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UNITED STATES NUCLEAR REGULATORY COMMISSION
BRIEFING ON NRC INTERNATIONAL ACTIVITIES

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THURSDAY

November 6, 2008

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The Commission convened at 1:30 p.m., the Honorable Dale E. Klein, Chairman
presiding.

NUCLEAR REGULATORY COMMISSION

DALE E. KLEIN, CHAIRMAN

GREGORY B. JACZKO, COMMISSIONER

PETER B. LYONS, COMMISSIONER

KRISTINE L. SVINICKI, COMMISSIONER

1 NRC STAFF:

2 WILLIAM BORCHARDT, Executive Director for Operations

3 MARGARET DOANE, Director, Office of International Programs

4 GARY HOLAHAN, Deputy Director, Office of New Reactors

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CHAIRMAN KLEIN: Today we get to hear about our international programs. This is a program that is, I would say, of greater importance than the size of its budget. For a program that is less than 1% of our budget it has a significant impact on what we do and what happens around the world.

The activities clearly are dynamic in the U.S., but they're also dynamic with our international partners. And so, our outreach activities are extremely important.

We have about 36 reactors worldwide under construction. We expect to see that increase and as we all know if there's a reactor accident there are no borders for those kinds of events.

And so, it's very important that we continue to push, I think, for the high regards of safety and security in the international community. So, this is really an important program for us.

I think when we went to the IAEA meeting - this was my third one - and every time I go to those, while they are somewhat exhausting in terms of meeting with everyone it's extremely important for our activities that we meet with those international partners.

I think the other aspect that we did this past year in the international front was on the convention for nuclear safety. I think when Jim Ellis and Gary Gates had attended that meeting I think they were amazed at our international activities and how important that is for not only the United States, but certainly for the NRC's involvement in those programs.

1 So, we're looking forward to hearing those programs. Any comments from
2 my fellow Commissioners?

3 COMMISSIONER LYONS: I'll add my compliments when it's my
4 turn.

5 CHAIRMAN KLEIN: Now, normally the EDO gets to go first, but I
6 believe today that Margie you get to go first. Would you begin?

7 MS. DOANE: Good afternoon. As you said I'm Margaret Doane.
8 I'm with Bill Borchardt, the Executive Director of Operations, Gary Holahan,
9 Deputy Director, Office of New Reactors. With Bill and Gary I look forward to
10 discussing in detail our international program.

11 Before I begin to address the specifics it might be helpful to keep in mind
12 that our program has over the last year been operating in a fast-paced and
13 dynamic environment. I don't have to tell you that.

14 We've provided legal, regulatory and licensing expertise to support the
15 historic India agreement, met the requests of more than two dozen countries which
16 are embarking on nuclear power programs for the first time, and significantly
17 expanded our regulatory assistance for radioactive sources, just to name a few
18 activities which have drawn on agency-wide resources.

19 It is, of course, not lost on us that we have the responsibility to maintain the
20 safety and security of our existing fleet of 104 reactors and a vast materials
21 program or that we have 17 applications, new Combined Operating License
22 applications, for 26 units.

1 What we intend to highlight for you today is how we have increasingly
2 turned to our international counterparts to enhance our understanding of
3 knowledge, expertise and practices that will benefit our domestic programs.

4 To meet these challenges the international program has shifted to a more
5 pro-active approach that more efficiently uses our resources.

6 So, without further introduction let me turn to our presentation.

7 As we discussed last year we have five major international program areas.
8 They're noted on slide 2.

9 The multiplicity of activities in each of these areas demonstrates the degree
10 to which the program offices and OIP are coordinated. These five categories also
11 underscore our longer-term international program vision, which is to advocate
12 strong, independent national regulatory entities as committed to under the
13 principles of the Convention on Nuclear Safety and other international legal
14 instruments and to achieve a sustainable, fully funded, efficient assistance and
15 cooperation programs.

16 In fiscal year 2008 as the Chairman mentioned our international program
17 was implemented through an agency-wide budget of \$11.2 million or
18 approximately 1% of the budget. That includes infrastructure and support.
19 Without it, it's a little less than 1%.

20 As we look out over the next three to five years, we anticipate the
21 continuation of our coordination efforts to bring success to the many activities we
22 can easily predict, in addition to a number of potentially new and resource

1 intensive initiatives.

2 We are positioning ourselves to meet the challenges with an array of
3 possible solutions. Let me now briefly discuss the specific activities we have
4 conducted in these program areas and give you a glimpse of what we anticipate
5 will occur over the next three to five years. Slide 3.

6 Conventions and Treaties: This program area encompasses activities that
7 the NRC conducts to help ensure the United States meets its obligations under
8 legally binding treaties and conventions. The U.S.'s obligations that fall to the
9 NRC include activities to address non-proliferation, safety, physical protection,
10 waste and spent fuel management, emergency preparedness and response, and
11 counter-terrorism.

12 In some cases the NRC has a leadership role and in others we provide
13 technical support to other U.S. Government agencies.

14 To this end in fiscal year 2008 as the Chairman was mentioning we took a
15 role at the April 2008 Review Meeting of Contracting Parties to the Convention on
16 Nuclear Safety. The Government's delegation was led by Chairman Klein and
17 included our outgoing and incoming Executive Directors for Operations, Luis
18 Reyes and Bill Borchardt and staff and senior managers from the Offices of
19 Nuclear Reactor Regulation, New Reactors and International Programs.

20 For the first time the U.S. delegation also included representatives from the
21 Institute of Nuclear Power Operations, Mr. Ellis as we were discussing earlier.
22 This collaboration was well received by our CNS partner states.

1 The preparation for the U.S. Government's participation in the May 2009
2 Review Meeting of Contracting Parties to the Joint Convention on the Safety of
3 Spent Fuel Management and on the Safety of Radioactive Waste Management -
4 the Joint Convention as it's referred to - is under way. The staff has worked
5 closely with the Departments of Energy and Department of State on the U.S.
6 National Report and will support the U.S. delegation at the May 2009 Review
7 Meeting.

8 I'd also like to note that the U.S.'s submission of its ratification of the
9 Convention on Supplementary Compensation for Nuclear Damage was this year.
10 This Convention still requires adherence by certain numbers and types of
11 countries - suppliers and buyers - for the convention to go into effect.

12 The NRC has provided regulatory insights to support the U.S. efforts of the
13 Department of State and Department of Energy to encourage participation in this
14 convention. Next slide, please.

15 The challenges that we face with treaties and conventions are not unlike
16 last year. In calendar year 2008 the staff has actively supported our efforts to
17 implement the Model Protocol Additional to the Agreement between United States
18 and the IAEA for the application of safeguards, referred to as the Additional
19 Protocol.

20 An intrinsic component of the Additional Protocol will be reporting from a
21 broad range of NRC licensees on relevant nuclear activities. A Federal Register
22 Notice of the final rulemaking was issued in October to ensure that NRC licensees

1 along with licensees of the Department of Commerce, Department of Defense,
2 Department of Energy and Department of Defense Components are in compliance
3 with the Additional Protocol as it comes into effect in 2008.

4 Throughout this process the NRC staff has coordinated closely with our
5 counterparts at these agencies as well as the White House.

6 To support the U.S. government efforts to seek broad adherence to the
7 amended Convention on the Physical Protection of Nuclear Material the staff has
8 provided technical advice to the U.S. interagency, which in turn has helped shape
9 interactions with like-minded states and ongoing discussions with the IAEA.

10 In addition, staff is working with the interagency counterparts and the IAEA
11 to revise Information Circular 225, the international guidance document on the
12 physical protection of nuclear material and nuclear facilities to bring it into
13 compliance with the Convention.

14 The staff will also be supporting the U.S. Government's preparations for
15 participation in the 2010 Nuclear Non-Proliferation Treaty Review Conference. A
16 significant obligation under the NPT is to access the peaceful applications of
17 nuclear energy.

18 NRC supplies information about its nuclear safety and security programs by
19 the U.S. delegation and staff will be a Washington-based technical resource for
20 the delegation during the Conference proceedings.

21 Much of the staff work on the conventions and treaties is behind the scenes
22 where these ongoing obligations are carefully monitored. We accomplish our

1 agency and government goals on an international level by actively participating, for
2 example, in the drafting of the U.S. National Reports, providing technical support
3 to U.S. delegations and ensuring that the NRC regulations comply with the
4 international commitments.

5 On a domestic level the NRC ensures that the NRC licensee's incorporate
6 U.S. obligations such as the IAEA safeguards, inspects compliance with these
7 licensing requirements and arranges for IAEA safeguards inspections at NRC
8 licensed facilities.

9 Ensuring that there continues to be a cadre of staff that is knowledgeable
10 about these international instruments is essential to ensuring that U.S. policies and
11 goals for the peaceful, safe and secure use of nuclear and radiological materials
12 can be advanced with safe regulatory practices.

13 As we anticipate a new wave of nuclear energy construction around the
14 world the implementation of these duties is even more starkly fundamental.

15 Turning to the next area, export/import licensing. In 2008 we continued to
16 spend significant resources in implementing the Energy Policy Act of 2005 and the
17 Code of Conduct on the Safety and Security of Radioactive Sources.

18 With the Department of State, Department of Energy and Commerce we
19 further refined the criteria for approving Category 1 and 2 radioactive source
20 exports. We also participated in international meetings to exchange information
21 about the U.S. experience implementing these new policies and heard from other
22 nations on the progress of their programs.

1 In addition to licenses which the NRC authorizes the agency participates in
2 interagency reviews of Part 810 authorization requests submitted to the
3 Department of Energy from the U.S. industry -- U.S. companies.

4 In this regard we have completed five Part 810 reviews. We also
5 participate in interagency reviews of subsequent arrangements for the transfer of
6 U.S. origin material or equipment under Section 123 Agreements for peaceful
7 nuclear cooperation.

8 This is done pursuant to the requirements of Section 131 of the Atomic
9 Energy Act and there have been three subsequent arrangements completed this
10 fiscal year.

11 Applications to import and export waste containing nuclear material have
12 increased in number and complexity. For example, the State of Utah and a
13 consortium of public interest groups requested a hearing on Energy Solutions
14 application to license and import up to approximately 20,000 tons of low-level
15 radioactively contaminated waste from nuclear facility operations in Italy.

16 OIP is addressing the more than 3,000 public comments which have been
17 received to date. The resources needed to address this license application will be
18 a challenge in fiscal year 2009 as it has been in fiscal year 2008.

19 To address significant ambiguity in our export and import licensing
20 regulations OIP has drafted a comprehensive revision to Part 110. The draft
21 proposed rule is due to the Commission for review in December of this year and
22 we expect it to be published for public comment in early 2009. The final rule is

1 due to the Commission by the end of 2009.

2 This is the first significant revision to NRC's export and import licensing rule
3 since the 1990s. In keeping with the developments associated with possible
4 exports of U.S. technology and materials these changes will ensure the agency is
5 prepared for licensing demands in the future.

6 Challenges in this area: While I've reference the proposed rulemaking
7 changes to Part 110 as an accomplishment, it is also a challenge in the coming
8 year. Changes in the industry are challenging the working knowledge of our staff.

9 We're preparing for an increase in export and import licensing of major
10 equipment and components associated with proposals for new nuclear power
11 plant construction in the U.S. and around the world.

12 The fuel cycle is constantly evolving raising expectations for enhanced
13 knowledge in export/import licensing and we continually face complexity in
14 licensing areas such as Waste Management.

15 To meet these demands over the past two years OIP has hired new staff at
16 entry-level and higher levels who have varied backgrounds in legal affairs,
17 regulatory licensing, rulemaking and experience in other agencies to ensure NRC
18 is positioned to revise and implement its import and export regulations.

19 In fiscal year 2008 the NRC participated in the review of five proposed
20 government-to-government peaceful use of nuclear energy agreements -- these
21 are referred to as Section 123 agreements -- up from an average of one per year
22 last decade.

1 Each agreement with Russia, India, Turkey, Jordan and the United Arab
2 Emirates has required extensive Commission and staff technical, legal and policy
3 resources be brought to bear on the unique characteristics of each country and its
4 relationship with the United States.

5 While the Commission has completed its review and provided its
6 independent views to the President on the Russia, India and Turkey agreements,
7 the agreements with United Arab Emirates and Jordan are still under
8 consideration.

9 As more countries consider the development of nuclear power it's likely that
10 more of these umbrella cooperative framework agreements will need Commission
11 review in 2009.

12 India's unique 123 Agreement needed a waiver of certain provisions. Each
13 export will be one-of-a-kind. OIP is working to ensure that it prepares in advance
14 for the requirements on licensing to carry out its review in an effective, timely
15 manner consistent with the existing laws and regulations.

