

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

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BRIEFING ON URANIUM RECOVERY PROGRAM

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PUBLIC MEETING

Nuclear Regulatory Commission  
One White Flint North  
Rockville, Maryland

Monday, July 29, 1996

The Commission met in open session, pursuant to notice, at 10:04 a.m., Shirley A. Jackson, Chairman, presiding.

COMMISSIONERS PRESENT:

SHIRLEY A. JACKSON, Chairman of the Commission  
KENNETH C. ROGERS, Member of the Commission  
GRETA J. DICUS, Member of the Commission

STAFF AND PRESENTERS SEATED AT THE COMMISSION TABLE:

JOHN C. HOYLE, Secretary of the Commission  
KAREN D. CYR, General Counsel  
HUGH THOMPSON, Deputy Executive Director  
Office of Nuclear Material Safety and Safeguards  
MARGARET FEDERLINE, Acting Director  
Division of Waste Management  
JOE HOLONICH, Chief  
Uranium Recovery Branch  
JOHN GREEVES, Acting Deputy Director  
Office of Nuclear Material Safety and Safeguards

P R O C E E D I N G S

[10:04 a.m.]

CHAIRMAN JACKSON: Good morning.

MR. THOMPSON: Good morning.

CHAIRMAN JACKSON: Well, good morning, ladies and gentlemen. This morning, the Commission will be briefed by the NRC staff on its uranium recovery program. I would like to announce at the outset that obviously Commissioner Rogers is not physically present with us, but this morning he is present by telephonic means and you may hear him from time to time participate that way. I hope he is hooked up.

As you know, the function of NRC's uranium recovery program is to license and regulate uranium mills' commercial in situ solution mining operations, uranium extraction research and development projects, and the disposal of uranium mill tailings and waste.

In carrying out these responsibilities, the NRC staff must perform detailed health safety and environmental reviews and inspect facilities to assure their safe operation.

It is a program that has undergone significant changes over the past few years. In 1994, the uranium recovery field office, or URFO, in Denver was closed down and all licensing activities were consolidated at headquarters and the inspection activities were transferred

to our Region IV office.

As a result, NRC staff and licensees had to adapt to a different way of doing business, although it appears that the closure of the URFO office in Denver was accomplished in a manner that minimized the impact on ongoing inspections, licensing and policy development programs.

More recently, the price of uranium has increased to a level where there is renewed interest in extracting additional uranium ore. This has drawn increased attention

to the uranium recovery program from licensees, state governments and the Congress.

Today, the Commission is looking forward to hearing more about the status of NRC's uranium recovery programs from the staff.

Commissioner Rogers, if you're on, if you have anything to add?

Commissioner Dicus?

COMMISSIONER DICUS: No.

CHAIRMAN JACKSON: If not, you may proceed, Mr. Thompson.

MR. THOMPSON: Thank you, Chairman Jackson and Commissioners.

This morning, we are here to update the Commission on the activities related to NRC's uranium recovery program.

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NRC's uranium recovery program falls under the division of waste management in NMSS and is one of the areas that doesn't frequently get Commission attention. As you said, there are many changing factors, and that's the reason we are here today.

John Greeves is the director of the division of waste management, although he's currently acting as the deputy director of the Office of NMSS; and Margaret Federline, who is the deputy director of the division, is currently the acting director of the division; and Joe Holonich here is the chief of the uranium recovery branch, and he is the chief.

As you did identify, there are lots of changes that have been ongoing. I think you identified all of those that are really impacting the workload, and it has impacted the workload and so we will identify some of those activities we are going to recover from the backlog we have.

In addition to its regulatory role related to the new and operating licensees, the Uranium Recovery Branch has the responsibility for carrying in DOE's clean-up of the inactive uranium recovery sites and for reviewing reclamation activities at NRC's license sites.

Once the reclamation has been complete, NRC will terminate those licenses and then turn those sites over to DOE for long-term custodial care. And so one of the things

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that I always had difficulty with for many years is knowing who had Title I and Title II; so the exam at the end of this was DOE is Title I and everybody else is Title II.

I'll turn it over to John, so he's clarify that for me if I made a mistake.

MR. GREEVES: I just want to make a few opening remarks. One way or another, I've been working on these issues for about 15 years, and I note that it has been a long time since the Commission has had any briefing on this particular program area. As Hugh Thompson identified, DOE has the Title I work; that's the abandoned mill tailing sites and mostly out West. So they have that.

They did come in about five years ago and give the Commission a briefing, a good briefing on the status of the Title I work. I believe Commissioner Rogers may have been on the Commission when they did give that briefing, but I don't think the rest of you were at the time.

CHAIRMAN JACKSON: Not if it was five years ago.

MR. GREEVES: There have been no briefings on the commercial side, so with that, we thought it was a good idea to recommend a briefing for the Commission to bring you up to date.

We've got about 18 FTE assigned to this program area, considerable technical assistance funds.

It turns out that last year, we reorganized this

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program area. Joe had responsibilities for both high level waste and uranium recovery. It was really difficult, actually, to keep up with both of them. So we decided to focus our efforts on uranium recovery, gave Joe that sole responsibility. I think it turned out to be a timely decision.

It turns out that the price of uranium, as you mentioned, Chairman, has gone up significantly. It has gone from \$9 to better than \$16 a pound. Some people can't even remember it being that high. So what we have is an industry that was facing decommissioning liability. That was what was in front of them. Now we have an industry that has a number of asset opportunities associated with it. So you can imagine what it does to the dynamics of the process.

We have received some high level input from the

governor of Utah, the governor of Wyoming, and most recently Senator Simpson from Wyoming.

So we look at this as kind of an opportunity to share how we're setting priorities in this program area and get you up to date on a couple of the key issues that the staff is wrestling with from day to day.

So with that, I would like to turn it over to Joe.

MR. HOLONICH: Okay. Thank you, John.

May I have the first slide, please?

[Slide.]

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MR. HOLONICH: This morning's presentation is set up to try to accomplish three objectives: give the Commission some background on the uranium recovery activities, including a little history of the program, and help understand a little bit of the framework within which the program is implemented; provide general information on uranium recovery activities, not only what licensees and DOE are doing, but also what the staff's involved with; and then to discuss several major issues that are currently facing the program.

May I have the next slide, please.

[Slide.]

MR. HOLONICH: Just to help set some context, we have a map of the United States and those states which have uranium recovery facilities in them. We also have highlighted the four agreement states, which are Washington, Colorado, Texas and Illinois. And this kind of helps lay out where the facilities are and what states are involved in these activities.

You notice in the legend we talk about the Title I, Title II sites, and Title II in situs, and as we get into the presentation, I'll expand on what John talked about and what is involved in these different sites and why we've kind of given them that shorthand name of Title I and Title II sites.

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May I have the next slide, please.

[Slide.]

MR. HOLONICH: Essentially, the milling of uranium was regulated by the Atomic Energy Commission under the authority given at the Atomic Energy Act; however, there was no regulation of the disposal of uranium mill tailings.

In the early 1970s, the Atomic Energy Commission found that it could exert some regulatory authority over the tailings through its National Environmental Policy Act responsibilities; however, even that didn't give the Commission the kind of authority they wanted to get over the mill tailings, and the reason was there were essentially two problems. Number one was a dispersal and use problems of tailings. This was mainly in the Grand Junction area where people were actually using the tailings to backfill streets, backfill utility lines, build houses, and there was no long-term control of these sites. And so those were the concerns that were there with the unregulated tailings.

May I have the next slide, please.

[Slide.]

MR. HOLONICH: To address this problem, Congress passed the Uranium Mill Tailings Radiation Control Act of 1978. Essentially what UMTRCA had as its basic philosophy were two things: Number one, stabilize the tailings and ensure long-term control of the site; and number two, clean

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up the groundwater that had been contaminated as a result of the milling operations there at those sites.

It also laid out responsibilities for federal agencies, the Department of Energy, the Environmental Protection Agency, and the NRC, as well as outlining responsibility for states in which the facilities were located. And I'm going to give you a little more detail on what UMTRCA did and I'm going to talk a little bit more about what the responsibilities of those different organizations were as we talk a little bit more about the details.

