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UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

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150th MEETING

ADVISORY COMMITTEE ON NUCLEAR WASTE

(ACNW)

+ + + + +

TUESDAY

MAY 25, 2004

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ROCKVILLE, MARYLAND

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The Advisory Committee met at the Nuclear Regulatory Commission, Two White Flint North, Room T2B3, 11545 Rockville Pike, at 3:25 p.m., B. John Garrick, Chairman, presiding.

COMMITTEE MEMBERS:

B. JOHN GARRICK	Chairman
MICHAEL T. RYAN	Vice Chairman
ALLEN CROFF	Consultant
GEORGE M. HORNBERGER	Member
RUTH F. WEINER	Member

ACNW STAFF PRESENT:

Richard K. Major, Designated Federal Official

Neil Coleman

Howard J. Larson

Michael Lee

ALSO PRESENT:

Tim Harris, NMSS

Tim Johnson, NMSS

Melanie Wong, NMSS

AGENDA ITEMS PAGE

P R O C E E D I N G S

(3:27 p.m.)

DR. GARRICK: Good afternoon. Our meeting will come to order.

This is the first day of the 150th Meeting of the Advisory Committee on Nuclear Waste. My name is John Garrick, Chairman of the ACNW.

The other members of the Committee present are Mike Ryan, Vice Chair, George Hornberger, and Ruth Weiner. We also have with us today a consultant, Allen Croff.

During today's meeting, the Committee will first hear a briefing on the Louisiana Energy Services' license application to construct and operate a gas centrifuge uranium enrichment plant in Lea County, New Mexico.

Secondly, we will commence with the preparation and review of potential ACNW letter reports.

John Larkins is supposed to be the designated federal official, but given that he's absent, Richard Major is the designated federal official for today's initial session.

This meeting is being conducted in accordance with the provisions of the Federal Advisory

Committee Act. We have received no requests for time to make oral statements from members of the public. Should anyone wish to do so, please make your wishes known to one of the Committee's staff.

It is requested that the speakers use one of the microphones, identify themselves, and speak clearly and loudly.

Before starting the first session, I would like to cover some brief items of current interest. I have five items.

The first one is Dr. Latif Hamdan, from NMSS, has accepted the position of Senior Staff Scientist on the ACNW staff. Latif, who had previously served on the staff on a rotational assignment from July 2001 to April 2002, we now welcome back on a permanent basis.

Dr. Hamdan received a Ph.D. in civil engineering from the University of Illinois at Champaign-Urbana and brings many years of valuable relevant experience to the staff. And we are pleased to have him back.

Number two, Sherry Meador, OSB staff, is leaving the ACRS ACNW office for a three-month rotational assignment in the Office of Incident Response Operations, NSIR.

We also welcome her boss, Jenny Gallo, Operations Support Branch Chief, back from a rotational assignment with NRR.

Number three, DOE recently announced that it has renamed the Savannah River Technology Center as the Savannah River National Laboratory following the recent decision to rename the Idaho National Engineering and Environmental Laboratory to the Idaho National Laboratory.

Number four, the State of Nevada has submitted a 101-page petition to participate in the Yucca Mountain license application review and hearing. The petition is under review by the Office of General Counsel.

And number five, the NRC staff's Risk Insights Report was released to the public during the week of May 10 to 14, 2004. And it has been placed on the NRC website and in the public document room.

All right. Unless there's comments from any of the Committee members, or staff, I think we will proceed directly into the agenda.

And it's, as I understand it, Tim Johnson is going to lead off. And he's the Project Manager of the Louisiana Energy Services project for NRC.

And he's going to be followed by Melanie

Wong, who is going to talk about the environmental impact statement.

Okay, Tim.

MR. JOHNSON: All right. Thank you very much.

Can everybody hear me? Yes, I turned it on. Hello?

Thank you very much. I appreciate the opportunity to talk to you today about our project for Louisiana Energy Services. This is an information briefing. At this time, we're not requesting any formal input from ACNW.

As part of this project, there are classified -- there is classified technology and classified information that we deal with. This briefing will be unclassified. And if some of the detailed questions do get into classified information, I'm not going to be able to answer them here in this forum. But we may be able to reschedule something later if you feel you need to know this information.

My objective today is to generally talk about the proposed project, talk about some of the unique regulations that apply to a uranium enrichment facility. I'll talk about the licensing and hearing status, the integrated safety assessment.

And then it will be -- I will be followed by Melanie Wong, who will give a brief summary of what's happening with the environmental impact statement preparation.

First of all, the proposed project, Louisiana Energy Services, LES, is proposing to construct and operate a uranium enrichment facility using the gas centrifuge process in Eunice, New Mexico. Eunice is located in southeast New Mexico, about 90 miles east of Carlsbad. It's right on the border between New Mexico and Texas.