16 Slide 7 - Bilateral Cooperation: The NRC's work under the 42 bilateral
17 arrangements with 38 countries and Taiwan and four administrative arrangements
18 is another core area of the Agency's international activities. What follows are
19 some highlights that occurred in fiscal year 2008.

20 Through the relationships developed and information shared by staff with
21 their foreign counterparts NRC positions itself to anticipate and respond effectively
22 to events and request for support, such as completing the rollout of security

1 related safeguards information to strategic partners which has improved and
2 expanded our cooperation in sensitive activities.

3 Participating in the administration's outreach to countries in the Middle East
4 - Qatar, Bahrain, United Arab Emirates, Kuwait, Saudi Arabia, Turkey and Egypt;
5 and the Pacific Rim - Vietnam, Indonesia and Thailand, all interested in developing
6 nuclear power.

7 During fiscal year 2008 the staff continued bilateral efforts to assist our
8 regulatory counterparts in other countries. In the reactor area, the staff, for
9 example, implemented a Memorandum of Cooperation with our Chinese
10 regulatory counterpart on licensing and regulatory issues associated with the
11 AP1000; worked closely with France, the United Kingdom and Canada as they
12 review nuclear power plan designs preparatory to new construction; and
13 developed pilot assistance projects with the Armenian, Kazakh and Vietnamese
14 regulatory authorities for developing the infrastructure needed for exercising
15 effective regulatory oversight, licensing, and inspection of new reactors.

16 To assist in the development of regulatory infrastructures, the staff
17 participated in two Department of Energy hosted workshops with representatives
18 from governments in the Middle East and the Pacific Rim respectively to aid them
19 in preparing for decisions concerning national development of nuclear power
20 options.

21 Finally, in the area of control of radioactive sources the staff has continued
22 to assist the IAEA and the Iraqi Regulatory Radioactive Source Regulatory

1 Authority and expanded radioactive source related assistance activities to include
2 additional countries in the Commonwealth of Independent States including
3 Armenia, Azerbaijan, Georgia, Moldova, Kazakhstan, Uzbekistan, Kyrgyzstan,
4 Turkmenistan and Tajikistan.

5 It should be noted that, particularly in cooperative efforts with countries
6 engaging in new build, the NRC is effectively leveraging it's own resources, such
7 as participating in inspection of vendors located overseas (Canada, Japan and
8 Spain) and learning from ongoing regulatory activities in countries already building
9 new nuclear power plants such as Finland, France and China.

10 Challenges in this area: In our briefing last year we informed the
11 Commission of anticipated significant increases in bilateral cooperation and
12 assistance efforts over the next few years. This encompasses safety and security
13 issues associated with new and existing nuclear power plants, research reactors,
14 radioactive and nuclear materials.

15 The Commission, agreeing with this assessment, has secured funding to
16 meet these challenges in fiscal year 2008 and years out.

17 I'd first like to address this area of new reactor challenges that we're facing
18 in the new reactors area.

19 Worldwide interest in building new nuclear power plants is expected to
20 increase between now and 2020. Factors driving this interest include the concern
21 over supplies of natural gas, the unstable price of oil, increasing concern with
22 emissions from carbon based fuels and increased confidence in the safety and

1 economics of nuclear power.

2 The interest is spread among countries with different energy needs and
3 circumstances: countries with established nuclear programs, those with small
4 programs and those currently without programs, but which have expressed
5 interest in developing one.

6 The need for effective regulatory oversight will be of interest within the
7 international community. We anticipate intensive cooperation with established
8 regulatory counterparts of countries in which either U.S. designed reactors are
9 going to be built or in which reactors are currently being built that are also planned
10 for the U.S.

11 We also anticipate receiving requests for regulatory assistance from
12 countries that do not have nuclear power programs, but have expressed interest in
13 developing them. I'll refer to them throughout our discussion from here on out as
14 "new entrants". That's how they're referred to now at the International Atomic
15 Energy Agency.

16 To meet these challenges the staff has developed an international new
17 reactor strategic plan that encompasses support from almost all sectors of the
18 NRC and the Commission has provided funding to proceed.

19 This mix of activities includes: a cost-free expert at the IAEA to assist in
20 safety programs which will reach more countries and eliminate the need for some
21 bilateral activities; the rotating position at the Nuclear Energy Agency to assist in
22 the implementation of the Multinational Design Evaluation Program; development

1 of new reactor related regulatory assistance pilot projects; and enhancing our
2 international coordination on international new reactor issues.

3 For existing nuclear power facilities we're embarking on a program --
4 embarking on this program without losing sight of the need to maintain safe
5 operation of existing new plants -- I'm sorry, existing plants.

6 NRC expects requests from regulatory counterparts to interact in such
7 topical areas as aging management and license renewal as nuclear utilities around
8 the world are looking to extend operational lifetimes of their existing facilities.

9 Gaining insight and experience from our established regulatory
10 counterparts is not limited to nuclear power plants. For example, privately owned
11 enrichment facilities proposed to be built in the U.S. closely mirror enrichment
12 facilities that exist in other countries.

13 Many countries also already utilize mixed oxide fuel and commercial
14 technologies such as fast reactors are operating in various countries. NRC will
15 continue to interact with our international regulatory counterparts as a source from
16 which technical knowledge on these topics can be developed.

17 There will be continued interest in bilateral security consultations with
18 countries that currently have nuclear power programs. At the Commission's
19 request the staff is comparing and sharing best security practices with select
20 foreign regulatory authorities in topics relating to both reactors and materials.

21 Although the NRC now has a number of these sharing arrangements the
22 discussions have to remain in the bilateral sphere as many of the countries do not

1 have parallel agreements for sharing similar information with each other. This
2 results in resource intensive multiple Commission and staff level meetings which
3 we try to space out throughout the year to reduce the impact.

4 Challenges continued: This is in the area of radioactive sources. The staff
5 has initiated a significant expansion of bilateral assistance activities. We're using
6 non-fee based fiscal year 2008 funding to assist counterpart regulatory authorities
7 to enhance their safety and security of radioactive sources.

8 This work will draw heavily upon the experience gained providing
9 assistance to the regulatory authorities in the Commonwealth of Independent
10 States. Regulatory personnel from these countries have also agreed to, in turn,
11 directly provide assistance to their neighbors, forging from our bilateral initiatives a
12 regional approach.

13 The Armenian and Georgian regulatory authorities, for example, are sharing
14 the experience they have gained with their counterparts in Central Asia -
15 Uzbekistan, Tajikistan and Kyrgyzstan.

16 Staff has initiated efforts to develop both bilateral and multilateral source
17 assistance activities in Africa. Staff will be providing technical experts including
18 NRC staff, retired annuitants and contractor personnel to support the International
19 Atomic Energy Agency's sponsored workshop for African regulatory authorities.

20 Staff is also working with the IAEA to identify one or two high priority African
21 countries with which to initiate a pilot regulatory strengthening project.

22 Bilateral assistance activities are not done in a vacuum. Expansion of

1 these activities necessitates a corresponding expansion of the coordination efforts
2 with other assistance providers. We're working closely with the European
3 Commission to coordinate ongoing or planned efforts to improve regulatory
4 oversight of high risk, Soviet-designed reactors.

5 We'll continue to work closely with the International Atomic Energy Agency
6 to coordinate efforts to improve regulatory oversight of radioactive sources with the
7 countries in the Commonwealth of Independent States.

8 NRC also has an active program to host assignees for on-the-job training.
9 As the Commission noted at last year's Annual Briefing on International Programs
10 the number of assignees at the NRC has dropped from a historic high of 28 in
11 1995 to five in 2007.

12 In fiscal year 2008 there again have been five: two from Japan, two from
13 South Korea and one from Romania, but staff has been addressing the long lead
14 times for clearing proposed assignees to work in the secure NRC environment.

15 We've also received a number of requests for assignments in the future:
16 one from South Korea, one from Japan, two from Pakistan and one from Romania
17 and have, for example, a pending assignee from France who should be at the
18 NRC in the near future.

19 NRC has also placed assignees abroad in Finland, at the NEA and soon at
20 the IAEA. We anticipate more opportunities for our staff in the future.

21 These assignments are welcome, but they are also resource intensive. OIP
22 is working with the program offices to plan, budget and reduce the burden as

1 much as possible.

2 One last issue. As we send more NRC staff abroad we're also looking into
3 making sure that they are provided adequate healthcare, an issue that we have
4 just begun to address.

5 So, it should be clear from the presentation so far that the NRC as an
6 agency, and not as a single office, has contributed to the success of our wide
7 ranging international work.

8 While the support for the conventions and treaties, for export and import
9 licensing and for bilateral activities can be generally identified with the Office of
10 International Programs, the day-to-day work associated with the International
11 Atomic Energy Agency and the Nuclear Energy Agency and cooperative research
12 activities fall more under the leadership of the Executive Director for Operations
13 and the program offices.

14 I would like to turn now to Mr. Borchardt to discuss the NRC's work on
15 international research activities and with multilateral organizations. And to
16 respond to the significant interest in the Multinational Design Evaluation Program,
17 Mr. Holahan will then make a brief presentation on the status of those activities.

18 MR. BORCHARDT: Thank you. Next slide, please. Successful
19 implementation of the NRC's international activities and programs results from the
20 enhanced coordination between the Office of International Programs and all of the
21 offices that report to the EDO.

22 The Commission's International Program today, I believe, is more focused

1 and more closely coordinated than it's ever been at any time in the past. And
2 while the work that is accomplished is done by many people in many offices, I'd
3 like to especially recognize the efforts of Margie and Marty Virgilio for taking a
4 leadership role within those two organizations.

5 Marty representing all the offices that report to the EDO and helping to
6 foster the U.S. initiatives, foster the NRC's activities throughout a very closely
7 coordinated international program. I think much of the success and the improved
8 performance in this area rests with Marty and Margie for their leadership in this
9 area.

10 While the NRC's views are actively solicited throughout the world it's also
11 true that our international interactions are of great benefit to the NRC and to the
12 approaches that we take domestically.

13 We continue to cooperatively participate in research programs that are of
14 interest to the NRC. This is a highly effective approach to dealing with a very
15 resource intensive area. I believe that our benefit to cost ratio is about 10 to 1.
16 So, we get 10 times the benefit for every dollar that we contribute to these
17 programs.

18 In the area of operating experience we continue to work with our
19 international counterparts to identify events that have potential generic applicability
20 to the current operating reactors.

21 And in the area of design issues for new and existing reactors, we have
22 been cooperating with several countries on issues such as the EPR containment

1 and GSI-191.

2 The Multinational Design Evaluation Program that Gary is going to talk
3 about is an example where we are actively participating in an initiative focused on
4 improving the efficiency and the effectiveness of the regulatory design reviews for
5 the new power plants. Next slide, please.

6 International research activities ensure that the NRC's programs
7 incorporate the results of international research and analysis. It helps the NRC
8 look for emerging technologies and issues and supports the NRC's effort to verify
9 and validate computer codes used to model nuclear reactor plant behavior.

10 Through the 70+ agreements that the Office of Research has implemented
11 the NRC staff has the opportunity to participate in major experimental programs
12 using test facilities that are not currently available in the United States.

13 Through the bilateral agreements the NRC obtains valuable technical
14 experience on seismic issues, fuel behavior and materials science, fire modeling,
15 LOCA experiments and aircraft impact test assessments.

16 The NRC also sponsors two major programs that support development and
17 maintenance of computer codes. The NRC's code applications and maintenance
18 program or CAMP is a joint assessment of NRC thermal hydraulic and neutronics
19 codes.

20 The NRC Cooperative Severe Accident Research program is a joint
21 assessment of NRC severe accident codes.

22 Research also actively participates through the Nuclear Energy Agency and

1 the IAEA activities related to research, standards development and state of the art
2 assessments on various technical issues.

3 The \$4 million per year research contributes to international projects here
4 and abroad provides NRC an actual value of approximately \$40 million. The
5 access to the foreign test facilities expands our knowledge base and contributes to
6 the effective and efficient use of NRC resources in conducting research on high
7 priority safety issues.

8 With fiscal year 2008 funds, Research contributed modest sums to
9 programs on seismic safety of existing plants and on tsunami hazard safety.
10 Participation in both programs has been successful and will continue in FY2009
11 with only slightly increased funding. Next slide.

12 NRC participates in several programs to collect and analyze industry
13 operating experience. We collect, screen, evaluate and apply domestic and
14 international operating experience information, for example, from bilateral contacts
15 and from the IAEA International Nuclear Event Scale System, as well as the
16 Web-based Incident Reporting System.

