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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

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RIC 2014

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26th ANNUAL REGULATORY INFORMATION CONFERENCE

OPENING SESSION

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TUESDAY

MARCH 11, 2014

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The Regulatory Information Conference convened in the Grand Ballroom of the Marriott Bethesda North, 5701 Marinelli Road, Rockville, Maryland, at 8:30 a.m., Eric Leeds, NRR Director, moderator.

P-R-O-C-E-E-D-I-N-G-S

8:32 a.m.

ANNOUNCER: Ladies and gentlemen, please welcome Eric Leeds, Director of the Office of Nuclear Reactor Regulation for the U.S. Nuclear Regulatory Commission.

MR. LEEDS: Thank you.

Good morning and welcome to the 26th Anniversary of the Annual Regulatory Information Conference.

As the gentleman just said, my name is Eric Leeds. I am the Director for the Office of Nuclear Reactor Regulation. It's my great honor to be here today and have this opportunity to welcome everyone on behalf of the United States Nuclear Regulatory Commission.

My office along with the Office of Nuclear Regulatory Research led by Dr. Brian Sheron are co-sponsors of this event.

We work closely with all the NRC offices to bring you a comprehensive and dynamic program over the course of the next of the next three days.

Before we begin, I want to thank the Joint Armed Forces Color Guard from the Military District of Washington for joining us this morning and, of course,

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1 Twana Ellis, one of NRCs own for that moving rendition
2 of the National Anthem.

3 The Regulatory Information Conference is the
4 largest annual meeting hosted by the NRC. This year,
5 we have over 3,100 registered participants
6 representing 35 countries.

7 The RIC provides opportunities for informal
8 open dialogue and a meaningful exchange of information
9 about significant NRC actions, planned or in progress,
10 related to the regulation of nuclear power plants and
11 nuclear safety research, and for sharing different
12 perspectives on emerging safety and security issues
13 facing both the domestic and the international nuclear
14 communities.

15 This year's conference provides a wealth of
16 information and features several distinguished
17 speakers.

18 To open the RIC, we will hear a keynote
19 address from Dr. Allison Macfarlane, our NRC Chairman
20 followed by remarks from Mark Satorius, our Executive
21 Director for Operations.

22 Later this morning, we will also have an
23 opportunity to hear from Commissioner Kristine
24 Svinicki and Commissioner George Apostolakis.

25 On Wednesday morning, Plenary sessions will

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1 include Commissioner William Magwood and Commissioner
2 William Ostendorff followed by Special Directors
3 Plenary Session with a panel of NRC and industry
4 executives including Dennis Koehl, President, Chief
5 Executive Officer and Chief Nuclear Officer of the
6 South Texas Project Nuclear Operating Company; Tony
7 Pietrangelo, the Senior Vice President and Chief
8 Nuclear Officer for the Nuclear Energy Institute; and
9 Michael Johnson, the NRC Deputy Executive Director for
10 Reactor and Preparedness Programs.

11 This year, the technical program consists of
12 36 technical sessions addressing a variety of topics
13 including significant domestic and international
14 issues associated with operating reactors, new and
15 advanced reactors, fuel cycle facilities, spent fuel,
16 nuclear security, safety research and safety culture
17 policies.

18 For the regional session on Wednesday, the
19 topic will be Contemporary Nuclear Power Plant
20 Regulatory Issues and the panelists include Maria
21 Korsnick, the Chief Nuclear Officer and Chief Operating
22 Officer for Constellation Nuclear Energy Group; Danny
23 Bost, the Executive Vice President and Chief Nuclear
24 Officer for the Southern Nuclear Operating Company.

25 Again, Michael Johnson, the Deputy Executive

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1 Directory for Reactor and Preparedness Programs and all
2 four Regional Administrators, Bill Dean from Region I,
3 Victor McCree from Region II, Cindy Pederson from
4 Region III and Marc Dapas from Region IV.

5 There are 15 sessions that have an
6 international component and that include our
7 colleagues from other countries sharing their
8 perspectives on issues of common interests.

9 New to the NRC, our Office of Information
10 Services is sponsoring a session entitled Interacting
11 with the NRC. This informational session is to help
12 stakeholders understand the many ways they can get
13 information about the NRC through the use of public
14 meetings, social media, the public document room,
15 ADAMS, Freedom of Information Act requests, and more.

16 Separate from this, but related, last year,
17 we took a lunchtime workshop sponsored by our Office
18 of Information Services to introduce ADAMS and allow
19 people more ways to access ADAMS. This was very
20 popular and well attended session, so we brought it back
21 again this year.

22 The workshop will be held Wednesday, 12:15
23 to 1:15 in the Brookside Meeting Room. Seating is
24 first come and first serve, so please grab your lunch
25 and be there.

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1 The RIC this year will also feature a session
2 sponsored by the Office of Nuclear Security and
3 Incident Response, a demonstration of the Multiple
4 Integrated Laser Engagement System, or MILES.

5 The MILES equipment which is used as a
6 training tool to aid the licensee in evaluating the
7 protective strategy of a facility and it will be on
8 display in the Forest Glen Meeting Room all three days
9 of the conference.

10 The NRC is also proud to announce the opening
11 of our new Operation Center in the Three White Flint
12 North Building. Tours will be available. Tour
13 participants convene by the Registration Service Desk
14 on the lower level of the conference center.
15 Stand-by's are welcome.

16 Equally as important as the technical
17 sessions are the technical posters and the tabletop
18 exhibits that are on display throughout the conference
19 space.

20 Spend some time with subject matter experts.
21 Engage in discussions relevant to their areas of
22 expertise.

23 New this year is we are providing an Internet
24 access area. There is a wireless Internet access area
25 that is available to all RIC participants in the White

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1 Flint Amphitheater foyer on the lower level of the
2 conference center.

3 An access code will provided for use during
4 the regular conference hours. The access is limited
5 to 50 people at one time. So as a courtesy to all
6 attendees, we ask that you limit your time so that
7 others may partake of the service. Thank you in
8 advance for your cooperation.

9 A few housekeeping notes. All plenary
10 sessions are webcasted, video teleconferenced and
11 audio recorded. All technical sessions will also be
12 audio recorded.

13 Recordings will be available on the NRC
14 website following the conclusion of the conference.

15 Based on registration information, a number
16 of session rooms will be at maximum capacity for
17 seating. We encourage you to make your way to your
18 sessions rooms early as sessions are filled on a first
19 come, first serve basis.

20 Once the rooms are filled to capacity,
21 participants will be directed to other sessions. This
22 is in accordance with the Fire Marshall's regulations.

23 Some general conference information.
24 Please silence all your electronic devices. Please
25 remember to visibly display your name badges throughout

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1 the duration of the Conference. This is especially
2 important due to the security measures in place this
3 year.

4 This year security is provided by the
5 Montgomery County Police to include canine officers.
6 Conference participants should immediately report any
7 suspicious activity to security staff or the
8 Registration Service Desk staff.

9 Please be aware of the fire exits that are
10 located on the sides and the back of the rooms in case
11 of fire. Please proceed calmly to the nearest exist
12 and await further instructions.

13 As always, your participation plays an
14 important role in making this Conference a success.
15 Please take advantage of the walk-up kiosks to provide
16 your feedback while you are here at the Conference or
17 by completing the Participant Survey which will be
18 e-mailed to you directly following the conclusion of
19 the conference.

20 We want to hear from you and we use your
21 feedback to continually improve the conference.

22 Finally, I'd like to take this time to thank
23 the NRC Conference Planning Committee for their
24 unwavering commitment and efforts in preparing for the
25 Regulatory Information Conference.

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1 I also want to thank the NRC staff who
2 volunteered their time to support the conference.
3 Thank you for all you have done.

