UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SECRETARY

June 23, 1999

MEMORANDUM TO: PARTIES
HYDRO RESOURCES, INC.
Docket No. 40-8968-ML
INTERNATIONAL URANIUM (USA) CORP.
Docket Nos. 40-8681-MLA-4/MLA-5/MLA-6/MLA-7

SUBJECT: TRANSCRIPT OF COMMISSION MEETING OF JUNE 17, 1999

Attached is the transcript of the Commission meeting on "Staff Proposals for Uranium Recovery Regulatory Issues, Secy Papers 99-011, 99-012 and 99-013" dated June 17, 1999. A copy of the transcript (text without attachments) as well as copies of the Secy Papers are also on the NRC web site. Should parties wish to provide comments to the Commission with respect to the meeting discussions, please provide your comments by July 23, 1999. Comments may be provided to the Secretary of the Commission by regular mail, e-mail (secy@nrc.gov) or fax (301-415-1101).

Annette L. Vietti-Cook
Secretary of the Commission

Attachment: As stated

SECY-EHD-011

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ORIGINAL

UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

Title: STAFF PROPOSALS FOR URANIUM RECOVERY REGULATORY ISSUES SECY PAPERS 99-011, 99-012 AND 99-013 -- PUBLIC MEETING

Location: Rockville, Maryland

Date: Thursday, June 17, 1999

Pages: 1 - 139

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DISCLAIMER

This is an unofficial transcript of a meeting of the United States Nuclear Regulatory Commission held on June 17, 1999, in the Commission's office at One White Flint North, Rockville, Maryland. The meeting was open to public attendance and observation. This transcript has not been reviewed, corrected or edited, and it may contain inaccuracies.

The transcript is intended solely for general informational purposes. As provided by 10 CFR 9.103, it is not part of the formal or informal record of decision of the matters discussed. Expressions of opinion in this transcript do not necessarily reflect final determination or beliefs. No pleading or other paper may be filed with the Commission in any proceeding as the result of, or addressed to, any statement or argument contained herein, except as the Commission may authorize.

UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

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OFFICE OF THE SECRETARY

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STAFF PROPOSALS FOR URANIUM

RECOVERY REGULATORY ISSUES

SECY PAPERS 99-011, 99-012 AND 99-013

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PUBLIC MEETING

Nuclear Regulatory Commission

Room 16-1F

One White Flint North

11555 Rockville Pike

Rockville, Maryland

Thursday, June 17, 1999

The Commission met in open session, pursuant to notice, at 9:07 a.m., the Honorable SHIRLEY A. JACKSON, Chairman of the Commission, presiding.

COMMISSIONERS PRESENT:

SHIRLEY A. JACKSON, Chairman of the Commission

EDWARD McGAFFIGAN, JR., Member of the Commission

GRETA J. DICUS, Member of the Commission

JEFFREY S. MERRIFIELD, Member of the Commission

NILS J. DIAZ, Member of the Commission

STAFF AND PRESENTERS SEATED AT THE COMMISSION TABLE:

KAREN D. CYR, General Counsel

ANNETTE VIETTI-COOK, Secretary

KING STABLEIN, Chief, Projects & Engineering Section

JOSEPH HOLONICH, Deputy Director, Division of Waste Management

CARL PAPERIELLO, Director, NMSS

JOHN GREEVES, Director, Division of Waste Management

WILLIAM FORD, DPV Presenter

MYRON FLIEGEL, DPV Presenter

JAMES J. FIORE, Deputy Assistant, DOE

WILLIAM SINCLAIR, Director, Division of Radiation Control, Utah Department of Environmental Quality

GARY SMITH, Deputy Director, Technical Assessments, Bureau of Radiation Control, Texas Department of Health

WILLIAM KEARNEY, Chairman, Uranium Industry Commission, Wyoming Mining Association

DAVE CULBERSON, Fuel Cycle Facilities Forum

RICHARD LAWSON, President & CEO, NMA

DIANE CURRAN, Counsel SRIC

STAFF AND PRESENTERS SEATED AT THE COMMISSION TABLE:

[Continued]

CHRIS SHUEY, Environmental Health Specialist, Southwest Research and Information Center

ANTHONY THOMPSON, Counsel, National Mining Association

LOREN SETLOW, Office of Radiation and Indoor Air, EPA

KATIE SWEENEY, Associate General Counsel, National Mining Association

P R O C E E D I N G S

[9:07 a.m.]

CHAIRMAN JACKSON: Good morning, ladies and gentlemen. Today the Commission will be hearing from a number of participants about several policy issues associated with uranium recovery. Our presenters today are the NRC staff, the Department of Energy, the Conference of Radiation Control Program Directors aka CRCPD, the State of Utah, the Wyoming Mining Association, the National Mining Association, the Fuel Cycle Facilities Forum and the Southwest Research and Information Center.

The purpose of the briefing is to discuss the issues that are presented in three papers presently before the Commission, SECYS-99-011, 012 and 013.

At the direction of the Commission these three papers were made publicly available through the Public Document Room and the NRC web site to provide early access to the information to interested stakeholders.

Experience in using and implementing existing NRC requirements in 10 CFR Part 40 to regulate uranium and thorium recovery facilities has suggested that some revisions are needed. The staff has concluded that revisions to the regulations are necessary to establish requirements that are tailored for in situ leach facilities and to resolve current policies issues to ensure safety

without imposing an unnecessary burden.

Therefore, the staff has recommended to the Commission the following: (1) preparation of a draft rulemaking plan for a proposed new 10 CFR Part 41 on domestic licensing of uranium and thorium recovery facilities; (2) specific requirements for in situ leach facilities; (3) allowance of disposal of other similar materials in uranium mill tailings impoundments; and (4) allowance of processing alternate feed material at uranium mills.

Because of the various interests associated with these issues, the Commission will hear a variety of stakeholder presentations this morning. The NRC staff will open an overview of the issues and recommendations discussed in the papers. This will be followed by the other presentations that will focus on points of agreement and disagreement with the staff's proposed plans and preferences.

All of the issues to be discussed today are generic and are of broad applicability to NRC activities. However, aspects of some of these same issues currently are being litigated in three adjudications before the Atomic Safety and Licensing Board. Because the Commission is the appellate body in each of the pending adjudications, it will not entertain in this briefing any arguments or discussions

of the case-specific issues in litigation. Let me repeat -- it will not entertain in this briefing any arguments or discussions of the case-specific issues in litigation.

We have an unusually large number of participants in our meeting today and a reasonable tight schedule, some might say unreasonably tight schedule. I ask that each of the presenters focus their message to the Commission and be precise. Your presentations today should be based on the assumption that the Commissioners are familiar with the content of your written material. Let me repeat -- your presentations today should be based on the assumption that the Commissioners are familiar with the content of your written material.

COMMISSIONER MERRIFIELD: Madame Chairman, I presume that means you mean that they should be reading the written testimony provided.

CHAIRMAN JACKSON: You have got it.

COMMISSIONER DICUS: That is correct, because we are and we want you to be concise.

CHAIRMAN JACKSON: We are requesting this so that the time scheduled for this briefing will also allow time for questions, this is to all to the presenters. Because the NRC staff happens to be sitting here does not mean that it is directed merely at them.

I understand that copies of all the viewgraphs and

statements and the three Commission papers are available at the entrances to the room. Unless my colleagues have anything more they wish to add, Dr. Paperiello, please proceed.

DR. PAPERIELLO: Good morning, Madame Chairman, Commissioners, and thank you.

With me at the table are Mr. King Stablein, the Acting Deputy Branch Chief of Uranium Recovery and Low Level Waste; Mr. Joe Holonich, Deputy Director of the Division of Waste Management; John Greeves, the Director of the Division of Waste Management; and Mr. Ford and Mr. Fliegel who are the Project Managers in the Division of Waste Management.

As you have indicated, the staff is here this morning to brief the Commission on issues in the uranium recovery program. Three of the four issues are documented in Commission papers that have been previously provided. The issues are related to concerns with the NRC's requirements under the Uranium Mill Tailings Control Act of 1978, better known as UMTRCA.

In my view the issues represent significant public policy questions as well as the reasonable assurance of protecting the public health and safety. Because of this, the staff is looking to the Commission for guidance. You will hear from two other staff members who have filed differing professional views on the issues in our papers.

A fourth issue, concurrent jurisdiction with states, has not yet been presented to the Commission in a paper. Staff has been working with the Office of General Counsel to determine what recommendations should be made. Once this effort is completed we plan on providing a paper with recommendations on this issue.

These issues arise in large part because of a change in technology over 20 years since UMTRCA was enacted. When the law was passed, Congress envisioned a very robust nuclear power industry and the price of yellow cake processed at these uranium mills was over $40 a pound. At that time the extraction of uranium was done mainly by conventional mills. In situ leach facilities and heap leach facilities were used to process ores that were uneconomical to run through a conventional mill.

Today the price of uranium is not $40 a pound but about $10 a pound. Nearly all the convention mills in operation when UMTRCA was passed are now under reclamation. The in situ leach process, an extremely small activity at the time of UMTRCA's enactment is now the predominant form of uranium production. UMTRCA and subsequent NRC regulations were focused on the technology of conventional mills. The change in technology from convention milling to solution extraction has generated a set of issues that were not envisioned when Congress passed UMTRCA.

I would like to now introduce Mr. King Stablein, the Acting Assistant Branch Chief for the Uranium Recovery and Low Level Waste Branch, who will discuss the major issues presented in our Commission papers.

MR. STABLEIN: Good morning, Chairman Jackson, Commissioners. Thank you for your introductory remarks, Dr. Paperiello.

Could I have slide one, please?

I have heard your message to briskly step through these issues, and I will attempt to do, stating what the issues are, what the options are for addressing the issues and some of the major pros and cons for each, understanding that you all have read the papers and know this material already. So I will move right along.

On the first slide we have the four major regulatory issues confronting the Commission and staff presently. The regulation of the in situ leach facilities, the disposal of material other than 11e.(2) byproduct material and in tailings impoundments, the processing of material other than the traditional natural ore in the uranium mills, and, finally, concurrent jurisdiction.

I will discuss the first three of these four and the options and the pros and cons.

CHAIRMAN JACKSON: These represent the issues in total that the uranium recovery staff is involved with, or

these are just the focus of your discussion today?

MR. STABLEIN: These are the major issues that we are involved in and the ones that will be discussed today. There are a lot of other issues that we are struggling with as well, but this briefing could get even more complex. But these are the ones we will focus on.

COMMISSIONER DICUS: So, we have to resolve these first before we can go further to resolve the other ones, is that what you are saying?

MR. STABLEIN: These are probably the ones that underpin the regulatory framework that could hopefully deal with the body of issues.

Could I have slide 2, please?

The first major issue is the regulation of the in situ leach facilities and, not to confuse things, but under this particular major issue, there are two important aspects that we need to distinguish. The first one is the industry view that NRC regulation of groundwater is duplicate of EPA's Safe Drinking Water Act program, if in fact NRC has jurisdiction at all over the groundwater in the wellfields. The Safe Drinking Water Act provides a program, the Underground Injection Control Program, by which EPA and the EPA primacy states assure the protection of groundwater and protection from contamination. And it is the view of some that NRC's efforts in this area are simply redundant and not

needed.

OGC has looked at the EPA program and has concluded that NRC can rely on the EPA process. Based on the comprehensive nature of the EPA's program and the latitude that the Commission has in regulating in situ leach facilities in the absence of specific regulations and laws, OGC has concluded that the EPA program would provide an adequate basis for us to defer regulation in this area.

CHAIRMAN JACKSON: But the industry's view is that we really have no jurisdiction, is that correct?

MR. STABLEIN: That is the industry view.

MS. CYR: Our view is really that the agency has sufficient flexibility, in terms of the nature of what our authority is, that it lets us look at alternative ways of meeting that responsibility. We looked at the scope of the EPA and it appears to us, and this would be subject to further examination in the context of a rulemaking or a specific case by case basis, but it appears to us, based on our look, that the scope of their program is one that the agency might well be able to rely on to meet is responsibilities.

MR. STABLEIN: The second aspect of this issue of regulation of in situ leach facilities is the question of which of the many waste streams involved in the process should be subject to NRC regulation by defining them as

11e.(2) byproduct material. You have got the stream involved with the production bleed, which is the over-pumping to keep fresh groundwater coming into the area. You have got the actual extraction wastes where the uranium is being concentrated in the process. And you have got the restoration waste waters as the licensee attempts to restore the groundwater. So each of these could be classified, depending on your interpretation of 11e.(2) byproduct material as 11e.(2) or not, and some of the options we will be talking about hinge on this.

Right now the post-extraction waste waters are classified as 11e.(2) and the production bleed is classed as 11e.(2), whereas the restoration waste waters are classed as mine waters, mine waste waters which are subject to EPA or EPA state regulations.

One major part of this problem is that, depending on how these streams are classified when the waste material is moved to the evaporation ponds, there is a danger of getting commingling of wastes and getting 11e.(2) and non-11e.(2) wastes commingled together, and we have guidance that precludes non-11e.(2) waste being put into tailings impoundments, leaving the industry in a difficult position. Hopefully, we will address those in some of our options.

Could I have slide 3, please?

With respect to that first aspect that I

discussed, that is, the possibility of relying on EPA's Underground Injection Control Program, the staff has recommended that we defer regulation to EPA in this area. The presence of an EPA or EPA primacy state permit would allow NRC to cease being concerned about groundwater contamination, groundwater restoration based on the opinion of OGC and our staff analysis.

With respect to the second problem of which waste streams are 11e.(2) and who should regulate what, we have looked at four options. The first option is the status quo, maintain the current situation. We would regulate production bleed and discrete processing wastes as 11e.(2) and the states and EPA would continue to regulate the mine waste waters. This really continues to leave the licensees with the problems dealing with how to dispose of the wastes.

However, I forgot to mention with regard to all four of these options, we consider that health and safety are protected by any of the four, perhaps more cumbersomely by one than anyone, but all four are protective of health and safety.

The second option that we have looked at is classifying all of these liquid effluents as 11e.(2) byproduct material and regulating them all under NRC. And this has the positive value of providing regulatory clarity. We would be responsible for them. It removes the ambiguity

and eliminates dual regulation. So it doesn't provide for a reduction in NRC's regulatory burden on licensees and staff could use more resources in reviewing, for example, evaporation pond designs and it could affect our dam safety program. In other words, there are some staff resource impacts to going this route, attractive as it is from the point of view of clarity.

Going in the other direction, the NRC could, in a sense, pull back and only be responsible for the wastes most directly related to the concentration of uranium in the ISL process. This would mean that the production bleed, as well as the mine waste waters, would not be under our purview, because they wouldn't be 11e.(2) material, and so we would basically just have our Radiation Control Program in the satellite facilities and the central processing building.

The downside of this, or one possible downside is that you would have perhaps the creation of numerous on-site disposal facilities all over the western United States which would not be under NRC jurisdiction. However, it is true that the states would be regulating these under their mining regulations so that these would not be unregulated.

Finally, Option 4, which builds on Option 3 really, it adds to seeking a legislative initiative in which UMTRCA would be amended to classify only the post-ion exchange wastes at the in situ leach facilities that is

11e.(2) byproduct material. Now what this adds to Option 3 is that it would give Congressional mandate to the direction that the NRC was going in. It would free us from the litigative risk that would pertain to Option 3 in that we are changing agency practice and direction, and so Option 4 is attractive in that sense. And the staff's recommendation from all this was Option 3 or Option 4 -- Option 4, of course, building on Option 3.

CHAIRMAN JACKSON: What happens to restoration wastes from ISL operations today?

MR. STABLEIN: They can be disposed of in a number of ways. You have the sludge that develops from trying to clean up the water. Depending on how it is defined, it can be put with 11e.(2) material or it can be put in an evaporation pond that is non-11e.(2) material, or it gets commingled presently.

CHAIRMAN JACKSON: Did the staff consider the option suggested by Dr. Fliegel? Is that how you pronounce your name.

MR. FLIEGEL: Yes.

CHAIRMAN JACKSON: To give licensees an option of how they designate the restoration wastes?

MR. STABLEIN: We considered it, but I don't recall the specific discussion as to how that went.

Mr. Holonich.

MR. HOLONICH: I don't recall either, but we did consider it. We looked at a number of options, including giving licensees the ability to dispose of 11e.(2) on-site under mining waste regulations for the state. We would have to consult with the Commission but the AEA does allow us to do that as an option, but the industry really is focused on wanting to get out of the dual regulation perspective and believes that other than post-ion exchange waste, everything else should be considered as mine waste, so we really were focused on that issue.

COMMISSIONER McGAFFIGAN: The Chairman just asked a question with regard to how it is treated today. In the paper it says that at least some of these wastes would likely be classified at T-NORM, but if -- this, you are referring to evaporation pond sludges. As I understand the situation today, those are regulated by state today. So why the "would likely be"? The states either have classified them as T-NORM or they haven't. How do states classify this material today? And how do they regulate it, do they regulate it as T-NORM?

MR. STABLEIN: Well, my understanding was they regulate it as mine waste, and I am not sure what the T-NORM addition adds to that.

MR. HOLONICH: I think "would likely" was just a poor choice of words, Commissioner. The waste that comes

from post-uranium extraction activities such as reclaiming the groundwater, we have said -- we look at that as a mine waste. The states have been regulating that as a mine waste. I think the "would likely" was just a bad term, bad choice of words.

COMMISSIONER DICUS: If I could add, I think the issue of T-NORM, I think the states are still struggling with that. Now, CRCPD is here and I would like for them to address that. But I think trying to come up with their regulations and how they are going to deal with this, they have a task force or maybe it is a commission now that is dealing with T-NORM and I think that is a whole other realm. So when a CRCPD representative talks, perhaps they can address that.

COMMISSIONER McGAFFIGAN: That is exactly where I was headed. Given that they have been struggling with T-NORM for many years, to come up with some sort of a regulatory scheme, and I guess the Academy of Sciences has weighed in with some suggestions, if that is how they are going to -- if that is how they are regulated, then there may not be much of a framework. If it is mine waste, maybe there is a framework for mine waste and I just may have gotten confused by the paragraph. So today it is actually regulated as mine waste.

MR. HOLONICH: Yes, that is correct. My

understanding is, for example, in the State of Wyoming it is regulated as mine waste, and I believe it is like four feet of soil has to cover the waste, and that is sufficient to take care of the reclamation.

COMMISSIONER McGAFFIGAN: Is there any sense of what the radiation -- you said all these are protective of public health and safety. What are the radiation consequences of just burying this stuff in four feet? Has anybody done the back of the envelope calculation as to what exposure would be for a typical -- for the use of that site?

MR. HOLONICH: The staff has not done any type of analysis like that. We have deferred to the states under their regulation. Maybe when the industry and Wyoming Mining Association speaks, if they have got some background, they can give you a little bit of information on that.

COMMISSIONER McGAFFIGAN: Okay.

MR. STABLEIN: If there are no further questions right now, could I have Slide 4, please?

The second major issue concerns disposal of material other than 11e.(2) byproduct material in tailings impoundments. And the material under consideration here is material that is similar to what is already being put in the tailings impoundments, low radioactivity waste like dirt and rubble containing uranium and thorium, for example. There are large amounts throughout the country. This material is

a potential candidate to be disposed in the tailings impoundments, but it is not 11e.(2) material as defined.

The staff has guidance which was issued in 1995 on when such disposal is acceptable and provided criteria that the staff would use in making this determination. These criteria did eliminate many types of material from disposal and the key reason for this is, once again, the attempt to avoid dual regulation with the states or with EPA. This could complicate the regulatory framework unduly and actually increase burden on licensees and make the regulatory framework really untenable.

So DOE, the long-term custodian, is understandably hesitant to accept sites for long-term care if they are going to be dealing with multiple regulators, perhaps in perpetuity. So, therefore, to avoid the dual regulation, the staff in its guidance has precluded non-AEA material, hazardous material and the like from the tailings impoundments.

Industry has advocated expanding the use of the sites to allow other types of material in. There is capacity available. The possibility exists that cleanup of various decommissioning sites throughout the United States could benefit by being able to dispose of the material in these tailing piles, and so industry sees a benefit to that and industry is willing to consider putting almost -- even

things like limited amounts of special nuclear material, 11e.(2) byproduct material. They have asked us to think outside the box as far as what could go into the tailings impoundments.

COMMISSIONER MERRIFIELD: Chairman.

CHAIRMAN JACKSON: Yes, please.

COMMISSIONER MERRIFIELD: Could you, just briefly, could you explain the characteristics of the typical tailings piles and the protective structures underneath in terms of liners and monitoring facilities and things of that nature? What are our requirements on that and what are some of the facilities we have out there?

MR. STABLEIN: I can probably start on this and ask Mr. Holonich, who is much more familiar with these structures, to add to them. They are required to be lined and the material has to be a relatively impermeable liner. We need a cap, a radon cap cover on these impoundments. They need to be designed to protect against erosion by various rock sizes.

COMMISSIONER MERRIFIELD: Let me ask a more directed question. One of the things that is under -- one suggestion is that some of these piles would be allowed to dispose of materials, TSCA contamination, RCRA contamination, CERCLA contamination. To what degree are these impoundments consistent with the requirements that EPA

has for the liners for facilities which dispose of those materials?

MR. STABLEIN: Let me start on this and then invite Mr. Holonich in. My understanding is that the impoundments are designed to be able to meet the requirements of at least the Solid Waste Disposal Act and the requirements are at least as stringent as for materials that would be disposed of under that Act. The requirements are --

COMMISSIONER MERRIFIELD: I'm sorry, I don't mean to get to this level of detail. Subtitle (d) or Subtitle (c) of Solid Waste Disposal Act, because it is a significant difference?

COMMISSIONER DICUS: I think the basic -- have we worked out our differences with EPA on disposal of mixed waste? And I think that is what --

COMMISSIONER MERRIFIELD: That is part of what I am getting to.

COMMISSIONER DICUS: Where are with that?

MR. HOLONICH: Let me maybe just step back a little bit and talk about what is in the Act today and what is in the tailings and what is in our regulations. Section 275 of the Act required that the administrator promulgate standards for non-radiological constituents in mill tailings that were the same as Subtitle (c) of the Solid Waste

Disposal Act.

It then said the administrator should not issue any permits under that Act because it wanted to keep with a single federal regulator. They promulgated standards both for radiological and non-radiological protection, first, for surface reclamation and then later for groundwater protection. Those groundwater protection standards were incorporated into our regulations in 10 CFR Part 40, Appendix A, Criterion 5. Those requirements include design of impoundments for events that you expect at the site, liners, cleanup standards for radiological and non-radiological constituents, including maximum concentration limits, alternate concentration limits and background.

The sites that were in existence prior to that are unlined cells because they were built before our groundwater regulations took effect. Cells that were built subsequent to that are lined. So you can go into mill sites, there is at least one I can think of that has several unlined cells and several lined cells, depending on when the cells were met.

So if you go into our regulations, EPA gave us standards for non-radiological like selenium and things that we have incorporated into Part A -- Appendix A, I'm sorry -- as well as radiological like radium. The composition of the

tailings is basically the ore with uranium removed, so you have got radium, thorium, things that you would find naturally in the ore, as well as the chemicals that were added to extract the ore, ammonia and other solutions that were used in the extraction process.

COMMISSIONER MERRIFIELD: But would you say that the impoundments that have been built since EPA promulgated those regulations, and we have implemented in a consistent fashion or our own regulations, are ours consistent with Subtitle (c) facilities then?

MR. HOLONICH: Yes. We sent the letter to EPA back about two years ago that said we have done this work, we think we are consistent, and if we don't hear from you, we will work with the assumption that you guys believe it is consistent also. We also met with the office director down there and, basically, they said they were not going to look at the compatibility question any more.

Now, John, did you want to add something?

MR. GREEVES: Commissioner Merrifield's question I think goes to the circle cells that they are building nowadays with double liners, leach A collection systems, and I don't think any of these facilities have double liners, leach A collection systems like the ones maybe you are familiar with. That is a design specification in CERCLA space. And Joe, correct me if I am wrong, but we don't have

double liner, leach A collection systems out there. Maybe the licensees can clarify that.

What we have is liners consistent with Part 40, which is also consistent with the EPA regulations that were put out for mill tailings facilities. There is a difference, I don't want you --

COMMISSIONER MERRIFIELD: There is.

MR. GREEVES: There is a difference.

COMMISSIONER MERRIFIELD: Subtitle (c) facilities require double liners and leach A collection.

MR. GREEVES: Correct.

COMMISSIONER MERRIFIELD: Okay.

MR. HOLONICH: I think we do have some double lined cells with leak detection systems in them. I believe White Mesa is one of the sites that has double liners.

COMMISSIONER MERRIFIELD: I have gotten in a far greater level of detail than I should and I would be interested in getting some more detail in the staff later on on that.

Just one last question as a follow-up, are we being asked by some of the people who will be testifying today to allow disposal of those types of materials in cells which are unlined, or will they only be in cells that are lined? Or do they make a distinction?

MR. HOLONICH: They don't make a distinction, but

I believe it would be lined cells because it would be all the new cells.

CHAIRMAN JACKSON: Why don't we ask them?

COMMISSIONER MERRIFIELD: Yes.

CHAIRMAN JACKSON: Why don't you go on?

COMMISSIONER MERRIFIELD: Thank you.

MR. STABLEIN: Could I have Slide 6, please? Five, I think. Sorry. That is moving along a little too quickly. Thank you, yes, that's the right slide.

Well, we have talked about the cells a bit. Let's talk about the three options to address this particular issue. Unfortunately the third option dropped off of the slide, but I will resurrect it for you when we get to it.

The first option is to retain the current guidance, limiting to certain kinds of AEA material what can go into the tailing impoundment. And of course this has the advantage that we remain the sole regulator of the radiological material in the pile. But this doesn't really do anything to make use of the tailings piles for cleanup of other sites and disposal of materials from decommissioning sites or other places.

The second option is to revise the guidance to allow more flexibility in using the disposal capacity of the tailings piles and to finalize this rulemaking to give it good codification as the agency practice. If we went this

route, we would remove many of the prohibitions currently in place on materials that could be put into the tailings pile, and I am sure we would have to work through which materials we would feel comfortable putting in the tailings pile. And, you know, this would make -- allow for more use of the impoundments for disposal of materials from other sites, but it opens up the possibility of multiple regulators being involved and, hence, we would have to be working with the long-term custodian for their concurrence and commitment that they would take the site even if it has these --

CHAIRMAN JACKSON: Non-AEA.

MR. STABLEIN: Non-AEA materials.

CHAIRMAN JACKSON: What about the third option of legislative.

MR. STABLEIN: Well, that is the one that rolled off the slide for some reason, but that is the third option. And it is, of course, the staff's recommended option, which would seek legislative change to provide Congressional certainty to the decision to expand the use of tailings impoundments to remove this possibility of multiple regulation. That is, in fact, the third option, Chairman.

CHAIRMAN JACKSON: So it should be on here.

MR. STABLEIN: It should be on here. I apologize.

CHAIRMAN JACKSON: Okay. Commissioner.

COMMISSIONER McGAFFIGAN: Madame Chairman, Mr.

Fliegel gives us language for his legislative change. I mean my sense, reading the paper, reading his DPV, you are awful close. But could you -- since you didn't provide language for your legislative change and he has language here, would you go beyond him in the sort of materials that would be allowed, or where is the difference between him and you if are both in agreement that a legislative option would be the best option?

MR. STABLEIN: I am sure that Mr. Fliegel will speak to this. I would say that I think we are very close as well. I just haven't written up my exact language yet that I would propose for a legislative package. It will have to be worked with the Office of General Counsel to see what we finally come up with.

I feel that the DPV'ers and Mr. Fliegel, in this case, have had an effect on the staff's position and that we have moved closer together since the original DPV was written. But Mr. Fliegel will no doubt comment on this. Now or later, as you wish.

CHAIRMAN JACKSON: We will finish your presentation. Try to keep it orderly, difficult though it may be.

MR. STABLEIN: Could I have Slide 6, please?

Moving to the third major regulatory issue that is confronting staff and the Commission is the consideration of

processing material in uranium mills other than the natural ore that has traditionally been the feed stock for mills. Of course, that is what is currently being used in mills. But the 1995 staff guidance on processing alternate feed material and Presiding Officer's decisions in 1993 and 1999 hearings on license amendments involving applications to process such material are presently before the Commission and I will attempt to avoid any -- going places I shouldn't go with this. I am only going to describe the issue and leave it at that.

A key criterion in the staff guidance requires mill licensees to demonstrate that they will be processing the alternate feed primarily for its source material content. In the 1993 hearing on the license amendment request, the Presiding Officer indicated that the staff should consider a financial test to ensure that the licensee is in fact processing this material for financial gain, that they are not just running the material through the process so that it can be legally reclassified 11e.(2) material and thereby being put into the tailings impoundment.

In the 1999 hearing on a similar amendment request, the Presiding Officer interpreted "primarily" differently. He interpreted it to mean merely that the licensee actually did run the feed through the mill and did extract uranium from that material without regard for the

financial benefit that accrued from removal of that uranium. Hence, his decision would reverse or overtake the 1993 decision, and this 1999 decision has been appealed to the Commission.

CHAIRMAN JACKSON: Let me ask OGC a question. Should the Commission action on this generic issue wait for the specific adjudicatory action to be completed?

MS. CYR: The Commission has the option of dealing with a generic.

CHAIRMAN JACKSON: Even with the pending adjudicatory. But doesn't the existing guidance include methods of justification other than a financial test?

MR. STABLEIN: It does indeed, yes. There are a couple of other tests that would still be in place even if this criterion were removed. You have got -- the "primarily" test would still exist, as I described it. You also have a direct disposal test. If the material could already be disposed of right in the tailings impoundment as 11e.(2) and they choose to process it, well, it is clear that they are processing it for the uranium content. There would be no point in running it through just -- there is no -- it would not be a sham disposal situation.

CHAIRMAN JACKSON: Right. Did you have a question, Commissioner McGaffigan?

COMMISSIONER McGAFFIGAN: Yes. I am just trying

to understand the interplay between -- again, I have Mr. Fliegel's legislative language in front of me, which I am sure is not blessed by OGC and lawyers will perfect if it ever becomes Commission position. But if his language were enacted, this whole issue, it strikes me, tends to go away because it is defining stuff as 11e.(2) that could go to the -- you wouldn't have, you know, the processing -- it would be able to be disposed of, under his language, "can be disposed of as a licensed uranium mill tailings impoundment." And so you would be -- you wouldn't be -- if they processed it, like you just said, if somebody chose to process something that could directly go to the impoundment, to the tailings pile anyway, then they must be processing it for its source material value. So, just is there an interconnection between these two issues?

MR. STABLEIN: Mr. Holonich?

MR. HOLONICH: Yes, there is clearly is, and you have got it Commissioner. Is if you define materials, 11e.(2) byproduct material than can go into the tailings, it is not covered by the definition now, then, in fact, if you bring it into the mill and run it through the mill, because you have defined it already as 11e.(2), you have taken care of the sham disposal question because you are purely processing it to get the uranium out now. So, yes there is an interconnection.

COMMISSIONER McGAFFIGAN: So the legislative solution, whether it is Mr. Fliegel's or something close to it that you haven't written yet, simultaneously solves this issue to a large degree.

MR. HOLONICH: To a large degree. But I am not sure what other material may be out there that they would be considering that might not be covered by the legal definition.

COMMISSIONER McGAFFIGAN: Okay.

CHAIRMAN JACKSON: Please.

MR. STABLEIN: There are clearly two options for addressing this major issue and they are dependent upon the Commission decision on the 1999 appeal. Either the existing guidance would be retained, including the financial test for "primarily" or the guidance would be revised in keeping with the Commission decision to overturn the financial test.

So those are the two options. The staff has recommended the second of the two to modify the existing guidance. I might say that our revised guidance would also include a performance-based amendment whereby the licensees wouldn't have to come back to the staff every time they wanted to process alternate feed material. All that they would have to do is to assess the material that they are considering to run through the mill to see whether it is reasonable to process it for its uranium content, and this

is same kind of decision they need to make, and do make, with natural uranium ore. So it is an attempt to make this easier for the licensees.

COMMISSIONER DIAZ: How do you plan to address the issue of non-agreement states' jurisdiction over the non-radiological components of 11e.(2)?

MR. STABLEIN: That is the concurrent jurisdiction question which is my next issue.

COMMISSIONER DIAZ: Oh, I see.

MR. STABLEIN: I think on the next slide, in fact, Commissioner Diaz.

COMMISSIONER DIAZ: Okay. Good.

MR. STABLEIN: So maybe we should move to Slide 7, please.

COMMISSIONER DIAZ: It was not covered in your paper.

MR. STABLEIN: You are perfectly correct. As Dr. Paperiello has stated in his introduction, the staff is working with the Office of General Counsel to determine what recommendations should be made regarding the concurrent jurisdiction issue. Once this effort has been completed, the staff will be presenting a paper to the Commission with those recommendations, and I am not prepared today to go further.

COMMISSIONER McGAFFIGAN: Can we -- is it fair to

ask the timing of when this might be sent the Commission?

MS. CYR: My staff has prepared an analysis to go back and look and see whether there is a basis for any change in views of the earlier opinion. I have not have a chance to review that in depth, but we are getting close.

COMMISSIONER McGAFFIGAN: Because I think it would be useful to treat this whole thing as a package.

COMMISSIONER DICUS: To have the fourth paper, yes.

CHAIRMAN JACKSON: What do you think, Karen?

MS. CYR: Once we reach our conclusion, I am not -- I don't know the extent to which we need to go back and work with the staff one way or the other with it. I would say within a month. I am not sure we can do it much faster than a month.

CHAIRMAN JACKSON: Okay.

MS. CYR: We might be able to do sooner than that, but I would say we could do it within a month.

COMMISSIONER DICUS: That might work.

MR. STABLEIN: Could I have Slide 8, please?

We have discussed three major issues this morning in a little bit of detail. Depending on Commission direction, Part 41 would provide the vehicle for incorporating the revised regulatory framework for uranium recovery facilities and for having an integrated, coherent,

stand-alone rule for these facilities.

It would be most important that the Part 41 codify the regulatory framework for the three issues that we have talked about today, the regulatory framework for in situ leach facilities, the criteria addressing disposal of material other than 11e.(2) in tailings impoundments, and the processing of alternate feed. As well, and I am sure the Commissioners are aware of this from reading Part 40 -- the Part 41 rulemaking paper, we have many ideas for clarifying the existing regulations, removing redundancies or inconsistencies that you find now in Part 40 and Part 40, Appendix A, which could be dealt with in this one rulemaking.

CHAIRMAN JACKSON: How many existing sites would be affected by this rulemaking, by this revision and codification?

MR. HOLONICH: There are currently 10 license sites that could be impacted by the rulemaking, depending on how much you want to backfit in the rule. New sites that are under review, we have got one active application, I think that will probably be done before the rulemaking will come out, so it will be just -- it will be an operating site with the others.

There are probably nine or ten other properties that are left to be developed, that people have identified

to us that, as those get licensed, would be licensed under this requirement, those are probably the ones that will be impacted the most in terms of the new rule. And I am not sure impacted as much as maybe have a more stable regulatory framework that they could be licensed under.

CHAIRMAN JACKSON: What does that represent of the universe of sites?

MR. HOLONICH: In terms -- those are the NRC sites. There are about 10 operating, one under -- two under active review, but one is maybe going to be pulling back, and 10 properties that are in states that we regulate. There are agreement state activities that could impact, could be impacted by in. In Texas there are a few operating in situs, there are many more under reclamation, so I think the impact there is not going to be very great. And in Colorado there are a couple of mills, only one of which is operating, so I think the rest would probably be reclaimed before -- or are close to being reclaimed before the rule would go out.

CHAIRMAN JACKSON: Mr. Greeves, you were going to make a comment.

MR. GREEVES: I just wanted to make sure we recognize the agreement state situation. Maybe you can hear more from the agreement states.

COMMISSIONER DICUS: Do we have a reason to

believe the agreement states are going to address this, that the representative states, maybe is something they should they address when they come to their panel.

MR. GREEVES: For completeness.

COMMISSIONER DICUS: We will ask them.

MR. STABLEIN: In summary, times have changed, the industry has changed. Issues have arisen that need to be addressed in the regulatory framework, and legislative clarification would be a big help in this effort. Staff is looking to the Commission for direction on how to proceed on all these issues. And the staff intends the completion of Part 41 and codification of the revised regulatory framework consistent with Commission direction will hopefully enhance the overall uranium recovery regulatory process. Thank you.

CHAIRMAN JACKSON: Thank you very much.

Any further questions? Commissioner Dicus? Commissioner Diaz?

COMMISSIONER McGAFFIGAN: I have one question that relates to fees. In one of the papers it mentions that hearing costs can't be collected on 170 fees and go into 171 the annual fee, and we have obviously had some hearings. And the suggestion is made that this clarification effort might reduce the necessity for hearings. Does this, writing all these papers also go into overhead and go into 171 fees as well? Because, obviously, this group of folks just had

their fees increased significantly. And how much of it is the hearings and how much of it is the effort to clarify the framework?

CHAIRMAN JACKSON: I think the fee question is something that either Carl or you get the CFO to address. I don't think --

COMMISSIONER McGAFFIGAN: Well, it is in the paper.