17 The NRC also shares domestic operating experience with the international
18 community. NRC rates all events and notifies daily in accordance with the
19 International Nuclear Events Scale that are of a Category 2 or Level 2 or higher.
20 This is a 0 to 7 scale with 7 being the most severe events.

21 In addition the NRC submits about 20 reactor related generic
22 communications each year so that they are available to the international regulators

1 and other nuclear organizations.

2 The NRC has met with international regulatory authorities and technical
3 staffs to share the status of many issues including the GSI-191 sump clogging
4 issue and countries that have been actively involved in these interactions have
5 included Germany, Spain, Belgium, Korea and Japan. The results of the
6 Japanese strainer testing have had an especially important impact on the NRC's
7 plans.

8 NRC staff has also recently provided reports to the international community
9 regarding issues such as electrical circuit breakers, vulnerabilities in essential
10 service water systems, emergency diesel generator operability, counterfeit parts
11 for both new and operating reactors, feed water related plant trips and gas
12 accumulation and safety systems.

13 The staff has continued outreach efforts to share and receive insights in
14 international operating experience in the fuel area. Our bilateral exchanges to
15 gain insights from the operating experience of others are particularly crucial to our
16 efforts to establish a clear regulatory framework for potential spent fuel recycling
17 applications.

18 Staff from the Office of New Reactors is closely working with the Office of
19 Nuclear Reactor Regulation to review operating experience from domestic and
20 international operating reactors, to identify lessons learned that could assist in our
21 technical review and the inspections with the review of new reactor applications.

22 Additionally, NRC inspectors from the Office of New Reactors in Region

1 II's Construction Inspection Program have spent several months at Finland's
2 Olkiluoto 3 plant and two weeks at the Taiwan Lungmen construction site.

3 Inspectors from the Office of New Reactors Quality Assurance and Vendor
4 Branch have visited Japan Steel Works, Mitsubishi Heavy Industries, and Doosan
5 along with their regulatory counterparts to observe their programs.

6 Through NRC involvement and IAEA Safety Standards Committees we've
7 been engaging our counterparts to consider how to better reflect operating
8 experience in the ongoing development and updates of standards. Next slide,
9 please.

10 I'd also like to take note of the work that the Committee on Radiation
11 Protection and Public Health and the Radioactive Waste Management Committee
12 perform. Staff participation in these activities and its expert groups play an
13 important role in the international process providing comments to the International
14 Commission on Radiological Protection on its draft recommendations.

15 Participation in the Radioactive Waste Management Committee continues
16 to foster developments in the area of geologic disposal, decommissioning and
17 stakeholder confidence as well as encouraging program evolution to place greater
18 emphasis on knowledge management and transfer.

19 While the work with the NEA partners focuses on cooperation our work with
20 IAEA has a broader scope due to its more diverse membership and the mix of
21 cooperation and assistance activities.

22 In addition to the ongoing cooperation with IAEA's safety and security and

1 safeguards programs this year for the first time the NRC is working with IAEA's
2 Department of Technical Cooperation as part of the outreach in the areas of new
3 reactor construction.

4 IAEA has been the focus for outreach efforts with countries considering
5 nuclear energy as the staff assists in the development of milestones for these
6 countries to use in preparing such programs.

7 The IAEA's work to help new entrants consider nuclear power provides an
8 avenue for NRC to reach many countries at one time. We're increasingly looking
9 to IAEA to provide leadership in this area so that our resources can be most
10 effectively utilized.

11 The NRC also supports two Operational Safety Review Team missions
12 each year. These are inspections of operating reactor facilities done around the
13 world. In addition to the NRC support of the Operational Safety Review Team or
14 OSART missions, the Institute of Nuclear Power Operations coordinates the
15 industry's involvement in those activities.

16 Similar to the reviews done on operating reactors there's a review process
17 done to evaluate the effectiveness of the regulators. In the past two years the
18 NRC has provided high level support to the Integrated Regulatory Review Service
19 or IRRS missions in France, Japan, Australia, Spain, Ukraine and Germany. Next
20 slide, please.

21 In 2010, the NRC will in fact be hosting for the first time our own mission to
22 the United States so that an IRRS mission will be conducted on the Nuclear

1 Regulatory Commission.

2 This mission will consist of a peer review team of high-level senior
3 regulators and other international experts selected by the IAEA and will assess our
4 operating reactor program against international guidance and standards.

5 Hosting an IRRS will be a very significant resource commitment to the
6 NRC. Although the IRRS itself takes two weeks that the team will physically be
7 here during the main part of the service, it requires a concerted preparation effort
8 on the part of the staff and is really a very resource intensive two weeks while the
9 team is on site. Many of the senior managers in the agency have been on these
10 teams in other countries, so we have seen the impact and it is very, very
11 significant.

12 In 2007, the NRC staff has conducted a self-assessment in preparation for
13 the mission coming to the U.S. and other preparatory activities have included staff
14 participation in other missions to other countries and an evaluation of those
15 mission results so that we can learn from those experiences.

16 The IAEA has recently identified the team leader for the mission coming to
17 the United States and it will be Dr. Schmocker who is currently the head of the
18 Swiss Federal Regulatory Agency.

19 The IAEA staff will continue to work with Dr. Schmocker and ourselves to
20 identify other team members over the coming months. Next slide, please.

21 NRC anticipates extensive work with the Nuclear Energy Agency, the IAEA
22 and other multilateral organizations. To ensure effective use of NRC resources

1 the first step in assisting the creation of regulatory, safety, security and emergency
2 preparedness and safeguards infrastructure in countries embarking on a nuclear
3 program is to direct countries to the IAEA.

4 This will assure a basic understanding of the regulatory components,
5 familiarizes countries with standard terminology, provides access to the best
6 practices through the IAEA guidelines and also may provide financial support for
7 on-the-job training and fellowships.

8 It's been the staff's recent experience that countries want more than these
9 basics, however. We anticipate that the requests for arrangements for exchanges
10 of technical information, for assignments of staff between regulatory bodies for our
11 active participation in seminars and workshops and assessment missions will
12 increase over the next three to five years.

13 We will do our best to prioritize these requests. We intend to use the IAEA
14 regional seminars and other programs and allow us to consider the use of retired
15 annuitants to reach the widest possible audience while minimizing the burden on
16 the staff.

17 We will continue to encourage U.S. industry and groups such as the
18 Conference on Radiation Control Program Directors and INPO to work with their
19 international counterparts. Of particular importance to the NRC is improving the
20 balance between safety and security and regulating the nuclear industry.

21 As the IAEA develops documents addressing the various aspects of
22 security from the design basis threat insider -- to insider threats and sabotage it is

1 essential that there is a common understanding of where safety processes
2 achieve security benefits and where initiatives to increase security may benefit
3 safety.

4 Over the next two or three years the NRC staff anticipates that IAEA will
5 seek to develop and promulgate over a dozen documents relating to security as
6 well as many safety documents.

7 The process of reviewing these is resource intensive, which is
8 simultaneously revising and issuing our own regulations.

9 As part of their longer-term human capital initiatives offices are considering
10 ways to leverage staff time and to build a knowledge base such that gaps between
11 domestic regulations and international guidance are identified and staff is prepared
12 to address the differences in these international fora.

13 At the IAEA General Conference as well as at other important international
14 conferences this year there has been a consistent theme that more experienced
15 regulators need to provide assistance to countries embarking on new nuclear
16 programs.

17 One example of the U.S. providing very strong leadership in this area is the
18 Multinational Design Evaluation Program or MDEP. This program is a model for
19 how the NRC can best prepare for regulating new build in the U.S., share
20 information with international colleagues, leverage scarce resources and provide
21 staff with developmental opportunities.

22 I'll now turn the presentation over to Gary who will discuss MDEP in some

1 more detail.

2 MR. HOLAHAN: Thank you, Bill. I'm going to take a few minutes to
3 update the Commission on this year's activities under the Multinational Design
4 Evaluation Program. This initiative is intended to enhance cooperation and to
5 further convergence of regulatory practices among 10 regulatory authorities
6 currently looking at new reactor activities.

7 The participants include Canada, China, Finland, France, Japan, Korea, the
8 Russian Federation, South Africa, United Kingdom and the U.S. The program is
9 built on cooperation among the regulatory authorities in each of those countries.

10 The two goals of the program really are to enhance safety by sharing best
11 practices and best information and to increase efficiency. I have to confess that
12 we seem to be a little better on improving safety at the moment and I think
13 efficiency might come a little later.

14 There was a one-year pilot project completed during this year in March and
15 at that time there was approval of 10 recommendations that were developed
16 during the pilot project. These are the same recommendations that were shared
17 with the Commission and received Commission approval, I guess it was back in
18 January. Those same recommendations were used to formulate a plan for going
19 forward with the entire program.

20 One of the fundamental changes in the program was to take it from a three
21 stage program in which activities with France, Finland and the U.S. on the EPR
22 was kind of considered a separate activity on the side. And that separate topics

1 were dealt with as a second stage and there was kind of a third stage, which was
2 not entirely developed at the time.

3 So, one of the fundamental recommendations was to take those three
4 stages and roll them into a single integrated program. If I can have slide 17, I think
5 it explains pretty well how both the topic areas and function and structure of the
6 program are set up.

7 The two goals of the program are related to cooperation and to
8 convergence. And so, the program in fact is split into two pieces. There's a policy
9 group, which is led by the head regulators of each of the 10 participating agencies.
10 Chairman Klein was an active participant in each of the policy group meetings.

11 There's a Steering Committee, which I am a member of. And we have
12 working groups dealing with on one hand design-specific issues in which there are
13 ongoing regulatory activities in a given country and those regulators work together.

14 So, you will see on the chart the EPR and the AP1000 have established
15 working groups. The EPR working group includes the U.S., Finland and France.
16 The AP1000 working group includes the U.S., China and the UK. Other members
17 would be added to those groups as they meet the criteria for joining the groups.

18 And that's basically that they have an application in front of them or maybe
19 an advanced pre-application in front of them and that they've worked out the
20 proprietary agreements with the vendor who is looking for approval on that design.

21 That allows these groups to share not only publicly available information,
22 but proprietary information and other details.

1 What you'll see under that is in brackets the possibility in the future of
2 setting up an ESBWR working group which was discussed, but doesn't yet reach
3 the criteria of having three active regulators dealing with that design. And in fact
4 the program is open to any number of additional designs where three regulatory
5 agencies have active applications in front of them and the basic working
6 arrangements have been put in place.

7 On the right-hand side of the diagram you'll see that there are specific
8 topics that have been chosen to test the degree to which safety can be enhanced
9 and efficiency can be enhanced by having more common approaches.

10 Digital I&C was chosen not because it was easy to do because in fact it's a
11 rather difficult topic, but it's one that is of common interest to all the regulators. It's
12 clearly an emerging technology, a changing technology and we have a working
13 group on that subject. They met recently. The U.S. in fact has the lead on that
14 group. And what we're trying to achieve is to establish some fundamental
15 principles by which all regulators will approach Digital I&C systems.

16 I think we will probably not come to agreement on fine level of detail, but we
17 will agree on the high level principles of redundancy and quality and testing of
18 digital systems. In fact, that will be a substantial step forward.

19 Those recommendations will also be put forward when there is a
20 commonality among the regulators. They will also be put forward to the IEEE and
21 ICE organizations with the encouragement that the standards organizations in this
22 area should also be looking for convergence and convergence in a way that is

1 compatible with what the regulatory authorities are looking for. Hopefully, that will
2 both enhance consistency and safety.

3 In the area of pressure event boundary codes and standards there's quite a
4 good opportunity. The organizations in various countries that deal with codes and
5 standards, the ASME and their counterpart organizations in Europe and the Far
6 East, have been very supportive of our encouragement that they get together and
7 to the extent possible they work out the differences between their codes and
8 standards giving the opportunity for the regulators to endorse something that
9 they've already endorsed in common among the standards.

10 The third area is vendor inspection cooperation, which is a very
11 encouraging activity. What we see both in practice and actually in the field there
12 are a lot of differences in the way different regulatory authorities approach
13 inspection of the manufacture of components. It's been a very healthy activity.

14 We've been sharing best practices and there have been a number of very
15 useful activities where we have had common inspections. I would say they're
16 probably best described as contemporaneous inspections in which three
17 regulators would each to inspect the same facility, the Doosan, the Korean
18 manufacturing or Mitsubishi Heavy Industries are two examples where three
19 regulators would each do their own inspection program at the same time, would
20 come back together each day or more than once a day, share their insights to
21 come together with a best and complete understanding of the quality of what's
22 being manufactured at that facility.

