

NATIONAL PRESS CLUB LUNCHEON WITH GREGORY JACZKO

SUBJECT: NUCLEAR POWER - LESSONS LEARNED AFTER FUKUSHIMA

MODERATOR: MARK HAMRICK, PRESIDENT, NATIONAL PRESS CLUB

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MARK HAMRICK: (Sounds gavel.) Good afternoon, and welcome to the National Press Club. My name is Mark Hamrick; I'm a broadcast journalist with the Associated Press, and the 104th president of the National Press Club. We are the world's leading professional organization for journalists committed to our profession's future through our programming, events such as this, while also working to foster a free press worldwide. For more information about the National Press Club, I'd ask you to take a look at our website at www.press.org. And to donate to programs offered to the public through our Eric Friedheim National Journalism Library, you can find more information there at www.press.org/library.

So on behalf of our members worldwide, I'd like to welcome our speaker, as well as those of you who are his guests and those of you attending today's event. Our head table does include guests of the speaker, as well as working journalists who are club members. If you hear applause in our audience, I'd like to remind you that we do have members of the general public attending today, so it's not necessarily evidence of a lack of journalistic objectivity when you hear that applause. I'd also like to welcome our C-SPAN and Public Radio audiences, our luncheons are also featured on our member-produced weekly Podcast from the National Press Club available for free download on iTunes. You can also follow the action on Twitter using the hash tag #NPCLunch. After our guest's speech concludes, we'll have Q&A and I'll ask as many as time permits.

And now it's time to introduce our head table guests, so I'd ask each of you up here to stand briefly as your name is called. So from your right, we begin with Steve Tetreault, he is bureau chief with the Stevens Washington bureau; Jennifer DePaul is a

reporter with *The Fiscal Times*; Dipka Bhambhani, media strategist, energy writer with Hill & Knowlton; Michelle Catts, senior resident inspector with the Indian Point Unit 2, and guest of our speaker; Yanmei Xie is a reporter with Platts; Jennifer Uhle is Deputy Director of the Office of Nuclear Regulatory Research and a guest of the speaker today.

Over the podium, Melissa Charbonneau with News Hook Media and our very capable Speakers Committee chair. We'll skip over the speaker for a moment. Rod Kuckro is Chief Editor with Platts, a member of the Press Club's Speakers Committee who organized today's event. Thank you, Rod. Dan Frumkin is team leader with the NRC fire protection branch and also a guest of the speaker; Ayesha Rascoe is a reporter with Reuters; Mike Soraghan is a reporter at Greenwire and a member of our National Press Club board; Maria Recio is Washington bureau chief with the *Fort Worth Star Telegram*. And now you can give them a round of applause, please. (Applause)

Before a March 11th earthquake and tsunami triggered disaster at the Fukushima Daiichi nuclear plant in northern Japan, it seemed as if the prospects were looking bright for a revival of the nuclear industry in the United States. In fact, at a time of deep political and philosophical divide in Washington, a rare bipartisan consensus had developed that there was a need to reexamine whether it was time to build new nuclear plants in our country. Some politicians liked the idea because nuclear, unlike coal and even natural gas, gives off no greenhouse gas emissions in producing electricity and could help address concerns about global warming. And some believed it could help to lessen the nation's dependence on foreign oil while also helping to create thousands of jobs.

Others believed the safety of nuclear technologies since Three Mile Island and Chernobyl decades ago had been greatly improved and proven by its use in other countries including Japan. Even the Obama Administration, for a combination of all those reasons, has offered billions of dollars in loan guarantees to jumpstart nuclear construction.

Since then, the accident in Japan grabbed headlines, of course, over a period of weeks as the damage worsened. Radiation was released. A meltdown exposed nuclear fuel in at least one reactor unit. Developments put the safety of nuclear technology back in the spotlight and in a public debate about that technology. And with it, the safety of nuclear power in the United States with which the Nuclear Regulatory Commission is entrusted.

Just last week, the NRC released a preliminary report on the implications of Fukushima and the U.S. industry and suggested improvements for safety and plan preparedness. But the industry is concerned about what some of those recommendations might cost financially. Some environmental groups do not believe any steps can make nuclear power safe enough.

So it is with this news backdrop that we are very pleased to have our guest speaker here today. In May of 2009, President Obama appointed our guest chairman of

the NRC, where he had served as commissioner since 2005. With a doctorate in physics, he learned to navigate the political corridors of power on Capitol Hill, first as a congressional science fellow for Congressman Ed Markey of Massachusetts. His next job, the one he held before joining the NRC, was science advisor to Senate Majority Leader, Harry Reid, in Nevada. Incidentally, Senator Reid says that he supports building new plants, although he has led the opposition to store waste from those existing and new plants in his state at Yucca Mountain.

Our guest was born in Pennsylvania and grew up in upstate New York, and we're pleased to have him here today to address this timely topic. And I have to say, also, I believe he's our first guest speaker who I just now learned has a spouse who's a member of the National Press Club and works for C-SPAN. So we're very happy to have that as well. Please give a warm National Press Club welcome to NRC Chairman, Gregory Jaczko. (Applause)

MR. JACZKO: I should say after that introduction at least my wife will be happy with whatever I say today. I want to thank you for that introduction. I'm very pleased and honored to be here today speaking at this venerable institution. The National Press Club is really a venue like no other. It's been at the center of Washington journalism and news for more than 100 years. As I was doing some research preparing for this and my staff did a little investigation of the Press Club, they noted that its historic emblem was that of an owl which symbolizes wisdom, awareness and long nights spent on the job. Now, I won't claim wisdom and I'll let you judge my sense of awareness, but I can definitely relate to the long nights spent sleepless on the job.