What they're proposing is a plant that will enrich up to five percent assay in U-235. And they will use technology from Urenco.

Urenco is a company in Europe that enriches uranium using a gas centrifuge process. They've been doing this for over 30 years. And they will be using the technology that is in place at several of their operating facilities now.

The proposed plant is going to be very similar to one that was proposed in a license application in the early 1990s to be located in Homer, Louisiana. And it is going to be almost identical to several operating facilities in Europe.

This is a very simplistic sketch of a gas

centrifuge machine. There is a rotor inside that rotates at high, very high speeds, driven by an electric motor. The rotor is enclosed in an aluminum casing.

The system operates in a near vacuum. And there are only gram quantities of uranium hexafluoride within the -- within any particular machine at any particular time.

The spinning rotor, the centrifugal forces from that, cause the uranium hexafluoride to separate based on the different masses of the isotopes.

And within the system, there are little scoops at the top and the bottom of the rotor that are designed to scoop up the depleted and enriched fractions. And these depleted and enriched fractions go back into the cascade either upstream or downstream of any one particular machine.

For a practical plant, several thousands of machines are required.

Some of the key characteristics of these facilities is first of all, this is a relatively low health hazard facility. The principal hazards are chemical, that is hydrogen fluoride. This is a reaction product from the reaction of water vapor or water with uranium hexafluoride. And there is also a

potential criticality hazard.

However, because this plant operates with very limited quantities of uranium hexafluoride within the system, and it operates in sub-atmospheric pressures, there is very little likelihood within the cascade itself of any significant releases.

Because criticality is limited by the five percent assay, again, the potential criticality situation and hazard is relatively low as well.

The principal hazards are really in the feed and withdrawal and in sampling systems within the plant. This has the largest quantity of uranium hexafluoride in any particular part of the plant.

But unlike the gaseous diffusion plants in this country, the feed and withdrawal sections are designed to not operate with liquified uranium hexafluoride. They'll operate below the melting temperature of uranium hexafluoride.

And because of the pressure and temperature conditions, the gas feed into the system basically sublimates from the solid. And in the withdrawal stations, the gas feed is basically frozen out directly into a solid without having to go through a liquid state.

The only part of the facility that does

require liquid uranium hexafluoride is in the sampling station. And that's basically because that's the only way that you can get a representative homogeneous sample of a particular cylinder.

One of the principal advantages of this technology is electricity use. In a gaseous diffusion plant, about 60 percent of the costs, the operating costs, of a gaseous diffusion plant result from electrical requirements. This particular process uses about five to ten percent of the electricity for the same amount of capacity.

Another aspect of this, and it's one that we're particularly careful about, is the technology is classified at the Secret/RD level, which means that for particular details of the design, you do require a Q clearance in order to get access to that information as well as having need-to-know.

A uranium enrichment facility also has some unique regulatory requirements with respect to other Part 40 and 70 facilities that we license.

Prior to 1990, enrichment facilities were considered production facilities and would have been licensed under Part 50. But in 1990, Congress amended the Atomic Energy Act to basically allow licensing under Part 40 and 70. And by doing this, it set up a

one-step licensing process as opposed to the two-step process in a Part 50 facility.

But in doing that, in simplifying the licensing process, it did keep some of the old requirements that would apply to a Part 50 facility. And some of those requirements involve that we have to do an environmental impact statement for a uranium enrichment facility, a formal Subpart G hearing is mandatory for this type of facility.

The hearing must be completed before we issue a license for construction and operation. Prior to operation, the NRC must conduct a pre-operation inspection to ensure that the facility is constructed in accordance with the license commitments. And that public liability insurance is required.

This is a little bit different than Price-Anderson Act coverage. Price-Anderson doesn't -- the Act does not apply to this type of facility. But Congress does require a licensee to get public liability insurance.

In December, we received an application from LES for this facility. We accepted it for review in January and shortly after that, the Commission issued its order initiating the proceeding. It also -- part of this order also addressed an opportunity to

petition to intervene in the hearing.

And perhaps the most important aspect of this order that effected the staff and its review is the Commission mandated a 30-month schedule to do the review and to come to a final agency decision.

And by final agency decision, I mean our technical review would be completed, the EIS would be completed, the hearing would be completed, and any appeals to the Commission and the Commission's final determination would have to be completed.

And, again, a schedule --

DR. GARRICK: Tim, what happens if they're not?

MR. JOHNSON: Well, I don't know what the penalties are. But for me, that wouldn't be very good for me as Project Manager.

(Laughter.)

MR. JOHNSON: And -- but there weren't any particular penalties but I think this just indicates the Commission is very serious about getting this job done. And doing it in a timely manner.

