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TRANSCRIPT OF PROCEEDINGS

APPEARANCES

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Director
Office of Nuclear Reactor Regulations

William D. Magwood, IV
Commissioner
U.S. Nuclear Regulatory Commission

1 PROCEEDINGS

2 ERIC LEEDS: Good morning. Welcome back to the second day of
3 the 24th Annual Regulatory Information Conference. Again, my name is Eric
4 Leeds. I'm the director of the Office of Nuclear Reactor Regulation. I'd like to
5 share with you some numbers that I just received this morning about this year's
6 conference. We have over 3,300 participants here with us. Over 200
7 international colleagues are attending this year's conference, and they represent
8 over 35 countries; that includes the U.S. So, thank you all for being here.

9 This morning we have plenary sessions with Commissioner
10 Magwood and Commissioner Ostendorff. Then we'll take a half hour break and
11 we'll have another plenary session focusing on operating and new reactor topics
12 where a distinguished group of nuclear veterans will respond to your questions.

13 But, before I begin, I've got some housekeeping reminders for you.
14 Please, everyone, remember to visibly display your name badges throughout the
15 duration of the conference. Please turn off or silence your electronic devices. All
16 items that are left behind in the conference and meeting rooms will be given to
17 the hotel bell staff. I understand that someone left a driver's license at the
18 registration desk. We're holding onto it for you. We have not made copies.
19 Please be aware of the fire exits at the sides and the back of the rooms. Recall
20 that all presentation materials that are not currently on the website will be posted
21 following the conclusion of the conference. And while our request for mild
22 weather for the RIC was granted, unfortunately, the unseasonably warm weather
23 resulted in very warm rooms. We received your feedback. We discussed it with
24 the hotel. They are working on it, and I think this morning I can feel it already.
25 It's a lot more pleasant in here, should be that way in all of our meeting rooms.

1 All right, and with that, I'd like to kick it off this morning and
2 introduce you to Commissioner Bill Magwood. The Honorable William D.
3 Magwood, IV was sworn in as a commissioner of the U.S. Nuclear Regulatory
4 Commission on April 1, 2010 to an initial term that ended on June 30, 2010, but
5 he's been reappointed and that term ends June 30, 2015.

6 Mr. Magwood has had a distinguished career in the nuclear field
7 and in public service. He was the longest serving head of the United States
8 Civilian Nuclear Technology Program, serving two presidents and five secretaries
9 of Energy from 1998 until 2005. Mr. Magwood served seven years as the
10 director of nuclear energy with the U.S. Department of Energy where he was the
11 senior nuclear technology official in the United States government and the senior
12 nuclear technology policy advisor to the secretary of Energy. Before his
13 appointment to lead the Office of Nuclear Energy, he served four years as the
14 associate director for technology and program planning. After his DOE service,
15 Mr. Magwood founded and headed Advanced Energy Strategies, a company that
16 provided strategic advice to domestic and international organizations. Prior to his
17 appointments at the Department of Energy, Mr. Magwood managed electric utility
18 research and nuclear policy programs at the Edison Electric Institute in
19 Washington, D.C. Before that, he was a scientist at Westinghouse Electric
20 Corporation in Pittsburg, Pennsylvania. Please join me in welcoming
21 Commissioner Magwood.

22 [applause]

23 COMMISSIONER MAGWOOD: There we go. That may actually
24 be too high.

25 ERIC LEEDS: Too high?

1 COMMISSIONER MAGWOOD: There we go. See, now it will
2 bounce up while I'm talking. Now, Eric also forgot to mention someone left their
3 reading glasses up here yesterday, so if you're missing your glasses and you
4 can't see, the reason is your glasses are up here with Eric.

5 One of the things I noticed when my colleagues were up here
6 yesterday was that they were all squinting through the lights. Now I can see why.
7 It's like being in the middle of -- it's like Hollywood, you know. It's great, except
8 no one asked for my autograph yet.

9 Well, let me begin with thanking the organizers. Eric and Brian, you
10 and your staffs have done a fantastic job putting this together. The fact that we
11 have so many countries represented at this conference shows that it's
12 transcended its original purposes and it's actually become a major international
13 event, and I think it's due to the efforts that you and your colleagues have put
14 together over the years. I'd also like to thank all those others who supported this.
15 We have people from the protocol office here who have done a fantastic job.
16 Security from NRC is here as well. So, many people have done a fantastic job
17 supporting this.

