012 budget provides for 90 percent fee recovery, less (1) appropriations from the Nuclear Waste Fund, (2) appropriations to implement Section 3166 of the Ronald W. Reagan National Defense Authorization Act for Fiscal Year 2005 (which pertain to waste incidental to reprocessing), and (3) appropriations to conduct generic homeland security activities. Accordingly, \$909.5 million of the FY 2012 budget would be recovered from fees assessed to NRC licensees and applicants. This would result in a net appropriation of \$128.6 million, which is a decrease of \$26.1 million in net appropriations when compared to the FY 2010 funding levels.

Nuclear Reactor Safety Program

The Nuclear Reactor Safety Program encompasses NRC efforts to license, regulate, and oversee civilian nuclear power, research, and test reactors in a manner that adequately protects public health and safety and the environment. This program also provides high assurance of the

physical security of facilities and protection against radiological sabotage. This program contributes to the NRC's Safety and Security goals through the activities of the Operating Reactors and New Reactors Business Lines, which regulate existing and new nuclear reactors to ensure their safe operation and physical security. Overall resources requested in the FY 2012 budget for the Nuclear Reactor Safety Program are \$800.8 million, including 3,032.9 FTE. This funding level represents an overall funding decrease of \$8.0 million, with an increase of 48.4 FTE when compared with FY 2010 funding levels.

Within this program, the Operating Reactors Business Line supports the licensing, oversight, rulemaking, research, international activities, generic homeland security, and event response associated with the safe and secure operation of 104 civilian nuclear power reactors and 31 research and test reactors. The FY 2012 budget request for operating reactors is \$521.3 million, including 2,064.4 FTE. This represents an overall funding decrease of \$20.5 million, including 26.3 FTE, when compared with FY 2010 funding levels. Examples of activities that the requested resources would support include the following:

- conduct technical review for 950 licensing actions, including complex actions such as license amendment requests from power reactor licensees adopting the requirements for performance standards for fire protection, often referred to as National Fire Protection Association (NFPA) 805
- review extended power uprate requests for increasing electric generating capacity and one improved standard technical specification conversion
- conduct 13 active, high- and medium-priority rulemaking activities
- conduct critical research and test reactor project management functions pertaining to license renewal application efforts, and applications to produce medical isotopes
- continue reviews of 12 license renewal applications
- conduct inspection activities for the 104 operating nuclear power reactors, including the component design-basis inspections, fire protection inspections, and generic issues inspections (approximately 100 per year)
- continue the Resident Inspector Pipeline Initiative to maintain an experienced and stable onsite inspection presence of qualified resident inspectors at the 104 nuclear power reactors

- conduct domestic and international security reviews and support for screening approximately 3,000 national and international operational events, with detailed evaluation of approximately 200 of those events
- carry out cyber security evaluations, as well as 24 force-on-force security inspections to complete a 3-year cycle for inspecting power reactors
- evaluate licensee emergency preparedness during biennial exercises

The resources within the Operating Reactors Business Line reflect a decrease in license renewal activities because of schedule changes and the reduced number of applications that will be under review.

The New Reactors Business Line supports the licensing, oversight, rulemaking, research, international activities, and generic homeland security associated with the safe and secure development of new power reactors from design, site approval, and construction to operational status. The FY 2012 budget request for new reactors is \$279.5 million, including 968.6 FTE. This represents an overall funding increase of \$12.5 million, including 74.8 FTE, when compared with FY 2010 funding levels. Examples of activities that the requested resources will support include the following:

- perform licensing and hearing support for 15 combined licenses, including two new combined license applications during FY 2012
- certify one design certification amendment, continue licensing reviews, rulemaking, or both on five applications and begin pre-application review on a new design
- review two early site permit applications and begin review of one new application expected in FY 2012
- develop and implement the construction inspection program
- oversee the four reactors expected to be under construction
- continue licensing and oversight activities for the construction of Watts Bar Unit 2
- conduct 15 domestic and international vendor inspections of component manufacturing quality
- conduct pre-application activities for two small modular reactor designs
- perform an acceptance review and initiate a design certification review for one small modular reactor
- continue the implementation of the Next Generation Nuclear Plant licensing strategy, which was developed in accordance with the Energy Policy Act of 2005

- continue to develop the regulatory framework that integrates the use of risk insights into the review process and support the resolution of key policy and safety issues associated with small modular reactors

The New Reactors Business Line shows an increase primarily driven by construction oversight of two new potential reactors under construction (for a total of five) and by development of the workforce to support inspection of up to an additional six reactors in future years. In addition, resources increase to support the review of new advanced reactor applications, increased pre-application interactions with prospective applicants, and funding for the one-time build-out of a new Headquarters office building.

Nuclear Materials and Waste Safety Program

The Nuclear Materials and Waste Safety Program encompasses the NRC's responsibility to license, regulate, and oversee nuclear materials and waste in a manner that adequately protects public health and safety and the environment. This program's goal is to verify the safety and security of materials and waste and protection against radiological sabotage, theft, or diversion of nuclear materials. Through this program, the NRC regulates uranium processing and fuel facilities; research and pilot facilities; nuclear materials users (medical, industrial, research, and academic); spent fuel storage; spent fuel storage casks and transportation packaging; decontamination and decommissioning of facilities; and low-level and high-level radioactive waste.

Overall resources requested in the FY 2012 budget for the Nuclear Materials and Waste Safety Program are \$226.5 million, including 868.5 FTE. This funding level represents an overall funding decrease of \$20.7 million, including 49.6 FTE, when compared with FY 2010 funding levels.

Within this program, the Fuel Facilities Business Line supports licensing, oversight, rulemaking, research, international activities, generic homeland security, and event response associated with the safe and secure operation of various fuel facilities, such as conversion, enrichment, and fuel fabrication facilities, and nuclear fuel research and pilot facilities. The FY 2012 budget request for fuel facilities is \$55.2 million, including 226.5 FTE. This represents an overall funding increase of \$0.6 million, including 18.2 FTE, when compared with FY 2010 funding levels.

Examples of activities that the requested resources would support include the following:

- licensing and oversight activities associated with fuel facilities and licensees with greater than critical mass quantities of special nuclear material
- operation and maintenance of the Nuclear Material Management and Safeguards System database and the Nuclear Materials Information Program
- emergency preparedness, security, and licensee performance reviews
- licensing, certification, inspection, oversight, environmental reviews, research, adjudicatory, enforcement, allegation, and other regulatory activities associated with new and operating fuel facilities, including uranium conversion and enrichment and fuel fabrication
- completion of mandatory hearings on the uranium enrichment license applications for the AREVA centrifuge and General Electric-Hitachi laser enrichment facilities
- licensing review of the International Isotopes depleted uranium deconversion facility
- oversight of construction activities at the proposed Mixed Oxide (MOX) Fuel Fabrication Facility and commencement of construction of the AREVA, General Electric-Hitachi, and International Isotopes facilities

The Fuel Facilities Business Line resources increase to account for the significant construction activities planned at the MOX facility; the commencement of construction at the AREVA centrifuge and General Electric-Hitachi laser enrichment facilities, and the International Isotopes depleted uranium deconversion facility; and to reflect staffing required at resident inspector offices. Resources also increase to support rulemaking activities regarding the potential licensing of reprocessing facilities. These increases are offset by the completion of the licensing and environmental reviews of the AREVA and General Electric-Hitachi license applications, as well as the completion of the licensing and environmental reviews for the International Isotopes depleted uranium deconversion facility application.

The Nuclear Materials Users Business Line supports the licensing, oversight, rulemaking, research, international activities, generic homeland security, event response, and State, Tribal, and Federal program activities associated with the safe and secure possession, processing, handling, and use of nuclear materials for the many and diverse uses of these materials.

Resources also support the National Materials Program and the Agreement State activities. The FY 2012 budget request for nuclear materials users is \$92.1 million, including 347.1 FTE. This represents an overall funding increase of \$0.4 million, including 9.1 FTE, when compared with FY 2010 funding levels. Examples of activities that the requested resources would support include the following:

- completion of 2,500 materials licensing actions and 1,000 routine health and safety inspections, including naturally occurring and accelerator-produced radioactive material and security inspections
- event evaluation, research, incident response, allegation, enforcement and investigations, and rulemaking activities to maintain the regulatory safety and security infrastructure needed to process and handle nuclear materials
- materials activities related to State, Tribal, and Federal programs, including oversight, technical assistance, regulatory development, and cooperative efforts
- operation of the National Source Tracking System, a secure, Web-based, nationalized central registry designed to enhance the accountability for radioactive sources
- development of the Integrated Source Management Portfolio, which consists of the National Source Tracking System, the Web-Based Licensing System, and the License Verification System
- reviews of 135–180 import/export of nuclear equipment and material license applications
- investigations into 45–55 allegations of materials-related wrongdoing

The Nuclear Materials Users Business Line resources increase slightly because of adjustments made within the business line to cover emergent activities. Overall, a slight increase resulted to address the workload associated with the implementation of the Integrated Source Management Portfolio major information technology system, which consists of the National Source Tracking System, the Web-Based Licensing System, and the License Verification System.

The Spent Fuel Storage and Transportation Business Line supports the licensing, oversight, rulemaking, research, event response, and international activities associated with the safe and secure storage of spent nuclear fuel and safe and secure transportation of radioactive materials. The FY 2012 budget request for spent fuel storage and transportation is \$41.2 million, including 152.4 FTE. This represents an overall funding increase of \$7.4 million, including 29.7 FTE, when compared with FY 2010 funding levels. Examples of activities that the requested resources would support include the following:

- review of license requests for site-specific independent spent fuel storage installations (ISFSIs), dual-purpose (storage and transport) casks, transportation security plans, and route approvals to support safe and secure domestic and international transportation of radioactive materials, regulatory requirements for full-core offload capability at operating reactor sites, and transfer of spent fuel to ISFSIs to support reactor decommissioning
- regulatory improvements to the proficiency and effectiveness of the licensing, inspection, and enforcement programs associated with storage and transportation of spent nuclear fuel
- inspection of storage cask and transportation package vendors, fabricators, and designers to ensure safety
- resolution of technical issues associated with allowance of burn-up credit for transportation and storage casks and the transportation and storage of high burn-up fuels (greater than 45 gigawatt-days/ metric tons of uranium)
- interaction with the International Atomic Energy Agency and other international regulators to inform the development of the regulatory framework for transportation of radioactive materials, long-term spent fuel and high-level waste storage, deferred transportation, and ultimate geologic disposal

The Spent Fuel Storage and Transportation Business Line resources would increase to develop the information necessary to evaluate extended long-term storage of radioactive material.

Resources are provided for a risk-informing gap study to identify methods, data, decision criteria, and regulatory actions that are needed to implement a regulatory framework for very long-term (more than 120 years) dry spent fuel storage that is enhanced by risk insights.

Resources will also support a scoping study for a generic environmental impact statement for ensuring protection of the environment from such spent fuel storage. Resources will also be provided to conduct research on technical issues associated with this storage, and to coordinate

with international partners on options for harmonizing international standards for certification of transport packages and licensing of storage cask designs.

The Decommissioning and Low-Level Waste Business Line supports the licensing, oversight, rulemaking, research, and international activities associated with the safe and secure removal of a nuclear facility from service and reduction of residual radioactivity to a level that permits release of the property and termination of the NRC license. The FY 2012 budget request for decommissioning and low-level waste is \$37.9 million, including 142.6 FTE. This represents an overall funding decrease of \$0.3 million, including 7.6 FTE, when compared with FY 2010 funding levels. Examples of activities that the requested resources would support include the following:

- project management and technical reviews for decommissioning activities for 10 power reactors, 10 decommissioning research and test reactors, 24 decommissioning materials facilities, 21 inactive Title I decommissioning, 11 Title II decommissioning, uranium recovery facilities, and five sites that are under general license with the U.S. Department of Energy (DOE)
- interfaces with licensees, applicants, Federal and State agencies, the public, other stakeholders, and Native American Tribal governments
- 8 environmental reviews and 11 safety reviews (hearings included) in support of licensing and oversight of uranium recovery facilities
- oversight of certain DOE waste determination activities and plans for waste incidental to reprocessing consistent with the NRC's responsibilities in the Ronald W. Reagan National Defense Authorization Act for Fiscal Year 2005

The Decommissioning and Low-Level Waste Business Line resources decrease reflects a refocusing of long-term waste research activities and adjustments made to the contract, travel, and training needs and other carryover balances for waste incidental to reprocessing work.

The High-Level Waste Repository Business Line supports activities associated with DOE's Yucca Mountain geologic repository application. This activity terminates in FY 2011. No resources are requested in FY 2012 for this business line.

In the FY 2012 budget structure, the New Fuel Facilities and Operating Fuel Facilities Business Lines were merged into the Fuel Facilities Business Line.

Mr. Chairman, Ranking Member, and Members of the Subcommittees, this concludes my formal testimony on the NRC's FY 2012 budget request. On behalf of the Commission, thank you for the opportunity to appear before you. I look forward to continuing to work with you to advance the NRC's important safety mission. I would be pleased to respond to any questions that you may have. Thank you.

STATEMENT
BY MICHAEL WEBER, DEPUTY EXECUTIVE DIRECTOR FOR
MATERIALS, WASTE, RESEARCH, STATE, TRIBAL AND COMPLIANCE PROGRAMS
UNITED STATES NUCLEAR REGULATORY COMMISSION
TO THE
HOUSE COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE
SUBCOMMITTEE ON ECONOMIC DEVELOPMENT, PUBLIC BUILDINGS, AND
EMERGENCY MANAGEMENT

MARCH 30, 2011

Good morning, Mr. Chairman and Members of the Subcommittee. I am pleased to appear before you on behalf of the United States Nuclear Regulatory Commission (NRC) to discuss our emergency planning and preparedness programs at nuclear power facilities in the United States, and to discuss the protective action guidance recently issued by the U.S. Ambassador to American citizens in Japan in response to the events at the Fukushima-Daiichi nuclear power plant site.

NRC's primary mission is to regulate nuclear reactors, materials, and waste facilities in a manner that protects the health and safety of the public and promotes the common defense and security. Emergency preparedness is a key element of the "defense in depth" safety philosophy we employ for nuclear power plants. This philosophy ensures high quality in design, construction, and operation of nuclear power plants; requires redundant safety systems that reduce the chances that malfunctions will lead to accidents; and recognizes that in spite of all these precautions, unforeseen events could occur. Through emergency planning and preparedness, mechanisms are in place to protect the public in the unlikely event that these measures fail.

The NRC emergency preparedness and planning regulations are extensive and require the licensee to develop and demonstrate an effective emergency plan as a condition of their

license. The nuclear power plant operator is required to provide extensive emergency response training to emergency plant workers. For example, they are required to provide severe accident management training to control room operators, and to demonstrate personnel response in a rigorous drill and exercise program. The NRC inspects licensees to ensure that they are meeting emergency preparedness requirements and monitors performance indicators related to emergency preparedness.

To form a coordinated system of emergency preparedness and response, the NRC works with licensees; Federal agencies; State, Tribal, and local officials; and first responders. This program includes an every-other-year full participation exercise that engages both the onsite and offsite response organizations as well as Federal Emergency Management Agency (FEMA). These exercises are evaluated by both FEMA (offsite) and NRC (onsite) staff. NRC resident inspectors also observe licensee on-site emergency drills and exercises. It is safe to say that over the 30-plus years of operating history and at 104 operating nuclear power plants, there have been thousands of drills and exercises designed to ensure optimum response to abnormal and emergency conditions.

For planning purposes, we define two emergency planning zones, or EPZs, around nuclear power plant sites. The first zone, called the Plume Exposure Pathway EPZ, is an area covering a 10-mile radius around a nuclear power plant. This is the area that would require the most immediate protective actions as it has the greatest potential for exposure from a release. Planning for this area is comprehensive and includes such protective actions as evacuation, sheltering, and administration of potassium iodide, as appropriate, for members of the public.

Consideration of these protective actions is prompted at very low projected dose levels. A second emergency planning zone, called the Ingestion Pathway EPZ, covering a 50-mile radius

around each plant is also established to deal with potential lower-level, long-term risks primarily due to exposure from ingestion of contaminated food, milk, and water. This comprehensive planning within the 10 and 50 mile EPZs provides a substantial basis for expansion of response efforts in the event that this is necessary.

Let me now address the NRC's recent protective action recommendation for U.S citizens in Japan to evacuate out to 50 miles from the Fukushima-Daiichi site. That decision was based on the best information available during an evolving event. NRC began monitoring the event when the tsunami warning was issued for Hawaii and the west coast of the United States. The information flow from the Fukushima site was often confusing and conflicting. In order to provide timely information to the U.S. Ambassador to Japan, and to best protect the health and safety of U.S. citizens in Japan, we based our assessment on the conditions as we understood them at the time. This site has six nuclear power plants and 4 of the plants are facing extraordinary challenges. Units 1, 3 and 4 appeared to have suffered significant damage as a result of reported hydrogen explosions. We suspected that the concrete, secondary containment buildings were severely damaged by the explosions and may not be capable to perform their function of stopping the release of radiation. Unit 4 was in a refueling outage and its entire core had been transferred to the spent fuel pool a little more than 3 months earlier. This means that there was irradiated fuel that had been freshly loaded into the spent fuel pool that was in danger of overheating if the water level dropped, and there were indications that was happening. Additionally, radiation monitors were showing very high levels of radiation on the plant site, which would pose challenges to plant crew attempting to stabilize the reactors, and there were offsite readings indicating that fuel damage had occurred.

Since communications were limited and there was a large degree of uncertainty about plant conditions at the time, it was difficult to accurately assess the radiological hazard. In order to

determine the proper evacuation distance, the NRC staff performed a series of calculations using NRC's RASCAL computer code to assess possible offsite consequences. The computer models used meteorological model data appropriate for the Fukushima Daiichi vicinity. Source terms were based on hypothetical, but not unreasonable estimates of fuel damage, containment, and other release conditions. These calculations demonstrated that the Environmental Protection Agency's Protective Action Guidelines could be exceeded at a distance of 50 miles from the Fukushima site, if a large-scale release occurred from the reactors or spent fuel pools. We understood that some of our assumptions were conservative, but believed that it was better to err on the side of protection, especially in the case of a seemingly rapidly deteriorating situation.

If this situation had occurred in the United States, the NRC has resident inspector staff at the plants that can report back to the Region and Headquarters on conditions as they are evolving. In addition, we are able to readily access "live-time" plant parameters and radiation monitors, as well as talk directly to our licensee and emergency management officials allowing us to refine our understanding and consequence assessments. The licensee would then make a recommendation to State or local officials on what protective actions to take. With the Fukushima event we had to make our best decision with what we had available. The Emergency Preparedness framework provides for the expansion of the emergency planning zones as conditions require. Acting in accordance with this framework and with the best information available at the time, the NRC determined that evacuation out to 50 miles for U.S. citizens was an appropriate course of action, and we made that recommendation to other U.S. Government agencies.

This concludes my testimony. Thank you for the opportunity to present this testimony. I would be happy to answer your questions.

From: Powell, Amy
Sent: Monday, April 04, 2011 1:29 PM
To: Shane, Raeann
Subject: RE: KI for US Residents in Japan

Thanks!

From: Shane, Raeann
Sent: Monday, April 04, 2011 1:13 PM
To: Powell, Amy
Subject: FW: KI for US Residents in Japan

fyi

From: Shane, Raeann
Sent: Monday, April 04, 2011 12:19 PM
To: Milligan, Patricia
Subject: KI for US Residents in Japan

Trish:

I got the following question from Congressman Markey's staff.....do you know the answer? If not, could you point me to who might?

Thanks,
Raeann

I have a couple of questions on KI use in Japan. I'm aware that NRC recommended a 50 mile evacuation zone, but what has it done on KI for US residents and/or personnel who are stationed there. Who has been given KI - and how far away are those individuals from the site? And have they been told to take the dose yet?

Raeann Shane
Sr. Intergovernmental and External Affairs Officer
Office of Congressional Affairs
U.S. NRC
301-415-1699
rms2@nrc.gov

From: Powell, Amy
Sent: Monday, April 04, 2011 2:20 PM
To: Rihm, Roger
Subject: RE: Markey interim

Great – thanks!

From: Rihm, Roger
Sent: Monday, April 04, 2011 2:19 PM
To: Powell, Amy
Subject: Markey interim

It has been pinked (the OEDO concurrence process) and should get out of here today or tomorrow, at which point it goes to SECY/Commission.

From: Dacus, Eugene
Sent: Monday, April 04, 2011 4:02 PM
To: Cassidy, Alison; Powell, Amy
Subject: RE: Sandia Report

Alison,

I've been informed that the staff members knowledgeable about this report are, as you might anticipate, involved in a number of other Japan event related requests and would need to review the report themselves before doing a briefing. How soon do you need this briefing?

Gene

From: Cassidy, Alison [mailto:Alison.Cassady@mail.house.gov]
Sent: Friday, April 01, 2011 10:07 AM
To: Powell, Amy; Dacus, Eugene
Subject: RE: Sandia Report

Amy and Gene,

Any progress on this?

Alison Cassady
Senior Professional Staff
Committee on Energy and Commerce
Rep. Henry A. Waxman, Ranking Member
(202) 226-3400

From: Cassidy, Alison
Sent: Tuesday, March 29, 2011 4:07 PM
To: 'Powell, Amy'; Dacus, Eugene
Subject: Sandia Report

Amy & Gene,

Jeff Baran and I are interested in speaking with someone who can brief us on a report Sandia prepared for NRC, entitled *Risk Informed Assessment of Degraded Containment Vessels*, and its conclusions about the Mark 1's vulnerability to containment failure in the event of a core-melt accident.

Can you help us out?