CHAIRMAN JACKSON: I know.

COMMISSIONER McGAFFIGAN: You know, as argument for why we want to go forward.

CHAIRMAN JACKSON: Do you want to make a comment?

DR. PAPERIELLO: It is certainly a factor. The program is small and the ratio of direct to indirect effort is something I watch and I am very concerned with. But, yes, writing the papers and doing rulemaking all impact the fees. I don't know, I am sure I could find out exactly the FTE expended in hearings. And, of course, some of that is not just NMSS FTE, it represents OGC FTE, too.

But, yes, they are significant when the program is as small as this program is.

CHAIRMAN JACKSON: Okay.

COMMISSIONER MERRIFIELD: Chairman.

CHAIRMAN JACKSON: Yes, please. I am sorry.

COMMISSIONER MERRIFIELD: There are a variety of

questions that are raised by some of the other individuals and groups that will be testifying today about where we are relative to the other agencies that we are dealing with, most notably DOE and the Environmental Protection Agency. There obviously are some suggestions made in these papers about how we might interact with them, and I wondering if you could discuss briefly the interactions that we have had with those two entities over the last six months or so in the development of these papers and where we are going to go from here.

MR. HOLONICH: With respect to DOE, we have talked regularly with DOE, both the Grand Junction office and headquarters about what was going on here. We made the aware of the NMA White Paper and the fact that it could change some of the legal definition of the material in the tailings from 11e.(2) to material other than 11e.(2). So, in my mind, and they are going to be addressing you a little later, and they can clarify that, but in my mind they are well aware of the industry position and what we have been doing.

We were just at a workshop at the beginning of June where the DOE Grand Junction program office was represented and they heard a briefing on these papers, they heard questions from the industry. We answered questions. I think one important point is even in the revised guidance,

one of the main criterion in there still says DOE or the long-term custodian, if it is the state, has to agree to take the site. So there is a big powerful role for DOE or the long-term custodian in accepting material other than 11e.(2) in the guidance. We did not want to remove that provision from the existing guidance and so we kept it there. And, in fact, I made a similar statement with the DOE reps in the workshop a couple of weeks ago, that we still view that as a very big gate through which the licensees have to pass, so we still look to DOE to have a lot of control in terms of what goes into these tailings.

With respect to EPA and the groundwater at solution mines, we have really been dealing more with the states because they have the primacy and the State of Wyoming has been and is the biggest state -- the only state right now where we have license facilities. They have given us comments back in August of last year, Part 41 and the ISL rulemaking effort incorporating ISL requirements into the rule. We have given them copies of the White Paper. They have had attendance at the workshops. We went over the White Paper with them. So the real focus because of Wyoming taking on the EPA primacy has been Wyoming.

Now, EPA did have some reps from the Denver office there, but they are really more in terms of the tailings activities, not the groundwater activities.

COMMISSIONER MERRIFIELD: It might be worthwhile for us, I know we have had other occasions where we haven't necessarily agreed with EPA, but this may be an area where further coordination, if we go down this path, would be appropriate in that regard.

The second question I have, very briefly, a lot of the proposals here are based on legislative solutions. Have you had discussions with Dennis Rathman and the folks at the Office of Congressional Affairs to identify who we might seek out to assist us in some of those efforts up on Capitol Hill?

MR. HOLONICH: I have not. I don't think anybody on the staff has.

COMMISSIONER MERRIFIELD: One of the comments that was made by the National Mining Association is that, given the time in the legislative calendar, depending on a legislative strategy, it is going to be very difficult at this point. From a personal perspective, knowing, you know, what I do about the Hill, my sense and I don't know if you guys have any information to the contrary, this is not an issue that I think is particularly high on the Senate legislative calendar. For us to rely so heavily on Congress to make determinations about where we should go, given that fact, I think is, in my eyes, somewhat dubious.

MR. HOLONICH: Commissioner, I think what we tried

to lay out in the paper was that we saw that the Commission had some flexibility in how it wanted to address these issues, and here were things we could do such as revising guidance or codifying rules. But we felt that the best solution, the most definitive solution would be through legislation. I think if you step back and look at some of the recommendations like revising guidance, we think you have got some latitude there if you want.

COMMISSIONER MERRIFIELD: No, I agree. I mean many of your proposals do involve layers of options. But in some circumstances, some of the papers call for the ultimate option being a legislative one and I think that is -- given this issue, I think that will be difficult.

CHAIRMAN JACKSON: I think it is important in terms of rulemaking and how the Commission deals generically with this issue, for the Commission to have clarity. I guess I am putting this to OGC as to where the legislation has to be, the ultimate backstop vice what the Commission can do itself, based on the existing legal framework.

COMMISSIONER McGAFFIGAN: Not to differ too much from my colleague, but I do worry on some of these issues that without legislation, going through a complex --

CHAIRMAN JACKSON: Rulemaking.

COMMISSIONER McGAFFIGAN: Heavily adjudicated rulemaking process, following by appeals of the rulemaking

in the Appeals Courts and whatever, it may not be any faster even if Congress doesn't get to it this session. I don't see a quick solution to any of this, or any process that I am aware of.

COMMISSIONER MERRIFIELD: Not to drag this on further, but it appears we have a lot of --

COMMISSIONER DICUS: But you are.

COMMISSIONER MERRIFIELD: Well, I mean -- well, I am responding to my colleague.

[Laughter.]

CHAIRMAN JACKSON: Go, Jeff.

COMMISSIONER DICUS: Go for it.

COMMISSIONER MERRIFIELD: You know, I don't disagree with that, but the fact remains, you know, unless sui sponte, the folks at the Office of Congressional Affairs have gone up and talked to people up on Capitol Hill about this, what we have is a whole series of things that we are thinking about doing, but with which we have really not had sufficient activity up in Congress to determine whether it is worth our going through that effort.

CHAIRMAN JACKSON: Right.

COMMISSIONER MERRIFIELD: And so I think, you know, before we start going down a road that is going to involve a lot of activity and effort on the part of our staff. I think we should have a better understanding about

where the authorizing committee is coming from, and whether what we are coming up with is --

CHAIRMAN JACKSON: Is realistic.

COMMISSIONER MERRIFIELD: Is realistic and something that will be acceptable.

CHAIRMAN JACKSON: Right. And that is why I think the two things really rest on what Commissioner Merrifield has said, and I think my question to Ms. Cyr, namely, to have more definitive clarity, if that makes sense, with respect to what is really in our hands.

MS. CYR: We felt that all -- I mean all the options that the staff proposed here, there was a basis in our current authorities to proceed along those lines. I think Mr. McGaffigan's point is true, I mean they are complicated arguments. We are going back and we are reassessing how we have looked at processing in the past, how we have defined that. We have to go through a process of explaining why we are changing our position from one to the other. That is subject to challenge, the rulemaking outcome is subject to challenge.

CHAIRMAN JACKSON: That is the way it is.

MS. CYR: But that is the way it is. So, I think the staff's point is you might shortcut some of that if you found -- if you had Congress interested in moving in this area and resolving it that way.

CHAIRMAN JACKSON: But I think we can take up this notion that we need to have some interaction through Congressional Affairs as to what is realistic on what kind of time scale, which is your point.

Okay. I think we have said all we can say on this. Let us hear from Mr. Ford and Mr. Fliegel.

Did you have a comment?

COMMISSIONER DIAZ: I just had a comment since my mind can only do arithmetic at this time. I just make some numbers and it looks like at the rate we are going this briefing will last seven hours.

CHAIRMAN JACKSON: Well, that is why we are moving on.

[Laughter.]

COMMISSIONER DIAZ: I just wished to point it out.

CHAIRMAN JACKSON: Right. Thank you so much.

Mr. Ford.

COMMISSIONER DICUS: You know there is a pool, the staff I understand has a pool on how long -- a betting pool on how long this briefing will last.

CHAIRMAN JACKSON: I will tell you what, you will be able to pay your mortgage.

[Laughter.]

MR. FORD: William Ford. First slide, please.

CHAIRMAN JACKSON: Would you please pull the

microphone closer?

MR. FORD: Sure.

I am William Ford and I would like to thank the Commission for the chance to speak to you. I will try and be brief. I wrote the differing professional view on regulation of liquid effluent from in situ leach facilities. Mike Fliegel also wrote a similar one on a smaller section of it. So there is two DPVs on this same issue.

This issue doesn't -- well, it talks about liquid waste at in situ facilities. It is also concerned with contaminated piping, equipment, basically, all the waste that comes in contact with liquid. It is concerned with contaminated soil. So it is more than just waste and impoundments.

It is also concerned, as you get into it, with safety of the worker from a radiation health standpoint.

Second slide, please.

My recommendation in this differing professional view is that the Commission should approve Option 2. Option 2 is that all the groundwater that is contacted by lixiviant underground, whether it is in the restoration phase or the mining phase is basically 11e.(2) material. Therefore, all the waste, contaminated pipe, equipment, soils, would also be handled as 11e.(2). It would either go to an 11e.(2) disposal site or it would have to be decontaminated and

released under our regulations.

My other opinion is that Option 4, which is the legislative option, in my opinion at this time is undefined. It is not explained what will be done to resolve the waste issues at in situ facilities. Therefore, I recommend that if the Commission choose Option 4, that until Option 4 becomes a reality passed by Congress, that we should implement Option 2.

Next slide, please, that would be Slide 3.

COMMISSIONER McGAFFIGAN: Madame Chairman, could I just clarify?

CHAIRMAN JACKSON: Yes.

COMMISSIONER McGAFFIGAN: You are basically saying you don't agree with the existing guidance that puts these restoration waste waters in EPA and state hands?

MR. FORD: I am basically saying that I don't agree with the current staff position the way we handle things with waste, and the proposal Option Number 3. Those two options I don't agree with.

COMMISSIONER McGAFFIGAN: And just to clarify, Option 4, I am not sure it is -- while they didn't put language down as Mr. Fliegel did, they do say that under Option 4 they would seek Congressional approval of essentially Option 3, that only post-ion exchange wastes are 11e.(2) byproduct material. You are opposed to that because

-- or what is it about Option 4 that you are --

MR. FORD: Okay. The problem I am also -- I have a problem with Option 3, and we will get to that. Option 4, I looked at those same words and I couldn't decide if they told us where in the process in Option 4 they would make their decision. Would it be identical to Option 3? It would be similar to Option 3. So I wasn't sure.

CHAIRMAN JACKSON: Let's let him walk through his presentation, and then if there is any point that we feel he has not address or you would like clarification on, we will ask him.

MR. FORD: Option 1, what I want to point out on Slide 3 is that these are some of the major problems that I have with the current approach that we have, which is that when you go to a restoration phase, that at that point in time the groundwater is no longer 11e.(2), it is only 11e.(2) when you are actively extracting uranium.

The problem I have with that is that I am afraid that it encourages on-site disposal. The bulk of the waste comes out when you go under groundwater restoration, so the bulk of the solid waste in the ponds will -- or land application, however it is disposed, will be produced by restoration fluids. So I am afraid that it would create -- encourage the creation of many small disposal sites, these in situ facilities, as opposed to collecting this material

and centralizing it and disposing of it under our regulations, and DOE would then look over it.

I am afraid that it might weaken regulatory authority over liquid, air and solid emissions from conventional and in situ 11e.(2) facilities. Basically, what you are saying is that you have had an 11e.(2) process, that that process contaminated groundwater, and now when it comes to cleanup of the groundwater, it is not our problem anymore. It is the same as like if you had an air emission, you contaminated the air from 11e.(2) process and once it has contaminated the air, we don't care, or soil. So if you have dripping water on soil, then if it happened during the restoration phase and contaminated the soil, we don't care. If it happens during mining, we care.

So it would seem to me that this raises the issue of emissions. Do we regulate emissions from 11e.(2) facilities? Are we responsible for cleanup, be it liquid, air or solid of conventional or in situ facilities?

I am afraid that it also, in my opinion, increases confusion over the regulation of the disposal of the liquid and solid waste, which I just alluded to in terms of contamination of soil. Is it one way or the other?

Slide 4, please.

Option 3, in my opinion, basically builds on Option 1. I feel it has most of the same disadvantages as

Option 1. Option 3 says that only post-ion exchange wastes are 11e.(2) material. That means that there is a whole part of the plant, the wellfield with its thousands of wells, many miles of pipes, the plants where they have -- you move the uranium and load it on the resin, and then the precipitation circuit begins after that. That, basically, I am afraid that that might decrease worker protection in the plant.

Primarily I am concerned that it might unilaterally remove NRC authority over the wellfields in parts of the surface facility. That means we would no longer be regulating, because it is non-11e.(2) material, the resin-ion exchange columns or the wellfield areas. And in the past, we have cited violations for radon emissions from these resin-ion exchange columns which are often the same facility with the precipitation circuit and the dryer.

So what I am afraid is that we might be unilaterally removing things that we inspect now for radiation exposure.

I am also worried that it might call into question NRC authority over aspects of the conventional mill sites. If you just worry about -- if you say that at in situ 11e.(2) material only starts at the precipitation circuit, well, -- and anything in front of that is non-11e.(2) at in situ, then the same argument, it seems like you could make

it at a conventional mill. So the grinding and crushing of the rock, and then the elution of that material onto a resin, basically, what it means is the bulk of the material that goes to a mill tailings pile might not be 11e.(2). Therefore, we might not be regulating 11e.(2), because all that takes place in front of the precipitation circuit, prior to it. So my concern is you might be -- you would be setting authority, you know, precedent where we might be removing a regulatory authority over mill tailings at conventional mills.

Next slide, Slide 5, please.

Now, I am going to tell you about the benefits of Option 2. Option 2 is basically what we followed up until 1995 for 20 years. We were happy with that. Basically, it encourages operators to reduce the volume of radioactive waste. For example, some facilities use land application and they precipitate out their radionuclides, remove them, and then they send that small volume off to an 11e.(2) disposal cell. It discourages the creation of many small disposal sites, so you don't have proliferation of small sites across the country, they have to be brought together to an 11e.(2) site.

It assures adequate disposal of radioactive waste. By that I mean it meets our -- it means it will meet our regulations, what we consider adequate. I believe it

provides a clear definition of regulatory responsibilities. There is no confusion on the inspectors and the regulators as to what piece of equipment we regulate and what piece of equipment we don't regulate in the plant, whether it is restoration water only or mining equipment.

And then, finally, it is consistent, and this is on Slide 6, with commitments made to the public in our environmental impact statements and assessments. What we have said is, look, this in situ facility will move in, it will mine, it will restore the groundwater, and when we are through mining, we will remove all the radioactive materials and take them off-site, and that is very popular when you are trying to license one of these facilities. And basically that concludes my presentation.

CHAIRMAN JACKSON: Let me just ask you two quick questions. Are you saying that the current policy, this is relative to Slide 6, is allowing disposals on-site that are not in accordance with what we have indicated in our environmental assessments?

MR. FORD: Yeah, what I am saying that our environmental assessments and impact statements, it is my opinion, what we have said is that it is 11e.(2) material and so, therefore, it is going to be taking off to an existing 11e.(2) facility.

The other alternative they have is -- and this may

not be stated in these, but since then, that they could dispose of it on-site, but if they did, they would have to dispose of it in accordance with our regulations. They have to have a liner, they would have to have a radon barrier. They would have to be stable for, you know, X amount of years.

CHAIRMAN JACKSON: What is your position on the additional option that was proposed by Mr. Fliegel, that is to let the licensee designate the restoration waste as either byproduct material or mine waste?

MR. FORD: Do you have a comment on that, Mike?

CHAIRMAN JACKSON: Well, I will let you -- I will wait then till Mr. Fliegel speaks, and then if you want to comment.

MR. FORD: Yeah, I don't have an immediate response for you on that.

CHAIRMAN JACKSON: Okay. Commissioner Dicus.

COMMISSIONER DICUS: No, I don't have any questions.

CHAIRMAN JACKSON: Commissioner Diaz. Commissioner McGaffigan.

COMMISSIONER McGAFFIGAN: I will try to be quick. You have a backup slide on Option 1.

MR. FORD: Yes.

COMMISSIONER McGAFFIGAN: And I would like -- two

backup slides. I would like you to walk us through that because the heart of it has to do whether the staff still believes in Part 20 or whether we think EPA is right in having these higher limits. And I just want to understand.

MR. FORD: Slide 8, please. What I am trying to present here is my opinion of what I think the staff was trying to get at when they first decided to define restoration groundwater as non-11e.(2) material. And if we define material, go with Option 2, could we still meet that same need that they were trying to get at? And it is my opinion that what they were trying to do was they were trying allow discharge to surface waters or uranium at higher concentrations than our 10 CFR 20 liquid release limits in our tables. And the EPA limit for that is 4 milligrams per liter maximum for one day, 2 milligrams per liter average for 30 consecutive days. Our 10 CFR 20 release limit comes to .44 milligrams per liter.

Now, the licensees wanted to meet the EPA standards rather than the more restrictive Part 20 requirements. By redefining our regulatory authority over the restoration groundwater, then that becomes non-11e.(2) material and they don't have to -- the licensee, therefore, does not have to comply with our 10 CFR 20 standard.

COMMISSIONER McGAFFIGAN: But your next slide goes on to point out -- it may be a flaw in Part 20 we are

talking about rather than a flaw in EPA, because EPA assumes dilution and I would assume that dilution does happen, so, you know, -- let me ask Mr. Fliegel the question.

Which side do you come down on? I am looking at your viewgraph, and I am not sure -- not Mr. Fliegel -- Mr. Ford. Is Part 20 wrong?

MR. FORD: Okay. Let me see if I can answer that. I will skip through on Part -- we are talking about Slide 9, and I will go right to the end. Basically, what is being said here is that the staff, if we had defined it all as 11e.(2), by redefining it as non-11e.(2), the staff didn't have to address the issue of whether or not the EPA 2 milligrams per liter was safe or not. The .44 -- the Part 20 assumes no dilution. The EPA assumes dilution. The staff has the option I think of doing a dose assessment. They don't have to restrict themselves just to the Part 20, they can take into account dilution. So I don't think they needed to redefine to give them -- the industry this flexibility.

Alternatively, the staff might decide that the EPA standard is adequate for us, taking into account dose, do a generic dose evaluation and, therefore, if they meet the EPA standard, they have met our requirement for surface discharge for uranium.

So I think the same thing could have been

accomplished without redefining the groundwater as non-11e.(2).

COMMISSIONER McGAFFIGAN: And just, since 1995 have people gone out and gotten these EPA discharge permits that you refer to?

MR. FORD: Actually, the industry --

COMMISSIONER McGAFFIGAN: Or the state equivalent?

MR. FORD: Yeah, there is -- I am aware of two discharge, only of two facilities that have discharge permits. One was obtained in 1980, one was obtained in 1986.

COMMISSIONER McGAFFIGAN: Okay.

MR. FORD: So the answer is just going on today.

DR. PAPERIELLO: I would like to address the issue of Part 20 versus the EPA limit. The Part 20 limits are very conservative, they give no credit, either air-borne or liquid for dilution. As a practical matter this agency does use dilution, but on the reactor side where, in fact, they use the dilution obtained by discharge canal recirculating water to meet the Part 20 limits for a discharge. And we, in fact, routinely in air-borne releases, again on the reactor side, allow dilution. I mean there are dilution calculations for release from the elevated stacks and the like.

So I just want to point if the EPA is giving

credit for dilution, you can easily calculate that we are dealing with not much dilution to bring the actual concentration to a stream or a body of water down to the equivalent Part 20 limit.

COMMISSIONER MERRIFIELD: Just one clarification. Your presentation is focused on the four options contained in SECY-113. Also included in that paper was a discussion of whether our agency should defer to EPA relative to the underground injection control programs, so that we avoid that level of dual regulation. Did you have a position on that as well, or are you comfortable with the recommendation of the staff?

MR. FORD: I am comfortable with the recommendation of the staff. I don't have a strong argument against dual regulation. If EPA requires restoration of the groundwater, that is the key thing on the groundwater. That is what the surety is held, that is where the rubber hits the road in the program when it comes to restoration.

And if EPA restores the groundwater, which OGC says they have a requirement for that, then I don't have an objection. And I don't think any discussion we have had on my DPV, however you class the groundwater, you could still rely on EPA.

COMMISSIONER MERRIFIELD: Thank you.

CHAIRMAN JACKSON: Thank you.

Mr. Fliegel.

MR. FLIEGEL: Thank you for the opportunity to present my DPV. I will only be discussing SECY-99-12 and primarily alternate feed. I agree with Mr. Ford's discussion of SECY-99-13.

If I can have the first slide, please.

My primary concern in terms of alternate feed is the potential for sham processing and the consequences thereof. First of all, it wasn't clear -- the paper, the Commission paper has gone through several iterations since I first wrote my DPVs. It is not clear to me now what the staff is recommending. In terms of alternate feed, it asks for performance-based licensing of alternate feed. I read it that it appears to rely on the existing guidance to get at what "process primarily for uranium" means, that is, whether or not you look at -- specifically, is it uranium versus vanadium, or is it uranium versus other motives? And if that is the case, it appears that that is not a good issue for performance-based licensing because it is so controversial. It is not an easy decision to make and I am not sure that that is the kind of thing we want to put in a performance-based license.

It also identifies the recent ruling on the interpretation of what "process primarily for," and I will just repeat what was said in the paper, but I won't discuss

that because of the ex parte rules, and that is that that decision said that "process primarily" is based on what is removed from the ore, that is uranium versus vanadium or something else, and the motive for process is not to be considered. The Commission paper takes no position and neither do I.

I think it is important to look -- if we can have the slide, please -- look at the basis for the 1995 staff guidance. And we briefed Commissioner de Planque in June of 1994 on this, and what we told her at the time was that, in terms of alternate feed, we were trying to accomplish two objectives, and one was to allow the processing of alternate feed material to the extent possible.

On the other hand, we were trying to prevent sham processing, and sham processing, as we explained at the time, was we were trying to prevent processing of radioactive waste that would have to be disposed of, primarily in a low level waste facility, simply to change its classification from low level waste to 11e.(2) byproduct material. That is what we defined as sham processing.

And as we said at the time, either one of these objectives is easy to accomplish. The difficulty is accomplishing both at the same time. And we developed a strategy to do that, and looking at the definition of 11e.(2) byproduct material, and the key phrase, "ore

processed primarily for its source material." Our strategy was to create a very expansive definition of ore that essentially allowed anything to come into the mill and be considered ore, and to focus on the phrase "primarily process for" and look at that phrase, and "primarily process for" in our mind was -- is it being processed really to get uranium out, or is it be processed to change the definition of what the waste is? And that is how the guidance was developed.

If we can go to the next slide.

Now, however, depending upon the interpretation of that phrase, "process primarily for source material," we may have to reconsider the staff's 1995 strategy. And the issue becomes, does the Commission -- the issue with the Commission in terms of providing guidance to the staff is, do we will want to prevent sham processing?

Now, if we continue to want to prevent sham processing, there is really only two ways to do it. One is to confirm what the staff tried to do in 1995 in its interpretation, that is, "process primarily" allows you to look at whether or not you are trying to change a definition. And if the Commission does not want to confirm that interpretation, then we would have to revisit our strategy and come up with a different way of trying to weed out those situations which would be sham processing.

COMMISSIONER DIAZ: Excuse me. Could you tell me what the difference in terms of public health and safety is, whether you process it or not process it as waste, what is the difference?

MR. FLIEGEL: Okay. The answer is it really isn't a public health and safety issue, and I will get to that when I go to sham processing. It is more are we doing, are we being above board in how --

CHAIRMAN JACKSON: Right. Because you have said yourself that you consider tailings impoundments to be good candidates for disposal of low level waste.

MR. FLIEGEL: Yes.

CHAIRMAN JACKSON: So I don't think that embodied in what he is talking about is an issue having to do with the public health and safety.

COMMISSIONER DIAZ: Thank you.

MR. FLIEGEL: Yes. If, on the other hand, the conclusion is that the agency no longer cares about sham processing, then the guidance can be simplified. But I do want to discuss some of the consequences of allowing sham processing.

One example is just looking at uranium yield of ores. Mills typically operated with ores that contained a few tenths of a percent of uranium, and they yielded several pounds of uranium per ton of ore. The cleanup criteria in

at least some decommissioning sites, the cleanup criteria for uranium in soil is 10 picocuries per gram. Now, I have also been told that actually that that may change when we look at doses and it may even be lower than that. But if you consider soils that are contaminated at or above 10 picocuries per gram and have to be cleaned up, those soils are either low level waste or, if you don't care about sham processing, they are alternate feed.

The yield from soil containing 10 picocuries per gram of ore, if it were brought to a mill, is a pound per 34 tons, or about a half an ounce per ton. That may be viable for gold, I am not sure it is very viable for uranium. But, again, if you don't care about that, you can have mills that are operating with that low a yield.

Another consequence is what I call "mock mills." That is, if in reality, when -- if you are only making, if a mill operator only is making pennies per ton on the value of the uranium in the ore, but is making hundreds of dollars a ton for disposal, the mill efficiency becomes irrelevant, we get the questions of what constitutes a mill. In the past, mills have had lots of leach tanks and lots of components and circuits.

If you really -- it really doesn't matter, you can build a minimal amount and call it a mill, when in reality you are really trying to just convert something. And the

same thing with the heap leach, you can build a concrete pad, pour some acid on it and say that is my mill if you have got a tailings impoundment. And essentially it becomes, this mill becomes a subterfuge to disguise a low level waste facility that is not licensed under Part 61. And it just resurfaces all the issues and concerns that we faced when we wrote the guidance and so that was why -- that is why I would recommend that we don't allow sham processing.

If I can have the next slide, please. Actually, the slide after that.

CHAIRMAN JACKSON: The next slide, please.

MR. FLIEGEL: The next slide, please. Yes.

Just a few words on the disposal of non-11e.(2) by product material. The paper has evolved a lot since I wrote my DPV. And I agree with the staff's option, preferred option of seeking legislative change. But I think we still need guidance from the Commission on what to do in the interim, because as it has been stated, it may take an awful long time for that to happen, and I would recommend retaining the current guidance as I discussed in my DPV.

Just a couple of additional comments on the paper. The paper points to a situation in which TSCA wastes have been allowed in the tailings impoundment and implies that that could be used as an example for other waste, and it is

not quite the same thing because the waste in question was 11e.(2) byproduct material contaminated with PCBs on the site. One could look at that as maybe the entity being 11e.(2), but rather than do that, the licensee went through the process, but that is dissimilar from bringing in wastes that have nothing to do with 11e.(2) from off-site.

And a minor point on the discussion of Part 61, no matter which option you use, we can make that a generic exemption, but my understanding was that that had to be done by rulemaking, which is why it was not -- we tried to do a generic exemption in the guidance and were told we couldn't do that.

CHAIRMAN JACKSON: Okay. Thank you.

Commissioner Dicus.

COMMISSIONER DICUS: No questions.

CHAIRMAN JACKSON: Commissioner Diaz.

Commissioner McGaffigan.

COMMISSIONER McGAFFIGAN: Just very quickly. Your legislative language, which I went and looked back, it was drafted in November, are you in violent agreement with the staff on the general thrust of the legislative language at this point, if that option were chosen? I mean is there -- I asked the staff earlier, is there any difference between your understanding of their legislative proposal and your legislative proposal?

MR. FLIEGEL: My reading of the paper was that their legislative proposal was essentially what I proposed and it was written as -- not as a lawyer.

COMMISSIONER McGAFFIGAN: No, I understand. I understand. Pretty good though.

CHAIRMAN JACKSON: Well, thank you. Commission Merrifield, did you have anything?

COMMISSIONER MERRIFIELD: No, thank you.

CHAIRMAN JACKSON: I am going to excuse this panel and we will call Panel 2 involving Mr. James Fiore from the Department of Energy and Dr. Gary Smith from CRCPD, the Conference of Radiation Control Program Directors, as well as Mr. Sinclair, thank you, from the State of Utah.

We will begin with Mr. Fiore, then we will have Mr. Smith, if he is here.

DR. SMITH: I am here, right here.

CHAIRMAN JACKSON: You have a name tag over here. And then Mr. Sinclair. Thank you.

MR. FIORE: Madame Chairman and Commissioners. First, since my estimate in the pool was about four hours, not seven hours, I will be very brief.

[Laughter.]

CHAIRMAN JACKSON: Have you made your mortgage payment this month?

MR. FIORE: I am counting on this pool, it is a

rather large pool.

First, I would like to thank you for the opportunity to meet with you today and to present our views on the paper, the various papers.

CHAIRMAN JACKSON: You need to turn the mike on.

MR. FIORE: Okay. Let me start again. I just want to thank you for our opportunity to present our views on the various papers. Before I do that, I do want to publicly acknowledge the efforts of some of the NRC staff in the Uranium Recovery and Low Level Waste Branch that have worked very closely with us on the Title I sites and the licensing of those sites. We brought that program to a successful close this year and we could not have done that without the excellent work both by the staff and the management. I think it was an excellent effort for the nation, and I want to applaud the efforts of the staff and management on that.

With respect to the papers, the paper of most significance to us is the paper on the disposal of material other than 11e.(2) byproduct material. To be very blunt, our position is, given budgetary constraints and manpower constraints, we would like to get Congressional direction before there are any actions that increase the burden on the department, either in terms of staff resources to deal with things or long-term custodian responsibilities. We have a

very tight budget situation with an intense focus on doing cleanup at many of our sites ourselves and we feel Congressional direction, whether it is in the form of legislation or guidance, is very important.

Let us say, in concept, we think allowing material that is chemically and radiological similar to byproduct material to be placed in the tailings pile is a reasonable thing to consider. We also put one major caveat on that and that is we do not want to get into a problem with dual regulation. If this can be set up in way that dual regulation is not a problem, I think it is reasonable to be considered. And what we would propose to do is have our staff work with the NRC staff to lay out what is an acceptable way to carry this out such that it does not create a significant additional burden for the Department of Energy.

CHAIRMAN JACKSON: Can you tell me, if you are placing other similar material in existing tailings impoundments, how does that require -- I mean result in more long-term care responsibility?

MR. FIORE: I think it again depends on -- let's talk about the dual regulation. If somehow that emplacement created a situation that was complex in terms of trying to define whether or not we need to deal with multiple agencies, whether it increases litigation risks where folks

are again saying, well, what you put in there should have been dealt with by a different agency, then it takes staff time and effort on our part to deal with that.

CHAIRMAN JACKSON: So it is primarily a dual regulation issue?

MR. FIORE: It is primarily a dual regulation issue. If we set aside the dual regulation, if we are putting in material that is essentially the same in terms of its chemical and radiological properties, and we have done a good job, as we would do just on the byproduct material, of assuring that the impoundment has been designed well and that long-term monitoring will not be a problem, we obviously don't have any major issue with adding other material to that.

Fundamentally, that is our bottom line. On the other two papers, they are not of great concern to us. I think we have a few minor comments in our remarks, but I will, again, keep things very brief, that is the heart of our position.

CHAIRMAN JACKSON: Thank you. You did make a point that you would like to see the inclusion of a performance review by DOE before accepting Title II sites into long-term care. But doesn't DOE prepare a long-term surveillance plan and could that not be viewed as a form of performance review?

MR. FIORE: Yes. It could be. Again, I think what we are simply saying is we want to have an active role in the turnover of those sites to us, as opposed to just someone saying, okay, they are ready and an expectation that we would just say, oh, that's fine, they are ours.

CHAIRMAN JACKSON: Okay. So rolling them into the development of your long-term surveillance plan would be potentially an acceptable way?

MR. FIORE: Potentially an acceptable way.

CHAIRMAN JACKSON: Okay. Commissioner Dicus.

COMMISSIONER DICUS: Nothing.

CHAIRMAN JACKSON: Commissioner McGaffigan. Commissioner Merrifield.

COMMISSIONER MERRIFIELD: I just have -- related to the question I had to our own staff. My understanding, you know, obviously, the desire to have this put into a statutory form to provide the appropriate boundaries for the comfort of the Department of Energy. Are you aware of interest up on Capitol Hill in exploring these issues, and whether there is some interest in pursing these?

MR. FIORE: No, we have no pursued that. I think your point is an excellent one. There is a wide range of issues that need to be dealt with. But I think, again, there is also a wide range of Congressional involvement. Discussions with the staff, guidance from the staff, or

whatever could go a long way in terms of indicating whether or not there is support for some of these actions. It might not mean a huge piece of legislation or something like that. But, no, we have not personally gone up there and bounced any of these ideas off the Congressional folks.

COMMISSIONER MERRIFIELD: Thank you.

CHAIRMAN JACKSON: Okay. Mr. Smith.

DR. SMITH: Good morning. Thank you for inviting us, or the CRCPD agreement states. Like my colleague here, Mr. Fiore, I would like to keep my remarks brief also. We have already touched on about three different points that we would want to emphasize and focus on.

The issue of alternate feed materials and alternate materials going into tailings impoundments, we essentially would agree with the DOE folks in that we would be looking at materials that have similar chemical and physical characteristics and would have the uranium and thorium and their decay products primarily, because the tailings impoundments have been designed for this in the first place, and the baseline monitoring that has gone into these places would support monitoring that material in the long run. That is really all I had to say about that issue.

Groundwater issues, we do agree with the position that NRC and the agreement states should not have overlapping programs, and in our own experience in the State

standard.

DR. SMITH: Thank you, sir.

CHAIRMAN JACKSON: Yes, and I think we will set a comparable set, won't we?

COMMISSIONER DICUS: Oh, she sent me --

[Laughter.]

CHAIRMAN JACKSON: No, I am looking all the way down the table.

COMMISSIONER DICUS: Just one quick question.

[Laughter.]

COMMISSIONER MERRIFIELD: I am glad you are not looking this way.

[Laughter.]

COMMISSIONER DICUS: Just a tiny little question. I am somewhat familiar with how CRCPD comes to decisions and you are presenting the CRCPD. Is this, the points that CRCPD has made and the position it has taken, it is pretty well unanimous or is there a minority opinion?

DR. SMITH: I am not aware of any minority opinion. The consensus of the board was final last Friday, so I was waiting on the edge to get that. Yes, it seems to be the consensus.

COMMISSIONER DICUS: Okay. Thank you. That was succinct.

CHAIRMAN JACKSON: Thank you so much.

COMMISSIONER McGAFFIGAN: Just real quick, you are one of the states, in your role as a Texas official, that has an in situ leach facility. How close do your regulations currently follow whatever, you know, Part 40 and Appendix A to Part 40? Are you in front of in any sense in trying to rationalize this stuff for your regulation of your particular facilities?

DR. SMITH: I would say our regulations are pretty much word for word, although we have taken a position -- this 1995 change guidance from NRC sort of caught us by surprise. In Texas, the program had been at another agency for a while and then it came back to TDH, and during the interim was when these positions were taken by NRC. But prior to that, we had been very stringent in consideration of byproduct material as really being all the effluents to take care of spills that might happen in wellfields and looking at the facility itself where ion exchange occurs and the precipitation.

I think we are still in that mode somewhat. We don't see in our state anyone really looking at material that may be called mine waste, because when you get to restoration you still have quite a bit of radium-226 that was mobilized in the first place in the ore by -- in that fluid. You don't just magically say it is restoration fluid and suddenly you lose that problem.

COMMISSIONER McGAFFIGAN: So there is no mine waste, in your state, there is no mine waste classification that some agency deals with as mine waste? It is all 11e.(2)?

DR. SMITH: That's correct.

COMMISSIONER McGAFFIGAN: Okay. Thank you.

CHAIRMAN JACKSON: Commissioner Merrifield.

COMMISSIONER MERRIFIELD: I have no questions.

CHAIRMAN JACKSON: With respect to alternative feed stock, is your definition of ore the same as what the staff's definition of ore is?

DR. SMITH: I think is fairly close. We would be looking at something that is sand-like, contaminated dirt, yes, ma'am.

CHAIRMAN JACKSON: Okay. Thank you. Thank you very much.

Mr. Sinclair.

MR. SINCLAIR: If I could have the first viewgraph, please.

Thank you, Chairman Jackson and Commissioners for the opportunity to appear before you today and give the perspective of a non-agreement state on uranium recovery regulation. The last time I appeared before the Commission was to talk about the integrated performance evaluation, IMPEP. As you may remember, Utah was the first state to get

IMPEP and I was one who made some highly critical remarks about the process, and today I feel very good about what has happened, and I am hoping today by being here that I can give you some food for thought regarding uranium recovery operations.

I also just want to state that the State of Utah has filed an appeal on LBP-99-54 to the Commission and so any remarks that I make today will be structured in a generic sense.

First I would like to make some comments on the SECY papers, and there are the three SECY papers, 99-11, 12 and 13. We would support the recommendations, the staff recommendations in a number of areas, especially on 99-11, where the recommendation is to promulgate a new Part -- 10 CFR Part 41 dedicated to the regulation of uranium and thorium recovery facilities.

There is mention of a number of areas to be clarified. We would agree with those areas that need to be clarified, along with looking at Appendix A and whether it should be revised or even eliminated. And I will discuss some very specific considerations for Part 41 in just a moment.

We would also support retaining the Staff guidance in its current form as outlined in SECY paper 012. This recognizes that the guidance is not perfect, but for us it

contains some very important policy implications for a non-Agreement State and I think Mr. Fliegel alluded to some of those.