4 All right, now it's with great pleasure I get
5 to introduce to you the NRC Chairman, Allison
6 Macfarlane.

7 The Honorable Allison M. Macfarlane was
8 sworn in as Chairman of the U.S. Nuclear Regulatory
9 Commission in July 2012.

10 Dr. Macfarlane holds a Doctorate in Geology
11 from the Massachusetts Institute of Technology and a
12 Bachelors of Science degree in Geology from the
13 University of Rochester. She's the only individual
14 with a background in geology to serve on the Commission.

15 Prior to joining the Commission, Dr.
16 Macfarlane was an Associate Professor of Environmental
17 Science and Policy at George Mason University. During
18 her academic career, she has held fellowships at
19 numerous universities.

20 From 2010 to 2012, Dr. Macfarlane served on
21 the Blue Ribbon Commission on America's Nuclear Future
22 created by the Obama Administration to make
23 recommendations about a national strategy for dealing
24 with the nations high level nuclear waste.

25 Her research has focused on environmental

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1 policy and international security issues associated
2 with nuclear energy.

3 Please join me in welcoming Dr. Macfarlane.

4 CHAIRMAN MACFARLANE: All right, good
5 morning.

6 Thank you, Eric for that very kind
7 introduction.

8 I want to welcome all of you who have traveled
9 so very far. I see some of you sitting right there from
10 around the world to join us today and this week for the
11 Regulatory Information Conference. And I would also
12 like to add my welcome to those of you from industry,
13 from public interest groups, from the public and, of
14 course, from the NRC.

15 And I would also like to add my thanks to
16 those of Eric to the staff who work tirelessly to bring
17 of the RIC every year. You know, they start planning
18 the RIC the day the RIC ends for the next year. So it's
19 quite an undertaking and it's a fabulous Conference.
20 I hope you all get to take full advantage of it.

21 Eric did explain a lot about what was going
22 on this week and I think it's going to be fantastic.
23 So welcome.

24 I want to reflect on what today is. Today
25 is March 11th, 2014. It is to the day the third

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1 anniversary of the great Tohoku earthquake which was
2 the initiating event of the Fukushima-Daiichi accident
3 in Japan.

4 The Tohoku earthquake, as you can see from
5 the image, was located 178 kilometers to the northeast
6 of the Fukushima-Daiichi site. It was a magnitude 9.0
7 earthquake and it resulted in significant damage on
8 land.

9 For the Fukushima-Daiichi site, it resulted
10 in loss of off-site power, but worse, 50 minutes later,
11 it resulted in a massive tsunami which not only affected
12 the plant but affected the East Coast of Japan and was
13 terribly devastating.

14 It wiped out entire coastal villages, more
15 than 18,000 people lost their lives in this event,
16 terribly devastating.

17 But relevant to us, in the nuclear business,
18 it affected greatly the Fukushima-Daiichi nuclear
19 power plant which was hit by a 45-foot wall of water.
20 And this wall of water swamped the diesel generators
21 which were providing the backup power after the loss
22 of the off-site power.

23 And we know the result now. Three reactors
24 melted down, four hydrogen explosions and a continuing
25 effort to now clean up the site and which will continue

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1 for years. And it's an amazing effort.

2 I had an opportunity to visit with my
3 Japanese colleagues yesterday and hear what they're
4 doing at the site. They're doing an amazing amount of
5 work.

6 Relevant for us in the U.S. as regulators,
7 we drew a lot of lessons from this accident, from this
8 operating experience. And we've required a number of
9 safety enhancements as a result.

10 Right after the accident, the NRC put
11 together a near term task force which produced within
12 three short months an excellent report outlining
13 activities that we should consider, the Commission
14 should consider in strengthening safety at nuclear
15 power plants.

16 The Commission did consider this and they
17 prioritized those activities into three tiers and we
18 have been making significant progress working with
19 industry on dealing with these changes at plants.

20 Let me just highlight for you some of the more
21 safety significant ones. The Mitigating Strategies
22 Order that was issued by the Commission in 2012 which
23 required plants to last indefinitely in the result --
24 in the event of the loss of off-site power.

25 And plants have been actively purchasing

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1 equipment, additional diesel generators, additional
2 pumps, piping, wiring, distributing around the site so
3 that something will be available in the event of a
4 disaster.

5 In addition, the industry has developed
6 off-site centers that can bring equipment in.

7 So there has been a lot of activity in
8 response to Fukushima and this year we will see
9 significant activity at nuclear power plants during the
10 refueling outages as they prepare to meet the 2016
11 deadline for a number of these Orders.

12 I'm not going to belabor them anymore and
13 I'll leave it to our EDO to discuss other issues in
14 particular.

15 But let me say that the U.S., of course, was
16 not the only regulator that had a response like this
17 to Fukushima. Our sister and brother regulators
18 around the world had similar responses and have
19 proposed similar changes and are instituting similar
20 changes at their reactors in their countries.

21 We, at the NRC, got some good feedback on what
22 we've done very recently. Just this last month in
23 February, we had an Integrated Regulatory Review
24 Service Mission follow-up which looked at our Fukushima
25 activities and noted that the report by the near term

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1 task force was a source of inspiration for many
2 regulatory bodies worldwide.

3 And we didn't do this alone. We also brought
4 our activities to the public. At the NRC, we've held
5 almost 200 public meetings on Fukushima activities
6 alone and we will continue to have these meetings as
7 we work through more of the changes that we are
8 considering.

9 So this has been a big activity for us, a big
10 response.

11 But let's not forget that, as a result of the
12 accident, public confidence was shaken, sometimes
13 significantly and in some places, significantly.

14 In Japan, certainly public confidence was
15 deeply affected and you see the public in Japan buying
16 Geiger counters so that they can themselves check
17 radiation levels around their homes and communities.

18 You also, immediately in the aftermath of the
19 accident, saw a lot of headlines illustrated here, that
20 sometimes has misleading stories attached to them
21 because there was a dearth of information associated
22 with what occurred during the accident.

23 And one knows the adage that nature abhors
24 a vacuum and certainly in the case of Fukushima or any
25 kind of nuclear incident when there isn't information,

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1 people will fill it in. And sometimes that information
2 may be incorrect, it may be misleading, it may be
3 deliberately misleading.

4 In the U.S., we've experienced this
5 ourselves. Most recently I recall a YouTube video of
6 a man in California holding a Geiger counter on a beach
7 and was seeing very high readings. The implication was
8 that radioactivity from Fukushima traveled across the
9 Pacific Ocean and had already landed on the beaches of
10 California in very high activity levels. Simply not
11 correct.

12 We know from measurements that there is a
13 radioactive plume coming across the Pacific Ocean. It
14 has not arrived yet on the West Coast and it is not
15 significantly high.

16 We know from models of this plume that, at
17 worst, the radioactive levels in the water that will
18 arrive will be 100 times lower than the drinking water
19 standard in the U.S. The Environmental Protection
20 Agency drinking water standard.

21 So even if you could drink seawater, you
22 would be able to because it would be significantly below
23 the standard.

24 Nonetheless, in the absence of good
25 information on this, one fills in and we need to be

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1 cognizant of this in the industry to make sure that we
2 get accurate information and credible information out
3 and available.

4 And this idea of credible information is a
5 theme that I'm going to carry through my discussion
6 today because I think it is imperative that we, as
7 regulators, find and seek out that credible
8 information.

9 So, in the face of the Fukushima accident,
10 we need to remain vigilant. We need to be prepared for
11 the unknown. We face an uncertain future, especially
12 in the U.S. right now, we are experiencing both reactor
13 decommissioning's and reactor construction. I'll
14 talk more about that a little later.

15 But we need to ensure safety and security and
16 that will give us the best opportunity to succeed as
17 regulators.

18 So, how do we operationalize this vigilance?
19 Ten years ago, actually, Commissioner Ed McGaffigan
20 stood on this stage and asked some very important
21 questions, I believe. And this was as a result of what
22 happened at the Davis-Besse plant where the pressure
23 vessel had developed a hole.