18 And as my colleagues have already one, I also just want to
19 recognize the fantastic work of the staff, the senior staff is with us here in front
20 this morning. All of them have just done exemplary work over the last year. It's
21 been a challenging year in many ways, and they've really seen the organization
22 through some very, very challenging times. And, you know, as I spend a lot of
23 time, and I think the Chairman mentioned my unenviable record of 13 years as a
24 political appointee yesterday. I don't like to advertise that because people think
25 I'm insane when they hear it, but, you know, as I've been in the government for a

1 long time, I do -- you do see that there's many, many people who do a fantastic
2 job. But once in awhile, you do see one or two people who just really stand out
3 and you know that their contribution has really been truly special. And, Marty, I
4 think you're one of those people. I mean, I've worked with a lot of people over
5 the years. I think your contribution really has been truly special in this
6 organization for a long time. Congratulations on your retirement. I know you
7 won't disappear entirely, but, you know, working with you over the last couple
8 years has been a true pleasure, so thank you.

9 [applause]

10 Now let me also recognize my commission office staff who have
11 joined us here today, and I always try to get that -- fortunately they're all lined up
12 so I can name them. So, it's Patty, the other Patty, Bill, Molly, Rebecca, Carrie,
13 and Beth Lizann [spelled phonetically] who joined my office for a year, is a
14 detailee from DOE. It's a pleasure to see you here today and, you know, I
15 appreciate your contributions over the last year.

16 And I also wanted to thank someone's -- a group that doesn't, I
17 don't think, gets enough thanks, and that's really the people I consider to be the
18 heroes of Fukushima Daiichi. The people who stood at the plant really worked
19 courageously and creatively through those difficult weeks last year to help see us
20 through a true crisis. And those people, I think, while they -- many of them have
21 remained nameless internationally, but we all know that they were there, we all
22 know what they did. And I also wanted to thank the people who are working at
23 the site now. Commissioner Ostendorff and I visited the Fukushima site back in
24 January, and we saw people diligently working to try to clean up that site and to
25 keep it safe. And those people are to be congratulated for the work they're

1 doing. And I also want to just issue my best wishes to all those in Japan who are
2 still struggling in the aftermath of the earthquake and tsunami of last year. And
3 let me just pass on the message [Japanese], and let me also thank my Japanese
4 teacher for helping me pronounce that correctly.

5 [laughter]

6 We should also -- you recognize that, as Eric pointed out, that we
7 should be grateful for the fantastic weather. Now, there is a background. Eric
8 made the comment that he had requested good weather. Now, whenever the
9 staff makes a request, it has to come up to the Commission. And that was a
10 policy issue, so the Commission did vote in favor of good weather for the
11 conference. It was a four-to-one vote.

12 [laughter]

13 You know, let me just sort of take the opportunity to thank my
14 colleagues. You know, we -- you know, there's, you know, a lot said about how
15 the Commission interacts together, but the truth is that, you know, we work very
16 closely together, and we've worked together as a group for two years.
17 Sometimes it's been fun, sometimes it hasn't been fun. Sometimes we agree,
18 sometimes we don't agree. But one thing I can say, it's never been boring, so I
19 thank you for that because I hate being bored more than anything. And I think
20 that one of the things I've learned over the last couple years is that working with
21 a commission is something that's really a pretty unique experience. Now, I think
22 that anyone who hasn't actually done it really can't appreciate how unique it is.

23 And when I -- as I reflect on the last couple of years, I realize that
24 there's actually something very subtle about the commission process that I think
25 that maybe people don't really give a lot of careful thought to, and that is that the

1 Commission itself reflects a very subtle aspect of nuclear safety that I'd like to
2 talk with you about today. You know, as a commission goes forward in making
3 policy, it engages in what become very esoteric debates about, you know, how
4 safety is defined and what safety is, what's really safe enough. You know, just
5 recently, my colleagues and I spent many hours looking at the staff's
6 recommendations over the response to the Fukushima disaster and the various
7 regulatory actions that they had recommended. And we got into this very
8 interesting debate about whether to redefine adequate protection or whether to
9 maintain adequate protection. And this was a very, you know, the differences
10 seemed very important at the time, but, you know, it was something that I think
11 that we spent a lot of effort on.