As Chairman of the Nuclear Regulatory Commission, one of the best aspects of my job is having the opportunity to lead a staff of nearly 4,000 talented, dedicated public servants. Like any regulatory agency, we hear from all sides and all perspectives about both our own safety record and that of the industry we regulate. We know we can always do better, and we always strive to do better. But I have absolute confidence and I believe that the American people should as well in the experience, expertise and professionalism of the NRC staff.

So today, I've brought three excellent representatives of that team with me, and I'd like to introduce them to you. As you heard, Michelle Catts is someone who has a degree in nuclear engineering and has worked for the NRC for eight years. She currently serves as one of two senior resident inspectors at the Indian Point Nuclear Power Plant in New York. As a resident inspector, she is the eyes and ears of the NRC. She and her fellow resident inspectors are the front line staff who conducted the inspections ordered by the agency in the days following the nuclear accident in Japan.

Also with me is Dan Frumkin, who's originally from the D.C. area and has a degree in fire protection engineering from Maryland. After working on fire protection programs for two nuclear plants, he has worked on improving fire protection at nuclear plants all across the country for the past 11 years at the NRC. This is a very important

and longstanding issue for the agency, and Mr. Frumkin has been a big part of the NRC's efforts to make progress on this issue.

And finally, Jennifer Uhle, who's been with the agency for 18 years. She has a doctorate in nuclear engineering from MIT and, in fact, the NRC helped provide her the opportunity to pursue those studies. Right now, she helps make decisions on where the NRC spends its research money to best advance the science of nuclear safety. And most recently, Ms. Uhle was part of a 24/7 operation center team during the Japan crisis. And because of her expertise, she was asked to serve on the International Atomic Energy Agency's fact finding mission to Japan. These three outstanding professionals are representative of the thousands of individuals who work day in and day out to make sure we meet our responsibilities for nuclear safety to the public.

Now I'm sure the recent events in Japan and their implications for how we approach nuclear safety in this country are foremost in everyone's mind. Since the events began to unfold four months ago, the NRC has taken strong and immediate actions to insure the continued safety of the nation's nuclear power plants. In light of the events in Japan, the commission has undertaken a systematic and methodical review of the NRC's nuclear safety program. This review had both short and long-term components and it has moved forward with a strong sense of urgency given the significant safety issues under examination.

To spearhead this effort, the commission established a taskforce made up of some of the agency's most experienced and expert staff. All together with the six members on this taskforce, they represent more than 135 years of regulatory experience. Around its review, the taskforce has had full access to all of the other staff at NRC headquarters and in our regions and ultimately our NRC staff who are continuing to work in Japan to assist the Japanese government as they respond to the situation there.

As part of its reviews, the taskforce reached out to the Federal Emergency Management Agency to benefit from their expertise in emergency management, as well as to the Institute for Nuclear Power Operations in order to understand the industry's response to events in Japan. Additionally, the taskforce considered information received from stakeholders and monitored international efforts and reports by the International Atomic Energy Agency and the Nuclear Energy Agency, and other organizations.

Last week, this taskforce completed its 90-day review, part of the short-term review assigned to them by the commission and submitted its report and recommendations to the commission for its consideration. In line with the NRC's commitment to transparency and openness, the commission has made this full report publicly available for everyone to see. The taskforce will also formally present the report to the commission at a public meeting tomorrow. And I want to thank the members of the taskforce for their tremendous work. It's clear that their focus remain first and foremost on nuclear safety. In particular, I want to acknowledge Charlie Miller, who delayed his retirement in order to lead this effort. He still has hopes of retiring soon, but we're doing our best to talk him out of it. (Laughter)

This taskforce developed a set of 12 recommendations, many with both short and long-term elements. And they were recommendations that were needed to strengthen nuclear safety in this country. In its review, the taskforce did not find any imminent risk to public health and safety from the continued operation of the nation's nuclear power plants. The taskforce was clear, however, that any accident involving damage to the reactor fuel, an uncontrolled radioactive releases of the magnitude of Fukushima, even one without significant health consequences, is inherently unacceptable. This is the same reaction I've seen as I've attended meetings throughout the country, and really throughout the world. Quite simply, many of us who work in this field thought that this type of accident could not and would not happen again.

So the challenge for the Congress, the industry and the public, and of course the agency, is how to better insure an accident like the one in Japan will not happen in the United States. But like the doctor's Hippocratic Oath, we must insure that we do that in a way that does no greater harm to nuclear safety. I think that's something, and I hope to share with you some thoughts today about how I think we can do that.

Now as you can tell, I'm tremendously proud of the work of the taskforce. They have given us an excellent starting point with which to tackle this important question and challenge. Over the next 90 days, just like the taskforce took 90 days to do their review, I call on the commission to do its job to systematically and methodically review these recommendations in a public and transparent way hearing from all of the relevant stakeholders. Regardless of your view on the taskforce recommendations, this is a step that I think we can all agree on.