Essentially, UMTRCA has two main titles: Title I and Title II. Title I deals with abandoned uranium mills. There were 22 sites specified in the Act that the Department of Energy was assigned responsibility for reclaiming. In addition, the Secretary was given the authority to add any additional sites that they deemed were necessary. They did add three sites, the Burrell site in Pennsylvania and the Bellfield and Bowman sites in North Dakota, bringing the total sites up to 25.

The Act directed DOE to reclaim these sites, both surface reclamation work and groundwater. It also directed EPA to promulgate standards that EPA thought were necessary to protect public health and safety. It gave us the responsibility under Title I to concur on the actions that

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DOE was taking. And it gave the states responsibility for paying 10 percent of the reclamation cost of the sites that were within those states.

Title II dealt with -- yes, Commissioner?

COMMISSIONER DICUS: May I ask a question there?

Ten percent -- whether it's a state that's handling the program or not?

MR. HOLONICH: Well, for Title I, the agreement states aren't involved. There is no agreement state for Title I. Title I is purely a federal responsibility.

COMMISSIONER DICUS: Okay.

MR. HOLONICH: It's the Department of Energy doing the reclamation, and we concur on that reclamation. The states are required to fund 10 percent of the DOE work, but they're not involved as an agreement state in doing any reviews.

COMMISSIONER DICUS: So that's all the states that have these sites?

MR. HOLONICH: That's correct, all the states that have the Title I sites.

Title II dealt with commercial facilities, and what Title II did was amend the Atomic Energy Act by adding a definition of 11(e)(2) byproduct material, which was essentially the byproduct material generated from the extraction of uranium and thorium from ores. It gave us the

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authority to regulate that byproduct material, and it applied that section to any facility that had an NRC license at the time the Act was passed or any facility that was licensed in the future after the Act.

The EPA again had standard-setting responsibility, and for both Title I and Title II, the EPA standards focused on the emission of radon, the stabilization of the tailings impoundment and groundwater cleanup limits. In the next couple of slides, I'm going to talk about what goes on in surface reclamation and what goes on in groundwater cleanup, and talk about the standards there and the specific values and how EPA came up with those standards.

CHAIRMAN JACKSON: Okay. So you are going to talk about that.

MR. HOLONICH: Yes. Yes, ma'am.

CHAIRMAN JACKSON: That's good.

MR. HOLONICH: Finally, the Act required that these sites be under the control of a long-term custodian. For the Title I sites, the Department of Energy is the long-term custodian. Those sites get licensed under the general licensing provisions of 10 CFR 40.27. There are currently five sites that are licensed under long-term care. They are the Spook site, Cannonsburg and Burrell sites, the Lowman site in Idaho and the Lake View site in Oregon. For Title II, there is one site currently licensed for long-term

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care, and that's the TVA Edgemont site.

Title II --

CHAIRMAN JACKSON: Who is the custodian?

MR. HOLONICH: DOE is the custodian for the Title II site.

Title II differs a little bit from Title I in that the Department of Energy becomes the long-term custodian for Title II sites if the states decide that they don't want to take long-term custody of the Title II sites. For Title I, it's solely the responsibility of the Department of Energy.

In addition, when these sites are terminated, the licensee in Title II is required to make a long-term payment to the federal government for monitoring these sites and, if necessary, maintaining these sites.

MR. GREEVES: I would like to point out that this transfer of this Title II site is a significant event. Many of the meetings that Joe and I have had with the industry over the past few years, the industry is wondering, well, can the NRC come to closure on these sites. So we've looked at this particular issue, and I think Joe has done a good job of being able to demonstrate that yes, there is a way for licensees to, once they clean their site up, to get it transferred, as the Act calls for, to the federal government. So this was a recent demonstration on that process and there's a number more in the pipeline.

MR. HOLONICH: May I have the next slide, please.  
[Slide.]

MR. HOLONICH: I would now like to talk a little about surface reclamation and what's involved with that.

What licensees do is they have to design the tailings impoundment to ensure that they limit the radon emission and the impoundment will be stable for 1,000 years. The way this process is done is they design a radon barrier based on the amount of radium that's in the tailings and what kind of radon is being emitted by the tailings. They then identify the kinds of threats that could be expected at these facilities over the design lifetime, and these could be things like earthquakes or floods. They then incorporate design provisions to make sure that the facility is capable of withstanding these threats.

Those documents get submitted to us and we do a review and determine whether they're in compliance with either the EPA standards if they're a Title I site or our regulations if they're a Title II site.

CHAIRMAN JACKSON: You can slow down.

MR. HOLONICH: Okay. I'm sorry.

In addition, licensees are required to clean up contaminated soil at the site. Usually, we deal with hundreds of acres of contaminated soils; it could be as much as three or four-hundred acres of contaminated soil. The

soil is contaminated from the tailings being dispersed through wind-blowing activities. The cleanup standard is promulgated by the EPA, and on the next slide I'll talk in a little more detail about that standard.

Essentially, these activities are the same for Title I and Title II sites. The Department of Energy does the same kind of design work, does the same kind of construction work as individual licensees do on their sites.

We do have, however, in Title I a Congressionally mandated completion date of September 1998. Now, I have to caveat that and say that the actual date is September of this year, but there is currently legislation before Congress to extend the date for two years; and based on discussions with the Congressional staff here, there is indications that that will pass by the end of the summer, so that the final completion date will be September of 1998.

We work very hard to try to make sure that we do what needs to be done, get that date complete, have a number of management meetings two or three times a year with my DOE counterpart. John Greeves meets with Jim Owendoff, who is the deputy assistant secretary for environmental restoration, at least every six months, and we go over where we are and kind of what we need to do to make sure that the process continues to move.

Parallel to that in Title II, we don't have

legislatively mandated dates, but we do have a memorandum of understanding between us and the Environmental Protection Agency. That MOU was negotiated as part of a settlement of a lawsuit. What it does is lay out dates by which individual licensees would complete their radon barriers for Title II sites, and it set December of 1997 as the ultimate date for completing those radon barriers.

Right now, we've got a couple of sites that have gone beyond those dates. We have talked with EPA, we've been working with EPA very closely. They are comfortable -- why we went beyond those sites, what happened at the licensees' facilities that required that we go beyond those sites.

This is one area where we've got a really good working relationship with EPA. This is a real success between us and EPA. And it seems like the process is working very well here.

So we've got kind of those two milestones that drive us and focus us on making sure we get the reviews done in a timely manner.

CHAIRMAN JACKSON: Do we review the licensees' plans?

MR. HOLONICH: Yes, we do.

CHAIRMAN JACKSON: And how long does that typically take?

MR. HOLONICH: Past experience has shown it could take as much as 18 months, depending on the number of rounds of questions we have to go through, depending on the quality of the design that they submit, the quality of the

information they submit.

The last one that we recently got through took us about 18 months. We had to go through two rounds of questions with the licensee.

CHAIRMAN JACKSON: I see. So it's a question of how much back and forth there has to be?

MR. HOLONICH: Yes.

CHAIRMAN JACKSON: Now, do we give the licensees some input as to what our expectations are from them up front?

MR. HOLONICH: We try to. We've got some regulatory guides that we provide to the licensees. We've got a facility that is looking to change its reclamation plan, is going to come in and meet with us in August, talk about what they want to do, get feedback from us as to what we think, what we would need to see to be able to make the demonstration. We have, in fact, got one of our staffers out in the field today talking with one of the licensees who is revising their reclamation plan, a different facility.

So whenever they say they want to meet with us, whenever they say they want to talk with us, we're willing

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to do that. And we've also got regulatory guides and standard review plan that they can certainly have access to, that we happily provide them to give them the kind of information we're looking for in the applications and what they need to do.

CHAIRMAN JACKSON: So theoretically, the time can be shortened?

MR. HOLONICH: Yes. As a matter of fact, we've got a couple of rec plans that we're hoping we can do by the end of the next fiscal year in about a six- to eight-month time frame, and that assumes just one round of questions and a high-quality application from the licensees.

CHAIRMAN JACKSON: Okay. Thank you.

MR. HOLONICH: May I have the next slide, please.