12 But one of the things that you recognize as you go through these
13 debates is the truth is that safety is not an absolute. It's true that some people
14 speak about safety with a sort of an echo of metaphysical certitude, but it really
15 isn't. The harsh reality is that safety in a world that's inherently unsafe is both a
16 subjective and a relative measure. What's considered safe in one country is
17 often unacceptable in another. What was safe in 1952 is now considered
18 hazardous in 2012. You know, the NRC, probably more than any other
19 organization in history, has worked -- has tried to tame those ambiguities and to
20 try to take the uncertainty out of those discussions. People like my esteemed
21 colleague, Commissioner Apostolakis, has spent many, many years trying to
22 quantify risk and safety and put it in terms that you can evaluate and compare in
23 a systematic and consistent fashion. But if science allows us to provide a basis
24 to compare and analyze safety, it doesn't really give you a clear answer to what
25 safety is. That's left to the judgment of policymakers, people who are reflecting

1 the values and the mores of society that they represent.

2 In the case of the United States, those standards are really set by
3 elected representatives, people in Congress and the president. And they reflect
4 their values by appointing people like us, like the Commission, and the five
5 people on the Nuclear Regulatory Commission today reflect the values and
6 mores of the people of the United States at this point in time because of the way
7 the process works. And I think this approach has served us very well. The
8 Commission makes judgments based on scientific facts, and when science alone
9 can't provide an absolute conclusion; the Commission makes judgments based
10 on its experience, its various points of reference, and, yes, the values of each
11 member. As commissions evolve over time, these factors evolve as well, and
12 also evolving will be the conclusions reached by the Commission over safety.
13 Some of the precepts stay the same, some are challenged, new thoughts are
14 constantly considered. In our case, this approach has allowed us to make
15 profound changes over the years as lessons have been learned through
16 operating experience, but it's also fostered the regulatory stability as necessary
17 to allow nuclear technology to be used to benefit society. So, that process, I
18 think, works and serves us very well.

19 But recently, the Commission undertook review of our low-level
20 waste policies, and we -- in the U.S., we have a part of our regulation 10 CFR 61,
21 and we spend a lot of time talking about that. And low-level waste is an area that
22 hasn't really received a great deal of attention over the recent years. In the U.S.,
23 we have an act called the Low-Level Waste Radioactive Policy Amendments Act
24 of 1985, which is really the guiding law of the land but which also, quite frankly,
25 hasn't entirely been successful. The structure that the law had anticipated, a

1 collection of state-run disposal facilities -- it simply hasn't occurred. In large
2 respects, the act has failed. And what the Commission wanted to do was to
3 undertake some update of this -- of our regulations under this law to reflect the
4 realities of the day, the new waste forms that are out there, the realities of the
5 sites that exist.

6 But as we reviewed the policy aspects of low-level waste disposal,
7 it was apparent that the most difficult questions facing us were not those related
8 to how best to protect the public we serve today but how decisions we might
9 make would impact the public and the people over the very long term. Our
10 discussions circulate around timeframes reaching out to 20,000 years and
11 beyond. So I really began to wonder, can a framework I spoke of earlier, where it
12 uses people like us to reflect the mores of today's society, really represent the
13 interest of future generations, what's our ability to make decisions on their behalf.
14 As a nuclear safety regulatory, what priorities should be placed on those issues?

15 Now, while there are many areas in today's society that impact the
16 future, many of the impacts that we are worried about most urgently really have
17 relatively short-term impacts, you know, even things like Social Security and the
18 future of Social Security or, you know, the state of our education system. These
19 are very important issues, but they really have impacts over the course of
20 decades. The things that we deal with at the NRC have impacts over thousands,
21 perhaps tens of thousands of years. Now, this is hardly a new line of thought, to
22 be honest. As the United States and other countries have confronted the issues
23 associated with the disposition of nuclear and hazardous waste over many years,
24 entire forests have been turned to papers and reports, cashing through the
25 matter of intergenerational decision-making with regard to risk.

1 A primary example is the National Academy of Public
2 Administration, NAPA. They developed a framework known as the chain of
3 obligation principle. Under this principle, each generation's primary obligation is
4 to provide for the protection of current and foreseeable generations, and, as
5 such, concrete hazards have priority over long-term hypothetical hazards. But as
6 NAPA states it, "No generation should needlessly now or in the future deprive its
7 successors of the opportunity to enjoy a quality of life equivalent to its own."
8 Now, in some sense, this can be easily summarized as "Do what you have to do,
9 but try not to do anything obviously stupid," which is probably a good principle for
10 our everyday life.