And this was one of the things that they're trying to correct from the previous LES licensing project in the early 1990s where the project extended for over seven years, primarily --

DR. GARRICK: Well, that's what I was thinking.

MR. JOHNSON: -- in hearing space.

DR. GARRICK: Right.

MR. JOHNSON: And finally LES terminated the process. You know after most of the hearing issues were resolved, there was still one hearing issue that hadn't been resolved.

But it had taken too long. And they decided to terminate the process. So the Commission's goal here is to have a deliberate, disciplined process for the licensing review and for the hearing.

Now in order to accomplish this, we're going to have to finish our technical review and prepare our final safety evaluation report within 18 months. And the EIS is also going to have to be prepared within 18 months.

We're trying to beat those schedules. But those are the definite schedules that we need to meet in order to be consistent with the Commission order.

The Hearing Board will have eight months to conduct this hearing. And there's an additional four months left over for the Commission's final determination and dealing with any appeals that come out of the hearing.

So, in total, this is a 30-month proceeding. It's a fairly aggressive schedule. But because we have experience in dealing with the Homer case, the staff feels that we can meet our commitments. And do a technical review in a sound way. And also to prepare the environmental impact statement.

The order ended up getting published in the Federal Register in February 6th. And because the Commission wants to use the new Part 2 hearing procedures, it set a 60-day deadline for submitting petitions to intervene.

And on that deadline, we had received three petitions, one from the New Mexico Environment Department, a second from the New Mexico Attorney General, and a third which was a combined petition from Nuclear Information and Resource Services and Public Citizen.

In those petitions, there were a number of contentions that were raised. They include ground water impacts from the operation of the facility, water usage, disposition of the depleted uranium, the viability of LES as a corporation, decommissioning funding, the adequacy of the radiation protection program, impacts from explosions from a gas line that

is located near the facility, and non-proliferation and security issues.

We've already begun our review of the application. And in April, we sent to LES a request for additional information. This request for additional information dealt primarily with clarifications and documentation needs applicable to the integrated safety analysis.

And we received their responses last week. And we're in the process right now of going over them to see if they met our needs in terms of our requests for additional information.

I'd now like to talk about, in general, the integrated safety analysis that was proposed by LES. LES, in order to meet the requirements in Part 70, there is a requirement to do an integrated safety analysis. This integrated safety analysis is set up to deal with consequences and likelihood of particular hazardous events.

And we're prepared a guidance document on doing these integrated safety analyses and they're in -- principally it's in the standard review plan that we use for licensing Part 70 facilities. This standard review plan does not require a fully quantitative probabilistic risk assessment.

And as such, what LES proposed to us was a semi-quantitative risk index method type of analysis. And this embodies a lot of the same aspects of a probabilistic risk assessment but it's done in a more qualitative way.

It does identify accident sequences. It does identify consequences of those accident sequences. And it does address the likelihood of those sequences.

And based on these sequences, LES calculates unmitigated as well as mitigated consequences with respect to each of these sequences.

And where mitigation is required to meet the overall performance requirements, LES identifies what we call "items relied on for safety" that are basically special safety features that would be required in order to ensure that the performance requirements in Part 70 are met.

The accident sequences were developed based on a hazop method that's commonly used in the chemical industry. It's a method that is a systematic method for identifying things that can go wrong in the facility and for setting up sequences for accidents and accident effects to be determined.

There are likelihoods and consequences of

concern that are developed from this approach. There are a number of documents that are excluded from the integrated safety analysis summary but are part of the overall ISA package that is retained by the applicant.

And basically it's an approach to meet our Part 70 performance requirements. And it is an approach that we have suggested in our standard review plan.

Now, the details of how well they've met this approach and whether we'll ultimately find it acceptable will follow out of our detailed review, which is underway.

My final slide is one on the major milestones that we have left in the project. Right now, we're planning to complete a draft environmental impact statement by the end of September of this year.

Following that, we would have a formal public meeting in the Eunice, New Mexico area to take comments on that draft EIS.

And then by June of 2005, we would have prepared our final safety evaluation report and the final EIS. And again, as I mentioned earlier, we're trying very hard to try to beat these schedules.

But it is an aggressive schedule but we feel that by taking advantage of some of the work that

has been done in the previous LES application, that we feel that these schedules are doable.

That concludes my part of the presentation, did you have any questions or comments on it?

DR. GARRICK: Well, we may have. Ruth?

DR. WEINER: Just a question. And I don't want to do anything to extend your schedule, but have you considered also having a public meeting in either Albuquerque or Sante Fe?

MR. JOHNSON: We did. But that's 300 miles away from the site. And, you know, our priority is really to make these public meetings close to where the plant is going to be built.