Thanks,

Alison Cassady

Alison Cassady

Senior Professional Staff
Committee on Energy and Commerce
Rep. Henry A. Waxman, Ranking Member
(202) 226-3400

From: Edwards, Isaac (Energy) <Isaac_Edwards@energy.senate.gov>
Sent: Monday, April 04, 2011 5:25 PM
To: Powell, Amy
Subject: FW: Urgent: TEPCO dumping of Fukushima nuclear waste water threatens Alaskan fisheries

Amy – per our phone call, below is the Friends of the Earth press release.

Thanks

Isaac

From: Moglen, Damon [mailto:DMoglen@foe.org]
Sent: Monday, April 04, 2011 3:28 PM
To: Fuglvog, Arne (Murkowski)
Subject: Urgent: TEPCO dumping of Fukushima nuclear waste water threatens Alaskan fisheries

Dear Arne, this is Damon Moglen over at Friends of the Earth. I wanted to be sure that you were aware that the Japanese utility TEPCO has just announced that it will immediately start dumping 10,500 tons of nuclear waste water into the Pacific from the crippled nuclear reactors at Fukushima. This historic dumping of nuclear waste clearly threatens fisheries in the Pacific and that could reach as far as the Alaskan fisheries. Please let me know if you would like to talk about this! Best Regards, Damon

Damon Moglen
Director, Climate and Energy Program
Friends of the Earth
1100 15th Street, NW
11th Floor
Washington, DC 20005
office: 202-783-7400
direct: 202-222-0708
skype: damonmoglen

<http://foe.org/tepco-dumping-radioactive-wastewater-sea>

For Immediate Release
April 4, 2011

Contact:
Kelly Trout, 202-222-0722, ktrout@foe.org
Nick Berning, 202-222-0748, nberning@foe.org

TEPCO Implementing Massive Discharge of Nuclear Waste into Open Ocean

Friends of the Earth calls on U.S. government to intervene

WASHINGTON, D.C.—Friends of the Earth warned today that plans by the Japanese utility TEPCO to dump some 11,500 tons of radioactive wastewater into the Pacific Ocean pose substantial threats to people and the environment.

Given U.S. government involvement in efforts to control the nuclear disaster at Fukushima, Friends of the Earth called on the Obama administration to intervene to stop this dumping of nuclear waste.

"Dumping this nuclear waste directly into the Pacific is dangerous and unacceptable," said Damon Moglen, Director of the Climate and Energy Project at Friends of the Earth. "It's incredible that while an international treaty forbids the dumping of even a barrel of this nuclear waste from a ship, Japan intends to send thousands of tons of that waste into the ocean. This dumping poses a direct threat to humans and the environment, and fisheries and industries depending on a clean Pacific could be devastated."

TEPCO announced today that it will immediately begin dumping 11,500 tons of radioactive waste water left from hosing down the four reactors and additional spent fuel ponds at Fukushima that have been involved in explosions, fires, and venting of radioactive material. While not providing data on the exact content and nature of the contamination contained in the nuclear waste water, TEPCO authorities have reportedly stated that the water is at least some 100 times beyond legal limits.

Japan is a signatory to the London Convention, which forbids countries from dumping nuclear waste at sea. But, under a loophole in that treaty, nuclear waste can be released from land-based sources. The Japanese government and TEPCO appear poised to use that loophole to pump the 11,500 tons of waste from the shore at Fukushima into the ocean. This waste cannot legally be dumped from a ship at sea.

"As the Obama administration has sent experts from numerous U.S. agencies to assist in response to the nuclear disaster at Fukushima, we have a right to know whether or not our government supports this nuclear waste dumping when alternatives are available," Moglen said. "Given that ocean currents will likely bring some of this radioactive contamination onto our shores, and given that contaminated seafood could find its way into the U.S. market, we demand to know what the U.S. government is doing to stop this dumping and to force TEPCO to retain this nuclear waste at the company's expense."

###

From: Powell, Amy
Sent: Monday, April 04, 2011 9:31 PM
To: Schmidt, Rebecca
Subject: Re:

We had avoided speculation... Now we need someone to speculate?

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

----- Original Message -----

From: Schmidt, Rebecca
To: Batkin, Joshua; Powell, Amy
Sent: Mon Apr 04 20:48:09 2011
Subject: Re:

Ok. We will get something to her tomorrow

----- Original Message -----

From: Batkin, Joshua
To: Schmidt, Rebecca; Powell, Amy
Sent: Mon Apr 04 20:43:07 2011
Subject: Re:

She told us she wanted some sort of short narrative about what was happening and what the potential solutions are...

Joshua C. Batkin
Chief of Staff
Chairman Gregory B. Jaczko
(301) 415-1820

----- Original Message -----

From: Schmidt, Rebecca
To: Batkin, Joshua; Powell, Amy
Sent: Mon Apr 04 20:26:05 2011
Subject: Re:

I still don't know what you need? She is getting the daily status. What is she looking for?

----- Original Message -----

From: Batkin, Joshua
To: Powell, Amy; Schmidt, Rebecca
Sent: Mon Apr 04 20:23:55 2011

Subject: Fw:

Help!

Joshua C. Batkin
Chief of Staff
Chairman Gregory B. Jaczko
(301) 415-1820

----- Original Message -----

From: Poirier, Bettina (EPW) <Bettina_Poirier@epw.senate.gov>
To: Batkin, Joshua
Sent: Mon Apr 04 19:32:48 2011
Subject:

Josh, we really need the summary of the japan situation for senator boxer. You had agreed to get it to us last week and she is pushing for it. Can we talk first thing. Thanks, bettina

----- Original Message -----

From: Poirier, Bettina (EPW)
Sent: Friday, April 01, 2011 05:12 PM
To: 'Batkin, Joshua' <Joshua.Batkin@nrc.gov>
Subject: Do you have the summary of the japan situation we discussed for senator boxer. Many thanks

-----Original Message-----

From: Batkin, Joshua [mailto:Joshua.Batkin@nrc.gov]
Sent: Thursday, March 31, 2011 12:05 PM
To: Dedrick, Kathy (EPW); Poirier, Bettina (EPW)
Subject: He

Just testified before house appropriations that we provided the unredacted SER to Issa and that he disagreed.

Joshua C. Batkin
Chief of Staff
Chairman Gregory B. Jaczko
(301) 415-1820

From: Schmidt, Rebecca
Sent: Monday, April 04, 2011 9:43 PM
To: Powell, Amy
Subject: Re:

I don't know when he promised this either. The post had some alternatives --we'll find something

----- Original Message -----

From: Powell, Amy
To: Schmidt, Rebecca
Sent: Mon Apr 04 21:36:17 2011
Subject: Re:

We could get the summary detailed btw testimony and daily summary - I can take a crack at that in the am. Not sure who could help with possible solutions or fixes, given that we've not gone there. Reactor safety team? Has anyone on the team returned from Japan that could give us "solutions"?

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

----- Original Message -----

From: Schmidt, Rebecca
To: Batkin, Joshua; Powell, Amy
Sent: Mon Apr 04 20:48:09 2011
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Joshua C. Batkin

Chief of Staff

Chairman Gregory B. Jaczko

(301) 415-1820

From: Powell, Amy
Sent: Tuesday, April 05, 2011 8:18 AM
To: Schmidt, Rebecca
Subject: Start of summary for Bettina
Attachments: Draft one-pager for BPoirier.docx

I cobbled together the attached summary of what we know about the reactors as well as how the 50 mi evacuation rec was made; we may be able to trim the latter. Was it yesterday's Post article that you referenced in your e-mail last night regarding solutions? Let me know and I can go from that to add solutions in.

CURRENT UNDERSTANDING OF ONGOING SITUATION IN JAPAN

On Friday, March 11th an earthquake hit Japan, resulting in the shutdown of more than 10 reactors. From what we know now, it appears possible that the reactors' response to the earthquake went according to design. The ensuing tsunami, however, appears to have caused the loss of normal and emergency AC power to the six units at the Fukushima Daiichi site; it is those six units that have received the majority of our attention since that time. Units One, Two, and Three at the site were in operation at the time of the earthquake. Units Four, Five, and Six were in previously scheduled outages.

Immediately after the tsunami, there appeared that there was no capability to inject cooling water into the reactor vessels on Units One, Two, and Three. On Saturday, March 12th, a hydrogen explosion occurred in Unit One; and then the following Monday, March 14th, a hydrogen explosion in Unit Three. On Tuesday March 15th, there were explosions in Unit Two and in Unit Four from hydrogen originating from, we believe, overheated fuel in the spent fuel pool. At this time, it is our assessment that Units One, Two, and Three have likely experienced some degree of core damage.

The NRC's Reactor Safety Team in the agency's Emergency Operations Center continues to analyze information from JAIF, NISA and TEPCO in order to support NRC personnel in Japan, the embassy, and the Japanese government as requested. Based on this analysis as of this morning (430am EDT April 5, 2011), here is the NRC's best understanding of the current situation:

Unit 1's core is damaged with the fuel partially or fully exposed. Primary containment, although degraded, can still be preserved if the responders take actions to inject the reactor vessel and primary containment with water.

Unit 2's core is damaged with the fuel partially or fully exposed. Damage to the primary containment is suspected, as well as other barriers to radiation release being compromised. This damage requires continued attention to cool the core and provide water to the primary containment to minimize the potential for radiation release.

Unit 3's core is damaged with the fuel partially or fully exposed. While the primary containment appears to be nominally functional, continued attention is required to cool the core with water.

Progress has been made in cooling the spent fuel pool of Unit 4.

NRC'S RECENT PROTECTIVE ACTION RECOMMENDATION FOR U.S CITIZENS IN JAPAN TO EVACUATE OUT TO 50 MILES FROM THE FUKUSHIMA-DAIICHI SITE

The NRC's recommendation that U. S. citizens in Japan evacuate out to 50 miles from the site was conservative guidance based on the best information available during an evolving event. NRC began monitoring the event when the tsunami warning was issued for Hawaii and the West Coast of the United States. The information flow from the Fukushima site was often confusing and conflicting. In order to provide timely information to the U.S. Ambassador to Japan, and to best protect the health and safety of U.S. citizens in Japan, we based our assessment on the conditions as we understood them at the time. This site has six nuclear power plants and 4 of the plants are facing extraordinary challenges. At the time, Units 1, 3 and 4 appeared to have suffered significant damage as a result of reported hydrogen explosions. We suspected that the concrete, secondary containment buildings were severely damaged by the explosions and may not be capable to perform their function of stopping the release of radiation. Unit 4 was in a refueling outage and its entire core had been transferred to the spent fuel pool a little more than 3 months earlier. This means that there was irradiated fuel that had been freshly loaded into the spent fuel pool that was in danger of overheating if the water level dropped, and there were indications that was happening. Additionally, radiation monitors were

showing very high levels of radiation on the plant site, which would pose challenges to plant crew attempting to stabilize the reactors, and there were offsite readings indicating that fuel damage had occurred.

Since communications were limited and there was a large degree of uncertainty about plant conditions at the time, it was difficult to accurately assess the radiological hazard. In order to determine the proper evacuation distance, the NRC staff performed a series of calculations using NRC's RASCAL computer code to assess possible offsite consequences. The computer models used meteorological model data appropriate for the Fukushima Daiichi vicinity. Source terms were based on hypothetical, but not unreasonable estimates of fuel damage, containment, and other release conditions. These calculations demonstrated that the Environmental Protection Agency's Protective Action Guidelines could be exceeded at a distance of 50 miles from the Fukushima site, if a large-scale release occurred from the reactors or spent fuel pools. We understood that some of our assumptions were conservative, but believed that it was better to err on the side of protection, especially in the case of a seemingly rapidly deteriorating situation.

From: Baran, Jeff <Jeff.Baran@mail.house.gov>
Sent: Tuesday, April 05, 2011 10:52 AM
To: Powell, Amy
Subject: Testimony
Attachments: Testimony - Corradini.pdf; Testimony - Levis.pdf; Testimony - Lyman.pdf

TESTIMONY OF
Michael Corradini
American Nuclear Society

BEFORE THE
HOUSE ENERGY AND COMMERCE COMMITTEE
SUBCOMMITTEE ON OVERSIGHT AND INVESTIGATIONS

April 6, 2011

Chairman Stearns, Ranking Member DeGette, members of the Subcommittee, thank you for the opportunity to testify.

I am currently chair of the Nuclear Engineering and Engineering Physics program at the University of Wisconsin, Madison. I am also involved in a number of nuclear energy activities for the National Academies, the Department of Energy (DOE) and the Nuclear Regulatory Commission (USNRC). Specifically, I am a member of the DOE Nuclear Energy Advisory Committee and Chair of its Reactor Technology Subcommittee. In addition, I am a member of the French Atomic Energy Scientific Committee and the NRC's Advisory Committee for Reactor Safeguards.

I appear today on behalf of the American Nuclear Society (ANS), a professional organization comprised of 11,000 men and women who work in the nuclear industry, the medical community, our national laboratories, universities and government agencies.

On behalf of all ANS members, I would like to express my deepest sympathies to the people of Japan for their loss and hardship. My sons and I were in Osaka in 1995 at the time of the Kobe earthquake and we witnessed the tragic effects of that natural disaster. From what I have seen from news reports and photos on the web, this is a tragedy that is orders of magnitude more devastating and thus, even more sobering. While we are here to discuss the Fukushima power plants, I wanted to be sure we put this in context to this tragic natural disaster with over 12,000 dead and over 15,000 missing.

The American Nuclear Society has organized the “Japan Relief Fund” targeted specifically to help our friends, colleagues, and their families in Japan who have been affected by the earthquake and tsunami. More information can be found at the American Nuclear Society website: <http://www.ANS.org> .

The leadership of ANS has asked me to serve as co-chair of a *Special Commission on Fukushima Daiichi*. This Commission will examine the major technical aspects of the event to help policymakers and the public better understand its consequences and its lessons for the US nuclear industry.

It is probably useful to begin by providing some current information and perspectives about the events and how they relate to the U.S plants and safety practices. That is my role here today. I want to briefly focus on three general topics:

- The effects of the natural disaster on the Fukushima-Daiichi plants,
- The effects of the accident progression on the surrounding region, and
- How we can learn from these events for our U.S. nuclear industry?

To review these topics, I have made use of the information provided on the websites of the Tokyo Electric Power Company (TEPCO), the Nuclear and Industrial Safety Agency (NISA), the Ministry of Education, Culture, Science and Technology (MEXT), Japan Atomic Industrial Forum (JAIF), the International Atomic Energy Agency (IAEA) as well as discussions with colleagues and specific press reports. Although there is so much that we do not know about what has happened in Fukushima and surrounding areas, I have found the information from these sources to be consistent and helpful to answer many questions. This timely availability of information is a tribute to Japan and its institutions since these nuclear troubles occurred in the midst of the response to the many injuries and property destruction caused by the earthquake on the general population.

EFFECTS OF THE NATURAL DISASTER ON THE FUKUSHIMA PLANTS

As we now know, the Tohoku earthquake, which occurred at 2:46pm on Friday, March 11th on the east coast of northern Japan, was measured at 9.0 on the Richter scale and is believed to be the 4th largest earthquake in recorded history. As a point of reference the next most serious quake was in 2004 off the coast of Sumatra with a tsunami resulting in 227,000 deaths. Following the earthquake on Friday afternoon, the nuclear plants at Fukushima-Daiichi, Fukushima-Daini and Osonawa plant sites shut down as designed, and emergency power systems were activated as expected; even though the earthquake was beyond the design basis. At the Daiichi plants the design basis safe-shutdown earthquake was 8.2 as measured on the Richter scale, which is a design base above historical values. The Tohoku earthquake caused a tsunami, which hit the east coast of Japan within the first hour of the quake. The size of the water waves that hit the Daiichi plant were significantly above the design base on which the seawall was constructed (17 ft) to mitigate its effects. The tsunami appears to have been the primary cause of the initial on-site damage, making the backup power systems and associated pumping, electrical and venting systems inoperable for Units 1, 2, 3, 4.

On-site battery power was able to run the emergency control and pumping systems at the plant site until about midnight on Friday and then the plants experienced a loss of all electrical power for an extended period of time. By the afternoon of Saturday, March 12th, portable generators and portable fire pumps were moved onto the Fukushima-Daiichi site and seawater was pumped in to cool the reactor cores for Units 1, 2 and 3. Decay heat was removed by venting the steam from above the containment suppression pools. The initial lack of water-cooling caused the reactor cores to be severely degraded, causing metal-water chemical reactions and hydrogen gas generation. Hydrogen was released during steam venting causing the destructive combustion events in reactor buildings outside of containment.

In addition to cooling the reactors, it has been necessary for plant personnel to replenish the water in each unit's spent fuel pools that was lost

due to water evaporation caused by decay heat. This is especially true for Unit 4, since it was undergoing maintenance at the time of the earthquake and its relatively "hotter" reactor core fuel assemblies were also placed in the spent fuel pool. For reasons that are not completely clear at this time, the water supply at spent fuel pools at these Units reached very low levels over the first few days causing the spent fuel to become severely damaged resulting in hydrogen generation and combustion, fuel rod cladding failures and radioactivity releases to the environment. Seawater was then sprayed in to refill these water pools and they now remain cooled.

This mode of cooling continued until fresh water was brought to the site about two weeks after the earthquake. The reactor plants and the spent fuel are now being cooled by injection of fresh water.

EFFECTS OF THE ACCIDENT ON THE SURROUNDING REGION

Immediately following the earthquake and tsunami and the subsequent loss of on-site electrical power, the Nuclear and Industrial Safety Agency (NISA) declared a site emergency and by the evening of March 11th, residents within 10km of the Fukushima-Daiichi plant were instructed to evacuate. By Saturday afternoon, NISA advised residents within 20km to evacuate and those between 20 to 30km away to remain in their homes as shelter or voluntarily leave the area. In the first few days after the earthquake, the air-borne radiation levels were much higher than natural background (normally around 0.3 to 0.4 microSieverts per hour). By a week after the event, they had already fallen to levels a couple of times above natural background. In fact, the air-borne doses outside of a 60km radius from the plant now have readings close to normal. At this time this event has not become a national health disaster for Japan.

I would also note that we have the technical capability to measure radiation and its elemental sources in extremely small amounts far below any levels that are harmful to the human body.

The source of the radioactive release is not precisely known, but some indications are that it came primarily from the heating, degradation and subsequent failure of the spent fuel. The levels of radiation on the plant site were much higher and following the hydrogen combustion events only a select crew of workers in rotating shifts was allowed on-site to deal with the emergency. Nevertheless, based on reports from NISA, 21 workers received doses exceeding 100 mSv. No worker has received a dose above 250 mSv, which is the allowable dose limit for emergency workers, and this is similar to standards in the U.S.

HOW WE CAN LEARN FROM THESE EVENTS FOR OUR INDUSTRY?

The safety approach used in designing and testing the plants in Japan are similar to those used in the U.S. The U.S. has adopted a philosophy of Defense-in-Depth, which recognizes that nuclear reactors require the highest standards of design, construction, oversight, and operation. Designs for every individual reactor in the U.S. take into account site-specific factors and include a detailed evaluation for natural events, as they relate to that site. There are multiple physical barriers to radiation in every nuclear plant design. Additionally, there are both diverse and redundant safety systems that are required to be maintained in operable condition and frequently tested to ensure that the plant is in a high condition of readiness to respond to any accident situation.

Nevertheless, this natural disaster exceeded the design basis envelope for those nuclear plants at the Daiichi site and we need to learn from this and continually improve our safety posture so that beyond design basis events can be managed. In the coming months, the USNRC will do a review of the accident and the safety posture of our plants. Over the longer term, lessons-learned from this event will be used to review the key areas of plant design, operation and readiness. I know I speak for all the ANS members, that we stand ready to help the industry and the government in this effort.

To promote some further discussion on these points let me suggest some items to consider. First, the events in Japan accentuated the need for the

U.S. to evaluate our entire civilian infrastructure (not just nuclear plants) and emergency preparedness for extreme natural disasters. Second, for our nuclear plants, we continually need to ask ourselves 'what-if' questions and what we may have missed. This was done for Three Mile Island accident and this resulted in the Severe Accident Management Guidelines (SAMGs) being used in U.S. plants today. I expect that these guidelines will be reviewed in light of lessons-learned from these events. The USNRC has also pioneered the use of Probabilistic Risk Assessment in WASH-1400 and has been used extensively. This technique can be used for such beyond-design basis events. Finally, we need to reexamine how we manage spent fuel both in its storage on-site as well as its final disposition. The ANS has recently issued a study on technical options for spent-fuel disposition that may be useful to this end. Also I assume the Blue Ribbon Commission will consider these recent events as they formulate their policy recommendations for spent nuclear fuel as directed by the President.

So in closing, let me offer some final thoughts.

First, while there is still much more information to gather, I think we now have an overall understanding of what happened at Fukushima Daiichi.

Second, while radioactive materials have been released into the environment, it does not appear, based on current data, that there will be widespread public health consequences.

Finally, because of differences in U.S. seismology and installed safety equipment, it is highly unlikely that Fukushima-like event could occur at a US nuclear plant. Nonetheless, the US nuclear industry - and every other industrial sector for that matter -- should use this opportunity to ensure that it can respond quickly and effectively to extreme natural events.

Thank you.