11 Now, depending on exactly what waste is at issue, we've taken a
12 wide variety of paths. As a general matter, disposition is geologic and relies on
13 various levels of engineer barriers to isolate toxic materials from the environment,
14 with the magnitude of isolation increasing with the degree and longevity of the
15 toxicity or the waste in question. In addition, various assumptions are made
16 regarding what very long-term measures are required to assure that some future
17 prospect or farmer doesn't accidentally drill through the waste disposal cell. EPA
18 oversees disposal of a much larger volume of waste than does the NRC, and
19 whereas some nuclear waste are highly toxic for tens of thousands of years,
20 many EPA-generated waste are hazardous forever. And I just put up a chart to
21 sort of compare some of them. I don't expect you to be able to read all of it, but
22 it's just up for a luster of purposes, just to indicate there are a wide variety of
23 ways that these things are viewed.

24 For EPA, for example, many of their long-term protections rely on
25 institutional controls to keep people away from the waste. Now, it's true that

1 once you create a government organization, it's hard to get rid of it, but I think it
2 might even be a little ambitious for EPA to expect to have inspectors showing up
3 10,000 years from now with a clipboard to make sure that the paperwork is in
4 order.

5 NRC's approach is a little bit different. NRC approach is perhaps a
6 little bit more realistic in that our regulations assume that institutional measures
7 eventually will fail. Afterwards we rely on engineer barriers, and there's some
8 reliance on some symbols or monuments to warn people thousands of years
9 from now they shouldn't drill or blast their way through our way cells looking for
10 gold or water or the lost Ark of the Covenant.

11 Now, these challenges raise difficult questions, many of which this
12 nation has spent many years and millions of dollars to address. But today, these
13 issues are further complicated by the current state of U.S. policy regarding the
14 disposition of high-level radioactive waste. That complication is, of course, at the
15 moment, we're between policies. From the time I first became involved in
16 nuclear energy, the U.S. had been on a path toward the disposal of high-level
17 waste and spent fuel at the Yucca Mountain, Nevada site. Obviously, this policy
18 has had a long and tortured path and its current state remains a matter of
19 consternation and controversy. But however you view the manner in which we
20 reached today's situation, the fact remains that the U.S. government is
21 responsible for the disposition of high-level waste and currently has no plan to
22 deal with them.

23 I met recently with a member of the group Mothers for Peace.
24 While there are a range of issues about which Mothers for Peace and NRC
25 disagree, I do have a lot of respect for this group and the diligence and thought

1 their members bring to their efforts. The most recent discussion I had with this --
2 with a person from Mothers for Peace focused on spent fuel accumulating in
3 nuclear power plant sites. This is a significant issue for Mothers for Peace and
4 for many groups across the country. During this discussion, the woman I was
5 talking with made -- gave an opinion that I had to stop and think about. She said
6 that operating nuclear plants without a path for spent fuel disposal was like
7 building a house with no bathrooms.

8 [laughter]

9 She's right. That's exactly what it is. Now, that said, I should
10 pause and say that I state clearly that I have great confidence that the storage of
11 nuclear waste at reactor sites is safe and will remain safe for many years to
12 come. Even without a clear policy for its final disposition, commercial spent fuel
13 today does not represent a crisis. The waste confidence ruling decision issued
14 by the Commission in 2010 found that spent fuel can be stored safely for up to 60
15 years beyond the license life of a reactor without significant environmental
16 impact. The ruling also stated that when sufficient repository capacity will be
17 available when necessary, and as the agency announced in January, work is
18 underway to determine the ability of storage to continue for an extended period of
19 the order of 200 years. This effort is necessary given the state of nuclear waste
20 policy in the United States, and I will continue to support the staffs efforts in this
21 area. However, that does not mean that anticipating the storage of nuclear
22 waste at reactor sites for hundreds of years is a good idea. It is, in fact, a very
23 bad idea and one whose problems are exacerbated by the uncertainty that
24 entails for both an intermediate and a long-term future. Moreover, as an NRC
25 Commissioner, if I'm confident that we can, if need be, store waste safely for

1 decades to come and I am confident we'll have repository when the time comes
2 when necessary, I am less confident about certain aspects of transporting spent
3 fuel. Packaging and preparing spent fuel for shipment will be a daunting
4 challenge. And the lack of a coherent and consistent plan over the years has not
5 made it any easier. And if spent fuel does remain in storage for many decades,
6 these challenges will only grow in scope and complexity. The house has no
7 bathrooms.