[Slide.]

MR. HOLONICH: The standards that are applicable to surface reclamation, as I noted earlier, were developed by EPA under its authority in UMTRCA, and they essentially deal with three areas: limiting the radon emissions to 20 picocuries per meter squared second from the tailings impoundment. And this is the equivalent of about a 175 millirem dose at the edge of the tailings impoundment, but by the time you get about a quarter of a mile around, you're at the background. The radon disperses so quickly, you can't tell at about a quarter mile away from the tailings

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impoundment. Ensuring the stability of the impoundment for 1,000 years, but no less than 200. And again, this is where identifying the design threats and incorporating the design features comes into play. And then cleaning up the contaminated soil -- this is mainly radium -- to a standard of five picocuries per gram in the top 15 centimeters and 15 picocuries per gram in every 15 centimeters after that. And this equates roughly to a dose of about 61 millirem. And this was based on an individual standing at the site 24 hours a day.

If I could now, I have a couple of pictures to show you of what a before and after of reclamation is, and if I could have the first picture --

CHAIRMAN JACKSON: Let me ask you a question about that.

MR. HOLONICH: I'm sorry. Yes.

CHAIRMAN JACKSON: This is some kind of averaged quantity?

MR. HOLONICH: The five picocuries per gram? Yes, it is. It's averaged over a ten meter square grid.

CHAIRMAN JACKSON: Okay.

MR. HOLONICH: Could I have the first picture of Tuba City, please.

What you're going to see here is the Tuba City site, which is a Title I site in Tuba City, Arizona. The

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total volumes of tailings, what was reclaimed was this triangular area right there. You can see some of the mill buildings here. That site was under reclamation by the Department of Energy. In addition to the tailings, they had about 250 acres of wind-blown contamination, radium contaminated soil. Essentially what's here is three tailings impoundments and three spill ponds for emergency spills.

If I could have the second picture, please.

What you will see here is how the site looks after it's been reclaimed, and what was done essentially was a demolition of surface and sub-surface structures, demolition of the mill buildings. All of that material was buried in the pile. They then placed a radon barrier on top of the pile. And then finally, the black that you see here is rock that is put down for erosion protection, to make sure that the radon barrier doesn't wash away.

CHAIRMAN JACKSON: What's typically used to create a radon barrier?

MR. HOLONICH: Clay. Clay.

CHAIRMAN JACKSON: Okay.

MR. HOLONICH: Can we go on to the next slide, please.

[Slide.]

MR. HOLONICH: The second aspect of site

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reclamation deals with the cleanup of groundwater, and the way this process works is that licensees are required to go out, characterize their groundwater situation, get a feeling as to what the extent of contamination is, what their plume is in the groundwater, and then develop a program to clean up that plume.

Of the mill sites that are under Title II today, right now we have 16 that are undergoing groundwater cleanup. There are a total of 19 licensed mills.

What's involved usually with these cleanup programs is a pump and evaporate scheme where people pump the groundwater, evaporate off the water, and then the residual, what's left, will be disposed of in the tailings impoundment. What they essentially do is pull the contamination back, pull the plume back, try to remove the plume from the groundwater system.

The programs that are in place today at Title II were approved and reviewed by the uranium recovery field office in the late '80s and early '90s. For the Title I program, we are just beginning the groundwater activities. They have just submitted some site-specific documents to us. This year, we have completed the review of four site-specific documents in the groundwater area; namely, the approaches, the strategies that DOE is going to use at these sites.

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So where the Title II program is a very mature program, the Title I program is just beginning the groundwater activities.

Yes, Commissioner?

COMMISSIONER DICUS: What's the groundwater standard that you are using?

MR. HOLONICH: On the next slide, I'm going to talk about the types of standards, and I don't have a specific number because it varies from constituent to constituent.

[Slide.]

MR. HOLONICH: Some licensees need to clean up their -- need to complete their groundwater program because part of what they do is use the top of their tailings impoundment as their evaporation pond rather than construct a separate evaporation pond, and you've got the water up there and you can't put down your radon barrier. And so to be able to meet your radon barrier date, they need to come in and ask us, now we've done all we could, we think we're there, we've done five, six, seven years of cleanup actions, we would like to stop this program, dewater these tailings and put down the final barrier.

So what happens in some instances is, in fact, groundwater becomes a critical path item for the completion of the radon barrier because the top of the tailings

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impoundment serves as the evaporation pond.

If we can go to the next slide, please.

[Slide.]

MR. HOLONICH: The type of standards that are applied to the cleanup of groundwater for Title II sites are three types. You can get to background, which is the condition that was there before the mill was placed there or the condition in the aquifer up gradient of the mill. You can go to maximum concentration limits, which are generic standards set by the Environmental Protection Agency. It's a health-based standard. Or you can go to ultimate concentration limits, which are site-specific limits for individual constituents based on a health risk standard of 10 to the minus 4.

Title I has the same kind of standards, but in addition, it has a fourth standard called a supplemental standard. What the supplemental standard allows is that there is no need to conduct groundwater cleanup if DOE can demonstrate that the actions are still protective of public health and the environment, and certain conditions are met for supplemental standards, and these, namely, are, number one, to do the groundwater cleanup would do more harm than good, or it's technically impracticable to do the cleanup, or, three, the groundwater aquifer where the contamination is of limited use, and there are a couple of standards in

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there for limited use, like 10,000 milligrams per liter of total dissolved solid is an example of that.

So Title I and Title II have essentially the same kind of standards in terms of background, maximum concentration, and ultimate concentration limits, but Title I also has the flexibility to use supplemental standards which Title II doesn't have.

CHAIRMAN JACKSON: Do you think that there are lessons learned in terms of these supplemental standards that could be applicable to setting groundwater standards in other parts of our program?

MR. HOLONICH: Well, I will tell you, Chairman, that we have not yet done any supplemental standards review of the DOE Title I sites. As I said earlier, they are just starting the program, we're just getting into the reviews.

CHAIRMAN JACKSON: Okay.

MR. HOLONICH: I certainly think the concept could be applicable to other types of facilities.

CHAIRMAN JACKSON: But you are going to be doing this?

MR. HOLONICH: We're expecting to do some supplemental standards reviews --

CHAIRMAN JACKSON: I think that would be very interesting and would be very useful to the Commission.

MR. GREEVES: This whole area -- and you're going

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through strategic assessment and the low risk issue. This is one of those areas, so it's one --

CHAIRMAN JACKSON: I think we need to know what we learn from it.

MR. GREEVES: Right. Certainly.

MR. THOMPSON: I do think we do have some -- there's the alternative concentration limits. So we do have some success in those areas.

COMMISSIONER DICUS: Is it the licensee's choice on which one of these standards on Title II they will use or is there --

MR. HOLONICH: The licensee can come in and propose the standard and then we will review it and determine whether we agree with that, and if we find it acceptable, then that would be the appropriate standard. The way it has worked is that we have either required licensees to go to background or maximum concentration limits, and then they have been under a groundwater cleanup program for some time. They have come in and said, we can't get to the limits, we would like to establish an alternate concentration limit.

COMMISSIONER DICUS: Do we provide them some guidance on making --

MR. HOLONICH: We have provided them guidance on how to develop alternate concentration limits. We don't

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have guidance on the maximum or background because those are pretty much the standards that are promulgated there.

Just for information, we do have four sites that are identified as Superfund sites because of their groundwater contamination. These are two in the State of Colorado, Canyon City and Uravan; and two in the State of New Mexico, Homestake and Churchrock.

I want to add that Homestake and Churchrock are our licensees, but at the time they were identified as Superfund sites, they were licensees of the State of New Mexico. New Mexico at that time was an agreement state.

CHAIRMAN JACKSON: Has the identification of these sites, particularly ones that are our sites, had any impact in terms of the rate at which, you know, there has been progress in the clean up?

MR. HOLONICH: They continue to clean up the groundwater. They're working on cleaning up the groundwater. It does add some complications in terms of the long-term custodian. The Department of Energy is very

concerned that even though these sites could be cleaned up to appropriate standards, because they were Superfund sites, there might be some liability for DOE. EPA may come back and say, hey, yeah, we said five years ago this was cleaned up enough, but we've looked at it now, we're not thinking that this site is cleaned up enough. And DOE, as the

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long-term custodian, would be the party responsible for it.