REFERENCES:

IAEA: <http://www.iaea.org/newscenter/news/tsunamiupdate01.html>

JAIF: <http://www.jaif.or.jp/english/>

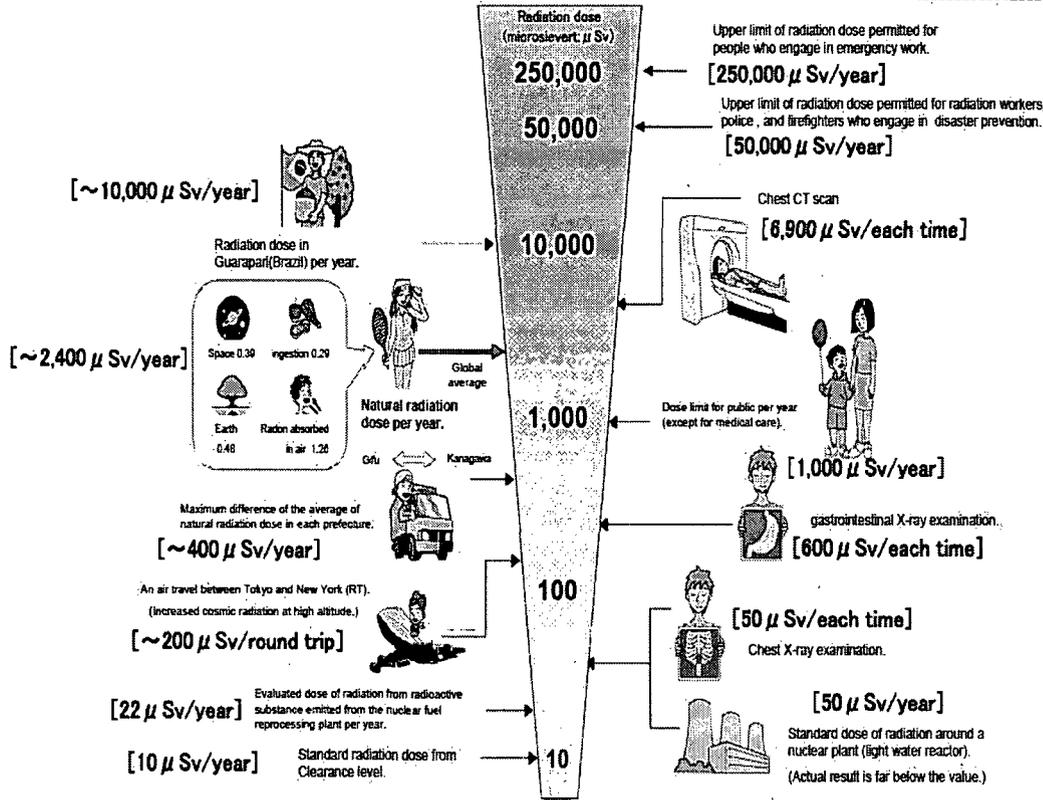
MEXT: http://www.mext.go.jp/english/radioactivity_level/detail/1303986.htm

NISA: <http://www.nisa.meti.go.jp/english/>

TEPCO: <http://www.tepco.co.jp/en/index-e.html>

Radiation in Daily-life

※Unit : μSv



Testimony of Dr. Edwin Lyman

Senior Scientist, Global Security Program

Union of Concerned Scientists

on “The U.S. Government Response to the Nuclear Power Plant Incident in Japan”

Before the

Subcommittee on Oversight and Investigations

Committee on Energy and Commerce

U.S. House of Representatives

April 6, 2011

Summary

- The crisis underway at the Fukushima Daiichi nuclear plant has revealed serious nuclear safety shortcomings that have major implications for nuclear power plants in the United States and around the world.
- Although the events are still unfolding in Japan, it is not too soon to begin to learn lessons from the evidence available so far.
- The Nuclear Regulatory Commission is initiating comprehensive internal reviews of its regulations and practices, but stringent external oversight will be required to ensure that these reviews effectively challenge prior assumptions that the Fukushima crisis has called into question, and that any weaknesses identified by the reviews are promptly corrected.
- Steps that the NRC should take in the near term include
 - Strengthening requirements to cope with prolonged losses of electric power (station blackouts) in order to prevent damage to reactor cores and spent fuel.
 - Requiring the accelerated transfer of spent fuel from densely packed wet pools to dry casks.
 - Strengthening requirements for management of severe events that cause damage to reactor cores and spent fuel, and ensuring plans are realistic and workable.
 - Revising emergency planning requirements in the vicinity of U.S. nuclear plants to ensure that all populations at risk from excessive radiation exposure will be protected.

Good morning. On behalf of the Union of Concerned Scientists, I would like to thank Chairman Stearns, Ranking Member DeGette, and the other members of the Subcommittee on Oversight and Investigations for the opportunity to provide our views on the still unfolding accident at the Fukushima Daiichi plant and its implications for nuclear power in this country.

The Union of Concerned Scientists would like to extend its deepest sympathies to the people of Japan during this crisis. While the dire situation in Japan should remain a main focus of U.S. attention, the U.S. also urgently needs to assess whether we are doing all that we can do to prevent a Fukushima-like nuclear disaster from happening here.

Before proceeding, I would like to say that the Union of Concerned Scientists is neither pro nor anti-nuclear power, but has served as a nuclear power safety and security watchdog for over 40 years.

Today, nearly four weeks after the catastrophic earthquake and subsequent tsunami that precipitated the Fukushima Daiichi crisis, there is still much that is uncertain, and it will be a long time before we learn all the lessons from this still-evolving accident. However, the severe and unacceptable consequences of this disaster for human health, the environment and the economy are already apparent. Hence lawmakers, regulators and the nuclear industry should not hesitate to take steps to help ensure that such a dire event will not happen here.

In the aftermath of the Chernobyl accident in 1986, many argued that such a large release of radioactivity could not happen in the United States or other countries with Western-designed reactors because those reactors had containment structures, unlike Chernobyl. However, it is now clear from Fukushima that significant releases of radioactivity can occur following a severe accident even without a catastrophic failure of containment. The Austrian Central Institute for Meteorology and Geodynamics has estimated that up to approximately 80 percent of the quantity of the long-lived isotope cesium-137 that was released after the Chernobyl accident was released from the Fukushima site in the first week after the accident. As large as this may sound, it only represents about one-tenth the total amount of cesium-137 in the three damaged reactor cores themselves. Further damage to the fuel, reactor vessel and containment could result in far greater releases. And the Fukushima Daiichi Units 1-3 boiling-water reactors have a type of containment structure, known as Mark I, which analysts have long known to be unusually vulnerable to breach in a severe accident. A 2006 study by Sandia National Laboratories estimated that in the event of a core melt, there was a nearly 36 percent chance that the molten core would melt through the containment wall (“Risk-Informed Assessment of Degraded Containment Vessels,” NUREG/CR-6920, November 2006, Table 4.5, p. 76). This mode of containment failure would not be affected by the changes that the NRC ordered for the 23 Mark I containment boiling-water reactors in the United States to reduce the chance of containment failure by a hydrogen explosion. Perhaps even more serious is the risk of further damage to the irradiated fuel in four compromised spent fuel pools, which also contain massive quantities of radioactive material but are not enclosed in leak-tight containment structures.

The Nuclear Regulatory Commission has announced that it will conduct both short- and longer-term reviews of its regulations and procedures. To that end, it announced last week that it had formed an internal task force to conduct a 90-day comprehensive examination of issues raised by the Fukushima accident, including station blackout risks and emergency preparedness. We believe that the task force has identified many of the right issues for scrutiny. However, we question whether the NRC's review will be sufficiently thorough without stringent oversight by Congress and entities such as the National Academies of Science. The defensive public posture that the NRC has taken since March 11 raises concerns that the agency remains too complacent to conduct a critical self-examination of its past decisions and practices. The NRC must confront the overarching question of whether it has allowed safety margins to decline to unacceptably low levels, based on a perception that severe accidents resulting in core damage are so infrequent that they do not require a high level of regulatory attention. It must adjust this perception in light of Fukushima.

We are also concerned about whether the NRC can adapt quickly to changed circumstances. Following the 9/11 attacks, the NRC undertook what it called a "top to bottom" review of its regulations for protecting nuclear power plants against radiological sabotage. Although the review uncovered serious shortcomings in the NRC's security requirements, the process of fixing them has been so slow that even today—nearly ten years after 9/11—some nuclear plants still have not completed required security upgrades, including Diablo Canyon, H.B. Robinson, Shearon Harris and Farley.

The Fukushima accident has already revealed a number of apparent vulnerabilities that may also affect U.S. plants. Some early lessons include the following:

1. The accident was initiated by a massive earthquake and tsunami, but the direct cause was the loss of both off-site and on-site power supplies, a situation known as a station blackout. There are many other types of initiating events that could cause such a situation, including terrorist attacks. In the event of a station blackout, only battery power is available to operate systems needed to prevent core damage. The NRC requires U.S. plants to have sufficient battery capacity to cope with a station blackout for no more than either four or eight hours, as well as plans to restore AC power by the time the batteries run out. Ninety percent of U.S. reactors only have a four-hour capability. We need to re-evaluate the adequacy of these plans, and whether they can be realistically implemented. Fukushima has demonstrated the extreme challenges that can be encountered in trying to restore power supplies after a catastrophic event that causes great disruption to the surrounding infrastructure.
2. At least one of the spent fuel pools at the Fukushima plant is believed to have lost coolant and caught fire, causing fuel damage, a hydrogen explosion and the release of long-lived radioactive particles. The pools are on the upper floors of these Mark I boiling-water reactors. The United States has 33 boiling-water reactors with similarly situated spent fuel pools that are far more densely packed than those at Fukushima and hence could pose far higher risks if damaged because of higher heat loads, less space available for coolant flow and greater radionuclide inventories. The United States should act as quickly as practicable to remove older spent fuel from these pools and place them in dry storage casks to reduce the heat load and radioactive inventories of the pools, and allow

greater spacing between assemblies. While NRC should give priority to the elevated spent fuel pools, it should also address risks at those pools that are at or below ground level, which are also vulnerable to loss-of-cooling events.

The NRC and the industry continue to maintain that U.S. spent fuel pools do not pose unacceptable risks and there is no need to transfer any spent fuel into dry storage other than fuel exceeding licensed pool capacities. However, NRC and industry officials have recently testified that as part of the post-9/11 plans for coping with the aftermath of terrorist attacks, the NRC has required changes to the way spent fuel is arranged in the pools, so that hotter fuel is not bunched together (so-called “checkerboarding”), and has also imposed new requirements for providing makeup water to the pools. The NRC would not have made these changes if it were not concerned about spent fuel pool risks. But what the public doesn’t know is whether these changes are sufficient to mitigate the risks, since further details are not publicly available. The difficulties and risks the Japanese have experienced in getting jury-rigged emergency cooling water supplies to the pools – using fire hoses, helicopters and concrete spraying pumps – raise questions about the workability of such plans.

3. Although the Japanese are engaged in truly heroic efforts to mitigate the worst effects of this accident and reduce radioactive releases that could harm the public, these efforts have only been partially effective, are already resulting in life-threatening conditions for the workers on site, and may ultimately fail. U.S. nuclear plants have severe accident management plans, but these plans are not required by regulations and are not evaluated by the NRC or tested for their effectiveness. In the case of aircraft attack on a nuclear

plant, the NRC does require plants to have plans to cope with the loss of large areas of the plant due to explosion and fire. The NRC now claims that these plans would also provide reactor operators with the capability to recover from a wide range of severe accidents, including natural disasters such as the events that triggered Fukushima.

However, these plans now must be re-evaluated to judge whether they can be realistically carried out in every circumstance under which the NRC takes credit for them, such as the extreme conditions now being encountered at Fukushima. For instance, a Nuclear Energy Institute official asserted in a Senate briefing on March 17 that the industry has pre-staged diesel-driven fire pumps and other equipment to enhance the capability of nuclear plant operators to mitigate severe events. But upon questioning, the official admitted that this equipment is not seismically qualified or otherwise “safety-related.” Thus it is unclear if it would actually be available following an earthquake. And even if the equipment were available, it is far from assured that it could actually be used safely and effectively for the duration of a crisis.

Because the industry’s post-9/11 plans are treated as “security-related information,” members of the public cannot access them and are not able to judge for themselves whether the plans are credible. For instance, the public does not know if these plans address serious issues in post-accident response that have been revealed at Fukushima, from the ability to manage and contain the large volumes of highly contaminated water generated by manual injection of coolant to the ability to ensure an adequate supply of personal dosimeters for all workers required for emergency response actions.

Presumably these plans are supported by a whole host of pre-Fukushima assumptions that may need to be revisited. Independent oversight of these plans is critical to ensure that such plans are robust and realistic, and that licensees are fully in compliance with them.

The regulatory concept of “defense in depth” means that efforts must be made both to prevent accidents from occurring and to mitigate them should they occur. We believe that the Fukushima experience indicates that mitigation is extremely challenging and may be impossible in some circumstances. NRC should place a far greater emphasis on preventing accidents and terrorist attacks from disabling multiple safety systems and disrupting core cooling by increasing safety margins, rather than trying to control events after core damage has occurred.

4. Levels of radioactive contamination and radiation dose rates high enough to be of significant concern have already been detected more than twenty miles from the release site, well beyond the 12-mile evacuation zone established by Japan. Lower but still elevated levels have been detected more than one hundred miles away. At one site approximately 25 miles northwest, hot spots are causing dose rates about forty times background levels. Residents occupying these areas would receive the maximum annual dose limit from artificial sources recommended by the International Commission on Radiological Protection within a week. These measurements confirm the wisdom of the U.S. decision to evacuate all Americans within fifty miles of Fukushima Daiichi.

However, if there was a reactor accident in the United States, the emergency preparedness measures that would directly protect the public, including evacuation planning and potassium iodide distribution, are limited to a 10-mile radius. The federal government should seriously consider increasing this distance, and should reassess the workability of emergency plans in the context of natural disasters or terrorist attacks that could disrupt emergency response activities. The NRC is defending the apparent inconsistency between its domestic requirements and the recommendations it issued for Japan by suggesting that the U.S. could always expand the evacuation zone beyond 10 miles as the situation warrants. However, the key to emergency planning is planning. The notion that an orderly and quick spontaneous evacuation could be carried out for large areas downwind of some U.S. nuclear plants in densely populated regions, such as Indian Point near New York City, simply strains credulity. Some degree of advance planning should be required for all populations who may be at significant risk in the event of a severe reactor accident, based on the best technical assessment. In particular, potassium iodide should be made available to all children who may be at risk of exceeding recommended intervention levels due to exposure to radioactive iodine either through direct plume inhalation or consumption of contaminated food or water.

There are many other areas where we believe the NRC has allowed safety margins to decrease too far. Now, not after an accident, is the time to reconsider whether the NRC's position on "how safe is safe" is truly adequate to protect public health and safety. Thank you for your attention, and I would be happy to answer any questions you may have.

STATEMENT

by

William Levis

President and Chief Operating Officer

PSEG Power LLC

to the

Subcommittee on Oversight and Investigations

Committee on Energy and Commerce

U.S. House of Representatives

April 6, 2011

Chairman Stearns, Ranking Member DeGette, and members of the subcommittee, thank you for the opportunity to appear before you today.

My name is William Levis. I am President and Chief Operating Officer of PSEG Power which is a subsidiary of Public Service Enterprise Group, headquartered in Newark, New Jersey. PSEG Power is a merchant generating company and owns approximately 14,000 megawatts of electric generating capacity. We own 100 percent of the Hope Creek nuclear generating station, 57 percent of the Salem nuclear station, and 50 percent of the Peach Bottom nuclear station. PSEG Power operates Salem and Hope Creek; Exelon operates Peach Bottom. Salem consists of two pressurized water reactors; Hope Creek is a single boiling water reactor; the Peach Bottom station has two boiling water reactors.

I appreciate your invitation to testify at today's hearing to discuss the status of the U.S. nuclear energy industry and the implications of the Fukushima nuclear accident on nuclear energy in the United States. I am testifying today on behalf of the Nuclear Energy Institute, the nuclear energy industry's Washington-based policy organization. NEI members include all companies licensed to operate commercial nuclear power plants in the United States, nuclear plant designers, major architect/engineering firms, fuel fabrication facilities, materials licensees, and other organizations and individuals involved in the nuclear energy industry.

My remarks will cover four major points:

First, U.S. nuclear power plants are safe.

Second, safety is the U.S. nuclear energy industry's top priority.

Third, the U.S. nuclear energy industry has a long history, over several decades, of continuous learning from operational events, and we have incorporated lessons learned into our nuclear plant designs (through structural or systems upgrades) and our operating practices and training. We will do the same as a result of the Fukushima accident.

And fourth, the U.S. nuclear energy industry has already taken pro-active steps to verify and validate our readiness to manage extreme events. We took these steps early – without waiting for clarity on the sequence of events at Fukushima.

Before I address these four points, however, let me note that the U.S. nuclear energy industry works very hard not to grow complacent about safety. This is not always easy when our 104 nuclear power plants are operating well, with an average capacity factor above 90 percent for the last 10 years. Similarly, we cannot be complacent about the accident at Fukushima. I am quite confident that we will learn important

lessons from this experience and identify additional steps we can and will take to further improve safety and response capability at our nuclear plants.

U.S. Nuclear Power Plants Are Safe

That said, we do believe U.S. nuclear power plants are safe. They are designed and operated conservatively, to exacting standards, to manage the maximum credible challenges appropriate to each nuclear power plant site. U.S. nuclear power plants have also demonstrated their ability to maintain safety through extreme conditions, including floods, hurricanes and other natural disasters.

I can think of no better summary of the status of U.S. nuclear power plants than the one delivered by President Obama to the American people on March 17. Mr. Obama said: “Our nuclear power plants have undergone exhaustive study, and have been declared safe for any number of extreme contingencies. But when we see a crisis like the one in Japan, we have a responsibility to learn from this event, and to draw from those lessons.”

The industry invests heavily in our nuclear power plants to ensure safe, reliable operation. The industry invested approximately \$7 billion in 2010 in our 104 reactors – to replace steam generators, reactor vessel heads and other equipment and in other capital projects.

U.S. reactors are designed to withstand earthquakes, tsunamis, hurricanes, floods, tornadoes and other natural events equal to the most significant historical event or the maximum projected event, plus an added margin for conservatism, without any breach of safety systems. We have many, many examples of U.S. nuclear power plants achieving safe shutdown during extreme events where offsite power was lost. During Hurricane Katrina in 2005, for example, the Waterford nuclear power plant in Louisiana shut down safely, lost all off-site power, and maintained safe shutdown on emergency diesel generators for three-and-a-half days until grid power was restored.

For earthquakes, nuclear plants are designed and constructed to withstand the maximum projected earthquake that could occur in its area, with additional margin added. Plant earthquake-induced ground motion is developed using a wide range of data and review of the impacts of historical earthquakes up to 200 miles away. Those earthquakes within 25 miles are studied in great detail. This research is used to determine the maximum potential earthquake that could affect the site. Each reactor is built to withstand the respective strongest earthquake; for example, a site that features clay over bedrock will respond differently during an earthquake than a hard-rock site.

It is important not to extrapolate earthquake and tsunami data from one location of the world to another when evaluating these natural hazards. These catastrophic natural events are location-specific, based on tectonic and geological fault line locations. The Tohoku earthquake that struck the Fukushima nuclear power plant occurred on a “subduction zone,” the type of tectonic region that produces earthquakes of the largest magnitude. A subduction zone is a tectonic plate boundary where one tectonic plate is pushed under another plate. Subduction zone earthquakes also produce the kind of massive tsunami seen in Japan.

In the continental United States, the only subduction zone is the Cascadia subduction zone which lies off the coast of northern California, Oregon and Washington. In an assessment released last week, the California Coastal Commission concluded that a “nuclear emergency such as is occurring in Japan is extremely unlikely at the state’s two operating nuclear power plants. The combination of strong ground motion and massive tsunami that occurred in Japan cannot be generated by faults near the San Onofre Nuclear Generating Station and the Diablo Canyon Power Plant.”

Safety Is the U.S. Nuclear Energy Industry's Top Priority

This leads to my second point: Safety is the U.S. nuclear energy industry's top priority, and complacency about safety performance is not tolerated.

Our industry operates in an unforgiving environment where the penalties for mistakes are high and where credibility and public confidence, once lost, are difficult to recover.

All of the safety-related metrics tracked by industry and the Nuclear Regulatory Commission demonstrate high levels of excellence. Forced plant outage rates, unplanned safety system actuations, worker radiation exposures, events with safety implications, and lost-time accident rates have all trended down, year over year, for a number of years.

We have confidence in nuclear plant safety based on those indicators, but we should derive even greater confidence from the process that produces those indicators, from the institutions we have created to share best practices, to establish standards of excellence and to implement programs that hold us to those standards.

After the 1979 accident at Three Mile Island, the nuclear industry created the Institute of Nuclear Power Operations (INPO). In INPO, the nuclear industry — unique among American industries — has established an independent form of self-regulation through peer review and peer pressure. In fact, the President's Oil Spill Commission, in its report on the Deepwater Horizon accident, identified INPO as the model for self-regulation by the offshore oil and gas industry.

INPO is empowered to establish performance objectives and criteria, and nuclear plant operating companies are obligated to implement improvements in response to INPO findings and recommendations. INPO has some 400 people monitoring nuclear plant operations and management on a daily basis. INPO evaluates every U.S. nuclear plant every two years, and deploys training teams to provide assistance to companies in specific areas identified as needing improvement during an evaluation.

INPO provides management and leadership development programs, and manages the National Academy of Nuclear Training, which conducts formal training and accreditation programs for those responsible for reactor operation and maintenance.

Among its many activities, INPO maintains an industrywide database called EPIX — for Equipment Performance and Information Exchange — and all companies are required to report equipment problems into the database. EPIX catalogues equipment problems and shows, for example, expected mean time between failures, which allows the industry to schedule predictive and preventive maintenance, replacing equipment before it fails, avoiding possible challenges to plant safety. INPO also maintains a system called Nuclear Network that allows companies to report and share information about operating events, to ensure that an unexpected event at one reactor is telegraphed to all, to ensure that an event at one plant is not repeated elsewhere, to ensure high levels of vigilance and readiness.

It may not be obvious to the outside world, but we have an enormous self-interest in safe operations. The industry preserves and enhances the asset value of our 104 operating plants first and foremost by maintaining focus on safety. Safety is the basis for regulatory confidence, and for political and public support of this technology.