We really don't support what I would turn opening up the barn doors to allow processing and disposal of other types of uranium and thorium byproduct material such as special nuclear material from mixed waste -- CIRCLA, TSCA waste -- and so forth.

However, the current guidance may be overly restrictive and really there doesn't appear to be much middle ground here in terms of the SECY paper.

As recommended in SECY-013 we support removal of the NRC from the ground water protection issues at in situ leeching facilities. We believe states are best equipped to handle these issues, whether it be delegated from EPA or through their own state ground water protection programs.

CHAIRMAN JACKSON: Is that because you believe NRC has no jurisdiction or you think that deferral is a good thing?

MR. SINCLAIR: I think deferral is a good thing in this case. I haven't looked at specifically the issue of the NRC jurisdiction in that case. The next viewgraph, please.

Some considerations for the new Part 41. As part of the redraft of the old Part 40 into the new Part 41, you

really need to look at what standards would apply to the different levels of activities at uranium mills. For instance, you are going to have maybe a conventional mill processing ore. You may have a mill that is processing ore and alternate feed combination. You may have a mill just processing alternate feed or you may have a commercial waste facility.

This gets even more complicated in the fact that you may have one that does more ore than alternate feed or one that does more alternate feed than ore, and so should the standards be different for those kind of facilities?

Some considerations also should be what responsibility does the generator have in properly characterizing the waste coming into the facility. There has been a lot of debate and discussion about how waste is characterized and really does this characterization need to be verified to some extent?

Container management for instance may become an issue if you are having a facility that is moving from an ore processing facility to a facility that is now receiving different types of material in lots of different containers.

Prevention really needs to be looked at.

Tailings impoundments at uranium mills in Utah reflect late 1970s technology. Today landfill cells and impoundments really are subject to a higher degree of

construction quality assurance control, both in terms of cell design, soils engineering, and liner installation, and should unused cells or new cells being contemplated be required to meet best available control technology of the '90s? I think the answer should be yes.

This also raises the question of is the ground water monitoring program at a facility that would take other waste or alternate feed adequate, and we need to look at that issue as well.

We also need to focus on financial assurance and whether or not it is adequate. It is something we always have to look at but it does raise some other issues in that regard.

Then what should the role be of the Department of Energy as a long-term custodian, and should they have some approval role in this process? Next viewgraph, please.

It is our belief that the current NRC guidance may not prevent the establishment of de facto radioactive waste facilities. Utah is currently faced with the prospect of having four facilities receiving either alternate feed or waste. One facility we have is licensed as a commercial radioactive waste disposal facility. We have a RCRA facility that is proposing to accept low-level waste. We have a mill that is currently processing alternate feel. We have another mill that has expressed interest in disposing

of byproduct material -- so we are faced with the prospect of having four facilities within our state.

By virtue of allowing this processing or taking of other materials under the current guidance, new disposal capacity is really created without concurrence from the state. Since Utah really doesn't have -- well, we don't have the authority to regulate byproduct material. Legislative or other change to allow other waste into mills under Federal preemption would just further disrupt Utah's ability to control its own waste destiny.

Should a line be drawn between disposal and processing or is there a need to do such? And this is really the challenge that you have to face because you need to decide what your role is going to be in terms of how to use uranium facilities. Are you going to promote the idea of waste disposal to these facilities or is it your job to regulate waste disposal, whether it be in Agreement States or under the jurisdiction of NRC?

Then you have to decide what kind of materials are appropriate to go into these kind of facilities and there are other actors or interested parties, stakeholders, that will need to be involved. Certainly there will be a lot of interest in terms of the people proposing the facilities -- Federal agencies, siting authorities such as compacts and so forth. Final slide, please.

I just want to talk a moment about dual regulation or concurrent jurisdiction and give you just a hint of our experience with this particular issue, as a non-Agreement State.

I think there is a general belief that dual regulation is a bad thing and it should be avoided at all costs. It really is exemplified when you have State and Federal entities coming into conflict with each other over it and you even have local jurisdictions at times that become involved, so as a non-Agreement state we really have run into this issue first-hand, but there are instances where it really can work. Let me give you some examples and I'll go through these very quickly.

For instance, Plateau Resources, Limited was issued a State of Utah ground water discharge permit in March of '99. The NRC acknowledged that the State requirements would be more restrictive and meet the NRC needs and this also met the State needs of protecting a very pristine source of drinking water very close to a large recreation area, Lake Powell, and we worked closely with the company to implement what we call the best available control technology for ground water protection of the site, and it has turned out to be a very positive thing in our minds.

We also have the licensed facility, Envirocare of Utah. It's the only commercial waste facility that takes

11e.(2) byproduct material and it also has a State of Utah ground water discharge permit. Just recently Envirocare identified some new constituents that they wished to add to their monitoring program that was the result of them taking these other types of waste that we're talking about.

Through the ground water discharge permit we are able to add those constituents to the monitoring program and I think we get a better level of protection.

We also have the situation where it hasn't been so rosy. The Atlas Corporation is a good example of where the State had to file a corrective action order because the NRC had no surface water quality standards and couldn't protect the Colorado River water.

Fourthly, the White Mesa Mill over the years, we have gone back and forth with them between the various owners and operators, regarding ground water protection at the mill, but at this point in time we are working with them to put into effect a ground water protection permit.

So dual jurisdiction can work; it takes a lot of effort and it takes a lot of time, but it can work. I would be glad to answer any questions.

CHAIRMAN JACKSON: Thank you very much. Commissioner Dicus?

COMMISSIONER DICUS: I don't have any questions, thank you.

CHAIRMAN JACKSON: Commissioner McGaffigan?

COMMISSIONER McGAFFIGAN: Just let me try to do one quick question.

On 99-012 you say you support Option 1. Does that mean you oppose Option 4, on which Mr. Fliegel and the Staff essentially agree -- I mean Mr. Fliegel says in his DPV "It is my opinion that uranium mill tailings impoundments are excellent places to dispose of low activity radioactive material."

Do you fundamentally disagree with that opinion?

MR. SINCLAIR: I disagree with that opinion in the fact that I, myself, would have to be comfortable with the design of the ground water protection standards at the particular mill in my state and I am not of the opinion that at this time we are there -- at least in my state.

COMMISSIONER McGAFFIGAN: And just -- I won't belabor this -- it strikes me that there is a larger issue here that might get some Congressional attention, because there is a RCRA issue that the Corps of Engineers is involved in and California at the moment where the site had a permit, and I don't know whether your RCRA site has one for NORM -- and the NORM actually is hotter than the Fuzart material that got shipped from New York and now it isn't clear whether the Fuzart material can or cannot go there. We are not involved in that but it just, it strikes me that

some consistency as to what can go into sites and whether it is NORM or whether it is exempt source material or whether it is -- whatever classification, that there needs to be some rationalization there at some point or else everybody gets into arguments and disputes, so maybe the solution that we are advocating here or the Staff is advocating in their paper is part of a larger solution to rationalizing what goes into, what the rules are at these various places.

MR. SINCLAIR: I think that is a very good point. I think the characterization issue is a very big issue and how people characterize their waste determines where it goes.

COMMISSIONER McGAFFIGAN: There is some very hot NORM --

MR. SINCLAIR: There is.

COMMISSIONER McGAFFIGAN: -- and the CRCPD has been working on regulations for NORM for -- with lots of help for an eternity, and I don't know. It is -- some rationalization needs to be done fairly soon.

CHAIRMAN JACKSON: Commissioner Merrifield?

COMMISSIONER MERRIFIELD: I don't really have any questions. The only comment I would make is I think the testimony raises a variety of good questions and I think we are going to have to think about them in this rulemaking process and I just wanted to thank the State for -- and all

of the members of this panel -- for some very thoughtful and thought-provoking questions.

CHAIRMAN JACKSON: Thank you very much I am going to excuse this panel. We will take a five minute break -- seven minute break and come back at 11:07.

[Recess.]

CHAIRMAN JACKSON: We will now here from three groups comprising Panel 3, from the Wyoming Mining Association, the National Mining Association, and the Fuel Cycle Facilities Forum, in that order, so we will begin with Mr. Kearney.

MR. KEARNEY: Good morning. My name is Bill Kearney. Today I am representing the Wyoming Mining Association. I represent the Mining Association as the Uranium Industry Committee Chairman, and I am also employed by Power Resources as the Environmental Superintendent and the Radiation Safety Officer at the Highland Uranium Project, which is an ISL operation located in east central Wyoming. On behalf of the WMA I would like to thank the Commission for the opportunity to provide input from the licensee perspective.

I am going to skip over some of the material to speed up on what WMA represents, but most people in this room they do a lot of mining in Wyoming and we lead the nation in uranium production.

We also represent 11 uranium mining companies with activities in Wyoming and one in western Nebraska, and more specifically this includes four out of the five ISLs operating in the U.S., seven Title II mill sites in decommissioning and one mill site which is in standby status.

There's four key areas I would like to touch on today. Those are (1) the current and expected state of the uranium recovery industry; (2) the need for the NRC to exercise preemption over all byproduct waste at Title II sites; (3) reasons why NRC should relinquish all jurisdiction over ISL wellfields; and finally (4) how the mining association could support a new Part 41.

The state of the uranium recovery industry -- I wish I could bring more good news to the operators that are here, but basically the present economic state of the uranium industry should not be viewed as a growth industry as portrayed in the SECY papers. We have heard some people talk today about, well, ISL -- we used to have conventional mining and now everything is ISL. That's true. Everything almost is ISL, but it is by no means a booming business. There will not be an ISL facility on every corner, and the next slide should be a graph of the price of uranium, the historic price and the projected price.

As you can see, in 1998 or 1999 we are around $10

a pound. Projections out to 2015 show that it is not going to go up much above $10 a pound and a lot of us know the economic forces that are driving this, that are out of the industry's control, so I just want to leave you with the knowledge that we do not believe that this is going to be a booming business any time in the near future.

Along those lines, all the Wyoming Title II sites except one are in decommissioning, and the ISL operations are indeed struggling.

Next slide shows uranium production in Wyoming. At one time Wyoming produced over 12 million pounds a year. We are just over 2 million pounds a year and there is no reason to expect that that rate is going to go up any time in the near future.

All four Wyoming ISL sites have recently reduced uranium production and/or reduced the number of employees.

The next graph shows the three ISL companies in Wyoming and Company Number 1 has had a reduction of over 27 percent in its workforce; Company Number 2, approximately 25 percent; and Company Number 3, which has recently gone into production, hasn't had any reduction in employment but they have curtailed their planned production for the next year significantly, so things aren't good out there in the ISL industry.

COMMISSIONER MERRIFIELD: I'm interested in this

question. How many employees does this represent? You said these are percentages. What -- typically how big are these companies?

MR. KEARNEY: I would say Company Number 1 would represent approximately 60 to 70 employees, Company Number 2 about the same, maybe a little more, and Company Number 3, around 80 to 90.

COMMISSIONER MERRIFIELD: Total employees?

MR. KEARNEY: Yes, that's total.

COMMISSIONER MERRIFIELD: Not the reduction?

MR. KEARNEY: Right. Total employees. What I am showing on here is the percent reduction.

COMMISSIONER MERRIFIELD: Thank you.

MR. KEARNEY: And these type of impacts in Wyoming and small communities like I live in in Douglas, Wyoming, are substantial, and it is not in my written presentation but I wanted to add it because the issue of fees has been brought up and that is very near and dear to our hearts as well. Our annual fee has gone up from $32,000 a year to $109,000 a year and we just recently reduced our workforce by over 27 percent. That type of increase represents on the order of three and a half workers, so you can see the impact that these things can have on our viability.

COMMISSIONER DICUS: Excuse me. I have a question here on your slide on uranium production. You are showing

an increase in production, modest but still an increase in production, but you are showing a reduction in workforce, so the reduction in workforce, I assume it is not because of a reduction in production. Was it efficiency or -- I mean these two slides don't quite match --

MR. KEARNEY: Right. I was afraid of that, but I can explain it quite simply.

COMMISSIONER DICUS: Okay.

MR. KEARNEY: Company Number 3 has recently started up in operation in the last two years and gone into production, so they have entered the picture with starting production and increasing their workforce, where the other two companies have curtailed, significantly curtailed production and reduced employment. Company Number 3 has actually reduced their production for the coming year, so I think when you look at the uranium production graph, where it shows slightly going up, it's not going to go up anymore. Hopefully it will stay level, but I don't see it going up.

Next slide, please.

Because Wyoming is not an Agreement States, the State should be precluded from regulating any, including the non-radiological constituents of byproduct material at Title II sites.

Federal preemption will assist both the NRC and the licensees in implementing risk-informed ACLs. It will

also allow for a simplified license termination process and transfer of sites to DOE and I think some other folks have already stated that.

Relative to the NRC relinquishing jurisdiction over ISL wellfields, WMA supports what NMA has put together in the white paper and WMA believes that there really is no legal authority to regulate ISL wellfields. The dual regulation with EPA/UIC regulations and the State of Wyoming ISL mining regulations is not beneficial to any party.

I am not sure that the Commission has received the letter from Governor Geringer on this issue.

CHAIRMAN JACKSON: I am sure we have, but you can give it to the Secretary.

MR. KEARNEY: I brought copies along for you.

Basically he reiterates the position that the Wyoming DEQ stated at the hearing last year in Casper, Wyoming as well as the Wyoming Mining Association that wellfields were adequately regulated by the state through the EPA-UIC program and we did not need dual regulation.

Mining is conducted at ISL wellfields and the NRC in the past has not regulated surface or underground mining and I think that is a good, a very important point, that it is mining. The State of Wyoming has detailed in situ mining regulations which address in situ mining. Those have been in place for well over 10 years.

There's been some discussion earlier on the DPVs and where the regulation of these type of facilities should occur. I think it is open for discussion that another logical place where the NRC's jurisdiction should start is at the satellite facility at the ion exchange column itself. There's a lot of reasons why that makes good sense, and I am not going to go into those now.

If NRC relinquished all jurisdiction over wellfields, there would be no discernable adverse impacts for the following reasons -- again reiterating that they would still be regulated by the EPA-UIC regulations and the Wyoming DEQ, and contrary to popular belief, the ground water is unfit for human consumption before or after ISL mining including after restoration due to the high radium and radon concentrations.

This is something that I want to make a point on There's a lot of individuals that believe for some reason that this water out there is drinking water before we mine it and it is not. It is far from that. That is why we have an aquifer exemption through the EPA-UIC program that says, yes, you can go in and leech this, because it will never -- never has been and never will be a source of drinking water. I think that is a very important distinction.

Additionally, as the NRC Staff points out in SECY-013, removing duplicative NRC oversight will not lessen

the protection of public health and safety and the environment, and I think we feel good that the NRC wants to rely on existing EPA regulations, but we think they need to take one more step, like they did in surface and underground mining and go back one step and say, you know, we really don't have any business being here at all. It is adequately regulated by the EPA and the State, and that is how it worked with surface and underground mining for years, and we think that that would be the most equitable thing to do for everybody -- and if the NRC relinquished all jurisdiction over wellfields, industry concerns and NRC Staff positions on other things such as waste water streams, which we have talked about some today, and sureties could also be simplified and resolved.

Additionally, if NRC stepped out of the wellfield, the impacts to fees could really be significant because a lot of the hourly rates that -- hourly charges we're going to incur and we have incurred are on the wellfield, and with those rates going up to $141 an hour and that combined with the annual fee assessment, if the NRC didn't regulate it, those type of issues would be less. We wouldn't be submitting those type of license amendments. It would be a much better situation.

How could WMA support the new Part 41 regulations? Well, if the new Part 41 significantly reduced the NRC

regulatory burden on licensees, including the associated fees, that would be a good thing. This could be accomplished if NRC exercised preemption over all byproduct material at Title II sites and relinquished all jurisdiction over ISL wellfields, and most importantly, if the NRC relinquished all jurisdiction at ISL wellfields the scope of any new Part 41 regulations and the burden to licensees would be substantially reduced, and the NRC could potentially reduce Staff assigned to reviewing, approving and inspecting ground water issues associated with ISL wellfields.

In conclusion, the Mining Association supports NRC activities geared towards streamlining and reducing regulatory oversight. We believe that the proposed actions just discussed and other suggestions by the NMA could substantially benefit both licensees and the NRC, and most importantly, without compromising any environmental and safety concerns.

In conclusion and on the behalf of the Mining Association, I would like to thank you for the opportunity to present our views today.

CHAIRMAN JACKSON: Thank you. I think we will go on and hear from the rest of the panel, because what you have to say seems to be intertwined, and then we will go back for questions.

Mr. Lawson.

MR. LAWSON: Good morning, Chairman Jackson, Commissioners. I am Dick Lawson, the President and CEO of the National Mining Association, and we, the industry, appreciate the invitation to present our views on the Staff proposals.

I have with me Ms. Katie Sweeney, the Associate General Counsel for NMA, and Mr. Tony Thompson, outside counsel for NMA, who were authors and principal staff participators in the development of the white paper.

Let me just say about that white paper, the industry spent almost a year in the development of that program. We went through a number a drafts in its creation and it represents the general position of the industry on these very important issues.

I also have members of the industry here that could provide additional insights if there are questions.

Today I will highlight the key points only and in the interest of time will speed right to those.

First, let me say with regard to Mr. Kearney's remarks, that the NMA agrees with his assessment of the current economic state of the industry and the need to take that economic situation into account when looking at the impact of regulatory actions.

Now we are pleased that the white paper has helped

to collectively bring us to this particular position. We commend the Staff on the work that they have accomplished to date and we believe that each of their proposals makes some positive changes. I guess our major observation would be that in some cases we haven't gone far enough and we would like to identify where that can happen.

For the next slide, let me just say that, first, we are particularly concerned that none of the Staff proposals address the non-Agreement State jurisdiction over the nonradiological components of 11e.(2) byproduct material. That is one of the two top issues identified in the white paper, the other being jurisdiction over ISL wellfields.

Our study questioned whether it makes sense for NRC to proceed with a Part 41 rulemaking if the concurrent jurisdiction issue is not part of that deliberative process. While a separate regulatory section may have advantages, if this jurisdictional issue is not resolved it seems to us that Part 41 would only be a temporary band-aid, still requiring further action.

CHAIRMAN JACKSON: Have you had any interaction, legal or otherwise, between the uranium recovery industry and Agreement States over the concurrent jurisdiction issue?

MR. LAWSON: None legal or -- we have had discussions back and forth, but none legal.

We believe the current jurisdiction issue could be properly aired during the rulemaking process and including this issue in the rulemaking would provide the type of finality that is merited and for that reason we put into our white paper the arguments that we felt were strongest, that made the case that NRC has exclusive jurisdiction over byproduct material and that they needed to exercise that jurisdiction. Next slide.

Establishing a separate regulatory section for uranium recovery facilities would have some advantages. As indicated in our scoping comments last summer, we do not object to the establishment of Part 41 as long as all of the issues are brought into the decision and rulemaking process. Next slide.

With regard to mill tailings, the Commission has suggested that the Staff explore ways to use mill tailings impoundment as possible disposal cells for material from other waste sites. Our white paper raised the same issue by suggesting that the current Staff disposal guidance was too restrictive and unnecessarily inhibits the disposal of other similar waste in tailings impoundments.

I think there is a lot of agreement that it is good public policy to provide for these disposal options for low level radioactive high volume waste types that currently have only one possible disposal option. Even the ad hoc

panel report accompanying the Staff paper emphasized the current exclusion of non-11e.(2) materials is not based on health and safety.

In light of the essential failure of the compact system and the future impact of NRC's new decommissioning rules which will likely lead to the creation of even more waste, we believe now is the time to address the issues. Next slide.

The Staff's recommended solution to seek legislative change we would agree with A legislative solution would certainly provide Congressional certainty. However, as noted in the previous discussion, at this juncture, an election year approaching, it may not be a realistic option in the immediate future.

CHAIRMAN JACKSON: So is that what your major concern is?

MR. LAWSON: Nevertheless, if the Commission decides to pursue, we will be there to assist.

CHAIRMAN JACKSON: No, but you said you had concerns about the legislative solution.

Is your primary concern --

MR. LAWSON: Only time. Only time.

CHAIRMAN JACKSON: Okay. That is what I wanted to understand.

MR. LAWSON: The Staff's fallback option is to

revise the guidance with similar waste materials while retaining restrictions on disposal of 11e byproduct material and special nuclear material. This option is attractive. We think it is still too restrictive. In our white paper we suggested that the Commission consider developing for public comment some generic criteria with respect to materials containing SNM or 11e material to the extent that waste is similar in terms of radiological activity and presents no potentially significant incremental hazard to that posed by the materials already in mill tailing impoundments.

The Staff fallback option essentially ignores the industry's suggestion on this matter and we believe that a public airing of potential generic criteria for disposal of SNM or 11e tailings would be most useful and could lead to a strategy for addressing duplicative or overlapping regulatory requirements.

The main rationale -- next slide -- provided for restricting disposal of non-11e.(2) material is to, quote, "reduce the potential for regulation of tailing impoundments by more than one regulatory agency." Yet this emphasis in the Staff paper, the differing professional views, and the ad hoc panel on the problems associated with dual jurisdiction as the guiding force behind non-11e.(2) policy is in absolute conflict with the position taken by the Commission Staff with respect to concurrent jurisdiction

over the nonradiological of 11e.(2) byproduct material.

Indeed, the total focus of these papers on the problem associated with overlapping jurisdiction only highlights the need for the Commission to assert its mandate to implement and enforce UMTRCA through this permitting process to the exclusion of others including EPA and the non-Agreement States. The dichotomy between the concerns associated with overlapping jurisdiction and its potential adverse impacts on the transfer of Title II sites to DOE and the legal staff's policy on Federal preemption over all 11e.(2) byproduct material, which includes both radiological and non-radiological components, is highlighted by a recent NRC/DOE protocol on license termination and site transfer.

In that protocol NRC states that the NRC agrees that it will not terminate any site-specific license until the site licensee has demonstrated that all issues with the state regulatory authorities have been resolved. The Commission's failure to assert Federal preemption over all components of AEA 11e.(2) byproduct material is leading to the very thing that the Staff paper says should be avoided. That is non-Agreement State review of NRC approved reclamation plans.

As the Ad Hoc Panel pointed out, the Staff paper makes not attempt to discuss a strategy of dealing with potential duplicative and overlapping regulation through

possible memoranda of understanding with relevant State or Federal agencies, and notes that the rulemaking process would provide a process for thorough ventilation of these issues as well as the Federal preemption issue raised in our white paper. Next slide.

NMA's white paper suggests that the economics of a licensee's decision to process alternate feeds is not within NRC regulatory jurisdiction, which is limited to the potential health and safety impacts of such processing. The Staff paper seeks guidance from the Commission either to propose legislative changes or to allow modification of the guidance to include criteria for a licensee to provide certification that the material is or will be processed primarily for its sole material content.

The new criteria would allow the licensee to demonstrate that the material can be disposed of directly in the tailings impoundment without further processing as sufficient justification for processing it. The licensee can provide justification on, quote, "any other basis of equivalent capability to make the demonstration."

The financial considerations test would be retained if the licensee chooses to use that basis. The retention of the financial test ignores the legislative history of UMTRCA and Commission statements which suggest that a licensed uranium mill's primary purpose is by

definition to process for feed for its source material content. In effect, by seeking and obtaining the uranium milling license we believe the licensee has stated its intent to process primarily for source material content.

The alternate feed paper fails to address UMTRCA, its legislative history and Commission statements in the record indicating that the word "primarily" differentiates between uranium recovery of license fuel cycle facilities whose primary purpose is to process for source material and thereby create 11e.(2) material and secondary or side stream uranium recovery at other types of mineral recovery facilities.

At those facilities uranium recovery is not the primary purpose of the recovery facility's process and 11e.(2) material is not created. The guidance was intended to ensure that processing alternate feeds results in the creation of 11e.(2) material. It is not intended to require an inquiry into the economic motivations of the processor, at least in our judgment.

Finally, the NMA agrees with WMA regarding the Staff paper on ISL jurisdiction, but I would like to add one final point. While the paper contains recommendations that eliminate some aspects of the dual regulation of ISL wellfields, the paper does not answer the question of why NRC is asserting jurisdiction over the wellfields. NMA's

white paper questioned NRC jurisdiction over the underground aspects of ISL facilities.

The Staff paper starts on the 50-yard-line, so to speak, and is devoid of any discussion of the bases for NRC's jurisdiction in the wellfield. This paper cannot be considered complete in our judgment without an analysis of NRC's jurisdictional bases. That concludes our comments on behalf of the industry and thank you again for inviting us.

CHAIRMAN JACKSON: Thank you. I am going to have a question for you. Mr. Culberson.

MR. CULBERSON: Good morning, Madam Chairman and Commissioners. I appreciate the opportunity and the invitation to come here to speak to you today to bring a perspective from another facet of industry, one that also has a stake in the issues that are being discussed today and whatever outcome may come from this.

My name is Dave Culberson. I am Chairman of the Fuel Cycle Facility Forum, and first I would like to recognize Mr. Joseph Nardy with Westinghouse Electric Corporation. Joe is seated in the audience and Joe was a major contributor to our comments and the presentation material that we have for you today and can help me answer any questions that may come up today.

The Fuel Cycle Facility Forum represents companies throughout the United States that are currently or formerly

involved in the processing of uranium, thorium, rare earth materials and other naturally-occurring radioactive materials many of whom are currently involved in decommissioning all or portions of their sites.

The Fuel Cycle Facility Forum has been meeting for over 10 years to address issues pertaining to decommissioning of these facilities and for similar facilities, and a number of the issues we have been addressing are of a regulatory nature. We consider today's discussion a significant milestone in our efforts in that it appears that the NRC and the industry are about to resolve a decommissioning issue that can have a profound positive effect on the commercial viability of many of the companies represented by the Fuel Cycle Forum, their ability to decommission their sites in a timely manner, and at the same time enable the NRC to carry out its mission and responsibility for protecting human health and the environment.

One decommissioning issue that is consistent and persistent throughout all of our discussions with respect to the fuel cycle industry is the excessively high cost of disposing of decommissioning wastes, especially large volumes of soil-like materials, slightly contaminated with uranium and thorium. It is not uncommon for these costs to exceed tens or hundreds of millions of dollars for a single

licensee. Next slide, please.

We are here today to support the National Mining Association's position as it is expressed in the White Paper, specifically regarding the use of alternate feed materials in uranium milling operations and the direct disposal of non-11e.(2) material in mill tailings impoundments. The Fuel Cycle Facility Forum and the National Mining Association have been meeting together for several years to discuss areas of mutual interest pertaining to decommissioning.

There are a number of decommissioning streams at these sites represented by the Fuel Cycle Facility Forum, as well as many other sites throughout the United States that could be considered, and should be considered excellent candidate material either for use as alternate feed, or for direct disposal in mill tailings impoundments.

Examples of these include, first of all, soils contaminated with uranium and thorium. The facilities that generate these materials include depleted uranium manufacturing facilities, normal uranium conversion facilities, facilities that handle NORM, rare earth processing facilities, zirconium manufacturing facilities, depleted uranium production facilities, and current and former low and high enriched uranium processing facilities, including not only commercial but government facilities.

Secondly, some examples of other waste streams include lagoon sludges, ash, slag and many other soil like materials that contain rare earth materials. Another category of waste stream is the nation's stockpile of depleted uranium that exists currently as UF6. And, finally, waste streams from metal extraction plants that contain uranium and thorium as a contaminate.

Collectively, these streams represent millions of cubic feet of soil-like material and hundreds of millions of dollars in disposal costs to the licensees. Some of the materials contain naturally-occurring uranium and thorium or rare earth materials in sufficient quantities and in sufficient amounts as to be considered as alternate feed material.

It is likely that recovery could be accomplished using existing milling operations with minor modifications at some of the existing milling facilities. In such cases it simply makes good sense to recover usable resources where possible, for a number of reasons. First of all, it is technically and technologically feasible. The processing technology is already in place for the most part and is currently being used. Minor modifications would likely be required, but those are very achievable.

Secondly, it allows for the re-use of materials that are otherwise considered waste and would have to be

disposed of and are no longer usable.

Third, it is economically beneficial to those that are involved in decommissioning by substantially reducing their decommissioning costs.

And, lastly, the incremental increase in health and safety as a result of these operations is trivial or insignificant.

Some of these materials could be considered for direct disposal in mill tailings impoundments for a number of reasons as well. First, we are not suggesting that this option be opened to the universe of waste that is out there for disposal. We are focusing and suggesting that focus be placed on materials that are similar to what is going into the impoundments now, similar chemical and radiological and physical characteristics.

In many cases, much of this material I have alluded to earlier is identical to or essentially identical to materials that are already being placed in the impoundments in that the material is soil-like and it contains naturally-occurring radionuclides. These materials in many cases would actually present an overall lower health and safety risk than the materials already being placed there because radon is generally not an issue for many of these other materials. And, last, the substantial capacity exists already at the existing impoundments for this

material that is out there that we consider candidate.

The Fuel Cycle Facility Forum suggests that special nuclear materials at low enrichments, on the order of a few percent, be given serious consideration for both use as alternate feed and direct disposal as non-11e.(2) material. This material from decommissioning is already being disposed of or placed in closure cells in bulk forms throughout the United States at a number of facilities, and we believe there is insignificant increase in health and safety risk as a result of that.

Low enriched materials are currently being processed in forms very similar to these non-11e.(2) forms, or alternate feed forms. Therefore, the processing technology is existing or readily available, or could be easily developed for application at a uranium mill site. And we believe the special nuclear material, when it gets down to the real significant issues, poses no incremental health and safety risks or impact over what is exhibited by the materials that are already being processed or are already being placed in impoundments.

The Fuel Cycle Facility Forum suggests that the NRC not establish a blanket prohibition against the presence of fission products and activation products in materials that would be placed in mill tailings impoundments. It is almost inevitable, or it is highly likely, and in many cases

already possible to detect levels of these isotopes in material just from natural causes such as fallout or from operations that are currently taking place in the industry. So there should be a recognition that the material process should be based on the significant radionuclide that contributes to the radioactivity and that fission products or activation products, or other radionuclides that may be present in trace quantities really have no significant health and safety impact, and at some level could be neglected when looking at the total issue.

The NRC should therefore base its actions on the significant contributor to total radioactivity that is present in this material, those being primarily uranium and thorium.

We have provided in the handout three examples of situations that currently exist at facilities represented by the Fuel Cycle Facilities Forum. These illustrate some of the concerns I have discussed. We could provide other examples if that would be beneficial.

In summary, regarding the use of other materials as alternate feed or disposal of non-11e.(2) materials in mill tailings impoundments, the Fuel Cycle Facility Forum encourages the NRC to give serious consideration to implementing regulations and guidance that would allow the broadest possible range of materials to be included as

alternate feed or as material for disposal in the tailings impoundments.

Earlier this morning, Chairman Jackson asked the staff how many facilities might be affected by proposed legislative action that is being discussed today, and I think the response was that there were on the order of about 10 or so facilities. I would suggest that you keep in mind that there are many other facilities that would be affected in a positive manner by such regulation without compromising the health and safety to those facilities or to the facilities that are being considered today, the mining and milling sites, and not just look at the sites where the materials might be processed or disposed.

We believe, along with the National Mining Association and the Wyoming Mining Association, that these issues should be raised in a public forum, discussing thoroughly so that we collectively can reach the best solution for all parties involved. Thank you.

CHAIRMAN JACKSON: Thank you very much.

Let me ask Mr. Lawson a question. If the NRC had no jurisdiction over groundwater and wellfields, how would the National Mining Association define the various waste productions at the in situ leach facilities, and how would that waste be handled?

MR. KEARNEY: I can assist with that, Chairman

Jackson.

CHAIRMAN JACKSON: Okay.

MR. KEARNEY: If NRC relinquished jurisdiction and, for instance, say, that the jurisdiction started at the IX column in the satellite facility, to me, theoretically, those waste water streams that came off of that would still be considered -- could still be considered byproduct material and that is why I put in my presentation that if they were out of the wellfield, it could make that, you know, those problems much easier to solve, because the waste streams come off the satellite and, theoretically, I think we could work with that.

CHAIRMAN JACKSON: The gentleman here, did you have a comment you wanted to make? And please identify yourself.

MR. THOMPSON: I am Anthony Thompson, counsel for NMA. I think the answer to that question -- that is one possible answer. The other answer is it depends on whether you accept that -- whether you determine that the underground activity in the wellfield is mining or whether it is milling underground. If it is mining, then the waste streams that come off, even after the ISL, can be considered part of the mining process. One of the papers sort of alludes to that.

So it could be handled one of two ways. If you

determine that the wellfields are mining, then it wouldn't be byproduct material, or doesn't need to be byproduct material to be handled according to state mine waste regulations, both sets, both waste streams.

CHAIRMAN JACKSON: This is a question for Mr. Culberson. Where is the fuel cycle facilities' waste being disposed of today?

MR. CULBERSON: Currently, the options that are available, to my knowledge, are commercial disposal, either Barnwell or Envirocare, or application for a restricted release and construction of on-site disposal cell, which is not an option that most facilities are keenly interested in because of the long-term liability issues.

CHAIRMAN JACKSON: Now, most of the existing tailings impoundments are in the process of final reclamation. So do you consider that there is ample available disposal volume for the waste at the mill tailings sites?

MR. CULBERSON: Yes, ma'am. We have looked at that in a preliminary sense at some of the joint meetings, and I believe we are convinced that there is ample volume and capacity there for the waste that would be considered.

CHAIRMAN JACKSON: Commissioner Dicus.

COMMISSIONER DICUS: This question will be for Mr. Kearney. Did I pronounce it correctly?

MR. KEARNEY: Yes.

COMMISSIONER DICUS: Okay. You indicated in your testimony that you, the WMA represents I guess four out of the five ISLs operating. And then later you indicated that the wellfields, the water is not potable water. Is that true for all four of the ones you represent?

MR. KEARNEY: Yes. Yes, it is.

COMMISSIONER DICUS: Do you have any information on the fifth one?

MR. KEARNEY: Oh, I guess it would be --

COMMISSIONER DICUS: About the quality of the water.

MR. KEARNEY: Well, there is four ISLs in Wyoming and three companies, but any of the operating ISLs or any proposed facilities which I am knowledgeable with on power resources, the water quality is all very similar due to the radon and the radium. And I think that is characteristic at any ISL site in the United States. I might be stepping a little bit overboard, but I think I am fairly -- I feel I am fairly safe in saying that.

COMMISSIONER DICUS: Okay. Thank you.

CHAIRMAN JACKSON: Commissioner McGaffigan.

COMMISSIONER McGAFFIGAN: No questions.

CHAIRMAN JACKSON: Commissioner Merrifield.

COMMISSIONER MERRIFIELD: Chairman, I have some

comments I would like to make, and I will be following those up by a question. In my previous occupation, I have had the pleasure and opportunity to visit a variety of mining sites around the country, and I felt that was a very instructive thing to do and I am very sensitive to the difficulties that are faces by a number of miners, particularly those in smaller states, smaller mines, and the economic difficulties that they are under.

What I found, however, in addressing the issues that I had to under SuperFund, there are some -- well, there are some mines, the vast majority of mines out there are run very well and have not had problems. There are some that indeed are some of the largest SuperFund sites that we have in the United States, most notably the Coeur d'Alene site in Idaho and the Butte, Montana site which is a former Anaconda mining site, and these are facilities which are very contentious and they take in some degree of interest on the part of Congress and the states and communities involved with those sites.

In addition, there is some question nationally as to potentially hundreds of abandoned mining sites that are under the jurisdiction of the Department of Interior and how we as a nation will be required to pay for those sites in the event that those need to be cleaned up.

Now, in the discussion today we have been talking

about the duties of this agency as it relates to UMTRCA and the modifications that that Act made to the Atomic Energy Act, most notably I point to Section 84(a)(1) which outlines that under our duties under managing byproduct materials under 11e.(2), the Commission, in order to protect public health, safety and the environment, and that is somewhat different than our duty in some other areas, the Commission is given authority to take those actions it deems appropriate in those areas. So, clearly, Congress, in making its determination about our role in UMTRCA, did envision that we would have to take into consideration environmental issues associated with these sites.

The experience that we have had at many other waste sites, and I wouldn't say necessarily related to these, but many other waste sites, including those associated with CERCLA, RCRA, and TSCA demonstrate that pollution prevention plays a significant role in ensuring that these -- we don't have problems associated with these sites in the future.

So I guess my question is this, in the testimony we received from Mr. Kearney and Mr. Lawson today, as well as Mr. Culberson, there have been suggestions for this agency to modify the way in which it is regulating these facilities and, arguably, to back away from some of the regulatory structure that we have now. Given the -- I think

as Mr. Kearney has outlined the relatively shaky financial position of some of these mines, if we are to back off from our level of regulation, what assurances do we have that these sites will be managed by the companies in a manner which is appropriate given their limited financial resources, and what assurances do we have that we will not be facing in the future burdens being placed on the taxpayer to clean up sites by companies that do not have the financial resources to manage them in an appropriate manner?

MR. KEARNEY: I think that is a very good question, and whether the NRC steps back from the regulation of wellfields or not, the entire operation, including the wellfield is bonded, we have surety in place. The operation has a surety that is updated every year, so that that money is available in the unlikely event of some type of default. So the money is there to clean up the site.