24 He asked, what do others know that we don't
25 know? And how could we not have seen this coming?

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1 And I think those questions are just as
2 relevant today as they were ten years ago. We need to
3 pay close attention to that. We need to be asking, what
4 do others know that we don't know?

5 We need to continuously learn. We need to
6 ask and look outside of ourselves as our own regulatory
7 body. We need to ask, what other federal agencies are
8 doing? What other industries are doing? What our own
9 industry knows.

10 We need to hear from the public. We need to
11 see what information they may have. We need to ask what
12 other countries are doing because they're dealing with
13 many of the same situations that we are.

14 We need to ask what the latest academic
15 research is telling us. We need to engender a healthy
16 debate on a lot of these issues. And by the way,
17 science only advances with debate. Debate is
18 essential and it is important.

19 And we need to make sure that as regulators
20 we have the best information available so that we can
21 most effectively accomplish our mission of ensuring
22 public health and safety.

23 So, let me spend some time focusing on what
24 I'm calling continuous learning. And I'm going to give
25 you some specific examples of how I think we can do this.

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1 Let me first focus internally within the NRC
2 and then I'll focus externally.

3 So internally, we have within the NRC a
4 wealth of knowledge. We have a brain trust. We need
5 to exploit it. Okay? And I'm going to give you an
6 example of how we can do that by looking a field that
7 is near and dear to me, the earth sciences. Okay?

8 So let me explain some of the insights from
9 the earth sciences and that our earth sciences can
10 provide to us.

11 So earth science tells us a few things. It
12 tells us that we need to expect change. The Earth is
13 dynamic. It tells us that we need to reconsider what
14 we've defined as normal and maybe not rely on historical
15 data alone. And it tells us that we need to recognize
16 that the field is still young and it is still learning.

17 Let me explain all of those in a little more
18 detail.

19 So we need to expect change. As I said,
20 earth systems are dynamic and complex. We face a
21 situation now on the planet of climate change and
22 climate changes means that we will be expecting more
23 floods, more droughts. We may expect a polar vortex,
24 although I'm told this polar vortex cannot be tied
25 directly to climate change. And we're going to

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1 experience it again on Thursday, by the way, be
2 prepared.

3 We need to expect warmer waters that will
4 affect both the intake and out take for nuclear power
5 plants.

6 We need to be expecting all of this and at
7 the NRC, we are. Eric assures me that we are doing this
8 kind of work and we need to continue to do it. We need
9 to continue to keep up with the latest models and latest
10 predictions so that we're prepared to deal with the
11 future.

12 Let me turn to defining or redefining what
13 normal is.

14 We have relatively short lifetimes compared
15 to the age of the Earth as human beings. And so it's
16 natural for us to rely on our own personal experience
17 or historical data. And by historical data, I mean
18 data that we've collected over the last hundred years
19 or so.

20 So for instance, there's a precipitation
21 data has been collected for about 60 years. And we're
22 using that precipitation data from that 60 year period
23 to define the boundaries of what we might expect in the
24 future.

25 As an earth scientist, I would argue that

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1 this not adequate. We need to look beyond historical
2 data because the Earth processes occur over much longer
3 time periods and we need to consider what might happen
4 over those longer time periods. We need to
5 recalibrate.

6 So, let me use an example to explain this to
7 you and I'm going to use an example of volcanism,
8 volcanos.

9 You might recall, most of you might recall
10 the Mt. St. Helens eruption 32 or 33 years ago in
11 Washington State. That eruption produced one cubic
12 kilometer of material illustrated by, my little
13 pointers not quite adequate here, by that tiny little
14 green square in the figure. Okay?

15 Now the largest volcanic eruption in history
16 was the Tambora eruption 200 years ago in Indonesia.
17 It produced 160 cubit kilometers of material,
18 significantly more.

19 But is that the upper end of what we should
20 expect? No, no, absolutely not.

21 If we look in the geologic record, we see two
22 million years ago, in the Yellow Stone area an eruption
23 produced 2,500 cubit kilometers of material and you can
24 see the aerial distribution of that eruption on the map
25 compared with the distribution in green of Mt. St.

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1 Helens material.

2 And you can see from this figure that there
3 were even larger eruptions that produced even more
4 material. So we need to recalibrate what we think
5 normal is and what we understand normal to be and we
6 will continually do this as we learn more about the
7 Earth.

8 This is significant in terms of that
9 magnitude nine earthquake outside Japan. Was it an
10 extreme event or was it a normal event?

11 Let me also say that the earth sciences is
12 continually learning, progressing, evolving as a
13 science.

14 In 2004, when the Sumatra quake happened, it
15 was a massive wake up call to seismologists because
16 prior to that period, prior to 2004, seismologists
17 believed that only certain subduction zones pictured
18 here, where one plate, one lithospheric plate is being
19 dragged beneath another that only certain subduction
20 zones could produce mega-quakes, quakes that produce
21 magnitudes of greater than 8.8.

22 Now, after that Sumatra earthquake which was
23 a mega-quake that produced that massive tsunami in the
24 Indian Ocean that killed 200,000 people, after that
25 quake, seismologists started publishing papers saying

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1 we need to rethink. It turns out that it looks like
2 any subduction zone of sufficient length can produce
3 a mega-quake and most unfortunately, in 2011 on March
4 11th, this was proven true with Fukushima.

5 So, the point is that the earth sciences is
6 constantly evolving. We're learning about new
7 processes. We're refining our understanding all the
8 time. And by the way, as a reminder, the paradigm that
9 underlies the earth sciences, plate tectonics, the
10 idea that the earth's crust is made up of a number of
11 lithospheric plates that move past each other. That
12 paradigm is as old as the NRC. It was accepted by the
13 earth science community in the early 1970s. So it is
14 a young science.

15 So, there's a lot of learning we can do from
16 the earth sciences and internally. I've got to keep
17 up with myself here.

18 But I also want to focus externally. After
19 Fukushima happened, experts from outside the industry
20 asked a lot of relevant and important questions,
21 questions we asked ourselves. Questions like, can
22 sites respond to prolonged station blackout? Are we
23 doing enough to address multi-unit accidents? Are
24 spent fuel pools vulnerable? And how reliable are
25 historical data?

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1 And the actions that we've taken at the NRC
2 address specifically these questions. But it's
3 important for us to continue to search for, search out
4 and accept information from outside our agency as well.

5 So let me give you some examples of that. Of
6 course, I think many of those at the NRC are quite
7 familiar that we learn from the nuclear industry and
8 it's a mutual process.

9 After Fukushima happened, this near term
10 task force report came out and it suggested that the
11 agency issue an Order to require plants to mitigate or
12 survive the loss of offsite power indefinitely.

13 And in developing that Order, the industry
14 responded and said, look, you know, this is how you
15 should think about the guidance. You should think
16 about how to implement this and we think, the industry
17 said, we think that you should include portable and
18 offsite equipment in that guidance. And we did so, and
19 that's how we're moving forward. These facilities are
20 being developed and the industry is moving forward with
21 that.

22 We need to hear from those we regulate, those
23 who implement our regulations so that the regulations
24 that we mandate are actually doable. So that's very
25 important for us to continue that conversation with

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1 industry.

2 But we also need to learn from other
3 industries. We are not the only ones who deal with
4 concrete, for example. And there have been problems
5 with concrete. There have been problems with concrete
6 in the construction of new power plants in Finland and
7 France. There was most recently a problem with
8 concrete at the Davis-Besse facility in the U.S.

9 But our industry isn't the only one that has
10 problems with concrete. I don't know how many of you
11 are familiar with the Big Dig in Boston, I lived through
12 the entire thing, so I'm quite familiar with it. But
13 there were a lot of problems with concrete in the Big
14 Dig and there was -- and pictured here is the problem
15 where the adhesive with the concrete did not work and
16 actually killed a person, crushed a car.