So there is that kind of complicating factor.

Yes, those kind of dynamics, that kind of complicating factor as you get towards terminating these licensees. In fact, on the Churchrock site, we have an MOU with EPA where for activities within the boundary, we are the lead federal agency and activities outside the boundary, EPA is the lead federal agency. So we've tried to consolidate and work with EPA, and we're also working on setting up a meeting between us, DOE and EPA to open up the dialogue on these Superfund sites so that DOE can understand and present its concerns to EPA, EPA can understand them, and maybe they can work out an MOU of some sort that would help govern what these sites do in terms of long-term licensing.

MR. GREEVES: I think DOE is going to be looking for a firm understanding that they're clean when they get these sites, whether they be Title I or Title II.

MR. HOLONICH: Can I go to the next slide, please?  
[Slide.]

MR. HOLONICH: The next slide lays out a little bit about what the staff is doing in terms of reclamation activities. Right now, we're looking to complete licensing of 17 of the DOE sites by September of 1998. With five licensed and 17, brings the total to 22. One site will remain open for long-term management of tailings. For

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instance, when Grand Junction does work and digs up tailings under the street, the Grand Junction cell will remain open and they will be able to dispose of those tailings there.

A couple of other sites have been removed. The Bellfield, Bowman sites in North Dakota right now DOE doesn't think needs to be remediated, so they won't be licensed for long-term care.

We have got an equally large amount of work in the Title II program. When these slides were provided to you a couple of weeks ago, we had ten reclamation plans that we had to complete. We now have eleven. We received one recently in the region in response to a notice of violation.

The same kind of work, the same kind of activities whether we're doing a DOE Title I review or whether we're doing a Title II licensing review.

CHAIRMAN JACKSON: Now, these Title II sites, the eleven identified reclamation designs, are these ones that have the December --

MR. HOLONICH: Some of those are the December '97 date. Some of those do not have the December '97 date because they were not undergoing reclamation at the time of the MOU. Two of them are mills that want to resume operation and they need to have their reclamation plan reviewed to be able to resume operation.

So there is a hodge-podge of things in there.

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CHAIRMAN JACKSON: Let me ask you this: Are we on track in terms of getting these things done on the time lines that were assigned to them?

MR. HOLONICH: We are. We have undertaken an effort to contract the review of these activities in some areas. Some of the plans stay with us and we'll review them in-house. We're hoping that by the end of the next fiscal year, we'll have a majority of these done. There will be a couple that will go into Fiscal '98, but that's because they won't be submitted until early next year, and so there will be kind of a staggered time line in terms of completing the reviews.

But our focus is trying to make sure we support the reviews, get the dates done so that they can meet their December '97 date or, if necessary, do what we need to be able to support the operation of the facility.

MS. FEDERLINE: I just wanted to add, this is one of the complexities in managing this program, because it requires multidisciplinary geotech engineers, health physicists, surface and groundwater hydrologists.

When you receive some of these submittals a month or two later than you expected to receive them, of course, you know, you've been managing the staff, trying to keep them all busy, you know, with one thing or another, and so

it adds to the complexity of scheduling. And this is how

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sometimes when an applicant comes in they have to wait a month or so and get into the sort of queue.

CHAIRMAN JACKSON: Given the mixture of technical disciplines that you have to use, what resources do we draw on? Are they strictly in-house? Do we use the, you know, center in San Antonio? How do we work that?

MS. FEDERLINE: Yes. We have explored and we have recently awarded a contract or are working toward a contract at the center for supporting the uranium recovery work. It's a good complement with the already existing expertise at the center.

CHAIRMAN JACKSON: Does that help to expedite things?

MS. FEDERLINE: Yes, it will.

MR. GREEVES: There is, I think, going to be a natural tension. With the price of uranium going up, everybody wants to be first. These ten or eleven people -- they're all beating on Joe's door and saying, you told me 18 months, Joe, I want it done in ten. So this is an area that you're going to see and hear more about because of this tension regarding the increased price of uranium, and Margaret and Joe have periodic meetings to manage the schedule and we briefed up through the EDO on this and told him, this is our get-well plan. He gave us additional resources to be able to --

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CHAIRMAN JACKSON: Okay. You're going to be talking about timeliness of review.

MR. GREEVES: Right.

CHAIRMAN JACKSON: So why don't we wait until we get to that point.

MR. HOLONICH: The other activities that are dealing with surface reclamation are the cleanup of

contaminated soil, and many of the facilities in Title II have been completing these programs over the past couple of years. Again, this was an area where URFO had done the earlier reviews. The licensees have been out there scraping up the soil, cleaning up the soil to the appropriate standard, and now they're completed with those programs and they're coming in to us and saying, we're done, we would like your approval to say you've completed the program in an acceptable manner.

Usually what they do with this soil is place it on top of the tailings impoundment, and the two reasons are convenience -- that's a nice place to store it; they're going to be taking care of it anyway -- and number two, the top ten feet of the tailings or the top ten feet of the material is really what dictates the thickness of the radon barrier. And so if you can put a soil up there that doesn't have as high a concentration of radium in it, you can reduce the thickness of the soil that you need for the radon

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barrier.

Of course, we have the groundwater reviews, we've got the corrective action programs, the cleanup programs in Title II that are coming to an end, people are trying to finish, and we've got the start of cleanup activities in the Title I program.

In addition, once reclamation work is done, we've got the long-term licensing of the sites. These involve us looking at construction, making the conclusion that construction has been completed in an acceptable manner, and then reviewing a long-term surveillance plan submitted by the Department of Energy and determining that that plan is acceptable and the site should be licensed under long-term care.

CHAIRMAN JACKSON: How many such reviews do you have underway?

MR. HOLONICH: Underway today?

CHAIRMAN JACKSON: Yes.

MR. HOLONICH: We have probably three or four underway today. We have four or five in backlog that are Title I sites. All together, we have 17 Title I, we have 13 Title II, which gives you 30, and then we have nine agreement states, which gives you 39 roughly, the total number.

What is going to happen here is DOE is going to be

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the short-term focus. We are going to be looking at getting the five backlog done next year as well as any others that

come in and working on those licensing activities through the end of Fiscal '98. We have one other Title II site, the Arco Bluewater Mill, which has completed construction, and we're probably looking at maybe early next year at potentially terminating that license and putting it under long-term care.

We have one site, the Day Loma site, which is a heap leach site in the gas hills of Wyoming. It's a unique site. The Commission has discretion under the Atomic Energy Act not to require long-term care of tailings disposal sites, and the licensee has presented information and made an argument to us that they think this site should be excluded from long-term care.

We went back with some technical questions on this site. They are going to come back with some answers and we are going to have to come up to you with a paper and consult as to whether you want to exercise that discretion or not. But what you've got is you've got a small 20-acre site that's almost the size of a postage stamp compared to several large open-pit mines, and the background and the mine spoils is much greater than the radon emissions you're getting off of the tailings impoundment, and that's part of the argument that the licensee is using.

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So not only are there straightforward reviews, but there are some complicated and interesting reviews here like the Day Loma site.

Finally, we have the states and public who are interested in what we are doing. The states, we're consulting with them regularly, whether they be agreement states or whether they be non-agreement states.

In addition, some sites have a lot of public interest, the most controversial of which is the Atlas site in Moab. We published a draft environmental impact statement on the Atlas site. We got 1100 comments on that.

CHAIRMAN JACKSON: A lot of interest.

MR. HOLONICH: Yes. Granted now, you know, some, like the State of Utah, sent us an inch and a half of comments; but we got a lot of individual commentators saying either move it or keep it in place. So we do have a lot of public involvement on certain sites, and that helps us think more critically, but it also helps us -- makes us think a little bit more about different issues.

MR. THOMPSON: I think also the federal government with the National Park Service is also involved in that one since it's right next door.

MR. HOLONICH: May I have the next slide, please.

[Slide.]

CHAIRMAN JACKSON: How well are you able to

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project what you think your future workload is going to be with respect to the licensing reviews?

