

UNITED STATES OF AMERICA
U.S. NUCLEAR REGULATORY COMMISSION

BRIEFING ON URANIUM RECOVERY

FEBRUARY 20, 2013

1:00 P.M.

TRANSCRIPT OF PROCEEDINGS

Public Meeting

Before the U.S. Nuclear Regulatory Commission:

Allison M. Macfarlane, Chairman

Kristine L. Svinicki, Commissioner

George Apostolakis, Commissioner

William D. Magwood, IV, Commissioner

William C. Ostendorff, Commissioner

APPEARANCES

Federal Representatives:

Jonathan Edwards
Director, Radiation Protection Division

Cliff Rader
Director, National Environmental Policy Act (NEPA)

Benjamin (Frank) Martin
Deputy Chief, Solid Minerals Division
Bureau of Land Management, U.S. Department of Interior

Susan Hall
Scientist, U.S. Geological Survey

Nancy Nuttbrock
Land Quality Division, Wyoming Department of
Environmental Quality

Dennis Yellow Thunder
Natural Resources Technician Oglala Sioux Tribe

Katie Sweeney
General Counsel, National Mining Association (NMA)

Geoffrey Fettus
Senior Project Attorney, Natural Resources Defense
Council (NRDC)

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Waste MANAGEMENT and Environmental Protection,
FSME

Kevin Hsueh
Chief, Environmental Review Branch, Division of Waste
Management and Environmental Protection, FSME

1 PROCEEDINGS

2 CHAIRMAN MACFARLANE: Good afternoon. The Commission
3 meets today to discuss issues associated with the licensing of new uranium
4 recovery facilities? The recovery of uranium is used in the supply of fuel for our
5 nation's nuclear industry. It's also a very important environmental issue to those
6 that may be affected by the increasing number of in-situ recovery and other
7 mining activities that are already underway or being planned. The NRC
8 coordinates with many federal, state, and Tribal partners in our regulation of
9 recovery operations. We also interact with citizens groups on this issue. The
10 Commission is interested today in hearing their perspectives on uranium
11 recovery, and the NRC's role in ensuring their health, safety, and protecting the
12 environment.

13 First this afternoon, we're going to hear from a panel of external
14 folks representing a variety of topics and viewpoints on uranium recovery. Let
15 me ask that each panelist keep their remarks to 10 minutes. We have a great
16 deal to talk about today, and please be respectful of the time, and please pay
17 attention to the timing lights. When they go red, you are out of time.

18 [laughter]

19 We also have a number of ongoing adjudications related to specific
20 in-situ leach sites. The Commission and the panelists have all been provided a
21 list of those issues in litigation, and we've requested the panelists not to discuss
22 any of those issues as they relate to a specific site. I also ask you to consider
23 avoiding the use of acronyms so the public can better understand what we're
24 discussing and me too.

25 [laughter]

1 Following a short break, we're going to hear from a panel of NRC
2 staff on recent licensing actions, environmental review efforts, and associated
3 interactions with the affected public. Before we begin, let me see if any of my
4 fellow Commissioners would like to make any opening remarks. No? In that
5 case, we will push onwards.

6 I'm going to turn the floor over to Jonathan Edwards, who's the
7 director of the Radiation Protection Division at the Environmental Protection
8 Agency, and Cliff Rader, director of the National Environmental Protection Act
9 Division at the EPA. And I note that you are sharing your 10 minutes. Go ahead.

10 JONATHAN EDWARDS: Good afternoon, Chairman and
11 Commissioners. We're pleased to be able to appear before the Commission,
12 and I'm here to briefly discuss the Radiation Protection Division's regulatory and
13 environmental protection activities concerning uranium extraction. We've
14 prepared a slide with three key messages that I'll talk to now. Hopefully those
15 can be presented. Thank you.

16 EPA's Office of Radiation Protection derives its authorities
17 regarding uranium extraction from several statutes. And the three principal ones
18 are the Uranium Mill Tailings Radiation Control Act, or UMTRCA; the Atomic
19 Energy Act; and the Clean Air Act. EPA is an important federal partner working
20 with the Nuclear Regulatory Commission through its licensed activities as well as
21 the Agreement States, and of course the Department of Energy and its role of
22 overseeing closed uranium mill tailing impoundments.

23 Specifically, it's Section 206 of UMTRCA that authorizes the EPA to
24 establish standards for oversight of uranium and thorium milling and byproduct
25 materials in order to protect public health and the environment from both

1 radiological and non-radiological hazards. So that's where under the UMTRCA
2 paradigm, the radiation control aspects are then also directed to co-join with
3 compatibility with the Resource Conservation and Recovery Act, or RCRA. So
4 it's not directly under the RCRA paradigm, but we're directed to write our
5 regulations so that it's consistent with RCRA practices.

6 These health, safety, and environmental standards are contained at
7 40 CFR 192, and that is indeed the regulation that we are presently revising to be
8 proposed to the public for comment. And of course, the NRC implements that
9 along with the Department of Energy. EPA originally issued the standards for
10 uranium extraction in 1983, with the most recent revision in 1995 -- so going on
11 20 years since the latest revision. When these standards were first set, as you
12 are aware, conventional mining and milling was the almost exclusive practice.
13 And of course, in-situ recovery has surpassed conventional milling as the
14 dominant form of uranium extraction in the U.S. and is expected to constitute the
15 bulk of future processing. So to count for this evolution in the industry and to
16 recognize the environmental challenges posed by the significant increase in the
17 ISR operations, EPA is now taking a look at 40 CFR 190, and in the process of
18 proposing updates to our regulation and to those standards.

19 We plan to focus our revisions on ISR and, in particular, the
20 groundwater protection and restoration aspects of ISR operations. In 2011, we
21 asked our science advisory board and sought their scientific and technical advice
22 as an independent advisory body on our rulemaking. And in particular, we
23 charged them for their advice in four specific areas related to groundwater
24 protection at ISRs.

25 First, the design and implementation of groundwater monitoring

1 networks. You know, what would it take to have a sufficient enough monitoring
2 data to be able to establish a baseline and then to look at post-closure, post-
3 restoration conditions.

4 Secondly, we asked them for what advice they had on approaches
5 for characterizing baseline groundwater conditions. Third, what are the
6 approaches for post-restoration groundwater monitoring? And then lastly, their
7 advice on uses of suitable statistical techniques in the environmental data
8 oversight. And, again, this ties pretty closely with the RCRA paradigm in
9 hazardous waste regulation. And finally, the final SAB report was issued last
10 February and is online at the EPA SAB site.

11 Our effort to update the rule has been collaborative. In addition to
12 internal EPA work group from various offices, we've been assisted by the Nuclear
13 Regulatory Commission staff. NRC staff has supported our efforts by providing
14 monitoring data from ISR sites as well as valuable support during our SAB
15 advisory. So this collaboration is important since of course the NRC is ultimately
16 responsible for implementing the environmental standards the EPA sets. As
17 required under UMTRCA, we will continue to consult with the NRC as we move
18 forward with these proposed changes.

19 So quickly, to recap, EPA has reviewed the current health and
20 environmental protection standards for uranium and thorium mill tailings, and it
21 has decided that updates are warranted, specifically for ISR. The agency
22 expects to propose the rule changes that focus principally on groundwater
23 protection and restoration at the ISR sites. And then finally the NRC staff has
24 assisted our efforts, and we really appreciate this collaboration. Thank you for
25 this brief amount of time to speak before the Commission. And I now turn it over

1 to my colleague, Cliff Rader.

2 CLIFF RADER: Thank you. Well, thank you for this opportunity. I
3 am the director of the NEPA Compliance Division. That's the National
4 Environmental Policy Act, which requires agencies to look at the environmental
5 impacts of their actions, and in particular we really focus on when agencies do an
6 environmental impact statement, and EIS. I can tell you that out of my office, the
7 majority of the work and the reviews are done by our regional offices, our 10
8 regions. And specific to these types of projects, it's our Region 8 office in Denver
9 and the Rocky Mountain West. When EPA reviews an environmental impact
10 statement, we look at both what we think are the potential environmental impacts
11 as well as the level of analysis. And we actually give a rating to each EIS for
12 both of those factors.

13 Are the slides available up there or not, because -- actually I don't
14 have one there. Is that the first one? So, out of our Denver office, there's been a
15 lot of effort over the past year and a half or two years to work much more closely
16 with NRC staff, and that's been going very well. The NRC staff has met with EPA
17 in advance of publication of the EISs, and they've been able to share ideas and
18 concerns and levels of what types of alternatives should be looked at, and we
19 really are pleased to see that level of cooperation and see things are really
20 improving.

21 And on the next slide -- the looking forward slide, I believe -- some
22 of the issues that we've looked at are including, you know, options for waste
23 disposal. You know, are looking at potential ways to, you know, improve
24 monitoring of both groundwater and air quality impacts. But again, I think what
25 I've heard from our regional office, that things are going fairly well and they're

1 really looking forward to continuing to cooperate with the NRC staff. And with
2 that, I conclude my remarks.

3 CHAIRMAN MACFARLANE: Okay. Thank you for being ahead of
4 time. Okay, next we are going to hear from Frank Martin, who is the deputy chief
5 of the Solid Minerals Division at the Bureau of Land Management. Mr. Martin.

6 FRANK MARTIN: Ladies and gentlemen, my name is Frank
7 Martin. And we'll talk a little bit about the status of the BLM NRC MOU, which
8 has been in place now since 2009 and is working extremely well. Modifications
9 to enhance coordination, define roles and promote information sharing. If we
10 could have the slides, please.

11 BLM manages about 750 million acres of federal mineral estate.
12 We manage all the mineral estate for all federal agencies, not just the mineral
13 estate, which is -- whose surfaces managed by BLM. BLM also manages 250
14 million acres of surface estate as well. Next slide, please.

15 Almost all of -- currently all of the mining of your operations that we
16 have are under the mining law of 1872. And under that law we have three levels
17 of use: casual use, which requires no notification of the government at all. Notice
18 level operations, which is basically exploration and requires that we be notified
19 but we don't have a permit approval of any kind that's associated with that. And
20 then, finally, the plan of operations, which involves -- is what happens when we
21 have a larger surface disturbance and always, of course, when we have a mine
22 plan that has to be approved. Next slide, please.

23 On March 17, 2012, the Government Accountability Office, or
24 whatever they're currently called reported to the ranking member of the
25 Committee on Natural Resources, the House of Representatives, with a

1 recommendation that the Secretary of the Interior and the Chairman of the
2 Nuclear Regulatory Commission, should enhance our coordination on financial
3 assurances for ISR operations through development of a memorandum of
4 understanding that defines roles and promotes information sharing. And so what
5 we chose to do was to modify the existing -- we jointly chose to do, of course --
6 was to modify the existing MOU. As far as implementing the recommendation in
7 the past year, the NRC and BLM staffs revised the existing memorandum of
8 understanding to strengthen interagency communication, improve the facilitation,
9 and sharing the special expertise and information, and also to coordinate the
10 review of financial assurances within the boundaries of our mutually existing
11 authorities. Next slide, please.

12 The MOU's been modified most importantly to include the actions
13 under Section 106 of the National Historic Preservation Act to ensure the
14 historical sites are properly cataloged and protected contemporaneously with
15 necessary actions and investigations under NEPA, which is what we normally do
16 and I'm sure what you all do as well. Thorium has been added to uranium,
17 bringing all mining and processing of potentially fissionables under the MOU.
18 We've strengthened the MOU language to require each agency to provide the
19 other with the opportunity to participate in all NEPA and Section 106 actions and
20 to combine such actions as much as possible to eliminate duplication and
21 improve efficiency. Next slide, please.

22 The MOU changes encourage both agencies to join together in
23 cooperating on NEPA tasks such as environmental assessments and
24 environmental impact statements and will encourage interaction of our respective
25 experts with attendant cross fertilization of ideas and information sharing. The

1 steering committee charter has been revised to require that technical expertise
2 be available and shared where needed to strengthen each agency's capabilities.
3 Next slide, please.

4 The charter of the steering committee has also been revised to
5 include the improvement of oversight of financial assurance, and this change will
6 focus oversight to avoid inadvertent gaps in coverage for financial assurance and
7 eliminate any overlap or redundancies. So everybody will be protected,
8 hopefully. And the next slide, please.

9 This is just a map that shows the state of Wyoming. We have
10 some projects that are outside of Wyoming, but almost all of them are in
11 Wyoming. And we have nine authorized and nine pending plans of operations or
12 mine plants and 22 authorized and one pending notice to explore for uranium.
13 And as you can see, they're pretty well scattered throughout the state. And, last
14 slide, please.

15 BLM looks forward to continued cooperation -- close cooperation
16 with the NRC in the future as we work together to deliver safe, efficient, and
17 environmental responsible energy to American, and I thank you.

18 CHAIRMAN MACFARLANE: Ok, thank you. Really staying ahead
19 of time today -- so far [laughs]. Just wait [laughs]. All right. Next we are going to
20 hear from Dr. Susan Hall, who is a scientist with the U.S. Geologic Survey and
21 the current chair of the OECD's uranium group, and I would like to just say it's a
22 pleasure to have so many geologists around the table.

23 [laughter]

24 SUSAN HALL: Good afternoon. I'll take care of any of the slot of
25 time that you have to have right now, so.

1 [laughter]

2 No, I'll keep on point. Setting the stage for more detailed
3 discussions to follow, I'll present an overview of U.S. uranium resources and
4 supply. In 2011, 54 million pounds of U-308 was delivered to U.S. producers,
5 operating 104 reactors in the U.S. About 91 percent of this uranium was of
6 foreign origin. Four million pounds was produced by U.S. uranium mines. The
7 source of this uranium was about 20 percent came from Canada; 19 percent
8 from Russia; 18 percent from Kazakhstan, Namibia, and Australia were also
9 large contributors. This mirrors world uranium supply in general. A large
10 percentage of uranium is derived from Afghanistan -- sorry, Kazakhstan. Canada
11 and Australia are also steady, large producers of uranium.

12 If you look at reasonably assured resources worldwide, which are
13 compiled by the International Atomic Energy Agency, Organization of Economic
14 Cooperation and Development, and their biennial red book publication, Australia
15 will continue to be a large source of uranium for the U.S. as well Namibia, Niger,
16 Kazakhstan. U.S. has a fairly large resource -- identified resource -- but much of
17 that is in higher cost categories, which are not currently economic.

18 Of the 9 billion pounds of U-308 that's identified worldwide, 60
19 percent is in mines that are operating or expected to come online in the next 10
20 years. This is what's corroborated by a study that I worked on with Mick
21 Coleman of Energy Information Administration. It is about to be published
22 imminently. And this is about 30 years of supply of 2010 rates of demand does
23 not take into account the reactors that are under construction or planned
24 worldwide.

25 Looking towards -- turning towards the U.S. specifically, the

1 evaluation of U.S. uranium resources is divided -- responsibilities are divided
2 between the Department of Energy, who tabulate reserves, and U.S. Geological
3 Survey, who estimate undiscovered resources. The two programs work fairly
4 well together and they have these -- responsibilities have been defined since
5 1984 at the end of the National Uranium Resource Evaluation Assessment
6 Program that was run by DOE from '74 to '82.

7 In 2008, Energy Information Administration estimated there was
8 530 million pounds of U-308 at \$50 a pound cost category, it's about 10 years of
9 supply. If you double the cost, you more than double the estimated resource --
10 in-situ resource. These resources are identified in Wyoming and New Mexico
11 and in the Colorado Plateau area, as well as Texas and in other non-identified
12 portions of the U.S.

13 In 2013, there are five operating ISR mines, four conventional
14 mines that are exploiting these resources. Conventional mines are concentrated
15 on the Colorado Plateau, and the ISR mines, of course, are in Wyoming, Texas,
16 and Nebraska. There are a number of mines that seem to be very close to
17 production, including two breccia pipe deposits in Arizona and two ISR targets in
18 Wyoming and one in Texas.

19 I'm going to run through the major producers operating in the U.S.:
20 Cameco, Energy Fuels, General Atomics, UEC, and Mestena Uranium. These
21 operators control about 300 million pounds of U-308, which is roughly 50 percent
22 of the EIA estimates in the \$50 a pound cost category.

23 Energy Fuels owns and operates the White Mesa Mill, the only
24 operating uranium mill in the U.S., and they exploit a number of underground
25 deposits around this area, providing feed to the White Mesa Mill. They also

1 operate one of the breccia pipe deposits -- Arizona 1 and a couple more are
2 about to come online.

3 Cameco operates the Crow Butte Mine in Nebraska and Smith
4 Highland in Wyoming. Their exploration strategy seems to be to test targets near
5 their U.S. operations and to develop satellite properties. They have about 102
6 million pounds of resources estimated.

7 General Atomics, under the Cotter Corporation, owns the Canyon
8 City Mill, currently on standby. They most recently operated the Schwartzwalder
9 deposit in Colorado and own a number of properties on the Colorado Plateau
10 area, URAVAN Mineral Belt. But their flagship property, in terms of resources, is
11 Mt. Taylor Mine in New Mexico, which is a 100 million pound deposit. It's quite
12 significant. It's on standby. It has been since 1989 when it was -- it's partly
13 developed as an underground mine. It's located on ground that's culturally
14 sensitive to Native Americans, and the most recent word is it's being evaluated
15 for in-situ leach mining.

16 Uranium Energy Corporation operates the La Palangana Mine in
17 South Texas, shipping their resin beads to their Hobson plant. They've just
18 recently received all the approvals necessary for their Goliad mine, just in
19 December, so I imagine that'll be coming online soon as well.

20 Mestena Uranium, private corporation operating on private -- large
21 private landholding in South Texas. Not a whole lot of information about the Alta
22 Mesa Mine, but it's about 6.5 million pounds of uranium.