8 Now, here, I find common cause with some of our harshest critics.
9 Well, you know, as they say, mixing went to China; thus, Magwood went to
10 NoNukes.org. Now, again, this will probably be hard for you to read, but these
11 are 10 points that the website -- NoNukes.org -- has put up through their Nuclear
12 Guardianship Project. The Nuclear Guardianship Project is a citizen-base effort
13 that, among other things, suggests that we should establish an oral history to
14 assure future generations -- assure the future generations know we're -- we've
15 left nuclear waste and to understand the hazards it presents. If you visit this site,
16 you'll see this 10-point plan. This is an abbreviated version of the 10-point plan.
17 Now, I don't agree with all the points in this ethic, but I agree with actually a lot of
18 it. And many of -- much of it is thought provoking. For example, the first value of
19 the list is that each generation shall endeavor to preserve the foundations of life
20 and well being for those who come after. To produce and abandon substances
21 that damage following generations is morally unacceptable. And that really is the
22 theme that many of their points take.

23 Now I operate in the context of my time and my society. My
24 primary mission as a regulator is to assure the public today is safe and they will
25 remain safe for the foreseeable future. But I've also concluded that our society

1 has an obligation to make decisions to protect future generations with the same
2 care as we bring to the present. It is our view the approach we take to all legacy
3 waste; I believe we can and should do better. And in the particular case of spent
4 nuclear fuel, I believe the current state of nuclear waste policies provides a
5 unique opportunity to reflect.

6 Our ability to store nuclear waste safely gives us a time to bring our
7 best and brightest to the nuclear waste issue. Over the years, scientists and
8 engineers in the U.S. and around the world have charted paths that could vastly
9 reduce the toxicity of a long-lived high-level waste and avoid leaving the long-
10 lived actinides of fission products to the custody of the future. For example, in
11 Germany, research done in the last few years indicates that it's possible to treat
12 nuclear waste such as toxicity [unintelligible] natural [unintelligible] over a few
13 thousand years. This work echoes similar research here in many countries over
14 the years. Here in the U.S., we developed technologies in the '80s and '90s that
15 showed considerable promise towards this goal. And if you look at this chart,
16 you see the top line is the toxicity over time of direct disposal. In the middle is
17 sort of current reprocessing technology. And at the bottom, you can see the
18 much less toxic long-term future if you have partitioning and transmutation
19 treatments. These are technologies that many countries have worked on.

20 Now, our job as nuclear safety regulators includes -- if our job as
21 regulator includes protecting future generations, that job would be much, much
22 easier if our legacy waste were treated in this fashion. The knowledge exists,
23 and all that's needed is the will to look a little bit over the horizon. There was a
24 time in our history not so long ago we had faith in the future and our ability shape
25 it. I showed this picture last year at last year's conference to provide historic

1 context for some of my remarks, but the picture still resonates with me because it
2 recalls a time when we saw that there was no problem we could not solve and no
3 challenge that we could not overcome. Dr. Seiborg and Jim Webb, the head of
4 NASA, were talking about going to Mars at some point in the future in this
5 picture. And today, it seems like we always find reasons not to look too far and
6 to reach too high. We can't fix our education system. We can't fix Social
7 Security. We can't mount the mission to Mars. And we can't solve the nuclear
8 waste problem. If we continue down this path, we are not only losing faith in the
9 future, we'll be handing our legacy waste down to generations unborn; we're also
10 breaking faith with the future.

11 Thank you very much.

12 [applause]

13 ERIC LEEDS: Commissioner, we've got a number of questions for
14 you. And let me start off. Has there been anything that you have found to be a
15 surprise as far as what you thought the job of a commissioner was going to be
16 before you came to the NRC?

17 COMMISSIONER MAGWOOD: I think that one of the things that
18 was most surprising initially -- I got used to the idea very quickly -- was that the
19 Commission deals with legal issues as much as it does technical issue. You
20 know, I was actually quite surprised by the -- there's actually almost a balance
21 between the two. We actually act as almost a court in many ways, and we look
22 at legal issues that are brought up by lawyers instead of technical staff. And the
23 amount of time and effort we put into that actually was a bit surprising. So, that
24 was probably the biggest surprise about working on the Commission.

25 ERIC LEEDS: Thank you. How does the NRC decide to turn its

1 regulatory insights inward when issues from deepwater fracking and climate
2 change are of overwhelming significance?

3 [laughter]

4 ERIC LEEDS: I just read them, sir.

5 [laughter]

6 COMMISSIONER MAGWOOD: Well, since I don't think the
7 Commission has done any fracking lately, [laughs] it's kind of hard to answer
8 that, but let me say I think that if you look at -- let me try to interpret the question
9 this way. If you're -- if the point of the question is how do we look at the broader
10 context of the safe -- of energy in a safety context, we don't really try to make
11 comparisons between, you know, deepwater drilling and looking for -- using
12 fracking for gas. I mean, our mission focuses on nuclear safety. We don't really
13 worry a great deal about what the other agencies are doing. We do try to remain
14 aware of what they're doing in case there's lessons to be learned, but it isn't our
15 job to compare the relative safety of different elements of the energy
16 infrastructure. Our job is to focus on nuclear safety.