COMMISSIONER MERRIFIELD: That's fair. I would only point out, having had recent experience with the Atlas site in Utah, which also had bonding authority, the money contained in that bond is insufficient to do the reclamation necessary, even under some of the planning that this agency is proposing, let alone actions which are proposed by other agencies in the U.S. government.

MR. KEARNEY: Well, along those lines, I think it is appropriate to say that the amount of waste material

associated with an ISL site is quite limited, because you don't have tailings, it stays underground. So the actual amount of waste is very limited and it is somewhat different than a conventional mill because, you know, acid wasn't used and things like that, so it probably of a better quality, too.

One other thing I think is appropriate to say, because I know the NRC staff is concerned about the proliferation of small sites. Well, even in the best picture, the uranium industry, there is not going to be a lot of ISL sites and for the most part they are very remotely located. And the need to transport that byproduct material to other sites, I personally believe the risk of doing that, the transportation of it is more of a concern than if you constructed a site -- a small site on-site. We are not dealing with near the volumes. You know, at our facility at Power Resources, we are talking during production, and we were the largest in the United States, of about 100 cubic yards a year of material. And we are not dealing with the millions of yards, like an Atlas or something.

MR. LAWSON: Let me just add one observation with your regard to your comments, and I think all of them are directly on target. We at the Association, on behalf of all mining, are presently working with all of the state

governors to develop a very detailed tabulation of all abandoned mine land sites to put together with that the current active sites and developing a general understanding of what those reclamation requirements are going to be. We are incorporating those into the overall program for the future and we presently have an initial site in each of the states going forward for reclamation of a particular mine site.

It is kind of the opening chapter of cleaning up this two centuries old set of issues that have been kind of bequeathed to us, but it is clearly on I think the plate of all the state governors and their staffs. And, certainly, the industry itself wants to solve that problem in a very systematic way.

COMMISSIONER MERRIFIELD: Thank you.

COMMISSIONER DICUS: I thank you very much for your testimony and your responses to our inquiries.

I would now like to call our fourth panel and I think our final panel, the Southwest Research and Information Center, represented I think by Diane Curran. Come forward, please.

MS. CURRAN: Good morning, or I guess it is about good afternoon.

COMMISSIONER DICUS: We are getting close, aren't we?

MS. CURRAN: I would like to introduce you to Chris Shuey, who I have asked to come sit with me. He is the technical person and this team and also the one with the longest institutional memory of the Uranium Mine Tailings Control Act, and he may help me answer some questions that you may have.

We are really glad to find out that it seems to be the consolation prize for getting the latest notice of a Commission meeting that you get the last word. So thanks for that.

I am here today on behalf of the Southwest Research and Information Center, which has a longstanding interest in the regulation of uranium recovery facilities and uranium mines that are located in New Mexico. There is a long history of uranium mining there. SRIC was very active in the promotion of the Uranium Mill Tailings Remediation and Control Act and has helped many organizations, many citizen organizations deal with environmental and public health issues arising from uranium mining.

SRIC, along with my other client, Eastern Navajo -- Against Uranium Mining, is an intervenor in the licensing proceeding for the HRI proposed ISL mine in Northwestern New Mexico. And we won't be discussing the specific issues in our case here today, and some of those issues are on appeal

before you, but a lot of our concerns come out of our experience with this licensing case, and we will try to express in generic terms what they are.

I think it was Mr. Lawson who complained that the NRC staff had done a very good job of justifying NRC jurisdiction over the underground activities involved in ISL mining, and we were also a bit frustrated. We would have like to see that OELD paper from I think it was 1980 that discussed the NRC jurisdiction. But we did our own inquiry into the matter and we conclude that it is very clear that the NRC has jurisdiction over the underground aspects of ISL mining.

In our view there is a three step inquiry that has to be made. First, is the ore that is under the ground more than 0.5 percent uranium? The question is not is the pregnant lixiviant more than 0.5 percent uranium, it is whether the ore itself is a sufficiently high grade or uranium. It really isn't very logical to evaluate pregnant lixiviant as an ore.

And then the next question is, is the uranium being removed from its place in nature? Its place in nature is in the uranium roll deposit that is far under the ground. It is in basically an inert condition, hasn't moved for thousands of years, and when one injects lixiviant into the groundwater, it has the effect of dissolving the uranium and

moving it up into the groundwater. It has been moved from its place in nature.

And then the question, the third question is, is this processing? In our view, it is clearly processing to introduce chemicals into the ground that have a chemical effect on the uranium ore that significantly changes its concentration in the groundwater. And one of our attachments to our testimony, to our comments, shows the relative concentrations of uranium in pregnant lixiviant with uranium in drinking water.

I just want to clarify one point about that. Whether there are ISL mines where the quality of drinking water is involved, and the answer is yes. In New Mexico, the proposed HRI mine is in an area that is drinking water supply. So that is a very important issue for us, the impact of ISL mining on drinking water.

COMMISSIONER MERRIFIELD: Just a point of clarification on drinking water supply. You know, each state has a different mechanism of establishing groundwater standards. Some states designate that all groundwater contained within the boundaries of the state is drinking water. Is that the case in New Mexico?

MR. SHUEY: Mr. Commissioner, in the State of New Mexico, the Water Quality Act defines water, fresh water as any water containing 10,000 milligrams per liter of total

dissolved solids or less. That is the statute and its corresponding regulations that regulate discharges onto or below the surface of the ground, in other words, protect groundwater, there is a specific set of numerical standards for the protection of groundwater. That is a different set of regulations under a different state statute than the state's equivalent of the Safe Drinking Water Act, Public Water Supply Program.

When Diane refers --

COMMISSIONER MERRIFIELD: So the point you are trying to make is the state may define it as drinkable, but that doesn't mean it meets the quality standards of either the EPA or the state for safe drinking water purposes?

MR. SHUEY: There are two different statutory and regulatory frameworks in the state. The point that Diane was making was that the aquifers involved in this particular proposed site are used and drinking water aquifers. They meet all the standards and are actually better than the standards, as our attachments to our testimony show.

COMMISSIONER MERRIFIELD: So they are currently being used as a drinking water source?

MR. SHUEY: Yes, sir.

COMMISSIONER MERRIFIELD: Okay.

COMMISSIONER DICUS: And that is the wellfields that you would be talking about? Or no?

MR. SHUEY: No, the wellfields have not been built.

COMMISSIONER DICUS: But my question goes to -- I mean if the wellfields were built, are they in the aquifers used for drinking?

MR. SHUEY: Yes.

COMMISSIONER McGAFFIGAN: Could I just clarify, too? Given the testimony of the Wyoming Mining Association person, just naturally you would expect that there would be a lot of radium and radon in this water if there is a lot of uranium concentration there, enough to mine. Why -- I mean just physically, isn't there -- why don't you run into trouble with the radium and radon concentration levels?

MR. SHUEY: Commissioner McGaffigan, we would need to go into a fairly detailed explanation of the subsurface geology at these sites that we are talking about to answer your question completely. Suffice it to say that the uranium ore occurs in discrete lens of the overall aquifer. The municipal water supplies tap the entire aquifer. There are portions of the aquifer which may have elevated concentrations of uranium, radium, radon, et cetera. The overall water quality and the overall aquifer is better than federal and state drinking water standards.

COMMISSIONER McGAFFIGAN: Okay.

MS. CURRAN: There is a potential impact of the

mine on the drinking water quality. And I think the situation in Wyoming is very different, so it needs to be clarified that these are two different situations we are talking about.

Getting beyond the issue of jurisdiction to the policy questions here, we are very concerned that the staff is making a number of proposals here without having done enough of the ground work to justify the changes. And the motivation seems to be a desire to help out an industry that is really struggling. I think you heard it here today that the ISL industry is in trouble, but that is not necessarily because they are over-regulated, there is a world uranium market that is very much affecting what is going on.

And I think Chairman Jackson said the NRC's responsibility is to ensure public health and safety without imposing undue burdens, and that is our primary concern here, that the public health and safety issues must take precedence over an issues of relieving burdens on the industry. And, also, we question whether some of the proposed changes here really give the kinds of efficiency that is being claimed.

COMMISSIONER DICUS: If I could just get some clarification. I think you realize, or hope you realize that we are really at the very beginning of this process. We are in the rulemaking plans, so we have a long way to go

to finalize where we are going.

MS. CURRAN: All right. In our view the staff has not provided a clear and convincing basis for delegating its regulatory authority over the underground aspects of ISL mining to the EPA and primacy states and Indian tribes. The big thing that is missing from the analysis that we can't find anywhere in this stack of SECY papers is some kind of a comparison between what are the elements of the EPA regulatory program, the UIC program, and what are the elements of the NRC's program, and comparing each aspect one to the other.

And the staff should be able to assure itself that all of its goals will be met if it delegates its authority to the EPA and the states. It may be that the staff will be satisfied, but we haven't -- and we have heard a couple of times here the staff referring to the fact that it is satisfied. But there isn't anything that we can find on the public record that provides us with some kind of a factual analysis that we can in turn evaluate. So that needs to be done.

An example of one of the regulatory gaps that is most glaring in our view is that EPA has no standard for uranium in drinking water. It has a proposed standard, but it has never been finalized. The NRC doesn't have a standard. We are not aware that any of the state

governments have drinking water standards for uranium. They have groundwater standards, but those are different.

The NRC has a Part 40 standard for uranium and effluent, but that is different. So we don't think that the NRC should be transferring its regulatory authority over something as important as this without answering that fundamental question first. What is the standard going to be for regulating uranium and drinking water as it relates to ISL mines? It is an important issue in the litigation that we are involved in, and I am sure in other cases, too.

It is important in terms of determining what the restoration is going to be, what standards are the licensees going to be required to restore the groundwater, what surety bond is going to be required. It leaves a tremendous gap in the regulatory program.

We also are very concerned that it doesn't appear that EPA has been consulted about this proposal. And I think I heard it said that the state governments had been consulted, and they are the entities that administer the UIC programs, but it is EPA that has to approve those programs. It is EPA that has the oversight authority over those programs, and it is EPA that needs to be consulted about this.

MR. SETLOW: I will be making a comment about that.

COMMISSIONER MERRIFIELD: Who are you?

COMMISSIONER DICUS: Wait, let's let her continue and then --

COMMISSIONER MERRIFIELD: Well, I am sorry. We had someone who has identified himself in the audience as saying he had a comment and we haven't called on him.

COMMISSIONER DICUS: But I think at the appropriate time -- I know. He can come to the podium at the appropriate time and identify himself.

COMMISSIONER MERRIFIELD: If we call on him.

COMMISSIONER DICUS: Yes, if we do. Would you please continue?

MS. CURRAN: To go on to the issue of the advisability of proceeding with a new Part -- 10 CFR Part 41, we think there are issues that really need to be clarified.

COMMISSIONER McGAFFIGAN: Madame Chairman, if I have I want to ask on this, should I ask now? Could I just -- before you leave that?

MS. CURRAN: Sure.

COMMISSIONER McGAFFIGAN: You saw the backup slide used by one of the people who filed a DPV earlier and he theorized or speculated that one of the things that would happen is that this less restrictive EPA standard would apply if -- than the Part 20 standard, because they allow

for dilution, and that that was -- I think I am putting words in his mouth, but part of what is motivating one of the staff recommendations is a back door feeling to, you know, let the EPA, the looser EPA standard -- looser only because they allow dilution and our Part 20 doesn't, and then Mr. Paperiello said we allow dilution, too, but it is not in the Part 20 .44 standard that is there.

What is -- is that your concern, that if EPA standards apply, that there will be a looser standard?

MR. SHUEY: Commissioner McGaffigan, Mr. Ford was discussing, as we discuss later on in our commentary here, the issues related to the disposition of liquid waste generated in ISL operations.

COMMISSIONER McGAFFIGAN: Okay.

MR. SHUEY: And the standards he was talking about are promulgated by the U.S. EPA under authority of the Clean Water Act's National Pollutant Discharge Elimination System for the uranium mining subcategory, I don't know exactly what it is called. Those would be discharges into waters of the U.S. They are more lax, as he pointed out, than the NRC's Part 20, Appendix B effluent limit for uranium in water. That is a different matter than the issue of subsurface regulation of the ISL operations from a groundwater protection standpoint, and we have comments on this issue of the NRC's proposal for deferring or delegating

authority over those liquid waste effluents.

COMMISSIONER McGAFFIGAN: Okay. I am just confused by the statement that got in this paragraph. "Similarly, we do not view NRC's use of 10 CFR Part 20, uranium and water effluent standards appropriate to protect drinking water." This is -- I thought it was in the context of the previous sentence, uranium restoration standards. When you get to it, just explain.

MR. SHUEY: The restoration standards apply to the groundwater that has been subject to the leaching.

COMMISSIONER McGAFFIGAN: Okay. Not to the effluent.

MR. SHUEY: And not to the effluents that is disposed on the surface or managed on the surface in one way or another.

COMMISSIONER McGAFFIGAN: Okay.

MS. CURRAN: But your general question, in terms of what is the comparison between EPA and NRC regulations is a good one.

COMMISSIONER McGAFFIGAN: Right.

MS. CURRAN: It is one that we are asking, we would like to see from the staff an evaluation, let's look at all the different aspects of this operation that need to be regulated. What are the NRC's requirements? What are the EPA's requirements? Is the NRC satisfied with -- well,

either the EPA program, or I think it is also necessary for the NRC to look at the state programs because those are the agencies that are carrying this out, and open that for public comment.

In terms of a new Part 41, we are not -- we think there are probably some things that could be improved by having a separate regulatory section for ISL mining. We are a little bit confused after this morning's meeting as to what is the exact purpose of a new Part 41. We had originally, when we read these papers, thought that a new Part 41 was to be restricted to ISL mining, regulation of ISL mining. And from a few things that were said today and some viewgraphs, it appears that there is a concern about clarifying existing provisions of Part 40, and we don't understand why a Part 41 would be used to clarify something in Part 40. And we don't really see how that would make sense, but I guess we will see how things develop as they go along.

We are very concerned that the centerpiece of a new Part 41 seems to be performance-based licensing. And this is something that we have challenged in the licensing case for the HRI, and I believe there is a petition for review pending before the Commission. The issues that we have raised in our appeal are general statutory challenges, challenges of consistency with the regulations, and we would

ask that the Commission take note of what we have argued in our brief before the Licensing Board on this issue as it evaluates performance-based licensing.

But on a policy basis, from a citizen's perspective, performance-based licensing poses great concern, because what it does is that it significantly reduces the accountability of a licensee to the public, and also the public's ability to participate in the decision-making process, because, in general, it involves making very, very broad prescriptions in the license and then allowing the licensee to make changes as it goes along in the operation of the facility without providing the kind of public notice and decision-making process that is usually provided in license amendment cases. So that as a practical matter, the public is effectively excluded from being an effective participant in this decision-making process which may have significant impacts on the health of the safety of the citizens surrounding these facilities.

So we would ask that you take a very careful look at performance-based licensing.

COMMISSIONER McGAFFIGAN: I am sure you know the context, if I could, but we are using performance-based licensing elsewhere in our regulations, I think increasingly. You know, there is always a question of how much flexibility you allow the licensee and how much it

needs to be reviewed by us. And if it is reviewed by us, it entails hearing rights and public involvement, et cetera.

But I think that the notion of how much flexibility to grant is sort of pandemic in all of our Title X regulations. But that doesn't -- we will certain look at your -- I will look at your arguments, but it is a question of degree.

MS. CURRAN: I agree, it is a question of degree, but we would say this is a giant step in the direction.

COMMISSIONER DICUS: Careful. We are getting into territory --

MS. CYR: This is an issue, I mean --

MS. CURRAN: Okay.

MS. CYR: I think the generic comments were fine.

COMMISSIONER DICUS: Yes. Thank you.

Go ahead, please.

MS. CURRAN: Okay. Another concern that we have is with the proposal to eliminate some of the prescriptive requirements in criteria -- in Appendix A. I am not sure it is totally clear which ones these are, but the purpose seems to be, again, consistent with performance-based licensing to reduce the number of specific requirements in terms of the mill tailings impoundments and the kinds of requirements they have to meet.

We are very concerned about this because it seems

to be taking a background step from the advances that were made in UMTRCA which was intended to rectify the situation where there was a great deal going on in terms of waste disposal or non-waste disposal that wasn't being overseen properly by any government entity, and we would not want to see a background step from that. That was a tremendous milestone in the process of improving environmental protection over uranium mining, and we are very concerned that this would be a background step.

On the issue of regulating the waste streams from ISL mining, the restoration water and the production bleed, we are very strongly in favor of Option 2 which would be to regulate the entire waste stream. We don't have any doubt that all of the effluent that is produced by ISL mining is subject to NRC jurisdiction and we would argue it is subject to your responsibility, not just your jurisdiction, and we would be very concerned if the NRC abdicated its responsibility to regulate those streams. We would like to see the NRC take responsibility for the restoration water stream, which, as one commenter mentioned, is a significant source of the waste products generated by ISL mining.

We don't think it makes much sense to give it away. What it is going to result in is having even more agencies regulate these waste streams which is we thought what the industry was trying to avoid. The industry is

looking to get more efficiency and lower costs, and here we are talking about a multiplicity of agencies regulated several waste streams from just one mine.

We also don't think it is consistent with other arguments that we have heard that the NRC should take more kinds of wastes into 11e.(2) disposal facilities. The purpose of UMTRCA, one of the purposes is to consolidate and decrease the number of waste disposal facilities in the United States so there isn't a proliferation of little dumps all over the place.

Well, it may be that that purpose is served by taking more kinds of waste material into an 11e.(2) waste disposal facility and allowing more kinds of feed to go into milling facilities so that waste can be characterized as 11e.(2) material, but if one accepts this logic, it doesn't make sense to then -- for the NRC to then divest itself from some of the waste streams and let them proliferate into small disposal facilities scattered around. And the amount of waste generated in an ISL facility may seem relatively small to a large industrial corporation, it isn't small to the citizens living nearby one of these places. It represents a major risk.

We thought it was very interesting and instructive that in Texas the state doesn't recognize a category of mining waste, that everything that comes out of an ISL mine

is regulated as 11e.(2) byproduct material and that we gather it works fine.

Finally, we would very strongly support the NRC's proposal to introduce uniform spill and release reporting requirements. This seems a very important measure to us, where a big concern that there is a threshold mentioned in the proposal that is 10,000 gallons, and where it wasn't said where that threshold comes from. We would like to have a chance to evaluate that. We would like to get more information on that proposal.

And just one last thing that we would like to leave you with, and that is that we are interested in this decision-making process. It may have a profound affect on the interests of SRIC and ENDAUM and other citizen groups that SRIC assists, and that we would like to be informed of any further Commission action, and also any further staff action on these proposals so that we can evaluate them and make a contribution.

COMMISSIONER DICUS: Well, like I told you, we are in the beginning of the process, so the information will be made available as we progress through the process.

Commissioner McGaffigan.

COMMISSIONER McGAFFIGAN: Just on that point, we are trying very hard to be open, not only in this area. We had an all-hands meeting the other day and a lot of the

questioning from the staff, how do we make sure that everybody needs to be involved -- there was a Part 70 question, the fellow who has run the web page on the Part 70 rulemaking told about some of the ad hoc things he did, sending e-mails and whatever to make sure everybody was informed -- What more can I do?

And so we are trying very hard, and I think we should get some credit over the last few years to involve, to be transparent, to put papers out while we are voting on them, et cetera. So I am sure we will do everything we can to keep you informed of our further actions.

COMMISSIONER DICUS: That's good.

MS. CURRAN: Thank you.

COMMISSIONER DICUS: Commissioner Merrifield.

COMMISSIONER MERRIFIELD: I just had one brief question regarding page 6 of your written testimony. Two-thirds of the way down the page, it would be the second full paragraph, you talk about the staff's discussion of the OGC opinion about our -- retaining our control over groundwater at ISL facilities, and you complete that with a sentence saying, "Retaining authority without exercising it exposes the agency to legal challenge by the public." And I am wondering if you could flesh out for me the basis upon which you are making that argument.

MS. CURRAN: Well, it certainly would create a lot

of confusion. For instance, if the NRC retained jurisdiction over ISL mining underground and then somehow delegated the program, the administration of its authority to EPA under EPA's program, what if EPA made a decision that the NRC disagree with? Would the NRC have the authority to take it back? Would the public have the right to go to both agencies and seek a change in the decision? It creates we think a lot of ambiguity and potential for --

COMMISSIONER MERRIFIELD: I guess it gets -- I believe that gets to Commissioner Dicus' point that, you know, we are early in this process, I think. And we can -- if the staff would like to comment on this, they could. But, presumably, this would be the subject -- if we were to go down this road, and if the Commission were to decide this was the right thing to do, that would be the subject of a Memorandum of Understanding between the two agencies setting out the appropriate guidance and interaction between the agencies and setting out what would be the appropriate area of appeal, where there to be concerns raised by the public associated with an individual site.

COMMISSIONER McGAFFIGAN: And I think furthermore, in the West Valley case we have set a precedent in our staff requirements in suggesting that in that case it is an MOU between us and the New York that we do that transparently and even put the MOU out for public comment or whatever.

COMMISSIONER MERRIFIELD: Right.

COMMISSIONER McGAFFIGAN: So I don't know, that is not prejudging what we do here if there were an MOU, if we need to make a decision. There is a lot -- but as Commission Dicus has said, we are at the start of the process and it will be transparent.

COMMISSIONER DICUS: Okay. We do have a representative, I assume an official representative of the Environmental Protection Agency here who has indicated an interest in coming forward to speak. If you would come to the podium and identify yourself, Mr. Setlow. And I am going to ask you to be as succinct as possible because this has gone on a bit, and also simply what you want to address to the Commission. And we won't get into a debate with anyone who has testified. But I recognize you to make a comment.

MR. SETLOW: Thank you, Commissioner. That was not my intention to create any debate. My name is Loren Setlow, I am the T-NORM team leader for EPA's Office of Radiation and Indoor Air. I am also the Chairman of the Inter-Agency Steering Committee on Radiation Standards, Subcommittee on NORM. My views here, comments address the hearing, and its general subject and represent the views of both the Office of Radiation and Indoor Air and also the Office of Groundwater at EPA.

We received notification of this hearing only two days ago and, based on some of the questioning from Commissioner Merrifield, the meeting which was held in June, the workshop a week or so ago, it was attended by two EPA employees only after we learned about the meeting through some discussions with the National Mining Association.

We find that this activity is regrettable as far as coordination and discussions with EPA, especially considering the fact that the proposals before you have such a potential impact on EPA's regulatory authorities, legislative authorities, as well as its existing resources. EPA is moving forward, currently we are under a mandate to report to Congress on our activities and approach to T-NORM and existing regulations and guidance. This is based on previous mandate as well as the National Academy of Sciences report. We hope that this is not a missed opportunity to include some discussion related to the T-NORM materials that have been under discussion today.

During the last two years, while this activity has been under discussion within NRC, with the states, the National Mining Association and industry as well, we have not heard a word in the Inter-Agency Steering Committee on Radiation Standards, nor the subcommittee that I am chair of. And it certainly would have been useful for us to have discussed these various things rather than to bring it

forward at this Commission meeting.

I hope that we will be able to work together on these proposals and that this will be placed in a public forum so that we have the opportunity to comment as appropriate.

COMMISSIONER DICUS: Thank you. And as you have heard us say, we are the beginning of the process and it will be a very transparent and public process. But I thank you for your comments.

COMMISSIONER McGAFFIGAN: I might just say on that, I am a little concerned, to be honest with you, that you weren't involved, because we have tried to -- I mean the papers have been out for a few months. These are not the sort of papers that get front page attention in the Washington Post, unfortunately.

COMMISSIONER MERRIFIELD: Joe Holonich may want a make a comment.

COMMISSIONER McGAFFIGAN: And I would be happy to have a comment. But we were certainly not trying to blind-side anybody, I don't think, and I will leave it to the staff to explain why we are where we are.

COMMISSIONER DICUS: And we are going to bring this to a close.

MR. HOLONICH: Thank you, Commissioners. Joe Holonich, Deputy Director of Waste Management. I just

wanted to note that we work very closely with the EPA Denver office, which is where the uranium mill tailings issues reside. And, in fact, Milt Lammering, who is the manager out there, and I, a month before the workshop, were out in California addressing an Atlas question. He was made aware of the workshop by me. We routinely mail them information on that. I had discussed with him the papers, in particular the non-11e.(2) and the Part 41. I noted that I thought he would be interested in them. He acknowledged he was. I called back that afternoon from California and had the staff FedEx the papers to him as soon as he indicated he was interested. So I think there is a very close working relationship with EPA Denver. I want to make sure the Commission understands that we in Denver are very comfortable with the working relationship we have.

COMMISSIONER DICUS: Okay. Thank you.

Commissioner Merrifield.

COMMISSIONER MERRIFIELD: Yes, we may need to take a look at -- obviously, we always want to have appropriate coordination with our sister agencies and departments, and we can certainly reassess that as we go forward, to make sure that we do have that proper communication.

That certainly goes both ways. If the EPA had some concerns that they wanted to raise, they certainly could have contacted the Secretary, who was unaware that

there would be participation today, and certainly blurting out in a meeting that you will be addressing that is not the way that we as a Commission like to operate around here. So in the future I think we ought to try to avoid those kind of outbursts. Thank you.

COMMISSIONER DICUS: Okay. Thank you. Given that, I want to thank all of the staff, of course, and the stakeholders who have come to this briefing and provided their testimony. And I now have the opportunity to close another rather lengthy Commission briefing.

COMMISSIONER MERRIFIELD: Good practice for a couple of weeks from now.

COMMISSIONER DICUS: Thank you. The Commission will as always give serious consideration to the views expressed here today in its review of these uranium recovery generic issues. It is clear that there are significant areas of disagreement on some of the issues addressed in SECYS-11 -- 99-11, 12 and 13. These areas of disagreement will obviously require close attention by the Commission in its review of these papers.

Again, I would like to thank all of the presenters for bringing focus to these areas through this briefing, and if there is nothing more this meeting is adjourned.

[Whereupon, at 12:33 p.m., the meeting was concluded.]

CERTIFICATE

This is to certify that the attached description of a meeting of the U.S. Nuclear Regulatory Commission entitled:

TITLE OF MEETING: STAFF PROPOSALS FOR URANIUM RECOVERY REGULATORY ISSUES SECY PAPERS 99-011, 99-012 AND 99-013 -- PUBLIC MEETING

PLACE OF MEETING: Rockville, Maryland

DATE OF MEETING: Thursday, June 17, 1999

was held as herein appears, is a true and accurate record of the meeting, and that this is the original transcript thereof taken stenographically by me, thereafter reduced to typewriting by me or under the direction of the court reporting company

Transcriber: Martha Brazil

Reporter: Jon Hundley

Presentation to the USNRC Commissioners June 17, 1999

by the
Fuel Cycle Facilities Forum
Presented by: David G. Culberson, Chairman

Introduction

The Fuel Cycle Facilities Forum (FCFF)[1] is pleased to be given this opportunity to support the National Mining Association (NMA) with respect to the White Paper titled "Recommendations for a Coordinated Approach to Regulating the Uranium Recovery Industry" and to comment on the two Federal Register Notices published April 12th (64FR17506 and 64FR17690). Over the past several years, the FCFF and the NMA have held joint meetings to discuss topics of common interest. This has established a continuing relationship between the two organizations and has identified several areas where a coordinated approach to regulations is appropriate.

The White Paper discusses several of these areas where the FCFF has a direct and common interest with the NMA. One of our major concerns over the years has been the decommissioning of fuel cycle facilities. In general these facilities often represent decommissioning issues that are not easily addressed by the current regulations. Such facilities can be generally characterized as facilities that are contaminated with alpha emitting radio-nuclides, such as Uranium and Thorium, and often involved substantial volumes of contaminated soils that require some form of long term disposal. The facilities included in our group include uranium enrichments from depleted Uranium up to highly enriched Uranium. In some cases the contamination also includes the progeny of Uranium and Thorium. Waste disposal costs often dominate the decommissioning costs associated with such facilities.

It is our opinion that the issues raised by the White Paper with respect to the NRC's Alternate Feed Policy and the disposal of Non-11E(2) Byproduct Materials in Tailing Impoundment Ponds can have a direct impact on the decommissioning of our fuel cycle facilities as well as other facilities throughout the country. The form of contaminated soils and soil-like materials associated with fuel cycle facilities is often very much like the same materials that are used as alternate feeds or disposed of in the mill tailing impoundment ponds. Certainly there are issues that would have to addressed such as the enrichment of the Uranium but there appear to be ways to factor in such considerations.

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[1] The Fuel Cycle Facilities Forum is a voluntary group comprised of membership from companies that represent all aspects of the nuclear fuel cycle. A major effort of the group has been to actively engage in the rulemaking processes related to the decommissioning of fuel cycle facilities.

Let me give you a few of the specific examples of material streams that the FCFF group would have that could be applicable to consideration as alternate feeds or direct disposal in the tailings impoundment ponds.

- Soils contaminated with Uranium and Thorium. There are a number of diverse operations that can result in such contamination, not all of which are normally considered part of the nuclear fuel cycle. Recent NRC publications in the Federal Register along with the SDMP list provide adequate examples of specific situations. A general listing is as follows:
    - Depleted Uranium manufacturing facilities
    - Normal Uranium conversion facilities
    - Facilities handling NORM materials
    - Rare Earth Processing facilities
    - Zirconium manufacturing facilities
    - Depleted Uranium catalyst production facilities for petrochemical plants
    - Current and former low and high enriched Uranium fuel processors (Commercial and Government)
- Lagoon sludge, slag, ash and other soil-like materials. These may contain other rare earth elements that might also be considered a valuable component.
- Disposal of the nations stockpile of depleted Uranium currently in the form of UF6. This might be accomplished by conversion to a solid form such as a ceramic suitable for direct disposal.
- Waste streams from facilities such as metal extraction plants that contain commercially viable concentrations of natural Uranium or Thorium.

This not an all inclusive list but each category represents specific examples of actual situations represented by the FCFF. Under today's regulations each case must be dealt with on a case-by-case basis but the regulations are so narrow as to effectively exclude all of the situations listed above. In each situation it is necessary to consider the technical and economic factors to determine the suitability for use as an alternate feed or for direct disposal. It is our belief and experience that the technical and economic factors will justify such action in essentially all cases.

Although there are technical questions that must be addressed, the FCFF believes that such issues can be satisfactorily resolved. Consideration is being given to issues such as the specific radioactivity of candidate materials in comparison with current materials disposed in tailings impoundment ponds, the effect of uranium enrichment, etc. A clear NRC policy with respect to both alternate feeds and direct disposal in the impoundment ponds would provide the industry with another option for consideration in the decommissioning process with the possibility of establishing a more cost effective approach to the disposal of the large volumes of slightly contaminated materials. The physical and radiological characteristics of the materials described above is in general similar to or more favorable than the materials currently being placed in the tailings impoundment ponds. In the specific case of radon emissions, most of the cases noted

above involve processed Uranium and therefore radon emissions are not an inherent part of the radiological considerations as opposed to tailings from the processing of ores.

In summary, the membership of the Fuel Cycle Facilities Forum supports the position of the National Mining Association regarding the use of alternate feed materials and the disposal of non 11e.(2) materials as described in the White Paper and urges the NRC to take the actions proposed by the NMA.

With respect to the published final rule on "Radiological Criteria for License Termination of Uranium Recovery Facilities" (64FR17506), the approach taken by the NRC to utilize the existing soil radium standard to derive a dose criterion (benchmark approach) for the cleanup of byproduct material other than radium in soil is to be commended. This approach will establish a consistent application of radiological protection criteria across a site.

With respect to the options considered in SECY-99-012, the FCFF strongly urges the NRC not to take a position the establishes a blanket prohibition against the presence of fission and activation products (11e(1) materials) in the material to be disposed of in the tailings impoundment ponds. There are specific examples of situations where the Uranium contaminated soils contain measurable quantities of such byproduct materials (11e.(1)) by:

- natural fallout
- returned fuel where the fuel cladding is contaminated, or
- fuel that has been slightly activated from having been stored in the spent fuel pool.

In such situations the Uranium constitutes the primary isotopes of concern and the 11e.(1) materials are of insignificant concentrations. Low enriched Uranium fuel fabricators receive fresh fuel back from nuclear power plant sites for recovery or re-fabrication where the fuel has been contaminated with 11e.(1) material from having been stored in the fuel storage pools at the power plant sites. It would be impossible to certify that "no" 11e.(1) is present in Uranium contaminated soil from a site in such circumstances. Rather than a blanket prohibition, the NRC should take the approach that recognizes the primary contaminants of concern, and ignores contaminants that are present in insignificant quantities.

Specific Examples

Uranium Contaminated Soil from Fuel Manufacturing Facilities

The decommissioning of Uranium Fuel Fabrication facilities often involves large volumes of soils contaminated with enriched Uranium. In two specific cases of facilities that ceased operation in the 1960's and 1970's, decommissioning work is underway and does involve the remediation of contaminated soil. One of these cases involves an estimated volume of soil in the range of 200,000 cubic feet. The Uranium enrichment in the soil ranges from depleted to highly enriched. When the soil is collected and packaged, the enrichment of the bulk material is in the low enriched range of 3% to 7% U-235. There are also insignificant but measurable concentrations of Co-60 and Cs-137 due to the nature of some of the waste processing activities. These concentrations are in the picoCi/gram range and are above what fallout values would be in the background. The concentrations of the Uranium are in the range of 10 to 100 ppm in the soil. Disposal cost at Envirocare for this volume of soil will be in the range of $7M to $14M. Evaluation of the various options is currently underway because of the high cost of the current direct disposal option.

The presence of enriched Uranium complicates the possibility of use of such material as an alternate feed material at a Uranium recovery facility but with proper technical evaluation and licensing such considerations might be overcome. The introduction of a compatible form of depleted Uranium to downgrade the enrichment might, for example, make it feasible to consider the soil as a potential alternate feed material. In any case the nature and radioactivity of such soils would be similar to the existing tailings material and should be considered for direct disposal.

Zirconium Manufacturing Facility

The manufacture of Zirconium metal involves the processing of Zircon sand which has low concentrations of Uranium and Thorium present in the sand. This is typical of many metal recovery facilities and is not unique to Zirconium manufacturing. The concentration of Uranium and Thorium in the incoming sand is low enough that the sand is not considered "Source Material" and therefore is not subject to licensing requirements. However, during the processing steps the Uranium, Thorium and Radium are concentrated into different process streams. This requires that the facility be licensed and that the waste from certain portions of the plant be treated as low level radioactive waste. As a result, this facility is Utah's largest generator of low level radioactive waste. Due to issues with the Northeast Compact all the waste is sent to the Richland disposal site and is not eligible to be shipped to Envirocare even though the waste would meet all the license criteria for disposal at Envirocare. This results in a higher cost of waste disposal for the facility. The issue has been discussed with the state but the general feeling has been that approval of the Compact would not be forthcoming and no formal steps have been taken.

The waste streams contain varying levels of Uranium and Thorium and should be considered as a potential source as an alternate feed material to a Uranium Recovery

facility. In one specific case, a side stream of material contains over 1% Uranium. In addition to the Uranium and Thorium, there are other rare earth materials present the might warrant recovery for their value. Although there are technical issues related to the use of these waste streams as an alternate feed material, the option for consideration should be opened to the facility.

In addition to those waste streams that are shipped to Richland for disposal, there are holding lagoons at the facility that include sediments which also contain Uranium, Thorium and Radium as contaminants. The volume of the sediments dominate the cost estimate to eventually decommission the site. If the sediments were to disposed at either Richland or Envirocare, the disposal cost could be in the hundreds of millions of dollars. The current approach for preparing a decommissioning cost estimate has been to evaluate the cost and acceptability of an on-site disposal cell as the basis for the decommissioning cost estimate. Such sediments also offer the potential for consideration as an alternate feed material or for direct disposal in a tailings pile and such options should be open to the facility. Another possibility has been the option of conducting an onsite processing operation that would concentrate the radioactive components into a smaller volume and leave the larger volume of chemical constituents available for recycle. The smaller concentrated volume could then be considered as an alternate feed material.

In both these cases, the radiological properties of the waste streams and the lagoon sediments are similar to what a Uranium Recovery facility would normally handle and dispose of in the tailings pile. Although specific consideration must be given to the other chemical constituents present, it is expected that technical answers are feasible and that these materials make definite candidates either as an alternate feed material or for direct disposal in a tailings pile.

Depleted Uranium Stockpiles

The current national stockpiles of depleted Uranium as UF6 also offer another possibility for consideration. It would be technically feasible to process this stockpile into a physical and chemical form suitable for direct disposal in a tailings pile. For example, the gaseous UF6 could be converted into a ceramic form. In this case it would be feasible to demonstrate that the chemical and radiological nature of the material would be similar to those materials already existing in the tailings pile. A national policy to implement such an option for disposal of the depleted UF6 stockpile should consider using the existing disposal capacity of the tailings piles.