Commitment to Continuous Learning

The U.S. industry routinely incorporates lessons learned from operating experience into its reactor designs and operations. U.S. nuclear power plants have implemented numerous plant and procedural improvements over the past 30 years. Some of these improvements have been designed to mitigate severe natural and plant-centered events similar to those experienced at the Fukushima nuclear power plant. In addition, the equipment and procedures could be used to mitigate other severe abnormal events. The type of events include a complete and sustained loss of AC power, a sustained loss of vital cooling water pumps, major fires and explosions that would prevent access to critical equipment, hydrogen control and venting, and loss of multiple safety systems.

Starting in the 1990s, U.S. nuclear power plants developed guidelines to manage and mitigate these severe events that are beyond the normal design specifications. Plants evaluated site-specific vulnerabilities and implemented plant and procedural improvements to further improve safety. These severe accident management guidelines were developed in response to probabilistic risk assessments (PRAs), which identified several high-risk accident sequences. These guidelines provide operators and emergency managers with pre-determined strategies to mitigate these events. The strategies focus on protecting the reactor containment structure as it assumes the zirconium cladding around the fuel and reactor cooling system are lost.

I could point to many, many examples of improvements made to U.S. nuclear power plants over the years in response to lessons learned from operational events. Let me list just a few:

- In the 1970s, concerns were raised about the ability of the BWR Mark I containment to maintain its design during an event when steam is vented to the torus. Subsequently, every U.S. operator with a Mark I containment implemented modifications to dissipate energy released to the suppression pool and stringent supports to accommodate loads that could be generated.
- As a result of the Three Mile Island accident, the industry made significant improvements to control room configuration and operator training – making it easier for operators to respond to plant issues, without taking time to diagnose what had occurred. The industry also learned significant lessons about emergency preparedness and the importance of ensuring the public receives timely and accurate information during a plant event. It was after TMI that the NRC required all sites have emergency plans including both an Emergency Operations Facility and a Joint Information Center. These offsite facilities were mandated to ensure the states and NRC could have direct access to the information coming from the station and that there was a means for the state, utility and NRC to communicate directly through the media to the public.
- In 1988, the Nuclear Regulatory Commission concluded that additional Station Black Out (SBO) regulatory requirements were justified and issued the Station Black Out rule (10 CFR 50.63) to provide further assurance that a loss of both offsite and onsite emergency AC power systems would not adversely affect public health and safety. The SBO rule was based on several plant-specific probabilistic safety studies; operating experience; and reliability, accident sequence and consequence analyses completed between 1975 and 1988.
- Since the terrorist events of September 11, 2001, U.S. nuclear plant operators identified other beyond-design-basis vulnerabilities. As a result, U.S. nuclear plant designs and operating practices since 9/11 are designed to mitigate severe accident scenarios such as aircraft impact, which include the complete loss of offsite power and all on-site emergency power sources *and* loss of large areas of the plant. The industry developed additional methods and procedures to provide cooling to the reactor and the spent fuel storage pool, and staged additional equipment at all U.S. nuclear power plant sites to ensure that the plants are equipped to deal with extreme events and nuclear plant operations staff are trained to manage them.

The U.S. Nuclear Energy Industry Has Already Taken Steps in Response to Fukushima

The U.S. nuclear energy industry has already started an assessment of the events in Japan and is taking steps to ensure that U.S. reactors could respond to events that may challenge safe operation of the facilities. These actions include:

- Verifying each plant's capability to manage major challenges, such as aircraft impacts and losses of large areas of the plant due to natural events, fires or explosions. Specific actions include testing and inspecting equipment required to mitigate these events, and verifying that qualifications of operators and support staff required to implement them are current.
- Verifying each plant's capability to manage a total loss of off-site power. This will require verification that all required materials are adequate and properly staged and that procedures are in place, and focusing operator training on these extreme events.
- Verifying the capability to mitigate flooding and the impact of floods on systems inside and outside the plant. Specific actions include verifying required materials and equipment are properly located to protect them from flood.
- Performing walk-downs and inspection of important equipment needed to respond successfully to extreme events like fires and floods. This work will include analysis to identify any potential that equipment functions could be lost during seismic events appropriate for the site, and development of strategies to mitigate any potential vulnerabilities.

Until we understand clearly what has occurred at the Fukushima Daiichi nuclear power plants, and any consequences, it is difficult to speculate about the long-term impact on the U.S. nuclear energy program. The U.S. nuclear industry, the U.S. Nuclear Regulatory Commission, the Institute of Nuclear Power Operations, the Nuclear Energy Institute, the World Association of Nuclear Operators and other expert organizations in the United States and around the world will conduct detailed reviews of the accident, identify lessons learned (both in terms of plant operation and design), and we will incorporate those lessons learned into the design and operation of U.S. nuclear power plants. When we fully understand the facts surrounding the event in Japan, we will use those insights to make nuclear energy even safer.

In the long-term, we believe that the U.S. nuclear energy enterprise is built on a strong foundation:

- reactor designs and operating practices incorporate a defense-in-depth approach and multiple levels of redundant systems
- oversight by a strong, independent regulatory infrastructure, which includes continuous assessment of every U.S. reactor by the Nuclear Regulatory Commission, with independent inspectors permanently on site and additional oversight from NRC regional offices and headquarters
- transparent regulatory process that provides for public participation in licensing decisions, and
- continuing and systematic processes to identify and incorporate lessons learned from operating experience.

In conclusion, let me leave you with a short-term and a longer-term perspective.

In the short term, all of us involved with the production of electricity from nuclear energy in the United States stand in awe of the commitment and determination of our colleagues in Japan, as they struggle to bring these reactors to safe shutdown.

In the longer term, it will be some time before we understand the precise sequence of what happened at Fukushima, before we have a complete analysis of how the reactor performed, how equipment and fuel performed, and how the operators performed. As we learn from this event, however, you may rest assured that we will internalize those lessons and incorporate them into our designs and training and operating procedures.

■

Committee on Energy and Commerce

U.S. House of Representatives

Witness Disclosure Requirement - "Truth in Testimony"
Required by House Rule XI, Clause 2(g)

1. Your Name: William Levis		
2. Are you testifying on behalf of the Federal, or a State or local government entity?	Yes	No x
3. Are you testifying on behalf of an entity that is not a government entity?	Yes x	No
4. Other than yourself, please list which entity or entities you are representing: Nuclear Energy Institute		
5. Please list any Federal grants or contracts (including subgrants or subcontracts) that you or the entity you represent have received on or after October 1, 2008: None		
6. If your answer to the question in item 3 in this form is "yes," please describe your position or representational capacity with the entity(ies) you are representing: Member company of NEI		
7. If your answer to the question in item 3 is "yes," do any of the entities disclosed in item 4 have parent organizations, subsidiaries, or partnerships that you are not representing in your testimony?	Yes	No x
8. If the answer to the question in item 3 is "yes," please list any Federal grants or contracts (including subgrants or subcontracts) that were received by the entities listed under the question in item 4 on or after October 1, 2008, that exceed 10 percent of the revenue of the entities in the year received, including the source and amount of each grant or contract to be listed: None		

Signature: Will Levis

Date: 4/4/11

From: Powell, Amy
Sent: Tuesday, April 05, 2011 12:18 PM
To: Coggins, Angela
Subject: Exchange with Michal re: KI

FYI - the latest exchange with Michal re; KI is below. Jenny is waiting to hear back with more info but wanted you to be aware of the line of questioning (since it involves you!)

-----Original Message-----

From: Freedhoff, Michal [mailto:Michal.Freedhoff@mail.house.gov]
Sent: Tuesday, April 05, 2011 12:12 PM
To: Weil, Jenny; Powell, Amy; Shane, Raeann
Cc: Fischhoff, Ilya
Subject: Re: KI

So no NRC personnel over there were given any to carry with them? What about the Chairman and his staff? Are the nRC personnel over there all outside the 50 mile zone?

Thanks

Michal

Michal Ilana Freedhoff, Ph.D.

Policy Director

Office of Representative Edward J. Markey

2108 Rayburn House Office Building

Washington, DC 20515

202-225-2836

Sent using BlackBerry

----- Original Message -----

From: Weil, Jenny [mailto:Jenny.Weil@nrc.gov]
Sent: Tuesday, April 05, 2011 12:07 PM
To: Freedhoff, Michal; Powell, Amy <Amy.Powell@nrc.gov>; Shane, Raeann <Raeann.Shane@nrc.gov>
Cc: Fischhoff, Ilya
Subject: RE: KI

Hi Michal,

This is a multi-agency coordination effort -- NRC, State Dept., Navy and DOE. KI supplies have been sent outside of the 50-mile radius and will be made available, if/as necessary. At the moment, no supplies have been distributed. I don't have information on exactly where the stockpiles are located... still checking.

/Jenny

To: Powell, Amy; Weil, Jenny; Shane, Raeann
Cc: Fischhoff, Ilya
Subject: RE: KI

Any word on this?

Michal Ilana Freedhoff, Ph.D.
Policy Director
Office of Congressman Edward J. Markey (D-MA)
2108 Rayburn House Office Building
Washington, DC 20515
202-225-2836

-----Original Message-----

From: Powell, Amy [mailto: Amy.Powell@nrc.gov]
Sent: Tuesday, April 05, 2011 6:22 AM
To: Freedhoff, Michal; Weil, Jenny; Shane, Raeann
Cc: Fischhoff, Ilya
Subject: Re: KI

Raeann is tracking down an answer for you on that.

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

----- Original Message -----

From: Freedhoff, Michal <Michal.Freedhoff@mail.house.gov>
To: Powell, Amy; Weil, Jenny
Cc: Fischhoff, Ilya <Ilya.Fischhoff@mail.house.gov>
Sent: Mon Apr 04 22:32:18 2011
Subject: KI

Hi guys

Still waiting on the KI response - who was it provided to in Japan (I mean US resident/personnel), where were they relative to the site, and were they instructed to take it? We need this information tomorrow.

Thanks
Michal
Michal Ilana Freedhoff, Ph.D.
Policy Director
Office of Representative Edward J. Markey
2108 Rayburn House Office Building
Washington, DC 20515
202-225-2836

Sent using BlackBerry

From: Freedhoff, Michal <Michal.Freedhoff@mail.house.gov>
Sent: Tuesday, April 05, 2011 12:39 PM
To: Weil, Jenny; Powell, Amy; Shane, Raeann
Cc: Fischhoff, Ilya
Subject: RE: KI

Thanks,

Michal Ilana Freedhoff, Ph.D.
Policy Director
Office of Congressman Edward J. Markey (D-MA)
2108 Rayburn House Office Building
Washington, DC 20515
202-225-2836

-----Original Message-----

From: Weil, Jenny [mailto:Jenny.Weil@nrc.gov]
Sent: Tuesday, April 05, 2011 12:29 PM
To: Freedhoff, Michal; Powell, Amy; Shane, Raeann
Cc: Fischhoff, Ilya
Subject: RE: KI

The staff is outside of the 50-mile zone in Tokyo.

-----Original Message-----

From: Freedhoff, Michal [mailto:Michal.Freedhoff@mail.house.gov]
Sent: Tuesday, April 05, 2011 12:12 PM
To: Weil, Jenny; Powell, Amy; Shane, Raeann
Cc: Fischhoff, Ilya
Subject: Re: KI

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Thanks

Michal

Michal Ilana Freedhoff, Ph.D.

Policy Director

Office of Representative Edward J. Markey

2108 Rayburn House Office Building

Washington, DC 20515

202-225-2836

Sent using BlackBerry

----- Original Message -----

From: Weil, Jenny [mailto:Jenny.Weil@nrc.gov]

Sent: Tuesday, April 05, 2011 12:07 PM

To: Freedhoff, Michal; Powell, Amy <Amy.Powell@nrc.gov>; Shane, Raeann <Raeann.Shane@nrc.gov>

Cc: Fischhoff, Ilya

Subject: RE: KI

Hi Michal,

This is a multi-agency coordination effort -- NRC, State Dept., Navy and DOE. KI supplies have been sent outside of the 50-mile radius and will be made available, if/as necessary. At the moment, no supplies have been distributed. I don't have information on exactly where the stockpiles are located... still checking.

/Jenny

-----Original Message-----

From: Freedhoff, Michal [mailto:Michal.Freedhoff@mail.house.gov]

Sent: Tuesday, April 05, 2011 11:58 AM

To: Powell, Amy; Weil, Jenny; Shane, Raeann

Cc: Fischhoff, Ilya

Subject: RE: KI

Any word on this?

Michal Ilana Freedhoff, Ph.D.

Policy Director

Office of Congressman Edward J. Markey (D-MA)

2108 Rayburn House Office Building

Washington, DC 20515

202-225-2836

-----Original Message-----

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Sent: Tuesday, April 05, 2011 6:22 AM

To: Freedhoff, Michal; Weil, Jenny; Shane, Raeann

Cc: Fischhoff, Ilya

Subject: Re: KI

Raeann is tracking down an answer for you on that.

Amy Powell

Associate Director

Office of Congressional Affairs

U. S. Nuclear Regulatory Commission

Phone: 301-415-1673

Sent from my Blackberry

----- Original Message -----

From: Freedhoff, Michal <Michal.Freedhoff@mail.house.gov>

To: Powell, Amy; Weil, Jenny

Cc: Fischhoff, Ilya <Ilya.Fischhoff@mail.house.gov>

Sent: Mon Apr 04 22:32:18 2011

Subject: KI

Hi guys

Still waiting on the KI response - who was it provided to in Japan (I mean US resident/personnel), where were they relative to the site, and were they instructed to take it? We need this information tomorrow.

Thanks

Michal

Michal Ilana Freedhoff, Ph.D.

Policy Director

Office of Representative Edward J. Markey

2108 Rayburn House Office Building

Washington, DC 20515

202-225-2836

Sent using BlackBerry

From: Powell, Amy
Sent: Tuesday, April 05, 2011 1:42 PM
To: Virgilio, Martin; Schmidt, Rebecca; Cool, Donald
Cc: Shane, Raeann
Subject: Testimony from "Panel 2"
Attachments: Testimony - Corradini.pdf; Testimony - Levis.pdf; Testimony - Lyman.pdf

FYI, one of our staff contacts on House Energy and Commerce shared the attached written testimonies for the participants on "panel 2" tomorrow.

Amy

Amy Powell
Associate Director
U. S. Nuclear Regulatory Commission
Office of Congressional Affairs
Phone: 301-415-1673

TESTIMONY OF
Michael Corradini
American Nuclear Society

BEFORE THE
HOUSE ENERGY AND COMMERCE COMMITTEE
SUBCOMMITTEE ON OVERSIGHT AND INVESTIGATIONS

April 6, 2011

Chairman Stearns, Ranking Member DeGette, members of the Subcommittee, thank you for the opportunity to testify.

I am currently chair of the Nuclear Engineering and Engineering Physics program at the University of Wisconsin, Madison. I am also involved in a number of nuclear energy activities for the National Academies, the Department of Energy (DOE) and the Nuclear Regulatory Commission (USNRC). Specifically, I am a member of the DOE Nuclear Energy Advisory Committee and Chair of its Reactor Technology Subcommittee. In addition, I am a member of the French Atomic Energy Scientific Committee and the NRC's Advisory Committee for Reactor Safeguards.

I appear today on behalf of the American Nuclear Society (ANS), a professional organization comprised of 11,000 men and women who work in the nuclear industry, the medical community, our national laboratories, universities and government agencies.

On behalf of all ANS members, I would like to express my deepest sympathies to the people of Japan for their loss and hardship. My sons and I were in Osaka in 1995 at the time of the Kobe earthquake and we witnessed the tragic effects of that natural disaster. From what I have seen from news reports and photos on the web, this is a tragedy that is orders of magnitude more devastating and thus, even more sobering. While we are here to discuss the Fukushima power plants, I wanted to be sure we put this in context to this tragic natural disaster with over 12,000 dead and over 15,000 missing.

The American Nuclear Society has organized the “Japan Relief Fund” targeted specifically to help our friends, colleagues, and their families in Japan who have been affected by the earthquake and tsunami. More information can be found at the American Nuclear Society website: <http://www.ANS.org> .

The leadership of ANS has asked me to serve as co-chair of a *Special Commission on Fukushima Daiichi*. This Commission will examine the major technical aspects of the event to help policymakers and the public better understand its consequences and its lessons for the US nuclear industry.

It is probably useful to begin by providing some current information and perspectives about the events and how they relate to the U.S plants and safety practices. That is my role here today. I want to briefly focus on three general topics:

- The effects of the natural disaster on the Fukushima-Daiichi plants,
- The effects of the accident progression on the surrounding region, and
- How we can learn from these events for our U.S. nuclear industry?

To review these topics, I have made use of the information provided on the websites of the Tokyo Electric Power Company (TEPCO), the Nuclear and Industrial Safety Agency (NISA), the Ministry of Education, Culture, Science and Technology (MEXT), Japan Atomic Industrial Forum (JAIF), the International Atomic Energy Agency (IAEA) as well as discussions with colleagues and specific press reports. Although there is so much that we do not know about what has happened in Fukushima and surrounding areas, I have found the information from these sources to be consistent and helpful to answer many questions. This timely availability of information is a tribute to Japan and its institutions since these nuclear troubles occurred in the midst of the response to the many injuries and property destruction caused by the earthquake on the general population.

EFFECTS OF THE NATURAL DISASTER ON THE FUKUSHIMA PLANTS

As we now know, the Tohoku earthquake, which occurred at 2:46pm on Friday, March 11th on the east coast of northern Japan, was measured at 9.0 on the Richter scale and is believed to be the 4th largest earthquake in recorded history. As a point of reference the next most serious quake was in 2004 off the coast of Sumatra with a tsunami resulting in 227,000 deaths. Following the earthquake on Friday afternoon, the nuclear plants at Fukushima-Daiichi, Fukushima-Daini and Osonawa plant sites shut down as designed, and emergency power systems were activated as expected; even though the earthquake was beyond the design basis. At the Daiichi plants the design basis safe-shutdown earthquake was 8.2 as measured on the Richter scale, which is a design base above historical values. The Tohoku earthquake caused a tsunami, which hit the east coast of Japan within the first hour of the quake. The size of the water waves that hit the Daiichi plant were significantly above the design base on which the seawall was constructed (17 ft) to mitigate its effects. The tsunami appears to have been the primary cause of the initial on-site damage, making the backup power systems and associated pumping, electrical and venting systems inoperable for Units 1, 2, 3, 4.

On-site battery power was able to run the emergency control and pumping systems at the plant site until about midnight on Friday and then the plants experienced a loss of all electrical power for an extended period of time. By the afternoon of Saturday, March 12th, portable generators and portable fire pumps were moved onto the Fukushima-Daiichi site and seawater was pumped in to cool the reactor cores for Units 1, 2 and 3. Decay heat was removed by venting the steam from above the containment suppression pools. The initial lack of water-cooling caused the reactor cores to be severely degraded, causing metal-water chemical reactions and hydrogen gas generation. Hydrogen was released during steam venting causing the destructive combustion events in reactor buildings outside of containment.

In addition to cooling the reactors, it has been necessary for plant personnel to replenish the water in each unit's spent fuel pools that was lost.

due to water evaporation caused by decay heat. This is especially true for Unit 4, since it was undergoing maintenance at the time of the earthquake and its relatively "hotter" reactor core fuel assemblies were also placed in the spent fuel pool. For reasons that are not completely clear at this time, the water supply at spent fuel pools at these Units reached very low levels over the first few days causing the spent fuel to become severely damaged resulting in hydrogen generation and combustion, fuel rod cladding failures and radioactivity releases to the environment. Seawater was then sprayed in to refill these water pools and they now remain cooled.

This mode of cooling continued until fresh water was brought to the site about two weeks after the earthquake. The reactor plants and the spent fuel are now being cooled by injection of fresh water.

EFFECTS OF THE ACCIDENT ON THE SURROUNDING REGION

Immediately following the earthquake and tsunami and the subsequent loss of on-site electrical power, the Nuclear and Industrial Safety Agency (NISA) declared a site emergency and by the evening of March 11th, residents within 10km of the Fukushima-Daiichi plant were instructed to evacuate. By Saturday afternoon, NISA advised residents within 20km to evacuate and those between 20 to 30km away to remain in their homes as shelter or voluntarily leave the area. In the first few days after the earthquake, the air-borne radiation levels were much higher than natural background (normally around 0.3 to 0.4 microSieverts per hour). By a week after the event, they had already fallen to levels a couple of times above natural background. In fact, the air-borne doses outside of a 60km radius from the plant now have readings close to normal. At this time this event has not become a national health disaster for Japan.

I would also note that we have the technical capability to measure radiation and its elemental sources in extremely small amounts far below any levels that are harmful to the human body.

The source of the radioactive release is not precisely known, but some indications are that it came primarily from the heating, degradation and subsequent failure of the spent fuel. The levels of radiation on the plant site were much higher and following the hydrogen combustion events only a select crew of workers in rotating shifts was allowed on-site to deal with the emergency. Nevertheless, based on reports from NISA, 21 workers received doses exceeding 100 mSv. No worker has received a dose above 250 mSv, which is the allowable dose limit for emergency workers, and this is similar to standards in the U.S.

HOW WE CAN LEARN FROM THESE EVENTS FOR OUR INDUSTRY?

The safety approach used in designing and testing the plants in Japan are similar to those used in the U.S. The U.S. has adopted a philosophy of Defense-in-Depth, which recognizes that nuclear reactors require the highest standards of design, construction, oversight, and operation. Designs for every individual reactor in the U.S. take into account site-specific factors and include a detailed evaluation for natural events, as they relate to that site. There are multiple physical barriers to radiation in every nuclear plant design. Additionally, there are both diverse and redundant safety systems that are required to be maintained in operable condition and frequently tested to ensure that the plant is in a high condition of readiness to respond to any accident situation.