17 Most recently, the Wanapum Dam in Washington
18 State has discovered a 65 foot crack in their concrete
19 dam.

20 We need to be working with other industries
21 and learning from them and I'm sure they can learn from
22 us as well. So that's another place we need to learn.

23 We also need to learn from the public. After
24 Fukushima, the public asked a number of relevant
25 questions. They asked can this happen here? And will

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1 the accident in Fukushima affect me? These are
2 important questions that we need to be able to answer.

3 But we can actually also learn from the
4 public because they have knowledge that we don't have.
5 And let me give you a couple examples.

6 After the Chernobyl accident, the fallout
7 cloud traveled over Europe, it traveled west over
8 Europe and there was no precipitation until that
9 fallout cloud arrived in Northern England. And then
10 there was heavy precipitation. So Northern England
11 was affected by the fallout from the Chernobyl
12 accident.

13 And initially, the UK government did some
14 calculations on the effect of the cesium in that area
15 and they did it by averaging the amounts and they said,
16 won't be so bad. Don't worry. There are a lot of sheep
17 farmers in the area and the sheep farmers were worried
18 that the sheep would eat the grass and be affected.

19 When the government said this, the sheep
20 farmers said, well wait a minute. You know, as you can
21 see from the picture, the land here is not flat. It's
22 very undulating and we know that in heavy rainfall
23 events, the rain washes down to certain areas and it
24 collects and we're afraid of hot spots.

25 And in fact, the sheep farmers were proved

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1 right. There were many hot spots in the area and to
2 this day, sheep farmers in that area are affected by
3 the fallout from Chernobyl.

4 Another example, closer to home for those of
5 us in the U.S. The Livermore National Lab in the late
6 1980s was trying to deal with its waste products, it's
7 hazardous and radioactive waste products. Idaho was
8 giving it trouble saying we don't your waste.

9 And so they decided they would build an
10 incinerator and incinerate the waste. And to do this,
11 they had to do an environmental impact statement. They
12 did their environmental impact statement and there were
13 folks in the community who were not very comfortable
14 with the idea of an incinerator. In particular, a
15 particular anti-nuclear group.

16 This anti-nuclear group teamed up with a
17 retired lab scientist who actually went very carefully
18 through the environmental impact statement and found
19 that the calculations in the environmental impact
20 statement were done incorrectly and significantly
21 underestimated the potential plutonium emissions from
22 the incinerator and caused the lab to redo that
23 environmental impact statement.

24 So again, members of the public have
25 knowledge that's relevant and we need to be mindful of

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1 that. We can learn from them, too.

2 But of course, we can also learn from our
3 international colleagues. We learn from other
4 countries and we do this a lot at the NRC. We have both
5 cooperative and assistance programs and in our
6 cooperative programs, we do a lot of sharing of
7 information.

8 We share operating experience. We exchange
9 staff. In fact, yesterday, I met one of the Japanese
10 staff who is going to come and spend some time in our
11 agency.

12 We have learned a lot from our Chinese
13 colleagues on construction of the AP 1000 and that's
14 been very helpful to us.

15 And we've shared a lot with our colleagues
16 around the world on post-Fukushima activities. And
17 we've learned from them on that. And we need to
18 continue to learn from other countries. They've dealt
19 with the same issues that we are dealing with. We do
20 not need to recreate the wheel. Its been invented.
21 Let's find it and use it.

22 As I said, we also have assistance programs
23 at the NRC where we work with other countries, whether
24 they have nuclear power plants or simply nuclear
25 materials. We work with them on safety and security

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1 issues and we promote effective regulation.

2 And let me just jump ahead and explain what
3 I mean by effective regulation. Effective regulation
4 requires a regulator who is independent, who is free
5 of undue influence, either political or industrial.

6 The regulator has to be well funded and they
7 have to be adequately staffed with competent staff that
8 has the expertise necessary to serve them. They also
9 should behave in an open and transparent manner. They
10 should behave transparently by making their decision
11 making public so the public can understand how they've
12 come to their decisions but they should also behave
13 openly, meeting with the wide variety of public
14 industry government officials who are interested in
15 their work and taking account of the feedback from these
16 folks.

17 And of course, they need support from the
18 highest levels of government. So let me go back
19 briefly and say that in this case of countries that are
20 considering nuclear power, it's very important, in my
21 view, to have indigenous regulatory capability,
22 absolutely essential. That's how you protect your
23 country. You need to have that ability.

24 And especially for those countries
25 considering a build-own-operate model, I think it's

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1 important to keep in mind that regulation from afar
2 would be challenging for any regulator to regulate from
3 afar. Something to keep in mind.

4 In terms of peer-to-peer,
5 country-to-country information and expertise, I will
6 be going less than two weeks to attend the convention
7 on nuclear safety. It's the triennial review meeting
8 of the convention and in Vienna, Austria. This is an
9 opportunity for peer review of our nuclear programs to
10 see if member states are meeting their obligations
11 under the convention.

12 And this will be the first time that we will
13 be evaluating each other's reactions and activities in
14 response to Fukushima. So this will be another
15 opportunity for peer-to-peer learning
16 internationally.

17 So let me begin to close by saying that I
18 think it's essential that we have a full scope of
19 information available to us before we make decisions.
20 This will inform our decisions. It will help us make
21 the best possible decisions and result in enhanced
22 public confidence as a result.

23 Our commitment to continuous learning,
24 therefore, is critical. And I think it's more
25 important than ever for us at the NRC as we face changing

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1 circumstances and let me focus a little bit on those
2 changing circumstances now.

3 We're facing what I call a dynamic
4 environment in the United States. As I mentioned, we
5 have five nuclear power plants that announced or have
6 shut down or announced a shut down in the last year.
7 We have five nuclear reactors that are under
8 construction.

9 We are continuing to implement the
10 post-Fukushima lessons learned. We have a lot going
11 on.

12 We are also operating under challenging
13 financial circumstances. Last year, we experienced a
14 difficult situation financially.

15 So what will we -- what actions will we take
16 in response? Well, first of all, of course, we will
17 always maintain our commitment to our core mission of
18 ensuring public health and safety.

19 The agency, under the leadership of our
20 Executive Director of Operations, Mark Satorius, is
21 undertaking a five year review which will take into
22 consideration the resources that we have, the
23 organization that we're doing and align our mission
24 responsibilities with our organization and our
25 resources. And I commend Mark for this effort and

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1 offer my help, such as it is, to go forward with that.

2 I think we need to be flexible and efficient
3 and we need to get things right the first time. So if
4 that means we need to pause, take a breath and think
5 carefully through a change before we make it, so bit
6 it. But we should get it right the first time instead
7 of trying to have to fix it later on.

8 We need to ensure that the safety
9 enhancements that we've put in place as a result of the
10 Fukushima accident are sustainable over the long-term.

11 And of course, in my view, I think it's
12 essential that we continue to work hard on improving
13 our public engagement.

14 So, let me say that we are fully committed
15 to protecting the public's health and safety at the NRC
16 and continuing our commitment to expand our knowledge
17 and our engagement is essential in assuring our success
18 in the changing environment that we face at the NRC.

19 Let me close with taking us back to the
20 anniversary of Fukushima today, the 11th of March and
21 as we reflect on that, I want to share with you a
22 Japanese proverb. Fall down seven times, stand up
23 eight.

24 And in that spirit, I want to commend out
25 Japanese colleagues and the Japanese people for their

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1 courage, for their resilience, for their commitment to
2 strengthening nuclear safety both within in Japan and
3 worldwide and for their willingness to share what
4 they've learned with us.

5 And with that, I thank you very much and I'm
6 happy to take questions.

7 MR. LEEDS: Thank you so much, Chairman.

8 We have a number of questions and we have a
9 little bit of time. So to begin with, the first
10 question is thus. Looking out five years, what are the
11 key challenges facing industry and the NRC?