Now, this is by no means the first time we've contemplated significant changes to our approach to nuclear safety. Throughout the NRC's history, our approach to nuclear safety and security has necessarily evolved as new scientific information and operational experience have given us a better understanding of nuclear technology and its risks. Although this process has primarily unfolded incrementally through piecemeal and patchwork changes along the way, the history of nuclear power has also been punctuated by several significant events that challenged old truths and upended our understanding of nuclear safety and security.

In 1975, the Browns Ferry fire occurred at a nuclear power plant and this led us to rethink our understanding of fire protection, an issue that we continue to work on to this day. In 1979, the Three Mile Island accident led us to rethink a large number of safety improvements and approaches to safety at nuclear power plants including a strong focus and emphasis on the control rooms and how people working in those environments could best deal with a challenging situation like the accident at Three Mile Island. And, of course, the September 11, 2001 terrorist attacks was another watershed event that caused us to dramatically rethink how we approach nuclear security in this country.

These events led to dramatic changes in both how the NRC regulates and ultimately how the nuclear industry operates, changes that remain with us to this day.

Based on the taskforce analysis and recommendations, it is clear that the accident at the Fukushima Daiichi site is another such event. And laying out a regulatory framework for the 21st century, the commission's taskforce has charted a path forward on how we can fundamentally strengthen the NRC's nuclear safety program.

Now, these taskforce recommendations are too extensive for me to fully discuss today. They range in areas from loss of power to earthquakes, flooding, spent fuel pools, the venting of hydrogen and emergency preparedness. They include proposed new requirements for nuclear power plants to evaluate and upgrade their seismic and flooding protection, to strengthen their ability to deal with prolonged loss of power. And ultimately, to develop emergency plans that specifically contemplate the possibility of events involving multiple reactors.

Throughout the report, the taskforce emphasizes that effective NRC action is essential in addressing these challenges and that voluntary industry initiatives are no substitute for strong and effective NRC oversight.

In addition to these specific recommendations, the taskforce calls on the commission to redefine adequate protection in light of what we've learned from Fukushima. Now for those of you who are not steeped in NRC parlance, adequate protection is likely not a familiar term. Ultimately, our statutory responsibility is for safety. It's the touchstone of what we do as regulators, and it is the standard of safety that the NRC must require nuclear power plants and other licensees in order to allow them to operate. Over the last 25 years, there have been few occasions where the commission has deemed it necessary to revisit the standard and redefine what safety ultimately means. We did so after September 11th, and now the taskforce established by the commission believes we should do so again given the insights the Fukushima accident has provided about rare catastrophic events.

While the decision on whether to redefine this core definition of safety is one for the commission ultimately to make, by examining the taskforce's recommendations, it's clear that Fukushima was an unacceptable accident and that we need to take strong steps to insure that that type of accident does not happen in the United States. As we consider and respond to these recommendations, the commission is committed to involving the public and our stakeholders in this process. At the NRC, we never forget that nuclear regulation is the public's business and that we have the responsibility to conduct our work openly and transparently.

Since my very first speech after joining the commission almost seven years ago, I have emphasized that openness and transparency are indispensable ingredients for effective decision making. In order to move forward openly and transparently, I have proposed to my commission colleagues a roadmap for taking action on this report. The centerpiece of this proposal is a series of public commission meetings with the NRC staff and the many stakeholders who doubtless will have opinions about the taskforce report.

In the lead-up to these meetings, there would be an opportunity for stakeholders to provide feedback on the taskforce recommendations and for the NRC staff to provide additional information to the commission about their thoughts on the taskforce recommendations. I believe this approach will help insure that the commission benefits from the information and perspectives that our stakeholders bring to the table.

We are in a strong position today to be able to move forward quickly and effectively because the taskforce did an outstanding job with a tremendously challenging responsibility. The American public should be grateful and proud of the service that these members have been provided. This taskforce has clearly done its part in helping us to better understand what nuclear safety requires in a post-Fukushima world.

Now it is time for my commission colleagues and me to do our part. We have the responsibility to the American people to diligently and expeditiously review these recommendations and make the best decisions to insure the continued safety of the public. In light of the taskforce work, I see no reason why the commission cannot provide clear direction on each of these recommendations in less than 90 days. That is the time the commission gave the taskforce to do its job, and I believe that is more than enough time for the commission to outline a clear path forward.

Now, I don't think that that means that the agency will be able to take final action on all of these matters. Since certain of the recommendations themselves are requirements or changes to our regulations, that in and of themselves may take months or years to develop. But I believe we have enough information at this time to take the necessary interim steps on issues identified by the taskforce and to initiate the longer-term changes to our regulations that will allow for full and meaningful participation by the public.

In order to provide that clear direction within the 90 days, it's up to all of us to think about new ways to do things differently. It should not be unexpected, since these are not normal times for the NRC, nor for our licensees. We all know that some changes are in order, and none of us want to make rushed, poor decisions. We must move forward, however, with the urgency called for by these safety issues.

As chairman, I'm committed to insuring that the commission has all the information it needs to make timely decisions and take decisive actions in response to the taskforce recommendations. As I alluded to earlier in my remarks, this is by no means the first time we have undertaken a significant reevaluation of what nuclear safety and security requires. Nearly a decade ago, we embarked on an effort to overhaul and strengthen the security of the nation's nuclear plants in the aftermath of the September 11th attacks. While we moved forward with short-term changes, it has taken the NRC and the industry almost ten years to fully develop and implement the new framework.