Nevertheless, this natural disaster exceeded the design basis envelope for those nuclear plants at the Daiichi site and we need to learn from this and continually improve our safety posture so that beyond design basis events can be managed. In the coming months, the USNRC will do a review of the accident and the safety posture of our plants. Over the longer term, lessons-learned from this event will be used to review the key areas of plant design, operation and readiness. I know I speak for all the ANS members, that we stand ready to help the industry and the government in this effort.

To promote some further discussion on these points let me suggest some items to consider. First, the events in Japan accentuated the need for the

U.S. to evaluate our entire civilian infrastructure (not just nuclear plants) and emergency preparedness for extreme natural disasters. Second, for our nuclear plants, we continually need to ask ourselves 'what-if' questions and what we may have missed. This was done for Three Mile Island accident and this resulted in the Severe Accident Management Guidelines (SAMGs) being used in U.S. plants today. I expect that these guidelines will be reviewed in light of lessons-learned from these events. The USNRC has also pioneered the use of Probabilistic Risk Assessment in WASH-1400 and has been used extensively. This technique can be used for such beyond-design basis events. Finally, we need to reexamine how we manage spent fuel both in its storage on-site as well as its final disposition. The ANS has recently issued a study on technical options for spent-fuel disposition that may be useful to this end. Also I assume the Blue Ribbon Commission will consider these recent events as they formulate their policy recommendations for spent nuclear fuel as directed by the President.

So in closing, let me offer some final thoughts.

First, while there is still much more information to gather, I think we now have an overall understanding of what happened at Fukushima Daiichi.

Second, while radioactive materials have been released into the environment, it does not appear, based on current data, that there will be widespread public health consequences.

Finally, because of differences in U.S. seismology and installed safety equipment, it is highly unlikely that Fukushima-like event could occur at a US nuclear plant. Nonetheless, the US nuclear industry - and every other industrial sector for that matter -- should use this opportunity to ensure that it can respond quickly and effectively to extreme natural events.

Thank you.

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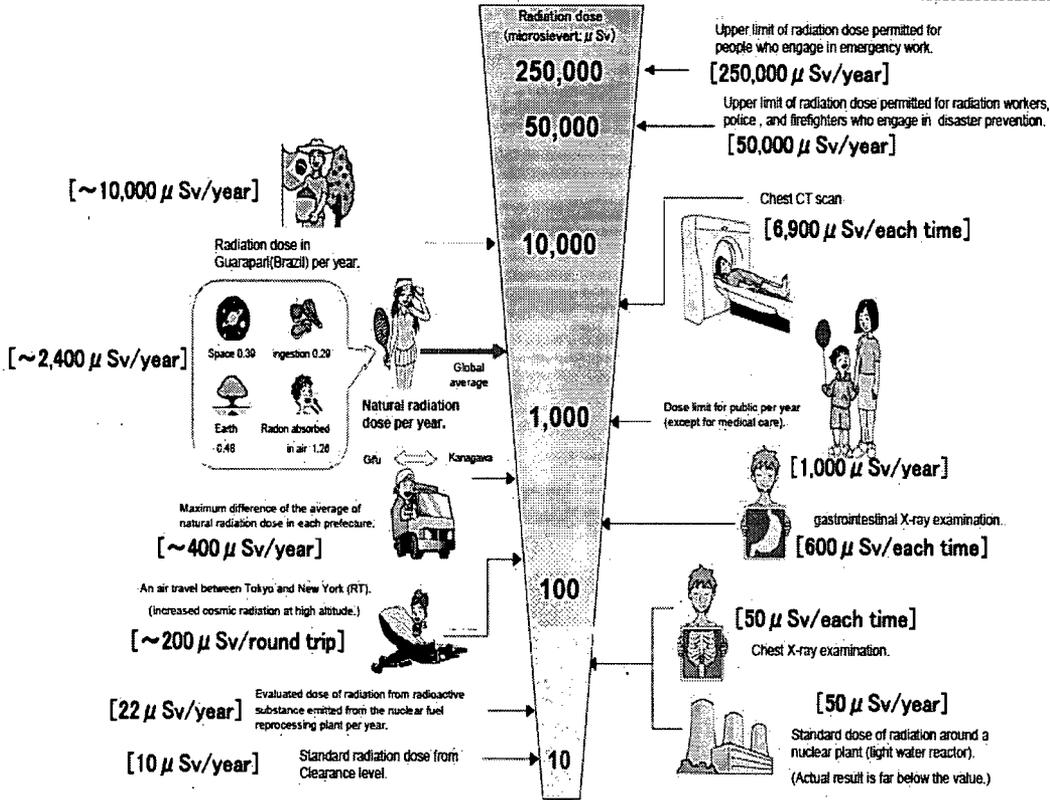
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Radiation in Daily-life

※Unit : μSv



Testimony of Dr. Edwin Lyman

Senior Scientist, Global Security Program

Union of Concerned Scientists

on “The U.S. Government Response to the Nuclear Power Plant Incident in Japan”

Before the

Subcommittee on Oversight and Investigations

Committee on Energy and Commerce

U.S. House of Representatives

April 6, 2011

Summary

- The crisis underway at the Fukushima Daiichi nuclear plant has revealed serious nuclear safety shortcomings that have major implications for nuclear power plants in the United States and around the world.
- Although the events are still unfolding in Japan, it is not too soon to begin to learn lessons from the evidence available so far.
- The Nuclear Regulatory Commission is initiating comprehensive internal reviews of its regulations and practices, but stringent external oversight will be required to ensure that these reviews effectively challenge prior assumptions that the Fukushima crisis has called into question, and that any weaknesses identified by the reviews are promptly corrected.
- Steps that the NRC should take in the near term include
 - Strengthening requirements to cope with prolonged losses of electric power (station blackouts) in order to prevent damage to reactor cores and spent fuel.
 - Requiring the accelerated transfer of spent fuel from densely packed wet pools to dry casks.
 - Strengthening requirements for management of severe events that cause damage to reactor cores and spent fuel, and ensuring plans are realistic and workable.
 - Revising emergency planning requirements in the vicinity of U.S. nuclear plants to ensure that all populations at risk from excessive radiation exposure will be protected.

Good morning. On behalf of the Union of Concerned Scientists, I would like to thank Chairman Stearns, Ranking Member DeGette, and the other members of the Subcommittee on Oversight and Investigations for the opportunity to provide our views on the still unfolding accident at the Fukushima Daiichi plant and its implications for nuclear power in this country.

The Union of Concerned Scientists would like to extend its deepest sympathies to the people of Japan during this crisis. While the dire situation in Japan should remain a main focus of U.S attention, the U.S. also urgently needs to assess whether we are doing all that we can do to prevent a Fukushima-like nuclear disaster from happening here.

Before proceeding, I would like to say that the Union of Concerned Scientists is neither pro nor anti-nuclear power, but has served as a nuclear power safety and security watchdog for over 40 years.

Today, nearly four weeks after the catastrophic earthquake and subsequent tsunami that precipitated the Fukushima Daiichi crisis, there is still much that is uncertain, and it will be a long time before we learn all the lessons from this still-evolving accident. However, the severe and unacceptable consequences of this disaster for human health, the environment and the economy are already apparent. Hence lawmakers, regulators and the nuclear industry should not hesitate to take steps to help ensure that such a dire event will not happen here.

In the aftermath of the Chernobyl accident in 1986, many argued that such a large release of radioactivity could not happen in the United States or other countries with Western-designed reactors because those reactors had containment structures, unlike Chernobyl. However, it is now clear from Fukushima that significant releases of radioactivity can occur following a severe accident even without a catastrophic failure of containment. The Austrian Central Institute for Meteorology and Geodynamics has estimated that up to approximately 80 percent of the quantity of the long-lived isotope cesium-137 that was released after the Chernobyl accident was released from the Fukushima site in the first week after the accident. As large as this may sound, it only represents about one-tenth the total amount of cesium-137 in the three damaged reactor cores themselves. Further damage to the fuel, reactor vessel and containment could result in far greater releases. And the Fukushima Daiichi Units 1-3 boiling-water reactors have a type of containment structure, known as Mark I, which analysts have long known to be unusually vulnerable to breach in a severe accident. A 2006 study by Sandia National Laboratories estimated that in the event of a core melt, there was a nearly 36 percent chance that the molten core would melt through the containment wall ("Risk-Informed Assessment of Degraded Containment Vessels," NUREG/CR-6920, November 2006, Table 4.5, p. 76). This mode of containment failure would not be affected by the changes that the NRC ordered for the 23 Mark I containment boiling-water reactors in the United States to reduce the chance of containment failure by a hydrogen explosion. Perhaps even more serious is the risk of further damage to the irradiated fuel in four compromised spent fuel pools, which also contain massive quantities of radioactive material but are not enclosed in leak-tight containment structures.

The Nuclear Regulatory Commission has announced that it will conduct both short- and longer-term reviews of its regulations and procedures. To that end, it announced last week that it had formed an internal task force to conduct a 90-day comprehensive examination of issues raised by the Fukushima accident, including station blackout risks and emergency preparedness. We believe that the task force has identified many of the right issues for scrutiny. However, we question whether the NRC's review will be sufficiently thorough without stringent oversight by Congress and entities such as the National Academies of Science. The defensive public posture that the NRC has taken since March 11 raises concerns that the agency remains too complacent to conduct a critical self-examination of its past decisions and practices. The NRC must confront the overarching question of whether it has allowed safety margins to decline to unacceptably low levels, based on a perception that severe accidents resulting in core damage are so infrequent that they do not require a high level of regulatory attention. It must adjust this perception in light of Fukushima.

We are also concerned about whether the NRC can adapt quickly to changed circumstances. Following the 9/11 attacks, the NRC undertook what it called a "top to bottom" review of its regulations for protecting nuclear power plants against radiological sabotage. Although the review uncovered serious shortcomings in the NRC's security requirements, the process of fixing them has been so slow that even today—nearly ten years after 9/11—some nuclear plants still have not completed required security upgrades, including Diablo Canyon, H.B. Robinson, Shearon Harris and Farley.

The Fukushima accident has already revealed a number of apparent vulnerabilities that may also affect U.S. plants. Some early lessons include the following:

1. The accident was initiated by a massive earthquake and tsunami, but the direct cause was the loss of both off-site and on-site power supplies, a situation known as a station blackout. There are many other types of initiating events that could cause such a situation, including terrorist attacks. In the event of a station blackout, only battery power is available to operate systems needed to prevent core damage. The NRC requires U.S. plants to have sufficient battery capacity to cope with a station blackout for no more than either four or eight hours, as well as plans to restore AC power by the time the batteries run out. Ninety percent of U.S. reactors only have a four-hour capability. We need to re-evaluate the adequacy of these plans, and whether they can be realistically implemented. Fukushima has demonstrated the extreme challenges that can be encountered in trying to restore power supplies after a catastrophic event that causes great disruption to the surrounding infrastructure.
2. At least one of the spent fuel pools at the Fukushima plant is believed to have lost coolant and caught fire, causing fuel damage, a hydrogen explosion and the release of long-lived radioactive particles. The pools are on the upper floors of these Mark I boiling-water reactors. The United States has 33 boiling-water reactors with similarly situated spent fuel pools that are far more densely packed than those at Fukushima and hence could pose far higher risks if damaged because of higher heat loads, less space available for coolant flow and greater radionuclide inventories. The United States should act as quickly as practicable to remove older spent fuel from these pools and place them in dry storage casks to reduce the heat load and radioactive inventories of the pools, and allow

greater spacing between assemblies. While NRC should give priority to the elevated spent fuel pools, it should also address risks at those pools that are at or below ground level, which are also vulnerable to loss-of-cooling events.

The NRC and the industry continue to maintain that U.S. spent fuel pools do not pose unacceptable risks and there is no need to transfer any spent fuel into dry storage other than fuel exceeding licensed pool capacities. However, NRC and industry officials have recently testified that as part of the post-9/11 plans for coping with the aftermath of terrorist attacks, the NRC has required changes to the way spent fuel is arranged in the pools, so that hotter fuel is not bunched together (so-called “checkerboarding”), and has also imposed new requirements for providing makeup water to the pools. The NRC would not have made these changes if it were not concerned about spent fuel pool risks. But what the public doesn’t know is whether these changes are sufficient to mitigate the risks, since further details are not publicly available. The difficulties and risks the Japanese have experienced in getting jury-rigged emergency cooling water supplies to the pools – using fire hoses, helicopters and concrete spraying pumps – raise questions about the workability of such plans.

3. Although the Japanese are engaged in truly heroic efforts to mitigate the worst effects of this accident and reduce radioactive releases that could harm the public, these efforts have only been partially effective, are already resulting in life-threatening conditions for the workers on site, and may ultimately fail. U.S. nuclear plants have severe accident management plans, but these plans are not required by regulations and are not evaluated by the NRC or tested for their effectiveness. In the case of aircraft attack on a nuclear

plant, the NRC does require plants to have plans to cope with the loss of large areas of the plant due to explosion and fire. The NRC now claims that these plans would also provide reactor operators with the capability to recover from a wide range of severe accidents, including natural disasters such as the events that triggered Fukushima.

However, these plans now must be re-evaluated to judge whether they can be realistically carried out in every circumstance under which the NRC takes credit for them, such as the extreme conditions now being encountered at Fukushima. For instance, a Nuclear Energy Institute official asserted in a Senate briefing on March 17 that the industry has pre-staged diesel-driven fire pumps and other equipment to enhance the capability of nuclear plant operators to mitigate severe events. But upon questioning, the official admitted that this equipment is not seismically qualified or otherwise “safety-related.” Thus it is unclear if it would actually be available following an earthquake. And even if the equipment were available, it is far from assured that it could actually be used safely and effectively for the duration of a crisis.

Because the industry’s post-9/11 plans are treated as “security-related information,” members of the public cannot access them and are not able to judge for themselves whether the plans are credible. For instance, the public does not know if these plans address serious issues in post-accident response that have been revealed at Fukushima, from the ability to manage and contain the large volumes of highly contaminated water generated by manual injection of coolant to the ability to ensure an adequate supply of personal dosimeters for all workers required for emergency response actions.

Presumably these plans are supported by a whole host of pre-Fukushima assumptions that may need to be revisited. Independent oversight of these plans is critical to ensure that such plans are robust and realistic, and that licensees are fully in compliance with them.

The regulatory concept of “defense in depth” means that efforts must be made both to prevent accidents from occurring and to mitigate them should they occur. We believe that the Fukushima experience indicates that mitigation is extremely challenging and may be impossible in some circumstances. NRC should place a far greater emphasis on preventing accidents and terrorist attacks from disabling multiple safety systems and disrupting core cooling by increasing safety margins, rather than trying to control events after core damage has occurred.

4. Levels of radioactive contamination and radiation dose rates high enough to be of significant concern have already been detected more than twenty miles from the release site, well beyond the 12-mile evacuation zone established by Japan. Lower but still elevated levels have been detected more than one hundred miles away. At one site approximately 25 miles northwest, hot spots are causing dose rates about forty times background levels. Residents occupying these areas would receive the maximum annual dose limit from artificial sources recommended by the International Commission on Radiological Protection within a week. These measurements confirm the wisdom of the U.S. decision to evacuate all Americans within fifty miles of Fukushima Daiichi.

However, if there was a reactor accident in the United States, the emergency preparedness measures that would directly protect the public, including evacuation planning and potassium iodide distribution, are limited to a 10-mile radius. The federal government should seriously consider increasing this distance, and should reassess the workability of emergency plans in the context of natural disasters or terrorist attacks that could disrupt emergency response activities. The NRC is defending the apparent inconsistency between its domestic requirements and the recommendations it issued for Japan by suggesting that the U.S. could always expand the evacuation zone beyond 10 miles as the situation warrants. However, the key to emergency planning is planning. The notion that an orderly and quick spontaneous evacuation could be carried out for large areas downwind of some U.S. nuclear plants in densely populated regions, such as Indian Point near New York City, simply strains credulity. Some degree of advance planning should be required for all populations who may be at significant risk in the event of a severe reactor accident, based on the best technical assessment. In particular, potassium iodide should be made available to all children who may be at risk of exceeding recommended intervention levels due to exposure to radioactive iodine either through direct plume inhalation or consumption of contaminated food or water.

There are many other areas where we believe the NRC has allowed safety margins to decrease too far. Now, not after an accident, is the time to reconsider whether the NRC's position on "how safe is safe" is truly adequate to protect public health and safety. Thank you for your attention, and I would be happy to answer any questions you may have.

STATEMENT

by

William Levis

President and Chief Operating Officer
PSEG Power LLC

to the

Subcommittee on Oversight and Investigations
Committee on Energy and Commerce
U.S. House of Representatives

April 6, 2011

Chairman Stearns, Ranking Member DeGette, and members of the subcommittee, thank you for the opportunity to appear before you today.

My name is William Levis. I am President and Chief Operating Officer of PSEG Power which is a subsidiary of Public Service Enterprise Group, headquartered in Newark, New Jersey. PSEG Power is a merchant generating company and owns approximately 14,000 megawatts of electric generating capacity. We own 100 percent of the Hope Creek nuclear generating station, 57 percent of the Salem nuclear station, and 50 percent of the Peach Bottom nuclear station. PSEG Power operates Salem and Hope Creek; Exelon operates Peach Bottom. Salem consists of two pressurized water reactors; Hope Creek is a single boiling water reactor; the Peach Bottom station has two boiling water reactors.

I appreciate your invitation to testify at today's hearing to discuss the status of the U.S. nuclear energy industry and the implications of the Fukushima nuclear accident on nuclear energy in the United States. I am testifying today on behalf of the Nuclear Energy Institute, the nuclear energy industry's Washington-based policy organization. NEI members include all companies licensed to operate commercial nuclear power plants in the United States, nuclear plant designers, major architect/engineering firms, fuel fabrication facilities, materials licensees, and other organizations and individuals involved in the nuclear energy industry.

My remarks will cover four major points:

First, U.S. nuclear power plants are safe.

Second, safety is the U.S. nuclear energy industry's top priority.

Third, the U.S. nuclear energy industry has a long history, over several decades, of continuous learning from operational events, and we have incorporated lessons learned into our nuclear plant designs (through structural or systems upgrades) and our operating practices and training. We will do the same as a result of the Fukushima accident.

And fourth, the U.S. nuclear energy industry has already taken pro-active steps to verify and validate our readiness to manage extreme events. We took these steps early – without waiting for clarity on the sequence of events at Fukushima.

Before I address these four points, however, let me note that the U.S. nuclear energy industry works very hard not to grow complacent about safety. This is not always easy when our 104 nuclear power plants are operating well, with an average capacity factor above 90 percent for the last 10 years. Similarly, we cannot be complacent about the accident at Fukushima. I am quite confident that we will learn important

lessons from this experience and identify additional steps we can and will take to further improve safety and response capability at our nuclear plants.

U.S. Nuclear Power Plants Are Safe

That said, we do believe U.S. nuclear power plants are safe. They are designed and operated conservatively, to exacting standards, to manage the maximum credible challenges appropriate to each nuclear power plant site. U.S. nuclear power plants have also demonstrated their ability to maintain safety through extreme conditions, including floods, hurricanes and other natural disasters.

I can think of no better summary of the status of U.S. nuclear power plants than the one delivered by President Obama to the American people on March 17. Mr. Obama said: “Our nuclear power plants have undergone exhaustive study, and have been declared safe for any number of extreme contingencies. But when we see a crisis like the one in Japan, we have a responsibility to learn from this event, and to draw from those lessons.”

The industry invests heavily in our nuclear power plants to ensure safe, reliable operation. The industry invested approximately \$7 billion in 2010 in our 104 reactors – to replace steam generators, reactor vessel heads and other equipment and in other capital projects.

U.S. reactors are designed to withstand earthquakes, tsunamis, hurricanes, floods, tornadoes and other natural events equal to the most significant historical event or the maximum projected event, plus an added margin for conservatism, without any breach of safety systems. We have many, many examples of U.S. nuclear power plants achieving safe shutdown during extreme events where offsite power was lost. During Hurricane Katrina in 2005, for example, the Waterford nuclear power plant in Louisiana shut down safely, lost all off-site power, and maintained safe shutdown on emergency diesel generators for three-and-a-half days until grid power was restored.

For earthquakes, nuclear plants are designed and constructed to withstand the maximum projected earthquake that could occur in its area, with additional margin added. Plant earthquake-induced ground motion is developed using a wide range of data and review of the impacts of historical earthquakes up to 200 miles away. Those earthquakes within 25 miles are studied in great detail. This research is used to determine the maximum potential earthquake that could affect the site. Each reactor is built to withstand the respective strongest earthquake; for example, a site that features clay over bedrock will respond differently during an earthquake than a hard-rock site.

It is important not to extrapolate earthquake and tsunami data from one location of the world to another when evaluating these natural hazards. These catastrophic natural events are location-specific, based on tectonic and geological fault line locations. The Tohoku earthquake that struck the Fukushima nuclear power plant occurred on a “subduction zone,” the type of tectonic region that produces earthquakes of the largest magnitude. A subduction zone is a tectonic plate boundary where one tectonic plate is pushed under another plate. Subduction zone earthquakes also produce the kind of massive tsunami seen in Japan.

In the continental United States, the only subduction zone is the Cascadia subduction zone which lies off the coast of northern California, Oregon and Washington. In an assessment released last week, the California Coastal Commission concluded that a “nuclear emergency such as is occurring in Japan is extremely unlikely at the state’s two operating nuclear power plants. The combination of strong ground motion and massive tsunami that occurred in Japan cannot be generated by faults near the San Onofre Nuclear Generating Station and the Diablo Canyon Power Plant.”

Safety Is the U.S. Nuclear Energy Industry's Top Priority

This leads to my second point: Safety is the U.S. nuclear energy industry's top priority, and complacency about safety performance is not tolerated.

Our industry operates in an unforgiving environment where the penalties for mistakes are high and where credibility and public confidence, once lost, are difficult to recover.