23 There's a great deal of activity in the -- intra mountain basins of
24 Wyoming, Nebraska, and South Dakota. They're abundant roll front deposits that
25 are being explored and exploited by a number of companies, known better by

1 people in this room than I, so I'll say no more than that. Most are ISR targets.

2 There is one conventional heat bleached target -- the Sheep Mountain deposit
3 Energy Fuels Mine in Crooks Gap, Wyoming -- Crooks Gap Mining District.

4 New Mexico, most of the exploration and development is still
5 focused on the Grants Mineral Belt, which is a very prolific mineral province in
6 the state. There's another large deposit that is in the central Colorado
7 Mountains: the Hansen/Taylor Ranch Project, a 90 million pound plus deposit in
8 a number of satellite properties. In some places, surface ownership is severed
9 from the mineral rights and last I heard they were proposing to mine the deposit
10 using a hydraulic borehole mining.

11 The largest undeveloped uranium deposit in the U.S. is the Coles
12 Hill Deposit in Virginia. There's a currently moratorium on uranium mining in
13 Virginia, so this deposit remains in-situ.

14 Overall, U.S. exploration and development activity have been on an
15 uptick since 2004 in terms of the number of holes drilled, production, the amount
16 of money spent on exploration and land positions. And U.S. mining prediction is
17 on a slow upward trend as well.

18 Future reserve development is expected to continue on the
19 Colorado Plateau, mostly conventional mine targets. Development requires
20 access to milling. There are some new ISR targets in New Mexico that are
21 working their way through the system as well.

22 A trend that we have just started to notice is in some of these older
23 mining areas: Wyoming, Texas, Nebraska, South Dakota, for many years has
24 been producing via ISR mining methods. The brownfields exploration is
25 transitioning to green fields as some of the deposits are either being defined or

1 condemned. So there's a lot more reconnaissance style exploration going on in
2 the field. And we may see some uranium from phosphate deposits. There are
3 some promising new techniques in terms of the extraction of uranium from
4 phosphate mining streams and fertilizer plants in Idaho and Florida.

5 USGS is working to try to validate the undiscovered resource
6 assessment that was reported at the end of the National Uranium Resource
7 Evaluation Program in 1980. Unfortunately, many of the -- the resource can no
8 longer be validated. The undiscovered resource can no longer be validated
9 because many of the supporting records have been lost over the years. So we're
10 working to -- on forensics to try to recreate these records and to determine if we
11 can rely on these undiscovered resource estimates that are 20 years old. We're
12 doing some detailed work on the Gulf Coast of Texas to that end. And then we're
13 also working to try to evaluate geologic provinces that were not addressed during
14 NURE, in particular, the Metasomatic vein shear zone deposits of the southeast
15 U.S., of which Coles Hill is one representative. We're looking at uranium
16 contained in phosphate deposits, trying to get a resource estimate --
17 undiscovered resource estimate for that uranium. And we are looking at Calcrete
18 uranium deposits that are very important worldwide, have not yet been identified
19 in the U.S. Is there something that -- some geologic factor that's missing that we
20 don't find them here? So we're moving on to that evaluation as well.

21 And I think I am out of time. So if anybody has any questions, our
22 two publications that are due to be released in the very near future -- a USGS
23 scientific investigation report analyzing world uranium resources that was written
24 in conjunction with Energy Information Administration. And there's an article on
25 some of our detailed work in South Texas coming out in Natural Resources

1 Research. I would refer you to them.

2 CHAIRMAN MACFARLANE: Great. Thank you very much. Okay.

3 Next we're going to hear from Nancy Nuttbrock, who is from the Land Quality

4 Division in the Wyoming Department of Environmental Quality.

5 NANCY NUTTBROCK: Thank you. Thank you for the invitation to

6 be here today. My name is Nancy Nuttbrock. I'm the administrator of the Land

7 Quality Division of Wyoming's Department of Environmental Quality. For the next

8 10 minutes, I'd like to discuss with you four points. The first two you had

9 specifically asked for me to touch on, and that's the status of the state permit

10 reviews, and also interactions with NRC on our applications. Should the colored

11 lights allow, I'd like to also talk about potential for a process improvement and the

12 Land Quality Division from this point forward. I'll just shorten it and use an

13 acronym, LQD. The LQD uranium industry work group that's been ongoing for

14 14 months now. So, next slide, please.

15 In no particular order, I'll take you through some of the major

16 permitting activities that the state of Wyoming is working on right now. AUC's

17 Reno Creek project. The Land Quality Division received the mine permit

18 application on January 25 of this year. So by February 25, just a few days from

19 now, we'll be making a determination as to whether that's complete or

20 incomplete. Should it be determined complete, over the next 150 days, we'll be

21 doing a technical review of that application.

22 Strathmore has submitted an application for its Lower Gas Hills

23 project. And, by the way, this is the only project on this list that's a conventional

24 service mining operation. All of the rest are ISR operations. We received this

25 application on October 31st of 2012, we had declared it incomplete and are --

1 had requested additional information from Strathmore, which was sent at the end
2 of December. So we're still in the process of evaluating that application in terms
3 of completeness.

4 UR Energy -- its Lost Creek Project -- we issued a permit in
5 October of 2011; construction on that project began in October of 2012, so that's
6 underway. Uranium One has two projects that we're working with currently. The
7 Ludeman Project was declared complete in August of 2011. We've been going
8 in multiple rounds of technical review with Uranium One and we're currently
9 awaiting a response from the latest technical round of review, and we're nearing
10 the end of the technical review for that particular application. They've also
11 submitted an amendment for their Willow Creek operation and we expect -- we
12 expect to be in full swing with that here in the first or second quarter of 2013.

13 Uranerz's Hank Nichols Ranch -- in July of 2011, NRC issued its
14 material license and construction has commenced. We anticipate production to
15 start sometime second quarter of 2013. Cameco's Smith Ranch, Highland and
16 Reynolds combo -- the Smith Ranch and Highland are currently permitted. There
17 was an amendment to expand into a Reynolds property. We've been working
18 with Cameco to combine what would have been three permits into one permit
19 area, so that's been a major effort. Again, we're at multiple rounds of technical
20 review there and again, we're nearing the end of the technical evaluation of this
21 application as well. Next slide, please.

22 Interactions with NRC on Uranium Recovery applications -- I'll
23 break this into three points: quarterly conference calls, project-specific
24 involvement, and general interest of both of the agencies.

25 Recently, we've merged our conference calls. In the past it had

1 been an instance where the DEQ -- its Land Quality Division, its Water Quality
2 Division, and various federal and state partners would have the same
3 conversations over multiple conference calls over a given quarter. Well, this last
4 month, this last week in particular, we've merged those conference calls in a way
5 be most effective for those people on the phone. Last week we had 30 people
6 on a conference call discussing anything ISR related across the state of
7 Wyoming, and that included many NRC staff, Wyoming's Department of
8 Environmental Quality, Land Quality staff, Water Quality staff, BLM Region 8,
9 EPA. So it was a 30-person conference call and I think going forward those sorts
10 of quarterly conference calls are going to be invaluable to those monitoring the
11 uranium industry across Wyoming. So that's a good move for everybody
12 involved.

13 Project-specific involvement -- NRC staff has been very responsive
14 to the needs of the Land Quality Division in terms of dialogue and exchange of
15 ideas as we collectively move through these application processes. And just by
16 way of example, Uranium One's projects, the Ludeman Project, and Cameco's
17 projects are both -- are both technically complicated and require the input of NRC
18 and many state and federal agencies, so we've really appreciated your staff's
19 involvement to that level.

20 General Land Quality Division and NRC interests -- I have an
21 interest in moving forward with understanding the rules of the state regulatory
22 authority in conjunction with the NRC's in both non-Agreement State status and
23 potentially, given a feasibility study I'll talk about on the next slide, what would --
24 what would that look like if Wyoming was to pursue Agreement State status.

25 And I just -- I think there's a note that I'd like to make here toward

1 the end of this slide that duplicating effort on behalf of Land Quality Division or
2 DEQ's divisions in NRC is just not a sustainable effort. We have to look at better
3 ways of working together and being more efficient. Next slide, please.

4 Potential for process improvement -- two points here. On the top of
5 the slide, NRC program liaison and Land Quality Division Uranium Coordinator --
6 I'd heard in the past that having a local presence from NRC in the western
7 region, particularly in Denver, potentially in Wyoming given the amount of
8 increased activity that Wyoming is projecting to see, would be a big benefit to the
9 industry and to those trying to administer the regulatory authority over Wyoming.

10 Counter to that, I'm looking at the possibility of establishing a
11 position within Land Quality that would specifically focus on uranium activities
12 and do so on a statewide endeavor such that we can realize higher consistency
13 in permitting approaches from industry and a better consistency among the
14 divisions and districts of the Land Quality Division when dealing with those
15 applications. I have a great interest in realizing consistency across the state.
16 This person would also serve as the point of contact for NRC, for EPA, for any
17 other state or federal agency; they would have one point of contact within the
18 state of Wyoming to fully understand what's going on with the state.

19 So the last point on this slide is the Land Quality Division and NRC
20 MOU. Memorandum of Understanding is something that's been talked about
21 over the course of years. Now since submitting these slides to you a week or so
22 ago, Wyoming's legislature is considering a bill that would allow for a study to
23 look at the feasibility of the state of Wyoming becoming an Agreement State. So
24 support for this bill is considerable at this point. Our legislative session ends
25 February 28, so at that point we'll know whether or not the state of Wyoming's

1 legislature has an interest in pursuing such a feasibility study.

2 If, at the end of that feasibility study, it's determined that there is a
3 benefit for the state of Wyoming and its industries to become an Agreement
4 State, then certainly the state of Wyoming would move through that process. If,
5 after the feasibility study, it's determined that it's not a benefit for the state or its
6 industries to pursue Agreement State status, then I think the idea of an MOU is
7 certainly appropriate and that's something that I have an interest in pursuing, and
8 I've been in conversations with your staff and we feel that there's certainly
9 avenues that we could approach for an MOU and definitely topics that we'd like
10 to include in such an agreement. So stay tuned; we'll know more come the end
11 of February. Next slide, please.

12 One thing that I'd like to touch on in the next minute is a local effort
13 that I've -- that I've started. Back in December of 2011, I realized very quickly we
14 needed to optimize the processes between industry and the Land Quality
15 Division. I set up a workgroup; it includes members of many of the uranium
16 players within the state of Wyoming and seven of my staff and the Wyoming
17 Mining Association. We've been meeting monthly since then. We've -- last
18 week, we had our 14th meeting. We meet the second Wednesday of every
19 month for an entire day, and it's amazing what we can get done. It's an
20 energetic, open exchange of ideas, interests, and concerns. Next slide, please.

21 When we met first in December of 2011, I wanted to understand
22 what the hindrances had been over the course of years. What had gone
23 unaddressed, and what could we do to streamline the process? We identified a
24 list of issues and we've been working through those month by month. Most
25 recently, we've been discussing the history of ISR jurisdiction and concurrent

1 jurisdiction and the historical perspectives and forecasting the feasibility of the
2 NRC Agreement State status by way of this new legislation being proposed. I'd
3 open this as an opportunity for NRC and its staff to bring broad issues to
4 Wyoming's uranium industry by this mechanism. We have our dates scheduled
5 through 2013. And I've mentioned to your staff that this is an opportunity to visit
6 with the entire industry in one setting.

7 In closing, I'd like to leave you with a message. Wyoming's
8 uranium's industry is thriving, and the land quality division is actively collaborating
9 with its operators to focus its regulatory efforts on minimizing environmental
10 impacts while supporting the development of Wyoming's resources. Thank you.

11 CHAIRMAN MACFARLANE: Thank you. Okay. Next we are
12 going to hear from Dennis Yellow Thunder who is a natural resources technician
13 for the Oglala Sioux Tribe.

14 DENNIS YELLOW THUNDER: Good afternoon, Commissioners.
15 As just mentioned, my name is Dennis Yellow Thunder; I'm from the Oglala Sioux
16 Tribe on the Pine Ridge Indian reservation in South Dakota. And I'm here on
17 behalf of our Tribal president, Mr. Bryan Brewer, and on behalf of Oglala Sioux
18 Tribe to voice our concerns about the uranium mining process in general, our
19 interaction with NRC and the 106 process, and the other items that are listed on
20 the agenda. To begin, I'd just like to mention that everything we are discussing
21 here as far as uranium mining touches our people very deeply in many ways.
22 When it comes to this type of extractive industries being so close to the borders
23 of our reservations, we feel that impact of those industries in many different ways
24 in respect to our culture, in respect to our way of life, and generally, and more
25 importantly, in the way that it's going to impact our future -- the future of our

1 children, our grandchildren, and actually the future of everyone in that general
2 area.

3 In regards to the uranium recovery licensing process, this morning
4 we are discussing on ways in which we can improve that process in regards to
5 our Tribal people, to our cultural ways. I think the most important way that we
6 can probably I would say improve our -- become a bigger part of that is to be
7 involved in a licensing process from the beginning. From the initial stages of
8 planning, design, and development, the Tribes can be involved in early stage so
9 as to avoid any types of Section 106 processes that may arise in the unforeseen
10 manner whether these projects are being designed and built -- can avoid that.
11 We can avoid any type of, you know, process that might become waylaid or
12 delayed in any way by not addressing these issues in the beginning. So that was
13 one way that we discussed this morning which we can improve or have better
14 report with NRC and the licensing process.

15 As far as the interactions with the NRC, the NRC staff that have
16 come in -- that I have been in contact with -- in my two years of having been a
17 natural resources technician for the Oglala Sioux Tribe, initially not having very
18 much knowledge of the uranium mining processes, the extractive industries, and
19 all of the regulations that are involved in that, it seemed to be kind of a rocky road
20 when it came to interactions with NRC and the Tribes, not only the Oglala Sioux
21 tribe but other various Sioux nations.

22 But as time has gone on, as we have progressed it's always best to
23 try to improve those relationships -- to try to improve how the NRC interacted
24 with the Tribes, and from my perspective, from my point of view, I believe that we
25 are making slow but steady progress when it comes to interactions with the

1 Tribes and how the NRC has approached us on different matters and particularly
2 when it comes to our cultural resources the TCP surveys that are conducted and
3 the importance of those cultural resources to the Tribes.

4 And in this general area, when it comes to this particular area, I had
5 a whole presentation, a whole written type of thing that I wanted to share with
6 you, but when it comes to these cultural resources in the 106 process, it's best to
7 speak directly from the heart and to try to relay the message to you of what these
8 cultural resources mean to the individual Tribal nations. When a project is going
9 to impact some type of culturally significant area, we feel that in our heart. We
10 feel that the vitality, the spirituality, and the life of these particular sites when they
11 are destroyed can never be regained again. The vitality is lost; their significance,
12 their importance to us as people, when they are destroyed, it's lost. It's
13 something that can't be gained back.

14 That is something that I shared with a lot of the members of the
15 NRC staff that has come -- has been so gracious as to come to the Oglala Nation
16 to visit and to consult with us, so to speak. And that was my message for them
17 when I met with them -- was the importance of these sites and the importance
18 that the Section 106 process be followed and strengthened -- the 106 process
19 needs to be strengthened when it comes to these culturally vital areas so that we
20 can avoid any unforeseen circumstances that may arise when it comes to a
21 project carrying on through.

22 So that was my main message when it came to speaking on behalf
23 of our Tribe with the NRC and other federal agencies, with the BLM, the DOT,
24 Federal Highways, Department of State -- it's the same message that I tried to
25 portray to them, was the significance of these cultural sites and the importance

1 that they carry not only for us, not only through history, but that are going to have
2 for future people -- future -- not just for us, but for everybody. For all nations to
3 have their historical sites remain intact so that they are there for the future
4 generations to observe, to believe in, and to carry forward. That was my -- the
5 message that I shared with the other agencies that I have spoken to and I have
6 the pleasure of speaking to many federal agencies. And it's an honor today for
7 me to be here sitting at the table with the esteemed Commissioners -- the
8 Nuclear Regulatory Commissioners and it's an honor for me to have come here
9 to speak on behalf of my Tribe and on behalf of our Tribal president.

10 And I would say that I think we are going to build better relations
11 with the NRC as we move forward from some of the dialogue that we've already
12 had this morning with some of the NRC staff. I'm looking forward to a better
13 rapport, a better sensitivity to these cultural resources, and building a better
14 relationship so that we can move forward for everyone involved -- for all nations
15 that are involved in the name of progress, in the name of energy, we can achieve
16 those goals by working together and seeing the significance of these cultural
17 sites and the importance of these cultural sites. By doing that, we'll reach our
18 goals. We'll reach the goals of the NRC and the quest for energy and we'll also
19 meet and reach our goals for protecting and avoiding and minimizing the damage
20 that occurs to the cultural resources that are already out there and those that we
21 may come across as we do move ahead with the different projects. All of these
22 mines that were mentioned -- the Ludeman, the Crow Butte, Three Crow, North
23 Trend expansion -- we've had contact with these -- all of these different mines in
24 one way or another. Letters come into our Tribe, so we have to address these
25 issues.

1 In closing, I would like to say that I believe that we can build a
2 better future and build a better rapport and build stronger ties with NRC as we
3 move forward. Thank you.

4 CHAIRMAN MACFARLANE: Thank you. Next we will hear from
5 Katie Sweeney, general counsel for the National Mining Association.