I believe that it would be unacceptable for our current effort to take that long. That is why I'm calling today for the NRC and the nuclear industry to commit to complete and implement the process of learning and applying the lessons of the

Fukushima Daiichi accident within five years, by 2016. This will take a lot of hard work, strong and decisive leadership from the commission, and an even stronger commitment by our licensees to continue to make safety a number one priority.

We ultimately have no other choice in this regard. I think the taskforce has provided an excellent start to this effort, and I believe that we are more than up to the task of seeing this effort through. Because ultimately, this is not a challenge or a problem for me or the members of the commission or the agency or the nuclear industry. It is ultimately a challenge for all of us as we continue to insure that nuclear power can be used safely and securely in this country.

This is not an NRC problem or a nuclear industry problem; it is ultimately a nuclear safety imperative. The American people are looking to everyone involved in nuclear safety, from the operators to the regulators to the members of the public who participate in our process, to do their part in continuing to protect the public. And this is something, I think, on which we must deliver. So with that, I thank you for your attention and I'd be happy to answer any questions you might have. Thank you. (Applause)

MR. HAMRICK: Thank you, and we do have a lot of questions today, as evidenced also by the presence of a fair number of working reporters covering the story today. So let's talk about the core of your speech, so to speak, and we'll ask which of the recommendations in the report do you think are the most urgent, first of all?

MR. JACZKO: Well, I think the taskforce did a really nice job of breaking the recommendations down into several different bins. There are a number of recommendations in which they recommended that we take immediate action, those that would require order, some of which that would be done through a longer-term process like regulations. I can go through the list here, I think, of where they really thought the more immediate actions could be taken. But they're in some of the clear areas. When you lose all electric power at the site, that's clearly a challenge we saw in Japan. The importance of fully understanding the impacts of natural hazards and flooding and earthquakes on a site. The importance of being able to monitor spent fuel pools and know and understand the condition of spent fuel pools in the event of an accident.

But in short, and perhaps more appropriately, the real answer to this question is this is what the commission needs to work through in the next 90 days, is figuring out which of these recommendations is most important, which do we want to implement on a short-term time frame and which we want to implement on a longer-term time frame. But I think as I said, the taskforce has given us a good place to start.

MR. HAMRICK: So perhaps this question has already been answered by your speech, and it came in before the speech was completed. It said you've been quoted as saying you want to fast track the recommendations. Is that parallel to your comment about the five years?

MR. JACZKO: Well, I think in order to get to a decision in five years, we have to start somewhere. And the place to start is with this taskforce and their recommendations. The commission asks for this report and the staff was assembled to complete it and they did their job in 90 days. I think it's reasonable for us to go through those recommendations and review them in 90 days. Now, that doesn't mean we're done at that point. Many of these recommendations themselves suggested the need for longer-term review and action by they commission. So I expect that this will begin the start of a process that I would like us to see have a goal of completing in five years.

MR. HAMRICK: So as you say, they asked for this report to be created. The question is have you consulted with your fellow commissioners on the timelines you've laid out and what do you think you have to do to gain support?

MR. JACZKO: Well, we've begun the process of consulting, and I actually this morning had a meeting with my colleagues where I laid out my proposal for us getting this first step done in 90 days. I suspect we'll continue to have discussions over the next several weeks as we begin the process of examining and reviewing this report. Of course, we have a meeting tomorrow where the commission will meet to talk about it.

You know, I think this is always an involved process whenever we have these kind of sweeping changes to our regulations. And it's important that we hear from stakeholders, that we hear from a large number of people to make sure that we move forward in an appropriate way. But as I said, I believe we can act on these recommendations in 90 days. I think that's a reasonable time frame.

MR. HAMRICK: So in other words, you're saying you believe you have sufficient support?

MR. JACZKO: Well, we'll see.

MR. HAMRICK: Okay, very well. It says you're talking about the 90 days, why is the 90 day timeline so important, as the questioner asked, if there is no imminent threat to safety?

MR. JACZKO: Well, I think as the taskforce laid out, there are a number of actions that should be taken in immediate time frame. That doesn't mean, again, that there's an imminent threat. If there were an imminent threat, we would be issuing orders to shut down facilities in this country. And it's important to understand that that's not what we're suggesting. But again, the process of any type of regulatory action that we take is invariably a process that takes some time. If it's a process that involves changing our regulations, that invariably will take a year or more to complete. And then following that, there's likely changes that the licensees would have to make.

So in the end, all of that can add up to several years or more. So it's important, I think, that we begin with the simple task of reviewing the recommendations and the report and coming to a final decision on those.

The other point I would like to emphasize is that if you look at the commission's schedule right now, the work we have in front of us is varied. But a big piece of that right now is looking at the licensing and potential review of new reactor licenses for the first time in a long time in this country. Right now, we're on a schedule to complete those reviews some time by the end of this year. And I simply think it would not be appropriate for us to go forward with those kind of new reviews if we have not yet dispositioned the recommendations in this taskforce. We have to understand what they will mean for new reactor licenses, and if we want to keep that work moving forward at a reasonable pace, we have to first come to some decision and resolution with these recommendations.

MR. HAMRICK: Since you brought up the question of the applications, I'm just going to ask a follow-up to that. Give people an idea of the landscape in the United States of how many nuclear plants are out there and how many essentially people would like to build now?