All of the safety-related metrics tracked by industry and the Nuclear Regulatory Commission demonstrate high levels of excellence. Forced plant outage rates, unplanned safety system actuations, worker radiation exposures, events with safety implications, and lost-time accident rates have all trended down, year over year, for a number of years.

We have confidence in nuclear plant safety based on those indicators, but we should derive even greater confidence from the process that produces those indicators, from the institutions we have created to share best practices, to establish standards of excellence and to implement programs that hold us to those standards.

After the 1979 accident at Three Mile Island, the nuclear industry created the Institute of Nuclear Power Operations (INPO). In INPO, the nuclear industry — unique among American industries — has established an independent form of self-regulation through peer review and peer pressure. In fact, the President's Oil Spill Commission, in its report on the Deepwater Horizon accident, identified INPO as the model for self-regulation by the offshore oil and gas industry.

INPO is empowered to establish performance objectives and criteria, and nuclear plant operating companies are obligated to implement improvements in response to INPO findings and recommendations. INPO has some 400 people monitoring nuclear plant operations and management on a daily basis. INPO evaluates every U.S. nuclear plant every two years, and deploys training teams to provide assistance to companies in specific areas identified as needing improvement during an evaluation.

INPO provides management and leadership development programs, and manages the National Academy of Nuclear Training, which conducts formal training and accreditation programs for those responsible for reactor operation and maintenance.

Among its many activities, INPO maintains an industrywide database called EPIX — for Equipment Performance and Information Exchange — and all companies are required to report equipment problems into the database. EPIX catalogues equipment problems and shows, for example, expected mean time between failures, which allows the industry to schedule predictive and preventive maintenance, replacing equipment before it fails, avoiding possible challenges to plant safety. INPO also maintains a system called Nuclear Network that allows companies to report and share information about operating events, to ensure that an unexpected event at one reactor is telegraphed to all, to ensure that an event at one plant is not repeated elsewhere, to ensure high levels of vigilance and readiness.

It may not be obvious to the outside world, but we have an enormous self-interest in safe operations. The industry preserves and enhances the asset value of our 104 operating plants first and foremost by maintaining focus on safety. Safety is the basis for regulatory confidence, and for political and public support of this technology.

Commitment to Continuous Learning

The U.S. industry routinely incorporates lessons learned from operating experience into its reactor designs and operations. U.S. nuclear power plants have implemented numerous plant and procedural improvements over the past 30 years. Some of these improvements have been designed to mitigate severe natural and plant-centered events similar to those experienced at the Fukushima nuclear power plant. In addition, the equipment and procedures could be used to mitigate other severe abnormal events. The type of events include a complete and sustained loss of AC power, a sustained loss of vital cooling water pumps, major fires and explosions that would prevent access to critical equipment, hydrogen control and venting, and loss of multiple safety systems.

Starting in the 1990s, U.S. nuclear power plants developed guidelines to manage and mitigate these severe events that are beyond the normal design specifications. Plants evaluated site-specific vulnerabilities and implemented plant and procedural improvements to further improve safety. These severe accident management guidelines were developed in response to probabilistic risk assessments (PRAs), which identified several high-risk accident sequences. These guidelines provide operators and emergency managers with pre-determined strategies to mitigate these events. The strategies focus on protecting the reactor containment structure as it assumes the zirconium cladding around the fuel and reactor cooling system are lost.

I could point to many, many examples of improvements made to U.S. nuclear power plants over the years in response to lessons learned from operational events. Let me list just a few:

- In the 1970s, concerns were raised about the ability of the BWR Mark I containment to maintain its design during an event when steam is vented to the torus. Subsequently, every U.S. operator with a Mark I containment implemented modifications to dissipate energy released to the suppression pool and stringent supports to accommodate loads that could be generated.
- As a result of the Three Mile Island accident, the industry made significant improvements to control room configuration and operator training – making it easier for operators to respond to plant issues, without taking time to diagnose what had occurred. The industry also learned significant lessons about emergency preparedness and the importance of ensuring the public receives timely and accurate information during a plant event. It was after TMI that the NRC required all sites have emergency plans including both an Emergency Operations Facility and a Joint Information Center. These offsite facilities were mandated to ensure the states and NRC could have direct access to the information coming from the station and that there was a means for the state, utility and NRC to communicate directly through the media to the public.
- In 1988, the Nuclear Regulatory Commission concluded that additional Station Black Out (SBO) regulatory requirements were justified and issued the Station Black Out rule (10 CFR 50.63) to provide further assurance that a loss of both offsite and onsite emergency AC power systems would not adversely affect public health and safety. The SBO rule was based on several plant-specific probabilistic safety studies; operating experience; and reliability, accident sequence and consequence analyses completed between 1975 and 1988.
- Since the terrorist events of September 11, 2001, U.S. nuclear plant operators identified other beyond-design-basis vulnerabilities. As a result, U.S. nuclear plant designs and operating practices since 9/11 are designed to mitigate severe accident scenarios such as aircraft impact, which include the complete loss of offsite power and all on-site emergency power sources *and* loss of large areas of the plant. The industry developed additional methods and procedures to provide cooling to the reactor and the spent fuel storage pool, and staged additional equipment at all U.S. nuclear power plant sites to ensure that the plants are equipped to deal with extreme events and nuclear plant operations staff are trained to manage them.

The U.S. Nuclear Energy Industry Has Already Taken Steps in Response to Fukushima

The U.S. nuclear energy industry has already started an assessment of the events in Japan and is taking steps to ensure that U.S. reactors could respond to events that may challenge safe operation of the facilities. These actions include:

- Verifying each plant's capability to manage major challenges, such as aircraft impacts and losses of large areas of the plant due to natural events, fires or explosions. Specific actions include testing and inspecting equipment required to mitigate these events, and verifying that qualifications of operators and support staff required to implement them are current.
- Verifying each plant's capability to manage a total loss of off-site power. This will require verification that all required materials are adequate and properly staged and that procedures are in place, and focusing operator training on these extreme events.
- Verifying the capability to mitigate flooding and the impact of floods on systems inside and outside the plant. Specific actions include verifying required materials and equipment are properly located to protect them from flood.
- Performing walk-downs and inspection of important equipment needed to respond successfully to extreme events like fires and floods. This work will include analysis to identify any potential that equipment functions could be lost during seismic events appropriate for the site, and development of strategies to mitigate any potential vulnerabilities.

Until we understand clearly what has occurred at the Fukushima Daiichi nuclear power plants, and any consequences, it is difficult to speculate about the long-term impact on the U.S. nuclear energy program. The U.S. nuclear industry, the U.S. Nuclear Regulatory Commission, the Institute of Nuclear Power Operations, the Nuclear Energy Institute, the World Association of Nuclear Operators and other expert organizations in the United States and around the world will conduct detailed reviews of the accident, identify lessons learned (both in terms of plant operation and design), and we will incorporate those lessons learned into the design and operation of U.S. nuclear power plants. When we fully understand the facts surrounding the event in Japan, we will use those insights to make nuclear energy even safer.

In the long-term, we believe that the U.S. nuclear energy enterprise is built on a strong foundation:

- reactor designs and operating practices incorporate a defense-in-depth approach and multiple levels of redundant systems
- oversight by a strong, independent regulatory infrastructure, which includes continuous assessment of every U.S. reactor by the Nuclear Regulatory Commission, with independent inspectors permanently on site and additional oversight from NRC regional offices and headquarters
- transparent regulatory process that provides for public participation in licensing decisions, and
- continuing and systematic processes to identify and incorporate lessons learned from operating experience.

In conclusion, let me leave you with a short-term and a longer-term perspective.

In the short term, all of us involved with the production of electricity from nuclear energy in the United States stand in awe of the commitment and determination of our colleagues in Japan, as they struggle to bring these reactors to safe shutdown.

In the longer term, it will be some time before we understand the precise sequence of what happened at Fukushima, before we have a complete analysis of how the reactor performed, how equipment and fuel performed, and how the operators performed. As we learn from this event, however, you may rest assured that we will internalize those lessons and incorporate them into our designs and training and operating procedures.

■

Committee on Energy and Commerce
U.S. House of Representatives
 Witness Disclosure Requirement - "Truth in Testimony"
 Required by House Rule XI, Clause 2(g)

1. Your Name: William Levis		
2. Are you testifying on behalf of the Federal, or a State or local government entity?	Yes	No x
3. Are you testifying on behalf of an entity that is not a government entity?	Yes x	No
4. Other than yourself, please list which entity or entities you are representing: Nuclear Energy Institute		
5. Please list any Federal grants or contracts (including subgrants or subcontracts) that you or the entity you represent have received on or after October 1, 2008: None		
6. If your answer to the question in item 3 in this form is "yes," please describe your position or representational capacity with the entity(ies) you are representing: Member company of NEI		
7. If your answer to the question in item 3 is "yes," do any of the entities disclosed in item 4 have parent organizations, subsidiaries, or partnerships that you are not representing in your testimony?	Yes	No x
8. If the answer to the question in item 3 is "yes," please list any Federal grants or contracts (including subgrants or subcontracts) that were received by the entities listed under the question in item 4 on or after October 1, 2008, that exceed 10 percent of the revenue of the entities in the year received, including the source and amount of each grant or contract to be listed: None		

Signature: Will Levis

Date: 4/4/11

From: Rhinehart Van Tassell, Melanie <Melanie.RhinehartVanTassell@mail.house.gov>
Sent: Tuesday, April 05, 2011 3:31 PM
To: 'jason.nelson@dhs.gov'
Cc: Powell, Amy; Dacus, Eugene; 'John.Berge@osec.usda.gov'
Subject: Re: Japan nuclear regulations

Follow Up Flag: Follow up
Flag Status: Flagged

Hi All, Jason Nelson from FEMA directed me to you regarding a few questions my boss has. Can you please help me?

My boss continues to be concerned about reports of radiation being leaked into the ocean from the plant in Japan. Do you know how I can get information on the status of the leak and its impact on public health? Also, my boss is also interested in knowing the impact of the radiation leak on marine life (especially salmon.) Do you how we can get answers to these questions?

Thanks!

Melanie Rhinehart Van Tassell
Legislative Director
Congressman Mike Thompson
231 Cannon House Office Building
Washington, DC 20515
202-225-3311
melanie.rhinehart@mail.house.gov

----- Original Message -----

From: Nelson, Jason [mailto:jason.nelson@dhs.gov]
Sent: Tuesday, April 05, 2011 03:21 PM
To: Rhinehart Van Tassell, Melanie
Cc: Hart, Patrick <Patrick.Hart@dhs.gov>
Subject: RE: Japan nuclear regulations

Hi Melanie,

The NRC has the primary responsibility for nuclear plant safety. The Associate Director of Legislative Affairs is Amy.Powell@nrc.gov and the Senior Congressional Affairs Officer is Eugene.Dacus@nrc.gov. You may also want to contact John.Berge@osec.usda.gov re: marine life issues.

I hope this helps.

Regards,

Jason

-----Original Message-----

From: Rhinehart Van Tassell, Melanie

[mailto:Melanie.RhinehartVanTassell@mail.house.gov]

Sent: Tuesday, April 05, 2011 3:08 PM

To: 'Patrick.Hart@dhs.gov'; 'jason.nelson@dhs.gov'

Subject: Japan nuclear regulations

Hi Guys, my boss continues to be concerned about reports of radiation being leaked into the ocean from the plant in Japan. Do you know how I can get information on the status of the leak and its impact on public health? Also, my boss is also interested in knowing the impact of the radiation leak on marine life (especially salmon.). Do you how we can get answers to these questions?

Melanie Rhinehart Van Tassell
Legislative Director
Congressman Mike Thompson
231 Cannon House Office Building
Washington, DC 20515
202-225-3311
melanie.rhinehart@mail.house.gov

From: Belmore, Nancy
Sent: Tuesday, April 05, 2011 3:32 PM
To: Peter.spencer@mail.house.gov; tiffany.benjamin@mail.house.gov
Cc: Shane, Raeann; Powell, Amy
Subject: Hearing on April 6, 2011
Attachments: Testimony_April6_2011_FINAL.docx

Attached is the written testimony for the hearing scheduled for Wednesday, April 6, 2011 at 9:00. We will be bringing 75 copies of the testimony with us tomorrow.

Nancy Belmore
Office of Congressional Affairs
U.S. Nuclear Regulatory Commission
nancy.belmore@nrc.gov
301-415-1776

**TESTIMONY OF MARTIN VIRGILIO
DEPUTY EXECUTIVE DIRECTOR FOR REACTOR AND PREPAREDNESS PROGRAMS
UNITED STATES NUCLEAR REGULATORY COMMISSION
TO THE COMMITTEE ON ENERGY AND COMMERCE
SUBCOMMITTEE ON OVERSIGHT AND INVESTIGATIONS
UNITED STATES HOUSE OF REPRESENTATIVES**

**NRC RESPONSE TO RECENT NUCLEAR EVENTS IN JAPAN AND THE CONTINUING
SAFETY OF THE U.S. COMMERCIAL NUCLEAR REACTOR FLEET**

APRIL 6, 2011

The staff of the U.S. Nuclear Regulatory Commission is deeply saddened by the tragedy in Japan. I and many of my colleagues on the NRC staff have had many years of very close and personal interaction with our regulatory counterparts and we would like to extend our condolences to them and to the Japanese people.

Introduction

The NRC is mindful that our primary responsibility is to ensure the adequate protection of the public health and safety of the American people. We have been very closely monitoring the activities in Japan and reviewing available information. Review of this information, combined with our ongoing inspection and licensing oversight, allows us to say with confidence that the U.S. plants continue to operate safely. There has been no reduction in the licensing or oversight function of the NRC as it relates to any of the U.S. licensees as a result of the substantial effort we are making to assist Japan.

We have a long history of conservative regulatory decision-making. We have been using risk insights to help inform our regulatory process, and, over more than 35 years of civilian nuclear power in this country, we continually make improvements to our regulatory framework as we learn from operating experience.

Notwithstanding the very high level of support being provided to respond to events in Japan, we continue to maintain our focus on our domestic responsibilities.

I'd like to begin with a brief overview of our immediate and continuing response, including our recommendation for U.S. Citizens in Japan to evacuate out to 50 miles from the Fukushima-Daiichi site. I then will discuss the reasons for our confidence in the safety of the U. S. commercial nuclear reactor fleet, and the path forward that we will take to ensure we learn any lessons we need to from events in Japan. Finally, I will give you an overview of NRC incident response capabilities here in the U.S.

The NRC's immediate and Continuing Response to Events in Japan

On Friday, March 11th, an earthquake hit Japan, resulting in the shutdown of more than 10 reactors. From what we know now, it appears possible that the reactors' response to the earthquake went according to design. The ensuing tsunami, however, appears to have caused the loss of normal and emergency AC power to the six units at the Fukushima Daiichi site; it is those six units that have received the majority of our attention since that time. Units One, Two, and Three at the site were in operation at the time of the earthquake. Units Four, Five, and Six were in previously scheduled outages.

Shortly after 4:00 AM EDT on Friday, March 11th, the NRC Emergency Operations Center made the first call, informing NRC management of the earthquake and the potential impact on U.S. plants. We went into the monitoring mode at the Emergency Operations Center and the first concern for the NRC was possible impacts of the tsunami on U.S. plants and radioactive materials on the West Coast, and in Hawaii, Alaska, and U.S. Territories in the Pacific.

On that same day, we began interactions with our Japanese regulatory counterparts

and dispatched two experts to help at the U.S. Embassy in Japan. By Monday, we had dispatched a total of 11 staff to Japan. We have subsequently rotated in replacement staff to continue our on-the-ground assistance in Japan. The areas of focus for this team are: 1) to assist the Japanese government with technical support as part of the USAID response; and 2) to support the U.S. Ambassador. The NRC's Chairman, Dr. Gregory Jaczko, traveled to Tokyo on March 28th to convey directly to his Japanese counterparts a message of support and cooperation, and to discuss the situation. While our focus now is on helping Japan in any way that we can, the experience will also help us assess the potential implications for U.S. citizens and the U.S. reactor fleet in as timely a manner as possible.

We have had ongoing interaction with the White House, Congressional staff, our state regulatory counterparts, a number of other federal agencies, and international regulatory bodies around the world. We recently sent an NRC staff member to Hawaii to support the United States Armed Forces Pacific Command (USPACOM).

The NRC response in Japan and our Emergency Operations Center continue with the dedicated efforts of NRC staff working in teams on a rotating basis around-the-clock. The entire agency is coordinating and pulling together in response to this event so that we can provide assistance to Japan while continuing the activities necessary to fulfill our domestic responsibilities.

The 50 mile evacuation recommendation that the NRC made to the U.S. Ambassador in Japan was made in the interest of protecting the health and safety of U.S. citizens in Japan. We based our assessment on the conditions as we understood them at the time. Since communications with knowledgeable Japanese officials were limited and there was a large degree of uncertainty about plant conditions at the time, it was difficult to accurately assess the

potential radiological hazard. In order to determine the proper evacuation distance, the NRC staff performed a series of calculations using NRC's RASCAL computer code to assess possible offsite consequences. The computer models used meteorological model data appropriate for the Fukushima Daiichi vicinity. Source terms were based on hypothetical, but not unreasonable, estimates of fuel damage, containment, and other release conditions. These calculations demonstrated that the Environmental Protection Agency's (EPA's) Protective Action Guidelines could be exceeded at a distance of up to 50 miles from the Fukushima site, if a large-scale release occurred from the reactors or spent fuel pools. The U.S. emergency preparedness framework provides for the expansion of emergency planning zones as conditions require. Acting in accordance with this framework, and with the best information available at the time, the NRC determined that evacuation out to 50 miles for U.S. citizens was a prudent course of action, and would be consistent with what we would do under similar circumstances in the United States, and we made that recommendation to the Ambassador and other U.S. Government agencies.

Let me note here in concluding this section of my remarks that the U.S. government has an extensive network of radiation monitors across this country. Monitoring equipment at nuclear power plants and in the EPA's system has identified trace amounts of radioactive isotopes consistent with the Japanese nuclear incident, but still far below levels of public health concern. We feel confident, based on current data, that there is no reason for concern in the United States regarding radioactive releases from Japan.

Continuing Confidence in the Safety of U.S. Nuclear Power Plants

I will now turn to the factors that assure us of ongoing domestic reactor safety. We

have, since the beginning of the regulatory program in the United States, used a philosophy of Defense-in-Depth, which recognizes that nuclear reactors require the highest standards of design, construction, oversight, and operation, and does not rely on any single layer for protection of public health and safety. We begin with designs for every individual reactor in this country that take into account site-specific factors and include a detailed evaluation for any natural event, such as earthquakes, tornadoes, hurricanes, floods, and tsunamis, as they relate to that site.

There are multiple physical barriers to radiation in every reactor design. Additionally, there are both diverse and redundant safety systems that are required to be maintained in operable condition and frequently tested to ensure that the plant is in a high condition of readiness to respond to any scenario.

We have taken advantage of the lessons learned from previous operating experience to implement a program of continuous improvement for the U.S. reactor fleet. We have learned from experience across a wide range of situations, including, most significantly, the Three Mile Island accident in 1979. As a result of those lessons learned, we significantly revised emergency planning requirements and emergency operating procedures for licensees, and made substantive improvements in NRC's incident response capabilities. We also addressed many human factors issues regarding control room indicators and layouts, added new requirements for hydrogen control to help prevent explosions inside of containment, and created requirements for enhanced control room displays of the status of pumps and valves.

Two significant changes after Three Mile Island were the expansion of the Resident Inspector Program and the incident response program. Today, there are at least two

Resident Inspectors at each nuclear power plant. The inspectors have unfettered access to all licensees' activities, and serve as NRC's eyes and ears at the power plant. The NRC headquarters operations center and regional incident response centers are prepared to respond to all emergencies, including any resulting from operational events, security events, or natural phenomena. Multidisciplinary teams in these centers have access to detailed information regarding licensee facilities, and access to plant status information through telephonic links with the Resident Inspectors, an automated emergency response data system, and directly from the licensee over the emergency notification system. NRC's response would include the dispatch of a site team to augment the Resident Inspectors on site, and integration with the licensee's emergency response organization at their Emergency Offsite Facility. The program is designed to provide independent assessment of events, to ensure that appropriate actions are taken to mitigate the events, and to ensure that State officials have the information they would need to make decisions regarding protective actions.

As a result of the events of September 11, 2001, we identified important pieces of equipment that, regardless of the cause of a significant fire or explosion at a plant, we want licensees to have available and staged in advance, as well as new procedures, training requirements, and policies that would help deal with a severe situation.

Our program of continuous improvement based on operating experience will include evaluation of the significant events in Japan as well as what we can learn from them. We already have begun enhancing inspection activities through temporary instructions to our inspection staff, including the Resident Inspectors and the region-based inspectors in our four

Regional offices, to look at licensees' readiness to deal with both the design basis accidents and the beyond-design basis accidents. The information that we gather will be used for additional evaluation of the industry's readiness for similar events, and will aid in our understanding of whether additional regulatory actions need to be taken in the immediate term.

NRC has also issued an information notice to the licensees to make them aware of the events in Japan, and the kinds of activities we believe they should be engaged in to verify their readiness. In response to the events licensees have voluntarily verified their capabilities to mitigate conditions that result from severe accidents, including the loss of significant operational and safety systems, are in effect and operational. Licensees are verifying the capability to mitigate a total loss of electric power to the nuclear plant. They also are verifying the capability to mitigate problems associated with flooding and the resulting impact on systems both inside and outside of the plant. Also, licensees are confirming that any necessary mitigating equipment is in place to compensate for the potential loss of equipment due to seismic events appropriate for the site, because each site has its own unique seismic profiles.