6 KATIE SWEENEY: Thank you. I appreciate the invitation to be
7 here today to highlight some of the key issues of importance to the uranium
8 recovery industry. In formats like this, we have to focus more on concerns that
9 need to be addressed rather than processes that are going well, but please don't
10 take my comments today as any indication of overall views of the industry-NRC
11 staff relationship. We don't always agree on everything, but we do find that NRC
12 is willing to listen, not only to industry's views but other stakeholders and try to
13 find solutions.

14 If I can have my first slide, please. One of our biggest issues,
15 pretty much the top of the list, is resource constraints. This is a pretty significant
16 problem. You'll see in the graphics that are upcoming in the NRC slides, but no
17 matter how you slice the pie, NRC doesn't have the resources it needs to
18 complete all the work before it. We see it's kind of a juggling act right now;
19 NRC's trying to deal with the operating facilities and then the applications, and
20 really, that leaves other work getting undone, including NRC guidance
21 documents. An important one for us is the revision of the Standard Review Plan
22 for in-situ recovery operations, and that's supposed to be the Bible for the ISR
23 facilities. And there are some updates that are needed, but that work is being
24 deferred due to resource constraints.

25 NRC staff has begun alerting applicants to the possibility that

1 reviews will be deferred. In fact, one of my members sent me a note yesterday
2 saying they got an email from NRC that indicated that deferrals may be coming.
3 NRC staff cannot predict if a deferral will occur or not or how long an application
4 may be deferred. The response from my member company was, "How are we
5 supposed to do business with all that kind of uncertainty?" So the resource issue
6 is a big one. We do appreciate the fact that staff is supplementing with personnel
7 from other branches and exploring other options.

8 National Mining Association remains committed to assisting and
9 finding solutions to this problem, but we do think this problem highlights the need
10 to wisely use the resources that NRC does have. Two ways of accomplishing
11 that are streamlining regulatory processes and focusing on significant risks. We
12 think there's been some mixed success on streamlining processes. The Generic
13 Environmental Impact Statement, or GEIS, for in-situ recovery operations -- that
14 was something that the industry had pursued and NRC developed that was
15 intended to streamline the application process for new in-situ recovery facilities.
16 We don't think the benefits of that have been fully realized to date. Definitely it
17 was underutilized for the first three applications that came in during its
18 development which led to some significant delays. We did -- I have heard
19 recently, and I think this is heartening, that it is being utilized well for some of the
20 newer applications, but then I also heard from a couple members who said on
21 license renewals the GEIS would also be appropriate for staff or NRC contractors
22 to use, and yet some of the questions they're getting from NRC contractors are
23 those that would have been answered had they looked at the GEIS. So room for
24 improvement with that one.

25 The Bureau of Land Management-NRC Memorandum of

1 Understanding -- took a while for that to get off the ground, but there definitely
2 has been progress made. I think Frank Martin talked well about how NRC and
3 BLM have worked together on cooperation on the NEPA analysis. I did not know
4 that the NRC-BLM MOU had been updated, so that was interesting and I was
5 excited to hear Frank talk about it -- how it now includes the 106 process as well,
6 because we'll get to that because that's an issue that has been causing delays
7 for industry and NRC as well.

8 Performance-based licensing -- performance-based licensing
9 conditions -- those were instituted about a decade ago, and we need to make
10 sure that we continue to maximize the benefits of this approach and not
11 undermine it. Another way to maximize use of existing resources is to expand
12 the use of risk-informed performance-based approaches to ensure that limited
13 resources are focused on higher risk activities. We believe this approach results
14 in a more efficient and effective program that optimizes protection of public
15 health, safety, and the environment. Next slide, please.

16 Somewhat related matter, because costs of course can be
17 contained by wise use of resources, are NRC's fees. Not unexpectedly,
18 applicants and licensees have faced increased costs with the increased activity
19 in uranium recovery. NMA members, however, want to know how their money is
20 being spent and the lack of details on invoices has been a chronic problem. In
21 fact, you don't know how many hours were spent on which part of which reviews.
22 There's just really a lack of information and the contractors' invoices are worse
23 than the NRC invoices. But I just received, last week, a much appreciated letter
24 from NRC's chief financial officer that gives me hope that we can resolve finally
25 this issue, and he indicated that NRC fee invoices can be tailored to meet

1 industry needs when coordinated communications occur between the licensee or
2 applicant, the program office, and the CFO's office. So we look forward to talking
3 with the CFO some more on that and hopefully coming up with a solution and
4 perhaps in the same meeting we can talk about the possibility of developing cost
5 estimates or flat fees for routine activities in the uranium recovery area. Next
6 slide, please.

7 Another critical issue that's been slowing NRC approvals is the
8 National Historic Preservation Act Section 106 process. I think that all engaged
9 recognized the need for a predictable process, but what's the best way to
10 achieve that goal? We have some ideas on improvements and I thought
11 Dennis's was a good idea -- to have the Tribal representatives involved from the
12 earliest is a good one to include. That's a good recommendation. You know,
13 obviously, if there were timeframes or thresholds for substantive consultation that
14 would be very helpful. The question is though should that be done or could that
15 be done through a programmatic agreement or through some type of NRC
16 guidance. I hope to get the letter that I submitted on the Tribal protocol
17 yesterday in earlier so people could be looking at that, but I think it will be
18 included on the website for these materials. But it's National Mining
19 Association's views that a programmatic agreement is preferred over guidance. I
20 think it provides more certainty and it gets all the interested parties involved and
21 provides the opportunity for them to be signatories as well to the programmatic
22 agreement. Next slide, please.

23 Okay, EPA subpart W rulemaking -- this is the Radon Regulations
24 under 40 CFR, Part 61. And why should NRC be involved? NMA thinks that
25 EPA's position is completely flawed legally, and the administrative record doesn't

1 -- that directly contradicts their legal position. And they are demanding approval
2 of evaporation pond construction at new facilities. And I don't -- I think that Cliff
3 earlier, at least on his slides, had -- there was a mention of subpart W and NRC
4 being engaged in helping them enforce that, so EPA's looking for NRC to be
5 engaged as well. We think that this is very similar to when NRC -- when the
6 Commission was directly involved with negotiations with EPA over the revisions -
7 - the rescissions of subpart I and subpart T, and those all related to dual
8 permitting of EPA and NRC over certain issues at uranium recovery facilities, and
9 we think this is another instance where there's going to be dual permitting or dual
10 regulation, and that should be something that NRC should be willing to go to bat
11 about.

12 Last slide really quickly, the pre-licensing site construction, we
13 appreciate the final rule. We know it's out there, but we just would like some
14 additional clarification. In our view, it doesn't prohibit the construction, but it
15 discourages it. But it's up to the licensee to float that risk, but the final rule also
16 says that it can be grounds for denial if the licensee does go ahead and do that
17 preconstruction activities. If the risk is on the licensee and they might have to
18 make corrections to assist or to meet NRC standards, we don't think that that
19 should be the basis for denial, if they're going to make any necessary changes,
20 and we'd just like some clarification on that. Sorry for going over. Thank you.

21 CHAIRMAN MACFARLANE: Thank you. All right. Last, but not
22 least, we will hear from Geoffrey Fettus, Senior Project Attorney for the Natural
23 Resources Defense Council.

24 GEOFFREY FETTUS: Chairman MacFarlane, members of the
25 Commission, thank you very much for having me today, and all of my esteemed

1 fellow panelists. I'll restrict my oral statement to just two points. I won't read the
2 longer piece I submitted for the record, but I hope that's submitted for the record
3 as well as the attached report.

4 The first point I'd like to discuss with the Commission today is one I
5 didn't actually go in, in significant detail in the statement I wrote for today, but it's
6 an important aspect of the larger report that we submitted, and I think were the
7 topic of discussion with you today. Because I think Katie said it right. Today is
8 the day to bring up issues of concern, and that is the need for substantially
9 improved scientific analysis, especially on the geology and the hydrogeology to
10 get after the environmental and public health impacts on uranium extraction and
11 processing, and also the associated availability of that information to the public,
12 to states, to Tribal leaders, as well as fellow federal agencies.

13 So, in order to improve our technical understanding of the impacts
14 of ISL uranium mining, we worked with a hydrologist from the University of
15 Colorado to do some preliminary analysis and modeling of groundwater flow at
16 ISL mines. We have nothing like this agency's resources, although I hear Katie's
17 point that you're under resourced on a whole host of issues, and I would probably
18 concur with her on that. We might have a different set of ideas on how it would
19 come out, but I think we would probably share the same concerns on the ability
20 to get your work done.

21 But in any event, we took a run at it and we did what we could. It's
22 discussed in some detail in our report. We chose to study the Christensen
23 Ranch ISL site, where right now we have no historical or current involvement.
24 What we learned buttressed our desire to ensure that the regulatory process for
25 ISL be substantially improved. Specifically, we modeled ISL mining operations

1 and restoration operations, including groundwater sweep, reverse osmosis,
2 recirculation, and we looked at a prediction in solute movement for an additional
3 20 years after the completion of restoration. And we were somewhat comforted
4 to find out that the initial analysis in this one instance with an enormous paucity
5 of information showed that the spread of contaminants was notable but not as
6 great as we initially feared. That's good.

7 So, where's the bad news? The bad news was the extraordinary
8 paucity of information and a number of caveats that had to go into the modeling,
9 and this was an extraordinarily competent hydrogeologist with the best
10 information that anybody could pull together. So, if our technical expert is getting
11 this information, we expect that the same difficulties would face our colleagues at
12 the Wyoming DEQ, and even NRC regulators or contractors trying to get this
13 information.

14 After describing several limitations inherent in the study as a result
15 of the extraordinarily scant data, we noted that quote, "The diffusion of chemicals
16 out of the immobile region can occur over many years or decades. Thus, even if
17 the water in the mobile zone appears clean, it may become contaminated over
18 time by this diffusive process."

19 So, our experience is consistent with everything we've seen from
20 the work of Dr. Hall at USGS and other places where anybody who has looked at
21 this, the long term environmental health impacts are simply at this level unknown.
22 We know that no single ISL mine has ever restored its water quality to pre-mining
23 water quality. There have been several contaminants that have been returned to
24 baseline or pre-mining water quality, but several have not been returned.

25 In short, our review which was only a preliminary effort done in part

1 to fill the analysis left vacant as we see it by the Generic Environmental Impact
2 Statement indicates that ISL mining degrades the groundwater systems where
3 mining takes place, and does so in a region already suffering from environmental
4 harm inflicted by the extraction of oil, gas, coal bed methane and other
5 resources. It also degrades water resources in an ever more arid and
6 consistently drought plagued region of the county in a world affected by climate
7 change, but as of yet there has been no comprehensive review of ISL industry
8 effective or adjacent aquifers, or an assessment of the potential options for
9 lessening or remediating its environmental harm. Such a detailed technical
10 review is long overdue and certainly beyond capacities of a single NGO, but it's
11 hoped that this paper and my testimony here today can spur the long overdue
12 inner-agency assessment necessary to ensure the uranium mining industry does
13 not repeat the mistakes of the past. Such technical review must take place in
14 order to fully inform the actions we've called for here today, that and this was the
15 point of the short statement I wrote, that the NRC should move swiftly to update
16 the relevant environmental protections for uranium recovery as a whole with
17 specific emphasis on groundwater protection standards for ISL mining. The
18 sooner the improved standards can be put into effect, the sooner the public
19 health and the environment will be protected.

20 EPA's representatives here today talked about a release of a draft
21 rule. I hope in the question-and-answer period we can find out when that draft
22 rule is eminent. I was quite specific in our written statement that as soon as that
23 draft rule goes forward, we expect NRC's long gestating groundwater protection
24 rule can emerge for public review, and then we can finally move forward with
25 providing not only the public the information that we seek on the larger, long term

1 environmental public health impacts, but also the certainty that Katie's clients
2 need in terms of where the environmental protection standards are going to be
3 going. They're decades overdue and it's time to get them out. So, thank you
4 and I look forward to your questions.

5 CHAIRMAN MACFARLANE: Thank you very much. Okay. We
6 will now turn to questions and we will start off with Commissioner Magwood.

7 COMMISSIONER MAGWOOD: Thank you, Chairman and thank
8 all of you for your comments this morning. It's been quite a panel. I think this is
9 the largest panel I've seen since being on the Commission, but it is a very good
10 panel, and I thought I would start by indicating -- I think the Chairman mentioned
11 that we should try to speak plainly for the public to understand what we're saying.
12 But the reality is that the way we regulate ISL properties is so complicated that
13 very few people even in the federal government really understand. So the idea
14 that the public would understand anything that's going on, on this panel today
15 other than, you know, a few details here and there is probably over-ambitious
16 because quite frankly, I've been in government for quite some time, on and off,
17 and I don't think I've seen anything that compares in the scale of the mess that it
18 is.

19 That said, the agencies that are involved in this mess do one heck
20 of a job manipulating it. It's a real tribute to the staff, the NRC, the EPA, BLM,
21 the states, DEQ, that they have been able to pull this together and create a
22 framework which I think, I hope, firmly hope does protect public health and
23 safety. We can't fix the overall framework. Only Congress can fix the overall
24 framework, but within the framework we're operating in I think that the staffs do a
25 very good job collectively.

1 So, first, congratulations to all of you for being so effective in your
2 jobs and making this work. I did have, as I've tried to go through this, I have
3 made visits, or a visit out to Wyoming and South Dakota where I did have the
4 opportunity to meet with the regional offices at EPA out in Denver, BLM, and also
5 of course met with DEQ, John Corra is his name I think. Was that the name,
6 John --

7 NANCY NUTTBROCK: Yes, sir. He has since retired.

8 COMMISSIONER MAGWOOD: He's retired?

9 NANCY NUTTBROCK: We have director Todd Parfitt now.

10 COMMISSIONER MAGWOOD: Oh, okay. They didn't send me an
11 invitation to the party. I don't know what happened. Well please, congratulations
12 on his retirement if you see him, and I think that those, that the kind of interaction
13 we have with the federal family with the states has been very close and very
14 effective. So, I was actually quite impressed by that. I thought I would start with
15 the questions. This is actually -- ask EPA to answer Mr. Fettus' question. When
16 are we going to see that new rule?

17 JONATHAN EDWARDS: Yeah Commissioner, I can give you --
18 what we've done is sort of where we're headed here. In preparation for the
19 consultation with the Science Advisory Board, of course we did do a considerable
20 amount of work in what's called the technical background document for the
21 rulemaking package. We are now, right now in the process of finishing the
22 economic impact analysis document, which we should be finished up in the next
23 couple of months or so. We're then going to move to the significant agency step
24 of what's called final agency review for the entire package, and that should be
25 sometime this spring, sometime in the next two to three months. After it goes

1 through final agency review, then whatever comments come out from the intra-
2 office workgroup as well as the senior politicals that attend that will be modified
3 into the rule package, and then the rule package then goes to our office of policy,
4 and gets signed off by the senior agency officials, and then transmitted to OMB
5 for inner-agency review, and then ultimately publishing in the Federal Register.
6 So because of the indefinites around that latter part of the thing, the best I can
7 tell you is to expect the proposed rule sometime later this year. I wish I could be
8 more definite, but I hope that gives you a sense for where we are right now.

9 COMMISSIONER MAGWOOD: Well, this sounds like it's on a
10 track towards getting complete, and that's the important thing, and if it -- and you
11 know, this year, you know, that's certainly more information than I had when I
12 walked in the room today. So, I appreciate that. That's very good to know. Are
13 there any aspects of the process where there is a potential for a further long
14 delay in this or do you feel pretty confident that we're --

15 JONATHAN EDWARDS: At this point, Commissioner, I don't see
16 any potential hang-ups and all that, but as you probably no doubt are aware,
17 EPA is going through a leadership transition right now, and so I can't predict how
18 that might play into the overall thing, as well as other pressing environmental
19 rules from different programs that may again impact the Office of Policy and what
20 not. But at this point, I can't identify a known road bump in the future.

21 COMMISSIONER MAGWOOD: Okay. I'm sure staff is staying
22 very close to you on this. We look forward to that. You mention -- you talked a
23 bit about the changes being a certain subpart W. Can you talk a little bit more
24 about that and how that might affect future licensing requirements?

25 JONATHAN EDWARDS: Commissioner, originally I was talking to

1 40 CFR 192, the regulation that actually encompasses all of the activities, not
2 only the DOE oversight facilities, but also operational uranium, and then we also
3 have a subpart on thorium activities, and what the rulemaking is looking at right
4 now is adding another subpart very specific to ISR. So, there'll be a new subpart
5 to 40 CFR 192. The NMA brought up subpart W. We are in the process of
6 writing a proposed change to that rule, although I have to tell you that this is the
7 first I've heard of the notion of possibly resending subpart W. So, I would
8 welcome the NMA to send us a letter or perhaps petition the agency for action on
9 that, if they'd like to go there, but right now we're focused on the rulemaking
10 around 192.

11 COMMISSIONER MAGWOOD: Okay. I think that was a reference
12 to Part 61, subpart W.

13 JONATHAN EDWARDS: Right, right, the -- exactly, so part W,
14 right.

15 COMMISSIONER MAGWOOD: I think this relates to the ponds, is
16 that --

17 JONATHAN EDWARDS: That's right, the radon emissions from
18 the impoundment ponds, yes.

19 COMMISSIONER MAGWOOD: Right, okay. Good. Well, let me
20 bounce back to Mr. Fettus, because you said something that's kind of interesting,
21 and I wanted to give you a chance to elaborate on this. You indicate that you
22 think that we at NRC should move out with our regulatory process, when the draft
23 becomes available from EPA. That would be pretty unusual for us to do that. Is
24 that, before going through the public comment, result in public comments; it
25 seems like it'd be a lot of risk in that.