12 CHAIRMAN MACFARLANE: Well, I think I went
13 over some of them. I think the industry is facing, they
14 tell me anyway, they're facing a tough economic
15 environment, and I understand that.

16 And they're facing that tough economic
17 environment while we're instituting changes from
18 Fukushima, but I don't believe that we can ignore the
19 operational experience that Fukushima has provided us.
20 And so we need to move forward with that, but working
21 with the industry at the same time.

22 So I think those are some of the challenges.

23 MR. LEEDS: Okay. Thank you.

24 Next question, does the NRC have enough funds
25 to finish the Yucca Mountain review? And if so, and

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1 if the staff finds there is no safety issues, do you
2 think the Administration should proceed with putting
3 the site in service?

4 CHAIRMAN MACFARLANE: So the question is do
5 we have enough funds to finish the review that needs
6 to complete the licensing, I assume?

7 MR. LEEDS: I assume so.

8 CHAIRMAN MACFARLANE: Yes. At the moment,
9 the answer to that is no. We have been asked by the
10 D.C. Circuit Court to use the funds that we have to
11 continue the licensing process and that is exactly what
12 we're doing.

13 MR. LEEDS: Okay, all righty.

14 Next question, I deeply agree that nuclear
15 regulation should be rigorous but also open and fair.
16 You've been with the Commission for about two years,
17 so what is your view of the rigorousness of the nuclear
18 regulations and the regulatory process?

19 CHAIRMAN MACFARLANE: I think this agency
20 works very hard to be as rigorous as possible. But
21 that's not to say that they get it right -- we get it
22 right all the time, sometimes we don't. And we should
23 always be striving to be as rigorous as possible and
24 to find the fullest information that we possibly can.
25 So that informs our decisions as best as possible.

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1 But I think that the agency does an excellent
2 job. As I said, we've got a brain trust here and we
3 do use it.

4 MR. LEEDS: Thank you.

5 The questions always come in fast and furious
6 at the end.

7 The industry and the NRC have stated that one
8 of the key challenges for this industry is knowledge
9 transfer. In your opinion, how do the industry and NRC
10 attract new talent and then keep them once they are
11 trained?

12 CHAIRMAN MACFARLANE: You know, the NRC is
13 known as one of the best places to work in government.
14 So I arrived at an agency and found a place that has
15 become a home to many people. It's a community to many
16 people and I think that in and of itself is very
17 attractive to those who find themselves working at the
18 agency.

19 I think the agency does a good job. They do
20 a good job going out and recruiting new young talent
21 and my understanding of the situation of, at least in
22 terms of producing nuclear engineers, is that the
23 situation is better than it has been in many years.

24 I think I saw some statistics from I think
25 it was MIT that they have -- they're graduating more

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1 students this year than they have for decades. So the
2 people are out there. The talent is out there. We
3 need to seek it out and make sure that we attract them,
4 both to the NRC and to industry.

5 MR. LEEDS: Thank you.

6 The next question, do you think utilities
7 will build more new plants assuming reasonable success
8 at the Vogtle and Summer plants here in the United
9 States?

10 CHAIRMAN MACFARLANE: I didn't bring my
11 crystal ball with me, so I really don't know. I think
12 it depends on a lot of issues, you know, many economic,
13 also political.

14 You know, I understand some members of the
15 Senate sat up all night, I don't really understand why,
16 talking about climate change and potential climate
17 change regulations.

18 If there was a price on carbon, I imagine that
19 might help the nuclear industry in some ways.

20 So there are a lot of unknowns in the future
21 that I can't begin to attempt to know whether there will
22 be more new construction.

23 MR. LEEDS: All right.

24 Considering the approval process of new
25 reactors in the United Arab Emirates, France, England,

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1 China and other countries, do you believe that these
2 countries are creating an unacceptable risk
3 considering these same new reactors are still working
4 their way through the U.S. certification?

5 CHAIRMAN MACFARLANE: I don't think I have
6 enough knowledge to answer that question. Do you want
7 to state it again?

8 MR. LEEDS: Well, I think what the question
9 is getting to is that there are a number of countries
10 building new reactor designs around the world and those
11 same designs are being submitted to the NRC staff for
12 review and approval here in this country. But those
13 approvals are taking more time --

14 CHAIRMAN MACFARLANE: Right.

15 MR. LEEDS: -- even though that there is
16 constructing going on in other countries and the
17 question here is do you think that these other countries
18 are creating a risk by going forward with these designs?

19 CHAIRMAN MACFARLANE: Well, the reason that
20 it's taken us a while to move through these evaluations
21 are multi-fold and may not really have anything to do
22 with the design itself.

23 I think there are a lot of good strong
24 regulators out there. We work internationally,
25 multi-nationally with other regulators on new

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1 construction through the MDEP, the Multi-National
2 Design Evaluation Program and we meet regularly and
3 talk about new designs and share information between
4 countries and among countries that are building those
5 new designs.

6 So there is a lot of work and attention being
7 paid to the new designs out there.

8 MR. LEEDS: Okay. Thank you.

9 This next question involves safety culture.
10 Safety culture and how to measure it has been an issue
11 discussed for several years by both the NRC and industry
12 and both have struggled with coming to terms with how
13 to ensure that we have a strong safety culture.

14 Could you please share your thoughts on
15 safety culture and the Commission's interest in the
16 subject?

17 CHAIRMAN MACFARLANE: I think safety culture
18 is absolutely essential to a safe and secure nuclear
19 power program. And I know in the U.S. we paid a lot
20 of attention to this issue, both within our own agency
21 and within the industry. And I think it's very
22 important for us to do that.

23 We evaluate, we at the NRC evaluate the
24 industry on their safety culture performance and if we
25 find them wanting, we institute additional

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1 inspections.

2 It's essential that we have a strong safety
3 culture and that we continue to pay attention to it.
4 A safety culture is what keeps everyone mindful of what
5 they should do.

6 And it's not just us who institute that
7 attention to safety culture, but the Institute for
8 Nuclear Power Operations is also very mindful of this.
9 And I think it's an essential part of being a good
10 regulator is to evaluate safety culture of our
11 licensees.

12 MR. LEEDS: Okay. Thank you.

13 Referring to your speech, considering
14 redefining the normal, are you thinking of changing
15 design basis for operating plants related to seismic
16 and flooding issues?

17 CHAIRMAN MACFARLANE: Well I'm not thinking
18 of doing that but I can tell you that we are in the
19 process of doing seismic and flooding hazard
20 reevaluations at all our plants in the U.S. So we're
21 doing that and we've already been receiving some of our
22 flooding hazard reevaluations from our licensees. We
23 will continue to receive those over the next few years.

24 We will be receiving this month, I believe,
25 our seismic hazard reevaluations from our licensees in

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1 the Central and Eastern U.S. and we'll be expecting
2 those from the Western U.S. the following year.

3 So we are in the process of doing this. And
4 I think it's very important that we do pay attention
5 to this.

6 MR. LEEDS: Thank you.

7 Final question, and I saved the provocative
8 one to end on.

9 Here's the question. Regulatory
10 uncertainty and political pressure appear to have
11 contributed to the San Onofre shutdown. How do you
12 plan to deal with these two issues in the future?

13 CHAIRMAN MACFARLANE: Well, I'm not going to
14 give any credence to that. I think there are a variety
15 of issues that probably contributed to the San Onofre
16 shutdown and not having -- as a researcher, not having
17 done a full analysis of the situation, I won't venture
18 anything on there.

19 In terms of regulatory uncertainty and --

20 MR. LEEDS: Regulatory uncertainty and
21 political pressure.

22 CHAIRMAN MACFARLANE: -- and political
23 pressure.

24 You know, I think, again, this goes back to
25 some of the things I said about what an effective

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1 regulator is. It's important for regulators to be free
2 of and to be independent of political pressure and
3 industry pressure, economic pressure.