17 ERIC LEEDS: Okay, thank you. By analogy with corporate ethics,
18 does the Commission have a fiduciary, but not monetary in nature, responsibility
19 for protecting the public good? If so, how do you understand that responsibility?

20 COMMISSIONER MAGWOOD: Is this from the same person?

21 [laughter]

22 Well, I think that we all took -- you know, I think we all, and I think
23 all the senior staff, have taken an oath to protect and defend, you know, the
24 Constitution of the United States. And I think as part of that our solemn oath is to
25 protect the health and safety, through our activities, of the American people. And

1 we do our best to do that, and that's what we do. That's why we exist. That's
2 why the American people have hired us, and that's how we earn our pay every
3 day. But I think that one of the things that has been really quite remarkable for
4 me over the last couple of years was to see how personally people in this agency
5 take the cause of nuclear safety. It really isn't just a job for the people in this
6 agency. It really is their life's mission. And many of the people in this agency,
7 and particularly the senior staff, has spent decades doing that. As we heard,
8 Marty spent 34 years doing this. And I think this goes beyond just, you know,
9 whether it's our legal responsibility. I think we see it as our moral responsibility.

10 ERIC LEEDS: Okay. What are your thoughts regarding the
11 licensing of new nuclear power plants [unintelligible] Watts Bar 2, Vogtle, and the
12 new Summer plants?

13 COMMISSIONER MAGWOOD: Well, obviously, we've licensed
14 one plant. Again, was that the same person?

15 [laughter]

16 No, I -- let me reinterpret this question. I think that the question
17 may actually be what do I think is going to happen perhaps. I'm not sure, but I --
18 obviously, you know, as long as we receive applications that meet our
19 requirements and we evaluate and we go through the process, if we approve
20 them, we will -- these plants can be built in the United States. And we've done
21 that with one plant so far. As the chairman indicated yesterday, we're close to a
22 decision on the Summer plant. There are others who have applications into the
23 agency, and we'll see where those go. But I think that the -- what -- it's
24 impossible to predict what the long-term -- what the future has, because, you
25 know, the industry will make decisions based on economic needs as to whether

1 they're going to go forward with all these projects or not. That's not in our
2 control. And -- but if they do come forward to the agency, we're prepared to
3 evaluate them.

4 ERIC LEEDS: Okay, thank you. The Department of Energy
5 spends a lot of money on life extension of aging reactors, mainly to do research
6 that may or may not be impacting safety, may or may not be implemented or
7 approved by the NRC. Is there a way that this research can be reviewed by the
8 NRC or someone to ensure that it will in line with realistic expectations for life
9 extension efforts? And the example is the value-cost ratio with regard to safety.

10 COMMISSIONER MAGWOOD: Well, I think it's important, you
11 know, NRC and DOE have two very different missions. And DOE has a principle
12 mission of technology and science research. And they certainly try to apply
13 those technologies to best effect to pave the way for the use of future
14 technologies. Our mission is focused on nuclear safety, and as such, where
15 there's an intersection, it makes sense for us to coordinate. And we do. And our
16 staff and DOE staff talk quite often to try to get coordinated so that the NRC and
17 DOE knows what our relative priorities are, and where there's an intersection we
18 can work together. So I think that's worked very well. I think we can do -- I think
19 it's a practice I'd like to see us do more of because I think there are more
20 opportunities down the road for cooperation, but I think we always have to
21 recognize that the missions are very different, the philosophies are very different,
22 but where there is intersection, we ought to try to work together.

23 ERIC LEEDS: Thank you. All right, the next question: When one
24 hears statements such as, "This outcome is unacceptable," in the absolute, it
25 seems to rule out cost-benefit analysis as a consideration in policy decisions. In

1 the post-Fukushima world, what do you believe the role of cost-benefit analysis is
2 in NRC decisions?

3 COMMISSIONER MAGWOOD: I think that that the role -- and I
4 look at cost -- first let me say I look at cost-benefit in a rather broad fashion. I
5 think we talk about things in terms of cost, but really its resources. And I think
6 there's a recognition that resources are finite and that if you're going to put great
7 effort into one area, you may deprive another area of equal attention. So, there's
8 only so many experts. There's only so many engineers. There's only so many --
9 so much time to analyze each issue. So I think that what a cost-benefit analysis
10 can provide is a way of prioritizing which efforts are most important. But that
11 said, I think that there's also a responsibility to recognize when there really are
12 game-changing developments. And there are some aspects of the Fukushima
13 event that the Commission found were sufficiently game-changing; the cost-
14 benefit analysis wasn't necessary.