MR. JACZKO: Well, we have 104 operating plants in the country right now, and we have a number of applications in front of the commission to license new reactors. And if you look at that group of applications, there's probably just a handful, or fewer, of plants that if they were to receive a license would move to construction. Right now, there's a plant in Georgia and a plant in South Carolina where there is kind of pre-construction work going on to prepare the sites for the potential of a new reactor being licensed at those sites. So it's really right now just a few plants that are moving forward if they were to receive a license.

MR. HAMRICK: Can you talk about visiting Japan for the first time after the accident? What did you expect to see, and maybe on one hand the technical things that you witnessed; and on the other hand, the human things that you saw?

MR. JACZKO: Well, I had the opportunity to visit Japan in the very early days, about two weeks after the event had started. I went to Tokyo on a very short trip to meet with my counterparts in Japan and to see the team that the NRC had sent to assist the Japanese government. Probably one of the most, I think, memorable moments for me during that event was just the effort and dedication of all the people who were involved in dealing with this very difficult situation. This clearly was a very challenging situation for the people of Japan and to see people from the NRC, people from other U.S. agencies working there to help our Japanese colleagues, I think, was just a real reinforcement for me about the strong bond that we have with our colleagues in Japan.

So I was very impressed with the efforts and the focus of people who were there, and their dedication on all sides to try and work through what were some very, very difficult issues in a very challenging environment.

MR. HAMRICK: And how do you think they're doing?

MR. JACZKO: Ultimately, I don't think I'm in a position to judge. I don't think any of us can truly understand and appreciate the magnitude of the crisis and the magnitude of the challenge in Japan. So what I think we can do best at the NRC is we can provide expertise as they requested and help them best handle a very challenging situation. But as I said, what I did see was a lot of people very dedicated to resolving what was a very difficult and challenging situation.

MR. HAMRICK: But clearly you're in a position to try to figure out what they did well and what they did not do well and apply that to the landscape in the United States. So can you break that down a little bit as to lessons learned from that, and obviously to some degree it's reflected in your recommendations. But specific to the Japan situation, you see something, that was good, that wasn't so good. Apply it to that, if you would please?

MR. JACZKO: Well, I think right now the international community as a whole is really working through that question to try and figure out and understand what lessons exactly we've learned. But I think as the taskforce laid out, clearly we all want to have a better understanding, or make sure we have a good understanding, of the types of natural hazards that can impact and affect any nuclear power plants. Clearly, I think there's an appreciation that we want to be able to manage the situation in which you lose all electric power, to be able to manage that with more certainty and to maintain safety systems and instrumentation and control systems for a much longer period of time than our plants are generally designed for right now.

I mean, there are some obvious lessons I think that we've seen so far. There will be more specific lessons that will be coming out of the work, work that was spearheaded by Jennifer working with the IAEA. So we'll learn more, I think, in the coming year that will give us more specifics about what kinds of things we need to change. But clearly, we have to make sure we consider some of these things I talked about as well as the impact of spent fuel pools. And ultimately, the fact that you could have multiple reactors having challenges at the same time.

So in many ways, these were novel challenges and I think our colleagues in Japan responded in the way that they thought was best, and with a limited resources that a large earthquake like that could present and the challenges of a dramatic, difficult situation.

MR. HAMRICK: Questioner asks, "What in your opinion is the future of nuclear energy in Japan now after all this trouble?"

MR. JACZKO: Well, I don't think I want to speculate on the future of nuclear power in Japan. Ultimately, that's a decision that the Japanese government, the Japanese people, have to make, is how they intend to move forward. My focus, and I think the focus for the NRC, should be on insuring that in this country we continue to do what we need to do to expand the safety net, if you will, to make it a little bit bigger, to capture some of the things that may have fallen through in Japan. And that's what I think the taskforce did.

MR. HAMRICK: Do you think evaluation plans for people living near nuclear power plants are currently adequate, and should you require plant operators and surrounding governments to conduct periodic evacuation drills of real people?

MR. JACZKO: Right now, we have a system of evacuation that's designed around two primary areas. One is a ten mile area around the nuclear power plants where we plan and prepare for evacuations in the short-term. Beyond that, we have prepared and planned for the ability to take action, to secure food or other material that could lead to radiation being ingested in individuals from the aftermath of an accident. I think that forms a very good planning basis for us for now. And again, one of the things the taskforce looked at, they made recommendations in this area. One of them was that the facilities in the short-term, we need to make sure they can plan for the potential of a long-term loss of electric power. Until we address that recommendation to enhance our ability to deal with that situation, we want to make sure that from an emergency planning perspective, the operators, the licensees are looking to see ways that they can address that type of situation.

One of the recommendations the taskforce had as well was for the longer-term review, to take a look at how we consider the impacts of multiple units having a challenge at one time and what kind of impact that might have on our emergency preparedness program. So I think there's some things that the taskforce told us we can do in the short-term and then some things they told us we need to look at in the long-term. But fundamentally right now, we believe we have a system that is adequate to deal with the challenges as we know them. And again, I would remind people that in the event of an accident, if a very unlikely event of an accident were to occur, the appropriate steps would be taken by the licensees working with state and local governments to ultimately take the right steps to protect the public. And that's the focus for our programs, and I think right now we have a good basis.

MR. HAMRICK: Can you talk about sort of the specific recommendations on the power backup issue that you made in your report? What people have to do right now, in other words what's the current requirement? What you need immediately, and then longer-term, what would be, dare I say, ideal?