There has been some interest, some -- we've had one informational public meeting in November of last year where we went out to Eunice and we talked about what our licensing process was. And we also had a formal scoping meeting for the EIS, also in Eunice.

There were several people from outside of Lea County that did attend there. But by and large, almost all of the people that attended these meetings, and in both meetings, there were over 250 people that attended each one, there were only a few that were from outside of the Lea County area.

DR. GARRICK: What's the population within 20 miles of the site approximately?

MR. JOHNSON: Eunice has a population of 2,200 people.

DR. GARRICK: Yes.

MR. JOHNSON: If you go 20 miles north of that, you come to Hobbs, New Mexico. And the population is about 20,000 there. The entire county is about 30,000.

DR. GARRICK: Yes.

MR. JOHNSON: And the county has an area that's three times the size of the State of Rhode Island.

DR. GARRICK: Ruth, anything?

MR. JOHNSON: This site is located about four to five miles from the center of Eunice. And it's about a mile from Waste Control Specialists. I don't know if you have visited that facility. But it's about a mile west of Waste Control Specialists.

But there really isn't any resident within two and a half miles of the site.

DR. GARRICK: George?

DR. HORNBERGER: Just a couple questions to satisfy my curiosity on the whole industry.

Now I take it that this is not being

proposed to meet a currently unmet demand but rather it's proposed because the product can be produced more efficiently and it will drive a gas centrifuge plant somewhere else out of business?

MR. JOHNSON: Well, I think the principal purpose of this project, and what LES has said its purpose is is one, to fulfill at least a need that the utilities have saying for another supplier within the country. So diversity of supply is one of the key objectives of LES.

Another is that they feel that they can make a product much more economically than can the gaseous diffusions plants. So that there's a market for in terms of the economic benefits from the use of this technology over gaseous diffusion.

DR. HORNBERGER: Right. But it's an economic benefit. It's not -- so, I guess, so currently some of the demand is being met by suppliers outside the U.S.?

MR. JOHNSON: Well, within the United States, the annual demand for separative work units is about 10 to 11 million SWU per year. And that varies a little bit on an annual basis based on individual plant schedules for refueling and fuel needs and so on. That's about a third of the worldwide demand.

And right now, the U.S. Enrichment Corporation, USEC, produces probably about 10 million SWU per year. Five and a half million SWU comes in from the Russian downblending project, which is part of an agreement with the United States and Russia, of which USEC is the exclusive agent for marketing that material.

They also produce, you know, three to five million separative work units a year from Paducah, which is their only other operating gaseous diffusion plant.

DR. HORNBERGER: Yes.

MR. JOHNSON: What USEC is planning on doing, they have an agreement with the Department of Energy to move into advanced enrichment technology. The agreement requires them to keep the Paducah plant operational until they get an advanced enrichment technology plant operating.

Their plan right now is to also go to a gas centrifuge system. They're planning to present us with an application for a full-sized plant this August for a three and a half million SWU capacity facility.

So if you drop out the gaseous diffusion plant, which, you know, does not produce separative work units at the same cost, at much higher operating

costs than gas centrifuge.

The French are also planning on going to use Urenco technology to replace their gaseous diffusion operation in Tricastin. So everybody is moving toward a more efficient process than gas centrifuge.

DR. HORNBERGER: Okay. So the numbers that you just quoted would lead me to believe that we're pretty close to being neither a net importer nor a net exporter. I think you said 11 million versus 10 million.

MR. JOHNSON: Well USEC doesn't sell all it's product to the United States first of all.

DR. HORNBERGER: Right.

MR. JOHNSON: I mean there's a portion of that --

DR. HORNBERGER: Right.

MR. JOHNSON: -- that goes overseas. You know, Urenco and COGEMA, which operates a facility in France, also have contracts to supply U.S. facilities.

DR. HORNBERGER: Right.

MR. JOHNSON: Urenco, it's current capacity is about 15 percent of the world supply.

DR. HORNBERGER: Right. But I was just trying to think of a -- on a gross level, the net, the

net U.S. You said that we produce 10 million and the demand is about 11 million, is that the --

MR. JOHNSON: Right. And you have to realize, too, that the agreement with Russia on the downblending HEU expires in 2013.

And while I think there's a lot of people that want to encourage the, you know, extending that agreement, it's really not certain whether or not that will happen or a deal will be constructed, you know, that will be beneficial to Russia as well as the United States.

So there are questions in the future. So -- but LES definitely feels that they can market their product in the United States and I think that's demonstrated by the fact that three of the major partners in this process are three of the largest utilities in the country, Exelon, Entergy, and Duke.

DR. HORNBERGER: Right. Just one last question. So in terms of the technology, is the disposal of the depleted uranium exactly the same as for any technology? Are there any benefits on the waste stream end of this technology?