MR. HOLONICH: Well, we have asked the industry to give us a presentation as to what they see new facilities are. At the March workshop, they did give us a presentation. They gave us some hard numbers of sites that they expect to file applications. We are also getting calls of interest from different companies.

COMMISSIONER ROGERS: Hello?

CHAIRMAN JACKSON: Hello, Commissioner Rogers?

[Pause.]

MR. HOLONICH: We are also getting calls of interest from different companies, and at least one has come to us and said they would like a pre-licensing consultation meeting with the staff to understand what's involved in licensing.

So we have taken the initiative to tell the industry we'd like to hear what your plans are. We're also getting, on their own initiative, people calling in. I'm going to ask that at least twice a year, at one of the three workshops -- two of the three workshops, we get some information from the industry as to what they see the growth is going to be in the industry and what kind of new applications they're expecting.

Slide 12, please.

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[Slide.]

MR. HOLONICH: I didn't want to leave you with the impression that the only activities being undertaken in uranium recovery were the decommissioning and reclamation of the sites; and as John noted, there has really been a shift over the past 18 months in terms of what's involved in the program.

There are operating facilities, there are two types of operating facilities, basically mills, and the mills essentially are standard chemical extraction process. And if I could just get the schematic up -- you can't see the schematic very well on the television screen and I don't want to go through details of the schematic, but essentially we have three columns of boxes across the page there, and if I were to characterize those three columns, the first one would be the process of liberating the uranium from the ore, second set of boxes, the second column is basically concentrating the uranium, and then the third set of boxes is drying the uranium and preparing it for shipment to the customer.

If we can go back to Slide 12, please.

Right now, there are four mills capable of operating. Of those four, one is processing mine water and extracting uranium from the mine water; one has just recently completed an operation processing both ore and

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alternate feed material, and alternate feed material essentially is something other than uranium ore but which has uranium in it; two mills are in standby and looking to restart, and we've got an application from one. That application is not complete; we need to get the reclamation information from that site before we can finish the review. And one we have not received the application yet to restart.

Whenever you run a mill, you generate a large volume of tailings, and the reason is you get about a pound to three pounds of ore for every ton of -- I'm sorry -- a pound to three pounds of uranium for every ton of ore that you process.

And so I noted earlier the Tuba City site was a smaller site; it had about a million cubic yards of tailings there. Of the Title II sites, the biggest one is 33 million cubic yards. We have others in the 20 to 24 million range, some at 10 million and some in the 2, 3, 7 million range.

So you do get a lot of tailings generated whenever you run these mills and that, of course, is the environmental issue we're struggling with in the reclamation portion of the program.

Complementing the mills, we have in situ leach facilities, and these facilities essentially extract the uranium from the ore in the ground. To be able to do that, you have to have certain hydrological conditions; namely,

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you have to have an impermeable barrier below the aquifer in which you're doing the mining, the ore body has to be below a groundwater table, and you have to know the direction and speed of the groundwater in the ore body.

What happens essentially is you inject a mining solution into the ore body, liberate the uranium, bring it up, run it through an ion exchanger and go through a similar process as you do with the mills. What's different here is that you require a large amount of water to restore the groundwater situation in the wellfields to the baseline conditions that were there prior to when you started mining.

If we can go to slide 14.

[Slide.]

MR. HOLONICH: This is a schematic of a typical in situ, and again you see it's kind of broken into three pieces: the ion exchange circuit, which is essentially the liberating the uranium from the ore; the aleutian circuit, which is the main processing plant, and that's where you're concentrating the uranium; and then finally the precipitation drying circuit is where you're preparing the uranium for shipment to the customer.

I've got a couple of pictures here of a site, if I can have the first picture of the Irigaray site. What this picture shows is the Irigaray site along with one of its wellfields. Could you focus in a little better on the

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wellfields, please?

Right here, these little white boxes, are the wellfields where the mining of the uranium is done. The building here is a satellite facility. This is where the ion exchange takes place. These resin beads are then loaded in the truck and taken down to the main processing plant.

This is a wellfield in Wyoming. This is the Cogema site. And the white boxes are there to protect the wellheads so that they don't freeze in the winter. They are heated to ensure that the flow keeps there and the wellheads don't freeze up.

May I have the next slide, please.

[Slide.]

MR. HOLONICH: The next slide is a close-up of the main processing plant at the Cogema facility, and you can't see much in terms of what happens there, but this is the main building where the concentration of uranium is done as well as the drying and packaging.

The pond you see over here is a radium settlement pond. The way the process works is that they pull more water out of the aquifer than they normally pump in to ensure that they're pulling fluid towards the wellfield rather than fluid going away. And they have a 1 to 3 percent bleed on the water, and that's where they put it, is in that radium pond.

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These ponds here are brine solution ponds, and that's what's used to wash the uranium off of the resin beads whenever they concentrate the uranium.

Can we go on to slide 15, please.

[Slide.]

MR. HOLONICH: As I showed you on the first slide, we do have a number of agreement states in the uranium recovery program and there are four: Colorado, Washington, Texas and Illinois. Colorado and Washington are mainly focused on reclamation activities. Texas has a number of operating in situs as well as three sites that are undergoing reclamation for Title II. Illinois has one site, a thorium mill up in West Chicago, Illinois, that is currently undergoing reclamation.

We have been working very well with the agreement states. We have a good working relationship. We consult them whenever we're doing major policy activities. We get them involved. They have also attended our workshops that we have three times a year with the industry. That helps them to understand some of the concerns that are out there in the industry, helps them understand what we're doing. That also allows us to have dialogue with them and understand some of the problems that they're facing, and there may be things that we haven't thought of yet or haven't realized are out there that they're actually getting

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into in their program. So it's a good effort, it's a good exchange between us and the agreement states.

I might note that the workshops that we have three times a year, we rotate. We do it in Denver once because the majority of the companies are headquartered there; we do it in the region in July; and we do it here in headquarters in October. So we go around the country with the workshop.

CHAIRMAN JACKSON: Is the degree of consultation consistent from agreement state to agreement state?

MR. HOLONICH: Yes, it pretty much is. They are active, they're involved, they will call us, we will call them, we'll talk to them, they give us the information we need. Yes, it's a fairly consistent level of interaction.

Next slide, please.

[Slide.]

MR. HOLONICH: Of course, we've got an inspection part of the program, and the inspections are conducted at both the operating sites and sites undergoing reclamation. We have a manual chapter that covers mills.

For the in situ facilities, we are using the general manual chapter on materials inspection, but we are in the process of preparing a manual chapter specifically for in situs.

We try to get to operating facilities twice a year and sites undergoing reclamation at least once a year. The

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inspections are usually done out of the region and they coordinate very closely with us. They in the spring generate a schedule of inspection activities that goes through September.

What happens with these sites is, because you're up in Wyoming, in northern states, often you can't get up there and inspect in the winter, so the prime inspection is usually between February, starting in New Mexico, and working your way up to Wyoming by the end of September. But they do coordinate very closely with us.

One of the reasons is that they don't have the technical expertise in surface water hydrology and geotech engineering to be able to conduct those portions of the inspection. So usually the region will put together an inspection team that involves somebody from the region as well as maybe one or two technical experts from headquarters to look at different aspects of the site.

We on occasion will lead an inspection team. We recently led an inspection team at the Arco site in New Mexico, looking at the completion of construction. Because that inspection was focused mainly on reclamation, we in the region both felt that it was good that we lead the team, but the region did have a health physicist out there supporting the inspection team and looking at groundwater clean up -- I'm sorry -- soil clean up as part of the inspection

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activities the region was doing.

CHAIRMAN JACKSON: So you do it on an as-needed basis and depending upon what the particular activity is?

MR. HOLONICH: I'm not following the question, Chairman Jackson.

CHAIRMAN JACKSON: Well, you were saying, for instance, well, when you have headquarters --

MR. HOLONICH: Right. It's as needed based on the activity.

CHAIRMAN JACKSON: It's as needed.

MR. HOLONICH: Right.

CHAIRMAN JACKSON: Okay.