Subsequent to the 1979 event at Three Mile Island, there have been a number of new regulatory requirements imposed by the NRC that have enhanced the domestic fleet's preparedness against some of the problems we are seeing in Japan. The "station blackout" rule requires every plant in this country to analyze what the plant response would be if it were to lose all alternating current so that it could respond using batteries for a period of time, and then have procedures in place to restore alternating current to the site and provide cooling to the core.

The hydrogen rule requires modifications to reduce the impacts of hydrogen generated for beyond-design basis events and core damage. There are equipment qualification rules that require equipment, including pumps and valves, to remain operable

under the kinds of environmental temperature and radiation conditions that you would see under a beyond-design basis accident. With regard to the type of containment design used by the most heavily damaged plants in Japan, the NRC has had a Boiling Water Reactor Mark I Containment Improvement Program since the late 1980s, which has required installation of hardened vent systems for containment pressure relief, as well as enhanced reliability of the automatic depressurization system.

The final factor I want to mention with regard to our belief in the ongoing safety of the U.S. fleet is the emergency preparedness and planning requirements in place that provide ongoing training, testing, and evaluations of licensees' emergency preparedness programs. In coordination with our federal partner, the Federal Emergency Management Administration (FEMA), these activities include extensive interaction with state and local governments, as those programs are evaluated and tested on a periodic basis.

The Path Ahead

Beyond the initial steps to address the experience from the events in Japan, the Chairman, with the full support of the Commission, directed the NRC staff to establish a senior level agency task force to conduct a methodical and systematic review of our regulatory processes to determine whether the agency should make additional improvements to our regulatory system and to make recommendations to the Commission for its policy direction. This activity will have both near-term and longer-term objectives.

For the near term effort, we are beginning a 90-day review. This review will evaluate all of the available information from the Japanese events to identify immediate or near-term operational or regulatory issues potentially affecting the 104 operating reactors in the U.S., including their spent fuel pools. Areas of investigation will include: the ability to protect

against natural disasters; response to station blackouts; severe accidents and spent fuel accident progression; radiological consequence analysis; and severe accident management issues. Over this 90-day period, we will develop recommendations, as appropriate, for changes to inspection procedures and licensing review guidance, and recommend whether generic communications, orders, or additional regulations are needed.

This 90-day effort will include a briefing to the Commission after approximately 30 days to provide a snapshot of the regulatory response and the condition of the U.S. fleet based on information we have available at that time. This briefing will also ensure that the Commission is both kept informed of ongoing efforts and prepared to resolve any policy recommendations that surface. I believe we will have limited stakeholder involvement in the first 30 days to accomplish this. However, over the 90-day and longer-term efforts we will seek additional stakeholder input. At the end of the 90-day period, a report will be provided to the Commission and to the public. The task force's longer-term review will begin as soon as the NRC has sufficient technical information from the events in Japan.

The task force will evaluate all technical and policy issues related to the event to identify additional potential research, generic issues, changes to the reactor oversight process, rulemakings, and adjustments to the regulatory framework that should be pursued by the NRC. We also expect to evaluate potential interagency issues, such as emergency preparedness, and examine the applicability of any lessons learned to non-operating reactors and materials licensees. We expect to seek input from stakeholders during this process. A report with appropriate recommendations will be provided to the Commission within 6 months of the start of this evaluation. Both the 90-day and final reports will be made publicly available in accordance with normal Commission processes.

Conclusion

In conclusion, I want to reiterate that we continue to make our domestic responsibilities for licensing and oversight of the U.S. licensees our top priority and that the U.S. plants continue to operate safely. In light of the events in Japan, there is a near-term evaluation of their relevance to the U.S. fleet underway, and we are continuing to gather the information necessary for us to take a longer, more thorough look at the events in Japan and their lessons for us. Based on these efforts, we will take all appropriate actions necessary to ensure the continuing safety of the U.S. fleet.

From: Powell, Amy
Sent: Tuesday, April 05, 2011 6:29 PM
To: Batkin, Joshua; Schmidt, Rebecca
Cc: Coggins, Angela
Subject: RE: One pager for Bettina

On mitigation, I added a line "Getting water into the units is a key component and focus of ongoing efforts" – anything else on that? On discharge to ocean, I stuck with the rad report from the daily status that oversight and Approps staff receive. Anything else?

From: Batkin, Joshua
Sent: Tuesday, April 05, 2011 4:45 PM
To: Schmidt, Rebecca
Cc: Powell, Amy; Coggins, Angela
Subject: Re: One pager for Bettina

Looks good, let's take out the quote from the professor, add in what we know of discharges to the ocean and the ongoing mitigation efforts, mark it however we've been marking the other stuff for the Hill, and send it to her this afternoon asking her if this is what she was looking for. Any concerns?

Joshua C. Batkin
Chief of Staff
Chairman Gregory B. Jaczko
(301) 415-1820

From: Schmidt, Rebecca
To: Batkin, Joshua
Cc: Powell, Amy
Sent: Tue Apr 05 16:34:45 2011
Subject: FW: One pager for Bettina

From: Powell, Amy
Sent: Tuesday, April 05, 2011 1:47 PM
To: Schmidt, Rebecca
Subject: One pager for Bettina

In case you need it – I've not gotten any feedback, requested changes.

CURRENT UNDERSTANDING OF ONGOING SITUATION IN JAPAN

On Friday, March 11th an earthquake hit Japan, resulting in the shutdown of more than 10 reactors. From what we know now, it appears possible that the reactors' response to the earthquake went according to design. The ensuing tsunami, however, appears to have caused the loss of normal and emergency AC power to the six units at the Fukushima Daiichi site; it is those six units that have received the majority of our attention since that time. Units One, Two, and Three at the site were in operation at the time of the earthquake. Units Four, Five, and Six were in previously scheduled outages.

Immediately after the tsunami, there appeared that there was no capability to inject cooling water into the reactor vessels on Units One, Two, and Three. On Saturday, March 12th, a hydrogen explosion occurred in Unit One; and then the following Monday, March 14th, a hydrogen explosion in Unit Three. On Tuesday March 15th, there were explosions in Unit Two and in Unit Four from hydrogen originating from, we believe, overheated fuel in the spent fuel pool. At this time, it is our assessment that Units One, Two, and Three have likely experienced some degree of core damage.

The NRC's Reactor Safety Team in the agency's Emergency Operations Center continues to analyze information from JAIF, NISA and TEPCO in order to support NRC personnel in Japan, the embassy, and the Japanese government as requested. Based on this analysis as of this morning (430am EDT April 5, 2011), here is the NRC's best understanding of the current situation:

Unit 1's core is damaged with the fuel partially or fully exposed. Primary containment, although degraded, can still be preserved if the responders take actions to inject the reactor vessel and primary containment with water.

Unit 2's core is damaged with the fuel partially or fully exposed. Damage to the primary containment is suspected, as well as other barriers to radiation release being compromised. This damage requires continued attention to cool the core and provide water to the primary containment to minimize the potential for radiation release.

Unit 3's core is damaged with the fuel partially or fully exposed. While the primary containment appears to be nominally functional, continued attention is required to cool the core with water.

Progress has been made in cooling the spent fuel pool of Unit 4.

NRC'S RECENT PROTECTIVE ACTION RECOMMENDATION FOR U.S CITIZENS IN JAPAN TO EVACUATE OUT TO 50 MILES FROM THE FUKUSHIMA-DAIICHI SITE

The NRC's recommendation that U. S. citizens in Japan evacuate out to 50 miles from the site was conservative guidance based on the best information available during an evolving event. NRC began monitoring the event when the tsunami warning was issued for Hawaii and the West Coast of the United States. The information flow from the Fukushima site was often confusing and conflicting. In order to provide timely information to the U.S. Ambassador to Japan, and to best protect the health and safety of U.S. citizens in Japan, we based our assessment on the conditions as we understood them at the time. This site has six nuclear power plants and 4 of the plants are facing extraordinary challenges. At the time, Units 1, 3 and 4 appeared to have suffered significant damage as a result of reported hydrogen explosions. We suspected that the concrete, secondary containment buildings were severely damaged by the explosions and may not be capable to perform their function of stopping the release of radiation. Unit 4 was in a refueling outage and its entire core had been transferred to the spent fuel pool a little more than 3 months earlier. This means that there was irradiated fuel that had been freshly loaded into the spent fuel pool that was in danger of overheating if the water level dropped, and there were indications that was happening. Additionally, radiation monitors were

showing very high levels of radiation on the plant site, which would pose challenges to plant crew attempting to stabilize the reactors, and there were offsite readings indicating that fuel damage had occurred.

Since communications were limited and there was a large degree of uncertainty about plant conditions at the time, it was difficult to accurately assess the radiological hazard. In order to determine the proper evacuation distance, the NRC staff performed a series of calculations using NRC's RASCAL computer code to assess possible offsite consequences. The computer models used meteorological model data appropriate for the Fukushima Daiichi vicinity. Source terms were based on hypothetical, but not unreasonable estimates of fuel damage, containment, and other release conditions. These calculations demonstrated that the Environmental Protection Agency's Protective Action Guidelines could be exceeded at a distance of 50 miles from the Fukushima site, if a large-scale release occurred from the reactors or spent fuel pools. We understood that some of our assumptions were conservative, but believed that it was better to err on the side of protection, especially in the case of a seemingly rapidly deteriorating situation.

OPTIONS FOR JAPAN

Japanese officials have acknowledged publicly that stabilizing the ongoing situation at the Fukushima Daiichi site may likely take months. The Japanese government will continue to examine alternative emergency measure to shorten this timeframe but concede that these may not be feasible. Case in point: efforts to stem the leaking water from the spent fuel pool at Unit 4, first by pouring cement into the crack and then a water-absorbent polymer, have been unsuccessful thus far. Potential solutions being discussed for containing the hazardous materials include spraying a synthetic resin on the ground to slow or stop contamination from spreading to the sea, and dropping a cloth cover over the reactors. Hironobu Unesaki, professor of nuclear engineering at Kyoto University, was reported as saying that a cover, fit with a customized ventilation system, could be an effective way to control gaseous emissions from the reactors. But he said it would likely not have an impact on the water leaking from a pipe or a compression chamber at the base of the reactor, as the company suspects is happening. Workers appear to be making limited progress eliminating radioactive water from the turbine buildings at Units One, Two and Three. Condensers are helping but are becoming full; using tankers and other large boats as repositories for the most radioactive water may be feasible as workers continue to address this issue.

From: Schmidt, Rebecca
Sent: Tuesday, April 05, 2011 9:06 PM
To: Batkin, Joshua; Hayden, Elizabeth
Cc: Powell, Amy
Subject: Fw: UCS memo and foia'd emails
Attachments: NRC foia staff memo.pdf; foia-1.pdf; foia-2.pdf; foia-3.pdf

Fyi-probably press coverage tomorrow. We put Marty on the phone with the committee staff to explain our position.

From: Spencer, Peter <Peter.Spencer@mail.house.gov>
To: Schmidt, Rebecca; Shane, Raeann; Powell, Amy
Cc: Harrison, Todd <Todd.Harrison@mail.house.gov>
Sent: Tue Apr 05 17:52:55 2011
Subject: UCS memo and foia'd emails

Attached please find a memo supplied to Committee staff by the Union for Concerned Scientists, and attached emails.

We would like NRC's explanation for these emails tonight, if possible.

Please have Martin Virgilio call me at 202-225-5736.

Peter

Peter L. Spencer
Majority Professional Staff
Oversight and Investigations
Committee on Energy and Commerce
U.S. House of Representatives
(202) 225-2927
peter.spencer@mail.house.gov

April 5, 2011

To: Subcommittee on Oversight and Investigations, House Energy and Commerce Committee

Re: Forthcoming UCS Analysis on NRC E-Mails Concerning Fukushima-Type Events

Tomorrow, after the Subcommittee's hearing, the Union of Concerned Scientists will publish the following analysis and additional documentation (also attached), which we have just obtained and are still in the process of fully evaluating. We apologize for delivering this to the Subcommittee so close to the hearing, but we were unable to prepare it in time for inclusion in the written testimony.

**INTERNAL NUCLEAR REGULATORY COMMISSION E-MAILS REVEAL DOUBTS
ABOUT MEASURES TO HELP U.S. PLANTS SURVIVE FUKUSHIMA-TYPE EVENTS**

Edwin Lyman

Senior Scientist, Global Security Program

Union of Concerned Scientists

April 6, 2011

In the weeks following the Fukushima accident, officials from the U.S. Nuclear Regulatory Commission (NRC) and the nuclear industry have been asserting that U.S. nuclear plants are better prepared than Japanese plants to withstand a catastrophic event such as the March 11 earthquake and tsunami, because U.S. plants have additional measures in place to cope with such disasters. According to internal NRC documents obtained by the Union of Concerned Scientists, however, there is no consensus within the NRC that these additional measures will be effective. Therefore, it remains highly uncertain whether U.S. plants would be better prepared than the Japanese to manage the aftermath of such severe events. Although the Japanese have engaged in heroic efforts, they have not been able to prevent significant damage to reactor cores, spent fuel and containment structures, resulting in huge radioactive releases into the atmosphere and the ocean.

The NRC has testified that U.S. plants are safer than those in Japan. In a hearing of the Senate Energy and Water Appropriations Subcommittee on March 30, NRC Chairman Gregory Jaczko testified that

“As a result of the events of September 11, 2001, we identified important pieces of equipment that regardless of the cause of a significant fire or explosion at a plant, the NRC requires licensees to have available and staged in advance, as well as new procedures and policies to help deal with a severe situation.”

Similarly, at the same hearing, nuclear utility official William Levis, testifying on behalf of the Nuclear Energy Institute, said that

“Since the terrorist events of September 11, 2001, U.S. nuclear plant operators identified other beyond-design-basis vulnerabilities. As a result, U.S. nuclear plant designs and operating practices since 9/11 are designed to mitigate severe accident scenarios such as aircraft impact, which include the complete loss of offsite power and all on-site emergency power sources and loss of large areas of the plant. The industry developed additional methods and procedures to provide cooling to the reactor and the spent fuel pool, and staged additional equipment at all U.S. nuclear power plant sites to ensure that the plants are equipped to deal with extreme events and nuclear plant operations staff are trained to manage them.”

These post-9/11 measures are referred to as “B.5.b,” in reference to the section of the Compensatory Measures order issued by the NRC in 2002 to all reactor licensees. These measures were codified in NRC’s regulations in 2009 in 10 CFR 50.54(hh)(2). The specific details of the B.5.b measures are considered by NRC to be security-related information and are not publicly available.

Both the NRC and the industry sound confident about the ability of these B.5.b measures to effectively cope with a situation such as the ongoing crisis at Fukushima Daiichi, in which both off-site and on-site power was lost for an extended period, eventually leading to the loss of all cooling at the site.

However, internal NRC e-mails obtained by UCS under the Freedom of Information Act tell a different story. In February 2011, UCS filed a FOIA request for all information associated with a secretive NRC program known as the “State of the Art Reactor Consequence Analyses,” or SOARCA. SOARCA, according to the NRC, is “a research effort to realistically estimate the outcomes of postulated severe accident scenarios that might cause a nuclear power plant to release radioactive material into the environment. The SOARCA project applies many years of national and international nuclear safety research, and incorporates the improvements in plant design, operation and accident management to achieve a more realistic evaluation of the consequences associated with such accidents.” The NRC also states that SOARCA takes into account the enhancements required by NRC after 9/11—that is, the B.5.b measures.

The SOARCA program was initiated in 2006, and the pilot study initially has focused on two plants: Surry in Virginia and Peach Bottom in Pennsylvania. Coincidentally, Peach Bottom is a Mark I boiling-water reactor, like Fukushima Daiichi units 1-4. One of the accidents that the NRC selected for analysis by SOARCA was a station blackout with failure to recover power prior to battery depletion, that is, the very situation that occurred at Fukushima. Thus the results of SOARCA could be very useful for anyone trying to understand more about what is happening at Fukushima. However, almost all documents related to SOARCA have been withheld from the public as “official use only” information. NRC has repeatedly delayed public release of the results of SOARCA.

In most Mark I BWRs experiencing a station blackout, a cooling system that runs on battery power, known as the Reactor Core Isolation Cooling system, or RCIC, is available. But when the battery runs down—after eight hours or less—the RCIC will cease to operate. If AC power has not been restored by then, no cooling systems will be available and the fuel in the reactor will start to overheat and eventually begin to melt, as most believe has occurred in Fukushima Daiichi units 1-3.

According to the e-mails obtained by UCS, NRC's B.5.b measures contain unspecified strategies to continue operating the RCIC even after battery power is lost. However, the e-mails make clear that there are disagreements between NRC senior reactor analysts (SRAs), who work in NRC's regional offices under the Office of Nuclear Reactor Regulation (NRR), and the staff conducting the SOARCA project, who are in the Office of Research (RES). In particular, one NRC staff e-mail, dated July 28, 2010, characterizes the objections of the SRAs to SOARCA as follows:

“One concern has been that SOARCA credits certain B5b mitigating strategies (such as RCIC operation w/o DC power) that have really not been reviewed to ensure that they will work to mitigate severe accidents. Generally, we have not even seen licensees credit these strategies in their own PRAs [probabilistic risk assessments] but for some reason the NRC decided we should during SOARCA.

“My recollection is that RI [Region I] SRAs in particular have been vocal with their concerns on SOARCA for several years, probably because Peach Bottom is one of the SOARCA plants.”

Thus the SRAs that work directly with the Peach Bottom Mark I BWRs apparently do not have faith in the effectiveness of the very B.5.b measures that NRC and NEI officials are now touting as a reason why the U.S. is better prepared to deal with a Fukushima-like event than Japan was.

Another (undated) e-mail reinforces this concern:

“The application of 10 CFR 50.54(hh) mitigation measures still concerns a number of staff in NRR. The concern involves the manner in which credit is given to these measures such that success is assumed ... 10 CFR 50.54(hh) mitigation measures are just equipment onsite that can be useful in an emergency when used by knowledgeable operators if post event conditions allow. If little is known about these post event conditions, then assuming success is speculative.”

If the public is to have confidence that U.S. plants are safe, the NRC and the industry should be fully transparent and honest in disclosing what they know and what they don't know. They are doing a disservice to the public if they express a level of confidence in the effectiveness of untested measures that is not justified. The concerns of NRC senior reactor analysts with regard to the credibility of post-accident mitigative measures need to be taken seriously by the NRC task force established to review regulations and policies in light of Fukushima.

Comment on Volume I

Section 3.0 "Methods Used For Mitigative Measures Assessment" states:

"... Mitigation measures treated in SOARCA include the licensee's emergency operating procedures (EOPs), severe accident management guidelines (SAMGs), and 10 CFR 50.54(hh) mitigation measures. 10 CFR 50.54(hh) mitigation measures refer to additional equipment and strategies required by the NRC ..."

The application of 10 CFR 50.54(hh) mitigation measures still concerns a number of staff in NRR. The concern involves the manner in which credit is given to these measures such that success is assumed. It is understood that the radiation exposure results in Volumes III and IV are computed both ways – with and without 10 CFR 50.54(hh) credit in order to show the difference. It is also observed that only unmitigated results are given in the executive summary. However, these measures are to be taken after both EOPs and SAMGs fail. There seems to be acceptance of credit for both EOPs and SAMGs because they are both written and practiced procedures. On the other hand, 10 CFR 50.54(hh) mitigation measures are just equipment onsite that can be useful in an emergency when used by knowledgeable operators if post event conditions allow. If little is known about these post event conditions, then assuming success is speculative.

Although operator errors or failures were accounted for in the SPAR model (including the EOPs) that generated the CDFs used in the results, the SAMGs and 10 CFR 50.54(hh) mitigation measures were assumed to be dependent on equipment resources alone. Although Surry and Peachbottom appear to have exceptional programs for their 10 CFR 50.54(hh) compliance, they may not be representative of the industry in general.

A quantitative evaluation of SAMGs and 10 CFR 50.54(hh) operator actions may be impractical due to a lack of defined actions. Therefore, credit given for 10 CFR 50.54(hh) mitigation measures should be qualified in the text to indicate the uncertainty in the outcome of these measures. Specifically, in the Volume I Executive Summary sections addressing "Mitigation Measures" under "Method" along with "Results and Conclusions" should contain a caveat that although successful mitigation is considered reasonable in most cases, the assumption of success is not universal and only the unmitigated cases are presented in this Executive Summary. A similar statement would be appropriate for Volume I section 1.4.3 "Mitigated and Unmitigated Cases" and Volume I Section 3.0 "Methods Used For Mitigative Measures Assessment".

James Vail

C/16

From: Powell, Amy
Sent: Wednesday, April 06, 2011 5:49 AM
To: Schmidt, Rebecca; Shane, Raeann
Cc: Belmore, Nancy; Quesenberry, Jeannette
Subject: Today's hearing, EPW hearing
Attachments: Jaczko Invite.pdf

The attached invite to the April 12th EPW hearing came in yesterday. I'll work with the Chairman's office on testimony for that. Given that, I will not come down this am for the House E&C subcommittee hearing.

Nancy or Jeannette, would you please get the attached to SECY, including Rochelle? Thanks

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

From: Lee, Katie(EPW) <katie_lee@epw.senate.gov>
To: Powell, Amy; Batkin, Joshua
Cc: Dedrick, Kathy (EPW) <Kathy_Dedrick@epw.senate.gov>
Sent: Tue Apr 05-19:12:44 2011
Subject: Invitation from Senate EPW Committee

Attached please find an invitation addressed to you from the US Senate Environment and Public Works Committee.

Please confirm receipt. Thank you.