Before the U.S. Nuclear Regulatory Commission

COMMENTS ON THE NRC STAFF'S INITIATIVES ON URANIUM RECOVERY REGULATION

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INTRODUCTION

Southwest Research and Information Center ("SRIC") appreciates the opportunity to comment on the Nuclear Regulatory Commission ("NRC") Staff's memoranda concerning proposed changes in uranium recovery regulation. SRIC, through its Washington, D.C., counsel and Albuquerque-based staff, looks forward to summarizing and discussing its concerns about these initiatives before the Commission itself at the public meeting on June 17, 1999.

As the Commission is aware, SRIC, Eastern Navajo Diné Against Uranium Mining ("ENDAUM"), and two Navajo women, Ms. Grace Sam and Ms. Marilyn Morris, are intervenors in an ongoing proceeding before the Atomic Safety and Licensing Board on the matter of the license issued to Hydro Resources, Inc. ("HRI"), for the Crownpoint Uranium Project ("CUP"). SRIC will abide by the Commission's admonition to refrain from making oral or written remarks that refer to arguments now pending in that adjudication. We will use this opportunity, however, to highlight why we believe that the Staff's initiatives may reduce the level of health and environmental protection to which the affected public is entitled under the Atomic Energy Act ("AEA") of 1954, as amended by the Uranium Mill Tailings Radiation Control Act ("UMTRCA") of 1978. Hence, it is in the spirit of broad public debate over policies that are important for the protection of human health and the environment that we offer our comments on the Staff's proposals regarding uranium recovery policy and regulation.

SRIC'S INTERESTS AND HISTORY ON URANIUM MILLING ISSUES

SRIC's staff has been closely and routinely involved in uranium mining and milling policy and technical issues for parts of three decades, beginning in the mid-1970s. SRIC was one of several public-interest organizations that campaigned for and championed passage of the UMTRCA — the first federal statute to authorize federal and state cleanup of abandoned, or "inactive," mills and tailings sites, and licensing and regulation of "active" uranium mills and mill tailings facilities. SRIC also participated extensively in the initial NRC and USEPA rulemakings that implemented UMTRCA requirements, and was a co-plaintiff with other national environmental groups in federal-court appeals of some of the NRC mill licensing regulations and the EPA general environmental standards.

SRIC's interest then, as it is now, was to ensure that the public health and safety and the

environment were protected from the radiological and nonradiological hazards associated with uranium milling and tailings disposal. To that end, the organization worked closely with communities and community groups on site-specific uranium mining and milling concerns, providing technical advice and field-level assistance largely at the request of local groups. From this work, we developed long-term relationships with several Navajo communities adversely affected by uranium waste mismanagement, such as the July 1979 Church Rock tailings spill. These relationships continue to this day, as evidenced by SRIC's partnership with ENDAUM in the adjudication of the HRI license.

OVERVIEW OF SRIC'S COMMENTS ON NRC STAFF'S CURRENT URANIUM RECOVERY REGULATORY INITIATIVES

In preparing these comments, SRIC's counsel and staff reviewed the following documents:

(1) NRC Staff. "Recommendations on Ways to Improve the Efficiency of NRC Regulation at *In Situ* Leach Uranium Recovery Facilities," SECY-99-013 (March 12, 1999);

(2) NRC Staff. "Use of Uranium Mill Tailings Impoundments for the Disposal of Waste Other Than 11e.(2) Byproduct Material and Reviews of Applications to Process Material Other Than Natural Uranium Ores," SECY-99-012 (April 8, 1999);

(3) NRC Staff. "Draft Rulemaking Plan: Domestic Licensing Of Uranium and Thorium Recovery Facilities — Proposed New 10 CFR Part 41," SECY-99-11 (January 15, 1999); and

(4) National Mining Association. "Recommendations for a Coordinated Approach to Regulating the Uranium Recovery Industry." (April 1998; hereafter referred to as "NMA White Paper".)

Based on these documents, and other relevant information, correspondence and memoranda, SRIC prepared comments that address the following issues: (1) the NRC's jurisdiction over the subsurface aspects of uranium ISL mining; (2) the lack of an adequate basis for delegating ground-water protection at ISL facilities to the EPA or to states and tribes with primacy to regulate solution mining pursuant the Underground Injection Control ("UIC") Class III program of the federal Safe Drinking Water Act ("SDWA") ; and (3) legal and policy problems with new

10 CFR Part 41 regulations now being considered by the NRC Staff, particularly the questionable legality of performance-based licensing ("PBL") and the proposed elimination of certain prescriptive siting and design requirements for uranium processing waste disposal impoundments.

At this time, SRIC recommends that the Commission *not adopt* either Option 2a or Option 2b, as those options are described in SECY-99-12. We are concerned that much of impetus for the staff's initiatives in these areas to help solve the uranium industry's long-standing economic difficulties, without adequately addressing the impacts of these changes on public health and safety. This is particularly apparent with respect to the issues of NRC jurisdiction over ISL operations, PBL, alternate feed materials, and disposal of non-11e.(2) wastes.

(1) NRC HAS AUTHORITY TO REGULATE SUBSURFACE OPERATIONS AT URANIUM ISL FACILITIES

SRIC agrees with and has long supported the Commission's authority to regulate ground-water protection at uranium ISL facilities. The Mining Association, however, asserts that NRC does not have authority under the AEA to regulate ground water at ISL sites. See, April 1998 White Paper at 104-113. Having reviewed the Mining Association's discussion of this matter, we conclude that the Association is just plain wrong. As we discuss below, its analysis suffers from a fundamental error about the point at which source material, i.e., uranium, is removed from its place of deposit in nature.

First, our reading of the NRC Part 40 regulations indicates that they contain a three-step approach to determining if a uranium recovery activity is covered by the licensing requirements of Part 40 or is exempt from them. The first step is to determine if the material is "source material," i.e., does it contain a uranium concentration of 0.05 percent or greater? If the answer is "yes," then the second step is to determine if the source material is removed from its place in nature. If the answer is "yes," then the third step is to determine where the material is being "refined or processed?" See, 10 CFR 40.13(b). If the answer is "yes," then the activity is not exempt and is subject to the Part 40 licensing requirements.

With respect to uranium ISL operations, the answers to each of these steps is "yes," and

each of the steps is accomplished *underground*. With regard to the first step, virtually all uranium host rocks, including those at ISL mines, have uranium concentrations exceeding 0.05%.[1] Hence, the answer to Step 1 is "yes."

In the ISL process, water fortified with oxygenates (called "lixiviant") is circulated through the uranium ore host rocks. The effect of the circulation of the lixiviant is to strip the uranium from the host rock thereby causing it to become dissolved in the ground-water/lixiviant solution.[2] The resulting uranium concentration in the "pregnant" lixiviant is typically several orders of magnitude higher than the baseline uranium concentration in the native ground water.[3] See, Attachments 1, 2 and 3. Since the leaching process *removes* the uranium *from its place of deposit in nature*, its host rock, the answer to the second step is "yes." In this regard, the Mining Association's conclusion that "the ore is not removed from its place of deposit in nature until it reaches the surface" (White Paper at 106) is clearly erroneous.

Finally, as can be seen from the discussion above, processing of the source material begins *in the ground water*. Part 40.13(b) uses the terms "refine and process" to determine if an activity is exempt or not.[4] The dictionary definition of the verb infinitive "to process" is "to

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[1]Average ore grades for several uranium deposits mined by the ISL method in Wyoming and Texas ranged from 0.08% to 0.2%. See, W.C. Larson, "Uranium In Situ Leach Mining in the United States," U.S. Bureau of Mines Information Circular 8777 (1977), Appendix B at 54-65. The Church Rock, N.M., ore grade at a site proposed for ISL mining is reported as 0.202%. See, also, Hydro Resources, Inc., Church Rock Environmental Report (April 1988) (ACN 8805200344), Figure 6.6-2 at 363.

[2]Gunn, J., Layton, M., Park, J. In-Situ Leach Uranium Mining (October 1988) at 4. Attached to SECY-99-013 (March 12, 1999) as Attachment 1.

[3]See, Tables 2.1 at 3.12 of NUREG-1508, *Final Environmental Impact Statement to Construct and Operate the Crownpoint Uranium Solution Mining Project, McKinley County, New Mexico* (February 1997), at 2-6 and 3-26, respectively (attached to these comments as Attachments 1 and 2). Compare, for instance, the anticipated chemical concentrations in HRI's pregnant lixiviant with baseline chemical and radiological characteristics of water from the Crownpoint, New Mexico, municipal wells, which tap the same aquifer that would be leach mined. See, also, Attachment 3 to these comments, which shows a direct comparison of pregnant lixiviant concentrations to baseline water quality.

[4]The term "beneficiation," which the Mining Association cites so liberally in its White Paper, does not appear in the NRC regulation.

prepare, treat or convert by subjecting to some special process; to put through the steps of a proscribed procedure." Similarly, the definition of the verb infinitive "to refine" is "to reduce to a pure state; purify." Lixiviant injection mobilizes uranium, separating it from the host rock and increasing its concentration in the ground water — physical and chemical processes that clearly connote processing and refining of the source material. Hence, the answer to the third step also is "yes." Accordingly, uranium ISL mining is not exempt from the regulations, and NRC has authority to regulate it.

SRIC believes, therefore, that NRC was correct in the early 1980s when it concluded that its jurisdiction to regulate uranium recovery extended to the subsurface in ISL mines because removal and processing occur in the ground water, and that this finding is not inconsistent with its determination that underground and open-pit mining are not subject to the licensing requirements of Part 40. In conventional underground and open pit mining, the uranium is not removed from its host rock until the rock is transported from the mine to the mill for crushing, grinding, and the addition of leaching acids and chemicals. This is distinguished clearly by the ISL process of using lixiviant to strip, or remove, the uranium from its host rock in the *subsurface hydrologic environment.*

(2) DELEGATION OF ISL GROUND-WATER REGULATION TO EPA OR THE STATES/TRIBES IS NOT JUSTIFIED

The NRC Staff is recommending that NRC remove itself "from the review of ground-water protection issues at ISL facilities" and instead "rely on the EPA UIC program" to protect ground water at ISL sites. SECY-99-013 at 10. The Staff's position appears to be based partly on an Office of General Counsel ("OGC") opinion[5] that such delegation, without loss of authority, would be appropriate to address the dual regulation concerns of the industry. See, SECY-99-013 at 3. This position, therefore, seems to rest largely on addressing industry's concerns, rather than on an analysis of whether it is appropriate, as a policy matter, for NRC to declaim jurisdiction that it has expressed and exercised for the last 20-plus years, or whether the EPA and state or tribal UIC programs are fully applicable to the wide range of ground-water

[5]We cannot comment at this time about the substance of the OGC opinion because it was not attached to the March 12 memorandum and we have not yet obtained a copy of it to review.

protection issues that are intrinsic to uranium ISL operations.

The NRC Staff has not provided a clear or convincing basis for its proposal to delegate ground-water protection regulation to EPA or to EPA-authorized states or tribes. None of the SECY papers we have reviewed contains a comparison between the ground-water protection requirements of NRC and those of EPA or authorized states or tribes pursuant to the UIC Class III program to evaluate the Mining Association's claims of regulatory duplication. Neither the NRC Staff nor the Commission has determined that NRC's responsibilities under the AEA to protect public health and safety and the environment from the use of radioactive materials will be fulfilled by delegating ground-water protection solely to EPA and the states or tribes. As a practical matter, any such determination by the Commission would need to evaluate state UIC requirements because EPA does not, at least at this time, directly permit any uranium ISL mine under its own UIC requirements since all existing ISL facilities are located in UIC-primacy states.

Implicit in the Staff's discussion of the OGC opinion is the notion that NRC would retain regulatory authority over ground water at ISL facilities, but not exercise it, regardless of whether EPA or a state or tribe with UIC primacy would. Retaining authority without exercising it exposes the agency to legal challenge by the public.

Delegating ground-water protection authority to EPA would certainly create at least one gap in the regulatory program. EPA does not have a uranium-in-drinking water standard, even though it proposed one in 1991. States which now regulate uranium ISL facilities pursuant to their state-level UIC programs have differing uranium restoration standards, and none of them are based on drinking water protection. In New Mexico, for instance, the uranium restoration standard would be 5 milligrams per liter ("mg/l"), based on the state's Water Quality Control Commission standards for *protection of ground water*.[6] 20 NMAC 3103. Similarly, we do not view NRC's use of its 10 CFR Part 20 Appendix B uranium-in-water effluent standard as appropriate to protect drinking water. Whatever the level, NRC ought to be satisfied that there is

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[6]SRIC's view is that the New Mexico WQCC's uranium value is an extraordinarily high level that is not protective of public health or the environment, especially when the native ground water concentration ranges from 0.001 mg/l to 0.02 mg/l, or 250 to 5,000 times the *less than* the uranium standard.

an appropriate restoration standard for uranium before delegating its authority.

Furthermore, there is no evidence in the relevant SECY papers that NRC has had agency-to-agency contact with EPA about delegating ground-water protection responsibilities for uranium ISL mines. Until this week, we could find no one at EPA in either Region IX or at headquarters who had been consulted by the NRC Staff about this matter, or who knew that NRC was even considering removing itself from ISL ground-water regulation. Interagency communication must take place at the highest levels of the agencies, and in consultation with the affected states and tribes, before such a fundamental change in the current regulatory structure is made.

(3) ADVISABILITY OF PROCEEDING WITH A NEW 10 CFR PART 41

The Staff enunciated three options for addressing uranium recovering regulations in the "Rulemaking Plan" attached to SECY-99-011 (January 15, 1999). The Staff also listed several specific proposed changes, deletions and clarifications to existing NRC regulations in Attachment 1 to the January Rulemaking Plan. The purpose of the proposed rulemaking would be to "codify the numerous regulatory decisions and precedents that have been developed [for]... ISL facility regulation" through reliance on guidance documents and license conditions. SECY-99-011 at 2.

SRIC agrees that the nature of the domestic uranium recovery industry has changed markedly since the Part 40 Appendix A licensing requirements were adopted in the early and mid-1980s. Creating a new Part 41 to address ISL operations is not, by itself, a bad idea to address the need to clarify and consolidate requirements applicable specifically to ISL operations. However, several of the proposed changes listed in Attachment 1 to SECY-99-011 appear to be oriented toward *relaxing* or even *eliminating* certain requirements, based almost exclusively on the uranium industry's stated desire for extensive regulatory flexibility, and in some case, even deregulation. Additionally, the Staff's options for removing NRC regulation of certain ISL waste streams, as set forth in SECY-99-013 (at 9), could make ISL regulation even more unwieldy by causing it to be divided potentially among three different governmental units: the NRC, the EPA and states or tribes with their own regulations governing effluent disposal. On whole, SRIC is concerned that the Staff's proposed changes are ill-conceived and will have

the net effect of decreasing protection of public health and safety and the environment.

In the sections below, we discuss our concerns about four of the proposed rulemaking issues: (a) operational flexibility; (b) deletion of certain "prescriptive" siting and design requirements; (c) disposal of liquid effluents from ISL operations; and (d) development of uniform spill-reporting requirements. Because of the short time we have had to prepare these comments, we are not commenting at this time on two other important matters: disposal of non-11e.(2) byproduct material in licensed tailings impoundments and use of alternate feed material in licensed uranium mills. SRIC reserves its right to comment on those matters at a later date.

(a) Issue 5: Operational Flexibility

We fear that the centerpiece of the Staff's initiative to create a new 10 CFR Part 41 is to codify deregulation of the uranium ISL industry through performance-based licensing ("PBL"), disguised as "operational flexibility." See, SECY-99-011, Attachment 1 at A-2 to A-3. While we cannot discuss those aspects of PBL that we think are illegal because the matter is currently on appeal in the HRI license adjudication, we urge the Commission to consider the legal and policy problems inherent in PBL.

Performance-based licensing in effect turns over to the operators fundamental regulatory decisions left more appropriately to the regulatory agency. Operators can change the scope of their ISL operations unilaterally, without agency oversight or approval and outside of the scope of public review and comment. The extent to which any change in an operation violates an NRC requirement or a license condition can be determined only upon the agency's inspection of documents and reports prepared by the licensee and maintained at the licensee's mining site. Hence, active "regulation" of uranium recovery is replaced by discretionary enforcement. Since, under most current PBL licenses, operators are required only to file an annual report with the NRC, the public is blind to the operator's decisions to change the project for up to a year after they were made.

SRIC is particularly concerned that operators will change numerical restoration standards upon their own, internal finding that such changes will not adversely affect public health and safety, or the environment. Such changes will not be known to the agency until long after they

are made, and not known to the local communities whose ground water could be affected adversely for many years as a result of such changes.

(b) Issue 8: Deletion of Prescriptive Siting and Design Requirements

The Staff proposes to eliminate certain siting and design requirements that, with the exception of mentioning Criterion 4 of Appendix A, are largely unspecified in Attachment 1 to SECY-99-011 (at A-4). SRIC fears that the Staff may be proposing to eliminate the essential surface impoundment design criteria in Criterion 5, the cover requirements of Criterion 6, and the monitoring requirements of Criterion 7. The regulations incorporated in Criteria 5 and 7 were adopted to prevent and detect ground-water contamination at tailings impoundments, while requirements in Criterion 6 were adopted to ensure long-term stabilization and control of tailings. Both were adopted in compliance with the generally applicable environmental standards promulgated by EPA in 40 CFR Part 192, Subparts D and E, which were based on RCRA-level design standards for hazardous waste impoundments. The NRC mill licensing criteria and the EPA general standards were authorized by the original UMTRCA in 1978 and by its amendments in 1982.

To relax these requirements for surface impoundments at uranium ISL sites would strike at the heart of the Mill Tailings Act's intent to prevent new ground-water contamination from tailings and to prevent dispersion of tailings through water and wind erosion and human disruption. While surface impoundments at ISL sites are necessarily smaller than those at conventional mills, they have the same potential for leakage if not designed and maintained properly.

As set forth in Attachment 1 (at A-4), the Staff's proposal for eliminating siting and design requirements appears oriented toward expanding the universe of PBL-eligible actions that licensees may take. Ultimately, however, the Staff's proposals must be consistent with requirements of the AEA, as amended by UMTRCA. Eliminating design and cover requirements, or relegating them to PBL status, may be inconsistent with the agency's statutory mandates under the AEA and UMTRCA.

(c) Issue 1: Regulations for ISL Facilities—Liquid Waste Disposal

In SECY-99-013 (at 9-10), the Staff proposes to divorce NRC of regulating waste waters generated by production bleed and restoration operations at ISL facilities. SRIC assumes that this proposal, along with the Staff's stated intention to delegate regulation of ground water at ISL sites, is part and parcel of its desire to craft a new Part 41 for ISL operations. Unfortunately, the Staff's liquid waste proposal makes no sense technically or administratively.

From a technical perspective, production bleed and restoration waste waters are so intrinsically connected with the processing of source material, i.e., uranium, that they should be regulated as byproduct material as defined in section 11e.(2) of the AEA. Production bleed waters would not be generated if the ISL operation were not in place. Production bleed effluents are the un-reinjected waste liquids necessarily generated by ISL mines to maintain lixiviant control. They also are likely to contain elevated concentrations of both radiological and nonradiological contaminants, with or without treatment prior to disposal.

Restoration waste waters almost always have high contaminant levels at the outset of restoration when contaminant levels remain high in the mined-out ore zones. These high levels would not be present in the ground water had the site not been subject to uranium ISL mining. Hence, the removal of the source material from the rock directly resulted in contamination of the ground water in the ore zone.

Neither does the Staff's proposal on regulation of ISL liquid waste streams make sense from an administrative perspective. See SECY-99-013 at 9-10. If the full breadth of the Staff's proposals are adopted, *three different* federal or state (or tribal) agencies would have authority over various liquid waste streams and mining operations at ISL facilities. For instance, NRC would regulate the *surface processing facilities* at the ISL plant; EPA or a state or tribal UIC-primacy agency would regulate the UIC Class III wells, wellfields and ground-water protection; and EPA or a state or tribal agency would regulate disposal of production bleed wastes and restoration wastes under various federal, state or tribal environmental authorities. This situation cannot possibly be seen as streamlining regulation or facilitating operator compliance. And it would be a total nightmare for communities and local groups wanting to participate in regulatory decisions affecting permitting or licensing of the facilities themselves.

These and other technical and policy points were made convincingly by Mr. William

Ford in his Differing Professional Views appended to SECY-99-013. SRIC urges the Commission to give great weight to these views in its consideration of this issue.

(d) Issue 10: Need for Uniform Spill and Release Reporting Requirements

SRIC concurs with the Staff's concerns about the lack of spill and release reporting requirements in 10 CFR Part 40, the lack of uniform and consistent data and information about spills and releases, and the potential for serious contamination of land, water and air by nonradiological pollutants released from licensed facilities. Spills of pregnant lixiviant, process waste waters and restoration waste waters are well documented at various ISL sites in Texas.[7] Hence, we support NRC's proposal to develop spill reporting requirements and to incorporate those requirements into the existing Part 40 program. We recommend that they be fully applicable to ISL facilities and achieve, to the extent practicable, compatibility with spill reporting requirements adopted by EPA under authority of the Clean Water Act's National Pollutant Discharge Elimination System ("NPDES").

CONCLUSIONS AND CLOSING COMMENTS

SRIC is not convinced that the staff is ready to proceed with the rulemaking proposed in SECY-99-011. Its proposals to delegate certain existing regulatory authorities are ill-conceived and possibly illegal, and seem aimed primarily at addressing the needs of the regulated community first, and addressing protection of public health and safety and the environment secondarily. Minimally, the Commission should defer action on the Staff's proposals today and direct the Staff to develop a more thorough basis and explanation for its initiatives. Especially important in this regard is the extent to which delegating authority for ground-water protection to EPA or the states or tribes will create gaps in regulation that do not now exist.

Finally, we were displeased with the way the agency notified SRIC of today's meeting. Neither SRIC, ENDAUM, Ms. Sam, Ms. Morris or any of their counsel received letters directly from the Commission Secretary. Rather, copies of the May 27, 1999, letters sent to the Department of Energy, the Mining Association and the states of Utah and Texas were forward to

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[7]SRIC intends to submit for the record in the near future data and information documenting the spills at various ISL sites in Texas.

us via the service list specific to the HRI license adjudication. Those copies did not reach SRIC's Albuquerque office until June 3. On June 9, SRIC's counsel sent a letter to the Commission Secretary requesting time on today's agenda. We were not notified until Monday of this week (June 14) that SRIC would be permitted to address the Commission.

This indirect and impersonal method of notification was untoward in light of the fact that representatives and SRIC and ENDAUM, and their counsel, appeared at the August 25, 1998, public meeting sponsored by the NRC Uranium Recovery Branch and expressed their concerns about NRC's consideration of wide-ranging changes in the way it regulates ISL facilities. That SRIC was not directly informed was even more curious considering its 20-plus years of involvement in national and state-level uranium recovery policy and regulation.

In the future, we request advanced, direct notification of all meetings — formal and informal — on uranium recovery regulatory policy. (Our various addresses appear on the cover of these comments.) This includes meetings not only before the Commission, but also meetings between the Uranium Recovery Branch staff and uranium licensees.[8] SRIC also requests that it be kept informed by the NRC Staff of its progress in going forward with the regulatory initiatives discussed today.

Again, SRIC appreciates the opportunity to comment in writing and before the Commission on these important matters.

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[8]We are aware that the Staff meets regularly with licensees in Wyoming to discuss regulatory issues. While SRIC staff cannot afford to travel to many of those meetings, we want to be informed that they are scheduled in the event that we determine that it is necessary to attend.

Table 2.1. Anticipated concentrations of principal chemical species in HRI's pregnant lixiviant from the well fields for processing
[Data are from HRI 1993a, test data, and operational licensing experience.]

Chemical species	Concentration (mg/L)
Calcium	100–350
Magnesium	10–50
Sodium	500–1600
Potassium	25–250
Carbonate	0–500
Bicarbonate	800–1500
Sulfate	100–1200
Chloride	250–1800
Nitrate	<0.01–0.2
Fluoride	0.05–1
Silica	25–50
Total dissolved solids	1500–5500
Uranium	50–250
Radium-226 (pCi/L)	1000
Other parameters	
Conductivity (μmhos/cm)	2500–7500
pH (standard units)	7.0–9.0

Table 2.2. Principal chemical reactions taking place in the ore body during uranium oxidation

(1) $2UO_2 + O_2 \text{ — — } > 2UO_3$

(2a) $UO_3 + Na_2CO_3 + 2NaHCO_3 \text{ — — } > UO_2(CO_3)_3^{4-} + 4Na^+ H_2O$

(2b) $UO_3 + 2NaHCO_3 \text{ — — } > UO_2(CO_3)_2^{2-} + 2Na^+ + H_2O$

HRI would pump uranium-enriched pregnant solution from production wells to the processing plants for uranium extraction by ion exchange. The resulting barren lixiviant would then be chemically refortified and reinjected into the well field to repeat the leaching cycle.

HRI anticipates using production flow rates of 9500 to 11,500 Lpm (2500 to 3000 gpm) at each ion exchange plant. Potential emissions at each plant were conservatively modeled assuming a maximum flow rate of 15,000 Lpm (4000 gpm), and HRI would be restricted from exceeding this rate by license condition. Maximum injection pressures to be used in each of the mine areas would be determined when the operating wells are completed. The approximate values of allowable surface (well head) pressures for each area are 2075 kPa (301 psi) at the Crownpoint and Unit 1 sites and 807 kPa (117 psi) at the Church Rock site (HRI 1996a). During normal operations, production rates would be

Table 3.12. Town of Crownpoint water quality data[a]

Parameter	Well NTUA-1 (mg/L)	Well NTUA-2 (mg/L)	Wells BIA-5&6 (mg/L)	Well BIA-6 (mg/L)	EPA (and NNEPA) drinking water standards (mg/L)
Calcium	5.0	1.3	9.2	1.8	
Magnesium	2.0	0.08	4.5	0.14	
Sodium	131.0	121.0	119.0	111.0	
Potassium	4.9	1.2	2.3	1.7	
Carbonate	17.0	20.0	1.0	8.0	
Bicarbonate	234.0	221.0	249.0	223.0	
Sulfate	82.0	52.0	98.0	49.0	250.0
Chloride	7.7	3.2	3.2	2.0	250.0
Nitrate	0.01	0.02	0.02	0.01	10.0
Fluoride	1.1	0.32	0.34	0.27	4.0 or 2.0
Silica	10.0	18.0	20.0	18.0	
TDS	402.0	351.0	406.0	325.0	500.0
Conductivity[b]	625.0	529.0	603.0	484.0	
Alkalinity	220.0	215.0	206.0	197.0	
pH[c]	8.79	8.91	8.33	8.7	6.5–8.5
Arsenic	<0.001	<0.001	<0.001	<0.001	0.05
Barium	0.02	0.05	0.05	0.06	2.0
Cadmium	0.0002	<0.0001	<0.0001	<0.001	0.01
Chromium	<0.01	<0.01	<0.01	<0.01	0.05
Copper	<0.01	<0.01	<0.01	<0.01	1.0
Iron	0.02	<0.01	0.01	<0.01	0.3
Lead	<0.001	0.002	<0.001	<0.001	0.05
Manganese	0.01	0.01	<0.1	<0.01	0.05
Mercury	<0.0001	<0.0001	<0.0001	<0.0001	0.002
Molybdenum	<0.01	<0.01	<0.01	<0.01	
Nickel	<0.01	<0.01	<0.01	<0.01	0.1
Selenium	<0.001	<0.001	<0.001	<0.001	0.05
Silver	<0.01	<0.01	<0.01	<0.01	0.1
Uranium	<0.001	<0.001	0.007	<0.001	
Vanadium	<0.01	<0.01	<0.01	<0.01	
Zinc	0.01	0.01	<0.01	<0.01	5.0
Boron	0.05	0.06	0.07	0.05	
Ammonia	<0.01	<0.01	<0.01	<0.01	
Radium-226[d]	0.6	0.3	0.6	0.3	5.0

[a]Data collected September 1990 (HRI 1996i).
[b]µmhos/cm.
[c]Units.
[d]pCi/L.

ATTACHMENT 2

ATTACHMENT 3

Estimated "Pregnant" Lixiviant Chemistry Compared with Water Quality in Crownpoint Municipal Wells and Federal/Tribal Drinking Water Standards[1]

Chemical	Lixiviant Concentration (mg/L)	Municipal Wells Ave. ± S.D. (mg/L)	Difference Lix. v. Mun. (#x)	Drinking Water Standards (mg/L)
Arsenic[2]	0.054	<0.001 ± 0.001	54	0.05
Bicarbonate	800 - 1,500	231.8 ± 12.8	3.4 - 6.5	none
Calcium	100 - 350	4.3 ± 3.6	8 - 23	none
Chloride	250 - 1,800	4.0 ± 2.5	63 - 450	250.0
Magnesium	10 - 50	1.7 ± 2.1	6 - 29	none
Molybdenum[2]	62	<0.01 ± 0.01	6,200	none
Potassium	25 - 250	2.5 ± 1.6	10 - 100	none
Radium 226+228 (picoCuries/liter)	100 - 1,000	0.45 ± 0.17	222 - 2,222	5.0 pCi/L
Selenium[2]	4.6	<0.001 ± 0.001	46,000	0.05
Sodium	500 - 1,600	120.5 ± 8.2	4 - 13	none
Sulfate	100 - 1,200	70.3 ± 23.8	1.4 - 17	250.0
Tot. Diss. Solids	1,500 - 2,500	371 ± 39.6	4 - 6.7	500.0
Uranium	50 - 250	0.0025 ± 0.0025	20,000 - 100,000	0.020[3]

[1]Data from Tables 2.1, 3.12, 4.13 of NRC *FEIS*, 1997.
[2]Data for selected trace metals based on Mobil Sec. 9 pilot project lixiviant concentrations.
[3]USEPA proposed drinking water standard, 1991.

NMA's Views on Staff Proposals for Uranium Recovery Regulatory Issues

NMA's Agrees With WMA

- NMA Agrees with WMA's Assessment of the Economic State of the Industry
- NMA Agrees with WMA's Position on ISL Jurisdiction

NMA's White Paper

- White Paper Helped Bring Us to This Point
- Staff to Be Commended for Their Efforts **BUT** Proposals DO NOT Go Far Enough to Solve Problems Identified in White Paper

Non-Agreement State Jurisdiction Over the Nonradiological Components of 11e.(2) Byproduct Material

- Proposals Do Not Address this Key Issue
- Part 41 Rulemaking Must Address this Issue
- NMA Requests NRC Review White Paper Arguments on this Issue

SECY-99-011 Draft Rulemaking Plan: Domestic Licensing of Uranium and Thorium Recovery Facilities – Proposed New 10 CFR Part 41

- Part 41 Would Have Some Advantages
- NMA Does Not Object to Part 41 As Long As White Paper Issues Are Adequately Addressed

SECY-99-012 Use of Uranium Mill Tailings Impoundments for the Disposal of Non 11e.(2) Byproduct Material and Reviews of Alternate Feed Applications

- Disposal of Non-11e.(2) Material
  - NMA White Paper Suggested Revisions to Current Policy
  - Prohibitions on Disposal Not Related to Health and Safety Concerns

Disposal of Non-11e.(2) Material (Continued)

- NMA Has Concerns About Legislative Solution but Willing to Help
- NMA Believes "Fallback Option" is Attractive BUT Is Still Too Restrictive
  - Retains Prohibition on Disposal of 11e.(1) and SNM -- Does Not Consider Generic Criteria for Such Materials

Disposal of Non-11e.(2) Material (Continued)

- Main Reason for Restriction is to Avoid Dual Regulation but Position on Non-Agreement State Jurisdiction Will Increase Likelihood of Dual Regulation
- Paper Does Not Discuss Dealing With Dual Regulation Through Memoranda of Understanding

Alternate Feed

- Economics of Decision to Process Alternate Feed is Not Within NRC's Jurisdiction
- Staff Proposal Retains Financial Test
- Use of Financial Test Ignores Legislative History of UMTRCA
- Use of Financial Test Ignores Commission Statements

SECY-99-013 Recommendations on Ways to improve the Efficiency of NRC Regulations at *In Situ* Leach Uranium Recovery Facilities

- Staff Proposals Will Eliminate Some Aspects of Dual Regulation **BUT**
- Paper Contains No Legal Analysis of NRC's Assertion of Jurisdiction

Wyoming Mining Association (WMA)Presentation to NRC Commissioners NRC Headquarters - Rockville, MD June 17, 1999

INTRODUCTION

- Good Morning. My name is Bill Kearney and today I am representing the Wyoming Mining Association (WMA).
- I represent the WMA as Uranium Industry Committee Chairman and I am employed by Power Resources, Inc. (PRI) as the Environmental Superintendent and RSO at the Highland Uranium Project, which is an ISL mining operation located in east-central Wyoming.
- On behalf of the WMA I would like to thank you for the opportunity to provide input from the uranium recovery licensee perspective

WMA Members

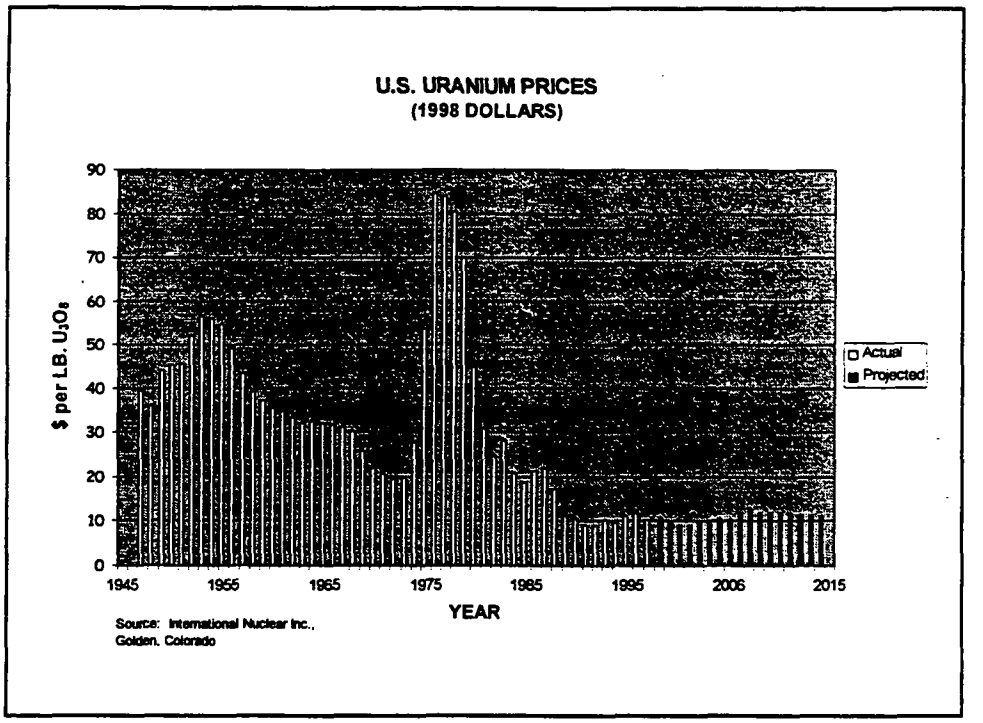
- WMA represents 30 mining companies in Wyoming - Wyoming leads the nation in production of bentonite, coal, trona (soda ash), and uranium.
- WMA represents 11 uranium mining companies with activities in Wyoming and one company in western Nebraska.
- More specifically, this includes 4 out of the 5 ISL's operating in the US, seven Title II mill sites in decommissioning, and one mill site in standby status.