MR. HOLONICH: Over the past two years, we have had some violation, but we have not had any major problems in terms of inspection findings.

COMMISSIONER DICUS: Have you noticed any common violations across the sites or does it vary?

MR. HOLONICH: It varies, Commissioner Dicus. The kind of violations that we've gotten that have resulted in severity level 4 is workers failed to shower, improper use of dosimeters, unauthorized changes to the mill circuit. So there was not a common problem there.

We do, when we believe something is serious, put out an information notice. For example, last year, the one mill that had operated and produced uranium had done some

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drying of wet uranium in an open environment, and they didn't do it consistent with procedures, they didn't do it consistent with safety practices. We sent out an information notice to all the mills and in situ saying this is not the kind of practice you should take, this is not what you should be doing.

So if we see something that we think is significant, we will put out an information notice to all the licensees so that they're aware of what else is happening at other sites.

CHAIRMAN JACKSON: All the mills and all the mining are in Region IV?

MR. HOLONICH: Correct.

COMMISSIONER DICUS: Those states that have programs and do inspections, are they finding pretty well the same violations or is there --

MR. HOLONICH: I don't know, Commissioner Dicus. I would have to look into that and get back to you.

The final part of the presentation is to talk about four significant issues that are currently there in the program, and these essentially deal with the timeliness of the reviews, a question of concurrent jurisdiction that we share with the states, fees, and the long-term care funding that needs to be paid as part of the termination process for Title II sites.

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Timeliness of reviews, as we noted earlier, we have a large amount of work facing us. A lot of that work involves the same kind of technical disciplines. We have a number of factors that are influencing us -- the statutorily Congressionally mandated dates for the Title I sites. We have licensees who have been doing reclamation work at their sites for a number of years who now want to terminate their licenses. And we have new facilities who want to operate or old facilities that have been in standby for ten or twelve years and want to come up and begin operation.

With all of that facing us, we have had quite a workload, and we still have a workload. We have taken some actions to try to make the program more efficient. As John noted earlier, we have the single branch, uranium recovery. That has been, I think, a big help, allowing me to focus just on the uranium recovery area and making sure that work continues there.

We are going over to a performance-based license, and what this performance-based license does is give licensees flexibility to operate and make changes to their facility without always having to come back to the NRC.

To give you an example, in the past, whenever an

in situ wanted to open a new wellfield, we would condition each individual wellfield in the license. So that every time a new wellfield was opened, the licensee would have to

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come to us and request an amendment to its license.

What we're doing in performance-based licensing is reviewing their operating plan for developing wellfields, making sure we agree with the methods and the approach that are laid out in that plan, and then telling licensees in the license, you shall open your wellfields consistent with this plan.

The down side to this for licensees is that we will go out and inspect to see how well they're doing against that plan, and if we find out they haven't complied with that plan, they're subject to enforcement action.

But the process here requires that they have a safety evaluation review panel that looks at all these actions and agrees that they are not necessary in terms of going to the NRC, that these are things that they can accomplish under their current license. So we have a review panel there at the site, plus we follow up and do inspection to make sure that as they implement these performance-based licenses, they're doing it in an acceptable manner.

CHAIRMAN JACKSON: Who comprises the safety evaluation --

MR. HOLONICH: There are three people: somebody from corporate management, somebody from plant operation, and the radiation safety officer. They can add other people. Three is the minimum. They can add other people as

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they need, like hydrologists or geotechnical engineers or whatever, but those three are the minimum that we specify in the license.

COMMISSIONER DICUS: And looking at this, is this a component of each inspection or is it done periodically?

MR. HOLONICH: Well, we've just got our first performance-based license issued last August, and we did our first inspection of the site, and it definitely was a component of that site.

[Laughter.]

MR. HOLONICH: So we're batting 100 percent right now, Commissioner Dicus.

CHAIRMAN JACKSON: But this is something you intend to fold into it, to be a regular part of your --

MR. HOLONICH: That's correct.

MR. THOMPSON: Absolutely.

MR. HOLONICH: We've got five renewal applications in front of us today, and as we go through those renewals, we would put them into performance-based licensing.

CHAIRMAN JACKSON: Well, I guess I'm asking two things. One you've just answered, that you will incorporate that --

MR. HOLONICH: Right.

CHAIRMAN JACKSON: -- into the licenses as you go along. The other piece is that you will also

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correspondingly incorporate the review of --

MR. HOLONICH: The inspection.

CHAIRMAN JACKSON: -- performance relative to the plan --

MR. HOLONICH: Yes.

CHAIRMAN JACKSON: -- as part of what you do on a regular basis?

MR. HOLONICH: Definitely. Yes, Chairman Jackson.

CHAIRMAN JACKSON: Okay.

MR. HOLONICH: Some other things we've done are listed there. We've gone over to ten-year licenses. We're going -- we have been working with DOE to streamline the review process. So we have done a lot of thinking on ways to improve the program. We have gotten out of the box in about the past nine months and have done some real strategic thinking, and I have identified ways to make the program more efficient.

Even with all of that, we had a backlog. I could not get an FTE of efficiency out of doing the reviews that we did. So we briefed the EDO. The EDO has given us additional resources in terms of contract dollars and in terms of FTE staff. Our goal is to eliminate the backlog by the end of the fiscal year.

CHAIRMAN JACKSON: And once you have eliminated it based on the projections you have of emergent work, with

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your new approach, with the dedicated branch and with your

performance-based licensing and an inspection program that's geared to that, will you be able to keep the backlog down?

MR. HOLONICH: I believe we will be able to.

CHAIRMAN JACKSON: Have you identified what is the most time-intensive part of the review?

MR. HOLONICH: I have not looked at that piece of it. I think probably, in terms of reclamation, is doing the design review and doing the construction verification.

CHAIRMAN JACKSON: It would seem that, in terms of kind of a work process, reengineering.

MS. FEDERLINE: We will get to that.

CHAIRMAN JACKSON: And it's something that you might want to specifically focus on, because if you can identify that, then that tells you how you need to structure your resources once you've worked your backlog down.

MS. FEDERLINE: We'll get to that in a later slide. We're talking about a cost control system that we have put in place, and that allows us to scope the activities of each of the staff members and should give us the data that you're talking about to do that.

CHAIRMAN JACKSON: Okay.

[Slide.]

MR. HOLONICH: The next slide, slide 19, kind of shows how the program is broken up this year -- I'm sorry --

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broken up for Fiscal '97. I would note that we've got about 18 FTE and about \$1.4 million in contractor support. Of that \$1.4 million, roughly \$1 million is going to the center to not only get the work done that we need, but help keep the center viable.

You notice I said we got five FTE and what happened was that in Fiscal '97, the program was scheduled to drop by two FTE. So we've picked up those two, plus an additional three FTE, and that's what gives us the five FTE in staff support.

This is direct staff; this is not overhead. It doesn't include branch chiefs or secretaries. This is the direct staff that will be working toward doing the technical reviews.

CHAIRMAN JACKSON: How has that worked out with the center's support of your program?

MR. HOLONICH: We have just started. We've got the statement of work in place for one aspect of the center work; we've got the other statement of work being sent to the center we hope within the next month or so. So we haven't used the center yet, but we've got the process in place and it looks like, hopefully by the first of September, we'll be able to start using the center in groundwater reviews.

CHAIRMAN JACKSON: I think it's important to

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capture as you go along any lessons learned from this --

MS. FEDERLINE: Yes.

CHAIRMAN JACKSON: -- in terms of the utilization of the center, both in terms of where it can effectively be used and how it might be used otherwise. You have to worry about the alligators in your swamp; they have to worry about the other swamps.

MR. HOLONICH: Correct.

May I go to the next slide, slide 20, please.

[Slide.]

MR. HOLONICH: The second issue is concurrent jurisdiction with states. This is an interesting issue. Essentially the agency view since 1980 has been that UMTRCA does not preempt the regulation of non-radiological hazards solely to the NRC. Because of that, the states share concurrent jurisdiction with us for non-radiological hazard.

This has mainly been an issue in the groundwater program where we look at limits for groundwater protection and states look at limits for similar constituents.