1 It's clear that different agencies have different approaches. The U.S.
2 approach clearly emphasizes quality assurance programs. Other programs are
3 more component oriented and we see the opportunity to have these two different
4 approaches melded together and produce an overall system that is perhaps better
5 than any individual system. So, that is developing and it's developing in a very
6 healthy way.

7 There's also the opportunity to pick up other subjects as they look like good
8 opportunities for safety enhancement and cooperation. There's ongoing
9 discussions of those. None have been yet suggested.

10 At the bottom of the chart something called the Library. That is an essential
11 part of this program that both the regulatory documents, reviews, even background
12 research, inspection reports would be put into a common library available to all the
13 participants. And they've generously offered to write an abstract of each one of
14 those in English for those of us who don't speak 10 different languages.

15 So, overall the program is moving forward. It seems to be doing so very
16 comfortably with the direction that the Commission has given us for the program.
17 We expect to report back to the Commission perhaps in the springtime and
18 certainly as the program nears its two-year mark, which would be March of 2010.
19 Let me leave it at that.

20 MS. DOANE: Slide 18. So, as Chairman Klein and Commissioners
21 have repeatedly noted nuclear energy is a global activity. Manufacturers and
22 vendors operate from various countries. Uranium is an internationally traded

1 commodity. Plant designs are developed by multinational corporations and plant
2 operators and regulators are trained in educational institutions from every
3 conceivable country.

4 The very internationality of the industry poses unique regulatory, safety,
5 security and safeguard challenges revolutionizing how we approach making
6 determinations of best practices.

7 While this fiscal year has seen an intensification of interest in nuclear
8 energy there is a vein of uncertainty which needs to be acknowledged even as
9 planning goes forward. The Office of International Programs is a microcosm of
10 these preparations and to prepare for growth and ensure ongoing activities are
11 provided sufficient intention and resources OIP has hired entry-level and
12 experienced personnel, provided training opportunities including rotational
13 assignments within the NRC and other offices.

14 We've anticipated funding needs for assistance programs that have been
15 supported by the Commission and more recently by Congress. We've
16 conceptualized an assignee program for international new build activities which
17 draws on national and international organizations.

18 It integrates NRC program offices into a single approach to avoid
19 duplication and overlap. It provides opportunities for staff development and uses
20 scarce resources in the most effective and efficient manner.

21 We've improved our communication with the U.S. interagency to ensure our
22 programs are within the scope of U.S. policies and in some cases providing

1 leadership for those activities.

2 As a result, our office of 34 serves the Commission and the entire agency
3 as a portal for communication with the U.S. government and our foreign
4 counterparts and I believe is positioned to efficiently and effectively carry out the
5 mandate of this agency for the next three to five years.

6 Similarly the program offices led by the EDO have positioned themselves to
7 actively and productively engage with our international counterparts to leverage
8 our resources, the benefits of our knowledge as in the revision of the IAEA safety
9 standards, cooperative research or operating experience and to learn from others
10 as in IRRSs and the MDEP.

11 There will be several world maps shown on the monitors after this prepared
12 presentation that depict the range of information on which OIP relies to assess
13 current and future nuclear activities. We believe this visual presentation is helpful
14 in understanding the breadth of the work which may result over the next three to
15 five years.

16 I guess before I conclude my prepared presentation I would like to thank
17 Dr. Karen Henderson for her help. She has worked with offices all over the
18 agency and the interagency to prepare our briefing today. She has led it. There
19 have been many, many people who have helped out from the Office of
20 International Programs and other offices to prepare us today.

21 And also Clarence Breskovic who is in the room right now helping us with
22 the slides, but also put together all the visuals and the annual report for the

1 Commission this year. So, special thanks to those guys. That's the end of our
2 prepared presentation.

3 CHAIRMAN KLEIN: Thank you very much for a broad overview of a
4 very important program. We'll begin our questions with Commissioner Lyons.

5 COMMISSIONER LYONS: Margie, I'd certainly start by
6 complimenting you, complimenting the IP team. Thanks especially to Karen and
7 Clarence as well as your two colleagues here today. I think you've adequately
8 demonstrated here that the international activities truly are an integral part of the
9 safety activities that the NRC conducts and to me that's very, very important. So,
10 many compliments.

11 Bill used a comparison on research activities of perhaps a 10 to 1 benefit.
12 And it occurred to me as you were going through this presentation that it would be
13 interesting sometime -- I'm not suggesting you have a number at this instant -- to
14 try to determine a return on investment across the full range of international
15 activities broader than research; the operational experience, the construction
16 inspection program, certainly MDEP.

17 It's very, very important to the operations of the NRC. I think that would be
18 a very impressive return on investment. I don't know if you want to comment on
19 that or not. I'm sure it would be a challenge to put together such a metric, but it
20 would be an impressive number.

21 MR. BORCHARDT: I don't know if you could come up with a number
22 so much because it's easy to do like you said for research. What it does in all the

1 other programs though it adds to the quality, the breadth of information that's
2 incoming. The operating experience is an easy program to understand. Only a
3 quarter of the reactors in the world are in the United States, so there's another
4 300+ reactors out all around the rest of the world that are having operating
5 experience every day.

6 If we didn't have this active engagement with our counterparts then it would
7 largely be invisible to us. So, now there's very extensive formal programs like I
8 mentioned in my slides that gather the information and then disperse it. But even
9 at least as valuable and maybe more valuable is the fact that we have our
10 operating experience people participating in workshops and these various
11 committees, working groups as part of the IAEA and NEA organizations.

12 And so you have this informal relationship that's built up, so that they're only
13 now a phone call or an e-mail away. We get a wealth of information through those
14 paths that help us understand what's happening, what are some of the test results,
15 what are recent events.

16 I don't know that you could really put a number on it, but you could clearly
17 say that the quality of our work is enhanced through that activity.

18 COMMISSIONER LYONS: Those kinds of contributions strike me as
19 almost invaluable. So, I agree. Maybe it's just impossible to quantify, but it's a
20 very, very impressive number.

21 MS. DOANE: I'd add that there are some activities that are done
22 overseas that have not been done in the United States like the LES enrichment

1 facility where we'll gain a tremendous amount of expertise from our counterparts
2 overseas.

3 You can imagine a very inefficient process if we weren't to learn from their
4 years of experience. It would be hard to put a number to it, but I think it would be
5 interesting on a project base to understand how much we had to put in and what
6 we really received in our exchange.

7 COMMISSIONER LYONS: Bill in your comment a second ago you
8 mentioned operating experience. A question I was going to ask, so it probably fits
9 in and follows well with what you just said. I know in years past there has been at
10 least some concern that on the international level not all countries were
11 contributing operational experience to the same extent certainly that we are. Has
12 that gotten better? Or is there anything that we could or should be doing to
13 improve it?

14 MR. BORCHARDT: I think both the IAEA and the NEA are taking
15 reasonable efforts to maximize the contributions from all the countries. It's not
16 getting any worse.

17 I can't say on my own understanding that it's getting significantly better, but
18 almost any information is more than we would have otherwise. So, there's still a
19 benefit to it.

20 The fact that there may be some countries that are not as actively
21 participating in it as we would like or being as timely as we would like is an area
22 that could be improved, but I don't think it in any way takes away from the benefits.

1 MR. HOLAHAN: I could add that for the new reactor designs and
2 new reactor construction which is early, but still some experience. What we're
3 seeing is that we've certainly opened up a number of opportunities besides just the
4 formal reporting systems. We have very good person to person feedback on
5 what's happening at those sites or what's being turned up in the design reviews.
6 So, I think the international activities are definitely increasing our insights into
7 what's going on in other countries.

8 COMMISSIONER LYONS: Bill, in your part of the discussion you
9 mentioned the IRRS coming up. You also mentioned that by now our staff has
10 participated in a number of such activities around the world. I know we have
11 completed our own self assessment, but I'm curious as we gain more experience
12 in looking at how the IRRS has been conducted around the world,
13 I would suggest and I'd be curious if you have gone back with your team to
14 evaluate whether our self assessment rises to the appropriate level. Have we
15 done enough in terms of preparing for the IRRS in light of that international
16 experience?

17 MR. BORCHARDT: Well, we are not by any stretch of the
18 imagination done with our preparations. One of the activities we have ongoing
19 now is in fact to take a look at that self assessment. In light of the fact that the
20 IRRS missions are constantly evolving also, that the methodology they use is
21 changing.

22 So, over the next 12 months we're going to have a fairly resource intensive

1 effort to make sure that we have appropriate corrective actions where we found
2 some weaknesses, look at the missions from other countries to see if the results
3 are applicable to us -- not the results, but the findings and issues that needed to
4 be improved.

5 We don't have that plan specifically laid out yet. That's one of the activities
6 NRR is focusing on in the very near future.

7 COMMISSIONER LYONS: I appreciate that we are taking a second
8 look at it because certainly the resource -- it's certainly a most resource intensive
9 undertaking for us, but it also has the potential to be extremely valuable to us. So,
10 if by putting in additional resources up front we can gain more in the long run. I'd
11 certainly be very supportive just in general making sure that we're as well
12 prepared to gain as much as possible from the IRRS.

13 Margie, a question that you didn't really touch on. It may not be a
14 completely fair question, but I know as I visited some countries and the same with
15 some of my colleagues we've included comments in different speeches and
16 interactions about the importance of an independent regulator.

17 I think all of us view that as of paramount importance. Different countries
18 approach the independence of their regulators in very different ways. There have
19 been some movements that I'm aware of -- I'm not saying that we get credit for it --
20 but I think there have been some reconsiderations in some countries; the recent
21 change in France with the ASN, changes in Switzerland that I'm aware of,
22 changes in Armenia, which tend to move towards independence of the regulator.

1 I'm just curious if you see more of an interest in assuring the independence
2 of the regulator in different countries and if you see our approach of trying to
3 encourage the independent regulator as perhaps bearing some fruit?

4 MS. DOANE: Okay. Well, I do think that our activities in this regard
5 have borne some fruit, I guess, or have garnered some fruit because we've seen
6 with the new entrants as I referred to the newer countries that have become
7 interested in nuclear power but don't have developed regulatory programs.

8 The new entrants are very interested in seeking our regulatory assistance in
9 establishing infrastructures. But we work under the IAEA who has also been
10 working very closely to develop milestone documents for the new entrants to
11 follow in putting together an infrastructure. So, again this is a positive movement
12 in the right direction and a significant interest and amount of resources are being
13 put into this.

14 It is seen as a very significant interest that really the world, any country with
15 developed nuclear programs has to put its resources into this area. And in the
16 2020 report that was issued from the IAEA, ElBaradei has said -- Director General
17 ElBaradei has made this a very important issue in the future with new countries
18 interested in nuclear power and also with existing programs to consider how
19 programs can be separate and independent.

20 So, I think that our efforts are seeing positive results, but also I think the
21 world has come together. The International Nuclear Regulators Association also
22 issued a memorandum to ElBaradei at the IAEA stating the importance for an

1 independent regulatory structure and offering their help to countries that are
2 interested.

3 So, there's assistance with their development of these structures. So, yes, I
4 think we have seen movement and it's been very positive.

5 MR. BORCHARDT: From my perspective there's a pretty good
6 agreement on having legislative independence, if you will. The one where there's
7 a growing universal acceptance of is what I would call technical independence, the
8 ability of the regulator to make it's own independent technical judgment which
9 frankly four years ago when I was in meetings at the IAEA, the nations without
10 nuclear programs now wanted to just hire an external body to make those
11 decisions for them. And that's been completely turned around.

12 I don't believe there's anybody using that kind of language now. Some
13 nations are hiring that technical skill, but still it's part of that government which I
14 think is the key elements that was missing four or five years ago.

15 So, it has been a massive turnaround on the attitudes on that one particular
16 issue of technical independence.

17 COMMISSIONER LYONS: I think those are important points. I
18 would hope that - maybe a better choice of words - but our constant preaching on
19 the importance of an independent regulator, I hope that is helping.

20 In some of my trips, too, I've seen real evidence that it is and another one of
21 our themes, the integration of safety and security, I think is also being increasingly
22 recognized as important around the world. I'll stop there. I have more questions

1 for later.

2 CHAIRMAN KLEIN: I think we also know where some of those
3 countries are hiring people to help them build their programs, too. Commissioner
4 Svinicki?

5 COMMISSIONER SVINICKI: Let me add my compliments to you
6 Margie and your staff. Having now had the opportunity to attend the General
7 Conference as part of the Chairman's NRC delegation that he lead over there
8 recently.