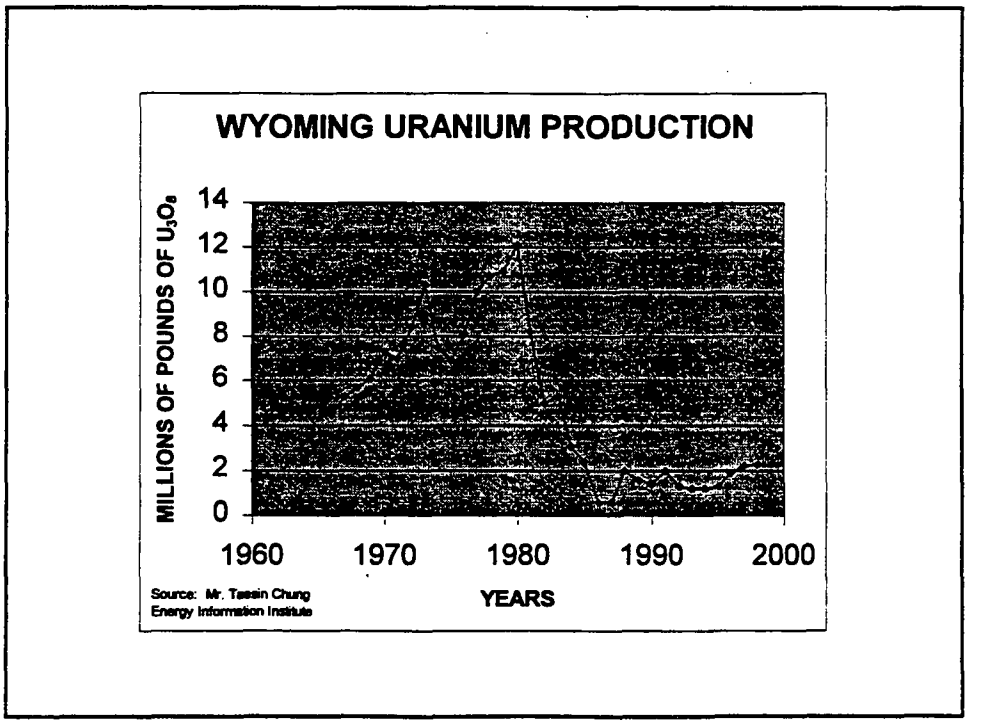
Four Key Areas

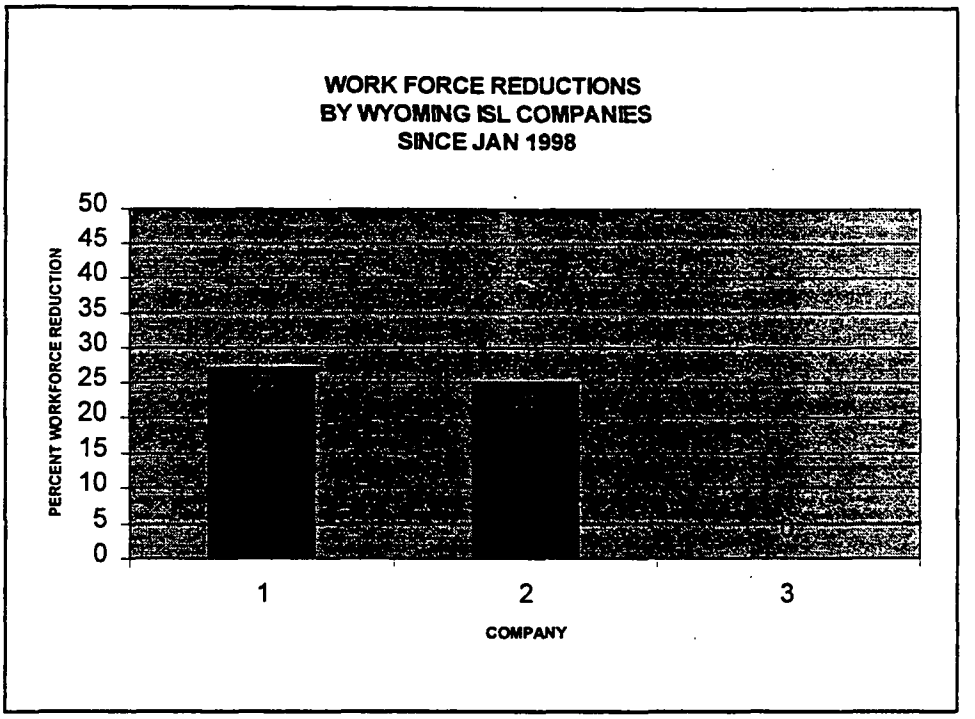
- **The current and expected state of the uranium recovery industry in the US.**
- **The need for NRC to exercise preemption over all by-product waste at Title II sites.**
- **Reasons why NRC should relinquish all jurisdiction over ISL wellfields.**
- **How WMA could support new Part 41 regulations.**

State of the Uranium Recovery Industry

- **Due to the present economic state of the US uranium industry it should not be viewed as a "growth" industry as portrayed in the SECY papers. (Graph of Historic and Projected Price of U_3O_8)**
- **All Wyoming Title II sites, except one, are in decommissioning. ISL operations are struggling. (Graph of Historic Wyoming Uranium Production)**
- **All four Wyoming ISL sites have recently reduced uranium production and/or reduced the number of employees. (Graph of Work Force Reductions by Wyoming ISL Companies since January 1998)**
- **Given this condition, the uranium industry does not need additional duplicative regulations and the accompanying increases in annual fees and hourly charges.**


U.S. URANIUM PRICES
(1998 DOLLARS)
$ per LB. U_3O_8
90
80
70
60
50
40
30
20
10
0
1945
1955
1965
1975
1985
1995
2006
2015
YEAR
Actual
Projected
Source: International Nuclear Inc.,
Golden, Colorado


WYOMING URANIUM PRODUCTION
MILLIONS OF POUNDS OF U_3O_8
14
12
10
8
6
4
2
0
1960
1970
1980
1990
2000
YEARS
Source: Mr. Taesin Chung
Energy Information Institute



Federal Preemption Over All Byproduct Material at Title II Sites

- **Because Wyoming is not an Agreement State the state should be precluded from regulating any (including non-radiological) constituents.**
- **Federal Preemption will assist both NRC and Licensees in implementing risk based ACL's.**
- **It will also allow for a simplified license termination process and transfer of sites to DOE.**

NRC Should Relinquish All Jurisdiction Over ISL Wellfields

- **As described in the NMA "White Paper" the NRC has no legal authority to regulate ISL wellfields.**
- **Dual regulation with the EPA UIC Regulations and the State of Wyoming ISL Mining Regulations is not beneficial to any party.**
- **Mining is conducted at ISL wellfields and NRC has not regulated surface or underground mining.**

NRC Should Relinquish All Jurisdiction Over ISL Wellfields (Continued)

- **If NRC relinquished all jurisdiction over ISL wellfields there would be no discernable adverse impacts for the following reasons:**
  - **Wellfields and associated ground water would still be regulated by the EPA-UIC regulations and the WDEQ.**
  - **Contrary to popular belief, the ground water is unfit for human consumption BEFORE OR AFTER ISL mining INCLUDING AFTER RESTORATION, due to very high radium and radon concentrations.**

NRC Should Relinquish All Jurisdiction Over ISL Wellfields (Continued)

- As NRC staff points out in SECY-013, removing duplicative NRC oversight will not lessen the protection of public health, safety, and the environment.

- If NRC relinquished all jurisdiction over ISL wellfields industry concerns and NRC staff positions on by-product waste water streams and sureties could potentially be simplified and resolved.

WMA Support of New Part 41 Regulations

- WMA could support New Part 41 regulations if they significantly reduced the NRC regulatory burden, and associated fees, on uranium recovery licensees.

- This could be accomplished if NRC exercised preemption over all by-product material at Title II sites and relinquished all jurisdiction over ISL wellfields.

- If the NRC relinquished all jurisdiction at ISL wellfields, the scope of any New Part 41 regulations and the burden to licensees would be substantially reduced, and NRC could potentially reduce staff assigned to reviewing, approving and inspecting ground water issues associated with ISL wellfields.

Conclusions

- **The WMA supports NRC activities geared towards streamlining and reducing regulatory oversight.**
- **WMA believes that the proposed actions just discussed, and other suggestions by the NMA could substantially benefit both licensees and the NRC without compromising any environmental and safety concerns.**
- **On behalf of the members of the WMA I would like to thank you for the opportunity to present our views.**

URANIUM RECOVERY A NON-AGREEMENT STATE PERSPECTIVE

June 17, 1999

Bill Sinclair, Director
Division of Radiation Control
Utah Department of Environmental Quality

STAFF RECOMMENDATIONS

- ✓ **Support Option 2b/SECY 99-011: Promulgate a new Part 10 CFR 41 dedicated to the regulation of uranium and thorium recovery facilities**

- ✓ **Support Option 1/SECY 99-012: Retain the staff guidance in its current form**

- ✓ **SECY 99-013: Support removal of NRC from the review of ground-water protection issues at ISL facilities and associated recommendations**

CONSIDERATIONS IN THE NEW PART 41

- **Should the standards be different for:**
  - **conventional mill processing ore**
  - **mill processing alternate feed**
  - **combination of ore/alternate feed**
  - **commercial waste facility**
- **Some considerations:**
  - **verification sampling**
  - **storage of material**
  - **upgrade of old technology**
  - **groundwater monitoring**
  - **financial assurance**
  - **ultimate caretaker's needs**

CONSIDERATIONS IN THE NEW PART 41

★ **Why is it important to determine when the line is crossed between processing and disposal?**
- **Current guidance may not prevent "de facto" waste facilities**
- **Utah commercial waste policy is negated**
- **It is possible to establish a line**

★ **Disposal at Uranium Mills: Who should have ultimate say?**
- **Private enterprise working in conjunction with local and state governments**
- **States where facilities are to be located**
- **Federal agencies such as NRC, EPA or DOE**

- Low Level Waste Policy Act

DUAL JURISDICTION

- Can it work?
  - All parties need to work together

- The Utah experience:

  - Plateau Resources
  - Envirocare of Utah
  - Atlas Corporation
  - International Uranium

Department of Energy Viewpoint
NRC Commission Meeting
SECY Papers 99-011, 012, AND 013
June 17, 1999

The U.S. Department of Energy (DOE) has reviewed the three staff papers before the Commission. The paper on disposal of other than 11.e.(2) byproduct material in mill tailings impoundments and the processing of other than natural ores (SECY 99-012) is of greatest interest to the Department. It has been more than 20 years since the passage of the Uranium Mill Tailings Radiation Control Act (UMTRCA). DOE has learned a lot about the containment and control of tailings during the execution of the Title I program. The Department realizes that many issues have arisen about what types of materials can and can't be placed in Title II impoundments since the passage of UMTRCA. UMTRCA was enacted by Congress to deal with uncontrolled uranium mill tailings, and we believe the use of these cells should not be expanded without congressional involvement to better define the types of material that can be placed in mill tailings impoundments and the financial arrangements for long-term stewardship. Also, due to budgetary constraints, the Department is not in the position to take on more long-term care responsibility for radioactive material.

If the NRC seeks legislation (SECY 99-012, Option 3), the disposal of NARM and secondary recovery wastes in mill tailings impoundments needs to be clarified. The Department does not believe it has authority to accept non-11.e.(2) byproduct material under Section 83 of the Atomic Energy Act. The Department would not support a legislative proposal that would result in dual regulation of the completed tailings impoundment. We would also like to see the inclusion of a performance review by DOE before accepting Title II sites into long-term care so that concerns raised by the Department during the transfer process have a mechanism for resolution. The Department believes NRC should increase a long-term care fee if maintenance were to be designed into Title II reclamation plans. Options for funding the long-term care activities should also be considered.

Revision of the staff guidance (SECY 99-012, Option 2) to allow for more flexibility in using the disposal capacity of mill tailings impoundments would remove the prohibition against the disposal of non-AEA material and material regulated under RCRA, TSCA, and CERCLA. The Department would oppose disposal of these materials without congressional direction.

NRC staff characterization of the DOE/ARCO discussions regarding the Bluewater site in New Mexico is incorrect. ARCO reached agreement with EPA for disposal of TSCA contaminated tailings in a separate impoundment at the site. DOE requested an indemnification from ARCO holding the Government harmless from any PCB discharges from the site. This should not be interpreted as DOE's acceptance of "other material" with comparable chemical and radiological characteristics to byproduct material in a tailings impoundment under its Nuclear Waste Policy Act section 151(b) authority.

The papers on a rulemaking plan to create a new 10 CFR 41 that specifically addresses uranium and thorium recovery facilities (SECY 99-011) and regulation of in-situ leach facilities (SECY 99-013) deal with how licensees are regulated and are not of concern to the DOE. The licensing of uranium and thorium facilities is an NRC issue and simplified regulations should be the desired outcome. The Department, however, believes that a small quantity exemption for 11.e.(2) material should be sought; especially for analytical labs to relieve them of the regulatory and financial burdens required to perform analyses on samples of 11.e.(2) byproduct material. If the elimination of prescriptive design requirements in 10 CFR Part 40, Appendix A, is pursued in favor of performance objectives, the Department would want assurances that Title II designs would be analogous to Title I designs in terms of maintenance requirements so that long-term care costs are minimized. If not, the DOE would seek an increase in the long-term care fee.

DOE supports the promulgation of new regulations specific to evaporation pond sludges generated at In-Situ Leach Uranium Recovery Facilities. A simplified regulatory scheme and the non-proliferation of disposal cells would be positive outcomes.

DIFFERING PROFESSIONAL VIEW

SECY 99-012

USE OF URANIUM MILL TAILINGS IMPOUNDMENTS FOR THE DISPOSAL OF WASTE OTHER THAN 11e.(2) BYPRODUCT MATERIAL AND REVIEWS OF APPLICATIONS TO PROCESS MATERIAL OTHER THAN NATURAL ORES

JUNE 17, 1999

MYRON H. FLIEGEL
DIVISION OF WASTE MANAGEMENT
OFFICE OF NUCLEAR MATERIAL SAFETY AND SAFEGUARDS

PROCESSING OF MATERIAL OTHER THAN NATURAL ORE

Not clear what changes staff is recommending

- **Asks for performance based licensing of alternate feed**
- **Appears to rely on existing guidance for "processed primarily for uranium"**
- **Because of difficulty of that issue - not a good candidate for performance based licensing**

SECY 99-012 identifies recent ruling (LBP-99-5) on interpretation of "processed primarily"

- **Based only on what is removed from ore**
- **Motive for processing ore not to be considered**
- **Commission Paper takes no position on issue**

BASIS FOR 1995 STAFF GUIDANCE

Staff Briefed Commissioner de Planque on June 6, 1994

Logic Behind Alternate Feed Position

- **Allow processing alternate feed material**
- **Prevent sham processing**
- **Either is easy, combination difficult**

Staff Strategy to Accomplish Combination

- **Expansive definition of ore to allow any material to be processed**
- **Prevent sham processing by considering whether processing primarily for source material or for waste disposal**

BASIS FOR 1995 STAFF GUIDANCE cont'd

Depending on interpretation of "processed primarily" - may have to reconsider staff's 1995 strategy

Issue: Do we still want to prevent sham processing?

- **To prevent sham processing:**
  - **confirm staff's 1995 interpretation, or**
  - **revisit guidance/strategy**
- **If prevention of sham processing not of concern, guidance can be simplified**

SHAM PROCESSING CONSEQUENCES

Uranium yield

- Mills typically operated with ore containing 0.1s percent uranium
- Yielded several pounds of U per ton or ore
- Cleanup criterion for U in soil - 10 pCi/gm
- Soils contaminated above 10 pCi/gm - LLW or "alternate feed"
- Yield from 10 pCi/gm "ore" - 1 pound per 34 tons or ½ ounce per ton

SHAM PROCESSING CONSEQUENCES cont'd

Mock Mills

- **If profit is in waste disposal, mill efficiency irrelevant**

  What constitutes a mill?
  - **1 leach tank**
  - **heap leach**

Does the mill become a subterfuge to disguise a LLW disposal facility?

Resurfaces concerns and issues considered in developing the guidance

DISPOSAL OF MATERIAL OTHER THAN 11e.(2) BYPRODUCT MATERIAL

Staff's Preferred Option - Seek Legislative Change

- Need to choose between Options 1 and 2 in interim
- Recommend Option 1 - current guidance
  - No additional resources to revise guidance
  - Avoids dual regulation problems

Additional Comments on SECY 99-012

- TSCA waste (PCBs) in tailings - not good example
  - Material was 11e.(2) & transformer oil - onsite
  - NMA wants to import non-11e.(2) material

- Discussion of generic exemption to Part 61
  - Guidance could not provide - need rulemaking
  - Can include in proposed rulemaking

DIFFERING PROFESSIONAL VIEW ON REGULATION OF LIQUID EFFLUENTS FROM IN SITU LEACH FACILITIES

June 17, 1999

William H. Ford
Division of Waste Management
Office of Nuclear Material Safety and Safeguards

DIFFERING PROFESSIONAL VIEW ON REGULATION OF LIQUID EFFLUENTS FROM IN SITU LEACH FACILITIES

- The Commission should approve Option 2 (All liquid effluents are 11e(2) byproduct material)
- Option 4 is undefined (Clarification of waste classification by legislative initiative)
- If Option 4 is approved, Option 2 should be implemented until Option 4 becomes law

OPTION 1 (CURRENT WASTE CLASSIFICATION)

- Encourages onsite disposal, which
  - Increases health and environmental risks
  - Encourages creation of many small disposal sites

- May weaken NRC regulatory authority over liquid, air, and solid emissions from "conventional" and "in situ" 11e(2) byproduct facilities

- Increases confusion over the regulation and disposal of

  - liquid and solid waste
  - contaminated plant and well field equipment
  - contaminated soils

OPTION 3 (ONLY POST-ION EXCHANGE WASTES ARE 11e(2) BYPRODUCT MATERIAL)

- Has most of the same disadvantages as Option 1
- May decrease worker protection within the plant
- May unilaterally remove NRC authority over the well fields and parts of the surface facility
- May call into question NRC authority over aspects of conventional mill sites

OPTION 2 (ALL LIQUID EFFLUENTS ARE 11e(2) BYPRODUCT MATERIAL)

- NRC and industry successfully followed this approach until 1995 (>20 years)
- Encourages operators to reduce volume of radioactive waste
- Discourages creation of many small disposal sites
- Assures adequate disposal of radioactive waste
- Provides clear definition of regulatory responsibilities

OPTION 2 (ALL LIQUID EFFLUENTS ARE 11E(2) BYPRODUCT MATERIAL) (Cont'd)

- Consistent with commitments made to public in environmental impact statements and assessments

BACK-UP OVERHEADS

HISTORY OF OPTION 1 GUIDANCE

- To discharge effluents to steams and rivers a permit must be obtained from EPA. Effluent limitations for uranium would be 4 mg/L maximum for any one day and 2 mg/L average for 30 consecutive days

- 10 CFR 20 liquid release limits for uranium are 0.44 mg/L

- Licensees wanted to meet EPA standards rather than more restrictive Part 20
- Redefining NRC's regulatory authority over 11e(2) byproduct material means licensees do not have to comply with the 10 CFR 20 standard of 0.44 mg/L

HISTORY OF OPTION 1 GUIDANCE (Cont'd)

- Option 1 removes NRC regulatory authority - Part 20 compliance not required
- EPA's discharge standard assumes dilution from water in the stream before use, while 10 CFR 20 does not
- Essentially, Option 1 implies that Part 20 was too restrictive
- If staff believes that Part 20 is too restrictive, then staff should require a dose assessment or revise Part 20; not remove NRC authority over effluent releases

POLICY ISSUES IN THE URANIUM RECOVERY PROGRAM

June 17, 1999

N. King Stablein, Acting Assistant Branch Chief
Uranium Recovery and Low-Level Waste Branch
Division of Waste Management

CURRENT REGULATORY ISSUES

- Regulation of in situ leach facilities (SECY-99-13)
- Disposal of material other than 11e.(2) (SECY-99 -12)
- Processing of material other than natural ore (SECY-99-12)
- Concurrent jurisdiction

REGULATION OF IN SITU LEACH FACILITIES

- Industry view that NRC regulation of groundwater duplicative of EPA Safe Drinking Water Act
  - NRC can rely on EPA process for groundwater regulation
- Current situation limits regulation of waste to only certain parts of production cycle
  - More specific definition of 11e.(2) at ISLs to eliminate regulation of some waste by NRC
  - Regulation of much of ISL process to States under EPA authority

REGULATION OF ISLs (Cont'd)

- Rely on EPA underground injection control program
- Four options to address waste issues (through guidance revisions and finalization in rulemaking)
  - Maintain current situation
  - Classify all liquid effluents as 11e.(2) byproduct material and regulate all
  - Classify only post-ion exchange wastes as 11e.(2)
  - Clarify Waste Classification at ISLs by Legislative Initiative in Which UMTRCA Would be Amended to Classify Only Post-Ion Exchange Wastes at ISLs as 11e.(2) Byproduct Material

DISPOSAL OF MATERIAL OTHER THAN 11e.(2)* IN TAILINGS IMPOUNDMENTS

- Material under consideration includes low radioactivity wastes similar to uranium mill tailings in volume, radioactivity and toxicity
- Staff guidance on when such disposal is acceptable
- DOE hesitant to accept sites for long-term care with multiple regulators
- To avoid dual regulation, preclude non-AEA material and hazardous waste
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DISPOSAL OF MATERIAL OTHER THAN 11e.(2) (Cont'd)

- Tailings impoundments designed to provide same protection as hazardous waste disposal cells
- Required to have long-term surveillance for life of cell
- Solid Waste Disposal Act requirements apply
- NRC options to address issue:
  - Retain current guidance
  - Revise guidance to allow more flexibility in using disposal capacity of tailings cells and finalize through rulemaking

PROCESSING MATERIAL OTHER THAN NATURAL ORE

- Source of feed stock for mills now uranium-bearing materials
- Staff guidance and Presiding Officers' decisions in 1993 and 1999 are presently before the Commission
- Options:
  - Retain existing guidance
  - Modify existing guidance
  - Do away with 1993 decision to add financial test
  - Allow processing of material based on whether it meets the primarily or disposal tests

CONCURRENT JURISDICTION

- NRC given authority over non-radiological hazards along with States
- State Involvement a concern as sites near license termination

PART 41 PROPOSED RULEMAKING

- Codify regulatory framework for in situ leach facilities
- Clarify existing regulations; remove inconsistencies
- Codify criteria addressing disposal of material other than 11e.(2) and alternate feed

SUMMARY

- SIGNIFICANT CHANGES IN THE URANIUM RECOVERY INDUSTRY SINCE THE PASSAGE OF UMTRCA HAVE RESULTED IN ISSUES THAT NEED TO BE ADDRESSED IN THE REGULATORY FRAMEWORK AND WOULD BENEFIT FROM LEGISLATIVE CLARIFICATION

- STAFF HAS REQUESTED INPUT FROM COMMISSION ON HOW TO ADDRESS ISSUES

- COMPLETION OF PART 41 AND CODIFICATION OF REVISED REGULATORY FRAMEWORK WILL ENHANCE OVERALL URANIUM RECOVERY REGULATORY PROCESS

Presentation to the USNRC Commissioners June 17, 1999

by the
Fuel Cycle Facilities Forum
Presented by: David G. Culberson, Chairman

Introduction

The Fuel Cycle Facilities Forum (FCFF)[1] is pleased to be given this opportunity to support the National Mining Association (NMA) with respect to the White Paper titled "Recommendations for a Coordinated Approach to Regulating the Uranium Recovery Industry" and to comment on the two Federal Register Notices published April 12th (64FR17506 and 64FR17690). Over the past several years, the FCFF and the NMA have held joint meetings to discuss topics of common interest. This has established a continuing relationship between the two organizations and has identified several areas where a coordinated approach to regulations is appropriate.

The White Paper discusses several of these areas where the FCFF has a direct and common interest with the NMA. One of our major concerns over the years has been the decommissioning of fuel cycle facilities. In general these facilities often represent decommissioning issues that are not easily addressed by the current regulations. Such facilities can be generally characterized as facilities that are contaminated with alpha emitting radio-nuclides, such as Uranium and Thorium, and often involved substantial volumes of contaminated soils that require some form of long term disposal. The facilities included in our group include uranium enrichments from depleted Uranium up to highly enriched Uranium. In some cases the contamination also includes the progeny of Uranium and Thorium. Waste disposal costs often dominate the decommissioning costs associated with such facilities.

It is our opinion that the issues raised by the White Paper with respect to the NRC's Alternate Feed Policy and the disposal of Non-11E(2) Byproduct Materials in Tailing Impoundment Ponds can have a direct impact on the decommissioning of our fuel cycle facilities as well as other facilities throughout the country. The form of contaminated soils and soil-like materials associated with fuel cycle facilities is often very much like the same materials that are used as alternate feeds or disposed of in the mill tailing

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[1] The Fuel Cycle Facilities Forum is a voluntary group comprised of membership from companies that represent all aspects of the nuclear fuel cycle. A major effort of the group has been to actively engage in the rulemaking processes related to the decommissioning of fuel cycle facilities.

impoundment ponds. Certainly there are issues that would have to addressed such as the enrichment of the Uranium but there appear to be ways to factor in such considerations.

Let me give you a few of the specific examples of material streams that the FCFF group would have that could be applicable to consideration as alternate feeds or direct disposal in the tailings impoundment ponds.

- Soils contaminated with Uranium and Thorium. There are a number of diverse operations that can result in such contamination, not all of which are normally considered part of the nuclear fuel cycle. Recent NRC publications in the Federal Register along with the SDMP list provide adequate examples of specific situations. A general listing is as follows:
    - Depleted Uranium manufacturing facilities
    - Normal Uranium conversion facilities
    - Facilities handling NORM materials
    - Rare Earth Processing facilities
    - Zirconium manufacturing facilities
    - Depleted Uranium catalyst production facilities for petrochemical plants
    - Current and former low and high enriched Uranium fuel processors (Commercial and Government)
- Lagoon sludge, slag, ash and other soil-like materials. These may contain other rare earth elements that might also be considered a valuable component.
- Disposal of the nations stockpile of depleted Uranium currently in the form of UF6. This might be accomplished by conversion to a solid form such as a ceramic suitable for direct disposal.
- Waste streams from facilities such as metal extraction plants that contain commercially viable concentrations of natural Uranium or Thorium.

This not an all inclusive list but each category represents specific examples of actual situations represented by the FCFF. Under today's regulations each case must be dealt with on a case-by-case basis but the regulations are so narrow as to effectively exclude all of the situations listed above. In each situation it is necessary to consider the technical and economic factors to determine the suitability for use as an alternate feed or for direct disposal. It is our belief and experience that the technical and economic factors will justify such action in essentially all cases.

Although there are technical questions that must be addressed, the FCFF believes that such issues can be satisfactorily resolved. Consideration is being given to issues such as the specific radioactivity of candidate materials in comparison with current materials disposed in tailings impoundment ponds, the effect of uranium enrichment, etc. A clear NRC policy with respect to both alternate feeds and direct disposal in the impoundment ponds would provide the industry with another option for consideration in the decommissioning process with the possibility of establishing a more cost effective approach to the disposal of the large volumes of slightly contaminated materials. The

physical and radiological characteristics of the materials described above is in general similar to or more favorable than the materials currently being placed in the tailings impoundment ponds. In the specific case of radon emissions, most of the cases noted above involve processed Uranium and therefore radon emissions are not an inherent part of the radiological considerations as opposed to tailings from the processing of ores.

In summary, the membership of the Fuel Cycle Facilities Forum supports the position of the National Mining Association regarding the use of alternate feed materials and the disposal of non 11e.(2) materials as described in the White Paper and urges the NRC to take the actions proposed by the NMA.

With respect to the published final rule on "Radiological Criteria for License Termination of Uranium Recovery Facilities" (64FR17506), the approach taken by the NRC to utilize the existing soil radium standard to derive a dose criterion (benchmark approach) for the cleanup of byproduct material other than radium in soil is to be commended. This approach will establish a consistent application of radiological protection criteria across a site.

With respect to the options considered in SECY-99-012, the FCFF strongly urges the NRC not to take a position the establishes a blanket prohibition against the presence of fission and activation products (11e(1) materials) in the material to be disposed of in the tailings impoundment ponds. There are specific examples of situations where the Uranium contaminated soils contain measurable quantities of such byproduct materials (11e.(1)) by:

- natural fallout
- returned fuel where the fuel cladding is contaminated, or
- fuel that has been slightly activated from having been stored in the spent fuel pool.

In such situations the Uranium constitutes the primary isotopes of concern and the 11e.(1) materials are of insignificant concentrations. Low enriched Uranium fuel fabricators receive fresh fuel back from nuclear power plant sites for recovery or re-fabrication where the fuel has been contaminated with 11e.(1) material from having been stored in the fuel storage pools at the power plant sites. It would be impossible to certify that "no" 11e.(1) is present in Uranium contaminated soil from a site in such circumstances. Rather than a blanket prohibition, the NRC should take the approach that recognizes the primary contaminants of concern, and ignores contaminants that are present in insignificant quantities.

Specific Examples

Uranium Contaminated Soil from Fuel Manufacturing Facilities

The decommissioning of Uranium Fuel Fabrication facilities often involves large volumes of soils contaminated with enriched Uranium. In two specific cases of facilities that ceased operation in the 1960's and 1970's, decommissioning work is underway and does involve the remediation of contaminated soil. One of these cases involves an estimated volume of soil in the range of 200,000 cubic feet. The Uranium enrichment in the soil ranges from depleted to highly enriched. When the soil is collected and packaged, the enrichment of the bulk material is in the low enriched range of 3% to 7% U-235. There are also insignificant but measurable concentrations of Co-60 and Cs-137 due to the nature of some of the waste processing activities. These concentrations are in the picoCi/gram range and are above what fallout values would be in the background. The concentrations of the Uranium are in the range of 10 to 100 ppm in the soil. Disposal cost at Envirocare for this volume of soil will be in the range of $7M to $14M. Evaluation of the various options is currently underway because of the high cost of the current direct disposal option.

The presence of enriched Uranium complicates the possibility of use of such material as an alternate feed material at a Uranium recovery facility but with proper technical evaluation and licensing such considerations might be overcome. The introduction of a compatible form of depleted Uranium to downgrade the enrichment might, for example, make it feasible to consider the soil as a potential alternate feed material. In any case the nature and radioactivity of such soils would be similar to the existing tailings material and should be considered for direct disposal.

Zirconium Manufacturing Facility

The manufacture of Zirconium metal involves the processing of Zircon sand which has low concentrations of Uranium and Thorium present in the sand. This is typical of many metal recovery facilities and is not unique to Zirconium manufacturing. The concentration of Uranium and Thorium in the incoming sand is low enough that the sand is not considered "Source Material" and therefore is not subject to licensing requirements. However, during the processing steps the Uranium, Thorium and Radium are concentrated into different process streams. This requires that the facility be licensed and that the waste from certain portions of the plant be treated as low level radioactive waste. As a result, this facility is Utah's largest generator of low level radioactive waste. Due to issues with the Northeast Compact all the waste is sent to the Richland disposal site and is not eligible to be shipped to Envirocare even though the waste would meet all the license criteria for disposal at Envirocare. This results in a higher cost of waste disposal for the facility. The issue has been discussed with the state but the general feeling has been that approval of the Compact would not be forthcoming and no formal steps have been taken.

The waste streams contain varying levels of Uranium and Thorium and should be considered as a potential source as an alternate feed material to a Uranium Recovery facility. In one specific case, a side stream of material contains over 1% Uranium. In addition to the Uranium and Thorium, there are other rare earth materials present the might warrant recovery for their value. Although there are technical issues related to the use of these waste streams as an alternate feed material, the option for consideration should be opened to the facility.

In addition to those waste streams that are shipped to Richland for disposal, there are holding lagoons at the facility that include sediments which also contain Uranium, Thorium and Radium as contaminants. The volume of the sediments dominate the cost estimate to eventually decommission the site. If the sediments were to disposed at either Richland or Envirocare, the disposal cost could be in the hundreds of millions of dollars. The current approach for preparing a decommissioning cost estimate has been to evaluate the cost and acceptability of an on-site disposal cell as the basis for the decommissioning cost estimate. Such sediments also offer the potential for consideration as an alternate feed material or for direct disposal in a tailings pile and such options should be open to the facility. Another possibility has been the option of conducting an onsite processing operation that would concentrate the radioactive components into a smaller volume and leave the larger volume of chemical constituents available for recycle. The smaller concentrated volume could then be considered as an alternate feed material.

In both these cases, the radiological properties of the waste streams and the lagoon sediments are similar to what a Uranium Recovery facility would normally handle and dispose of in the tailings pile. Although specific consideration must be given to the other chemical constituents present, it is expected that technical answers are feasible and that these materials make definite candidates either as an alternate feed material or for direct disposal in a tailings pile.

Depleted Uranium Stockpiles

The current national stockpiles of depleted Uranium as UF6 also offer another possibility for consideration. It would be technically feasible to process this stockpile into a physical and chemical form suitable for direct disposal in a tailings pile. For example, the gaseous UF6 could be converted into a ceramic form. In this case it would be feasible to demonstrate that the chemical and radiological nature of the material would be similar to those materials already existing in the tailings pile. A national policy to implement such an option for disposal of the depleted UF6 stockpile should consider using the existing disposal capacity of the tailings piles.

U.S. ENERGY CORP.

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Mr. Bill Hill, Office of the Secretary
Nuclear Regulatory Commission
Washington D. C.
fx: 301.415.1672

VIA FAX

14 June 1999

RE: Support for NRC Staff Proposals for Uranium Recovery Regulatory Issues

Dear Mr. Hill:

Thank you for taking the time to read this correspondence prior to the abovementioned meeting. I will be brief.

The purpose of this letter is to notify the Commission of our support of the staff recommendations contained in SECY-99-011 and SECY-99-012. U. S. Energy Corp. is the owner and operator of the Shootaring Canyon Uranium Mill near Hanksville, UT as well as a joint venture owner of the Sweetwater Uranium Mill near Rawlins, WY....the last two uranium mills constructed in this country.

We support the non-legislative NRC Staff's recommendations that guidance for alternative feed and non-11e.(2) storage be revised. Our reasons are numerous, however the primary reasons are summarized below:

1. **Remove Current Material Exclusions.** Oversight from the NRC is, and has been, very thorough. Public safety and health has always been the driver for NRC regulation and rule making. Currently, certain radioactive materials are precluded from being processed or disposed in uranium mill facilities. The uranium industry, and Staff concur, that the prohibitions in guidance against the disposal of non-AEA, RCRA, TSCA and CERCLA materials should be removed. Processing and/or storage of these materials in a uranium mill tailings impoundment is logical as these facilities were originally designed, constructed and licensed for same. There is substantial disposal capacity available in existing uranium mill tailings facilities. Further, these facilities are subject to substantial regulations which provides protection for the public health and environment from both the radiological and non-radiological constituents.

2. **Performance Based License Amendment.** This Staff recommendation makes good sense. This recommendation is precisely what uranium mill operators do routinely with primary uranium feeds. We consider the uranium content of the material fed to the mill. The material may be blended up or down depending on the uranium content. Any recovery of uranium is a return of a resource to society. Why should alternative feeds be any different?

3. **National Security.** The proposed recommendations ultimately allow the preservation of the few remaining uranium mills in this country. At one time there were 42 operating uranium mills in the United States producing some 42 million pounds of U3O8 concentrates with the industry employing in excess of 20,000 individuals. Today, six remain and production has

dropped to less than 3.8 million pounds and employment less than 1000. However, U. S. nuclear reactors still consume 42 million pounds, the majority of which is imported. We believe that it is important for our nation and national security to maintain uranium milling capability. Staff recommendations allow the preservation and continued operation of these facilities until the uranium price improves.

4. **Avoidance of Dual Regulation.** Staff recommendations for clarifying the alternative feed and 11e.(2) issues are clear....to avoid uranium milling facilities falling under the operational and disposition guidance of more than one regulatory body. Currently, NRC provides this governance and it should stay that way.

In summary, we believe that uranium mills governance should rest entirely with the Nuclear Regulatory Commission. We applaud the NRC's efforts to clarify their position on alternative feed and non-11e.(2) material storage at uranium mills. This clarification should allow uranium mills to process and store those radioactive materials that they were originally designed and built for which follows the NRC's goals and objectives of consolidating and properly storing radioactive materials in this country.

Sincerely,

Hal Herron
V. P.

Keith Larsen
President

John L. Larsen
Chairman

Department of Energy Viewpoint
NRC Commission Meeting
SECY Papers 99-011, 012, AND 013
June 17, 1999

The U.S. Department of Energy (DOE) has reviewed the three staff papers before the Commission. The paper on disposal of other than 11.e.(2) byproduct material in mill tailings impoundments and the processing of other than natural ores (SECY 99-012) is of greatest interest to the Department. It has been more than 20 years since the passage of the Uranium Mill Tailings Radiation Control Act (UMTRCA). DOE has learned a lot about the containment and control of tailings during the execution of the Title I program. The Department realizes that many issues have arisen about what types of materials can and can't be placed in Title II impoundments since the passage of UMTRCA. UMTRCA was enacted by Congress to deal with uncontrolled uranium mill tailings, and we believe the use of these cells should not be expanded without congressional involvement to better define the types of material that can be placed in mill tailings impoundments and the financial arrangements for long-term stewardship. Also, due to budgetary constraints, the Department is not in the position to take on more long-term care responsibility for radioactive material.

If the NRC seeks legislation (SECY 99-012, Option 3), the disposal of NARM and secondary recovery wastes in mill tailings impoundments needs to be clarified. The Department does not believe it has authority to accept non-11.e.(2) byproduct material under Section 83 of the Atomic Energy Act. The Department would not support a legislative proposal that would result in dual regulation of the completed tailings impoundment. We would also like to see the inclusion of a performance review by DOE before accepting Title II sites into long-term care so that concerns raised by the Department during the transfer process have a mechanism for resolution. The Department believes NRC should increase a long-term care fee if maintenance were to be designed into Title II reclamation plans. Options for funding the long-term care activities should also be considered.

Revision of the staff guidance (SECY 99-012, Option 2) to allow for more flexibility in using the disposal capacity of mill tailings impoundments would remove the prohibition against the disposal of non-AEA material and material regulated under RCRA, TSCA, and CERCLA. The Department would oppose disposal of these materials without congressional direction.

NRC staff characterization of the DOE/ARCO discussions regarding the Bluewater site in New Mexico is incorrect. ARCO reached agreement with EPA for disposal of TSCA contaminated tailings in a separate impoundment at the site. DOE requested an indemnification from ARCO holding the Government harmless from any PCB discharges from the site. This should not be interpreted as DOE's acceptance of "other material" with comparable chemical and radiological characteristics to byproduct material in a tailings impoundment under its Nuclear Waste Policy Act section 151(b) authority.