1 GEOFFREY FETTUS: I don't think there's a lot of risk. This has
2 been gestating for so many years at this point, Commissioner Magwood, that
3 there's no question NRC has a very long and thorough history in understanding
4 of what their colleagues at EPA are doing, and the groundwater rule has been in
5 draft form for -- I've been asking for it for years, to at least get it out. Because
6 Commissioner Merrifield was entirely accurate when he said the agency has
7 been trying to pound a square peg through a round hole, or maybe it was a round
8 peg through a square hole, but in whatever geometric shape he used, he was
9 right.

10 And the problem you guys face, it's a classic -- it's not your fault,
11 but it is your problem, and that is that the uranium regulations were put together
12 at a time when in-situ leach recovery was not the primary method. They were
13 put together for conventional uranium recovery, and you only regulated the
14 processing. We have a whole set of theories, if you want to talk about how a lot
15 of this could be made a lot more coherent with greater authority provided to EPA
16 to treat radioactivity as a pollutant the way it does everything else. But be that as
17 it may, that's a congressional issue. We don't need to belabor that here today.

18 What we do face though is a nearly two decade gap where the
19 agency has had to jerry rig its rules and how it manages regulating industry in
20 doing a form of uranium recovery that, you know, the amount of time that many
21 of us here spent looking at criterion five through nine, in 10 CFR. I mean talk
22 about things that will confuse the public. Just as you said, this is a mess and as
23 soon as EPA comes out with its long overdue draft rules, you know, I'm sure
24 there will be road bumps down the road, but there also may be years until they
25 can get through to a final rule because they could get sued. They could -- a

1 whole host of things could happen, but all the while this agency goes along
2 permitting folks in something that Commissioner Merrifield called a mess.

3 So I just think the federal agencies have it well within their capacity.
4 There are some superb staff at both places that have it well within their capacity
5 to start to provide a sense of coherency as to where the industry is going and
6 what the standards are they're going to have to start meeting, rather than this ad
7 hoc license condition after license condition mess.

8 COMMISSIONER MAGWOOD: All right, I appreciate that. I've got
9 about 30 seconds left. I know you can't answer this question in 30 seconds. I'm
10 going to ask it anyway. Let me direct this back to the EPA. You heard a
11 suggestion from NMA about the programmatic agreement. You have a lot of
12 experience with programmatic agreements. I think BLM does as well. Do you
13 have a thought about whether the 106 process is a good target for that?

14 JONATHAN EDWARDS: I can tell you a lot of EPA actions don't
15 necessarily trigger 106 compliance, but we have seen and when reviewing many
16 NEPA documents, or EISs where agencies do have programmatic agreements,
17 and you know, for us it always seems to make sense to have that overarching
18 agreement, rather than project by project.

19 COMMISSIONER MAGWOOD: Appreciate that. Let me close out
20 first, I didn't have a chance to ask Mr. Yellow Thunder any questions, but I
21 appreciate your statements. We heard that very clearly. I've heard similar
22 statements in the visits I've had, including visits to South Dakota. So, I
23 appreciate that you came here and delivered that message in person. I look
24 forward to perhaps having a chance to talk with you further in person about this.

25 And I just want to congratulate Dr. Hall on being the point chair of

1 the uranium group at the OECD Nuclear Agency, as former Chairman of the
2 steering committee of the Nuclear Energy Agency. I know how important that
3 work is, and it's kind of nice having an American doing that. So, I appreciate that
4 you're doing that. So, thank you very much. Thank you, Chairman.

5 CHAIRMAN MACFARLANE: And I believe the first woman
6 Chairman. Good. All right, Commissioner Ostendorff.

7 COMMISSIONER OSTENDORFF: Thank you, Chairman. I add
8 my thanks to those of others for you being here today. I believe that four of the
9 five Commissioners here, except for Commissioner Svinicki, this is our first
10 meeting on uranium recovery since we've been in office. The last meeting was
11 March, 2010, right before we joined, for three of us. So, this is an important
12 topic.

13 I want to, perhaps, start out with an area that Commissioner
14 Magwood touched on. It concerns the groundwater piece and so I have a
15 question for EPA, then also for NRDC here. There is a -- are you familiar with an
16 NRC staff memo, this goes back to July of 2009. There was a staff assessment
17 of groundwater impacts from previously licensed in-situ uranium recovery
18 facilities. Are you familiar with this?

19 JONATHAN EDWARDS: I don't know off the top of my head,
20 Commissioner, but I bet staff probably --

21 COMMISSIONER MAGWOOD: Let me make a -- and I'll ask Mr.
22 Fettus the same question here. There's a comment here, and again, it's almost
23 four years ago and I recognize it's perhaps a bit outdated, but the staff memo at
24 that time, and again, July, 2009, says, "The staff is unaware of any situation
25 indicating (1) that the quality of groundwater at a nearby water supply well has

1 been degraded, (2) the use of a water supply well has been discontinued, or (3)
2 that a well has been relocated because of impacts contributed to an ISR facility."
3 So, I'm looking in the context of groundwater contamination issues, some ISR
4 operations. I didn't know if there was any general views that EPA had with
5 respect to our staff's prior assessment, and I'll ask Mr. Fettus NRDC's position on
6 this.

7 JONATHAN EDWARDS: Well, I would have to concur with what
8 Mr. Fettus said in that, you know, generally over the years there's been a lack of
9 data in order to really analyze this. I can't say that I've known of any major
10 excursions as you've sort of pointed to in this last staff memo. But on the other
11 hand, there is a concern because of the -- is the lixiviant is injected underground
12 there. You are mobilizing a tremendous amount of the metals there, and so
13 when you have metals like arsenic, vanadium, molybdenum, you know, silver,
14 those sorts of things. There are obviously concerns that you need to restore that
15 groundwater after the operation, ensure that there's some sense of stability and
16 that you've got some confidence that there is some long term ability to say,
17 "Yeah, that is stable there."

18 So, again, that's what we talked to the SAB about, you know how
19 can we make sure that the monitoring at the baseline establishment prior to the
20 operation, that there's a sufficient amount of time post-closure and post-flushing
21 of the water body such that there is confidence to say that we aren't going to
22 have those problems with nearby wells, or excursions that might damage the
23 environment.

24 GEOFFREY FETTUS: Thank you, Commissioner Ostendorff. That
25 same memo, and this is the July 2009 memo, that same memo, the NRC

1 admitted, and this was just a short study of 11 restoration sites at three ISL
2 facilities. And so, this is exactly what I'm talking about when I say I think the
3 science is out still. The science hasn't been done. This was an extremely brief
4 study. The data showed that over 60 percent of the constituents were restored to
5 their preoperational concentrations, which means 40 percent were not restored to
6 their preoperational concentrations. Of course the NRC's short memo and then
7 the more extensive but not nearly enough GEIS failed to do in any analysis
8 where they actually went out and looked at a lot of these aquifers, and looked at
9 what Mr. Edwards was just describing. So that memo that, in fact, I think
10 supports the point I'm trying to make, that the technical work hasn't been done on
11 the hydrogeology, and it's leaving the states, and the areas, and the Tribes, and
12 the public around these areas, we don't know what's coming for the long term.
13 And we don't know what the long term degradation is going to be, and I will tell
14 you having been a former western land lawyer for the state of New Mexico,
15 whiskey is for drinking and water is for fighting. And water is what it's all about,
16 and the idea of what is a viable water source over the next 10, 20, 30 years in the
17 American west, and over the past 10 to 20 years has changed enormously. So if
18 we're going to be potentially sacrificing for the long term, meaning for aquifers,
19 then it needs to be something that we need to do with a much clearer scientific
20 understanding, and not moving forward on this permitting process right now, and
21 the final licensing that I'm discussing. So, thank you.

22 COMMISSIONER MAGWOOD: Thank you. Nancy let me ask a
23 question from the state of Wyoming's perspective, and I know that I'm sure you
24 get involved in all kinds of mining activities other than uranium mining, and so I'd
25 just be curious. Are there any big differences in approaches between uranium

1 mining in your state for safety or environmental concerns compared to other
2 types of mining?

3 NANCY NUTTBROCK: I would say that the concerns expressed
4 here around the table are shared within the state, certainly pertaining to ISR.
5 The regulation of the ISR industry is certainly much more complex I would say,
6 yeah and given the multitude of federal and state involvements, and jurisdictions,
7 then the mining and regulation of other resources in Wyoming.

8 COMMISSIONER MAGWOOD: From a regulatory perspective, are
9 there any significant philosophical differences on safety between uranium mining
10 in your state and other mining activities? I understand the complexity issue that
11 you're saying, but just from a philosophical approach to safety or environmental
12 protection?

13 NANCY NUTTBROCK: Philosophically, groundwater protection is
14 of utmost concern not only of the DEQ but of the citizens of Wyoming. But I
15 wouldn't say that's specific to uranium mining. I think that's a general concern of
16 citizens when any mining activity is taking place.

17 COMMISSIONER MAGWOOD: Okay, now if I can ask the same
18 question of Dennis, please. Assume your Tribe has interactions with other types
19 of mining, other than uranium mining, or maybe you don't. I'm not sure. Do you
20 have involvement with other types of mining activities outside the ISR?

21 DENNIS YELLOW THUNDER: I believe that generally speaking
22 our reservation is mainly concerned with the uranium mining that's happening
23 around the borders of our reservation, and we don't generally get too involved
24 with any other type of mining activity although we are often involved in the
25 consulting, and consenting, and TCP identification processes in regards to other

1 Tribes situations in regards to oil and gas like up in North Dakota. Sometimes
2 we are presenting a unified front in those areas as far as the cultural aspect of it,
3 but generally our main concerns are the environmental impacts of the uranium
4 mining that is occurring around the borders, northwestern, southeastern borders
5 of our reservation. So, generally that's the only type of mining that is greatly
6 impacting us right now.

7 COMMISSIONER MAGWOOD: Thank you. I have time for one
8 last question, and Katie, you identified a lack of NRC staff resources to handle
9 permits for uranium mining. I know that Susan, in your presentation you
10 indicated I think 91 percent of the uranium supply in this country comes from
11 foreign sources, and because the long lead time of 15 to 20 years from discovery
12 to production, et cetera, that there's some predictability of what may happen in
13 the future. And I was curious, you know, how do you characterize -- I'll ask both
14 of you real quickly. How do you characterize the predictability of future mining
15 applications? Our staffs can tell us later on in the next panel that about 40
16 percent of projected applications that industry tells us we're going to receive
17 never come in. So, I'm curious as to how to look at the predictability of this
18 industry.

19 KATIE SWEENEY: Forty percent never come in or they come in at
20 a different timeframe than --

21 COMMISSIONER MAGWOOD: Different time period, okay. That's
22 good.

23 KATIE SWEENEY: Yeah, and I saw those slides too, and I thought
24 that number was really interesting, because even if 40 percent don't come in,
25 there are still not enough resources for NRC, and it is difficult to predict. And it's

1 definitely -- the National Mining Association would like to figure out some ways
2 that we might be able to provide, the industry might be able to provide additional
3 information that would firm up some of those timeframes.

4 COMMISSIONER MAGWOOD: Okay. Susan, do you have any
5 comments on the predictability of the future activities?

6 SUSAN HALL: I would only comment that, you know, there's a
7 number of hurdles that the companies are facing right now. Katie can probably
8 speak to that more fluently, but you know, a company may get to a certain point
9 and have trouble raising money. The uranium price is quite low right now. So
10 you know, it may come in and they may have to pull out an application for lack of
11 funding, but it will come in eventually. The resources are there. It's just a matter
12 of timing in terms of developing them.

13 COMMISSIONER MAGWOOD: Okay. Thank you. Thank you all.
14 Thank you, Chairman.

15 CHAIRMAN MACFARLANE: Okay, thank you. Okay, my turn.
16 Thank you all for your presentations. I found them very helpful, but I note the
17 lack of -- and maybe this is just my technical narrow point of view, but I note the
18 lack of technical discussion on exactly some of the leaching issues, some of the
19 groundwater contamination issues in a panel of nine people, eight people. Can't
20 count. Well, so much for technical capabilities.

21 [laughter]

22 All right. A quick question for you, Mr. Edwards. Do you mobilize
23 lead, because lead is a daughter product of uranium and you said you mobilize
24 heavy metals.

25 JONATHAN EDWARDS: I'm sorry. I'd have to get some technical

1 expertise on that. Phil, do you --

2 MALE SPEAKER: Yes.

3 JONATHAN EDWARDS: We can, yes, yeah.

4 CHAIRMAN MACFARLANE: I would imagine if you're mobilizing
5 uranium, you could probably mobilize lead; it's not quite as heavy as uranium. I
6 don't know. Okay, so in general I'm interested in the leaching and some of the
7 new technology. Susan, right now is all the in-situ leaching done in sedimentary
8 rocks?

9 SUSAN HALL: Sandstone hosted deposits, yeah.

10 CHAIRMAN MACFARLANE: Okay, and if you had, you know,
11 some of these other deposits in phosphates, are there deposits in igneous or
12 metamorphic rocks?

13 SUSAN HALL: It would be a new set of elements. Typically though
14 what we're concerned with are red-ox sensitive elements. So, arsenic,
15 molybdenum, uranium of course.

16 CHAIRMAN MACFARLANE: Okay.

17 SUSAN HALL: And there's different, you know, you have to -- once
18 they're oxidized as part of the mining process, they essentially need to be re-
19 reduced to be immobilized again.

20 CHAIRMAN MACFARLANE: Right, and when they're mobilized,
21 they're mobilized in solution, they're mobilized on colloids?

22 SUSAN HALL: They're mobilized in a solution and then extracted
23 on, you know, resins at the surface.

24 CHAIRMAN MACFARLANE: Right, right, right.

25 SUSAN HALL: And a lot of operations use carbon dioxide or some

1 other carrier that will, you know, bind with these elements and bring them to the
2 surface more effectively as well.

3 CHAIRMAN MACFARLANE: But in these other deposits, there are
4 uranium deposits in the U.S. that are either igneous or metamorphic, yes, and
5 would you use in-situ leaching or not?

6 SUSAN HALL: I can't imagine that you would. The permeabilities
7 would be so --

8 CHAIRMAN MACFARLANE: Right, yeah.

9 SUSAN HALL: -- that --

10 CHAIRMAN MACFARLANE: I can't imagine either, but I'm just
11 checking.

12 SUSAN HALL: Yeah, yeah, even some of the sandstone deposits
13 maybe more effectively mined using conventional methods.

14 CHAIRMAN MACFARLANE: Right, right, so these calcrete
15 deposits, are these surface deposits?

16 SUSAN HALL: Yeah.

17 CHAIRMAN MACFARLANE: Okay.

18 SUSAN HALL: Yeah.

19 CHAIRMAN MACFARLANE: Sorry, we're just going to speak in
20 code for few minutes.

21 [laughter]

22 SUSAN HALL: Everybody else is speaking code around here.

23 CHAIRMAN MACFARLANE: Yeah, I know. We might as well too,
24 right? So, in terms of these other deposits like the phosphate recovery in Florida
25 or this hydraulic borehole mining, I'm interested anybody, you guys, have any

1 views on some of these new technologies for extracting with these kinds of
2 methods, and whether you believe there are adequate standards in place to
3 evaluate these technologies and their impacts?

4 GEOFFREY FETTUS: There aren't adequate standards in place
5 for what's happening now.

6 CHAIRMAN MACFARLANE: Okay.

7 SUSAN HALL: Well, the phosphate mining would be you take a
8 stream from a phosphate mining operation already in place, and run it through an
9 ion exchange extraction process, removing uranium from --

10 CHAIRMAN MACFARLANE: And the phosphate mining is not in-
11 situ leaching?

12 SUSAN HALL: No, it's actual mining, yeah, yeah. So, I'm not sure
13 of all the details. They've just done pilot testing of this process. A number of
14 countries -- you know, it's a huge resource worldwide, huge.

15 CHAIRMAN MACFARLANE: [affirmative]

16 SUSAN HALL: So, a number of countries particularly around the
17 Mediterranean are quiet interested in anything that they can use to economically
18 extract. So --

19 CHAIRMAN MACFARLANE: So the bottom line is uranium is in
20 everything almost?

21 SUSAN HALL: There is a lot of uranium running around the natural
22 environment.

23 CHAIRMAN MACFARLANE: Yeah.

24 SUSAN HALL: It's just finding it --

25 CHAIRMAN MACFARLANE: No shortage of uranium.

1 SUSAN HALL: Yeah.

2 CHAIRMAN MACFARLANE: Yeah. Yeah, yeah. No, I even did
3 research on uranium and Hemolian granites anyway, a long time ago. What
4 about you guys? Do you have a view on the new technologies?

5 JONATHAN EDWARDS: I have to tell you, I don't know enough
6 about the technology. We haven't investigated enough to be able to comment on
7 that, Chairman.

8 CHAIRMAN MACFARLANE: Okay, okay. So Jeff, Do you know if
9 there's data? You've highlighted the paucity of data. Are there data from ISRs
10 done in other countries like Canada maybe or wherever else it might be done to
11 suggest impacts?

12 GEOFFREY FETTUS: Not a lot. Not a lot. There were some work
13 done in Australia. There was a little bit of work that we found done in Canada,
14 but again not a great deal. What we found in Kazakhstan that was done was
15 very difficult to find, and truly troubling because they used more of an acid
16 solution rather than a base. So, the impacts were substantially worse as far as
17 we could tell with the brief amount of data we could find, but no. It's not like the
18 nuclear waste issues where you can look around the world and find a host of
19 serious geologists and radiation health physicists and others thinking about
20 things.

21 CHAIRMAN MACFARLANE: [affirmative] does anybody -- do you
22 know if there's any?

23 SUSAN HALL: Very little, very little information. I looked in state
24 records in Wyoming, and Texas, Nebraska, and pulled together what I could, but
25 even in Texas I think the study you're referring to, I could only find, you know,

1 approximately half to two thirds of the records remained, so...