4 And so, I think it's something that we need
5 to be mindful of. We need to be able to do our job
6 without that political pressure.

7 In terms of industry and how industry works,
8 I'll leave that to them. But for us as regulators, I
9 think we need to be mindful to keep away from the
10 political pressure piece of it.

11 In terms of regulatory uncertainty, I think
12 we are working hard at the NRC to provide regulatory
13 certainty to our licensees. And working with them,
14 communicating regularly, we've been doing a lot in
15 terms of cumulative effects of regulation.

16 Certainly for rule making, we check in with
17 the industry regularly looking at whether there are
18 conflicts in rules that we're going to institute and
19 try to understand from their perspective what is
20 important.

21 So I think we're trying to deal with both of
22 those issues.

23 MR. LEEDS: Thank you so much, Chairman.

24 CHAIRMAN MACFARLANE: Thank you.

25 MR. LEEDS: Now I'd like to introduce the

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1 NRC's Executive Director for Operations, Mark
2 Satorius.

3 Mr. Satorius has been the Executive Director
4 for Operations at the NRC since August of 2013.

5 Prior to that, he was the Director of the
6 Office of Federal and State Materials and Environmental
7 Management Programs. And he was also a regional
8 administrator in the NRC's Region III Office in Lisle,
9 Illinois.

10 Since joining the NRC in 1989 as an Operator
11 Licensing Examiner in Region IV, Mark has held several
12 other leadership positions in both NRC Headquarters and
13 out in the Regions.

14 Prior to joining the NRC, Mark was an Officer
15 in the U.S. Navy's Nuclear Power Program. He also
16 managed his family's 1,500 acre farming operation and
17 he worked as the Chief Operating Officer of a start-up
18 retail company.

19 Please join me in welcoming the NRC's
20 Executive Director for Operations.

21 MR. SATORIUS: Thanks for that introduction,
22 Eric. I appreciate that.

23 I have somewhat of a storied past and you'll
24 have to get me in the hallways to tell you the start-up
25 company that I spent an interesting year of my life.

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1 But good morning to everyone. On behalf of
2 the NRC staff, I'm pleased to add my welcome to this
3 year's conference. This is my first conference as the
4 Executive Director for Operations and I look forward
5 to interacting with my many stakeholders over the next
6 few days.

7 My thanks to the Offices of Nuclear Reactor
8 Regulation, Eric, and Nuclear Reactor Research, Brian,
9 for organizing this event and to the many volunteers
10 and corporate support offices that contribute to its
11 success.

12 As the Chairman has mentioned several times
13 in her speech, and I think it warrants touching upon
14 again. It has been three years today since the tragic
15 accident at Fukushima.

16 Much has changed since that time, some of
17 which I'm going to talk about later on. But one thing
18 that hasn't changed is NRC's clear undiminished focus
19 on ensuring the safety and security of activities that
20 we regulate to protect public health and the
21 environment.

22 And anniversaries such as this, only
23 reinforces the importance of our shared
24 responsibilities to remain vigilant in ensuring the
25 safe and secure use of radioactive materials.

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1 Today, I want to talk to you about several
2 things. First, I want to give you a brief state of the
3 agency from my perspective as the EDO, what we've
4 accomplished, what issues and activities we're
5 focusing on.

6 Then next, I want to talk to you a little bit
7 about being the new EDO and the approach that I've been
8 taking thus far in my relatively brief tenure.

9 Finally, I'd like to discuss some of the
10 challenges we both face and talk about where we're going
11 and how we're going to get there.

12 The NRC staff, with the cooperation and input
13 of our stakeholders, has had another year of
14 significant accomplishments. Most significantly, we
15 have had a year of safe and secure operations of
16 commercial nuclear power plants and possession and use
17 of radioactive materials by our materials licensees.

18 Among other accomplishments, NRC staff,
19 particularly the regional staff, provided significant
20 oversight activities at several nuclear power plants
21 including Fort Calhoun, Browns Ferry and the San Onofre
22 Nuclear Generating Station.

23 We issued the draft generic environmental
24 impact statement and proposed rule on waste confidence.
25 The agency published a major spent fuel pool study and

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1 completed the regulatory analysis of expedited
2 transfer of spent fuel.

3 Our new reactor staff continued
4 comprehensive construction oversight at Vogtle, Summer
5 and Watts Bar. And we maintained a steady progress on
6 implementing the Fukushima near term task force
7 recommendations.

8 Related to that, we authorized restart of the
9 Honeywell Conversion Plant following upgrades prompted
10 by lessons learned from Fukushima.

11 Staff also issued new licenses and
12 significant amendments to existing licenses for
13 uranium recovery.

14 In addition, we implemented the License
15 Verification System as part of the Integrated Source
16 Management portfolio.

17 And a final example, we hosted an
18 International Atomic Energy Agency Integrated Physical
19 Protection Advisory Service Mission that resulted in
20 a strong endorsement of the agency's nuclear security
21 program.

22 As an organization, we weathered our first
23 ever NRC budget shutdown last fall. The shutdown was
24 a significant distraction and certainly impacted some
25 of our ongoing activities. But I'm extremely pleased

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1 in the way that the staff responded to the challenge,
2 both in planning for it and in operating during the
3 shutdown period.

4 When we returned to work, we gathered lessons
5 learned, should we ever have to go through this again,
6 and the staff quickly refocused on business as usual.

7 In recent years, our budgets have been
8 declining. In January, Congress passed the Fiscal
9 Year 2014 Appropriations Act that gave the NRC just over
10 \$1 billion as a budget, which, while slightly larger
11 than the Fiscal Year 2013 budget, is more like out 2007
12 budget when measured in constant dollars.

13 We began Fiscal Year 2014 with 3,742 staff
14 on board. While this is a robust number, we are
15 continuing to hire new staff to keep pace with
16 accelerating attrition, fill critical positions and
17 ensure a strong entry level pipeline.

18 And we need to ensure that the right
19 individuals hired have the right skills to take us
20 through our future with the next five years
21 particularly important.

22 Turning to our ongoing work, we have a broad
23 range of actions underway on a number of significant
24 activities, a few of which I'd like to touch on today.

25 Earlier, I mentioned our continuing progress

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1 in implementing the Fukushima near term task force
2 recommendations with a continued focus on high priority
3 or our Tier 1 items. These include among other things,
4 a June 2013 Order modifying an earlier Order for boiling
5 water reactor hardened vents to ensure those vents will
6 remain functional in the conditions following reactor
7 core damage.

8 As we proceed, we continue to remain mindful
9 of the need to balance these efforts against the need
10 to ensure they do not displace ongoing work of greater
11 safety benefit.

12 As noted earlier, our efforts continue to
13 address the June 2012 U.S. Court of Appeals decision
14 that struck down the 2012 update to the waste confidence
15 decision and temporary storage rule.

16 Subsequent to publishing the draft proposed
17 rule and draft generic environmental impact statement
18 for public comment, the staff held 13 public meetings
19 around the country to collect stakeholder input. We
20 expect to complete our work this fall.

21 The staff is also back at work on the Yucca
22 Mountain safety evaluation report following last
23 summer's U.S. Court of Appeals decision directing us
24 to resume review of the Department of Energy's
25 application and the Commission's subsequent direction

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1 to the staff.

2 We estimate that, absent any unforeseen
3 issues, the resources currently available in the
4 Nuclear Waste Fund will be sufficient to complete the
5 safety evaluation report.

6 We also expect that we can complete and issue
7 the remaining volumes of the Yucca Mountain safety
8 evaluation report approximately 12 months after we have
9 initiated work which should be near the beginning of
10 calendar year 2015.