The papers on a rulemaking plan to create a new 10 CFR 41 that specifically addresses uranium and thorium recovery facilities (SECY 99-011) and regulation of in-situ leach facilities (SECY 99-013) deal with how licensees are regulated and are not of concern to the DOE. The licensing of uranium and thorium facilities is an NRC issue and simplified regulations should be the desired outcome. The Department, however, believes that a small quantity exemption for 11.e.(2) material should be sought; especially for analytical labs to relieve them of the regulatory and financial burdens required to perform analyses on samples of 11.e.(2) byproduct material. If the elimination of prescriptive design requirements in 10 CFR Part 40, Appendix A, is pursued in favor of performance objectives, the Department would want assurances that Title II designs would be analogous to Title I designs in terms of maintenance requirements so that long-term care costs are minimized. If not, the DOE would seek an increase in the long-term care fee.

DOE supports the promulgation of new regulations specific to evaporation pond sludges generated at In-Situ Leach Uranium Recovery Facilities. A simplified regulatory scheme and the non-proliferation of disposal cells would be positive outcomes.

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June 17, 1999

N. King Stablein, Acting Assistant Branch Chief
Uranium Recovery and Low-Level Waste Branch
Division of Waste Management

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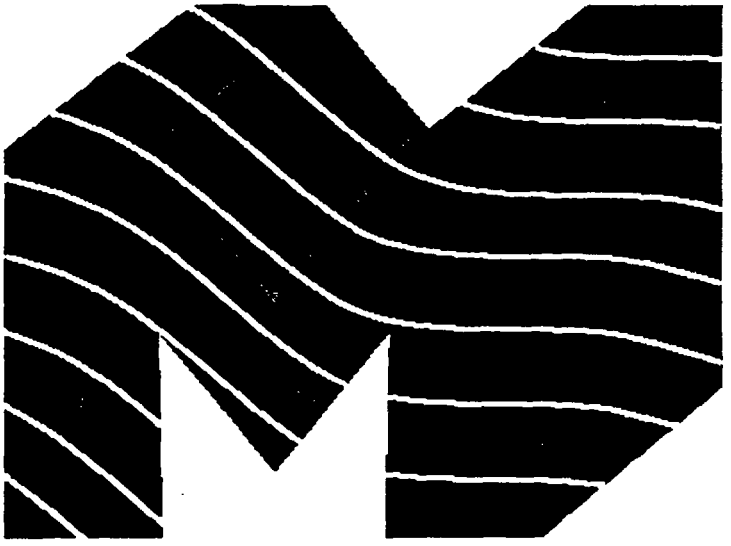
STATEMENT OF RICHARD L. LAWSON
PRESIDENT AND CEO
OF THE NATIONAL MINING ASSOCIATION
TO
THE NUCLEAR REGULATORY COMMISSION
REGARDING STAFF PROPOSALS FOR URANIUM
RECOVERY REGULATORY ISSUES
SECY PAPERS 99-011, 99-012 AND 99-013

JUNE 17, 1999



National Mining Association®

Foundation For America's Future

Good Morning, I am Richard L. Lawson, President and CEO of the National Mining Association. I appreciate the invitation to present NMA's views on the staff proposals for uranium recovery regulatory issues. I have with me Ms. Katie Sweeney, Associate General Counsel for NMA and Mr. Anthony Thompson, outside counsel for NMA to help answer specific questions regarding our presentation. We have members from the industry here as well to provide additional insights as needed.

Today, I will highlight the key points of the detailed written materials NMA submitted. Also, I do not want to repeat points made by Bill Kearney of the Wyoming Mining Association regarding the current economic state of the industry. NMA agrees, however, with the WMA assessment and the need to take the economic situation into account when looking at the impact of regulatory actions.

NMA is pleased that its White Paper has helped bring us to this point. NMA commends the Staff on the work it has done and indeed, each staff proposal makes some positive changes. However, none of the proposals go far enough to address the problems and potential solutions identified in NMA's White Paper.

NMA is particularly concerned that none of the staff proposals address non-Agreement State jurisdiction over the nonradiological components of 11e.(2) byproduct material, one of the two top issues the White Paper identified as being a priority for industry, the other being jurisdiction over ISL Wellfields.

NMA questions whether it makes sense for NRC to proceed with a Part 41 rulemaking if the concurrent jurisdiction issue is not addressed as part of that process. While a separate regulatory section may have advantages, if this jurisdictional issue is not resolved, Part 41 will only be a band-aid when surgery would be more appropriate.

NMA believes the concurrent jurisdiction issue could be properly aired during the rulemaking process. Including this issue in the rulemaking would provide the type of finality merited by this important issue. NMA requests that NRC review carefully the White Paper arguments that NRC has exclusive jurisdiction over byproduct material and that NRC needs to exercise this jurisdiction in order to facilitate site closure by eliminating dual jurisdiction.

SECY-99-011 **Draft Rulemaking Plan: Domestic Licensing of Uranium and Thorium Recovery Facilities – Proposed New 10 CFR Part 41**

Establishing a separate regulatory section for uranium recovery facilities would have some advantages. As indicated in our scoping comments last summer, we do not object to the establishment of Part 41, as long as through the rulemaking process, all the White Paper issues are raised and addressed.

SECY-99-012 **Use of Uranium Mill Tailings Impoundments for the Disposal of Waste Other than 11e.(2) Byproduct Material and Reviews of Applications to Process Material Other than Natural Uranium Ores**

Disposal Of Non-11e.(2) Material

The Commission has suggested that the staff explore ways to use mill tailings impoundment as possible disposal cells for material from other waste sites. NMA's White Paper raised the same issue by suggesting that the current staff disposal Guidance is too restrictive and unnecessarily inhibits disposal of other *similar* waste in tailings impoundments.

I think that there is a lot of agreement that it is good public policy to provide disposal options for these low-level radioactive/high volume type wastes that currently have only one possible disposal option. Even the Ad Hoc Panel report accompanying the Staff paper emphasizes that the current exclusion of *non*-11e.(2) materials is "not based on health and safety considerations." In light of the essential failure of the Compact system and the future impact of NRC's new decommissioning rules, which will likely lead to the creation of even more such wastes, now is the time to address these issues.

The Staff's recommended solution is to seek legislative change. A legislative solution would provide Congressional certainty. Pursuing legislation at this juncture, with an election year approaching, however, may not be a realistic option. Nevertheless, if the Commission decides to pursue legislation, NMA will assist NRC in that endeavor.

The Staff's fallback option is to revise the guidance with respect to "similar" waste materials, while retaining the restrictions on disposal of 11.e(1) byproduct material and special nuclear material. This option is attractive, but still too restrictive.

The White Paper suggested that the Commission consider developing for public comment some *generic criteria* with respect to materials containing SNM or 11e.(1) material to the extent the waste is *similar* in terms of radiological activity and presents no potentially significant incremental hazard to that posed by the materials already in mill tailings impoundments. This fallback option essentially ignores the suggestion of NMA's White Paper that a public airing of potential *generic criteria* for disposal of SNM or 11e.(1) in tailings piles would be useful and could lead to a strategy for addressing duplicative and overlapping regulatory requirements.

The main rationale provided for restricting the disposal of non11e.(2) material is to "reduce the potential for regulation of tailings impoundments by more than one regulatory agency." Yet, the emphasis the of the Staff Paper, Differing Professional View and Ad Hoc Panel on the problems associated with dual jurisdiction as the guiding force behind the *non*-11e.(2) policy is in absolute conflict with the position taken by the Commission staff with respect to *concurrent jurisdiction* over the *non*-radiological components of 11e.(2) byproduct material. Indeed, the total focus of these papers on the problems associated with overlapping jurisdiction

only highlights the utter folly of the Commission refusing to assert its mandate to implement and enforce UMTRCA through its permitting process, presumably to the exclusion of others including EPA and non-Agreement States.

The dichotomy between the concerns associated with overlapping jurisdiction and its potential adverse impacts on the of transfer Title II sites to DOE and the legal staff's policy on federal preemption over *all* 11e.(2) byproduct material (which includes both radiological and *non*-radiological components in a single definition) is highlighted by a recent NRC/DOE protocol on License Termination and Site Transfer. In that protocol NRC states:

> "The NRC agrees that it will not terminate any site-specific license until the site licensee has demonstrated that *all* issues with state regulatory authorities have been resolved."*(emphasis added).*

The Commission's failure to assert federal preemption over *all* components of "AEA 11e.(2) byproduct material is leading to the very thing that the Staff Paper says must be avoided – *non*-agreement state review of NRC approved reclamation plans.

As the Ad Hoc Panel points out, the Staff Paper makes no attempt to discuss a strategy of dealing with potential duplicative and overlapping regulation through possible memoranda of understanding with relevant state or federal agencies, and, notes that the rulemaking process would provide a process for thorough ventilation of these issues as well as the *federal preemption* issue raised in the NMA White Paper.

Use of Alternate Feed

NMA's White Paper suggests that the economics of a licensee's decision to process alternate feeds is not within NRC regulatory jurisdiction, which is limited to the potential health and safety impacts of such processing. The Staff Paper seeks guidance from the Commission either to propose legislative changes or to allow modification of the guidance to include criteria for a licensee to provide certification that the material is or will be processed primarily for its source material content.

The new criteria would allow the licensee to demonstrate that the material can be disposed of directly in the tailings impoundment without further processing as sufficient justification for processing it. The licensee can provide justification on "any other basis of equivalent capability to make the demonstration." The financial considerations test would be retained "if the licensee chooses to use that basis."

The retention of the financial test ignores the legislative history of UMTRCA and Commission statements, which suggest that a licensed uranium mill's primary purpose is, by *definition*, to process for feed for its source material content. In effect, by seeking and obtaining

a uranium milling license, the licensee has stated its *intent* to process primarily for source material content.

The alternate feed paper fails to address UMTRCA, its legislative history and Commission statements in the record indicating that the word "*primarily*" differentiates between uranium recovery at licensed fuel cycle facilities whose primary purpose is to process for source material, and thereby create 11e.(2) material and *secondary* or *side stream* uranium recovery at other types of mineral recovery facilities. At those facilities uranium recovery is not the *primary* purpose of the recovery facilities processes, and 11e.(2) material is not created. The Guidance was intended to ensure that processing alternate feeds results in the creation of 11e.(2) material. It was not intended to require an inquiry into the economic motivations of the processor.

SECY-99-013 **Recommendations on Ways to Improve the Efficiency of NRC Regulations at *In Situ* Leach Uranium Recovery Facilities**

NMA agrees with WMA regarding the Staff paper on ISL jurisdiction but I have one additional point. While the paper contains recommendations that will eliminate some aspects of the dual regulation of ISL wellfields, the paper does not answer the question of why NRC is asserting jurisdiction over the wellfields. NMA's White Paper questioned NRC jurisdiction over the underground aspects of ISL facilities. The Staff paper starts on the "fifty-yard line" and is devoid of any discussion of the bases for NRC's jurisdiction in the wellfield. This paper cannot be considered complete without an analysis of NRC's jurisdictional bases.

Thank you again for inviting us here today.

NMA'S BRIEFING PAPER REGARDING NRC STAFF PAPERS AND ATTACHMENTS RE: DRAFT RULEMAKING PLAN: DOMESTIC LICENSING OF URANIUM AND THORIUM RECOVERY FACILITIES PROPOSED NEW 10 C.F.R. PART 41; USE OF URANIUM MILL TAILINGS INPOUNDMENTS FOR DISPOSAL OF WASTE OTHER THAN 11e.(2) BYPRODUCT MATERIAL; AND REVIEWS OF APPLICATIONS TO PROCESS MATERIAL OTHER THAN NATURAL URANIUM ORES-SECYS 99-011, 99-012

National Mining Association®

Foundation For America's Future

I. INTRODUCTION

The National Mining Association ("NMA") presented its "Recommendations for a Coordinated Approach to Regulation of the Uranium Recovery Industry: a White Paper" ("NMA White Paper" or White Paper") to stimulate strategic thinking about conflicting and confusing regulatory requirements in the context of the future of the uranium recovery industry including additional uses for conventional mill tailings operations and decreased regulatory oversight of *in situ* leach ("ISL") uranium recovery operations. The NMA White Paper addressed a number of specific topics including the use of uranium mill tailings impoundments for the disposal of other than 11e.(2) byproduct material, restrictions on the acceptance of alternate feed materials for processing at conventional uranium mills, overlapping and duplicative regulation at ISL facilities and the problems caused by NRC's failure to assert federal preemption over all aspects of regulation of 11e.(2) by product material. At least partly in response to the NMA White Paper and ongoing dialogue with the uranium recovery industry, NRC Staff began consideration of a separate regulatory section, namely 10 C.F.R. Part 41, to deal solely with the domestic licensing of uranium and thorium recovery facilities.

The NRC Staff has presented a draft rulemaking plan ("DRP") to the Commission seeking guidance with respect to some of the issues raised in the White Paper, other issues raised during public hearings on a potential Part 41, and issues raised in individual licensing activities. The DRP suggests that implementing 10 C.F.R. Part 40 over the years, and particularly in the last few years, has led to the conclusion that "revisions are necessary to correct problems that are detracting from a consistent and effective regulatory program." In essence, the Staff appears to believe that a thorough ventilation of some of the controversial issues presented in the White Paper and others generated by an advanced notice of proposal rulemaking or a rulemaking

proposal will provide valuable information and insight into a potential new Part 41 regulatory program. A program that will be designed to more specifically address the regulatory issues associated with ISL facilities in particular and the disposal of *non*-11e.(2) material in tailings piles and processing of alternate feed materials at conventional uranium mills. The Staff proposal would, at the same time, streamline the provisions of current Part 40 appendix A that are primarily relevant to conventional uranium mills based on this same experience.

NMA has stated that it does not necessarily oppose a new Part 41 rulemaking proceeding to address the issues noted above. NMA maintains a new Part 41 can be worthwhile as long as it preserves the fundamental flexibility and performance orientation of Appendix A while modifying parts which are either irrelevant or inappropriate for conventional mills. However, as discussed in detail below, NMA has concerns with each of the staff recommended positions on three White Paper issues: disposal of non11e.(2) material in tailings piles; the use of alternate feed; and jurisdiction over ISL wellfields. In addition, NRC has yet to release any draft papers/positions on one of the two critical jurisdictional issue raised in the White Paper: concurrent jurisdiction over the nonradiological components of byproduct material. NMA questions whether it makes sense for NRC to proceed with a Part 41 rulemaking if the concurrent jurisdiction issue is not addressed as part of that process. While a separate regulatory section for uranium recovery facilities may have advantages, if this jurisdictional issue is not resolved, Part 41 will only be a band-aid when surgery would be more appropriate. NMA would like to continue to work with NRC to ensure that any rulemaking developed focuses on fostering a regulatory climate that enables an already beleaguered industry to survive and at the same time promote NRC's mission to protect human health and the environment. Additionally, NMA notes that the scope of any new regulations addressing ISL mining will depend heavily upon NRC's

decision regarding withdrawal from active oversight of ISL well fields. With respect to an new regulations addressing alternate feeds and *non*-11e.(2) byproduct material, the sooner that mill tailings facilities can take more alternate feeds and dispose of more types of waste without long regulatory delays the sooner the public interest will be served by more cost effective disposition of wastes that are effectively being stored indefinitely now.

II. DISPOSAL OF WASTE OTHER THAN 11e.(2) BYPRODUCT MATERIAL AND VIEWS OF APPLICATIONS TO PROCESS ALTERNATE FEEDS.

A. Disposal of *non*-11e.(2) by product material

1. Staff Papers

The Staffs' *non*-11e.(2) paper notes that the Commission in Direction Setting Issue 9 (Option 7) of its Staff Requirements Memorandum (SRM) dated March 31, 1997, suggested that the Staff explore ways to use mill tailings impoundments as possible disposal cells for material from other waste sites. The Staff Paper also notes that the White Paper has directly raised the same issue by suggesting that the current Staff Guidance on the disposal of *non*-11e.(2) material is too restrictive and unnecessarily inhibits disposal of other *similar* waste materials in tailings impoundments.

The White Paper also suggests that it is good public policy to provide disposal options for these low-level radioactive/high volume type wastes that currently have only one possible disposal option. In light of the essential failure of the compact system and the future impact of NRC's new decommissioning and decontamination ("D&D") rules, which ultimately will lead to the creation of even more such wastes that will require new cost effective disposal options, now is the time to address these issues including the controversial aspects thereof.

The Staff paper indicates that the primary purpose of the non-11e.(2) guidance is to "reduce the potential for regulation of tailings impoundments by more than one regulatory agency." For example, the paper indicates that disposal of *non*-11e.(2) material in tailings impoundments could "create dual jurisdiction of the impoundments by NRC and the state. This would allow the state an opportunity to require changes to NRC-accepted final tailings stabilization and remediation plans." *See* Staff paper at 3, 6. The report of the Ad Hoc Panel ("AHP") echoes the Staff paper with respect to the purpose of excluding *non*-11e.(2) materials and further noting that the exclusion is "not based on health and safety considerations."

The Staff paper further observes that the overlap with respect to "*e.g.* the final design for the reclamation and long term stabilization of mill tailings" could lead to associated additional regulation which could decrease the viability of this approach. *Id.* At 6. The Differing Professional View ("DPV") voices the concern that additional resources of both the Department of Energy ("DOE") and NRC could be required to address these kinds of conflicts.

The Staff paper further indicates that the Uranium Mill Tailings Radiation Control Act of 1978 ("UMTRCA") "contains elements supporting the view that Congress intended the dual regulation of these sites to be avoided." Senator Randolph, during discussions on UMTRCA, stated that: "standards and requirements under the amendment of [UMTRCA] will be implemented and enforced by the Commission through its permitting process." As a result, he noted there will be no Environmental Protection Agency ("EPA") permitting under the provisions of the Solid Waste Disposal Act. *Id.* At 4. Finally, the Staff Paper discusses DOE's concerns with regard to taking sites for long term custodial care where there are overlapping and duplicative regulatory requirements imposed or potentially imposed by either EPA or individual states. Thus, the paper notes that to broaden or to relax the requirements or the guidance with

respect to the disposal of *non*-11e.(2) material would require substantial DOE involvement and approval since section 151(b) of the Nuclear Waste Policy Act does not *require* DOE to take radioactive waste materials but rather *allows* DOE to take such materials. In contrast DOE is required to take 11e.(2) byproduct by UMTRCA. *See* AHP p.4, fn. 11.

The Staff Paper presents the following options to the Commission.

(1) essentially retain the current policy as is;

(2) revise the guidance with respect to "similar" waste materials containing primordial elements, retain the restrictions on disposal of 11.e(1) byproduct material (11e.(1)) and special nuclear material ("SNM") so that no fission or transuranic materials would be allowed. Remove the requirement for Compact approval to the extent that it is not legally required;

(3) Propose legislation to solve the problem. (The DPV endorses the legislative approach and provides a proposed fix of its own.)

2. NMA Comment:

For the reasons stated in the White Paper, Option One is not satisfactory to NMA. NMA has concerns about Option Three, as it may prove impossible to get Congress to address this issue so close to the Presidential election. If the Commission decides to proceed with the legislative option, however, NMA will assist in any way it can.

With regard to Option Two, while more attractive than Option One, it continues to be too restrictive. The White Paper suggests that the Commission consider developing for public comment some *generic criteria* with respect to materials containing SNM or perhaps even

11e.(1) material to the extent the waste is *similar* in terms of activity and presents no potentially significant incremental hazard to that posed by the materials already in mill tailings impoundments. In this vein, NMA suggests that materials containing traces of transuranics or fissionable materials in clearly identified *de minimis* quantities not be prohibited from being placed in 11e.(2) byproduct material tailings impoundments.

Evaluation of appropriate *generic criteria* could consider radioactivity limits (*e.g.* the 1980 Branch Technical Position ("BTP") would have permitted burial of up to 2,000 picocuries per gram of enriched or depleted uranium under certain circumstances, which included restrictions on site use. Recognizing that BTP was based on a different dose limit than the current 100 milliren standard, the BTP analytical protocol still provides a starting point for considering what levels of SNM could appropriately be placed in tailings piles.) Many of these materials would not have any significant radon component, which has been identified by both EPA and NRC during the development of the rules applicable to uranium mill tailings facilities as the primary potential public health threat. Other considerations could be physical form, moisture content, and solubility of the radionuclides or compounds containing radionuclides and transportation issues.

The Staff paper therefore, is deficient in essentially ignoring the suggestion of NMA's White Paper that a public airing of potential *generic criteria* would be useful and could lead to a strategy for addressing duplicative and overlapping regulatory requirements. In addition, the AHP points out that the Staff paper makes no attempt to discuss a strategy of dealing with potential duplicative and overlapping regulation through possible memoranda of understanding with relevant state or federal agencies, and, notes that a comment period on an advanced notice of proposed rulemaking, proposed rule or a proposed policy would provide a process for

thorough ventilation of these issues as the White Paper suggests. The AHP also suggests that the Commission investigate the *federal preemption* issue which is raised in the White Paper with respect to overlapping and dual jurisdiction and that the Staff should provide a legal analysis indicating whether or not Compact approval for disposal of such materials would be legally required. NMA agrees with the AHP that these are deficiencies in the Staff paper.

NMA also would like to point out that the Staff paper, DPV and AHP papers emphasize many times that avoiding the problems associated with overlapping duplicative, jurisdiction is the guiding force behind the *non*-11e.(2) policy. These papers, therefore, are in absolute conflict with the position taken by Commission staff with respect to *concurrent jurisdiction* over the *non*-radiological components of 11e.(2) byproduct material. Indeed, the total focus of the staff, DPV and AHP papers on the problems associated with overlapping jurisdiction only highlights the utter folly of the Commission refusing to assert its mandate, as stated by Senator Randolph, to implement and enforce UMTRCA through its permitting process, presumably to the exclusion of other potential regulatory entities such as EPA and non-Agreement States. There exists a dichotomy between (1) the virtual paranoia associated with overlapping jurisdiction and its potential adverse impacts on the transfer of Title II sites to DOE manifested in these papers, and the *Dawn Mining* case, and (2) the Commission Staff's policy of not asserting federal preemption over *all* 11e.(2) byproduct material (which includes both radiological and *non*-radiological components in a single definition). This dichotomy is highlighted by the NRC/DOE protocol entitled "License Termination/Site Transfer Protocol Between U.S. Department of Energy and the U.S. Nuclear Regulatory Commission." In paragraph four of that protocol NRC states:

> "The NRC agrees that it will not terminate any site-specific license until the site licensee has demonstrated that *all* issues with state regulatory authorities have been resolved."*(emphasis added).*

The Commission's failure to assert federal preemption over *all* components of AEA 11e.(2) byproduct material is leading to the very thing that the Staff paper says must be avoided: *non*-Agreement State review of NRC approved reclamation plans. With the new fee proposal, the increased Staff time necessary to address these problems noted in the DPV will further burden the uranium recovery industry. Add to this the fact that uranium recovery licensees are paying for Agreement State oversight and the Commission's failure to fulfill its statutory responsibilities becomes even more egregious.

B. Alternate Feed Guidance.

(1) Staff Papers.

The Staff Paper on the processing of alternate feed materials discusses the current guidance requirements wherein a licensee may provide certification, supported by a justification based on either the high uranium content of the material, financial considerations or other factors, that the material is being processed "primarily for its source material content." The Staff paper further indicates that the criterion which includes financial considerations to support the milling of alternate feed is based on "an order from the presiding officer (PO) in a 1983 hearing," involving Staff approval of Umetco Minerals Corporation's application to test alternate feed material for possible processing at the White Mesa Mill near Blanding, Utah. *See* Staff paper at 7.

The Staff paper suggests that while the PO's order did not overturn the Staff's approval of Umetco's application, it did discuss the PO's concerns with the Staff's review including "a need

to examine the economic factors of a licensee's request to process alternate feed materials." This review of economics "would help ensure that mill licensees were not trying to sidestep other licensing requirements by processing materials simply *to change its legal definition.*" *Id.* At 8. The State of Utah had argued in that proceeding that processing material for a fee that could not be processed profitably without the fee would in effect be simply processing the material to attempt to change its legal definition and would result in *sham disposal* that should not be tolerated by the Commission.

The State of Utah continues to advocate this position at the current time suggesting that by processing materials that, in and of themselves, are not profitable based solely on the uranium content of the material being processed is waste disposal that is, or should be, subject to waste disposal regulatory requirements including state siting and gubernatorial approval requirements. The DPV essentially adopts the position of the State of Utah on this matter. *See* DPV at pp. 4-5.

NMA's "White Paper" suggests that the economics of a licensee's decision to process alternate feeds, as with conventional ores, is not within NRC regulatory jurisdiction, which focuses on the potential health and safety impacts of such processing.

The Staff Paper then reports on the decision of the PO in a case involving International Uranium (USA) Corporation ("IUC") in which the PO rejected Utah's position based on language in the Atomic Energy Act ("AEA") which defines by-product material, as "the tailings or waste produced by the extraction or concentration of uranium or thorium from *any ore* processed *primarily* for its source material content" (emphasis added). The PO ruled that "*primarily*" does not refer to a test of *motive* or *purpose* but rather to what is removed from the material being processed. Therefore, the PO found, "if source material is removed from the

alternate feed material in a uranium milling process, it meets the primarily test." The Staff Paper notes that this case is currently on appeal to the Commission.

The Staff Paper seeks guidance from the Commission either to propose legislative changes or to allow it to modify its guidance to include criteria for a licensee to justify certification that the material is or will be processed primarily for its source material content. The new criteria would allow the licensee to demonstrate that the material can be disposed of directly in the tailings impoundment without further processing, which in accord with the *reasoning* of the "co-disposal test," assures that it is indeed being processed primarily for its source material content. The licensee can provide justification on "any other basis of equivalent capability to make the demonstration". The financial considerations test would be left in "if the licensee chooses to use that basis."

(2) NMA Comment:

The Staff paper, the DPV and the AHP paper are all deficient in the same fundamental respect. These papers all fail to mention IUC's May 9, 1998 Petition for Reconsideration of the Nuclear Regulatory Commission's "Final Position and Guidance on the Use of Uranium Feed Material Other Than Ores" which the Commission indicated it would take up in conjunction with a potential Part 41 rulemaking. The paper also fails to address the arguments made by IUC in its brief in opposition to the State of Utah to the PO on which the PO based his opinion rejecting Utah's position. As a result, the current discussion of alternate feed guidance has essentially passed the paper (as well as the other Staff papers) by as the paper does not address all of the issues raised that are currently before the Commission for consideration.

Notably, the paper does not discuss the requirements of UMTRCA and its legislative history as they relate to the primary focus of UMTRCA, which was the creation of 11e.(2) by-product material, which in turn is the primary focus of NRC's uranium mill tailings regulatory program. Further, the paper fails to take into consideration the fact that the Staff's current guidance or any future guidance or rules that fail to adequately take into account UMTRCA and its legislative history are subject to challenge for failure to recognize Congressional intent.

The IUC Petition and briefs on file with the Commission in the IUC matter demonstrate that the legislative history of UMTRCA and numerous Commission statements make it plain that the definition of *ore* necessarily must be tied to the definition of 11e.(2) by-product material. NRC has clearly stated its concern that the definition of 11e.(2) by-product material and the Commission definition of ore be co-extensive so that no waste streams generated at uranium recovery facilities would *not* be considered 11e.(2) by-product material. In view of the concerns about long term controls over uranium mill tailings that prompted passage of UMTRCA, NRC wanted to assure that "all" wastes from processing source material at uranium mills would be 11e.(2) material and would not be either orphan waste or subject to dual regulatory jurisdiction.

The legislative history of UMTRCA and Commission statements suggest that a licensed nuclear fuel cycle facility's (*i.e,* a uranium mill's) primary purpose is *by definition* to process feed for its source material (*i.e.* uranium or thorium) content. In effect, by seeking and obtaining a uranium milling license, the licensee has stated its *intent* to process primarily for source material content. Otherwise, why on earth would any entity take on all of the stringent ongoing oversight of operations and the significant long-term liabilities associated with final disposal of uranium mill tailings. The three papers utterly fail to address Commission statements in the record that indicate that the word "*primarily*" was intended to differentiate between uranium

recovery at licensed nuclear fuel cycle facilities whose primary purpose is to process for source material content and *secondary* or *side stream* uranium recovery at other types of mineral recovery facilities (*e.g., c*opper, molybdenum and phosphate) wherein uranium recovery is not the *primary* purpose of the recovery facilities' processes.

IUC has suggested that this creates a *presumption* that when a uranium mill licensee is processing conventional or alternate feed materials and is extracting uranium (or reasonably expects to extract uranium) the licensee is processing *primarily* for its source material content. IUC understands concerns about sham processing to merely attempt to change the legal definition of a waste material, thus, the presumption, as with most presumptions under the law, is rebuttable. IUC's definition of *sham processing* is when a licensee runs materials through the mill in an attempt to create 11e.(2) by-product material without any expectation of, any effort to, and does not actually recover any uranium. IUC further suggests that if it is proper for other mineral recovery activities to have secondary purposes (such as a *side-stream* uranium recovery) why is the logic not equally applicable to a uranium mill licensee. A mill licensee's primary purpose is to process for source material content but it can have multiple secondary purposes including *secondary* or *side stream* mineral recovery of such things as tantalum, niobium or vanadium as has been the case at the White Mesa Mill. And why not other types of secondary purposes such as a recycling fee, since recycling represents good public policy and all recycling costs money.

Finally, the Staff paper's description of the PO's *order* in the Umetco case and the Staff's apparent response to it during the development of the alternate feed guidance represents a serious overreaction to the PO's decision. The PO does not require an economic test but rather suggests

as dicta , that it might be helpful. As a result, the PO's decision should never have had the impact that it apparently did.

In sum, the Staff's paper while interesting, is essentially out-dated and therefore, inadequate.

III. RECOMMENDATIONS ON WAYS TO IMPROVE THE EFFICIENCY OF NRC REGULATION AT IN SITU LEACH URANIUM RECOVERY FACILITIES.

1. Staff Paper

In its discussion of the background of this Staff paper, the White Paper is cited with respect to its concerns about NRC's jurisdiction over groundwater protection at ISL facilities as well as problems with Staff treatment of the discharge of liquid effluent from such facilities. The Staff paper indicates that historically NRC has imposed conditions on ISL operators to ensure groundwater quality is maintained during licensed activities and that actions are taken to ensure the restoration of groundwater quality before the license is terminated. The Staff paper discusses how a licensee must obtain underground injection control (UIC) permits from EPA or EPA-authorized states before uranium recovery operations can begin. The paper also notes that NRC routinely incorporates groundwater protection limits from a state's permitting program into specific license requirements and routinely accepts specific methodologies and guidance developed by EPA for groundwater monitoring programs and well construction. *See* Staff paper at 2-3.

The Staff paper indicates that the industry's preferred approach is for NRC to determine that it does not have jurisdiction in the well field. The Staff paper, however, concludes:

> NRC's position on its authority and jurisdiction over ISL well fields is that NRC does have jurisdiction over groundwater in the wellfield.

The paper reports that NRC's Office of General Counsel (OGC) has concluded that the Commission could exercise its *discretion* to rely on UIC permits and UIC oversight by EPA or EPA-authorized states for the protection of groundwater. NRC would still retain jurisdiction over the wellfield and groundwater under its AEA authority but would simply defer active regulation to EPA or the states. OGC further recommended that the Commission address this in an memorandum of understanding (MOU) with EPA and/or complete a rulemaking before changing the agency practice in order to provide an appropriate technical legal rationale for changing in its previous practices and guidance.

The Staff paper goes on to discuss its effluent disposal guidance and indicates that the Staff took a narrow view of the definition of 11e.(2) by-product material and differentiated between various waste waters generated during ISL operations on the basis of their origin and whether uranium was extracted for its source material content during that phase of the operation. As a result, the Staff determined that waste generated during restoration activities would not be considered 11e.(2) by-product material since they do not satisfy the definition. The Staff paper further states, however, that recognizing this distinction between waste waters has created a potential conflict with the Commission's *non*-11e.(2) policy. In the past restoration and production wastes were commingled in radium settlement ponds and as a result, have been placed in 11e.(2) tailings piles. The distinction in the effluent guidance would require licensees to either separate the two-waste streams or be able to demonstrate with reasonable justification which waste stream was *predominant* in any sludges generated. Thus, the Staff concludes that if the current interpretation is retained that any such commingled wastes put into 11(e)(2) piles

prior to the adoption of the 11(e)(2) effluent guidelines would have to be *grandfathered* as 11e.(2) by-products/material.

The Staff Paper suggests several options:

(1) Continue the current policy, which the Staff suggests is essentially coequal to EPA's policy as expressed in its UIC regulations. Staff does, however, note that restoration sludges would be a radioactive waste that would be subject solely to state jurisdiction as NORM and possibly could generate a disposal problem.

(2) Treat all of the waste stream liquid effluent from both production and restoration operations as 11e.(2) byproduct material which would in some sense be consistent with certain past practices.

(3) Attach NRC jurisdiction at ISL facilities after the ion exchange ("IX") unit and focus NRC's regulatory oversight on radiation protection leaving oversight of both production and restoration bleed wastes to states as NORM. Again, the Staff raises some concerns about the potential radiological impacts of such wastes by suggesting that if they were of the same volume as mill tailings they would pose the same potential hazards, however, they neglect to indicate that they are not remotely like uranium mill tailings and do not pose anything like the level of potential hazard.

The DPV's and the AHP discuss retention of authority over all effluent and, in particular, all production bleed since the production bleed comes after the IX column wherein uranium is extracted. One DPV suggests that groundwaters contaminated by processing are 11e.(2) material and notes that the current guidance raises questions about authority to require restoration if the restoration fluids are not 11e.(2) by-product material. The DPV suggests that both waste production and restoration streams are the result of uranium extraction and, therefore, both should be considered 11e.(2) by-product material. The AHP raises the issue in a slightly different context by questioning whether the bleed is primarily for concentrating uranium or for protecting groundwater. If it is for concentrating uranium, then the contaminated waste water would be 11e.(2) by-product material. The joint DPV suggests that the Staff effluent quidance's assumption that restoration fluid does not satisfy the definition of 11e.(2) by-product material has

no basis and is not explained and, further, suggests that the statement that Option two is more consistent with EPA's UIC regulations is incorrect.

2. NMA Comment.

The Staff paper on improving the efficiency of NRC regulation at ISL facilities is totally inadequate and fatally flawed in that it fails to consider the fact that NRC lacks jurisdiction over ISL wellfields. *See* NMA White Paper; Letter from Anthony Thompson to Malcolm Knapp (March 10, 1994); Letter from Malcolm Knapp to Anthony Thompson (June 2, 1994). The Staff paper merely states in conclusory fashion that NRC believes it has jurisdiction without further explanation. This is a totally inadequate response to any kind of serious comment such as those provided by both the NMA White Paper and the letter from Anthony Thompson.

In essence, the Staff, DPV and AHP Papers are similarly flawed as they also do not address the full scope of the problem as delineated by the most current information. In effect, the Staff Paper starts on the 50 yard line and therefore, does not provide the full context in which the issue must be addressed. The Staff, DPV and AHP discussions are reasonably coherent if one assumes or accepts the NRC's initial assumption in asserting jurisdiction over ISL well fields that ISL mining is the functional equivalent of milling underground. For example, without making that basic assumption, the DPV's argument that all contamination is caused by the extraction of the uranium from the well field and, therefore, all fluids including restoration fluids would be 11e.(2) does not carry the same weight because if one assumes that it is mining in the well field the statement is incorrect.

The statement that a change in the policy can be supported by going through rulemaking, while procedurally sound, fails to discuss in any meaningful fashion the fact that if the

Commission has no jurisdiction in the first place, changing the policy is no problem. Lack of jurisdiction is something that cannot be cured any other way than by acknowledging it.

The Staff paper correctly reflects the kind of problems that the effluent guidance has caused with respect to having to "*grandfather*" pre-existing shipments to 11e.(2) impoundments and having to develop the *predominance* test with respect to facilities where fluids from restoration and processing have been mixed.

The abject failure of the Staff paper to consider the NMA's assertion that ISL mining is not the functional equivalent of milling underground results in NRC ignoring important definitions in the AEA or in NRC regulations. First, NRC, and its predecessor the AEC, has no jurisdiction over source material until it is removed from its place in nature in accordance with the AEA. Second, licenses are not required for source material quantities that are considered unimportant by the Commission. Therefore, to the extent that uranium in an ISL mining operation has not reached the surface (*i.e.*, removed from its place in nature) and has not reached a concentration of 0.05% or greater, it is not subject to NRC jurisdiction. The Staff Paper similarly fails to address the Commission's attempt to boot-strap jurisdiction over ISL wellfield operations by suggesting that its National Environmental Policy Act (NEPA) responsibilities, and the potential groundwater impacts are so closely related to the surface uranium extraction activities provide NRC with the authority and the responsibility to protect groundwater. As NMA has pointed out in the White Paper relying on NEPA for some additional grant of jurisdiction to NRC is legally unsound. NEPA is a procedural statute and provides no grant of jurisdiction. The Commission maintained the same sort of posture with respect to its authority to regulate uranium mill tailings after milling operations ceased but abandoned that in favor of

legislative definition that was subsequently created for NRC control over 11e.(2) by-product material.