2 GEOFFREY FETTUS: And if I could ask a question of Dr. Hall.

3 Didn't you have to go to somebody's garage or something like that at one point?

4 SUSAN HALL: It wasn't that bad, but it was the Texas

5 Commissioner of Environmental Quality Offices and --

6 GEOFFREY FETTUS: Oh, okay.

7 SUSAN HALL: -- they were not garage like.

8 GEOFFREY FETTUS: Thank you.

9 [laughter]

10 No offense intended, just...

11 SUSAN HALL: It's an exploration project, finding the data...

12 GEOFFREY FETTUS: By the way, I'd like to thank Wyoming and
13 the staffers we had help us at the DEQ in terms of trying to get that information.
14 They were all to a person terrific and helpful.

15 CHAIRMAN MACFARLANE: So Susan, your impression is that
16 there is this paucity of data?

17 SUSAN HALL: Right, right, yeah, and especially internationally
18 there's almost none.

19 CHAIRMAN MACFARLANE: Yeah.

20 SUSAN HALL: There's Kazakhstan, there's one study that was
21 published that --

22 CHAIRMAN MACFARLANE: The Canadians had done any work
23 on this? No?

24 SUSAN HALL: I'm not sure they've even done any on ISR mining.

25 CHAIRMAN MACFARLANE: I guess they have their -- they don't

1 do sandstone.

2 SUSAN HALL: Yeah, they're mostly -- right now they're mining the
3 unconformity deposits that are really high grade.

4 CHAIRMAN MACFARLANE: Right. They're really old.

5 SUSAN HALL: They have water problems, but it's in keeping the
6 water out. Yeah.

7 CHAIRMAN MACFARLANE: Yes.

8 SUSAN HALL: Protozoa gage.

9 CHAIRMAN MACFARLANE: Yeah, protozoa stuff, more code.

10 Okay, question for Mr. Yellow Thunder. Are there areas of a cultural sensitivity
11 that you believe the NRC is not really attuned to properly, and if so can you help
12 identify that?

13 DENNIS YELLOW THUNDER: There are certain areas -- actually
14 when you want to -- if you want to speak to the fact of the areas, we regard our
15 whole ancestral homelands, which is from the eastern borders of Missouri,
16 eastern shore land of Missouri down, as far down as Yankton, South Dakota, as
17 far as Sioux Falls, back down into that area all the way up to the Montana and
18 Wyoming areas are regarded as our ancestral homelands that there are very
19 important and significant traditional cultures that lie within those ancestral
20 boundaries. And to some extent there are some very culturally sensitive areas
21 that are within the Black Hills of South Dakota, which we regard as very sacred
22 and very culturally significant. And it is generally in that particular area along with
23 other sites that are of cultural significance to other Tribes. They have their own
24 Black Hills. They have their own culturally significant sites that you want
25 avoidance of, to preserve them for the future, but right now I think as far as the

1 Oglala Sioux Tribe is concerned, it is the Black Hills and that surrounding area in
2 which there are proposed projects that we regard as being very sacred, and want
3 to bring that message to NRC of the importance of those particular areas. There
4 are burial grounds up there. There are caverns. There are stone circles. There
5 are effigies. Those are very important and so to narrow it down to Black Hills and
6 that surrounding area, Devils Tower, Bear Butte, Harney Peak, Pe Sla of course
7 you've heard of that one as the Rosebud Tribe has purchased. Those are some
8 of the more significant areas that I think, and I believe, that the NRC and its staff,
9 field staff and others are making I believe a very strong effort to understand --

10 CHAIRMAN MACFARLANE: Okay.

11 DENNIS YELLOW THUNDER: -- and that was what I was referring
12 to earlier is we are building a better rapport when it comes to those extreme
13 sensitive high density areas like that, and so basically I think the Black Hills is
14 one of those areas that you're referring to --

15 CHAIRMAN MACFARLANE: [affirmative]

16 DENNIS YELLOW THUNDER: -- that the NRC and its staff, field
17 staff, project managers, or these other individuals that are involved are making
18 progress in becoming in tune with those areas. So, I think yes we're making
19 progress and hope to make better progress as we move forward, but the Black
20 Hills specifically is one area which is very culturally significant.

21 CHAIRMAN MACFARLANE: Thank you. Thank you.
22 Commissioner Svinicki.

23 COMMISSIONER SVINICKI: I want to add my thanks to all of you
24 for being here today. My colleague, Commissioner Ostendorff makes me feel
25 like a little bit of a grizzled veteran I guess this may be -- this is at least my third if

1 not my fourth Commission meeting on uranium recovery, and the staff, the NRC
2 staff when they present shortly, will show a graph of what was happening to
3 uranium prices in the year when I joined the Commission in 2008. So, that is
4 some correlation to the increase in our staff activities, and at one point I think the
5 Commission was at least attempting to meet annually on this topic, and then that
6 also makes you reflect, I think as some have mentioned is that we seem to
7 convene and have the same list of topics that we discuss, and the same
8 rulemakings that we talk about over a period of years. And I can't put any
9 argument to that. We do have a lot of the same topics each time we convene to
10 talk about this.

11 My colleagues have covered a lot of ground. I did have some
12 specific questions that arose from things I heard or thought I heard in some of the
13 presentations. So I might return to that. I wanted to begin with the Section 106
14 process, and I'm not an expert in that process, but I thought I discerned that
15 there was at least some general agreement that the Section 106 process could
16 be improved, and then I thought I heard maybe some specific agreement that a
17 potential improvement would be to have the Tribes involved earlier in the
18 process. I think that Mr. Yellow Thunder mentioned that and that Ms. Sweeney
19 agreed with it. So I couldn't help but note that and I wondered if there's general
20 agreement that improvement is needed in specific agreement that this would be
21 an improvement, and are there barriers to having the Tribes involved earlier, and
22 if so what are they?

23 And then Ms. Sweeney, I would ask you specifically to address --
24 I'm sure that your member companies are very active in trying to have public
25 awareness and education in the areas where they operate. So, I know that

1 there's a government-to-government interaction that occurs between the federal
2 government and the Tribes, and of course the member companies can't conduct
3 that since it's a government-to-government engagement. But could you speak to
4 this issue of why maybe there's only engagement that occurs later?

5 KATIE SWEENEY: I think part of it is that the fact that the Tribes
6 are waiting for the government-to-government engagement, and there is
7 educational efforts on the part of the applicants and the licensees to reach out to
8 the nearby communities and nearby Tribes, to let them know in advance of the
9 application being filed, what's going on, what's being planned, what the scope of
10 the project might be. But it is difficult to have direct interaction with the Tribes
11 before the formal process begins, because they do want to have that
12 government-to-government consultation, which is understandable. I think one of
13 the reasons that we were suggesting a programmatic agreement is because you
14 could actually have the Tribes as one of the signatories to the agreement, and
15 then you could hammer out a lot of these issues up front, and have better
16 interactions between industry and the Tribes, the Tribes and NRC, and other
17 interested stakeholders.

18 COMMISSIONER SVINICKI: That sounds like it's a term of art that
19 I wasn't really sure of the specific aspects when you referred to a programmatic
20 agreement. It sounds like EPA has some activities that utilize a programmatic
21 agreement. What are the key components of that if it's a term of art, is it liken a
22 memorandum of understanding?

23 KATIE SWEENEY: No, it's a more binding on the parties, not that
24 a memorandum of understanding isn't binding, but it's got a little more heft to it
25 than that. But it is something that's contemplated by the regulations for the

1 ACHP that programmatic agreements are one way to address the Section 106
2 consultation process, and a programmatic agreement could be on a regional
3 basis. It could be on a national basis. NMA submitted as part of its comments
4 yesterday as an attachment, national level programmatic agreement that BLM
5 had done, that addresses their 106 consultation process for their permitting on
6 federal lands. Frank could probably talk more about it if you had questions about
7 specifics, but yeah. It's a process that's contemplated under the law.

8 COMMISSIONER SVINICKI: Okay. Frank, did you want to add
9 anything to that? Are you in general agreement?

10 FRANK MARTIN: I'm sorry, I have trouble hearing.

11 COMMISSIONER SVINICKI: Okay, on the programmatic
12 agreements, I wasn't familiar with the term. It sounds like it's a kind of a term of
13 art for some processes, but it sounds like it can be tailored for different
14 applications. I don't know if you have a lot of use with programmatic
15 agreements.

16 FRANK MARTIN: Not that I'm aware of.

17 COMMISSIONER SVINICKI: Okay, all right. Thank you, and then I
18 guess, Ms. Sweeney, to stay on some of the comments you had made, you
19 indicated that you had a response from the chief financial officer on the level of
20 invoice detail. My understanding is that our system actually, the NRC staff is
21 tracking a lot of the costs at a pretty significant level of detail, and it would just be
22 a matter of finding out the different components of data on tailoring the output of
23 the invoice. I'm told though that our databases are quite powerful and that we
24 track an awful lot of information that was not reflective in the invoices that we
25 send. So, hopefully, there will be some way to move forward and have maybe

1 something that would be a more constructive amount of information, at least it
2 sounded encouraging to me, what it was the power of what our system was
3 capable of doing.

4 And then on the final rule on pre-licensing site construction, you
5 said clarification was needed on the final rule, and I mentioned the fact that we
6 need and talk about the same issues. I guess the only thing that's more
7 discouraging is to hear that we finally got a final rule done on something and it
8 wasn't clear. I know the staff worked hard on that. I remember reviewing it and
9 voting on it myself, and I thought it was a pretty significant effort on the NRC's
10 part. So can you help me understand a little bit more there of what, how -- and
11 were those comments that NMA submitted but the staff just addressed them in
12 some other way, or...

13 KATHIE SWEENEY: They did address the comments in the final
14 rule. There was a response to some of the comments that we made particularly
15 on the previous Commission decision at Nuclear Fuel Services, but our -- the
16 crux of the problem is the final rule does say that, you know, NRC isn't going to
17 prohibit such activities, discourage but not prohibit. But then at the same time
18 says that, "The application can be denied if the preconstruction activities
19 happen."

20 COMMISSIONER SVINICKI: Which sounds like very strong
21 discouragement.

22 KATHIE SWEENEY: Yeah, and we're just thinking if the risk is on
23 the licensee that they might have to correct something or undue something to get
24 their license approved, it doesn't seem to me that there should be that language
25 in there that would say that NRC can deny the approval.

1 COMMISSIONER SVINICKI: Okay, well it might just be something
2 akin to fairly standard language that we need. I can certainly ask the NRC. I'm
3 not going to ask you to try to pause it while the NRC staff structured their
4 language in a way they did. I can take that up with them.

5 I guess I'll just close with a statement. You had indicated that one
6 of your member companies received notice I think you said yesterday, about
7 some uncertainties related to review of their application. I'm going to take some
8 measure of responsibility for that and I'll explain why. It's that starting the latter
9 half of last year, the Commission met in a series of programmatic meetings with
10 the NRC staff, to look at different areas of activity, what the challenges were,
11 what the level of activity, what priorities were being set. And in the area
12 specifically of ISLs, we talked about this. We get letters of intent as
13 Commissioner Ostendorff was mentioning, how many applications do we get on
14 what schedule, and I encourage the NRC staff, and then the Commission as a
15 whole adopted some directive language to the staff in the memorandum that
16 came out of the meeting, that told the NRC staff that we needed at least to try to
17 give some signals and transparency to applicants if there were schedule
18 uncertainties. Because I think, again, perhaps the only you know, worse news
19 then it might be delayed is that we knew it was going to be delayed and we didn't
20 tell the applicant. So I just thought that there was really no down side to the fact
21 is that if they had -- the NRC staff had indication of potential delays, and I think
22 we're all not talking about the elephant in the room. Since this is February 20th,
23 all federal agencies if sequester takes place will be affected. I'm surprised that
24 our partners from EPA didn't -- it was tee'd exactly up by Commissioner
25 Magwood, are there any potential things that might delay this rulemaking --

1 [laughter]

2 -- and I can't believe that every federal employee doesn't
3 reflectively say to that, "Sequester is the answer to that question." So you know,
4 I will just say that I think that the Commission as a whole has told the staff to try if
5 and when that sequester occurs, we need to be as transparent as we can be
6 about the effects of that on people who have things pending before the agency.
7 I'll end with --

8 KATHIE SWEENEY: I appreciate the transparency.

9 COMMISSIONER SVINICKI: Okay. All right. Thank you. Thank
10 you, Chairman.

11 CHAIRMAN MACFARLANE: Thank you. Commissioner
12 Apostolakis.

13 COMMISSIONER APOSTOLAKIS: No questions.

14 CHAIRMAN MACFARLANE: No questions? No questions. All
15 right, then that means we go faster to our break. We will take a break of five
16 minutes. Let me thank the panel again. We will be back here in five minutes.

17 [break]

18 CHAIRMAN MACFARLANE: Okay. I think we're going to get
19 going. Now we are going to hear from the NRC staff and I will turn it over to Mike
20 Weber who is the Acting Executive Director for Operations.

21 MIKE WEBER: Thank you, Chairman. Good afternoon. Good
22 afternoon Commissioners. It's our pleasure to appear before the Commission
23 today and make a presentation on the staff's Uranium Recovery Program.
24 Uranium recovery is a small but important part of the Agency's program. About
25 one percent of the Agency's resources are devoted to the Uranium Recovery

1 Program where we focus on ensuring protection of people and the environment.
2 It's also important because as the Chairman pointed out in your opening
3 remarks, uranium not only fuels the nuclear power plants and the research and
4 test reactors, but is also used in fabricating the targets that are used to prepare
5 medical isotopes and for other applications.

6 In the last several years, uranium recovery has seen renewed
7 interest in the United States. This is driven by not only the increase in the price
8 of uranium, but also in the expiration this year of a megatons-to-megawatts
9 program. And thus, we expect that some of the imports that have been occurring
10 over the last several years will no longer occur and thus it drives more of a
11 domestic interest in the uranium supply.

12 To provide our presentation today, I'm going to turn it over to Mark
13 Satorius. Mark's the director at the Office of Federal and State Materials and
14 Environmental Management Programs and his staff to lead us through. Mark?

15 MARK SATORIUS: Thanks Mike. And good afternoon Chairman,
16 Commissioners. The next slide, please.

17 Today we will discuss the Uranium Recovery Program with a focus
18 on the licensing of new recovery facilities and cover the substantial progress that
19 we've made since we last briefed the Commission on this program in March,
20 2010, and also to go over a few of our challenges. With me today are Drew
21 Persinko, the deputy director of the Division of Waste Management and
22 Environmental Protection, Bill von Till, who's the branch chief of the Uranium
23 Recovery Licensing Branch, and Kevin Hsueh, who is the branch chief of the
24 Environmental Review Branch. And they will be covering topics as we go
25 through our presentation.

1 Before we get started, a couple of key messages I'd like to share
2 with you is that the Uranium Recovery Program consists of new licensing,
3 managing existing facilities, inspections, guidance development, and outreach.
4 Planning and budgeting are based, as you heard on the previous panel, on
5 letters of intent from applicants that provide application submittal dates. We have
6 undertaken a number of program efficiencies, which include the development of
7 a generic environmental impact statement and conducting pre-submission
8 application reviews. And lastly, the focus is gradually shifting more to oversight
9 and inspection as new sites are licensed and put into operation, which results in
10 less resources available for new licensing.

11 Could I have the next slide, please? As you can see from this slide,
12 the price of uranium was stable for quite some time, bouncing between \$10 and
13 \$20 per pound. In 2006 to 2007, prices soared as Commissioner Svinicki
14 mentioned earlier, for many reasons, one being such as the indication of a
15 nuclear renaissance for both new builds here and abroad. Since the peak in
16 approximately 2007, the prices fluctuated between \$40 and \$80 per pound.
17 We're now seeing a large growth in applications over the next several years
18 based on the letters of intent that we've received. And as has been mentioned
19 before, we have faced and continue to face a challenge in planning and budget
20 execution due to the inaccuracies of some of these letters of intent. These letters
21 of intent have traditionally turned out to have an inaccuracy of about 40 percent.
22 So if we get 12 letters of intent to come in in 2014, we may actually get three or
23 five in 2014, with the others coming at later dates when funding may be available
24 or other applications may have been satisfied.

25 So I'm going to turn it over to Drew Persinko and he's going to

1 proceed with the staff presentation.

2 ANDREW PERSINKO: Okay. Thank you, Mark. Good afternoon
3 Chairman. Good afternoon Commissioners. My presentation today provides a
4 programmatic overview of the Uranium Recovery Program with a focus on
5 licensing new uranium recovery facilities. Next slide.

6 Since we last met with the Commission in March, 2010, on this
7 subject, we made substantial progress, most notably issuing three licenses for in-
8 situ uranium recovery facilities. It is the first time in 15 years that the
9 Commission has issued a new license to a uranium recovery facility.
10 Additionally, we conducted pre-application reviews to improve the quality of
11 application and Region IV with its two uranium recovery inspectors and with
12 headquarters' assistance in some cases, conducted 18 inspections at five
13 licensed sites and investigated an operating event at one site.

14 With 20 technical staff in two review branches in headquarters, we
15 are currently managing three operating facilities and providing assistance to the
16 Region for inspections, working on nine major licensing actions, and developing
17 guidance for heap leach and conventional mills, the word heap referring to a pile
18 of ore.

19 This fiscal year we expect to complete the safety and
20 environmental reviews for four sites and issue new or renewed licenses or
21 amendments for these sites and support hearings that will begin for two or three
22 of these sites. As we look ahead, we expect that our workload will significantly
23 increase over the next several years based on letters of intent from applicants
24 and the increase in the number of licensed facilities. These letters of intent
25 provide license application submittal dates that we use for planning and

1 budgeting purposes. Next slide.