MR. JACZKO: Well, in the area for the loss of electric power, which is really an important area, the taskforce recommended two things. One, they recommended that we begin immediately to change our regulations in two ways; one, to really change the scope of how we deal with this loss of electric power. And that was to insure that we can at least cope with that for eight hours. And then in addition to that, if we were to get into a more severe scenario, that you have an ability in an extended way to cope for another 72 hours. So that's a very comprehensive but important recommendation that the taskforce recommended lends itself to longer-term analysis that a change in our regulations would require.

The second thing that they suggested was that we institute an order right now to take equipment that we already have on site and basically insure that that equipment, which could help mitigate this long-term extended loss of power, that we could take that equipment and we put it in places and locations in which it's more likely to be able to withstand the kinds of things that we saw in Japan, namely the potential for significant flooding, the potential for an earthquake. So it's really a two-pronged approach to dealing with that. So in the short-term, we would better shore up that equipment that we already have in place that performs a mitigation function if we would ever get into a more severe situation. And we couple that with a longer-term effort to change our regulations to be able to deal with the situation for much longer than we have by requirement now.

MR. HAMRICK: Explain the why eight hours, why 72 hours? Obviously, you made those decisions for a reason?

MR. JACZKO: Well, some of them are, I think, the virtue of historical information. Right now, generally nuclear power plants respond in about-- are required to cope for about four to eight hours to this loss of electric power. As the taskforce did its review, it looked at this issue and it found that eight hours was an appropriate time to ultimately put the plant in a position in which they could take all the other actions that would be needed to do this more extended period of coping. So the eight hours buys you the time you need to prepare and set up everything else that you need to do to get that much longer 72 hours.

So again, this is something which I think there'll be tremendous debate and discussion about because these are the kinds of things that we want to hear from stakeholders, we want to have more refined analysis, which is why the taskforce, I think, recommended doing this as part of a change to our regulations. That's how we get that kind of input and feedback.

MR. HAMRICK: Questioner asked, "To the best of your knowledge, has anyone died or been seriously injured as a result of this accident in Japan? And is there any prognosis on how the workers of the nuclear power plant may have been affected overall? What do you know about the health effects?"

MR. JACZKO: Well, we in general, members of the public, were evacuated and protective actions were taken to reduce the potential long-term impacts from the accident. There are some workers who have received doses in excess of what we typically would look at for an emergency worker in a situation like this. But again, that's not necessarily unexpected given the challenges of the site. There have been a few workers who've received some skin exposures that are significant. But at this point, certainly nothing that appears to have any impact ultimately for immediate health impacts.

So the challenges really are on dealing with a population that is displaced from their homes which personally I believe is often a missing or not discussed health or ultimately impact to people. Being told to leave your home for extended periods of time is, I think, not something that any of us would want to deal with and I don't think would

consider that to be something that is of no impact. So when we talk about the health impacts, we normally just talk in terms of the radiation exposures. And because of the robustness of the programs that we have in the nuclear field, they were able to be minimized, and that's a good thing.

But as I said, as I talk to people in the international community, as I talk to people in this country, I think there's no one who believes that what happened in Japan is something that would be acceptable in this country. So, that's why we have some recommendations to help us work through that.

MR. HAMRICK: Question, we're here in the nation's capital in the center of power, we're in an important neighborhood and zip code. People always want to know about the players and how all the different gears interact. So the person asks, "Can you talk about the NRC's relationship with the White House and how can other government agencies help your efforts? How do they help your efforts?"

MR. JACZKO: Well, as an independent regulatory agency, we have an independent role here in setting nuclear policy. Now certainly during the events of the crisis of Japan, there was a tremendous amount of coordination between the NRC and many different agencies in the federal government. In fact, the NRC staff who went over to Japan did not go over as an NRC team, they went over as part of a USAID team that was there for humanitarian aid and assistance. And in fact, there's a tremendous number of people throughout the federal government who have offered their assistance and help to the Japanese people. While the nuclear may have seen many of the headlines, it wasn't necessarily the biggest piece of the U.S. response.

So in general, what I have seen through my interactions as chairman is we have worked very collaboratively and cooperatively with the White House, with other federal agencies. But there has been a very strong respect for the independent role of the NRC in ultimately making nuclear safety decisions.

MR. HAMRICK: Someone's asking, "How do you determine the appropriate balance between the regulatory agency and the industry itself?" I suppose if we lived in an ideal world, the industry would be self policing aggressively, but maybe long-term experience across the whole landscape of the business world doesn't suggest that that's a dependable model. So how do you see it working right now, and how would you like to see it?

MR. JACZKO: Well, I think in general the system works pretty well in this country. We have the NRC, which has a responsibility to establish safety requirements. We have an industry which is then ultimately responsible for implementing those, and ultimately has the immediate day to day responsibility for safety. There's also an industry self-regulatory organization which I mentioned earlier known as INPO, which plays a role in providing excellence in the nuclear safety industry.

So I think we have many different pieces working on this. And, of course, we have the public. And I think one of the things that I continue to be amazed by is the level of engagement and involvement that we get from members of the public on all of these issues. So I think whenever you bring a lot of different views together, it's always more challenging to make decisions. But in the end, I think it's the right thing. This is a difficult area in which to make decisions. And so by design, I think it's a system that's intended to be open and transparent and seek input from a lot of different stakeholders. And that's what we started to do at the agency.