9 If I think about it more broadly, you come to be an NRC Commissioner and
10 you're focused on various aspects of the job and I think something I didn't have a
11 complete appreciation for is the NRC's many obligations under law, all of these
12 interagency processes that we participate in, 123 Agreements and our role in
13 import/export.

14 That was something that I don't think was in the front of my mind, but I've
15 come to find out over the last few months what a role NRC plays. I think that when
16 things are done well and done seamlessly it looks effortless, but I know it's not
17 now having gotten -- pierced the veil a little bit by travelling with you and some of
18 your staff to the IAEA.

19 I know the tremendous effort that it takes to do what you seem to do so
20 effortlessly. So, thank you for your contributions and your staff. And also I
21 compliment everyone on the really integrated approach. It's interesting to me. I
22 was looking at the transcript of last year's briefing on International Programs so

1 that I could understand some of the themes and issues that move through the
2 years. You had commented last year, Margie, on the fact that the Commission
3 had kind of confronted the agency staff, I think it was in 2005.

4 I'm looking at whether international activities were really integrated across
5 the agency. You came back and admitted that it wasn't as efficiently coordinated
6 as it could be. And I heard Bill say that it's well coordinated now as it's ever been.

7 It sounds like you've been continuing efforts to make it an across agency
8 approach that leverages our investment on all of these things. But with the
9 creation of NSIR and FSME you've got a couple more moving parts now. Is it
10 challenging or do you feel that you're able to weave together our efforts across all
11 the program offices? Maybe that's for you and Bill?

12 MS. DOANE: Okay. I guess I'll go first. I think it is a challenge and
13 with two new offices it has become more challenging. It's also become more
14 challenging just to address the various security issues that are continuing to -- I
15 think the interest in our security programs is continuing to increase. And so, with
16 new offices it does become more complex.

17 I do have to echo what Bill said. Marty Virgilio has been a tremendous help
18 in helping me integrate the program across the offices, and of course, with the
19 leadership that is sitting at the table with me. It does make it a lot easier.

20 And also with the Commission's support to the staff telling them how
21 important international activities are to the agency and to safe nuclear power and
22 use of radioactive materials around the world. So, it's become easier, but it is at

1 the same time become much more complex because as these initiatives increase
2 you just have to collect a lot more people to participate in the program.

3 As you can see, they're not in OIP. They're in these other offices. New
4 Reactors, for example, has had to take on a tremendous number of new initiatives
5 as we get requests from countries that are looking for new nuclear power.

6 And OGC has become very engaged in helping us go out and discuss
7 some of the regulatory infrastructure issues that are necessary to communicate to
8 our counterparts. So --

9 COMMISSIONER SVINICKI: I had neglected to mention that.
10 Thank you. Because I think that's a key element here. Many of these countries
11 want to develop the legal framework to do this as well.

12 I've read some of the trip reports of the OGC staff that have gone over and
13 so I appreciate you mentioning that. I think we lose sight of that. It's not all
14 technical.

15 MS. DOANE: No, it's not. A lot of these things that you've seen in
16 the export/import area we get tremendous support from the Office of General
17 Counsel to provide the legal -- our technical expertise combined with the legal
18 views that have to go forward in order to give the agency's views on these
19 complicated matters.

20 And they're coming up with these countries because we've had so many
21 123s, for example, this year. We're facing issues we've never faced before,
22 especially with the historic India agreement and the Office of General Counsel has

1 put in a tremendous amount of effort. In fact, they had staff on the negotiating
2 teams that were observing the negotiations as they were going forward so that
3 we'd be prepared when the issues landed on our doorstep.

4 COMMISSIONER SVINICKI: Bill, I don't know --

5 MR. BORCHARDT: I'll just say that I think the great change from my
6 perspective that's happened is we've gone from being a reactive agency largely in
7 this area to one that's proactive. That allows the program offices to know where
8 they're going to be involved and take advantage of the opportunity to have that
9 engagement be beneficial to the domestic program as well as hopefully benefiting
10 the people we interact with.

11 Years ago, it was an exothermic reaction. There was a lot of energy put
12 into it without any benefit. That's obviously an overstatement, but with limited
13 benefit internally.

14 COMMISSIONER SVINICKI: Only at NRC would our International
15 Program be described as an exothermic reaction. [LAUGHTER]

16 MR. BORCHARDT: Now, I mean, I think almost every activity we're
17 engaged in there is some domestic benefit to the engagement.

18 COMMISSIONER SVINICKI: Okay. I appreciate that. I think
19 reactive activities may or may not be of benefit to our regulatory core mission, but
20 with a proactive we can shape and influence and find the benefit. So, I appreciate
21 you mentioning that.

22 I wanted to also follow-up. There was a specific conversation, Margie, last

1 year about your use -- and this was in response to Commissioner Lyons' question
2 to give credit to him -- your use of rehired annuitant authority. You had talked
3 about some specific cases where there had been key retirements not only in OIP,
4 but at State and other agencies and it had left one core mission area where you
5 had hired some new folks, but you were using the rehired annuitant authority to
6 not only train some of your new staff, but you talked about you had a knowledge
7 transfer initiative to put some documents together and also you were organizing
8 some databases on agreements so that you could retrieve historic information.

9 Did those efforts bear fruit? How are you now in terms of rehired annuitants
10 again in its abridging capability? I know the intention is always to do the
11 knowledge management and to do the training and not rely on that heavily over
12 time. How is that working in OIP?

13 MS. DOANE: Well, it's improved because we have now another year
14 under our belt working with these experts that did retire, but were willing to come
15 back and help us put together databases.

16 As always, or at least from my experience, what we envision for a database
17 hasn't materialized in the way that we would like it to have materialized. It's much
18 more complicated. You sort of get a vision of what you want it to do and then you
19 find out what you can really do with the software that you have or the resources
20 that you have.

21 So, I think we could do a little more in that area, but we are improving and
22 definitely the knowledge expertise in that area once we focused on it -- it was

1 actually in the agreements program -- has tremendously improved and we have
2 several people in our group now that I think have the resources necessary.

3 On the other end with the interagency we're continuing to see retirements,
4 but it has slowed a bit. So, I don't know, maybe the economy might have
5 something to do with that, but it's slowed a bit, so that's helped us to increase our
6 expertise in those areas, those critical areas.

7 I continue to see as one of my focus areas the treaties and conventions.
8 You've seen a little bit of this now over the last few months. It's a very complicated
9 area to meet the U.S. obligations and it's very hyper technical in a lot of ways. I
10 focus on that area because I know if we lose the expertise it will be hard to build it
11 back up.

12 COMMISSIONER SVINICKI: We're checking on Dr. Henderson's
13 401(k) or TSP to make sure.

14 MS. DOANE: We've got to keep her happy, exactly, and others with
15 her expertise. But that is an area that I've been focusing on and I know the staff
16 has parallel problems with its programs trying to get expertise.

17 I will mention we do have a retired annuitant doing a workshop. It's
18 unusual. We have a workshop in Africa so we're expanding resources there. We
19 have a very good -- I guess track record might be a way of describing it -- with
20 finding rehired or rehiring as contractors retired NRC staff that are willing to help
21 out. I continue to see that.

22 So, I'm very encouraged by the interest in international work that we're

1 seeing from our retirees because then we can combine that with our own staff and
2 stretch our resources.

3 COMMISSIONER SVINICKI: I'm hearing from you and I think you
4 can tell by my question is that Congress has given us that authority and they don't
5 want it to become a crutch. So, I appreciate that you're focused on the fact that it's
6 a bridge to other things. So, I appreciate your continued vigilance on that.

7 Just quickly I'll try to cover. I had some questions about the IRRS and I
8 want to thank Marty who spent some time with me to try to talk about these
9 missions and some of the feedback he's aware of from staff that have participated
10 in missions to other countries and as we prepare for the one in the U.S.

11 I would be curious. There are countries such as Spain who I would
12 characterize as certainly mature peer regulator who have had their missions. I
13 don't know if it results in findings. Is that the right terminology? But I would be
14 curious if you could provide me an example of a country that has undergone an
15 IRRS mission where the finding -- and they have a mature, independent, strong
16 regulator -- and the findings of the IRRS resulted in some kind of substantive
17 strengthening or improvement in the regulatory program.

18 What was a finding or outcome of an IRRS mission that then resulted in that
19 country being able to uncover some gap or something? I don't understand the
20 nature of what they find and then what you do with it.

21 MR. BORCHARDT: I could give you one. I guess about 18 months
22 ago I was on the IRRS mission to the United Kingdom. This was a rather focused

1 effort that was looking at their ability to review new reactor designs and prepare for
2 licensing of new reactors.

3 Their staffing situation could not support it with the skill mix that they had,
4 nor could their recruiting efforts show any realistic signs of being able to meet the
5 demand.

6 They were able to use those findings and actually get governmental
7 authorities to come up with a different pay structure to be able to attract the kind of
8 skills and experience level that they needed within the NII in order to do those
9 reviews. So, that authority has been granted.

10 They're still in the process to see whether or not the results will be effective.

11 COMMISSIONER SVINICKI: I suspect that they probably knew that
12 they did not have the adequate resources, but I think what you're indicating is they
13 were able to leverage the finding of an international group of other regulators to
14 persuade the forces that be that they needed to be resourced differently.

15 I also would be curious -- Commissioner Lyons has talked about the fact
16 that this will be resource intensive for the NRC and in terms of both the planning
17 and preparation for and then support during the actual IRRS review.

18 Will that be tracked to a time and attendance code or will we have a way
19 when this is over to know how many staff hours were expended in both
20 preparation and support?

21 MS. DOANE: Well, I can tell you it won't be probably that -- I'm not
22 sure. We could probably closely track it like that, but right now what we've done is

1 we've anticipated it and we've put a number of FTE that will be dedicated to doing
2 the work.

3 COMMISSIONER SVINICKI: I suspect it would be beyond those
4 dedicated to support it. Others will be pulled in while it's going on and I don't know
5 how extensive that will be.

6 MS. DOANE: It will be and I'll let Bill and Gary if he wants to discuss
7 this further. But from our perspective, for example, OIP will draw on its resources.
8 We've gotten together and had planning meetings and we'll have a lot of policy
9 support for the activities and also for bringing this whole team over. They have to
10 be ushered throughout this time.

11 So, those types of activities are already integrated within our office. So,
12 unless we dedicate some time and attendance codes you probably wouldn't see it
13 because we'll just pick it up as any other activity, like INRA, for example.

14 COMMISSIONER SVINICKI: I'm not saying we need great fidelity,
15 but it may be at some point that the agency would be asked how much resources
16 they put into supporting this. I think if we have some, even at a higher level, way
17 to estimate that I think it would serve us well to track it as we go along. I've gone
18 over, Mr. Chairman, but if we have another round I would have another question.
19 Thank you.

20 MR. BORCHARDT: We will have what we call "tacs" for the staff to
21 charge their time to at the staff level. I think there already is one kind of a general
22 category for management involved in international activities. So all we have to do

1 is give instructions to the staff on what to charge time to. So, it's easy to do after
2 the fact.

3 COMMISSIONER SVINICKI: Do you have any estimate in
4 thousands of man hours? Would it be thousands?

5 MR. BORCHARDT: Yeah, probably. It's just that during the two
6 weeks from the IRRSs that I've been on, that almost every IRRS team member will
7 have an individual assigned to them full-time, so that's two weeks out of that
8 person's schedule plus the technical experts. It's just like an NRC inspection.

9 You ask a specific question and you need to go get the specific technical
10 reviewer that did that review if they're looking at how you do design calculation.
11 So, you're going digging down into the staff pulling somebody out for half a day to
12 pull out calculations or whatever it is they wanted to look at.

13 COMMISSIONER SVINICKI: Thank you.

14 CHAIRMAN KLEIN: It's too bad that Jim Dyer isn't here, but with
15 20,000 codes I can't imagine there not being one that says IRRS.

16 MR. BORCHARDT: We'll have 20,010 after the IRRS.

17 CHAIRMAN KLEIN: Marty, did you want to comment on IRRS in
18 general?

19 MR. VIRGILIO: Thank you, Mr. Chairman. I just wanted to
20 supplement something that Bill had said. We have been doing a lot of planning in
21 the background. Although we did complete the self assessment and we do have
22 12 actions that we're working on there's probably a need to do a little bit more.

1 We have established our technical and our logistical team leads and we're
2 in the process of forming a steering committee consisting of those of us that have
3 participated on IRRS missions to help guide the staff in responding to this.

4 There are going to be some policy issues I think we're going to want to
5 engage the Commission on. We have agreed that we're going to do operating
6 reactors, but I think what we need to agree on is what's the scope of operating
7 reactors. Are we going to include EP? The Canadians, for example, are not. Are
8 we going to include security? The Spanish, for example, did.