2 With respect to program enhancements, in 2011, we began offering
3 pre-application reviews to help improve the quality of applications. Of the six that
4 we have performed, we have received three applications. For these three, the
5 staff has generally seen an improvement in the quality of the applications
6 compared to applications where no pre-application review was performed.
7 Applicants have been complimentary of this initiative.

8 In the past, it's taken about 33 months to complete our safety and
9 environmental reviews, which is comparable to the time it takes to complete an
10 environmental review elsewhere in the Agency. Based on experience gained,
11 having performed a number of safety and environmental reviews, we believe that
12 the review time can be cut to approximately 30 months or less, assuming a
13 quality application and timely responses to requests for additional information.

14 In 2009, we completed a generic environmental impact statement
15 that serves as the starting point for site-specific environmental reviews. We have
16 used the generic environmental impact statement in five reviews and believe that
17 it has resulted in efficiency gains. Kevin will speak about this in more detail when
18 he speaks.

19 Section 106 of the National Stored Preservation Act requires,
20 among other things, that federal agencies consult with Native American Tribes
21 concerning properties that may have religious and cultural significance to the
22 Tribes that may be affected by the licensing activity. The National Historic
23 Preservation Act created the Advisory Council on Historic Preservation that,
24 among other things, administers the Section 106 review process. Implementing
25 the Section 106 process has been more challenging for uranium recovery sites

1 than other NRC licensing actions because most of our sites are located in the
2 west where there are normally 20 to 30 Tribes who are actively interested in each
3 application.

4 Although Section 106 is a separate requirement from the National
5 Environmental Policy Act or NEPA, we implement the Section 106 process as
6 part of our NEPA process as permitted by the advisory council's regulations. We
7 believe that we made improvements to the process in the way we implement the
8 Section 106 process over the past two years and are continuing to explore
9 further ways to improve the process. Kevin will discuss this when he speaks to it
10 later. Next slide, please.

11 Our review priorities are that we work on licensed sites first that
12 includes activities such as inspections, operational events, and operational
13 amendments, sometimes referred to as licensing maintenance actions. The new
14 licensing that includes new licenses, license renewals, and amendments for
15 expansions into new areas, and then guidance. The order reflects ensuring the
16 safety of operating facilities. We perform safety and environmental reviews for
17 an application in parallel to the extent possible. For new licensing, we do our
18 planning based on letters of intent. We perform our acceptance reviews based
19 on the order of receipt and the detailed review based on the order of acceptance.

20 The Uranium Recovery Licensing Program has an annual
21 budget of about \$6 to \$7 million, a relatively small program compared to some
22 other Agency programs. At current resource levels, we have the capacity to work
23 on eight to 10 major licensing actions at a given time. We are currently deferring
24 work on one application. However, we anticipate starting that application next
25 month when resources become available as we complete current work. Because

1 of the small size of the environmental review branch relative to the work, we
2 make extensive use of contractors. That being said, the size of the staff limits
3 the number of contracts we can simultaneously manage since we must maintain
4 a balance between staff and contracts in order for staff to oversee the work. It
5 should be noted that the Environmental Review Branch also performs
6 environmental reviews to support the Office of Nuclear Material Safety and
7 Safeguards.

8 We face a challenge in budgeting for and scheduling work because
9 applicants' letters of intent that we used to plan and budget, have proven to be
10 only about 40 percent accurate with respect to the year of submittal. Starting this
11 fiscal year and going through FY15, we anticipate receiving 21 applications
12 based on the letters of intent, one of which has already been received. Next
13 slide?

14 This slide graphically shows the number of projected applications
15 by fiscal year. The red bar represents the number of submittals according to the
16 letters of intent. The green bar represents what we believe is a more realistic
17 number based on historical data tempered by staff confidence in the FY13
18 submittals. And the blue bar represents the carryover from the previous year,
19 essentially the difference between the red and green bars in the previous year.
20 The slide shows that a significant amount of work is projected to be submitted,
21 assuming that all applications and the letters of intent materialize.

22 This bar chart -- oh, here we go -- this bar chart depicts the number
23 of applications that we project to have on our plate for review through FY 5. It
24 factors in our current work load, our completion schedule, timing of new
25 applications, and the cascading effects from year to year due to a multi-year

1 review. It assumes that 60 percent of the application submittals are delayed by
2 either six months or by one year, and that all applications for which we currently
3 have letters of intent, are submitted, albeit later than in the letter. The
4 applications are projected to begin to increase in the latter half of FY13 and peak
5 at about 20 in FY15.

6 Based on current resource levels and a flat budget environment,
7 the number of deferrals is projected to increase, even when considering the
8 uncertainty in the letters of intent. These deferrals result from an increased
9 number of submittals and an increased number of licensed sites that will place
10 additional resource demands on the same staff that work on new license
11 applications.

12 To address the current and anticipated future work load, we've
13 assigned staff from other branches within the division and borrowed from other
14 offices and are looking at other ways of increasing staff levels and capacity while
15 remaining mindful of our Uranium Recovery Program budget. Next slide.

16 Since March of 2010, we have conducted approximately 60 public
17 meetings, conducted numerous Tribal outreach activities, and conducted both
18 safety and environmental workshops to convey lessons learned. Additionally, we
19 interact often with other federal agencies, such as the Bureau of Land
20 Management, Environmental Protection Agency, and the Advisory Council on
21 Historic Preservation. We also interact with state agencies in Wyoming,
22 Nebraska, South Dakota, and New Mexico, states where many of the uranium
23 recovery facilities are located.

24 Further, at the request of the Commonwealth of Virginia, we gave
25 presentations about the NRC Uranium Recovery Program to the Commonwealth

1 as it decides whether to lift the moratorium on uranium mining and milling and
2 whether to modify the Agreement state Agreement regarding a potential uranium
3 site in Virginia. In addition to the normal interfaces with applicants and licensees,
4 we also interact with the uranium industry, having given presentations at the
5 National Mining Association meetings and other industry conferences. Thank
6 you. I will now turn it over to Bill.

7 BILL VON TILL: Thank you, Drew. Good afternoon Chairman and
8 Commissioners. My discussion topics will include a summary of major licensing
9 actions, actions for license sites, and projections for future actions. This slide
10 illustrates a typical uranium recovery facility in the United States today. In-situ
11 recovery has become the preferred method used by industry. However, it is not
12 feasible to extract uranium from all ore bodies using this technology. This is due
13 to a variety of factors, including depth of the ore body, lack of groundwater
14 formation, lack of permeability, and lack of confining units. Therefore, we still
15 expect some conventional and heap leach applications in the future. Next slide,
16 please.

17 This slide illustrates the location of uranium recovery sites where
18 we have the majority of actions in sites that I will cover later. All current uranium
19 recovery sites in the U.S. are located in the west and in Texas. However, as
20 mentioned earlier, there has been recent interest in south central Virginia for
21 conventional milling and mining. Next slide, please.

22 We have granted three additional licenses since we last briefed the
23 Commission in 2010. This slide illustrates the nine reviews we have on our plate
24 now that Drew mentioned earlier. These actions are broken into license
25 renewals, new facility application reviews, and reviews for expansion of existing

1 facilities. To complete these actions, it takes approximately 4.5 to 5 FTE and
2 \$850,000 over the life of each project.

3 With respect to actions listed in the table, we expect to complete a
4 number of major milestones within the next several months. I'll now go through
5 the table in more detail. For the Cameco Crow Butte license renewal review, the
6 final safety evaluation report was completed in December, 2012, and the
7 environmental review is scheduled to be completed this fiscal year.

8 For the Cameco Smith Ranch license renewal review, questions
9 are being developed. For the Cameco Crow Butte North Trend expansion, the
10 final safety evaluation report is scheduled to be completed shortly, and the
11 environmental review is scheduled to be completed in this fiscal year.

12 For the Cameco Crow Butte Marsland expansion review, questions
13 are being developed. The Uranium One Willow Creek license renewal review is
14 near completion.

15 For the Powertech Dewey Burdock new in-situ recovery review, the
16 final safety evaluation report is scheduled to be completed shortly, and the
17 environmental review is scheduled to be completed this calendar year.

18 For the Strata Ross new in-situ recovery review, the final safety
19 evaluation report is scheduled to be completed shortly, and the environmental
20 review is scheduled to be completed this calendar year.

21 For the Uranium One Ludeman expansion, the applicant is in the
22 process of responding to questions.

23 For the UR Energy Lost Creek Dryer expansion, the review will be
24 completed shortly.

25 Expansions for existing facilities increase the number of licensing

1 actions at a facility and the scope of inspections. It's important to note the
2 hearings have been granted for the Cameco Crow Butte license renewal, the
3 Cameco Crow Butte North Trend expansion, the Powertech application and
4 Strata application. Two to three hearings are anticipated to start in full this year
5 with the completion of reviews. And in addition, a hearing petition has been filed
6 for the Marsland expansion review.

7 Our first priority is the oversight inspection of operating sites. When
8 issues arise that call for us to devote more resources to our first priority, we may
9 experience resulting delays in our second priority, new licensing. Next slide,
10 please.

11 Next I will cover actions associated with already licensed sites.
12 There has been an increase in operating sites since 2010. Uranium One's
13 Willow Creek in-situ recovery facility became operational in December, 2010.
14 And the UR Energy Lost Creek and Uranerz Hank and Nichols Ranch sites are
15 under construction and anticipated to go operational this year.

16 Region IV is the lead for inspections for uranium recovery sites and
17 my counterpart is Dr. Blair Spitsberg. For operating uranium recovery sites, I
18 want to emphasize that headquarters staff provides support for inspections,
19 especially in the area of groundwater protection for in-situ recovery sites.

20 Now we'll turn to the types of actions for licensed sites. These
21 actions are highly variable in scope and duration. Some actions occur at the
22 start-up of a new facility. Some occur during operations. And other actions
23 occur at the groundwater restoration and decommissioning stage of a facility's
24 timeline. Some examples of actions are annual surety reviews, decommissioning
25 plans, restoration reports, change of control requests, flow rate increases, and

1 dryer expansions, to name a few. Next slide, please.

2 Now I will turn to the projection of future actions. We maintain a
3 public table on our website with the latest information on anticipated future
4 actions. And we make updates to that table monthly. We work early and often
5 with potential applicants to assure quality applications.

6 This slide illustrates what we expect in the coming years. I'm using
7 this slide to emphasize a key message. There are many actions anticipated for
8 license sites over the next few years in addition to new applications. Note that
9 we have two green bars on this slide, first showing the license maintenance
10 activities and the second showing expansion reviews. Also this slide assumes a
11 flat budget. By fiscal year 2015, we anticipate there will be 11 sites licensed to
12 operate. We also anticipate that existing sites will be larger due to expansions.
13 I'll now turn the briefing over to Kevin Hsueh. Thank you.

14 KEVIN HSUEH: Thank you, Bill. Good afternoon Chairman and
15 Commissioners. Today I will discuss the implementation of GEIS and the related
16 SEISs for ISR or in-situ recovery facilities, Section 106 consultations, and the
17 process improvements associated with environmental reviews. Next slide,
18 please.

19 The staff's GEIS serves as the starting point for its analysis under
20 NEPA or the National Environmental Policy Act for site specific ISR applications.
21 The GEIS determines which impacts was essentially would be the same for all
22 ISR facilities and which will be different and thus require further site specific
23 information and analysis. Staff tiers the SEIS from the GEIS by incorporating
24 applicable GEIS discussions by reference and adopting relevant GEIS
25 environmental impact conclusions in the staff's site specific environmental

1 reviews.

2 Since March 2010, staff has issued the first three SEISs tiered from
3 the GEIS and we are currently working on two SEISs and plan to issue them later
4 this year. By tiering SEIS from the GEIS, staff gains efficiency by focusing on
5 important site specific environmental issues. Next slide, please.

6 This slide shows the contract cost savings of tiering from the GEIS.
7 The cost for GEIS was about \$1.2 million. Total cost for completing the GEIS
8 across the first three SEISs was about \$3.3 million, which is less than the
9 estimated cost of about \$4.5 million for completing three standalone ISR EISs.
10 Staff saved about \$1.2 million for completing the first three SEISs alone and
11 expects further savings when most SEISs are completed. Next slide, please.

12 This slide shows the four steps in the Section 106 process as well
13 as the public's involvement in the process. Each step involves consultation with
14 Native American Tribes, state historic preservation officers and other consulting
15 parties. The amount of time spent in the consultation can be significant. The
16 Section 106 process is complete when any of the outcomes on the right hand
17 side is reached. Next slide, please.

18 The Section 106 process has presented certain challenges in
19 recent years. There has been a significant increase in the number of Native
20 American Tribes interested in each ISR project. From a few Tribes prior to 2010,
21 to a current average of 20 per project, we are currently interacting with about 30
22 Tribes in total. As Tribes are sovereign nations, each Tribe's views need to be
23 respected and taken into consideration. Staff also takes into account views from
24 other consulting parties, including applicants and state historic preservation
25 officers.

1 More recently, Tribes have been requesting field surveys at the
2 proposed IST sites to identify properties of significance to them. Staff has been
3 working with the Tribes and the other consulting parties to respond to this
4 request to meet a reasonable and good faith standard for identifying historic
5 properties. The same kind of amount of time spent by staff responding to this
6 requests have caused delay in meeting Section 106 milestones for some
7 projects. Nevertheless, staff made progress and facilitated Tribal field surveys
8 for four Crow Butte project sites and the majority of the surveys were completed
9 within four weeks. Staff has applied experience gained from these surveys to the
10 Section 106 reviews for other projects. Next slide, please.

11 Since March, 2010, staff has completed four Section 106 reviews.
12 We are currently conducting Section 106 reviews for eight ISR projects and
13 expect to complete three reviews this fiscal year and five in 2014. Next slide,
14 please.

15 Staff has improved its environmental review process based on
16 lessons learned from past experience. I will highlight some of those
17 improvements. We've had substantial discussion with EPA Region 8 to address
18 their comments on the first three SEISs and we will continue to enhance our
19 communication and coordination with EPA on the current and future SEISs.
20 Also, we are cooperating with BLM under our MOU for two ISR projects by jointly
21 preparing the SEIS and conducting the Section 106 process, thus minimizing
22 duplication of efforts.

23 Further, the MOU has been revised to enhance communication and
24 cooperation. For guidance and feedback on the Section 106 process, staff and
25 management regularly communicate with the Advisory Council on Historic

1 Preservation. Staff also regularly communicates with certain staff historic
2 preservation offices since they play a key role in the Section 106 process. We
3 have increased our outreach activities with Tribes and continue to involve other
4 key stakeholders and the general public early in the environmental review
5 process. Next slide, please.

6 Regarding Section 106 process improvements, staff and
7 management have attended comprehensive Section 106 training and frequently
8 interact with other federal and state agencies. In addition, to support our Section
9 106 reviews, staff has hired experts knowledgeable in the process and respected
10 by the Tribes.

11 Finally, we are developing Section 106 guidance specifically for
12 uranium recovery projects by building on existing draft guidance coordinated
13 within the agency's NEPA Steering Committee. Staff is also applying knowledge
14 and experience gained in our support to finalize the NRC's Tribal protocol
15 manual and develop NRC's Tribal policy statement. This concludes my
16 presentation and I'll turn it over to Mark.

17 MARK SATORIUS: Thank you, Kevin. If I could have the last
18 slide, please. We've made substantial progress within this program since we last
19 briefed the Commission in March of 2010. We've made enhancements to our
20 program and we continue to look for opportunities to add additional
21 enhancements. The projected work load is increasing starting at the end of this
22 fiscal year. If the projected work load becomes reality, we would not have the
23 capacity to handle it without deferring work at the current resource levels. We're
24 exploring ways to increase capacity while remaining cognizant of our uranium
25 recovery overall program budget. And that completes the staff's presentation

1 and we would entertain questions.

2 MIKE WEBER: I would only add that I would like to note that the
3 Commission has wrestled with this question of resources for this particular
4 program and I just wanted to say thanks for the support that you have all
5 provided. I know it's not easy because it's a matter of what priorities the
6 Commission wants to establish and you've diligently pursued that in each of your
7 considerations. I didn't want this chorus of not having enough resources to
8 sound like we're complaining, because we're not. We recognize that the
9 Commission has tough decisions before it every year in the budget and we
10 respect your decisions.

11 CHAIRMAN MACFARLANE: Thank you. Okay. Turning it over to
12 Commissioner Magwood.

13 COMMISSIONER MAGWOOD: Thank you, Chairman. And thank
14 you for the presentation and for all the work on this program. I want to sort of
15 echo comments from the panel today because I think that when I first came on
16 the Commission and I remember going to a conference back in 2010, and it was
17 really just kind of a chorus of doom and destruction, you know, the wheels are off
18 the cart, these applications will never -- you know, it was pretty grim. And I
19 remember talking to Mike and others about how we were going to go forward
20 with this and there was a clear plan to do a lot of outreach to work with potential
21 applicants to explain to them how the process worked and to go through the pre-
22 application process. And really in just a relatively short period of time in
23 government space, two years, it's a pretty well-functioning program, you know.
24 No program's perfect, but this has vastly improved over where it was two years
25 ago. So it's really a huge success story. So congratulations for that.

1 A few things. You know, Mike is here as the Acting Executive
2 Director for Operations and probably people don't know his real job is as game
3 show host for the Agency. Those who were paying attention know what I'm
4 talking about. Good job, by the way, with doing that.