MR. HAMRICK: So from a horrible accident, there's an opportunity now to improve regulation, at least from your vantage point. Is that the benefit of this disaster? The questioner makes the point, some would argue, any press is good press and therefore the negative might forge a positive. Is that essentially an opportunity that you're presented?

MR. JACZKO: Well, I don't think there's anyone involved in this who would prefer not to have had this opportunity presented to them. This is not something that we wanted to be faced with, nor did, I think, the people in Japan. So given the challenges in front of us, I think we have an obligation to the American people to do what we think is right. And as I said, that's a process that I think is going to need the involvement of stakeholders and it's going to need to hear from the industry.

As I said, we talk a lot about impacts and the impacts of the changes that we as a regulator make. And as I talk to some licensees, one of the things that they've impressed upon me, and I think is an important point, is that as we make these changes, it's very important that we insure the continued, safe operation of the facilities in this country. Ask the taskforce found, there's not an imminent concern or an imminent threat with the facilities. So as we make these changes, we have to go about it in a systematic way, but also in a way that doesn't create unnecessary challenges that would detrimentally impact the safety of the nuclear facilities in this country.

So that's where I think we need to have the discussions and the understanding of the right way to go forward.

MR. HAMRICK: One more question on the taskforce report, a person asks, "Are you surprised by the tone of the report, which lamented so-called patchwork of regulations?" And the person asks, "Are things really that bad?"

MR. JACZKO: Well, I wouldn't say that patchwork is a bad thing. I think what the taskforce was trying to say was that looking back now with some degree of hindsight, when you put together the pieces of our regulatory system, what you find is that as there have been incidences, there have been changes and modifications. And I think what this taskforce did, which I really applaud them on, was they take a look at this from a big picture perspective and realize that, you know what? There may be a better organizing principle now for all of these changes that we've made over the years.

So I don't view that as necessarily a bad thing, it's simply a recognition that as issues have come up, we've addressed those issues. And there have been maybe enough issues now that some themes and trends have developed. And what the taskforce said was that really incidents in this country fall into two categories. There's those things that we want to make sure the plants protect against, the so-called design basis accidents. So we want to make sure they can withstand earthquakes and flooding. But there may always be earthquakes or floods or some type of natural disaster that we haven't envisioned.

And so we have to have something beyond that which we talk about as our-- which they've termed an extended design basis. And what they found was over the years is they looked at the things the commission did. What it, in fact, had done was without calling it an extended design basis, it had added on additional requirements and regulations. And that presented and created that patchwork. But it's not necessarily a problem, it's simply the historical development and nature of what we do.

So now we have an opportunity to take all of those things and put them into some more consistent bins that as we go forward will provide a way for new regulations or new requirements, in response to new incidents, it will give us a better sense of which one of those two bins those activities fall in. And that design basis are the basic things you need to do for safety, as opposed to those things that are dealing with kind of the mitigation and the effects of the design basis, events that you can't quite consider.

MR. HAMRICK: So as we all know, Germany has voted to completely shut down its nuclear reactors by 2022. Is that an overreaction? And do you expect to see potentially other countries following suit?

MR. JACZKO: As I said, my focus is first and foremost here on the U.S. and making sure we have the appropriate reaction in this country to the events in Japan. Ultimately, I think it's up to the German people to decide, and the German government, what's appropriate for them given their situation and their circumstances.

MR. HAMRICK: Do you think other countries may follow?

MR. JACZKO: I don't know. I think it's hard to say. I think what will be crucially important is for here in the United States, for us to take this taskforce's recommendations to work through them in a systematic way. I think every country I've seen is taking some kind of approach to address the situation in Japan. And ultimately, I think if those approaches are focused on nuclear safety, in the end then there'll be good information on which to make a decision about the long-term prospects for nuclear power in any country.

MR. HAMRICK: As a scientist, as you see a country try to juggle its energy needs, is nuclear a necessary part of that balance?

MR. JACZKO: Well, I think the day I took the oath of office to be a commissioner, I stopped having opinions about that. And ultimately, my job is nuclear

safety and there's a lot of people in Washington and throughout the country who have a lot of good ideas about what our energy mix should be, what our approach to energy should be, and I would humbly defer to them and know that my focus is on safety and that's really where our approach will be.

MR. HAMRICK: We'll ask you that question a few years down the road, then.

MR. JACZKO: That's right.

MR. HAMRICK: There's some news today about the food supply in Japan being contaminated in cattle and so forth. Is that to be expected under these circumstances?

MR. JACZKO: Well again, I think from what I've seen, the levels of contamination are measurable. They're not levels that are immediately harmful to anyone. But I think as you deal with a situation like this, there's always going to be the challenges of maintaining and communicating with people who are producing the food. That's why in this country we have what we call an ingestion zone pathway. That's that 50 mile area outside of nuclear power plants where we prepare and we pre-plan to be able to do--take the appropriate actions for livestock, for other food production that could ultimately allow radioactive material to get into the food supply.

So I think that any system you have is going to have challenges and that's part of why there's monitoring and work to insure the integrity of that food supply.

MR. HAMRICK: Yucca Mountain, we had a lot of questions about it here today and I've tried to sort of boil it down. It seems to be boiled down in one of the questions I had which takes a legal approach. And that is the questioner says, "The federal appeals court sternly said in a ruling earlier this month that the NRC must act on the DOE application for nuclear waste storage at Yucca Mountain." He's asking, or she is asking, "Will the NRC act on that application and what must be done essentially to move forward on that? What becomes of the application process from this point on?"