Katie Lee
Majority Staff
U.S. Senate Environment and Public Works Committee
410 Dirksen Senate Office Building
Washington, DC 20510
202.224.8832
202.224.1273 (Fax)

BARBARA BOXER, CALIFORNIA, CHAIRMAN

MAX BAUCUS, MONTANA
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BENJAMIN L. CARDIN, MARYLAND
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KRISTEN GILLIBRAND, NEW YORK

JAMES M. INHOFE, OKLAHOMA
DAVID VITTER, LOUISIANA
JOHN BARRASSO, WYOMING
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JOHN BOOZMAN, ARKANSAS

United States Senate

COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS

WASHINGTON, DC 20510-6175

BETTINA POIRIER, MAJORITY STAFF DIRECTOR
RUTH VAN MARK, MINORITY STAFF DIRECTOR

April 5, 2011

The Honorable Gregory B. Jaczko
Chairman
Nuclear Regulatory Commission
Washington, DC 20555-0001

Dear Chairman Jaczko:

On behalf of the Senate Committee on Environment and Public Works and its Subcommittee on Clean Air and Nuclear Safety, we invite you to testify before the Committee at a joint hearing entitled, "Review of the Nuclear Emergency in Japan and Implications for the U.S." The hearing will be held on Tuesday, April 12, 2011, beginning at 2:45 p.m. in Room 406 of the Dirksen Senate Office Building. The purpose of this hearing is to discuss the ongoing emergency associated with the Fukushima Daiichi nuclear power plant in Japan, as well as the potential ramifications for the United States.

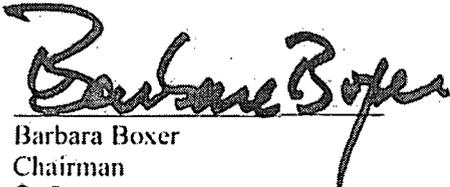
In order to maximize the opportunity to discuss this matter with you and the other witnesses, we ask that your oral testimony be limited to five minutes. Your written testimony can be comprehensive and will be included in the printed record of the hearing in its entirety, together with any other materials you would like to submit.

To comply with Committee rules, please provide 100 double-sided copies of your testimony at least 48 hours in advance of the hearing to the Committee at the following address: 410 Dirksen Senate Office Building, Washington, D.C. 20510-6175. To ensure timely delivery, the copies of testimony must be hand delivered to 410 Dirksen. Packages sent through FedEx, U.S. Mail, or overnight delivery services will be subject to offsite security measures that will delay delivery. Please also email a copy of your testimony (in both MS Word and as a PDF file) to the attention of Katie Lee, Katie.Lee@epw.senate.gov, at least 48 hours in advance. This email address will be used later to quickly finalize hearing transcripts.

If you plan to use or refer to any charts, graphs, diagrams, photos, maps, or other exhibits in your testimony, please deliver or send one identical copy of such material(s), as well as 100 reduced (8.5" x 11") copies to the Committee, attention of Katie Lee, Katie.Lee@epw.senate.gov, at the above address at least 48 hours in advance of the hearing. Exhibits or other materials that are not provided to the Committee by this time cannot be used for the purpose of presenting testimony.

If you have any questions or comments, please feel free to contact Kathy Dedrick or Grant Cope of the Committee's Majority staff at 202-224-8832, Annie Caputo of the Committee's Minority staff at 202-224-6176, Laura Haynes of Senator Carper's staff at 202-224-2441, or Brian Clifford of Senator Barrasso's staff at 202-224-6441.

Sincerely,



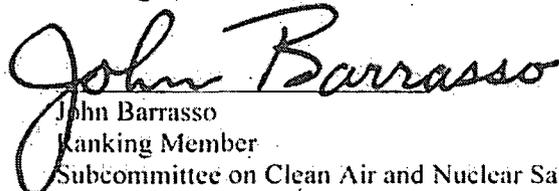
Barbara Boxer
Chairman



Thomas R. Carper
Chairman
Subcommittee on Clean Air and Nuclear Safety



James M. Inhofe
Ranking Member



John Barrasso
Ranking Member
Subcommittee on Clean Air and Nuclear Safety

From: Shane, Raeann
Sent: Wednesday, April 06, 2011 6:44 AM
To: Spencer, Peter; Schmidt, Rebecca; Powell, Amy
Subject: RE: UCS memo and foia'd emails

I will let you know when we are close. We plan to leave here at 7:00.

From: Spencer, Peter [mailto:Peter.Spencer@mail.house.gov]
Sent: Tuesday, April 05, 2011 8:12 PM
To: Shane, Raeann; Schmidt, Rebecca; Powell, Amy
Subject: RE: UCS memo and foia'd emails

Let me know when you are coming into Rayburn tomorrow.

From: Shane, Raeann [mailto:Raeann.Shane@nrc.gov]
Sent: Tuesday, April 05, 2011 6:57 PM
To: Spencer, Peter; Schmidt, Rebecca; Powell, Amy
Cc: Harrison, Todd
Subject: Re: UCS memo and foia'd emails

Todd/Peter call us at 301 415 1798 if you are there

From: Spencer, Peter <Peter.Spencer@mail.house.gov>
To: Schmidt, Rebecca; Shane, Raeann; Powell, Amy
Cc: Harrison, Todd <Todd.Harrison@mail.house.gov>
Sent: Tue Apr 05 17:52:55 2011
Subject: UCS memo and foia'd emails

Attached please find a memo supplied to Committee staff by the Union for Concerned Scientists, and attached emails.

We would like NRC's explanation for these emails tonight, if possible.

Please have Martin Virgilio call me at 202-225-5736.

Peter

Peter L. Spencer
Majority Professional Staff
Oversight and Investigations
Committee on Energy and Commerce
U.S. House of Representatives
(202) 225-2927
peter.spencer@mail.house.gov

From: Batkin, Joshua
Sent: Wednesday, April 06, 2011 7:26 AM
To: Powell, Amy; Schmidt, Rebecca
Subject: Re: Summary

See next email

Joshua C. Batkin
Chief of Staff
Chairman Gregory B. Jaczko
(301) 415-1820

----- Original Message -----

From: Powell, Amy
To: Batkin, Joshua; Schmidt, Rebecca
Sent: Wed Apr 06 05:58:03 2011
Subject: Re: Summary

I'll check with Roger on the letters this am.

FYI, there is a NYT article that posted online last night that references a confidential NRC assessment of the Japan situation. That may heighten her Q's.

Let's talk about who would be involved in a briefing. Options, expediting, etc. have not been in our playlist to date.

Amy Powell
Associate Director
Office of Congressional Affairs
U. S. Nuclear Regulatory Commission
Phone: 301-415-1673

Sent from my Blackberry

----- Original Message -----

From: Batkin, Joshua
To: Schmidt, Rebecca; Powell, Amy
Sent: Tue Apr 05 21:18:30 2011
Subject: RE: Summary

k thanks

From: Schmidt, Rebecca
Sent: Tuesday, April 05, 2011 9:13 PM
To: Batkin, Joshua; Powell, Amy
Subject: Re: Summary

It seems to me a briefing would be easier because she is just going to keep coming back with more questions. She needs to get people from several agencies though to get all her answers. In terms of her letters, Roger is working on them. We can ask where they stand

----- Original Message -----

From: Batkin, Joshua

To: Powell, Amy

Cc: Schmidt, Rebecca

Sent: Tue Apr 05 21:05:07 2011

Subject: RE: Summary

So, here's a summary of my post kid bedtime conversation with her tonight: She appreciates it but would like more about the options to resolve the situation, how long it will take, why this can't be dealt with on a more expedited basis, how do we evaluate the discharges into the ocean and the consequences of those discharges. I think it might just be best to get her boss a briefing but I didn't offer that yet.

She also would like answers to all the outstanding questions to us in letters from her prior to the hearing. She offered to talk informally to us about them this week (maybe Thursday) so can we see where we are tomorrow and try to set something up and then try to get those formally done by next week???

Finally, she also asked about the shutdown so I talked her through some of how the shutdown would affect us and when.....

Josh

From: Powell, Amy

Sent: Tuesday, April 05, 2011 6:43 PM

To: Poirier, Bettina (EPW)

Cc: Batkin, Joshua; Schmidt, Rebecca

Subject: Summary

Hi Bettina –

Please see attached. Let us know if this meets your needs.

Amy

Amy Powell

Associate Director

U. S. Nuclear Regulatory Commission

Office of Congressional Affairs

Phone: 301-415-1673

~~OFFICIAL USE ONLY~~

CURRENT UNDERSTANDING OF ONGOING SITUATION IN JAPAN

On Friday, March 11th an earthquake hit Japan, resulting in the shutdown of more than 10 reactors. From what we know now, it appears possible that the reactors' response to the earthquake went according to design. The ensuing tsunami, however, appears to have caused the loss of normal and emergency AC power to the six units at the Fukushima Daiichi site; it is those six units that have received the majority of our attention since that time. Units One, Two, and Three at the site were in operation at the time of the earthquake. Units Four, Five, and Six were in previously scheduled outages.

Immediately after the tsunami, it appeared that there was no capability to inject cooling water into the reactor vessels on Units One, Two, and Three. On Saturday, March 12th, a hydrogen explosion occurred in Unit One; and then the following Monday, March 14th, a hydrogen explosion in Unit Three. On Tuesday March 15th, there were explosions in Unit Two and in Unit Four from hydrogen originating from, we believe, overheated fuel in the spent fuel pool. At this time, it is our assessment that Units One, Two, and Three have likely experienced some degree of core damage.

The NRC's Reactor Safety Team in the agency's Emergency Operations Center continues to analyze information from JAIF, NISA and TEPCO in order to support NRC personnel in Japan, the embassy, and the Japanese government as requested. Based on this analysis as of this morning (430am EDT April 5, 2011), here is the NRC's best understanding of the current situation:

Unit 1's core is damaged with the fuel partially or fully exposed. Primary containment, although degraded, can still be preserved if the responders take actions to inject the reactor vessel and primary containment with water. Nitrogen is also being connected to this unit.

Unit 2's core is damaged with the fuel partially or fully exposed. Damage to the primary containment is suspected, as well as other barriers to radiation release being compromised. This damage requires continued attention to cool the core and provide water to the primary containment to minimize the potential for radiation release. Fresh water is being injected into the spent fuel pool of this unit as well. As of this morning, radiation level of >100 rem per hour was reportedly being discharged into the ocean from this unit.

Unit 3's core is damaged with the fuel partially or fully exposed. While the primary containment appears to be nominally functional, continued attention is required to cool the core with water. Fresh water is being injected into the core.

Progress has been made in cooling the spent fuel pool of Unit 4. Fresh water is able to be injected.

NRC'S RECENT PROTECTIVE ACTION RECOMMENDATION FOR U.S CITIZENS IN JAPAN TO EVACUATE OUT TO 50 MILES FROM THE FUKUSHIMA-DAIICHI SITE

The NRC's recommendation that U. S. citizens in Japan evacuate out to 50 miles from the site was conservative guidance based on the best information available during an evolving event. NRC began monitoring the event when the tsunami warning was issued for Hawaii and the West Coast of the United States. The information flow from the Fukushima site was often confusing and conflicting. In order to provide timely information to the U.S. Ambassador to Japan, and to best protect the health and safety of U.S. citizens in Japan, we based our assessment on the conditions as we understood them at the time. This site has six nuclear power plants and 4 of the plants are facing extraordinary challenges. At the time, Units 1, 3 and 4 appeared to have suffered significant damage as a result of reported hydrogen explosions. We suspected that the concrete, secondary containment buildings were severely damaged by

the explosions and may not be capable to perform their function of stopping the release of radiation. Unit 4 was in a refueling outage and its entire core had been transferred to the spent fuel pool a little more than 3 months earlier. This means that there was irradiated fuel that had been freshly loaded into the spent fuel pool that was in danger of overheating if the water level dropped, and there were indications that was happening. Additionally, radiation monitors were showing very high levels of radiation on the plant site, which would pose challenges to plant crew attempting to stabilize the reactors, and there were offsite readings indicating that fuel damage had occurred.

Since communications were limited and there was a large degree of uncertainty about plant conditions at the time, it was difficult to accurately assess the radiological hazard. In order to determine the proper evacuation distance, the NRC staff performed a series of calculations using NRC's RASCAL computer code to assess possible offsite consequences. The computer models used meteorological model data appropriate for the Fukushima Daiichi vicinity. Source terms were based on hypothetical, but not unreasonable estimates of fuel damage, containment, and other release conditions. These calculations demonstrated that the Environmental Protection Agency's Protective Action Guidelines could be exceeded at a distance of 50 miles from the Fukushima site, if a large-scale release occurred from the reactors or spent fuel pools. We understood that some of our assumptions were conservative, but believed that it was better to err on the side of protection, especially in the case of a seemingly rapidly deteriorating situation.

OPTIONS FOR JAPAN

Japanese officials have acknowledged publicly that stabilizing the ongoing situation at the Fukushima Daiichi site may likely take months. Getting water into the units is a key component and focus of ongoing efforts. The Japanese government will continue to examine alternative emergency measure to shorten this timeframe but concede that these may not be feasible. Case in point: efforts to stem the leaking water from the spent fuel pool at Unit 4, first by pouring cement into the crack and then a water-absorbent polymer, have been unsuccessful thus far. Potential solutions being discussed for containing the hazardous materials include spraying a synthetic resin on the ground to slow or stop contamination from spreading to the sea, and dropping a cloth cover over the reactors. Workers appear to be making limited progress eliminating radioactive water from the turbine buildings at Units One, Two and Three. Condensers are helping but are becoming full; using tankers and other large boats as repositories for the most radioactive water may be feasible as workers continue to address this issue.

~~OFFICIAL-USE-ONLY~~

From: Powell, Amy
Sent: Wednesday, April 06, 2011 9:48 AM
To: Schmidt, Rebecca; Batkin, Joshua
Cc: Droggitis, Spiros; Shane, Raeann
Subject: Another NYT-generated request

FYI, Sen. Bingaman's staff is now asking for same.

From: Epstein, Jonathan (Bingaman) [mailto:Jonathan_Epstein@bingaman.senate.gov]
Sent: Wednesday, April 06, 2011 9:43 AM
To: Powell, Amy; Shane, Raeann
Cc: Fowler, Sam (Energy)
Subject: NYT

I read in the NYT an assessment prepared by the NRC

http://www.nytimes.com/2011/04/06/world/asia/06nuclear.html?_r=2&hp

is this releasable to us? TX, JE.

From: Powell, Amy
Sent: Wednesday, April 06, 2011 10:56 AM
To: Rihm, Roger; Schmidt, Rebecca
Subject: RE: Congressional Correspondence

Yes, the Chairman will be testifying at the April 12th Senate EPW hearing. At this point, we anticipate working with the Chairman's office on the written testimony; we'll let you know ASAP if that changes.

Thanks,
Amy

From: Rihm, Roger
Sent: Wednesday, April 06, 2011 10:36 AM
To: Schmidt, Rebecca; Powell, Amy
Subject: FW: Congressional Correspondence

Is the Chairman expected to do this one?

From: Jaegers, Cathy
Sent: Wednesday, April 06, 2011 10:01 AM
To: Rihm, Roger
Subject: FW: Congressional Correspondence

From: Champ, Billie
Sent: Wednesday, April 06, 2011 9:35 AM
To: Batkin, Joshua; Bradford, Anna; Sharkey, Jeffrey; Sosa, Belkys; Bubar, Patrice; Nieh, Ho; Burns, Stephen
Cc: Vietti-Cook, Annette; Jaegers, Cathy; Clayton, Kathleen; McKelvin, Sheila; Mike, Linda
Subject: Congressional Correspondence

I have attached for your information a letter from Congress dated April 5, 2011, invites Commission testimony at the April 12, 2011 hearing to discuss the ongoing emergency associated with the Fukushima Daiichi nuclear power plant

Billie A. C-Lopes

BARBARA BOXER, CALIFORNIA, DEMOCRAT

MAX BAILEY, MONTANA
THOMAS R. CARPER, DELAWARE
CHRIS CANNON, UTAH, REPUBLICAN
CHRIS COONS, OREGON, DEMOCRAT
MURKIN, MISSOURI, REPUBLICAN
MURKIN, MISSOURI, REPUBLICAN

JAMES M. INHOFE, OKLAHOMA
DAVID VITTER, LOUISIANA
JOHN BARRASSO, MONTANA
JOHN BARRASSO, MONTANA

United States Senate

COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS

WASHINGTON, DC 20510-6175

April 5, 2011

The Honorable Gregory B. Jaczko
Chairman
Nuclear Regulatory Commission
Washington, DC 20555-0001

Dear Chairman Jaczko:

On behalf of the Senate Committee on Environment and Public Works and its Subcommittee on Clean Air and Nuclear Safety, we invite you to testify before the Committee at a joint hearing entitled, "Review of the Nuclear Emergency in Japan and Implications for the U.S." The hearing will be held on Tuesday, April 12, 2011, beginning at 2:45 p.m. in Room 406 of the Dirksen Senate Office Building. The purpose of this hearing is to discuss the ongoing emergency associated with the Fukushima Daiichi nuclear power plant in Japan, as well as the potential ramifications for the United States.

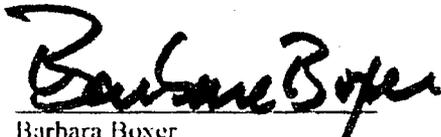
In order to maximize the opportunity to discuss this matter with you and the other witnesses, we ask that your oral testimony be limited to five minutes. Your written testimony can be comprehensive and will be included in the printed record of the hearing in its entirety, together with any other materials you would like to submit.

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If you plan to use or refer to any charts, graphs, diagrams, photos, maps, or other exhibits in your testimony, please deliver or send one identical copy of such material(s), as well as 100 reduced (8.5" x 11") copies to the Committee, attention of Katie Lee, Katie_Lee@epw.senate.gov, at the above address at least 48 hours in advance of the hearing. Exhibits or other materials that are not provided to the Committee by this time cannot be used for the purpose of presenting testimony.

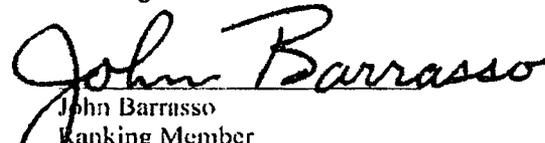
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Sincerely,


Barbara Boxer
Chairman


James M. Inhofe
Ranking Member


Thomas R. Carper
Chairman
Subcommittee on Clean Air and Nuclear Safety


John Barrasso
Ranking Member
Subcommittee on Clean Air and Nuclear Safety

From: Powell, Amy
Sent: Wednesday, April 06, 2011 10:58 AM
To: Schmidt, Rebecca; Droggitis, Spiros
Cc: Shane, Raeann
Subject: FW: Markey statement at today's nuclear hearing

Importance: High

FYI – were there follow on questions about this too?

From: Burnell, Scott
Sent: Wednesday, April 06, 2011 10:57 AM
To: Powell, Amy; Riley (OCA), Timothy; Decker, David
Cc: McIntyre, David
Subject: FW: Markey statement at today's nuclear hearing
Importance: High

Another Markey item to track down ASAP. Thanks.

From: Lobsenz, George [mailto:George.Lobsenz@ihs.com]
Sent: Wednesday, April 06, 2011 10:56 AM
To: McIntyre, David; Burnell, Scott
Subject: FW: Markey statement at today's nuclear hearing

Hi guys--please see Markey statement below that he says he has been told by NRC that fuel has "probably" melted through reactor pressure vessel at Fukushima Unit 2. Can you confirm or deny this statement by Markey? Any comment on this would be welcome.

George

From: Barry, Giselle [mailto:Giselle.Barry@mail.house.gov]
Sent: Wednesday, April 06, 2011 10:49 AM
To: Barry, Giselle
Subject: Markey statement at today's nuclear hearing

FOR IMMEDIATE RELEASE
April 6, 2011

Contact: Giselle Barry 202-225-2836, Eben Burnham-Snyder 202-225-6065

**Statement of Congressman Edward J. Markey (D-Mass.)
“The U.S. Government Response to the Nuclear Power Plant Incident in Japan”
Subcommittee on Oversight and Investigations
April 6, 2011**

“On March 28, 1979, almost exactly 32 years ago, a partial core meltdown at the Three Mile Island nuclear power plant terrified the nation and caused a full-scale re-evaluation of the nuclear industry in our country.

“On April 26, 1986, almost exactly 25 years ago, the meltdown caused by the Chernobyl nuclear power plant spewed highly radioactive smoke all over Europe. Again, the world was appalled, and promised increased safety.

“Today, we see that we are just as helpless when faced with nuclear disaster as we were 25 and 32 years ago.

“The cores of at least two of the Japanese reactors are severely damaged. I have been informed by the Nuclear Regulatory Commission that the core of Unit Two has gotten so hot that part of it has probably melted through the reactor pressure vessel.

“To bring the reactors and their spent fuel pools under control, the Japanese have had to resort to sending young workers in to risk their lives as they operate what amount to giant water guns.

“To assess and then sop up the radioactive water that has begun spewing into the ocean, they are relying on the use of bath salts and diapers.

“Just like the use of pantyhose and golf balls to stop last year’s oil spill, the Japanese have been compelled to try a “nuclear junk shot” in desperate attempts to stop an environmental calamity.

“Yet the Nuclear Regulatory Commission insists that our systems are safe, even before beginning, let alone completing, its review of our reactors and spent fuel pools.

“It does so in the face of its own analysis showing that there is a higher risk of core damage from earthquakes that has not yet been incorporated into regulatory requirements.

“It does so in the face of backup electricity requirements that are generally less stringent than what the Fukushima reactors were equipped with.

“And it does so after removing the post-Three Mile Island requirement to include systems to prevent the explosions of hydrogen that occurred at Fukushima from its regulations.

“I have introduced legislation, the Nuclear Power Plant Safety Act of 2011, to impose a moratorium on all pending NRC licenses and re-licenses in light of the need to fully understand the safety risks and include remedies into our own regulations. Many other countries have announced similar measures. I look forward to today’s testimony.”

Information on the latest status of the Fukushima reactors was gathered from communications between Congressman Markey’s office and the Nuclear Regulatory Commission (NRC).

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