5 One of the comments we heard and I wanted to sort of just launch
6 this and ask Mark, sort of talk about this a bit, was from Ms. Nuttbrock from
7 Wyoming, who made the rather interesting suggestion that perhaps we consider
8 stationing an NRC person out west in Colorado or maybe even Wyoming, to help
9 facilitate all this. I'm sure this has come up before in the past. I'd just like to hear
10 you talk about that a bit.

11 MARK SATORIUS: Well it's interesting you should say -- in fact, as
12 soon as that statement was made, Drew leaned over to me and said, "The
13 Uranium Recovery Office in Denver." The NRC used to have an office in Denver,
14 specifically focused on uranium recovery and it was a staff of, I don't know, 15 or
15 20? And I think we closed that office, I want to say probably in the mid-1990s.
16 Does that sound about right, Mike?

17 MIKE WEBER: Or earlier.

18 MARK SATORIUS: Or earlier. So that's -- that was an effort I think
19 to be responsive in that way. I'll be honest with you, we've not considered that.
20 Whether it might be a direction we would want to take a look at, I think we'll
21 always need to be open to suggestions. But I just thought I'd provide that piece
22 of history where there was an office that was in place for, I don't know, I think
23 probably 10 or 12 or 15 years.

24 MIKE WEBER: The uranium recovery field office was started at the
25 partial request, certainly of the Commission, but also with a lot of congressional

1 interest and it was when there was a projected growth in the uranium recovery
2 business such that it made sense from an Agency perspective to get out closer to
3 where the potential sites were. As time progressed and the interest in uranium
4 recovery waned, it became increasingly difficult for the Commission to justify the
5 large expense of maintaining an independent office in a location and cover the
6 large administrative overhead costs associated with that. So, it hasn't been
7 revisited recently. Certainly if the business case were to be made that would
8 favor that, that would be something that the staff would entertain.

9 COMMISSIONER MAGWOOD: Now I've -- it's -- you know, it
10 would certainly be convenient to have someone there, but whether there's a
11 business case to justify it at this point, I think it's hard to tell. But I take what the
12 state representatives say quite seriously. If they believe there's a tempo of
13 activities that would make things work more easily, it's at least something I think
14 staff should give some thought to. But, you know, leave it at that.

15 And you spent most of the time today talking about the budget
16 challenges and of course we heard that from the previous panel as well. And a
17 lot of this circulates around the letters of intent and what you believe and what
18 you don't believe about the letters of intent. When you look at how to budget for
19 things like this, are letters of intent really the best mechanism? Is that really the
20 best tool to use to try to project the budget going forward? Is there?

21 MARK SATORIUS: I'll just start. And I think Drew has probably
22 something to add. Maybe. Maybe there's a better way of doing it. I think it's a
23 good place the start at least. It's just, you know, an anchor point before you go
24 venturing out and we don't just -- we get them -- I think we make a quarterly call
25 for letters and we get them pretty regularly. So it's not like they come all at once.

1 In other words, we ask for letters of intent annually so that they kind of get
2 backlogged up and they all come in at once -- we get a trickle of them throughout
3 the year. So to me that makes a little bit of an argument that there is some
4 consideration by prospective licensees in that they're doing their appropriate due
5 diligence and coming in when they're ready, when they have the appropriate
6 financial backing and any other type of initiatives that they need to have
7 underway. But Drew, I would appreciate what you might have.

8 ANDREW PERSINKO: I don't know if it's the best way. I don't
9 know of a better way, right now. But we focus most of our attention working with
10 the NMA trying to encourage them to improve the accuracy of the letters and
11 some licensees do it better than others -- some applicants do it better than other
12 applicants, too, quite frankly. But I think the industry has told us that they may
13 have an initiative where they're going to try to improve the accuracy of the letters
14 of intent.

15 MIKE WEBER: I would also add that we try to be consistent across
16 the Agency. So just like in new reactors and in fuel facilities, the Uranium
17 Recovery Program takes a consistent approach by asking for that kind of early
18 planning information because the better we know, the better we can help prepare
19 for the potential receipt of those new applications. And now with the focus on
20 pre-application reviews, we need to know that even earlier so that we can be
21 prepared to support those activities. We try to be as supportive as we can,
22 reflecting the Agency's priorities, on safe operation of existing facilities.

23 MARK SATORIUS: And Mike just brought up a very good point
24 that the pre-application audits that we do really do give us a high return on that
25 investment because the quality of the submittals are much, much better after

1 they've had a pre-submission audit.

2 COMMISSIONER MAGWOOD: Certainly agree with that one. Is
3 there a cost associated with submitting a letter of intent to the Agency?

4 ANDREW PERSINKO: Not really. I mean, the letter comes in and
5 we use it for our planning purposes.

6 COMMISSIONER MAGWOOD: There's a large sigh coming from
7 the industry.

8 [laughter]

9 ANDREW PERSINKO: Maybe there's a cost associated with
10 preparing it, but from our perspective, the letter arrives and we then go in and
11 adjust our schedules and our various tracking mechanisms to reflect if there's a
12 change to the submittal date and then we factor that into our projections.

13 MIKE WEBER: We should also point out that uranium recovery is
14 somewhat unique among the activities that NRC regulates. It is a minerals
15 recovery operation and minerals businesses are inherently kind of on a boom
16 and bust cycle. So there are challenges that we recognize the applicant's face
17 that might not be as pressing in other parts of the regulatory activities that we
18 administer.

19 COMMISSIONER MAGWOOD: Let me switch gears and we heard
20 from Mr. Yellow Thunder I think was his name about some of the Tribal
21 interactions we're having and I was actually quite pleased to hear what he
22 characterized as slow but steady progress. That's -- in this world, sometimes
23 that's the best you can achieve, I'm afraid. But I do think there has been some
24 progress and we do have the Tribal protocol that staff has been working on.
25 Could you give us an update where is that, how are we doing?

1 KEVIN HSUEH: I think that Tribal protocol that they find out and
2 with the FRN on tribal protocol manual out for public comment and also have
3 some questions to ask for public input in terms of Tribal policy statement and
4 public comment period I think ends on April 1st. And then after that I think
5 there's an information paper is due to the Commission later this year. So the
6 staff is -- environmental reviews staff and also working with other staff in the
7 office and working together and so and try to all of the lessons learned and try to
8 fit into that Tribal protocol manual and also policy statement.

9 MICHELLE RYAN: Thanks Kevin. I just wanted to add -- Michelle
10 Ryan from the FISME inter-governmental staff. As Kevin said, the Federal
11 Register notice went out in October. We had a 180 day comment period so it is
12 ending April 1st. We've established an NRC working group comprised of staff
13 from the various program offices. As part of that work, we've reviewed other
14 federal agency policy statements and protocols.

15 In addition, we've engaged in extensive outreach, including
16 presentations, mailings, informal discussions, letters to Tribal colleges and
17 universities in addition to 566 federally-recognized Tribes, national Tribal
18 organizations, inter-Tribal organizations, and we've partnered with federal
19 agencies to engage some Tribal organizations in their existing meetings. So it is
20 an ongoing process and we're building on the previous information paper
21 submitted in 2009 with the existing draft Tribal protocol manual.

22 COMMISSIONER MAGWOOD: Excellent. It sounds very
23 thorough. Thank you very much. Thank you, Chairman.

24 CHAIRMAN MACFARLANE: Commissioner Ostendorff.

25 COMMISSIONER OSTENDORFF: Thank you, Chairman. I want

1 to add my thanks and well done to that of Commissioner Magwood. I know that
2 there were problems in any program, but the progress that Commissioner
3 Magwood pointed out, I think is very real and I think that one can always improve
4 and make changes to get better, I think, that the progress over the last few years
5 has been significant. So, thank you and your teams.

6 I'm going to start out -- I'm going to ask this -- I'm going to kind of
7 focus this on Mark, and Mark you can pass this off to whoever you want to have
8 answer this if it's not yourself. I want to go back to Geoff Fettus' comments at the
9 first panel. I think there are some significant issues that he has raised and that
10 are raised in NRDC letter of February 20th. And there's a lot of material in here;
11 I'm going to focus, just really, on kind of the groundwater piece. I think that might
12 be worth looking at. We had the July 2009 memorandum from our staff that
13 talked about there being no evidence of significant problems in this area based
14 on their review not quite four years ago.

15 And then, in the NRDC letter there were comments about a lack of
16 data. There is no cataloging of ISR restoration history, that there are controls
17 that should be in place that are not, that there're potential conflicts. I'd just be
18 interested in the staff and whoever you want to have comment on any reaction
19 and comments on NRDC correspondence.

20 MARK SATORIUS: I think I'm going to ask Bill to take that on, but
21 I'll just say, just from a broad perspective, you know, there's another side of the
22 story here, and I think you're going to hear --

23 COMMISSIONER OSTENDORFF: That's what I want to hear. I
24 want to hear both sides, yeah.

25 BILL VON TILL: Thank you, Commissioner. Groundwater

1 protection is really an integral part of our program with in-situ recovery facilities.
2 We have a strong focus on groundwater protection in ISR facilities through
3 inspection, oversight, licensing, extensive groundwater monitoring to measure
4 potential leaks from the recovery area where they're doing most of their recovery
5 horizontally, vertically, mechanical integrity testing of the wells, and then, of
6 course, the requirements of restoration. We do have restoration requirements in
7 our 10 CFR Part 40 Appendix A, and there's basically a background MC --
8 maximum concentration limits and alternate concentration limits.

9 I also want to point out that before the industry can operate, they
10 also have to get an exemption from the EPA under the safe drinking water act in
11 the portion of the aquifer where the industry is going to do their recovery, and
12 what that basically says is that they have to make a determination that it does not
13 currently serve as a source of drinking water, and it cannot now and will not in
14 the future serve as a source of drinking water. So the area -- the portion of the
15 aquifer is already -- has elevated levels when the industry comes in.

16 Now the 2009 report that you're referring to is still accurate.
17 There's still -- we have not seen with NRC sites, in-situ recovery sites impacts to
18 water supply wells. There are excursions and leaks and so forth from time to
19 time. They are looked at, they are reported --

20 COMMISSIONER OSTENDORFF: On that point, before you go
21 further, do you -- does your group collect that data?

22 BILL VON TILL: Yes. And on the data --

23 COMMISSIONER OSTENDORFF: What do you do with it?

24 BILL VON TILL: We have requirements in our license to report any
25 leaks, excursions, and so forth in the license application tied down to the license

1 has requirements for what that applicant -- what that licensee should do in that
2 case: reporting it by 24 hours, characterizing, taking corrective action, and so
3 forth.

4 Now the data part, we agree there's been some lack of data, and
5 what we've done, we've gotten a contractor to start to come up with a database
6 for all the in-situ recovery data that we have, and that project is in process. Part
7 of my staff, Dr. Elyse Striz, is heading that up with our contractor at the center to
8 try to come up with a better database on groundwater restoration, groundwater
9 background, groundwater quality data in general. So, we are doing that. Again,
10 our priorities are, you know, operating sites and new licensing and so forth, but
11 that is occurring in parallel. So, that's --

12 COMMISSIONER OSTENDORFF: So, this is data for operating
13 sites.

14 BILL VON TILL: This is data for operating sites.

15 COMMISSIONER OSTENDORFF: Is that -- do you envision -- is
16 that currently or in the future will it be promulgated on a website or what's the
17 method of communicating this information with the public?

18 BILL VON TILL: We'll have to look at that. At this point in time
19 we're just collecting the data and we'll have to look at the mechanism to get that
20 into the public, but we do plan to do that.

21 MARK SATORIUS: That would be an initiative that I think that we
22 would go is that we need to be able to provide that information so that it's
23 publically available for our stakeholders to see. One important thing is that as
24 opposed to the reactor program and the inspection program, in this inspection
25 program we have a number of inspectors in Region IV that perform the in-situ

1 recovery inspections. That takes part of our staff. We send hydrologists out to
2 provide the support to the inspectors so the inspections are done, kind of, hand
3 in hand with FSME staff as well as the Region. So we provide the expertise on
4 those type of matters involving groundwater monitoring that Bill has just kind of
5 described.

6 COMMISSIONER OSTENDORFF: Okay. Mike?

7 MIKE WEBER: If I could just add briefly. This is not a new issue.
8 NRC used to sponsor research in this area. So, in the 1980s we had large
9 projects with PNNL to look at the effectiveness of groundwater restoration when
10 in-situ recovery was an emerging technology for uranium recovery. I happened
11 to work in that area at the time in the NRC.

12 Having said that, there is merit to the points that NRDC is raising,
13 and part of the time I think we're talking pass one another because while our
14 analysis shows no impact on current wells, you do see that when restoration has
15 been conducted, for some elements they have not been able to get back to the
16 baseline levels. They have gotten back through restoration to maintain the water
17 quality class, but that doesn't mean necessarily that the pre-existing levels in
18 baseline are restored for all those elements, all those compounds. So you have
19 to be careful, you know, to compare apples to apples so that we're on a common
20 factorial basis when we have that discussion.

21 In addition, I think the comment made that it really would benefit all
22 of us to have regulations that are specifically written to address in-situ recovery is
23 a sound point. That's why NRC embarked on developing requirements. That's
24 why the Environmental Protection Agency is working on requirements in that
25 area. I recall when we were interacting with the EPA in 1983 on these

1 regulations, and we were asking, well, what about in-situ recovery? And in our
2 dialogue it wasn't something that people felt comfortable addressing at the time
3 because it was a newly emerging technology at the time. Of course, time
4 marches on, and it's now the predominant technology used for recovery in the
5 United States. So our regulatory framework has to maintain its currency to keep
6 up with developing technology.

7 COMMISSIONER OSTENDORFF: That's very helpful, thank you.
8 Thank you all for your answer there. Let me -- Kevin, I'm going to go to Slide 21
9 and maybe ask a question or two depending upon time for that. This is the
10 Section 106 process, and I guess that the bottom line is I look at the bottom
11 Failure to Agree piece which kind of catches one's eye, you know. How do you
12 know when you fail to agree, and who makes that call?

13 KEVIN HSUEH: Thank you for that question. I think that what we
14 say Failure to Agree is that when all the consulting parties, they're trying to reach
15 a memorandum of agreement, in this case, to a point that the agency could say,
16 well, it seems that it's not going to go anywhere or spend maybe months and try
17 to get the consensus and cannot get to a point. And they go to the ACHP say we
18 simply cannot agree. That is one possibility, and I -- my understanding is there
19 are also other consulting parties and can go to ACHP and say, well, it seems that
20 it's not going to happen. Hopefully we won't get to that point, but I think that it's a
21 mechanism there for ACHP to chime in.

22 COMMISSIONER OSTENDORFF: Okay. Let me jump in here just
23 because we're running out of time. Staying with ACHP, what kind of feedback
24 have they given NRC on the functioning of the 106 process?

25 KEVIN HSUEH: Their feedback, I think that we interact with the

1 ACHP frequently, and we update them, and I think that in the past we have a
2 case -- actually, we went to ACHP and they said, well, NRC had conducted a
3 good faith and reasonable effort and so that we can complete our Section 106.

4 So, overall, I think that the feedback has been positive.

5 COMMISSIONER OSTENDORFF: Okay. Drew, do you want to
6 add something there?

7 ANDREW PERSINKO: I was just going to mention the one case.
8 We did have one case early on where it wasn't -- I wouldn't really call it a failure
9 to agree yet, but the ACHP weighed in. We were trying to work out the details of
10 the memorandum of agreement, the MOA, and during that meeting there were
11 some differences of the various parties, and the ACHP became a party to the
12 consultation, and they weighed in and they said, we believe the NRC met its
13 reasonable and good faith effort. And so, they weighed in, they were the judge,
14 and they weighed in on that case.

15 COMMISSIONER OSTENDORFF: Thank you, Chairman.

16 CHAIRMAN MACFARLANE: Thank you. Okay, I'm just going to
17 jump on top of the first line of questioning that you started with, Bill, and because
18 I'm also interested in whether this data was collected in one place and whether it
19 was publically available so I would encourage you to continue with that. Do you
20 know when your database will be available?

21 BILL VON TILL: Not yet. There's been a little bit of slow down with
22 the work with the continuing resolution and so forth. We're working that
23 database through and we can get back to you on that.

24 CHAIRMAN MACFARLANE: Okay. And I would encourage you to
25 make it publically available.

1 BILL VON TILL: Certainly.

2 MIKE WEBER: Pending any impact by sequestration.

3 [laughter]

4 CHAIRMAN MACFARLANE: Moreover, so, I'm wondering if you
5 know of any trends or if you are working with hydrogeologists to understand if
6 there are particular hydrogeologic conditions that are more vulnerable based on
7 the supposedly existing data so that would help you understand looking at future
8 sites whether there may be issues. Do you do that kind of thing?

9 BILL VON TILL: Yes, as a matter of fact, we were in an EPA
10 workshop and Dr. Susan Hall was there as well, and we had a lot of discussions
11 about geochemical conditions and how different sites can be totally different as
12 far as the complexing of uranium, whether uranium will migrate further or it'll stop
13 in its place. So, I think understanding the characteristics of the hydrogeology of
14 the site is extremely important towards later on determining the solute transport
15 in a situation how far over time and distance the degradation of that continues.
16 So it's really highly variable to each site, but we do see trends as far as, you
17 know, some iron mineralogy and so forth that might cause, you know, more
18 attenuation.

19 MIKE WEBER: And as you might well imagine, this is going to be a
20 principal issue in the anticipated EPA rulemaking because it's the scientific basis
21 for the standards development then ultimately if there is an EPA standard which
22 we implement it will continue to be an issue that we'll have to address in our
23 oversight implementation of those standards.