9 So, I think there are things around operating reactors that we're going to
10 want to discuss with the Commission to nail down the scope. There are also some
11 policy issues as part of the IRRS. They're elective policy issues. There are about
12 a dozen and we have the option of selecting those in addition to having the reactor
13 program examined.

14 So, that's another issue where I think we're going to want to sit down with
15 the Commission and talk about which of those policy issues do we want to
16 evaluate.

17 And then there's the standards themselves. The IAEA uses GSR-1 which
18 is the top level standard for evaluating the Government and the regulatory body.
19 Which version of GSR-1 because it's undergoing a revision today might we want
20 to benchmark ourselves against?

21 Then there's the issue that you raised or Commissioner Lyons raised as to
22 how good is our self assessment. A lot of things have changed. There's been a

1 lot of evolution both in our programs and the IAEA's program since we conducted
2 the self assessment.

3 At the staff level, we believe it's probably worthwhile to do a complementary
4 effort now to supplement the self assessment that we already did.

5 Then there is the involvement of the team leader. We're trying to schedule
6 that time when we have the senior regulator from Switzerland, Ulrich Schmocker,
7 who is going to be our team leader, to have come over and interact with us about
8 our programs. Right now, ideally, I think that would be in March of 2010, but were
9 sort of negotiating around that time frame.

10 We'll also have to establish the logistics for the team. That's going to be a
11 lot of effort to make sure that they get to the right place at the right time, that we
12 have the hotel accommodations and all the transportation arrangements are made
13 for them.

14 And then finally, but not the least significant, I think we have to have our
15 communication plan lined up. I think that about the time that we start the pre-visit
16 in March 2010 we need to be communicating with our stakeholders internally - and
17 I mean domestically - about the IRRS mission, what it is and what we hope to get
18 out of it. So, that's just sort of a brief overview of the IRRS. Thank you.

19 CHAIRMAN KLEIN: I had a question I was going to ask Bill, but
20 since you're heavily involved in the IRRS I'll deflect it to you.

21 Just in general on the IRRS missions, I can say from my international
22 colleagues that I deal with, it's a big deal. They really look at it. They focus on it.

1 It's something that is very significant.

2 EIBaradei at the IAEA is very excited about the U.S. participating in that
3 program and a lot of my colleagues. So, I guess for those of us on this side of the
4 table as Commissioners what can we do to ensure success? What do you need
5 from us to make sure we do it and we do it right?

6 MR. VIRGILIO: I mentioned the policy issues. I think they're going
7 to be critical to the success of this mission. The other thing that we've been
8 kicking around at the staff level is the use of -- I know you've coined the term
9 "ready reserve", but I think to conduct the self assessment this might be an ideal
10 application of the ready reserve to have people that are knowledgeable yet
11 objective and free from the programs and program influence.

12 That's a different team of people then you would have when the IRRS
13 comes to visit us to explain our programs and defend our programs. But for the
14 complementary self assessment your support to have rehired annuitants or others
15 from the ready reserve, I think that would be very helpful.

16 And then the policy issues. I think they're really key to the success of the
17 mission.

18 CHAIRMAN KLEIN: Well, keep us informed on that because I think
19 the ready reserve would be a good use of those resources so that our employees
20 can do what our employees do and that is focus on safety and security of
21 radioactive materials and use our ready reserve to help facilitate that process.

22 MR. VIRGILIO: Thank you.

1 CHAIRMAN KLEIN: Well, obviously, the 123 Agreement with India
2 was very much in the news. Obviously, there's others coming. How many 123
3 Agreements do you think we'll see in '09?

4 MS. DOANE: Well, I can't give you a number because that's very
5 difficult to predict. We have a new administration, right, so that will -- we'll have to
6 see how that starts to develop and see if their interest in meeting the needs of
7 these countries is the same. And so, if it continues along the same path I think we
8 had four new countries come in. I would think we're just as likely to get four more
9 if I think about it because there are more than 40 countries that have been
10 identified as new entrants.

11 I wouldn't want anybody to bank on this because this is purely speculative,
12 but there are more than 40 countries who are new entrants and of those I think the
13 IAEA has been saying maybe 10 or 12 have moved along more quickly than
14 others. And of those 12, five are moving even on a quicker path.

15 I think in that group there are a few that we haven't seen 123s with and
16 those 123s could move more quickly than others. So, we could have just as
17 many, but it largely depends on -- it's a lot of effort on the part of the Executive
18 Branch as you've seen, the President and the Executive Branch. They lead these
19 and we are technical support and then provide our views at the end. So, it's very
20 difficult to predict, but that's the best the best I can do.

21 CHAIRMAN KLEIN: On slide 7 you had talked about the pilot
22 assistant projects. With respect to that program are the countries sharing

1 information with neighboring countries as you had expected?

2 MS. DOANE: Yes. We were very excited to have some -- I think
3 Jack Ramsay is here and he deserves a lot of credit for this program. The
4 Commonwealth of Independent States, we had poured a tremendous amount of
5 effort into countries, for example, Armenia and what we saw is that the Armenians
6 were then willing in turn to provide regulatory support.

7 An interesting outcome that we didn't expect was the Armenians were
8 willing to go and work with the Vietnamese when we held a workshop and we were
9 going over regulatory issues. So, you never know how the pairings will be. It's
10 turned out to not just to be regionally focused or you don't just get a benefit for the
11 region, but you're actually seeing a benefit to anybody who's similarly situated as
12 long as we're willing to bring the groups together.

13 So, yes, we have seen both regional support and support with similarly
14 situated countries. It's been very interesting.

15 CHAIRMAN KLEIN: Bill, on one of your slides you had the headline
16 "Operating Experience" and a lot of activities underneath that. Are you going to
17 develop a similar program for Construction Experience?

18 MR. BORCHARDT: In fact, it's under development now. There's
19 several activities related to both MDEP and there's a new working group as part of
20 the NEA, the working group on the regulation for new reactors, which one of its
21 primary reasons for being created was to expand the information to a broader
22 population of nations beyond the 10 that are in the formal MDEP program.

1 They're working on gathering all that kind of operational construction
2 experience, getting it into some kind of database or some kind of a form that's
3 easily drawn upon by whoever is interested in the program. It's one of the primary
4 work activities underway.

5 MR. HOLAHAN: I would just add that, I guess, a year or maybe two
6 years ago we thought about whether there should be two separate programs -
7 operating experience, construction experience. I think we've come to the point
8 where there'll be a fully integrated program. We'll use information notices. We'll
9 use all the tools of the operating experience program for the new reactors as well
10 as for operating reactors. It seems to be working very well.

11 CHAIRMAN KLEIN: Good. Well, Gary, obviously MDEP has been
12 very exciting and dynamic. You now have two reactors you're looking at, the EPR
13 and the AP1000. What's the sense of the group? Do they want add any more or
14 is that sufficient for the moment?

15 MR. HOLAHAN: Well, I think the group was satisfied to write some
16 rules about how to get in the club. The rules call for there to be at least a third
17 country actively involved; otherwise, this is more or less a bilateral activity, which
18 we already do quite frequently and I think pretty well.

19 Obviously, there's a lot of marketing going on. Obviously, Westinghouse
20 and Areva have been very active internationally. At some point the Pebble Bed
21 design could -- it's actively under consideration in South Africa. If it is the choice
22 of the Department of Energy as their new generation of nuclear power plant then it

1 would be in the U.S. also.

2 There's been some other talk about -- the Chinese have a Pebble Bed. It's
3 not exactly the PBMR, but it certainly is similar. So, there are a couple of
4 opportunities.

5 The ESBWR, the GE ESBWR, was pretty close. Being under consideration
6 obviously in the U.S, but also in the U.K. We just have to see how these develop.

7 There's a possibility actually that the ABWR because there are ABWRs in
8 Japan and there's an ABWR under application in the U.S. makes two. If another
9 country had an ongoing program with ABWR that could also end up developing
10 into a group.

11 CHAIRMAN KLEIN: Thanks. Commissioner Jaczko?

12 COMMISSIONER JACZKO: I just want to follow up on the IRRS
13 discussion. I think what I'm hearing is that we -- Commissioner Lyons asked the
14 question of whether our self assessment was good enough. I guess I'm kind of
15 hearing the answer that it probably wasn't. We're going to do a second self
16 assessment.

17 One, I guess I'd be interested in knowing how much that's going to cost us,
18 whether that's budgeted and how we're going to get it right the second time.

19 MR. VIRGILIO: This is Marty Virgilio again. What I think is if you
20 look back in time when we did our original self assessment it was the beginning of
21 the IRRS program and it has evolved considerably since we did that self
22 assessment. Today, they have -- Commissioner Svinicki and I have joked about

1 the eight modules, but I think there's a much more structured program today then
2 when we were first engaged around this.

3 COMMISSIONER JACZKO: So, we're going to do a second one?

4 MR. VIRGILIO: I think we should. I'm going to make this
5 recommendation to Bill. We haven't had a chance to really talk through this.

6 COMMISSIONER JACZKO: What are we talking about for
7 resources then for that?

8 MR. VIRGILIO: I don't know yet. That's something that we will have
9 to cost out, but I believe it can be done within the resources that are currently
10 allocated for the IRRS in 2009. This is a 2009 activity to prepare us for the 2010
11 IRRS.

12 COMMISSIONER JACZKO: I guess the last point then or the last
13 part of the question. I guess what I'm hearing is you're going to benchmark this
14 now to more current practices for self assessment. So, we're comfortable that this
15 one will be more useful to us as we go forward?

16 MR. VIRGILIO: In February 2008 the IAEA documented the IRRS
17 process. I think it's now much more stable again around what they call these eight
18 modules. I think it's a much better target today than what we had to shoot at when
19 we did our original self assessment.

20 COMMISSIONER JACZKO: I appreciate that. I'm not necessarily --
21 again, depending on what the resource is, would be convinced that the right way
22 to do it would be to use staff outside of the agency. I think in a way the purpose of

1 the self assessment is for us to do an internal reflection and it may be more useful
2 if we have our own staff doing it rather than the reserve cadre.

3 I'm not sure that -- that will be more of an independent assessment rather
4 than a self assessment, I think, but that's something we can discuss further.

5 I wanted to turn to the 110 import/export rulemaking. There's a couple
6 issues there. I'm very interested in seeing this rulemaking. In particular, in light of
7 some of the experience we've had with the Italian waste imports. I guess a very
8 specific question.

9 At this time is the staff considering rewriting that -- we're adding four
10 provisions in our import/export Part 110 that deals specifically with imported waste.
11 One of those provisions deals with -- I think the phrase is something like "if a
12 licensee is willing to accept it" -- that's pretty strange words for a regulator, I think,
13 to have in their rules.

14 Is the staff planning right now to rewrite that specific provision to be
15 something that's a little bit more specific and perhaps easier for the agency to
16 apply in a given situation like the one that we have right now where there seems to
17 be some ambiguity about what it means for a licensee to have -- be willing to
18 accept a facility?

19 MS. DOANE: I don't have the language in front of me, but that
20 language mirrored a code on waste. The provisions in our regulation for accepting
21 nuclear waste were following -- well, there's the Convention, the Joint Convention
22 that sets up the provisions for waste which the U.S. has agreed to follow. But

1 specifically what happened was there was a concern that waste would go to
2 countries that wouldn't be prepared to accept it. They wouldn't have the regulatory
3 structure or they wouldn't have the physical structures to safely dispose of waste.

4 So, these provisions developed from not so much that there was a concern
5 in the United States that we wouldn't have that ability and so that language was
6 really -- we knew that it would be highly regulated so to speak in the domestic -- by
7 the domestic program and it was really to just make sure that there was someone
8 in the country that would be willing to accept it.

9 That's why the language is written the way it is. It really was following
10 international standards. It has raised some concern on our part, but -- we didn't
11 anticipate this, but what if someone is willing to accept it, but let's say an outside
12 compact, for example, who is asserting jurisdiction says that they're not allowed.
13 Then it does become very confusing.

14 COMMISSIONER JACZKO: I appreciate that and I certainly hope
15 that the staff will take a look at that when they propose the rule because I think if
16 there is some way that we can tighten up that language to be clear, again, perhaps
17 how a compact would play -- again, depending on how some of this may play out
18 in the courts.

19 If we can certainly clarify that ourselves I think it would certainly be helpful
20 as we go forward with these issues in the future. Again, I don't know -- I'm not
21 suggesting what I think the answer is, but I think it's a good one to -- I think that
22 perhaps that particular phrase that's in there now has served its purpose and we

1 can use something more effective.