The concern with concurrent jurisdiction is that we may be in a position of having to delay a license termination. The reason would be, we might find that a licensee has done what needs to be done to meet our requirements, but a state may step forward and say, hey, we think that an alternate concentration limit of 2 milligrams

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per liter is too high, we think it should be a half a milligram per liter. And although the licensee has met our ACL and legally we could terminate the license, one of the things we need to step back and think about is that then the Department of Energy would take over that site, and thinking in a full federal government view, would we be subjecting a

federal agency then to state regulation to clean up the groundwater when in fact the licensee who was responsible for the site should have been doing that groundwater cleanup.

So it's a complicated issue. It's a concern to DOE.

CHAIRMAN JACKSON: What are you doing to address it head-on?

MR. HOLONICH: We are working with the states. We recently completed an ACL alternate concentration limit review in New Mexico. We have worked very closely with the State of New Mexico on determining those limits. The state was satisfied with our review. The state didn't have any problems with the limits we put together. That was a really good success story.

In Utah, we have been working with Utah on mainly the Atlas site. We haven't had as much success there. The state would like us to take over regulation of all the groundwater, including implementation of its groundwater standards, the state groundwater standards and state surface water standards. We couldn't do that.

The state didn't feel comfortable, then, with having a double regulator there. We have been continuing to work with the state, continuing a dialogue with the state. We have not had as much success.

What we're trying to do is get the states and DOE licensees together and try to come up with an acceptable approach. We have had some success. I don't want to say we've had no success with Utah, we've had some success, but we're continuing to work with them.

CHAIRMAN JACKSON: You don't work off of an MOU kind of approach?

MR. HOLONICH: No, we don't. No, we don't.

CHAIRMAN JACKSON: Is that possible?

MR. HOLONICH: It could be possible.

John, do you have --

MR. GREEVES: It could be state by state. This whole dynamic varies state by state.

Correct me if I'm wrong, Joe, but up in Wyoming, the state looks at us to work off these groundwater issues. They're so overburdened on their other sites, as much as the licensees in some cases would like to get them involved, they've pretty much said no, that's NRC's ball, you run with that one.

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So it varies, and in other program areas, we have developed MOUs on a state-specific basis. We did this in Pennsylvania, where we have a lot of SDMP sites. So it's maybe something that we will think about and get back to you if we see some room in the State of Utah -- Utah, I think, Joe --

CHAIRMAN JACKSON: Well, I'm going to ask you to get back with me.

MR. GREEVES: Okay. Utah is the one that we've had the most difficulty; is that right, Joe?

MR. HOLONICH: That's correct, John.

CHAIRMAN JACKSON: Have there been any license terminations that have, in fact, been delayed as a consequence?

MR. HOLONICH: Well, no. We've only terminated the Edgemont site, and there was not a groundwater problem with the Edgemont site.

CHAIRMAN JACKSON: Okay.

MR. HOLONICH: The third issue to talk about is fees. Fees are a concern to the industry for two reasons. Number one, the industry believes that the Commission's fee rate is too high; and, number two, they are concerned about the amount of time it takes NRC to conduct its reviews.

There is not much I can do with the fee rate; that's set by appropriations and developed by the

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comptroller's office. But as Margaret noted earlier, we have some --

CHAIRMAN JACKSON: There's something we can do about it.

MR. HOLONICH: We have put a cost control system in place to help us better manage our resources. What this system does, the way it works, is that when an application for an amendment or a reclamation plan or new license comes in, the project manager and the technical staff who are assigned to that activity will develop estimates for what it would take to complete that review. Those estimates are

then loaded into the cost control system. That system then monitors and tracks resource expenditures based on the time that is charged or put toward the charge number associated with that activity. Every month, the project manager will get a printout. The printout will show who has charged time to the activity that month as well as -- it will also have a cumulative data record of who has charged time, how much time has been charged and how that compares to the original estimates that were projected whenever the application arrived.

CHAIRMAN JACKSON: And what does that show? What is that showing you?

MR. HOLONICH: What is that going to show me? That's going to show me --

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CHAIRMAN JACKSON: No, I'm saying has it shown you anything to this point?

MR. HOLONICH: We have just started the system. We got our first printout the end of this month. We've shown that we're over-budget on a lot of activities we knew we would be, like the Atlas site.

CHAIRMAN JACKSON: Okay. So what you're really saying is that you really would like to come back and talk to the Commission at a later time?

[Laughter.]

MR. HOLONICH: I think I would.

MR. THOMPSON: This is an important area that really has implications on the small areas where we have fees. We have licensees who are very sensitive to fees. And sometimes workload expectations -- if they give us a poor application, we can spend a lot of time on interfacing and reviewing poor applications when they would think, well, we gave you the answer, but it was a very poor application.

CHAIRMAN JACKSON: Yes, I agree with you. But there are two aspects to poor applications. One has to do with what we have set out as what the minimum criteria are.

MR. THOMPSON: Correct.

CHAIRMAN JACKSON: And any other standardization we can build in up front. The other, then, obviously, is what in fact licensees submit to us, whatever the criteria

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are.

MR. THOMPSON: Right.

CHAIRMAN JACKSON: But we have to be sure that, on our side, that we're laying out -- I mean, we're learning as we go along, but we have to be sure that we're giving the up-front box within which we would like to operate as much as possible so that there is no confusion in that regard.

Okay.

MR. HOLONICH: The final issue I would like to talk about starts on slide 22, and that is the long-term care funding.

[Slide.]

MR. HOLONICH: Just to reemphasize what I said earlier, when a Title II site is terminated, the licensee is required to make a payment to the federal government for the long-term care of that site. The amount of the payment is specified in our regulations as a minimum of \$250,000 in 1978 dollars. As escalated for inflation, the value today is roughly around \$580,000. In addition, any amount that the NRC determines is necessary for long-term care of that site.

GAO did a study recently of the cost of uranium mill tailings and came up with two recommendations. One was that we work with DOE to determine an agreed-upon estimate for long-term care funding and that we also revisit our

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basis for the minimum long-term care amount.

What happened here is that, from our perspective, from the minimum amount specified in the regulation, you would look to spend about \$5,800 per site, per year doing monitoring. DOE, based on its Title I experience, was spending around \$21,000 per site per year. It's a factor of four difference. And that \$21,000 was made up of about \$5,000 to do the monitoring, about \$6,000 to do maintenance at the site, and \$10,000 for a DOE contractor to prepare the report documenting the findings from the inspection.

GAO was concerned that our long-term care fund was going to be underfunded by a factor of four, and so they asked us to start working with DOE.

This, of course, is an interesting issue. There are differing views. The industry thinks it's too high. The industry thinks that 3 percent is a better real interest

rate for calculating the perpetual care fund rather than 1 percent. DOE, of course, based on its long-term care experience in Title I sites, thinks that that amount may be too low.

We have done a number of things to look at the issue. Even before the GAO report came out, we had went to the region and asked the region to look at what it would take to implement a long-term surveillance plan for a Title II site, give us an estimate. They came back with that.

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They estimated about 40 hours is what it would take. Using the NRC labor rate of \$116 an hour, we came up with about \$4,600 per site per year. That's close to the \$5,800 that we've had in the past, and so we're getting indications that probably the minimum number appears to be pretty solid.

In addition, we're going to talk a little bit in a couple of minutes about our working with DOE, but since the GAO report has come out, DOE has gone back and looked at its cost. It's come down to about the \$8,000 per site per year range.

CHAIRMAN JACKSON: From 21.

MR. HOLONICH: From 21.

So the numbers are getting closer, and we continue to work with DOE --

CHAIRMAN JACKSON: This is the same order of magnitude.

MR. HOLONICH: Yes.

[Laughter.]

MR. HOLONICH: We are also developing guidance that people can use that will help them identify when the minimum care fund should be escalated, when more money is needed for maintenance at those sites; and we're working with DOE to identify what they do on inspections because what they do on inspections drives the cost. And we continue to work with them.

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So I think we're working to address the issue. Right now, we're scheduled to close the recommendations by the end of this calendar year, and I think we're on track to do that.

CHAIRMAN JACKSON: The only question I have is since you did indicate that industry thinks it's too high and DOE too low, are you doing anything specifically to interact with licensees as you are working this intensively with DOE?