MR. JOHNSON: Well, I mean what you end up with is a product similar to what you get from a gaseous diffusion operation. You get depleted uranium

at about .3 weight percent U-235.

There is a requirement in the U.S. USEC Privatization Act that requires DOE to accept depleted uranium from a uranium enrichment facility licensed by the NRC if we determine it to be low-level radioactive waste. And the Commission, in its order declared that to be a plausible strategy for addressing disposition of DU.

LES is also -- they also want to pursue -- beside the DOE pathway, they also want to try to pursue a commercial pathway in which they convince another commercial entity to do conversion for them. And to use existing commercial disposal facilities for ultimate disposal.

Those facilities -- or the conversion facility doesn't exist in this country at the present time. There is a similar facility that's operating in France. And I'm sure you are aware that DOE is constructing two deconversion facilities for their material in Paducah and Portsmouth. And construction on those facilities is scheduled to begin in July.

The technology for doing deconversion is not an unknown technology. And it would be a matter of LES trying to convince another entity that there is a market for doing this kind of work. And they're in

the process of trying to do that now.

Now whether or not that happens or not, I don't have a definitive answer yet. But in the event that things don't go as -- in the way they would like it in terms of the commercial pathway, they still have the DOE pathway that's required by law.

DR. GARRICK: Mike?

DR. RYAN: Tim, you commented earlier that the earlier effort in Louisiana had the same design as the facility you have an application for now. Is that giving you a leg-up on your 18-month schedule of review? Are you able to take advantage of what you learned in the last go around?

MR. JOHNSON: Yes, it's very similar to what was proposed in the Homer, Louisiana project. There are some differences. But those differences, I think, are primarily in the feed and withdrawal stations.

In the Homer project, they were going to generate liquid UF-6. And the feed and withdrawal stations, their project designs have changed so that they don't require going to a liquid any more. So that enhances safety.

DR. RYAN: Yes.

MR. JOHNSON: But other than that, the

designs are pretty similar. It's basically double the size of the plant that was proposed in Homer.

So we do have a final safety evaluation report and a final EIS that was prepared for the Homer facility. And we are trying to take advantage of that so that we don't have to reinvent the wheel.

But one of the biggest changes that occurred since that project was the promulgation of new standards in Part 70 that basically required integrated safety assessment, which did not -- was not in effect at the time of the previous facility. So that is a new requirement and it's a new thing for us to deal with in terms of this type of plant.

But at Capenhurst and the Almelo facilities of Urenco, they are building and are operating parts of these facilities that basically are identical with this facility that's proposed for Eunice.

DR. RYAN: Thanks.

DR. GARRICK: You got close to this but were there any alternative technologies considered? I know there aren't too many.

MR. JOHNSON: Well, there's obviously gaseous diffusion. There's a SILEX process that was -- a process -- it was a laser-type process that an

Australian company was trying to develop with financial support from USEC. USEC eventually withdrew from that to focus on its gas centrifuge technology from DOE.

There's also the AVLIS process, which was a process that was originally developed by the Department of Energy as part of the USEC privatization, it was given to USEC.

And shortly after privatization, USEC decided that that was not economically attractive on a commercial scale. So they've dropped that technology. And no work is currently being done on that.

But those are basically the technologies that are out there for enrichment.

DR. GARRICK: Right, right. This will come up, I guess, in the EIS, but how far is the site from El Paso?

MR. JOHNSON: Oh, I guess it must be close to 300 miles, 250 to 300 miles.

DR. GARRICK: Yes.

Any other -- our consultant? Allen, do you have any comments? Questions? You want to pull your microphone down.

DR. CROFF: This plant will be fed with

only natural uranium?

MR. JOHNSON: I'm sorry?

DR. CROFF: The plant will be fed only with natural uranium?

MR. JOHNSON: Yes, yes.

DR. CROFF: And what kind of provisions do they put in place to make sure that they don't get some recycled uranium?

MR. JOHNSON: That is a question that is -- we still have before them in terms of -- I assume your question is regarding contaminants --

DR. CROFF: Yes.

MR. JOHNSON: -- from light technecium?

DR. CROFF: Yes.

MR. JOHNSON: We've asked them to address that in their possession limits.

DR. CROFF: Okay. Thank you.

A second question, in talking --

MR. JOHNSON: But in their initial application, they did not include Technicium 99 as part of their possession limits, which, you know, I don't know how practical that is, that was our question. But it appears that they were not planning on using anything that would contaminate the process.

DR. CROFF: Okay.

Second, regarding the tails, you noted that the Department of Energy has to take these back if LES were to so wish. But there was a -- I detected a caveat in there about low-level waste or being determined to be low-level waste by the NRC.

Is that material low-level waste according to NRC?