2 Also on this topic one of the issues that's come up recently is again issues
3 of notification to the states and perhaps even to compacts. I'm wondering if you've
4 made changes or thought about making changes to where we're establishing the
5 thresholds for notifying states of waste importations and at what level of material
6 that notification is made or not made.

7 MS. DOANE: Well, now that we've seen a greater sensitivity, we're
8 notifying whenever there's any material, I think -- my licensing staff is here, but
9 recently we notified them of really a very small amount of material going. We just
10 feel like erring on that side was probably better. So, we'll have to as we go
11 forward get some consistency in applying those regulations.

12 The waste cases - every one is different and it's very difficult to create a
13 process, an overall process that would be applicable to each case, but we have
14 become very sensitized to this issue. We notify if we know that waste is going to a
15 compact. We're now notifying them so that we have their views early in the
16 process.

17 This is also an open public process. We do notice -- we put waste cases in
18 the Federal Register so there is ample opportunity and we've been gaining a lot of
19 press inquiries and things like that, so we think that notice is working as well.

20 COMMISSIONER JACZKO: Good. Well, I appreciate that. Again, if
21 there's things we need to do to further clarify -- again, if there are thresholds or
22 appropriate threshold's I'm certainly willing to look at that. Again, I think it just may

1 be an issue that any improvements we can make would be helpful, again, just to
2 clarify when we're going to do notifications and when we're not.

3 Gary, I have a question on MDEP. You talked about perhaps having new
4 design groups and kind of a threshold for that. I'm not sure if that reflected a
5 membership within MDEP or if you're a member of MDEP then you get to be in a
6 design group. I guess it leads me to a broader question.

7 Are there folks that are out there right now who not members of MDEP that
8 have expressed an interest? And if yes, what are we doing about that?

9 MR. HOLAHAN: You're correct. The rules of the game that I was
10 expressing were members of MDEP of those 10 countries for being on the design
11 specific working groups. The original constitution of the group of 10 for MDEP was
12 those actively involved in the new reactor activities. And in some cases it was that
13 the reactor design was coming out of that country.

14 Originally, the interest from Canada and South Africa was because of the
15 Pebble Bed design and the ACR design. In those two cases it's actually evolved
16 to where they're looking at light water reactors as well.

17 The Steering Committee does discuss this issue occasionally. We've had, I
18 would say, informal interactions with other regulators saying, "How do I get into the
19 game?" In general, the policy group at the meeting which has been annual in the
20 past, I don't think a decision has been made about whether there will be one next
21 spring or not.

22 Unusually the policy group gets together. It's sort of like the 10 existing

1 members vote on whether the next country would be a valuable asset to the
2 group. I think there hasn't been a good test case yet.

3 What I would think is a relatively mature regulatory authority with a reactor
4 design or application in front of it similar or the same as those to the existing
5 group, I think that would be a likely candidate to be considered by the policy group.

6 I think there's a great reluctance to take on the role that IAEA has set out of
7 taking countries from entry level and beginning to develop a program. The MDEP
8 is really intended to maximize and optimize the work of the already pretty mature
9 and independent groups.

10 But I see no reason why a number of those that are countries with existing
11 programs, existing regulators which are beginning to think about new reactors are
12 not good candidates over the next few years.

13 COMMISSIONER JACZKO: I appreciate that. Certainly, one of the
14 concerns that I do have with MDEP is that this becomes too much of a shortcut for
15 countries that don't have mature programs. I'm glad to hear that the ideas for
16 more mature programs to maximize their effort because I think we can get into
17 perhaps a very difficult situation if we're allowing countries in who have an
18 interests but don't really have the ability to contribute and then walking away and
19 saying, "Okay, we participated in MDEP and we're okay with the design." And
20 then they build it and they have no idea how to regulate it and oversee it. That's a
21 real concern that I have as we would expand the membership. I have a couple
22 more questions.

1 MR. HOLAHAN: I think that's an understood and shared concern
2 among the participants. It is a difficult issue on how to get from entry-level to
3 being this independent and strong regulator. MDEP is not meant to be a shortcut
4 to do that.

5 COMMISSIONER JACZKO: Appreciate that. Thanks.

6 CHAIRMAN KLEIN: Commissioner Lyons?

7 COMMISSIONER LYONS: Margie, you mentioned that the foreign
8 assignees had been as high as 28 and they're down to five now. I've been
9 impressed everywhere from interactions with international counterparts at RIC to
10 occasionally on travel to see the number of very responsible positions in other
11 countries that some of those assignees had evolved into.

12 I guess that's a way of saying that I would be very supportive of trying to
13 find ways to increase the number of foreign assignees. I think it is a way of
14 instilling some of the attributes that we hold very strongly and trying to instill them
15 or encourage that they be accepted in other countries.

16 You mentioned it's resource intensive and I don't doubt that. Has there
17 been any consideration to how to make it less resource intensive? Or do you see
18 any approaches that can let us increase that number without in some sense
19 sinking the ship with the resources?

20 MS. DOANE: The Commission did send a very strong signal last
21 year in the same regard that you were impressed by the foreign assignee program
22 and you thought that we needed to meet as many of the requests as we could.

1 In response to that we looked at what the most resource intensive or the
2 most lengthy part of the process is, which is a lot of the reviews that have to take
3 place. It's not our agency, but other agencies and we looked at ways to cut down
4 on that time.

5 I don't have specifically how much time, but I believe we've cut it actually in
6 half for a country and maybe even a little more for countries that don't raise
7 significant issues. For countries that raise significant issues with other agencies,
8 it's nearly impossible to cut down the review time, but that's what's changed most
9 dramatically.

10 That spike of 28 was after the Soviet Union broke up and we saw a number
11 of countries that already had nuclear power plants in their countries come in with
12 many foreign assignees. I think for one country I think there were six. That spike
13 is a little bit -- a number that you won't see.

14 In fact, we may host several assignees from -- I believe China has
15 requested to have maybe six at one time. You'll see these numbers jump in a
16 similar way, but the foreign assignees that you're seeing now are for long-term and
17 there aren't as many of them. And even when there was 28 there weren't those
18 long-term assignments.

19 I don't think you'll ever see 28 -- actually, I shouldn't say that, but that was
20 really a phenomena of the time and it could be, but that would be the future. I
21 don't see that now.

22 Certainly, we'd like to at least double that. I shouldn't make any promises

1 here, but it looks like that's what we'll have if you see the foreign assignees that
2 are in line to come in and have their security clearances.

3 Part of this is also on the regulators' side, the other side. They're not
4 sending people as quickly because they've got demands on their program as well.
5 There's always more we can do, but that was the area we focused on first and it's
6 yielded some results.

7 MR. BORCHARDT: If I could add just a couple points related to that.
8 One is there's a space issue. We need to find a place for them to work and we're
9 in a difficult situation. The other one --

10 COMMISSIONER LYONS: It doesn't have to be headquarters or at
11 least I hope we look at other options.

12 MS. DOANE: We're using all of them.

13 MR. BORCHARDT: One thing that I'm especially sensitive to is --
14 one of the most difficult jobs in this agency is first-line supervisor. When you bring
15 one of these people in, that's an immediate long-lasting demand on their attention
16 because it requires more supervision. There's security aspects to it.

17 Nothing is simple and so you just brought in a new employee that requires
18 probably deservedly a little more attention onto somebody who's already pretty
19 well loaded in their workload. I'm talking about the first-line supervisor. It's
20 something you need to take into consideration as we try to come up with a
21 reasonable plan.

22 COMMISSIONER LYONS: I'm going to try to cram in one more

1 question before the clock goes to zero, probably for Margie. There's been a fair bit
2 in the press lately about interest in the European community in taking some sort of
3 EU or EC centric approach to nuclear safety.

4 I have no idea where that could lead, but I could imagine that if it were to
5 come to some fruition it would probably dramatically change some of our
6 interactions with other nations perhaps. I just don't know.

7 I'm just curious if within IP you're following this and if you have -- to ask you
8 to guess how it will turn out isn't fair, but I am curious if there's any thoughts on
9 where this may lead and more importantly how it will impact us and nuclear
10 safety?

11 MS. DOANE: I think you're right. We've seen the same thing in the
12 press and we have been trying to follow it very closely. Our counterparts, our
13 European counterparts, have been giving us apprised of these issues as we're
14 going forward.

15 It will have an impact if they were to come up with uniform directives. Just
16 like the HASS -- I don't know if you remember this, but the HASS directive put the
17 code of conduct on the safety and security of radioactive sources. It ended up
18 having a standard that was somewhat different and created a lot of confusion for
19 the international community and for us as we were trying to put our plans in place.

20 Also, there's some indirect cost to it in that we have relationships that we're
21 trying to harmonize standards through these different programs like MDEP. This
22 is what we saw with the HASS directive, for example.

1 Our assistance programs, our cooperation programs were all affected, but it
2 also comes back to the IAEA and affects standards there. This is a community of
3 non-nuclear power programs and nuclear power programs. There's very
4 interesting politics at issue.

5 So, I would say I guess that yes, we are watching it. We are trying to find
6 ways to make sure that we have a better opportunity; maybe attending some
7 meetings or other avenues to really understand what's going on. We're also
8 making a point of having conversations with our counterparts to keep apprised of
9 these activities.

10 COMMISSIONER LYONS: Thank you.

11 CHAIRMAN KLEIN: Commissioner Svinicki?

12 COMMISSIONER SVINICKI: I appreciate Commissioner Jaczko's
13 questions on MDEP and kind of eligibility and membership. When I first was
14 hearing about MDEP when I came here I've watched even over the course of the
15 months depending on when the document was produced. You see, I think, a
16 slightly different terminology used for the objectives of MDEP.

17 I keyed today, Gary, when you talk about you were using Digital I&C as one
18 of the subgroups and you used that as your example. You talked about
19 agreement on high level principles. Again, I'm not picking on -- I'm beginning, I
20 think, to understand the complexity of both attempts at harmonization, but then
21 you used a term which was "convergence", which I see as a kind of a half step
22 back from harmonization.

1 Harmonization was described to me as an objective of MDEP when I first
2 learned about it and now you talk about, well, we're going to agree on some
3 high-level principles. I mean this in the most earnest way, but as MDEP moves
4 forward and the complexities of it are kind of right in everyone's face is a harsh
5 truth about how hard it is to harmonize and perhaps even to converge.

6 Is the overall objective -- is success kind of being redefined or is it just that
7 there's a realization it's going to take longer to get to the ultimate objective? Is any
8 of what I've observed even fair in terms of it's been a little bit changing over time?

9 MR. HOLAHAN: I think it's fair to say that the MDEP participants are
10 a very pragmatic group. It started out with some ideals about convergence of
11 requirements and the like, but it's recognizing that a lot of the reactor designs
12 we're looking at are on our plates today and we expect to be completed with a lot
13 of those review activities in a few years. There are practical considerations.

14 In the Digital I&C area, for example, there's a general feeling that you can't
15 wait for standards to be developed because in a lot of detailed way, a lot of those
16 standards become obsolete by the time that they've been endorsed by everyone.
17 So, I would say the group is taking a pragmatic approach.

18 COMMISSIONER SVINICKI: Are the outcomes still meaningful and
19 beneficial even if they're high level principles?

20 MR. HOLAHAN: Oh, sure. Absolutely. I just think we have different
21 expectations for let's say a commonality convergence, if you will, for Digital I&C
22 then we do for let's say piping and vessels. One has 100 years of experience and

1 we know pretty much what it means to make a vessel.

2 Many of the international codes are in fact derivatives from the ASME
3 codes, so getting them back together, I think, is a practical and achievable goal. In
4 Digital I&C world agreeing on general principles will allow each of the regulators to
5 at least move forward in a relatively comfortable environment, but two, three years
6 from now we're going to face questions that we probably don't currently know.

7 COMMISSIONER SVINICKI: I may be hampered because high-level
8 principles can mean different things. Something as high level as it should work
9 properly. I hope high-level is a little bit lower than that.

10 MR. HOLAHAN: I think what we would do is we will start the highest
11 level to say Digital I&C should be a reliable system and then say, "Okay, can we
12 take it to another level to say all software should be produced with a formal
13 validation and verification system? Can you agree on that?" We'll start to drive it
14 to another level.

15 I think our goal is to test the commonality by driving it further and further
16 into detail. But I'm convinced that we're going to get to some level for which each
17 country is looking at a different system and it has different features. You just won't
18 be able to come to agreement on issues and technicalities that are too
19 changeable.

20 COMMISSIONER SVINICKI: Okay. I've always been a little dubious
21 that we could get to ultimate harmonization. I knew it would be hard. I just
22 wondered if we were walking entirely back from the objective. It sounds like we're

1 not, but it's going to take as long as we thought it would.