15 And so, my personal feeling is that there's a judgment that has to
16 be made by the Commission on a case-by-case basis as to where those lines
17 are. And, you know, I think you can't talk about it as a general matter. You have
18 to look at each individual issue as they've come up. One where I think we were -
19 - we had more agreement was, for example, on the idea that vents -- all Mark I
20 and Mark II reactors should all have hardened vents. I think there was more
21 commonality from the Commission on that point, not universal but more
22 commonality. There was more debate about some of the other issues. So, but I
23 think that the -- I think that there's a judgment that you have to make on each
24 individual case and that you can't just simply make a broad statement one way or
25 the other on anything.

1 ERIC LEEDS: Thank you. The next question: How do we know
2 that future generations with technology and advance of hours [spelled
3 phonetically] will not view spent fuel as a resource, not a waste? How do we
4 leave their options open?

5 COMMISSIONER MAGWOOD: Well, you know, if future
6 generations -- first, two questions -- there's two ways to look at that question. If
7 future generations view it as a resource, you're making the assumption that the
8 future generations have the technical and social infrastructure to use spent fuel
9 to their benefit. So, in other words, they're an advanced society, it looks more
10 like "Star Trek" than -- what's a bad one -- than a time machine, the "Planet of the
11 Apes." It looks more like "Star Trek" than "Planet of the Apes." So, if we're in
12 "Star Trek," this isn't -- this is neither a big safety issue, and if it's not a safety
13 issue, it becomes economic and social benefit issue. It's really not something
14 that I think we need to worry about. I think what we're worried about is "Planet
15 of the Apes." Yeah, we don't want the people who are scrounging around in the
16 dust in the year 30,000 or whatever it was to have to deal with these issues. And
17 really, that's the worst case scenario. We're thinking about situations where the
18 social structures aren't in place, where people are not -- do not have a lot of
19 background on what's been buried and what the dangers are. And those are the
20 people we're trying to -- I think when we think in long, long term, that's the kind of
21 scenario that we give some concern to. So, I don't -- so I don't really worry about
22 preserving the benefits of spent fuel for future generations. I worry more about
23 protecting future generations from the hazards presented by spent fuel.

24 ERIC LEEDS: Okay, thank you. Our next question: What is your
25 position on establishing de minimis limits for the free release of waste, similar to

1 the very low-level waste category established by the International Atomic Energy
2 Agency?

3 COMMISSIONER MAGWOOD: Do you really expect me to answer
4 that question? [laughs] Well, you know, this has been a very -- this has been an
5 issue the U.S. has been talking about in one form or another for about as long as
6 I can remember. And we've never really wrestled this one to the ground. So, I
7 think it's something I'd like to see us talk about. It has not come before the
8 Commission. The Commission hasn't broached this subject. It's a very difficult
9 subject because, in the past experience has shown that it's difficult to get a
10 consensus on the issue of below regulatory concern. So I don't really -- I don't
11 want to express an opinion right now, but I do think it's an issue that is worth
12 taking on, and I think it's one that's worth giving some thought to.

13 ERIC LEEDS: Thank you. Okay, simple question. Why isn't there
14 more focus to reprocess spent fuel in the United States?

15 COMMISSIONER MAGWOOD: I'm sorry. Would you ask it again?

16 ERIC LEEDS: Why isn't there more focus to reprocess spent fuel
17 in the United States?

18 COMMISSIONER MAGWOOD: Well, I think there's a variety of
19 reasons. One reason is the cost. I think that there was a study that was issued
20 by industry maybe three years to indicate that building a reprocessing plant in the
21 U.S. would cost on the order of \$25 billion. And when you start talking about
22 those kinds of dollars, it becomes apparent that you're going to need some sort
23 of assistance from the government in terms of perhaps loan guarantees or
24 something like that. And I think industry has talked about that. And if you go to
25 the government, you start to run into policy issues about the current technology,

1 and I think that DOE has spoken on this publicly on multiple occasions recently
2 about, you know, the issues that the government has with the current state of
3 reprocessing technology. And therefore, I think DOE is doing research looking
4 into more advanced approaches. So, I think the combination of the costs and the
5 policy issues that have been talked about in the U.S. over the last several years
6 make it very difficult to go forward. That said, you know, there's nothing -- there's
7 no law against someone proposing a reprocessing plant. If someone wants to do
8 it, file an application, and we'll be happy to start looking at it, but no one has done
9 that so far.