MR. JOHNSON: Well, in the Commission's order, what the order said was that if it meets the requirements under Part 61 for classification, that it would deemed low-level radioactive waste. And that LES makes a determination that it is waste.

DR. CROFF: Oh, okay.

MR. JOHNSON: You know, a portion of this material might go to be sold for other commercial uses. But we don't expect that all of it would end up-- there being a commercial demand for all of the material that would be generated.

DR. CROFF: And it --

MR. JOHNSON: But for it to be waste, it has to be waste. And LES has to make that determination on whether it can market it elsewhere.

DR. CROFF: Okay.

If declared waste, is it low-level waste under Part 61?

MR. JOHNSON: Yes, uranium is -- in 61.55, is Class A radioactive material.

DR. CROFF: Okay. Thank you.

DR. GARRICK: Any questions from staff?

(No response.)

DR. GARRICK: Thank you then.

MR. JOHNSON: All right. Well, I'll turn the discussion now over to Melanie Wong, who will talk about the status of the environmental impact statement process.

DR. GARRICK: Thank you, Tim. That was a very good update.

I understand we've had some new people come into the room. I just want to remind you that we all need to sign in so if you haven't done so, please do so. Thank you.

Melanie?

MS. WONG: Good afternoon.

Can you all hear me?

Good afternoon. My name is Melanie Wong. And I'm the Environmental Project Manager for the review of the proposed enrichment facility.

May I have the next slide please? My presentation will briefly discuss the environmental review and the issues to be addressed in the

environmental review.

Next slide please. As Tim stated, we received the license application in December of 2003. We then issued a Notice of Intent to prepare an environmental statement, an EIS, and to conduct a scoping process.

On March 4, 2004, the staff held a scoping meeting in Eunice, New Mexico, to solicit both oral and written comments from interested parties. Of the 43 commenters, 33 fully supported the facility. We also received a petition of support of over 2,000 signature.

During the review of the license application, questions arose requiring the NRC staff to request additional information and also clarification. We issued our RAIs in April 2004 and it's currently reviewing the responses that we received from LES last week.

Currently we are continuing with our intensive environmental review, which will result in a draft EIS. Once we issue the draft EIS, we will then have a public comment period, which will include a public meeting.

And, Dr. Weiner, as you had asked the question about whether we would go out to Albuquerque,

while we may not have a meeting in Albuquerque, we will be sending out a Federal Register.

We will also advertise in the Albuquerque newspapers to solicit broad comments back to us. Comments that are received on the draft EIS will be addressed on the final EIS.

Next slide please. This slide indicates the environment discipline where we will focus our review. One of the major area of environmental consideration is the disposition of the depleted uranium.

Tim Harris, who is the lead for this part of the review, will now discuss the history of the depleted uranium.

MR. HARRIS: Good afternoon.

As Melanie said, I'm Tim Harris. I'm a Senior Project Manager in the Division of Waste Management and Environmental Protection. I guess I'm the tail of the presentation as it were.

I'd like to focus my discussion on depleted uranium disposition issues in terms of what LES has proposed. And add a little bit more detail to the answer that Tim gave Dr. Hornberger.

As Tim mentioned, the Commission did provide some guidance to the staff prior to receiving

the application. Specifically, they required the applicant, LES, to address the technical, financial, and insurance provisions and resources dealing with the disposition of depleted uranium.

They also identified several plausible strategies, which the Commission viewed as plausible strategies. And that was the level of detail that they required of the applicant. Not that they had to have concrete plans in place at the application time, but at least provide some plausible strategy that the tails could be dispositioned.

The Commission said that storing the tails as a potential resource at the plant was a possible plausible strategy.

Also continuously converting the depleted, the tails to depleted -- excuse me, to uranium oxide that could be used either as a potential resource or for disposal.

They also said that a combination of either storing or continuously converting was also a plausible strategy.

They also said that deep disposal in an underground mine or deep bore hole would also be a plausible strategy.

Further, they went on to say that if the

depleted uranium tails met the definition of low-level waste in Part 61, then the tails could be transferred to the Department of Energy under the USEC Privatization Act.

And as Tim mentioned, LES has not made that determination whether it's a resource or a waste. But the Commission also went on to say unless LES demonstrates that the depleted uranium tails, that there was a market for them, that they should be considered waste.

LES, in its application, provided six strategies and identified two as plausible. Their preferred alternative was a private sector conversion facility. And then they just planned for disposal in an exhausted mine. And I think they proposed a -- or gave an example of a mine in Colorado that could be used.

The other strategy that they considered plausible was conversion by DOE, the method through the USEC Privatization Act where they would pay DOE to take care of the tails for ultimate disposal.

The other alternatives, the other four alternatives, dealt with foreign, either re-enrichment, conversion, or disposal. And because of cost or international agreements, LES decided that

those were not plausible. So those were the six strategies that they presented.