MR. HOLONICH: Yes. As a matter of fact, at the March workshop, we had a half a day session on license termination in general, and part of that session focused on long-term care funding, what we were doing on long-term care funding, when we would look for the long-term care funding to be escalated. So the industry has been kept well aware of what we're doing in this area.

In addition, this procedure, once we finalize it, I plan to make it available to the industry, the states, to DOE, to everybody. So it's not like we're going to have this internal procedure and not have it out there. I'm certainly going to be willing to send it out to states and the industry.

CHAIRMAN JACKSON: Okay.

MR. THOMPSON: One other aspect about this funds is right now, as I understand it, these funds just go into

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the general treasury as opposed to being into a trust fund or a specific fund.

CHAIRMAN JACKSON: Dedicated, yes.

MR. HOLONICH: In summary, basically where we are today is that the workload has doubled based on projections that I put together back in March of '94. At that time, I had about 150 activities I expected; I've got somewhere around 290 right now.

What is happening? A couple of things are happening. Number one, DOE is accelerating its Title I program. Title II licensees are getting towards the end of their dates for radon barrier and they want to get that complete. We've got new applications for in situs and we've got people who want to resume operation. And all of that is coming together at the same time, and any one of these aren't necessarily as problematic as all four of them happening at the same time.

We have a lot of external influences that continue to affect us. We have concerns with states, not only in terms of what we're doing in the reviews, but, Chairman Jackson, I know you've got a couple of letters from

governors who want to see facilities brought on line because of the economic benefit that those states are going to get.

We have a highly organized and involved licensee community. They are not bashful about telling us what they

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would like to see, they are not bashful about telling us what they think we're doing wrong. But we have a very good interaction with them. I think, since the closure of URFO, that we've worked very hard at workshops. As a matter of fact, things went so well at the March workshop that we didn't need to have our July meeting with the industry because we had no open items left from the March workshop. So we're working very well, I think, with the industry.

We have a concern on organized public. As I noted, we got 1100 comments on the Atlas DEIS. I've got a DEIS for an in situ mill in New Mexico. We have 950 comments on that, plus seven petitions to intervene. So the public is not bashful about stepping up and saying when they don't like something that's being done in the uranium recovery area.

We continue to work with EPA and implement the MOU. Again, I want to emphasize it's a good working relationship with EPA. I think it's a real success area and I really enjoy working with the staff down there that I'm interacting with.

I want to say the same thing about the region. We have a good working relationship with the region. Chuck Cain, Ross Scarano -- managers down there who are implementing the inspection program are doing a very good job. They have done reactive inspections when we need them,

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they've coordinated with us, they kept us involved. So it's been a really good effort with Region IV.

As I noted, the EDOs added resources. They have given us five FTE, another million dollars or so in contractor support to help address the backlog and get it reduced by the end of this fiscal year.

Even with that, though, many aspects of the program are going to continue. We have new facilities, continued operational supports at facilities. That includes things like amending licenses as well as doing inspection of those facilities. We've got the long-term licensing of the 40 or so sites that I had mentioned, and then we have the groundwater cleanup of the facilities. Title II is ending, but the Title I is starting. So those activities are going to carry us through I think for the next four or five years.

That completes the presentation this morning. I hope we have given you some background and some context on what's happening in the uranium recovery program and some of the exciting things that we have on our plate.

CHAIRMAN JACKSON: Sounds quite exciting.

[Laughter.]

CHAIRMAN JACKSON: Do you have any additional questions?

COMMISSIONER DICUS: A couple of things I would like to ask about.

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Regarding Title II reclamation, are any of these sites the licensee no longer exists, and do you think any of these where we have -- the licensees may be in financial difficulty to do the reclamation?

MR. HOLONICH: There is one site where the licensee is insolvent, American Nuclear Corporation, the Gas Hill site up in Wyoming. ANC went bankrupt in the spring of 1994. The State of Wyoming reclaimed the bonds, reclaimed the surety for the ANC site, and they are currently completing the reclamation.

ANC is still in existence because it is entitled to some payments from DOE for reclamation work done on the tailings. It's the percent of uranium bought from the mill by the federal government. The federal government reimburses them that percent for the work for reclaiming the tailings, and it has got to be the licensee. The law and the DOE regulations state the licensee. And so ANC is still around, but as a corporate entity, it's not very viable and the State of Wyoming is taking care of that.

The other licensee really that was in some financial straits was Energy Fuels Nuclear, which was a mill down in Blanding, Utah, the White Mason mill. This was the one that recently finished production run early this year. That site's surety is backed by UMETCO Minerals Corporation. UMETCO is a subsidiary of Union Carbide. They voluntarily

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increased their surety from \$6 million to \$11 million. We asked them to do that before they began operation. They voluntarily increased the surety. So we feel like we may not be exactly at \$11 million, but we're a lot closer to what the surety should be than we were when they were at \$6 million.

So those were the only two where we really had some financial problem.

COMMISSIONER DICUS: Okay. You have identified, I think, a couple of the problems with being able to meet the schedules that are in front of us. It's a complex operation, quality of what you get in from the licensee.

Have you identified anything else that might keep you from meeting the schedule?

MR. HOLONICH: No. I just think it's been basically the volume of work, --

COMMISSIONER DICUS: You feel comfortable you have a handle on it?

MR. HOLONICH: -- the complexity and the quality of the submittals. And we have taken care of the volume of work by adding more resources, so it's just the complexity of the reviews and the quality of the submittals, I think.

COMMISSIONER DICUS: Okay. And one more quick one.

Anyone have any idea of why uranium prices have

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gone up? Because I think about a year or so ago, I thought the market was flooded almost. Just curious.

MR. GREEVES: It's a worldwide market. I'm not certain, but I thought I had heard that a lot of these contracts the utilities had have a fairly low dollar value, now are rolling over. So there is apparently, on the spot market, some competition. It's basically the spot market that dictates what this price is.

MR. HOLONICH: Yes. Essentially, we asked, Commissioner Dicus, for the industry to give us a little talk on that at the March workshop. What happened was there were a lot of reactor orders in the late '70s, early '80s. People were producing a lot of uranium to support those reactors. Those plants got canceled. There was a large stockpile of uranium. That stockpile has been eaten away. In addition, there has not been as much uranium from the Soviet bloc that people originally anticipated.

So what the industry has found is that there is probably a 30 to 35 million pound per year shortfall between now and 2000 in the availability of uranium. It's been mainly there's been a large stockpile that got eaten away and the availability of eastern uranium has not been as great as people originally expected.

CHAIRMAN JACKSON: My understanding is that Commissioner Rogers is on the line.

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COMMISSIONER ROGERS: Yes, I'm here, but I don't have any additional questions.

CHAIRMAN JACKSON: Okay. I just wanted to be sure you had the opportunity.

COMMISSIONER ROGERS: Thank you very much.

CHAIRMAN JACKSON: Well, thank you.

The Commission would like to thank you for a very comprehensive and very informative briefing on the NRC's uranium recovery program. It appears that progress is being made on all fronts -- licensing and inspection, site remediation and regulatory guidance, which I always liked to see. So the Commission is pleased to hear that the staff is effectively utilizing the technical resources of the Center for Nuclear Waste Regulatory Analysis and working off the current backlog of work, and it would be interesting, as you go along, to get some feedback from you in terms of how that, in fact, works out.

The Commission is also pleased to hear that headquarters' personnel and the regional staffs are working together effectively in the absence of the URFO office in Denver, and that coordination, again, is another thing that is very important.

The Commission would like to encourage the staff to continue to work with the affected local communities, local governments, and the states as you continue to work

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with federal agencies and the licensees in the various areas you identified. I think you have gotten a good idea of the concerns. It will all be memorialized in an SRM.

So Commissioner Rogers, Commissioner Dicus, unless there is anything else you would like to add?

COMMISSIONER DICUS: No.

COMMISSIONER ROGERS: Nothing, thank you.

CHAIRMAN JACKSON: We stand adjourned.

MR. HOLONICH: Thank you.

[Whereupon, at 11:20 a.m., the meeting was concluded.]