MR. JACZKO: I can't comment too specifically on this because this is an active matter in front of the commission, this legal question. Certainly read the opinion from the court and the commission has that and is deliberating on the issue.

MR. HAMRICK: What are the options for long-term storage that are out there?

MR. JACZKO: Well, the Secretary of Energy has appointed a blue ribbon commission to examine the options for long-term storage in this country. So that's something that they have a focus on. For the NRC, our focus ultimately, as I said earlier, is on safety and security. So, we've taken a good look at the fuel that's out there. We believe it can be maintained safely and securely for at least 60 years beyond the time that a plant would shut down, which generally gives you about 100 years or more of safe storage and secure storage.

And in fact, the commission just last year went one step further and asked the agency, and asked our staff, to begin exploring a period beyond that, maybe to two or three or four hundred years to see if there were any immediate safety and security issues that came out of that that could cause us to do something differently right now. So that's something we've engaged on and we'll be working on in the next three years to do that. But right now, we don't see an immediate concern with the safety and security of that fuel.

MR. HAMRICK: Extreme weather, it seems as if we're seeing more of it these days. Does that present greater risk to nuclear power out there and if so, is that embodied, the response to that, embodied in your recommendations?

MR. JACZKO: That's precisely one of the recommendations, is to make sure that we have a good understanding of the natural phenomenon that can occur. The way we've always looked at it is to look at what we think the worst thing is that happened historically and make sure the plants can be designed to deal with that kind of hazard. But, of course, as we get new information, as we get better ways to understand and predict what could happen from a natural phenomenon, we always want to revise and update our requirements.

And in fact, the commission prior to the events in Japan was working on reexamining two fundamental issues that deal with natural hazards. One has to do with earthquakes in the central and eastern part of the United States and the potential that our understanding of those wasn't as good as it was when we initially licensed those facilities. And the other had to do with flooding and the potential for a more significant flooding events than we had initially planned on.

So again, it doesn't mean that any of those is going to require changes to the facilities. There's no immediate concern for many of those. But it just shows that we're a constantly learning organization and where we get new information, we work to apply that and implement it.

MR. HAMRICK: Those of us who are old enough to remember can remember in the late '70s and early '80s, there was a fair amount of public protest around nuclear power. A person is referencing what they're seeing out there today, and I guess ultimately the question is what do you think is the level of public support for nuclear power out there? And as a follow-up, is there an increased level of opposition in the United States as a result of the Japan disaster?

MR. JACZKO: That's a difficult one for me to answer. A lot of people do polling to answer these questions. And generally what I see is I mostly read these in the newspaper. There's probably, I'll say, there's support for nuclear power in this country. But I think there is concern and there's opposition as well. I had a chance, actually, a few months ago to go up to the Indian Point nuclear power plant, which is a plant in New York that has a lot of public interest. And outside the gate of the plant were four or five

or maybe ten people who were protesting and were there partially because I was visiting, I think. And so I held a press conference and toured the plant, visited the plant. On my way out, I got out of the car and stopped and talked to the folks.

And what I find in general is there are lots of people who have very legitimate questions about the safety of nuclear power. And ultimately, I think it's the job of the NRC to make sure that we take the appropriate steps to ultimately insure safety of the public. And in the seven years that I've been at the NRC, or six years I've been at the NRC, what I've found is the people who work at the agency are dedicated every day to doing that, to making sure that we protect public health and safety. It's what we do. I've just been impressed to see it in so many different ways as a commissioner and now as chairman.

MR. HAMRICK: Very well, I'll just ask you to stand by. We have a couple of last housekeeping matters to take care of. I'd like to remind our audience about some upcoming speakers. July 28th, Congresswoman Michele Bachmann, presidential candidate representing Minnesota will be out here, and the parade goes on. August 19th, Governor Gary Johnson, former governor of New Mexico and also a presidential candidate. October 13th, Secretary Ray LaHood, the Secretary of the Department of Transportation. And in early November, Tom Brokaw will be here to talk about his new book.

Secondly, officially, I'd like to present our guest with a traditional NPC mug. Thank you, Mr. Chairman. (Applause) I have one last question. I can remember growing up, there were any number of movies that tended to demonize nuclear power. I can think of "Silkwood" and "China Syndrome." And in the modern culture, we have no less than the very popular "The Simpsons" where Homer Simpson works and doesn't always seem to have the level of education that you bring to the podium. So when you see those popular portrayals of nuclear power, does that bother you, and what's your reaction to it?

MR. JACZKO: Well, I wouldn't say it bothers me at all. I think "The Simpsons" are very funny and ultimately I think it's the job of the NRC to communicate to the public about what we do. I know the people who work at the NRC are dedicated to nuclear safety and they're a tremendously talented group of people and as I look out at the nuclear power plants in this country, there are dedicated people at those plants as well. That doesn't mean we don't have disagreements and differences, but I think in the end if everyone does their job right and is committed to nuclear safety, we'll get there.

MR. HAMRICK: How about a round of applause for our guest speaker today? (Applause) I'd like to thank you all for coming here today. And I'd also like to thank the National Press Club staff including our library and our broadcast center for organizing today's event and a reminder that you can find more information about the National Press Club on our website at www.press.org. You can find a copy of today's program and streaming of future events on there as well. Thank you very much, and we're adjourned. (Sounds gavel.)

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