As Melanie mentioned, we're evaluating those right now. And the depleted uranium disposition is the subject of a number of contentions.

Next slide please. Next, I'd like to, I guess, provide a little bit more detail on what DOE is doing with their tails. As you know, DOE has a fairly large inventory of depleted uranium tails at three sites, totaling over 700,000 metric tons.

As Tim mentioned, or Tim -- excuse me, DOE prepared a programmatic EIS for long-term management and use of the depleted uranium tails. And issued the draft environmental impact statement in 1997. And then finalized that in 1999. And these were a programmatic look by DOE as to how they could either use their tails as a resource or what forms would be preferable for disposal.

Then in 1998 and again in 2002, Congress enacted legislation which required DOE to construct and operate conversion facilities that Tim mentioned at Paducah and Portsmouth. And this would be to treat and recycle the depleted uranium hexafluoride prior to disposal.

And I think that concludes my

presentation. I'd be happy to answer any questions or Melanie on the environmental impact statement.

DR. GARRICK: Okay. Questions?

DR. WEINER: Melanie, could you go back to your slide where you listed the topics covered in the environmental impact statement? There. Okay.

Okay, yes, I notice transportation is there. Are you aware that there has been an environmental assessment on transportation of uranium hexafluoride? It's DOE/EA-1290 if you want to look it up. That might be of some assistance to you. And I believe there is also a follow-up document to that.

My other question is are you making any use of the considerable environmental impact assessments that were done for the Waste Isolation Pilot Plan because you're basically in the same area. It looks just like WIPP down there.

MS. WONG: We are. We are using information from WIPP. Also previous EISs such as the programmatic EIS from DOE and the two conversion facilities' draft EISs.

DR. WEINER: Yes, the EIS, if you're looking at the natural environment, the WIPP EIS, I think, would be of considerable assistance to you.

Also in your transportation EIS, are you

including transportation of the tails to somewhere, whether it's waste or a commercial product?

MS. WONG: We will be evaluating that in our EIS.

DR. WEINER: Yes. What are you using -- in your transportation, what are you using to look at the behavior of -- what are you -- you're using 48X, 48Y cask cylinders? Is that what's going to be transporting?

MR. HARRIS: That's correct.

DR. WEINER: Yes, what are you using to look at the behavior of those cylinders in accidents?

MS. WONG: We are looking at, in terms of transportation, we using the RADTRAN 5. And also WEBTREG --

DR. WEINER: Yes.

MS. WONG: -- for the transportation route.

For accident analysis, we are using GENII 1.485.

DR. WEINER: So that gives you -- what does GENII -- GENII gives you the source term? What are you using for release fractions?

MR. HARRIS: I think it would be 0170, I believe, but there may be -- I don't see any

Transportation staff in here. But I believe it would be NUREG-0170.

DR. WEINER: 0170 is about 30 years old. I'd encourage you to look for some more recent --

MR. HARRIS: I don't know if there's any Transportation staff or anybody that has --

MS. WONG: Actually, if we could have our contractor who is doing the transportation analysis, ATL is our contractor, Abe Zeitoun, and he can address that.

MR. HARRIS: The man whose staff is doing the analysis.

DR. WEINER: Yes, there is a microphone right here.

MR. ZEITOUN: Yes. My name is Abe Zeitoun and I'm supporting the EIS development. You are correct. We're using the two containers that you just recommended. One for the feed and one for the depleted uranium, we're going to use that.

Also we are using some guidelines from the EISs that DOE has just published. We are using all the methodologies of the DOE so we can have a comparable analysis, so we will benefit as the CEQ regulation requires, we'll benefit from the existing information so we don't have to duplicate the efforts.

DR. WEINER: Thanks.

DR. GARRICK: Is that it?

DR. WEINER: Yes, that's it.

DR. GARRICK: George?

DR. HORNBERGER: It's the curiosity question, Tim. What is the economic use for tails.? I mean is this what they use to make artillery shells?

MR. HARRIS: Well, certainly shielding is one. I think another one that is kind of interesting is not silicone chip but uranium chips, semiconductor chips that they are exploring.

But there's not a whole lot --

DR. HORNBERGER: They can make a lot of them right?

MR. HARRIS: Yes.

(Laughter.)

DR. GARRICK: Well, and just as an extension of George's question --

MR. HARRIS: You could make a lot of airplanes, too, with all that depleted uranium.

DR. GARRICK: Just an extension of George's question, given the tremendous experience that exists, U.S.-wide and the worldwide, with depleted uranium, why is this such a big issue?

MR. HARRIS: I'm sorry, I didn't follow

your question. What?