24 CHAIRMAN MACFARLANE: And I imagine, you know, for each
25 species you're going to have a different situation depending on the specific

1 geochemistry and geohydrology at each site.

2 BILL VON TILL: Absolutely.

3 CHAIRMAN MACFARLANE: So, then, let me jump to another
4 question that I have. So, then help me understand this generic environmental
5 impact statement given the apparent uniqueness of each site. And so, are there,
6 you know, sort of from a 30,000 foot view, are there other situations where there
7 are technologies that interact intimately with the natural environment for which a
8 generic environmental impact statement is done.

9 KEVIN HSUEH: I'll start it. The generic environmental impact
10 statement basically is done based on our 30 years of past experience operating
11 the ISR facility, and we use that and then we also look at the four geographic
12 regions where the ore is, Wyoming East, Wyoming West, South Dakota,
13 Wyoming area and then also New Mexico area. So we identify those areas that
14 are generic because ISR facility whether it is in Wyoming or in New Mexico, and
15 they are area that may be same for ore -- environmental impact may be the same
16 for -- for example, noise impact. It doesn't matter whether you operate in
17 Wyoming or whether you operate in New Mexico, the noise from operation during
18 ISR operation may be the same.

19 So we look at those areas that are generic to all ISR facility, and so
20 that's kind of generic environment impact statement so we kind of have that
21 framework there. But then for site specific, for example, that the -- South Dakota
22 we have to report our project. There are some specific that Dennis mentioned.
23 So there are some site specific issues that -- cultural resources issues that need
24 to be addressed. So for -- so, we kind of use the generic impact statement to
25 cover what those are, and all problematic impact statement covered -- those are

1 more general, but then we also -- so they can help us focus on -- when we
2 receive a site specific application we can focus on those site specific area. So,
3 that's kind of the framework.

4 LARRY CAMPER: Chairman, Larry Camper, Division of Waste
5 Management and Environmental Protection. Let me add to what Kevin has said.
6 If we go back to about 2006, 2007, 2008, that timeframe, we were facing a huge
7 number of possible in-situ recovery applications. In fact, we knew that the
8 potential number in those days, which was something greater than 40, in fact, I
9 can recall being in conversations at the NMA meeting when uranium was at its
10 peak price, that Mark pointed out on his slide, when there was talk of 60 to 70 to
11 80 applications coming in. Well, the regulations in Part 40 for in-situ uranium
12 recovery require that we do an environmental impact statement. We knew it was
13 simply going to be impossible to get the resource to do an individual EIS for
14 every one of these in-situ recovery. So, we took advantage of the tool that exists
15 in NEPA space, a programmatic environmental impact statement, in our
16 vernacular, a generic environmental impact statement. And what made the GEIS
17 work for in-situ was -- using the four region approach was -- the technology is
18 essentially the same wherever you do it. The type of aquifer and formations in
19 which it can be done are essentially the same. That lent itself to then a generic
20 approach. Then we knew that we were going to have to tier doing a
21 supplemental environmental impact statement capturing site specific conditions
22 of the very nature that you cited a while ago, specific hydrogeological
23 considerations for each given site. But that's why we chose to do it, and that's
24 why it worked in terms of the generic approach.

25 CHAIRMAN MACFARLANE: Okay. I still think there's a little

1 contradiction here.

2 MIKE WEBER: The way I would explain it is we deal in the generic
3 environmental impact statement --

4 CHAIRMAN MACFARLANE: But see, the noise is the same,
5 maybe.

6 MIKE WEBER: On the generic aspects, and where we find we
7 can't deal with it generically we deal with it in the supplemental environmental
8 impact statement, and that's a practice used across the federal government. It's
9 well -- construction under NEPA.

10 CHAIRMAN MACFARLANE: I just want to make sure that I
11 understand properly that it's, you know, from my point of view the geology varies.

12 MIKE WEBER: Absolutely.

13 LARRY CAMPER: I must add one thing. Given what you just said,
14 I must share with you something from having been out there in many public
15 meetings when we were developing the generic environmental impact statement.
16 You have no idea how much I came to loathe the use of that term, generic
17 environment impact statement. I mean, it is a programmatic environmental
18 impact statement.

19 CHAIRMAN MACFARLANE: Like exemption, huh?

20 MARK SATORIUS: Right. You know, because the very point
21 you're raising is the very criticism that we heard. This is only so generic.

22 CHAIRMAN MACFARLANE: Okay. Good, I'm glad we're clarifying
23 that anyway. Okay. What else do I want to ask here? So what are the most
24 technically challenging areas in the safety review for in-situ recovery?

25 BILL VON TILL: I think groundwater is because the rest of it's

1 really straight engineering. The biggest risk of these facilities really is the yellow
2 cake dryer and the yellow cake itself, just to be clear. But when it comes to the
3 groundwater, as you know as a geologist, I'm a geologist; you base your data on
4 wells that you drill. Luckily at these sites there's lots of wells that are drilled. And
5 so getting the characterization of the site and trying to set up the situation to
6 monitor these facilities properly and to restore back as low as reasonably
7 achievable, you know, 60 percent or so forth, that's the biggest challenge, and
8 that's where we've spent a lot of time with hydrogeologists doing a thorough
9 review of the characterization and the application as far as that, and just to be
10 clear about the generic and so forth, that part is very site specific based upon the
11 actual data and characteristics of the site itself. How the monitoring programs
12 are set up, how this formation at this site will perform under restoration. So,
13 that's the biggest challenge.

14 CHAIRMAN MACFARLANE: And there's a time component to the
15 monitoring because obviously some of these species move very slowly.

16 BILL VON TILL: Absolutely. And generally speaking, in Wyoming
17 the water in these formations moves much slower than in Texas. Selenium may
18 be an issue in Texas; it's not as much of an issue in Wyoming. So we do know
19 some general data like that, but really it comes down to the specific well fields in
20 a specific area. One might be across a fault and one might be in the other side
21 of a fault. You might have unconfined aquifers. Lots of different variety, and
22 that's the challenge.

23 CHAIRMAN MACFARLANE: Perched aquifers, et cetera.

24 BILL VON TILL: Perched aquifers, exactly.

25 CHAIRMAN MACFARLANE: All right. I will turn it over to

1 Commissioner Svinicki. Thank you.

2 COMMISSIONER SVINICKI: Well thank you all for your
3 presentations, and I do want to begin by acknowledging I might've sounded a bit
4 pessimistic previously about all the Commission's meetings on this. There has
5 been a lot of progress made, but I'm going to stop there and say that what you've
6 presented I think there are definitely challenges going forward and far from Mike
7 saying, you know, it sounded like complaining. I think it sounded like the kind of
8 transparency that we need to have about what we're facing. And some of it is
9 just very logical and straightforward, but I think it bears repeating on our part is
10 that we've issued some licenses now so now we have oversight activities for
11 those licenses. In a best case scenario for the applicants, uranium prices will
12 rise. Perhaps that would be our worst case scenario because then we will get a
13 fulfillment of the letters of intent. There's been a lot of discussion of letters of
14 intent as if they were something exotic and unique to ISL. In licensing space we
15 are a reactive agency as are many permanent granting and licensing agencies.
16 We would not be able to have any level of confidence in the budgets we ask for
17 and construct two years out if we didn't routinely solicit for letters of intent.

18 And to the extent that there's been any implication that because
19 you don't have to pay a fee like a college application that costs \$300 to apply,
20 that there is some sort of motivation for the regulated community to come in willy-
21 nilly with a lot of letters of intent. I can see a number of very natural disincentives
22 for them to do that. First of all we base our fee structure that we -- and we
23 recover these costs from them. So if we construct fees based on surge capacity
24 for 60 ISL applications, then the regulated community is not well served by our
25 having done that if they're only going to send in eight. So there's lots of checks

1 and balances in this system and, you know, I think that the regulated community
2 has a lot of motivation to be as accurate as they can be, but I think the other
3 aspect here is that we're acting like there's not a feedback loop, and that's the
4 other thing is that I'm sure that we send staff, as I know for a matter of fact we
5 do, to Mine Expo and other annual gatherings like that. We talk about the fact
6 that yes, we get letters of intent, but oh by the way, our budget next year will
7 likely only support eight new applications. And so to act as if that doesn't have
8 some sort of then effect on somebody who 18 months ago sent you a letter of
9 intent realizing that we're really not going to be able to resource to support these.
10 So this -- there's no purity in this process, it's a continual feedback, and we get
11 letters of intent, you know, that's industry making a best effort. I don't think that I
12 am disillusioning anybody if I were to say that NRC doesn't get to ask necessarily
13 for infinite amounts of money every year from Congress so, that I don't think is
14 any secret to anybody that there's upper bound limits on what we can ask for.

15 When I came to this agency, nuclear reactor regulation was we
16 were asking for and budgeting for about 1,500 licensing actions a year. I think
17 we now most recently have budgeted for about 800. And you can have your
18 agreement or disagreement with that. I think that NRC staff has said power
19 reactors are a mature industry and therefore we just are going to budget for
20 fewer licensing actions, but this -- we don't just sit and kind of construct this, we
21 have to get this from the outside. But when I take some of your bar charts about,
22 you know, and it is based on successful completion of some of the reviews we
23 have in house, which it should be so, then again all these parameters are linked
24 so the number of facilities for which we are doing oversight goes up, and we're
25 simply not going to be able to support a surge capacity in this area. So I think

1 you've been very candid about that. I think that the Commission is well served
2 by that as is all those in the regulated community who are hearing that now, you
3 know, we have to keep looking at what the demand is for applications, and this is
4 both renewals and expansions and new applications, and we're going to have to,
5 as the Commission always does in looking at budgets, we'll keep adjusting that
6 and working with the staff, but I don't think that hiding some of these challenges
7 from anybody serves anyone well.

8 They also, you know, as the financing community looks at the
9 NRC's review durations and whether or not we can support the reviews then that
10 affects the access to capital and then you don't get the application. This is a
11 multivariable equation that all of these things are linked to each other. So I just
12 wanted to kind of lay that out there a little bit, but I for one don't hear it as
13 complaining, I hear it as a necessary, I think, very open discussion of some of
14 what we face.

15 I might direct a couple of questions about some of the things we
16 heard from the other panel. We heard that the GEIS was underutilized for the
17 first three applications and it's being utilized more fully for applications we're
18 looking at now and that its application to renewals was kind of a mixed bag.
19 Would you like to react to that?

20 KEVIN HSUEH: Yes. I think that for the past three SEISs -- the
21 first three SEISs, as you may know, we had comments from EPA Region 8 on
22 the first three on the draft SEISs, and so it took us quite some time to interact
23 with EPA and address their comments. And so, I think we learned from the
24 process and so now we have more experience working on those draft SEISs and
25 then finalize the SEISs going through the process. So now we came from the

1 process, now we listened to the issue of draft SEIS for three further projects. So,
2 I think that came from the process.

3 And the other thing is about the EA, environmental assessments. I
4 think there was some EAs that were started when the GEIS was finalized and so
5 there was kind of -- we haven't had a chance to really use the GEIS, but now
6 more recent EAs then we can start to use GEIS as a starting point because those
7 EAs started after the GEIS was finalized.

8 COMMISSIONER SVINICKI: And that -- I'm not as close to it or an
9 expert on it, but it struck me when I heard that it would be somewhat of a learning
10 curve issue. So, I appreciate that you verified that it's somewhat certainly in the
11 first instances we're probably not going to have as much experience and where
12 we've come up that learning curve, and I'm sure much as we use the GEIS for
13 license renewal, you know, now that's a very, very mature process, but we'll
14 continue to learn as we did on the reactor side.

15 What is a status of an update to the standard review plan for ISL
16 applications?

17 BILL VON TILL: I can answer that. We worked to revise that
18 document, and a lot of work we had -- we had a contractor do some work for us.
19 We went down the road with it and then a combination of the priorities from the
20 other licensing actions we have and the oversight and then in addition to that with
21 the EPA going forward with its rulemaking we felt that -- we knew that the rule
22 would come out first and then go ahead and do our guidance and rulemaking
23 otherwise we might get up ahead of that and then totally have to change it in a
24 couple of years. So a couple of those factors is why that hasn't materialized yet.
25 Part of it's a lack of resources from the hydrogeology standpoint, too. We got

1 pretty far along and then we saw the EPA rulemaking, we interacted with the
2 EPA rulemaking, and we were doing our own rulemaking and now we wanted to
3 wait until the EPA rulemaking comes out at least in the draft -- final rule -- that we
4 would have to do our own conforming regulation and guidance at that point in
5 time. So, that was kind of the thinking on that.

6 COMMISSIONER SVINICKI: I wanted to ask a question about how
7 pervasive our agency reliance is on contractors for licensing actions. Is it -- are
8 we singularly dependent on contractors for environmental reviews and licensing
9 actions and if contracts were cut in that area would we come to a full stop on
10 certain reviews of licensing matters?

11 MARK SATORIUS: They would be significantly reduced. We do
12 rely on contractors fairly extensively. It doesn't mean that we are not capable of
13 doing our own work within our shop, but we have gotten to that point where we
14 have found that that's been useful.

15 COMMISSIONER SVINICKI: But you're indicating that if we did
16 need to further reduce contractor support we could re-energize or re-invigorate
17 some in house work or would that be --

18 MARK SATORIUS: I think we're just going to run out of bodies. I
19 think Drew probably has a better tie to the exact numbers, but I think it would
20 impact our output.

21 ANDREW PERSINKO: It would definitely impact our output,
22 especially in the environmental area.

23 COMMISSIONER SVINICKI: So, you can do the safety but as long
24 as you can't --

25 ANDREW PERSINKO: Even then, we have staff that could do it in

1 house, but even then I think that there are some specialty areas that we don't
2 have on our staff that we'd have to borrow from elsewhere in other environmental
3 review groups within the agency like NRO or NRR, perhaps, so we could cobble
4 together the necessary technical expertise, but we are --

5 COMMISSIONER SVINICKI: If there were a sustained reduction in
6 that area we would have to look at those kinds of measures.

7 How do you resource for the granting of hearings. I would without
8 really any hard data say that there's more hearing being granted on your
9 licensing actions. Does that -- I know there's some OGC resourcing there. Does
10 that come out of -- do you budget for that and then does that affect -- is that in
11 addition to oversight and licensing the bar graph. Should there be almost a bar
12 for support to hearings or is it the same reviewers generally?

13 ANDREW PERSINKO: It's the same reviewers. It's just the
14 reviewer -- the technical reviewers, either the environmental or the safety would
15 also support the hearings. It's not budgeted, per se, in that -- in those bar charts.
16 It's just the bar charts show capacity thus far and -- but it's not -- we didn't budget
17 it per se, but we know it's coming, and we know it's going to be a demand on our
18 resources as we go forward.

19 COMMISSIONER SVINICKI: So just some percentage of them will
20 have hearing support so you just make your best estimate on that?

21 ANDREW PERSINKO: We would -- right. We would have to
22 increase our capacity if we wanted to handle more of the hearing and keep up
23 the 8 to 10 capacity in new licensing.

24 COMMISSIONER SVINICKI: And I just had one last question. I'm
25 hoping it's quick, but I raised with the previous panel that the final rule that it was

1 said it was not clear on pre-licensing site construction. What I heard from the
2 panelist was we now discourage but we don't prohibit, but it may be grounds for
3 denial. Can you help me understand that?

4 MARGARET DOANE: I think they're going to refer that question to
5 me. Since this started initially with the NSF decision where we first -- where the
6 Commission first made this determination, and I think this is -- it's really just, sort
7 of, a logical conclusion of what might happen. It's really not us coming up with a
8 prohibition and then a warning, and a discouragement. It really is thinking about
9 if you do activities at this early stage that in a later stage involve some kind of an
10 environmental issue or a taking or an unresolved issue that we hadn't seen
11 before when you first started this there might have to be some kind of mitigation.
12 If you couldn't mitigate it then that's how it could have implications for denial of a
13 license. So it's really just sort of a logical, sort of, understanding of what could
14 happen.

15 So, for example, there was a case that I understand where some
16 cable was laid. And it turned out that some inspections couldn't -- later on when
17 they did get into the licensing that they couldn't inspect those cables so they had
18 to be torn up and there had to be mitigation. But let's say that couldn't happen
19 because it's a taking -- an environmental taking or something like that, and there
20 was no way of remedying it later in the proceeding. That's when it could be a
21 denial. And there are issues like this, it doesn't just affect NRC licensing but this
22 actually -- this was an outgrowth of -- there was a NRC -- I'm sorry, an EPA,
23 NRDC case -- where NFS relied on that holding to say it was a permitting case
24 where EPA was going to permit later and had the same situation.

25 COMMISSIONER SVINICKI: I think I speculated with the earlier

1 panel. I think I called it maybe boilerplate meaning that we need to have the
2 ultimate backstop at the end. So, I think that you're telling me it's really no
3 different than that. We have to have that ultimate ability to deny. Okay. Thank
4 you.

5 MARGARET DOANE: And I would add to that, that I would
6 encourage just further discussion. You're talking about a review plan and things
7 like that to better identify where these lines are and what things might trigger later
8 review or concerns.

9 COMMISSIONER SVINICKI: Okay, thank you. Thank you,
10 Chairman.

11 CHAIRMAN MACFARLANE: Thank you. Commissioner
12 Apostolakis. No questions. Okay. Anybody else have further questions? No.
13 No. Okay.

14 Then I will thank the staff for their presentations again and remind
15 everybody this was a very worthwhile session this afternoon, a variety of topics
16 covered. I appreciate all our external panelists for traveling here and making
17 presentations, and I look forward to ongoing engagement with the staff with the
18 affected public, with the states, with the Tribal governments as well. As of now
19 we are adjourned.

20 [whereupon, the proceedings were concluded]