10 ERIC LEEDS: Okay, thank you. The next question: Given that the
11 linear no-threshold hypothesis is not supported scientifically, is the NRC doing
12 anything to prepare for a potential step relaxation of current dose limits?

13 COMMISSIONER MAGWOOD: Well, we're always looking at the
14 latest technical information to update our approaches and our regulations. And I
15 do think that there is some thought there, be a revision to Part 20 sometime
16 down the road. I don't know exactly what the schedule is for that. So, there will
17 be an opportunity for people to weigh in on that if they think we should take a
18 path like that. So, there will be a discussion about our Part 20 requirements, and
19 so, I'll leave it at that. Just simply stated, there will be an opportunity to discuss
20 that.

21 ERIC LEEDS: Okay. All right. Will the NRC continue to give
22 licenses for new nuclear reactors without a final and safe solution for nuclear
23 waste?

24 COMMISSIONER MAGWOOD: Yes.

25 [applause]

1 ERIC LEEDS: All right, sir. More interesting questions, so, just a
2 couple more.

3 COMMISSIONER MAGWOOD: Are you prioritizing these or are
4 you saving the best for last?

5 [laughter]

6 COMMISSIONER MAGWOOD: I don't like the way he's rubbing
7 his hands there.

8 [laughter]

9 COMMISSIONER MAGWOOD: "Let's see him answer this one."
10 [laughs]

11 ERIC LEEDS: Like I said, sir, I don't write them; I just read them.
12 The IG report indicates that you and other commissioners wanted the Yucca
13 Mountain Safety Evaluation Report released in the fall of 2010. Given the money
14 and effort that went into that process and the benefits of making the staff's
15 conclusions public, would you favor making the Yucca Mountain SER public?

16 COMMISSIONER MAGWOOD: Well, you know, the Commission
17 talked about this at some length and has not reached a conclusion any different
18 from the path that we've taken so far. And the agency has issued the technical
19 evaluation report, I think is what we call it, which has much of the information
20 related to the SER, but not the entire SER. So, you know, the Commission
21 hasn't made a decision different from that. A majority has not voted to release
22 the entire SER, so I mean, that's where we are right now.

23 ERIC LEEDS: Okay, thank you. All right, sir. How would you set a
24 societal safety goal for the use of nuclear power without comparing it to a safety
25 goal for the use of coal or oil or other technologies used to generate electricity?

1 COMMISSIONER MAGWOOD: Well, I think that -- I think, in a
2 sense, that we do. If you go back to the very basis of our safety goals, they
3 really are based broadly on the societal perception of what is safe. And I think
4 when the safety goal was first created, decades ago I guess now, the safety goal
5 looked at a broad range of hazards presented by everything from, you know, air
6 travel to traffic or any other -- probably even, you know, the release of other
7 fuels. So, the safety goal is based on -- is basically a representation of the
8 agency's judgment as to what the relative safety -- what the society perceives as
9 the relative levels of safety. And so, I think, in a sense, it's already incorporate it
10 as part of that. That's not to say these things can't be updated and looked at.
11 We actually have decided not -- we've actually looked at this recently in the last
12 year and decided not to make changes in the safety goal, but, you know, I think
13 that -- I think we -- I think the safety goal is actually pretty good where it is right
14 now and don't feel a need to change it.

15 ERIC LEEDS: Okay, thank you. Sir, we have time for one last
16 question. What is your opinion on how well the NRC works with other federal
17 agencies such as FERC, the Department of Energy, DHS, FEMA to resolve
18 issues of common interest such as degraded voltage, or cyber security?

19 COMMISSIONER MAGWOOD: That's actually, I think, it's an area
20 that, I think, the agency does very well in. I know that the senior staff is
21 constantly reporting back that they've had conversations with their counterparts
22 in other agencies on issues of mutual concern. I know the chairman meets
23 regularly with senior officials from other agencies to talk about -- with, you know
24 people from FERC or from EPA or others to talk about issues of mutual interest.
25 So this is an area -- you know, many of the commissioners meet with people and

1 other agencies as well, so I think this is actually an area where we're going quite
2 well. You can always do better. You can always coordinate more, but I think
3 right now, I think the NRC does a pretty good job of coordinating with our sister
4 agencies.

5 ERIC LEEDS: Well, thank you very much. Thank you.

6 [applause]

7 [Whereupon, the session concluded]