DR. GARRICK: Given the experience we have with depleted uranium, and you've sort of alluded to the fact that this is one of the major issues of what to do with it, why is it such a big issue?

MR. HARRIS: Well, I think, you know, if you look at DOE has large stockpiles that they haven't dispositioned yet. Certainly back in the mid-90s, DOE thought it was a significant issue enough to prepare for programmatic EIS.

So I think that's the basis of the answer to your question is that, you know, this facility will generate large amounts of depleted uranium. And, you know, the Commission has said before you can license a facility, there has to be a clear, plausible strategy for the disposition. That, you know, they're just not going to sit around forever.

DR. GARRICK: So we're not satisfied with what DOE has done?

MR. HARRIS: Well, I think we're building on what DOE has done.

DR. GARRICK: Yes?

MR. HARRIS: I mean I think as Abe mentioned and Melanie mentioned, we're using the work that DOE has done in their analysis.

DR. GARRICK: Yes.

Mike, you have any questions?

DR. RYAN: Well, I guess, you know, just on the depleted uranium question, most of the uses of that are as metal, I would guess.

MR. HARRIS: Yes, that's correct.

DR. RYAN: So it's shielding or it's armaments or it's, you know, and then there are a few odd uses for semiconductors and perhaps a few other odd products here and there. But it's kind of like phosphogypsum in Florida. There's a lot of it.

DR. HORNBERGER: I guess what I'm curious about, though, is that people then worry about disposal of --

DR. GARRICK: Right.

DR. HORNBERGER: -- uranium bullets.

DR. WEINER: Yes, yes.

DR. HORNBERGER: Because now they have, you know, shooting ranges are now contaminated with uranium. I mean I think it's perhaps crazy but they do worry about it.

DR. RYAN: Well, it's -- I mean I think Tim pointed out, and correct me if I'm wrong, Tim, but, you know, it is Class A low-level radioactive waste. And that's a very straightforward disposal

circumstance. And there's lots of capacity to manage low-level waste disposal.

MR. HARRIS: And I think DOE looked it. As you mentioned metal is the most usable form but DOE looked at, for disposal, whether it was more preferable to convert it to metal or convert it to various oxide forms or even UF-4 as a, you know, potential form for disposal.

DR. RYAN: Sure.

MR. HARRIS: So the programmatic EIS addresses all those different options.

DR. WEINER: Can you use --

DR. RYAN: And to me, when you think about disposal, George, really it boils down to the fact there's a lot of mass. It's not -- I mean in a hazardous context, it's a very low radiological hazard material.

DR. WEINER: Can you use it for --

DR. RYAN: But there's a lot of it.

DR. WEINER: And can you use if for pottery glaze again? That's a serious question.

MR. HARRIS: There's a lot of it.

DR. GARRICK: Allen, do you have any questions?

DR. RYAN: Fiestaware.

MR. HARRIS: Yes, I don't think our regulations allow that right now but --

DR. GARRICK: Is it fair to ask the group though not necessarily the contention issues, but what they consider to be the top three or four technical issues associated with this project?

MS. WONG: I would say depleted uranium, water use as it relates to the EIS, water use, water -- air quality also, the potential for emissions from the facility. Those are the three areas we're really looking at on the environmental side.

DR. GARRICK: And I would think there would be a lot of data on air quality and the emissions, from the emissions standpoint.

MR. HARRIS: Yes, no, not that there's a lack of data, but those were --

DR. GARRICK: The technical.

MR. HARRIS: -- the most potentially significant impacts.

DR. GARRICK: Yes, okay.

MR. JOHNSON: All right. If I can add a little bit more to that. What Melanie and Tim are referring to are their big issues for the EIS.

In terms of safety, the most critical parts of the facility are the feed, withdrawal, and

the sampling stations because you have the largest quantity of material there at those points.

DR. RYAN: And, Tim, again, I'm just trying to recall what you said. You kind of indicated that the chemical aspects, HF being one, are probably predominant in the analysis?

MR. JOHNSON: Correct. Well, what you want to do is you want to prevent the uranium hexafluoride from contacting air --

DR. RYAN: And water, right.

MR. JOHNSON: -- and generating hydrogen fluoride.

DR. RYAN: Right. Thank you.

DR. GARRICK: Good. Any other questions from the staff or anybody?

(No response.)

DR. GARRICK: All right. Well, thank you very much. We appreciated the update.

Okay. I think this is going to end our recorded session. And we're going to take a five-minute break and then come back in and either do one of two things, whichever the Committee prefers.

We have some unfinished business with respect to the PNP meeting this morning. Or we can jump right in to what the agenda shows is the letters.

Any preference?

All right. I have one vote for PNP -- I have one vote for the continuing with the PNP until we finish that.

(Whereupon, the above-entitled meeting was concluded at 4:27 p.m.)