11 With regard to new reactors, as I noted
12 earlier, construction progresses at Vogtle, VC Summer
13 and Watts Bar sites. With NRC staff continuing to
14 provide necessary oversight through inspection,
15 assessment and licensing, the first nuclear island
16 concrete for Unit 4 at Vogtle and Unit 3 at Summer was
17 placed in November 2013 with no major issues. I also
18 understand that just within the past few days, module
19 CA20 was placed at Vogtle, the largest module to be
20 installed at that plant.

21 Both sites, Vogtle and Summer, continue to
22 make significant progress in non-safety related
23 systems including turbine buildings and cooling
24 towers.

25 Regarding small modular reactors, we

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1 anticipate design certification applications will
2 start arriving this calendar year.

3 Our efforts on cyber security have been a
4 security topic with significant recent and ongoing
5 activity. With cyber security plans approved for all
6 nuclear power plant licensees, interim milestones were
7 identified that emphasized the completion of a set of
8 prioritized activities by the end of 2012.
9 Inspections to verify licensee implementation of those
10 interim milestones began in January of last year.

11 To date, NRC has completed 16 inspections to
12 verify implementation. Full implementation of our
13 regulatory requirements will occur on a plant specific
14 basis over the next three years.

15 In NRC, we greatly value our international
16 interactions and we believe active international
17 cooperation and support as well as learning from our
18 experienced international partner is critical to our
19 success.

20 Today, I want to mention just one significant
21 recent activity that we have been involved in. In
22 2010, a group of our international colleagues came to
23 the NRC on an International Atomic Energy Agency
24 Integrated Regulatory Resource Service, or IRRS
25 mission, to examine the agency's operating power

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1 reactor program.

2 The team left us with two recommendations and
3 a number of suggestions for strengthening our operating
4 reactor program.

5 Just last month, the team returned for its
6 follow-up mission to assess the agency's response to
7 those recommendations and suggestions, including and
8 examination of NRC's response to the accident at
9 Fukushima.

10 I am pleased to report that the follow-up
11 team found the agency's responses to Fukushima was
12 timely and properly implemented short-term actions.
13 The team also commended the NRC for effectively
14 addressing one of two of the recommendations and 19 of
15 the 20 suggestions from the original IRRS mission.

16 The NRC continues to address the remaining
17 recommendation and suggestion and will address an
18 additional suggestion that was received from the
19 follow-up team.

20 While these efforts are certainly
21 noteworthy, our significant undertakings comprised
22 more than just a list of ongoing activities. The NRC
23 staff has worked long and hard to put forward to the
24 Commission analyses and recommendations on additional
25 critical topics that will guide future activities and

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1 accomplishments.

2 These include, among other things, staff
3 recommendations for the disposition of recommendation
4 one of the Fukushima near term task force.

5 The spent fuel pool study and analysis of
6 expedited transfer of spent fuel to dry storage and
7 policy options for evaluating financial qualifications
8 of merchant power plant applicants.

9 As you can see, when I came on board as the
10 EDO about six months ago, I inherited a full plate of
11 important ongoing efforts posing significant
12 challenges. I also inherited a talented staff and a
13 strong group of leaders who are very effectively
14 carrying out our mission.

15 My predecessor, Bill Borchardt, steered the
16 staff through some difficult times during his tenure.

17 My goals as EDO will not surprise you and are
18 consistent with current operations. We need to focus
19 on accomplishing our safety and security mission. We
20 need to maintain the NRC staff as the premier nuclear
21 regulator. Successfully adapt to a changing
22 environment that includes a decreasing agency budget,
23 energy market changes and more staff retirements.

24 And lastly, remain responsive to Commission
25 direction and keep its members appropriately informed

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1 of our efforts.

2 I've taken time to immerse myself in my new
3 position and to observe before I act. In taking a fresh
4 look, it became clear to me that things are changing
5 and somewhat unsettled on several fronts and that we
6 face a number of challenges.

7 For more than a year now, the NRC has been
8 working to update our strategic plan including
9 soliciting stakeholder ideas. A proposed revision was
10 published in the Federal Register last week for a 30-day
11 public comment period. I urge you all to look at the
12 plan and provide any comments that you may have.

13 In that document, a number of challenges,
14 many affecting both the NRC and the nuclear industry
15 are framed for our planning and operations in the years
16 to come.

17 These challenges include the need for
18 continued implementation of enhancements to improve
19 reactor safety based on insights arising from the
20 operating experience reviews and lessons learned from
21 the nuclear accident at Fukushima in 2011.

22 Changing economic conditions in the energy
23 market that will affect current and planned applicants
24 to construct and operate new nuclear facilities or
25 decommission existing ones.

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1 A constrained federal budget environment
2 with rising fixed costs and the necessity of continual
3 learning and adaptation of our regulatory frame work.

4 Readiness to review applications involving
5 new technologies such as small modular reactors and
6 medical isotope production facilities.

7 Maintaining a highly competent and fungible
8 staff with appropriate skill sets and analytical tools
9 to carry out all elements of the agency's mission
10 including addressing emerging issues.

11 And finally, the ongoing need to cooperate
12 with and support the development of nuclear safety
13 regulations around the world and the continued
14 globalization of nuclear technology and the nuclear
15 supply chain.

16 NRC realistically tackles each of these
17 challenges in light of some of the economic pressures.
18 In particular, we have begun to ask our self more
19 consistently, are our regulatory programs having the
20 intended effect and can we become a more efficient and
21 effective regulator?

22 The agency's initiative on the cumulative
23 effects of regulation has started to address this
24 question by looking at licensee challenges when
25 confronted by multiple complex regulatory requirements

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1 within a limited implementation period and with
2 available resources.

3 We cannot let such potential distractions
4 divert licensee attention from other duties necessary
5 to ensure safety or security which is our primary
6 responsibility.

7 We've made enhancements to all phases of our
8 rule making process to address concerns with cumulative
9 effects. Many of these enhancements increase
10 interactions with stakeholders and they take longer
11 sometimes.

12 The staff has also carried out additional
13 activities response to Commission direction and we have
14 been gathering input from you, our stakeholders, on the
15 effectiveness of this effort and to inform our decision
16 making regarding new regulatory development.

17 The Commission is following this effort with
18 great interest and a cumulative effect of regulations
19 implementation status report including
20 recommendations for improvement derived from lessons
21 learned is due to the Commission next year.

22 I believe there are a number of examples that
23 demonstrate we are making progress in striving for the
24 best possible management and administration of our
25 Regulatory programs.

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1 These include the Fukushima near term task
2 force and a systematic compilation of lessons learned
3 from that accident.

4 The use of National Fire Protection
5 Association Standard 805 as an alternate approach to
6 ensuring fire protection at nuclear power plants.
7 While implementation has been challenging, ultimately,
8 the standard will provide performance-based approaches
9 that will provide more flexibility and can reduce the
10 regulatory burden associated with fire protection
11 requirements.

12 And using stakeholder feedback and lessons
13 learned from our recent experience with new nuclear
14 power plant licensing to implement improvements to the
15 Part 52 licensing process, improve post-combined
16 license implementation of the process and apply new
17 reactor licensing guides lessons learned to the
18 development of appropriate guidance.

19 Through these and other efforts directed
20 towards continuous improvement, we will seek to
21 identify additional tools and approaches and
22 collaborate with you, our stakeholders, in an effort
23 to maximize the effectiveness of our regulatory
24 programs.

25 This is an issue of great importance to all

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1 of us and I want to ensure we maintain an open dialogue
2 so that we can achieve our shared objectives of
3 protecting public health and safety as efficiently and
4 effectively as possible.

5 Beyond these ongoing efforts to enhance our
6 regulatory effectiveness, my senior managers and I have
7 undertaken an additional related initiative to make
8 certain that the full array of challenges I noted
9 earlier are being addressed in our day to day
10 operations.