2 MR. HOLAHAN: Yes.

3 COMMISSIONER SVINICKI: Okay. The other thing I kind of broke
4 my thought into two points here. I was mentioning Commissioner Jaczko talked
5 about eligibility and who participates in MDEP. I think it might have been on one
6 of Bill's slides that he talked about the IAEA general conference theme for the new
7 entrants as Margie has talked about, we need countries that are more experienced
8 and need to provide assistance.

9 And then the next thought was an example of the U.S. providing leadership
10 to these new entrants in MDEP. I just want to echo Commissioner Jaczko's point
11 that I think there may be some benefits to new entrants of the fact that others are
12 doing MDEP. I'm not sure I could think of it right now off the top of my head. It's a
13 very different purpose and a different program. So, I appreciate that he clarified
14 that. Thank you.

15 CHAIRMAN KLEIN: Gary, in terms of the MDEP countries do you
16 have some of the countries that are very active and some that are not very active?

17 MR. HOLAHAN: Actually think I've been surprised that most of them
18 have been quite active. I would say that probably eight out of 10 are active in
19 those generic areas where they're allowed.

20 There are a few issues. For example, it's pretty clear that the pressure
21 vessel code used in the Russian Federation wasn't derived from the ASME. It was
22 derived from a completely separate set of technical bases and that makes it more

1 difficult for them to participate in that activity.

2 All the things that are talked about by the other members are not entirely
3 meaningful and useful to them. I think each of the participants decides what is the
4 most useful to them based on their circumstances.

5 Beyond that, some of the members I think to be frank, the Chinese have
6 had a number of travel and internal changes going on in their program that has
7 made it difficult for them to be fully participating in every meeting. We had a very
8 effective video conference with them not so long ago, a few months. I think it was
9 this summer. And I think they're very committed to the program. They're moving
10 forward.

11 I think it's still not easy for them to participate in all these activities, but I
12 think the desire is pretty uniformly high.

13 CHAIRMAN KLEIN: Thanks. Well, I have a question for each of the
14 people at the table and I'll start with Margie. Not counting money, what's the most
15 important thing that we should do to enhance the international program? Money is
16 too easy of an answer.

17 MS. DOANE: What's the most important thing? I think at this point
18 to enhance the program, I think support my initiatives in the future to improve our
19 administrative aspects. Administrative isn't the right word and improve probably
20 isn't the right word, but to strengthen. Our administrative staff right now is under a
21 tremendous burden because everything has increased and we're such a small
22 office.

1 I need to work with them to make sure that they have the resources
2 necessary and the right support. That's probably the best thing you could do for
3 me right now. I think it would help all of the offices because the staff, the staff in
4 our office then supports all of the activities in the other offices, not just the
5 Commission trips. That's an area that it grew much quicker than we had
6 anticipated. So, you'll see it and if you could support it that would be a huge help.

7 COMMISSIONER JACZKO: But you don't need money?

8 MS. DOANE: Is FTE money? I think I can do other things and
9 stealing from other people's staff or something. I don't know. Rotations? We'll
10 see.

11 CHAIRMAN KLEIN: Bill, what do you think?

12 MR. BORCHARDT: I think from my perspective it's to recognize the
13 international activities are an integral part of our domestic responsibility. For too
14 long I think we've thought about our domestic responsibilities and then
15 international was something else. We tracked it differently. We managed it
16 differently.

17 Really, we're now in a world where it's all together. It's one thing. And for
18 us to do the best job we can to carry out all of our responsibilities, an important
19 part of that is international engagement.

20 And to stay proactive so that we pick and choose proactively what we want
21 to be engaged on and not just always be responding at the last minute to some
22 request that we don't foresee a domestic purposes for.

1 CHAIRMAN KLEIN: Gary?

2 MR. HOLAHAN: Well, I agree with both of those, but I can have my
3 own also. I think the reality is that the NRC is a role model for regulators around
4 the world and probably a really important thing that we need to do for international
5 activities is to be a good role model for the staff, for the Commission, for all of us.

6 To do our jobs and do them well I think probably reflects in places that we
7 don't understand and it has meaning to a lot of other agencies and a lot of other
8 areas that we may never hear the details of, but I think it's very meaningful.

9 CHAIRMAN KLEIN: Thanks. Commissioner Jaczko?

10 COMMISSIONER JACZKO: I had a couple specific questions, but I
11 would just follow up with Gary on one of the things that I learned when I first came
12 here. As Commissioner Svinicki indicated you learn things you didn't anticipate
13 learning and one of the things I learned was really the fact that almost in every
14 country I think the U.S. is viewed as really the world's foremost nuclear regulator.

15 I think we continue to be a leader and I think it's certainly important that we
16 continue the international programs and the international activities we do because
17 we really are a role model, I think, as Gary said. I think that's really a testament to
18 the work that you do, the work that your offices do, and really the work that we do
19 as an agency here domestically.

20 So, it's really, I think, good to see and I continue to hear that whenever I
21 meet with people or even people here domestically that they continue to say that.
22 I think it's really something you should be proud of.

1 An area where I also think we have been a real leader and it's not
2 something we've really touched on yet, but that's in the source security arena.
3 Keeping my fingers crossed, but in about two months I think we're going to be able
4 to say that will have fulfilled yet another element of the Code of Conduct when we
5 have National Source Tracking System operating.

6 I think that really will place us in a unique category for countries because
7 we will -- well, there may be others who say they have an inventory system. I don't
8 think there's any country right now, perhaps I'm wrong, that could really say that
9 they have really implemented as many elements of the Code of Conduct as we
10 have. And I think that's really, again, I think something we should be proud of.

11 Which leads me to a question perhaps. What can we do to continue to
12 ensure that we keep the pressure on for other countries to continue to fully
13 implement the Code and for more countries that are currently implementing parts
14 of it for them to participate and get more and more involvement?

15 MS. DOANE: Just to make sure -- I know our Canadian colleagues
16 sometimes tune in, so I'm going to make sure that I -- they have implemented
17 probably just as many aspects of the Code at this point and they have something
18 similar to the National Source Tracking. So, I'll just give a plug for them and there
19 are probably other countries that have met as many milestones.

20 What we need to do -- it is setting an example by continuing to go to the
21 conferences. We've identified a number of issues. We did this last year. We
22 identified a number of issues where we saw a divergence of countries or where

1 things weren't working and we can identify those in advance of the conferences.

2 There's a lot of support through the interagency for the Code of Conduct.

3 And so, again, the proactive role there is to identify the issues beforehand,
4 put them on the table for the international community and then attend with both
5 technical offices and international programs to make sure that we then advance
6 those issues, bring them back.

7 We also have something to learn because we were the first to go out with
8 our rulemaking on the Code of Conduct and other countries are implementing it
9 differently.

10 Our industry will tell you that they, for example, pay significant fees that
11 other countries don't have and have issues that they would want us to resolve.
12 So, the issues will continue to go on, but I think the best thing for us to do is
13 identify those issues and where there's an international solution bring them to
14 these conferences.

15 So, participating in those conferences and again looking at our own
16 implementation of the Code to make it harmonize with the rest of the world where
17 they are doing things differently once they do implement.

18 COMMISSIONER JACZKO: That's good to hear that that work is
19 going on. As I said, I think it's an important area and one where we -- there
20 probably will need to be continued vigilance, I think, on our part and certainly in
21 these international meetings and as there are periodic updates for the
22 Code.

1 The last question I had and this perhaps gets to follow up from the
2 Chairman's question. Margie, you talked a little bit about resource challenges and
3 the burdens on your staff with a lot of the extra work.

4 I'm wondering if you could -- maybe not now, but perhaps maybe in a
5 follow-up to this meeting -- think about what we would want to do to start to
6 perhaps prioritize and maybe if you have ideas now as we get more requests, do
7 we want to be more involved in countries that are at the very basic levels, perhaps
8 a country like Vietnam which has expressed interest in developing their program?

9 Is that a more useful place for our engagement or with a country that is in
10 the middle of their development and needs a little bit of help to get to that mature
11 level? If you have thoughts on it now, I'd certainly appreciate it, but if not maybe
12 something in a follow-up.

13 MS. DOANE: Okay. Just very briefly. We look at these countries
14 kind of on a continuum. Some countries are just thinking about it to all the way to
15 those countries who are building U.S. technology.

16 By far, the most resources are on those countries that are building U.S.
17 technology that already is the way it is, we can actually touch those other countries
18 that are just thinking about it with very tiny resources. Working with the
19 interagency we can really meet their expectations actually with not as much
20 difficulty.

21 But we are -- in the out years it will become more and more burdensome as
22 they move into different categories. We've positioned ourselves really for 2009

1 and 2010 to where we think we need to be. We had to predict which of those 40
2 that we've talked about; which ones will be serious and when they move into the
3 more what I'll call "resource intensive" categories.

4 I think we are positioned right now and that's essentially what we did. We
5 just stepped back and said we can always build in timelines. Maybe we can't meet
6 the demand now, but we can meet it later. That's a lot of what happens with
7 foreign assignees.

8 Mentioning that Bill's issues were very good issues. We have to be careful
9 how many we bring in to not over burden the domestic program. There's a piece
10 to that. There's training. There's foreign assignees. There's all kinds of different
11 issues and we've laid it all out and I think are well-positioned.

12 We've got a lot of support from the Commission to put us in that place. So,
13 we're budgeted right now for at least '09 and '10. I think we're in a very good
14 position.

15 MR. BORCHARDT: I think we are one of several like-minded
16 experienced regulatory bodies and this is where IAEA can play the valuable role
17 so that we don't have to necessarily go to each of those countries.

18 We can participate and as long as we're comfortable with the message
19 that's being sent in these various kinds of workshops that we'll pull our full share.
20 We'll contribute, but we don't have to do it independently or separately for each
21 country that's interested.

22 COMMISSIONER JACZKO: As we look forward and perhaps

1 beyond 2010 you said the bulk of our resources is really in a lot of this
2 international arena, is with countries that have U.S. technology. As U.S.
3 technology becomes more mature doesn't it make sense to start thinking about
4 changing that breakdown a little bit, so we're dedicating less resource to that
5 aspect and more resources to some of the other developing and emerging nuclear
6 technologies?

7 MS. DOANE: It's just a function of the need. The need is greater if
8 they're building U.S. technology right now, but what we'll see -- what I think we'll
9 see and what I hope through MDEP and these other programs is eventually what
10 you want to see is countries like, for example, China. They're the first to build the
11 AP1000.

12 As they get their program moving then our expectation would be that the
13 training -- a lot of the training and the training ground for AP1000 for builders
14 around world -- Gary can speak or Bill can probably speak on this better than I
15 can, but when these plants are being built around the world, they're going to go to
16 China and seek the same kind of intense help with their programs.

17 We'll always be, I think, we're seen as a leader. We have the largest
18 nuclear program in the world as we've said several times today. And so, they will
19 come to the U.S., but I think that will wane to some extent as others become more
20 experienced in our technology and in fact build it before the possibility for one
21 being built in the U.S. if they progress the way that they're scheduled.

22 So, I think that's why it's hard to look out past a couple years, but the

1 resource intensiveness is really because of what the activities -- what activities are
2 necessary.

3 But I think maybe Gary could comment. I think we get a tremendous
4 amount of benefit as well from those interactions.

5 MR. HOLAHAN: Let me speculate, anyway. It seems to me that as
6 time goes on those emerging countries become closer and closer to having
7 regulatory authority and the reactors constructed.

8 At the same time the mature countries like the U.S. are getting past their
9 design reviews. By 2011 most of the difficult design reviews that we're looking at
10 will be done.

11 There may be a natural shift away from the mature regulators looking for
12 the very first time at this new design to these countries who are sort of in the
13 second tier getting closer and closer to actually making decisions.

14 So, I think it probably makes some sense and it probably will happen
15 naturally that our attention sort of shifts in that direction.

16 COMMISSIONER JACZKO: Thank you. Appreciate it.

17 CHAIRMAN KLEIN: Well, I think we're certainly all aware of the
18 nuclear renaissance in the U.S. We see that -- it seemed like for a while every
19 week we were getting new applications, but we really are in an area of interest in
20 nuclear worldwide.

21 I think this is a role and this program is one in which we play a key element.
22 We can certainly help others and we can also learn from others. It's a two-way

1 street where we can all get best practices and make it better.

2 So, thank all of you for your presentations and Marty for your presentation

3 as well. And especially thanks for all of those behind the presenters that do a lot

4 of the work. The meeting is adjourned.

5

6 (Whereupon meeting was adjourned.)