11 We're taking a fresh and realistic look at
12 each of our business lines and corporate support supply
13 lines. And where we anticipate the agency's posture
14 will be in five years, taking what we know now and
15 attempting to read the tea leaves as best we can so that
16 we can adjust, refine and redirect our activities as
17 appropriate.

18 As a result of this forward looking activity,
19 we have assembled a best estimate scenario of our future
20 in 2019. While I won't detail every element of that
21 vision here today, some of the key elements of our best
22 estimate scenario include the following:

23 A thorough understanding of where we will be
24 in the new large light water reactor application review
25 and construction processes.

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1 A realistic view of what advanced reactors
2 will have applications under review or be in
3 construction.

4 A best estimate of the size of the operating
5 fleet and the number of facilities expected to be in
6 decommissioning, as well as a sense of the licensing
7 backlog post-Fukushima.

8 A vision for our fuel facilities, spent fuel
9 storage and transportation and low level waste
10 programs.

11 An assessment of our various corporate
12 support functions including staffing, facilities and
13 technology.

14 And finally, a sense of the breadth of our
15 international technical assistance and research
16 agreements as well as other international engagements.

17 With this analysis in hand, NRC leadership
18 is currently helping prepare the agency for the future
19 by taking the following steps:

20 Making the connection between this
21 information and the agency's strategic plan.

22 Identifying agency level strategies
23 necessary to protect our core that is our mission, our
24 vision, values and principles.

25 Executing these strategies and continually

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1 monitoring internal and external environments,
2 identifying changes to the internal and external
3 environments and adjusting our strategies accordingly.

4 And probably most important, enhancing
5 agility and organizational capacity.

6 We're in a dynamic period for our economy,
7 for regulatory agencies and for the energy industry and
8 I anticipate that this will not change any time soon.
9 We need to remain highly flexible and agile as we
10 respond to new events and other external pressures.

11 Going forward, we cannot simply be reactive.
12 We must be proactive and address the challenges and
13 maintain a focus on the mission and where we are going.

14 In accomplishing that, I look forward to
15 working together with all of you and to ensure the safe
16 and secure use of radioactive materials.

17 So I thank you for listening and I'll be happy
18 to take questions now.

19 MR. LEEDS: Thank you very much, Mark.

20 We've got a number of questions. To being
21 with, while you take a sip of water, the first question.

22 Looking out five years, what are the key
23 challenges facing industry and the NRC?

24 MR. SATORIUS: I think what's most
25 provocative is my management team has come together and

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1 we've been looking at where do we think we'll be in 2019
2 is the provocativeness of where we thought we would be
3 in 2009 five years ago today.

4 And I think by most accounts in 2009, we
5 thought that there would be more new build in the United
6 States, at least indications towards that, had no idea
7 that the economic challenges of inexpensive natural gas
8 would create the challenge it's created.

9 I think we believed that we would have a deep
10 repository under construction at Yucca Mountain.

11 So when you look at where we thought we would
12 be in 2014 makes it even more important as we look at
13 2019.

14 But agility is the key, I think, because
15 things are going to change. We have to have fungible
16 skills within the staff to be able to be nimble, to move
17 staff around, to be able to deal with things as they
18 change.

19 So I think that, like I said, I don't
20 necessarily want to get into the details of predicting
21 what the size necessary of the operating fleet will be,
22 but it's likely it may be less than it is today.

23 Will there be more large light water reactor?
24 I think it's -- I'm not going to speculate but it's going
25 to -- we'll have to see how the remainder of the Vogtle

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1 and Summer construction goes which will be instrumental
2 in making decisions. And also the overall energy mix
3 as we move into 2019.

4 MR. LEEDS: Thank you.

5 The next question, the Commissioners have
6 asked the staff for recommendations related to foreign
7 ownership, control and domination. When do you see the
8 staff providing these recommendations to the
9 Commissioners? And will the Commission paper be made
10 available to the public?

11 MR. SATORIUS: As far as being made available
12 to the public, I think that's the Commission's
13 decision, so I'm not going to speculate on that.

14 I don't know the exact schedule for that
15 particular issue and when it's going to be provided to
16 the Commission but I know that the staff is working on
17 that piece.

18 MR. LEEDS: I believe that we are looking to
19 get that paper up to the Commission within the next six
20 to eight weeks. So it should be coming soon. And
21 typically this Commission has been very forthright in
22 providing the papers out for the public.

23 So even though you don't want to speculate,
24 but I will. I think that they're going to make it
25 public right away, for everything that that's worth.

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1 MR. SATORIUS: Now you're been at your job a
2 little long than I've been in mine.

3 MR. LEEDS: Thank you.

4 Our next question, the Regulatory
5 Information Conference includes a session on life
6 extension beyond 60 years. Can you discuss your views
7 on this and are there any major obstacles to allowing
8 plants to operate for more than 60 years?

9 MR. SATORIUS: Well, I think there is -- I
10 believe there's a paper before the Commission right now
11 on staff recommendations. There has not been a vote,
12 so there is no decision on and no guidance from the
13 Commission as yet on how the staff should proceed.

14 But, what was the other part of the question?
15 My views?

16 MR. LEEDS: Your views, or do you think there
17 are any major obstacles to a plant being able to operate
18 for more than 60 years?

19 MR. SATORIUS: Well I think that we asked the
20 same question of when it was life beyond 40. There will
21 be similar, I think, challenges as we go to another
22 extension period that licensees, presuming -- I don't
23 want to really presume what the Commission's going to
24 tell us to do but if we were to move in that direction,
25 we would have to look very hard at components and

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1 programs to ensure that licensees are continuing to
2 review and assess the aging of components and how that
3 that would play out.

4 MR. LEEDS: Thank you.

5 All right, the agenda for the RIC is heavily
6 focused on nuclear power plant regulation. Does that
7 indicate that the NRC finds regulating other materials
8 less important?

9 MR. SATORIUS: No. I answered in the manner
10 that I would expect Commissioner Apostolakis to answer,
11 no.

12 I'll just go on, yes, I've spent a time of
13 my career, in fact, I spent more time in the Regions
14 than I've spent in Headquarters in my career. So I'm
15 very, very aware of the inspection of decommissioning
16 activities, materials users, the medical use of
17 radioactive devices.

18 I spent some time in FSME, so I'm familiar
19 with those issues in low level ways. So no, it -- those
20 are important programs as well.

21 I will point out that the sponsors of this
22 are reactor focused offices, so I would tend to think
23 there would be a little bit more focus on reactor issues
24 within the RIC than maybe other regulated activities.

25 MR. LEEDS: Certainly at the RIC we do have

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1 sessions on fuel cycle facilities and on spent fuel,
2 so there is a myriad of different topics that are
3 covered in the RIC.

4 But certainly, the NRC also has other
5 conferences that focus --

6 MR. SATORIUS: That's right.

7 MR. LEEDS: -- on some of these other items.
8 So there are ways to get more information and we do
9 provide those public meetings. All right, let me have
10 -- we have time for one more.

11 Let me go forward on a difficult issue for
12 the government right now, cyber security. The
13 question reads, cyber security burden is not informed
14 by the degree of risk of various assets. Is the NRC
15 committed to consequence-based approach in addressing
16 cyber security at nuclear power plants?

17 MR. SATORIUS: I'm tempted to answer in
18 another manner that Commissioner Apostolakis answered
19 a question last year, I'm not sure I know. I think that
20 as we move into cyber security, we're taking a very
21 informed approach towards looking at where the
22 vulnerabilities are. We're reaching out to
23 stakeholders so that we can be sure and get it right.
24 So I'm comfortable as we move forward into those areas
25 of regulation that will do so in a judicious and fair

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1 manner.

2 MR. LEEDS: Thank you very much, EDO.

3 All right, everyone, we've got -- everyone,
4 we have a 30 minute networking break and we'll reconvene
5 at 10:30. Thank you so much.

6 (Whereupon, the proceedings in the foregoing
7 matter went off the record at 10:00 a.m.)

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