The DPV's and AHP discuss the question of whether or not the production bleed should be considered 11e.(2) byproduct material because it comes into the process after the IX columns where uranium is taken out of the mine water. That discussion may make some sense if one accepts the assumption that it is not mining that is going on in the wellfield, but rather milling. On the other hand, if one makes the assumption that it is mining, then the bleed becomes a part of the mining cycle by inhibiting the build-up of contaminants so that the mining activity can be as efficient as possible in the same way that in surface or underground mines waste material is and removed so that the focus of production activities can be on the ore. ISL mining brings in native groundwater from outside the mining zone to assist in this process. That water should be viewed similarly to water in underground uranium mines, which goes to the voids created by the mining activities and which then must be pumped from the mine and run through an IX facility and radium settlement pond before release under an NPDES permit.

The final DPV which includes the comments of two individuals, suggests that the Staff Paper's conclusion that the current alternative is more consistent with EPA UIC regulations is not correct is itself absolutely and completely incorrect. The Staff paper is correct. The EPA UIC regulations do distinguish between process and restoration fluids. Process fluids cannot be released under an NPDES permit and restoration fluids can.

Finally, the suggestion that NRC defer to EPA regulations since it regularly accepts EPA authority (See also Preamble to Part 51 regarding accepting EPA determinations with respect to water assets under the Clean Water Act) and then to retain jurisdiction is a very poor

compromise that will lead to ongoing problems. The same kind of problems that the gerryrigging (i.e., predominance test) that was required to address the problems created by the effluent quidance has created. Retaining jurisdiction will be an open invitation to those who would object to a particular project to seek intervention from NRC as a result of alleged failures by EPA or EPA-authorized states. NRC should get out of wellfield regulation because it does not belong there under the AEA.

Comments on Draft Rulemaking Plan for New 10 CFR Part 41: Domestic Licensing of Uranium and Thorium Recovery Facilities. (SECY-99-011, -012, and -013)

Agreement State Comments

Additions to the Existing Regulations

1. Regulations for in situ leach facilities are necessary to codify acceptable standards for the operation and decommissioning of in situ facilities.

We would agree with the position that NRC and its Agreement States should develop uranium rules which do not overlap with EPA's UIC program responsibilities, except that, environmental assessments would still address groundwater issues as needed in an overall evaluation of the impacts on human health and safety.

2. Addition of regulations for disposal of other material in tailings impoundments.

We would agree that alternate materials could be disposed in an 11e.(2) impoundment as long as the material is similar chemically and physically to 11e.(2) and contains uranium and/or thorium. This seems to be acceptable because usually only small volumes are disposed and the monitoring established for tailings impoundments are based on background concentrations developed for uranium and/or thorium.

3. Criteria for construction of 11e.(2) byproduct material disposal cells.

Agree with proposal to update criteria for 11e.(2) disposal cells.

4. Regulations for processing alternate feed material.

We would agree that alternate feed material must (1) satisfy qualifications for an ore, (2) not contain any listed hazardous material, and (3) be processed for its source content.

5. Operational flexibility provision for permitting performance-based licensing.

We do not agree in total. We would still want to review all changes proposed by a licensee.

6. Requirement for standby trust.

We agree with this approach. For example, the State of Texas has the Radiation Perpetual Care Fund which accomplishes the function of a standby trust, whereby funds and security instruments held in that fund are readily available for use by the Texas Department of Health should the need arise.

7. Addition of general license provision for 11e.(2) byproduct material.

We do not agree. Possession of 11e.(2) material should still be fully licensed.

Deletions from the Existing Regulations

8. Deletions of prescriptive site and design requirements.

Any update of Appendix A should retain requirements for siting and prohibition of maintenance in the long-term design. Siting of 11e.(2) disposal cells should follow the kind of criteria set down for low-level waste disposal cells. Long-term performance for 11e.(2) waste cells should be based mostly on site characteristics and not be dependent on engineering features and maintenance.

Modifications and Clarifications to Existing Regulations

9. Clarify the meaning of 11e.(2) byproduct material as it relates to ISL uranium recovery facilities.

We would agree with the option that all liquid effluents in an ISL process should be considered as 11e.(2) material. ISL recovery operations are conducted by recirculating a flow of lixiviant fluid through an ore-bearing formation. Circulating lixiviant fluid is recharged with oxygen and bicarbonate, and stripped of uranium carbonate anions once per circuit. (Beneficiation begins when U^{+4} bound to the surface of the ore material is dissolved by oxidization to U^{+6} which then forms a carbonate anion complex in solution. Uranium carbonate anions are removed from the lixiviant by anion exchange.) As lixiviant leaves the ore formation, it carries dissolved uranium, uranium decay products, and other dissolved species to the surface. Sludges from this process which are accumulated in holding ponds, contain radium and would be considered 11e.(2) material. Considerable amounts of radium mobilized during the source recovery stage remain dissolved in the circulating lixiviant even into the restoration phase. Thus, circulating fluid in an ISL facility would contain 11e.(2) at all stages of the process. Surface spills occuring anytime and anyplace during the entire process would be considered 11e.(2) waste.

10. Clarification of reporting requirements.

We agree that any clarification of a licensee's report requirements would benefit both the regulatory agency and the licensee.

11. Clarification of applicability of siting and design requirements for existing facilities.

We agree with the need to clarify siting and design requiements for existing facilities.

12. Modification of annual surety requirements.

It appears that NRC meant "biennial" (once every two years) rather than "biannual" (twice per year). We would otherwise agree.

13. Update the long-term surveillance fee. Update fee from $250,000 in 1978 dollars to 1998 dollars.

We agree with the need for this update.

STATE OF WYOMING
OFFICE OF THE GOVERNOR

JIM GERINGER
GOVERNOR

STATE CAPITOL
CHEYENNE, WY 82002

June 10, 1999

NRC Commissioners
U.S. Nuclear Regulatory Commission
11545 Rockville Pike
Rockville, MD 20852

Dear Commissioners:

On August 26, 1998, the Nuclear Regulatory Commission (NRC) conducted a public meeting in Casper, Wyoming to solicit public comment on the NRC initiative to revise the regulatory framework for the licensing of uranium and thorium operations. This meeting was held in Casper as four of the in situ leach (ISL) mines and seven Title II mill sites regulated by the NRC are located in Wyoming. These operations, as well as the employment and the revenue they generate, are very important to Wyoming and the small communities where the workers reside.

During the NRC August 1998 meeting, the Wyoming Department of Environmental Quality (WDEQ) expressed strong belief that ISL wellfields were adequately regulated by the State of Wyoming. The WDEQ also indicated that proposed regulations being considered were duplicative with existing state regulations and therefore not needed.

The Wyoming Mining Association (WMA) stressed that proposed rulemaking to further involve NRC in the regulation of ISL wellfields was not needed since mining at ISL wellfields is sufficiently regulated by existing EPA Underground Injection Control (UIC) regulations. In Wyoming the UIC regulations are administered by the (WDEQ) through the Wyoming Environmental Quality Act and detailed WDEQ Land Quality Division (LQD) regulations which specifically regulate in situ mining.

With the continuing efforts by NRC to increase the regulation of ISL wellfields in the proposed Part 41 regulations, it is apparent that NRC has not accepted the input from the State of Wyoming or the WMA. Moreover, it appears that the NRC is trying to impose even greater federal regulations and associated costs on an activity that has been, and will continue to be, adequately regulated by the State.

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I would, therefore, stress my concern that the continued dual jurisdiction of ISL wellfields by the NRC causes an unneeded burden, not only to the companies involved, but also to the NRC itself and the WDEQ. One of the precepts of most environmental regulation is to allow the states to assume primacy of the program.. This precept recognizes inherent state sovereignty, allows the states to construct a program that best fits that state, and ensures the operator only has to answer to one, all the while ensuring that federal program requirements are met. In this case, the State of Wyoming has effectively regulated all aspects of uranium mining for decades without the involvement of the NRC.

I request that NRC relinquish all jurisdiction over ISL wellfields, as these mining operations are more than adequately regulated by the State.

We don't need duplication. The NRC, like many other agencies, has a very large workload. How much more effective to focus those efforts on other areas needing attention than to duplicate efforts that are currently being handled by the State. Most importantly, removing the NRC from involvement in ISL wellfields will not adversely impact any environmental or safety considerations of the mining process, as those concerns are adequately covered by the State of Wyoming.

Best regards,

Jim Geringer
Governor

JG:DH:ct
cc: Wyoming Congressional Delegation

Before the U.S. Nuclear Regulatory Commission

COMMENTS ON THE NRC STAFF'S INITIATIVES ON URANIUM RECOVERY REGULATION

Submitted by
SOUTHWEST RESEARCH AND INFORMATION CENTER

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June 17, 1999

INTRODUCTION

Southwest Research and Information Center ("SRIC") appreciates the opportunity to comment on the Nuclear Regulatory Commission ("NRC") Staff's memoranda concerning proposed changes in uranium recovery regulation. SRIC, through its Washington, D.C., counsel and Albuquerque-based staff, looks forward to summarizing and discussing its concerns about these initiatives before the Commission itself at the public meeting on June 17, 1999.

As the Commission is aware, SRIC, Eastern Navajo Diné Against Uranium Mining ("ENDAUM"), and two Navajo women, Ms. Grace Sam and Ms. Marilyn Morris, are intervenors in an ongoing proceeding before the Atomic Safety and Licensing Board on the matter of the license issued to Hydro Resources, Inc. ("HRI"), for the Crownpoint Uranium Project ("CUP"). SRIC will abide by the Commission's admonition to refrain from making oral or written remarks that refer to arguments now pending in that adjudication. We will use this opportunity, however, to highlight why we believe that the Staff's initiatives may reduce the level of health and environmental protection to which the affected public is entitled under the Atomic Energy Act ("AEA") of 1954, as amended by the Uranium Mill Tailings Radiation Control Act ("UMTRCA") of 1978. Hence, it is in the spirit of broad public debate over policies that are important for the protection of human health and the environment that we offer our comments on the Staff's proposals regarding uranium recovery policy and regulation.

SRIC'S INTERESTS AND HISTORY ON URANIUM MILLING ISSUES

SRIC's staff has been closely and routinely involved in uranium mining and milling policy and technical issues for parts of three decades, beginning in the mid-1970s. SRIC was one of several public-interest organizations that campaigned for and championed passage of the UMTRCA — the first federal statute to authorize federal and state cleanup of abandoned, or "inactive," mills and tailings sites, and licensing and regulation of "active" uranium mills and mill tailings facilities. SRIC also participated extensively in the initial NRC and USEPA rulemakings that implemented UMTRCA requirements, and was a co-plaintiff with other national environmental groups in federal-court appeals of some of the NRC mill licensing

regulations and the EPA general environmental standards.

SRIC's interest then, as it is now, was to ensure that the public health and safety and the environment were protected from the radiological and nonradiological hazards associated with uranium milling and tailings disposal. To that end, the organization worked closely with communities and community groups on site-specific uranium mining and milling concerns, providing technical advice and field-level assistance largely at the request of local groups. From this work, we developed long-term relationships with several Navajo communities adversely affected by uranium waste mismanagement, such as the July 1979 Church Rock tailings spill. These relationships continue to this day, as evidenced by SRIC's partnership with ENDAUM in the adjudication of the HRI license.

OVERVIEW OF SRIC'S COMMENTS ON NRC STAFF'S CURRENT URANIUM RECOVERY REGULATORY INITIATIVES

In preparing these comments, SRIC's counsel and staff reviewed the following documents:

(1) NRC Staff. "Recommendations on Ways to Improve the Efficiency of NRC Regulation at *In Situ* Leach Uranium Recovery Facilities," SECY-99-013 (March 12, 1999);

(2) NRC Staff. "Use of Uranium Mill Tailings Impoundments for the Disposal of Waste Other Than 11e.(2) Byproduct Material and Reviews of Applications to Process Material Other Than Natural Uranium Ores," SECY-99-012 (April 8, 1999);

(3) NRC Staff. "Draft Rulemaking Plan: Domestic Licensing Of Uranium and Thorium Recovery Facilities — Proposed New 10 CFR Part 41," SECY-99-11 (January 15, 1999); and

(4) National Mining Association. "Recommendations for a Coordinated Approach to Regulating the Uranium Recovery Industry." (April 1998; hereafter referred to as "NMA White Paper".)

Based on these documents, and other relevant information, correspondence and memoranda, SRIC prepared comments that address the following issues: (1) the NRC's jurisdiction over the

subsurface aspects of uranium ISL mining; (2) the lack of an adequate basis for delegating ground-water protection at ISL facilities to the EPA or to states and tribes with primacy to regulate solution mining pursuant the Underground Injection Control ("UIC") Class III program of the federal Safe Drinking Water Act ("SDWA") ; and (3) legal and policy problems with new 10 CFR Part 41 regulations now being considered by the NRC Staff, particularly the questionable legality of performance-based licensing ("PBL") and the proposed elimination of certain prescriptive siting and design requirements for uranium processing waste disposal impoundments.

At this time, SRIC recommends that the Commission *not adopt* either Option 2a or Option 2b, as those options are described in SECY-99-12. We are concerned that much of impetus for the staff's initiatives in these areas to help solve the uranium industry's long-standing economic difficulties, without adequately addressing the impacts of these changes on public health and safety. This is particularly apparent with respect to the issues of NRC jurisdiction over ISL operations, PBL, alternate feed materials, and disposal of non-11e.(2) wastes.

(1) NRC HAS AUTHORITY TO REGULATE SUBSURFACE OPERATIONS AT URANIUM ISL FACILITIES

SRIC agrees with and has long supported the Commission's authority to regulate ground-water protection at uranium ISL facilities. The Mining Association, however, asserts that NRC does not have authority under the AEA to regulate ground water at ISL sites. See, April 1998 White Paper at 104-113. Having reviewed the Mining Association's discussion of this matter, we conclude that the Association is just plain wrong. As we discuss below, its analysis suffers from a fundamental error about the point at which source material, i.e., uranium, is removed from its place of deposit in nature.

First, our reading of the NRC Part 40 regulations indicates that they contain a three-step approach to determining if a uranium recovery activity is covered by the licensing requirements of Part 40 or is exempt from them. The first step is to determine if the material is "source material," i.e., does it contain a uranium concentration of 0.05 percent or greater? If the answer

is "yes," then the second step is to determine if the source material is removed from its place in nature. If the answer is "yes," then the third step is to determine where the material is being "refined or processed?" See, 10 CFR 40.13(b). If the answer is "yes," then the activity is not exempt and is subject to the Part 40 licensing requirements.

With respect to uranium ISL operations, the answers to each of these steps is "yes," and each of the steps is accomplished *underground.* With regard to the first step, virtually all uranium host rocks, including those at ISL mines, have uranium concentrations exceeding 0.05%.[1] Hence, the answer to Step 1 is "yes."

In the ISL process, water fortified with oxygenates (called "lixiviant") is circulated through the uranium ore host rocks. The effect of the circulation of the lixiviant is to strip the uranium from the host rock thereby causing it to become dissolved in the ground-water/lixiviant solution.[2] The resulting uranium concentration in the "pregnant" lixiviant is typically several orders of magnitude higher than the baseline uranium concentration in the native ground water.[3] See, Attachments 1, 2 and 3. Since the leaching process *removes* the uranium *from its place of deposit in nature*, its host rock, the answer to the second step is "yes." In this regard, the Mining Association's conclusion that "the ore is not removed from its place of deposit in nature until it

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[1]Average ore grades for several uranium deposits mined by the ISL method in Wyoming and Texas ranged from 0.08% to 0.2%. See, W.C. Larson, "Uranium In Situ Leach Mining in the United States," U.S. Bureau of Mines Information Circular 8777 (1977), Appendix B at 54-65. The Church Rock, N.M., ore grade at a site proposed for ISL mining is reported as 0.202%. See, also, Hydro Resources, Inc., Church Rock Environmental Report (April 1988) (ACN 8805200344), Figure 6.6-2 at 363.

[2]Gunn, J., Layton, M., Park, J. In-Situ Leach Uranium Mining (October 1988) at 4. Attached to SECY-99-013 (March 12, 1999) as Attachment 1.

[3]See, Tables 2.1 at 3.12 of NUREG-1508, *Final Environmental Impact Statement to Construct and Operate the Crownpoint Uranium Solution Mining Project, McKinley County, New Mexico* (February 1997), at 2-6 and 3-26, respectively (attached to these comments as Attachments 1 and 2). Compare, for instance, the anticipated chemical concentrations in HRI's pregnant lixiviant with baseline chemical and radiological characteristics of water from the Crownpoint, New Mexico, municipal wells, which tap the same aquifer that would be leach mined. See, also, Attachment 3 to these comments, which shows a direct comparison of pregnant lixiviant concentrations to baseline water quality.

reaches the surface" (White Paper at 106) is clearly erroneous.

Finally, as can be seen from the discussion above, processing of the source material begins *in the ground water*. Part 40.13(b) uses the terms "refine and process" to determine if an activity is exempt or not.[4] The dictionary definition of the verb infinitive "to process" is "to prepare, treat or convert by subjecting to some special process; to put through the steps of a proscribed procedure." Similarly, the definition of the verb infinitive "to refine" is "to reduce to a pure state; purify." Lixiviant injection mobilizes uranium, separating it from the host rock and increasing its concentration in the ground water — physical and chemical processes that clearly connote processing and refining of the source material. Hence, the answer to the third step also is "yes." Accordingly, uranium ISL mining is not exempt from the regulations, and NRC has authority to regulate it.

SRIC believes, therefore, that NRC was correct in the early 1980s when it concluded that its jurisdiction to regulate uranium recovery extended to the subsurface in ISL mines because removal and processing occur in the ground water, and that this finding is not inconsistent with its determination that underground and open-pit mining are not subject to the licensing requirements of Part 40. In conventional underground and open pit mining, the uranium is not removed from its host rock until the rock is transported from the mine to the mill for crushing, grinding, and the addition of leaching acids and chemicals. This is distinguished clearly by the ISL process of using lixiviant to strip, or remove, the uranium from its host rock in the *subsurface hydrologic environment*.

(2) DELEGATION OF ISL GROUND-WATER REGULATION TO EPA OR THE STATES/TRIBES IS NOT JUSTIFIED

The NRC Staff is recommending that NRC remove itself "from the review of ground-water protection issues at ISL facilities" and instead "rely on the EPA UIC program" to protect ground water at ISL sites. SECY-99-013 at 10. The Staff's position appears to be based partly

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[4]The term "beneficiation," which the Mining Association cites so liberally in its White Paper, does not appear in the NRC regulation.

on an Office of General Counsel ("OGC") opinion[5] that such delegation, without loss of authority, would be appropriate to address the dual regulation concerns of the industry. See, SECY-99-013 at 3. This position, therefore, seems to rest largely on addressing industry's concerns, rather than on an analysis of whether it is appropriate, as a policy matter, for NRC to declaim jurisdiction that it has expressed and exercised for the last 20-plus years, or whether the EPA and state or tribal UIC programs are fully applicable to the wide range of ground-water protection issues that are intrinsic to uranium ISL operations.

The NRC Staff has not provided a clear or convincing basis for its proposal to delegate ground-water protection regulation to EPA or to EPA-authorized states or tribes. None of the SECY papers we have reviewed contains a comparison between the ground-water protection requirements of NRC and those of EPA or authorized states or tribes pursuant to the UIC Class III program to evaluate the Mining Association's claims of regulatory duplication. Neither the NRC Staff nor the Commission has determined that NRC's responsibilities under the AEA to protect public health and safety and the environment from the use of radioactive materials will be fulfilled by delegating ground-water protection solely to EPA and the states or tribes. As a practical matter, any such determination by the Commission would need to evaluate state UIC requirements because EPA does not, at least at this time, directly permit any uranium ISL mine under its own UIC requirements since all existing ISL facilities are located in UIC-primacy states.

Implicit in the Staff's discussion of the OGC opinion is the notion that NRC would retain regulatory authority over ground water at ISL facilities, but not exercise it, regardless of whether EPA or a state or tribe with UIC primacy would. Retaining authority without exercising it exposes the agency to legal challenge by the public.

Delegating ground-water protection authority to EPA would certainly create at least one gap in the regulatory program. EPA does not have a uranium-in-drinking water standard, even though it proposed one in 1991. States which now regulate uranium ISL facilities pursuant to

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[5]We cannot comment at this time about the substance of the OGC opinion because it was not attached to the March 12 memorandum and we have not yet obtained a copy of it to review.

their state-level UIC programs have differing uranium restoration standards, and none of them are based on drinking water protection. In New Mexico, for instance, the uranium restoration standard would be 5 milligrams per liter ("mg/l"), based on the state's Water Quality Control Commission standards for *protection of ground water*.[6] 20 NMAC 3103. Similarly, we do not view NRC's use of its 10 CFR Part 20 Appendix B uranium-in-water effluent standard as appropriate to protect drinking water. Whatever the level, NRC ought to be satisfied that there is an appropriate restoration standard for uranium before delegating its authority.

Furthermore, there is no evidence in the relevant SECY papers that NRC has had agency-to-agency contact with EPA about delegating ground-water protection responsibilities for uranium ISL mines. Until this week, we could find no one at EPA in either Region IX or at headquarters who had been consulted by the NRC Staff about this matter, or who knew that NRC was even considering removing itself from ISL ground-water regulation. Interagency communication must take place at the highest levels of the agencies, and in consultation with the affected states and tribes, before such a fundamental change in the current regulatory structure is made.

(3) ADVISABILITY OF PROCEEDING WITH A NEW 10 CFR PART 41

The Staff enunciated three options for addressing uranium recovering regulations in the "Rulemaking Plan" attached to SECY-99-011 (January 15, 1999). The Staff also listed several specific proposed changes, deletions and clarifications to existing NRC regulations in Attachment 1 to the January Rulemaking Plan. The purpose of the proposed rulemaking would be to "codify the numerous regulatory decisions and precedents that have been developed [for]... ISL facility regulation" through reliance on guidance documents and license conditions. SECY-99-011 at 2.

SRIC agrees that the nature of the domestic uranium recovery industry has changed

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[6]SRIC's view is that the New Mexico WQCC's uranium value is an extraordinarily high level that is not protective of public health or the environment, especially when the native ground water concentration ranges from 0.001 mg/l to 0.02 mg/l, or 250 to 5,000 times the *less than* the uranium standard.

markedly since the Part 40 Appendix A licensing requirements were adopted in the early and mid-1980s. Creating a new Part 41 to address ISL operations is not, by itself, a bad idea to address the need to clarify and consolidate requirements applicable specifically to ISL operations. However, several of the proposed changes listed in Attachment 1 to SECY-99-011 appear to be oriented toward *relaxing* or even *eliminating* certain requirements, based almost exclusively on the uranium industry's stated desire for extensive regulatory flexibility, and in some case, even deregulation. Additionally, the Staff's options for removing NRC regulation of certain ISL waste streams, as set forth in SECY-99-013 (at 9), could make ISL regulation even more unwieldy by causing it to be divided potentially among three different governmental units: the NRC, the EPA and states or tribes with their own regulations governing effluent disposal. On whole, SRIC is concerned that the Staff's proposed changes are ill-conceived and will have the net effect of decreasing protection of public health and safety and the environment.

In the sections below, we discuss our concerns about four of the proposed rulemaking issues: (a) operational flexibility; (b) deletion of certain "prescriptive" siting and design requirements; (c) disposal of liquid effluents from ISL operations; and (d) development of uniform spill-reporting requirements. Because of the short time we have had to prepare these comments, we are not commenting at this time on two other important matters: disposal of non-11e.(2) byproduct material in licensed tailings impoundments and use of alternate feed material in licensed uranium mills. SRIC reserves its right to comment on those matters at a later date.

(a) Issue 5: Operational Flexibility

We fear that the centerpiece of the Staff's initiative to create a new 10 CFR Part 41 is to codify deregulation of the uranium ISL industry through performance-based licensing ("PBL"), disguised as "operational flexibility." See, SECY-99-011, Attachment 1 at A-2 to A-3. While we cannot discuss those aspects of PBL that we think are illegal because the matter is currently on appeal in the HRI license adjudication, we urge the Commission to consider the legal and policy problems inherent in PBL.

Performance-based licensing in effect turns over to the operators fundamental regulatory

decisions left more appropriately to the regulatory agency. Operators can change the scope of their ISL operations unilaterally, without agency oversight or approval and outside of the scope of public review and comment. The extent to which any change in an operation violates an NRC requirement or a license condition can be determined only upon the agency's inspection of documents and reports prepared by the licensee and maintained at the licensee's mining site. Hence, active "regulation" of uranium recovery is replaced by discretionary enforcement. Since, under most current PBL licenses, operators are required only to file an annual report with the NRC, the public is blind to the operator's decisions to change the project for up to a year after they were made.

SRIC is particularly concerned that operators will change numerical restoration standards upon their own, internal finding that such changes will not adversely affect public health and safety, or the environment. Such changes will not be known to the agency until long after they are made, and not known to the local communities whose ground water could be affected adversely for many years as a result of such changes.

(b) Issue 8: Deletion of Prescriptive Siting and Design Requirements

The Staff proposes to eliminate certain siting and design requirements that, with the exception of mentioning Criterion 4 of Appendix A, are largely unspecified in Attachment 1 to SECY-99-011 (at A-4). SRIC fears that the Staff may be proposing to eliminate the essential surface impoundment design criteria in Criterion 5, the cover requirements of Criterion 6, and the monitoring requirements of Criterion 7. The regulations incorporated in Criteria 5 and 7 were adopted to prevent and detect ground-water contamination at tailings impoundments, while requirements in Criterion 6 were adopted to ensure long-term stabilization and control of tailings. Both were adopted in compliance with the generally applicable environmental standards promulgated by EPA in 40 CFR Part 192, Subparts D and E, which were based on RCRA-level design standards for hazardous waste impoundments. The NRC mill licensing criteria and the EPA general standards were authorized by the original UMTRCA in 1978 and by its amendments in 1982.

To relax these requirements for surface impoundments at uranium ISL sites would strike

at the heart of the Mill Tailings Act's intent to prevent new ground-water contamination from tailings and to prevent dispersion of tailings through water and wind erosion and human disruption. While surface impoundments at ISL sites are necessarily smaller than those at conventional mills, they have the same potential for leakage if not designed and maintained properly.

As set forth in Attachment 1 (at A-4), the Staff's proposal for eliminating siting and design requirements appears oriented toward expanding the universe of PBL-eligible actions that licensees may take. Ultimately, however, the Staff's proposals must be consistent with requirements of the AEA, as amended by UMTRCA. Eliminating design and cover requirements, or relegating them to PBL status, may be inconsistent with the agency's statutory mandates under the AEA and UMTRCA.

(c) Issue 1: Regulations for ISL Facilities—Liquid Waste Disposal

In SECY-99-013 (at 9-10), the Staff proposes to divorce NRC of regulating waste waters generated by production bleed and restoration operations at ISL facilities. SRIC assumes that this proposal, along with the Staff's stated intention to delegate regulation of ground water at ISL sites, is part and parcel of its desire to craft a new Part 41 for ISL operations. Unfortunately, the Staff's liquid waste proposal makes no sense technically or administratively.

From a technical perspective, production bleed and restoration waste waters are so intrinsically connected with the processing of source material, i.e., uranium, that they should be regulated as byproduct material as defined in section 11e.(2) of the AEA. Production bleed waters would not be generated if the ISL operation were not in place. Production bleed effluents are the un-reinjected waste liquids necessarily generated by ISL mines to maintain lixiviant control. They also are likely to contain elevated concentrations of both radiological and nonradiological contaminants, with or without treatment prior to disposal.

Restoration waste waters almost always have high contaminant levels at the outset of restoration when contaminant levels remain high in the mined-out ore zones. These high levels would not be present in the ground water had the site not been subject to uranium ISL mining. Hence, the removal of the source material from the rock directly resulted in contamination of the

ground water in the ore zone.

Neither does the Staff's proposal on regulation of ISL liquid waste streams make sense from an administrative perspective. See SECY-99-013 at 9-10. If the full breadth of the Staff's proposals are adopted, *three different* federal or state (or tribal) agencies would have authority over various liquid waste streams and mining operations at ISL facilities. For instance, NRC would regulate the *surface processing facilities* at the ISL plant; EPA or a state or tribal UIC-primacy agency would regulate the UIC Class III wells, wellfields and ground-water protection; and EPA or a state or tribal agency would regulate disposal of production bleed wastes and restoration wastes under various federal, state or tribal environmental authorities. This situation cannot possibly be seen as streamlining regulation or facilitating operator compliance. And it would be a total nightmare for communities and local groups wanting to participate in regulatory decisions affecting permitting or licensing of the facilities themselves.

These and other technical and policy points were made convincingly by Mr. William Ford in his Differing Professional Views appended to SECY-99-013. SRIC urges the Commission to give great weight to these views in its consideration of this issue.

(d) Issue 10: Need for Uniform Spill and Release Reporting Requirements

SRIC concurs with the Staff's concerns about the lack of spill and release reporting requirements in 10 CFR Part 40, the lack of uniform and consistent data and information about spills and releases, and the potential for serious contamination of land, water and air by nonradiological pollutants released from licensed facilities. Spills of pregnant lixiviant, process waste waters and restoration waste waters are well documented at various ISL sites in Texas.[7] Hence, we support NRC's proposal to develop spill reporting requirements and to incorporate those requirements into the existing Part 40 program. We recommend that they be fully applicable to ISL facilities and achieve, to the extent practicable, compatibility with spill reporting requirements adopted by EPA under authority of the Clean Water Act's National

[7]SRIC intends to submit for the record in the near future data and information documenting the spills at various ISL sites in Texas.

Pollutant Discharge Elimination System ("NPDES").

CONCLUSIONS AND CLOSING COMMENTS

SRIC is not convinced that the staff is ready to proceed with the rulemaking proposed in SECY-99-011. Its proposals to delegate certain existing regulatory authorities are ill-conceived and possibly illegal, and seem aimed primarily at addressing the needs of the regulated community first, and addressing protection of public health and safety and the environment secondarily. Minimally, the Commission should defer action on the Staff's proposals today and direct the Staff to develop a more thorough basis and explanation for its initiatives. Especially important in this regard is the extent to which delegating authority for ground-water protection to EPA or the states or tribes will create gaps in regulation that do not now exist.

Finally, we were displeased with the way the agency notified SRIC of today's meeting. Neither SRIC, ENDAUM, Ms. Sam, Ms. Morris or any of their counsel received letters directly from the Commission Secretary. Rather, copies of the May 27, 1999, letters sent to the Department of Energy, the Mining Association and the states of Utah and Texas were forward to us via the service list specific to the HRI license adjudication. Those copies did not reach SRIC's Albuquerque office until June 3. On June 9, SRIC's counsel sent a letter to the Commission Secretary requesting time on today's agenda. We were not notified until Monday of this week (June 14) that SRIC would be permitted to address the Commission.

This indirect and impersonal method of notification was untoward in light of the fact that representatives and SRIC and ENDAUM, and their counsel, appeared at the August 25, 1998, public meeting sponsored by the NRC Uranium Recovery Branch and expressed their concerns about NRC's consideration of wide-ranging changes in the way it regulates ISL facilities. That SRIC was not directly informed was even more curious considering its 20-plus years of involvement in national and state-level uranium recovery policy and regulation.

In the future, we request advanced, direct notification of all meetings — formal and informal — on uranium recovery regulatory policy. (Our various addresses appear on the cover of these comments.) This includes meetings not only before the Commission, but also meetings

between the Uranium Recovery Branch staff and uranium licensees.[8] SRIC also requests that it be kept informed by the NRC Staff of its progress in going forward with the regulatory initiatives discussed today.

Again, SRIC appreciates the opportunity to comment in writing and before the Commission on these important matters.

[8]We are aware that the Staff meets regularly with licensees in Wyoming to discuss regulatory issues. While SRIC staff cannot afford to travel to many of those meetings, we want to be informed that they are scheduled in the event that we determine that it is necessary to attend.

Table 2.1. Anticipated concentrations of principal chemical species in HRI's pregnant lixivient from the well fields for processing
[Data are from HRI 1993a, test data, and operational licensing experience.]

Chemical species	Concentration (mg/L)
Calcium	100–350
Magnesium	10–50
Sodium	500–1600
Potassium	25–250
Carbonate	0–500
Bicarbonate	800–1500
Sulfate	100–1200
Chloride	250–1800
Nitrate	<0.01–0.2
Fluoride	0.05–1
Silica	25–50
Total dissolved solids	1500–5500
Uranium	50–250
Radium-226 (pCi/L)	1000
Other parameters	
Conductivity (μmhos/cm)	2500–7500
pH (standard units)	7.0–9.0

Table 2.2. Principal chemical reactions taking place in the ore body during uranium oxidation

(1) $2UO_2 + O_2 \text{ — — } > 2UO_3$

(2a) $UO_3 + Na_2CO_3 + 2NaHCO_3 \text{ — — } > UO_2(CO_3)_3^{4-} + 4Na^+ H_2O$

(2b) $UO_3 + 2NaHCO_3 \text{ — — } > UO_2(CO_3)_2^{2-} + 2Na^+ + H_2O$

HRI would pump uranium-enriched pregnant solution from production wells to the processing plants for uranium extraction by ion exchange. The resulting barren lixiviant would then be chemically refortified and reinjected into the well field to repeat the leaching cycle.

HRI anticipates using production flow rates of 9500 to 11,500 Lpm (2500 to 3000 gpm) at each ion exchange plant. Potential emissions at each plant were conservatively modeled assuming a maximum flow rate of 15,000 Lpm (4000 gpm), and HRI would be restricted from exceeding this rate by license condition. Maximum injection pressures to be used in each of the mine areas would be determined when the operating wells are completed. The approximate values of allowable surface (well head) pressures for each area are 2075 kPa (301 psi) at the Crownpoint and Unit 1 sites and 807 kPa (117 psi) at the Church Rock site (HRI 1996a). During normal operations, production rates would be

Table 3.12. Town of Crownpoint water quality data[a]

Parameter	Well NTUA-1 (mg/L)	Well NTUA-2 (mg/L)	Wells BIA-5&8 (mg/L)	Well BIA-6 (mg/L)	EPA (and NNEPA) drinking water standards (mg/L)
Calcium	5.0	1.3	9.2	1.8	
Magnesium	2.0	0.08	4.5	0.14	
Sodium	131.0	121.0	119.0	111.0	
Potassium	4.9	1.2	2.3	1.7	
Carbonate	17.0	20.0	1.0	8.0	
Bicarbonate	234.0	221.0	249.0	223.0	
Sulfate	82.0	52.0	98.0	49.0	250.0
Chloride	7.7	3.2	3.2	2.0	250.0
Nitrate	0.01	0.02	0.02	0.01	10.0
Fluoride	1.1	0.32	0.34	0.27	4.0 or 2.0
Silica	10.0	18.0	20.0	18.0	
TDS	402.0	351.0	406.0	325.0	500.0
Conductivity[b]	625.0	529.0	603.0	484.0	
Alkalinity	220.0	215.0	206.0	197.0	
pH[c]	8.79	8.91	8.33	8.7	6.5–8.5
Arsenic	<0.001	<0.001	<0.001	<0.001	0.05
Barium	0.02	0.05	0.05	0.06	2.0
Cadmium	0.0002	<0.0001	<0.0001	<0.001	0.01
Chromium	<0.01	<0.01	<0.01	<0.01	0.05
Copper	<0.01	<0.01	<0.01	<0.01	1.0
Iron	0.02	<0.01	0.01	<0.01	0.3
Lead	<0.001	0.002	<0.001	<0.001	0.05
Manganese	0.01	0.01	<0.1	<0.01	0.05
Mercury	<0.0001	<0.0001	<0.0001	<0.0001	0.002
Molybdenum	<0.01	<0.01	<0.01	<0.01	
Nickel	<0.01	<0.01	<0.01	<0.01	0.1
Selenium	<0.001	<0.001	<0.001	<0.001	0.05
Silver	<0.01	<0.01	<0.01	<0.01	0.1
Uranium	<0.001	<0.001	0.007	<0.001	
Vanadium	<0.01	<0.01	<0.01	<0.01	
Zinc	0.01	0.01	<0.01	<0.01	5.0
Boron	0.05	0.06	0.07	0.05	
Ammonia	<0.01	<0.01	<0.01	<0.01	
Radium-226[d]	0.6	0.3	0.6	0.3	5.0

[a]Data collected September 1990 (HRI 1996i).
[b]μmhos/cm.
[c]Units.
[d]pCi/L.

ATTACHMENT 2

ATTACHMENT 3

Estimated "Pregnant" Lixiviant Chemistry Compared with Water Quality in Crownpoint Municipal Wells and Federal/Tribal Drinking Water Standards[1]

Chemical	Lixiviant Concentration (mg/L)	Municipal Wells Ave. ± S.D. (mg/L)	Difference Lix. v. Mun. (#x)	Drinking Water Standards (mg/L)
Arsenic[2]	0.054	<0.001 ± 0.001	54	0.05
Bicarbonate	800 - 1,500	231.8 ± 12.8	3.4 - 6.5	none
Calcium	100 - 350	4.3 ± 3.6	8 - 23	none
Chloride	250 - 1,800	4.0 ± 2.5	63 - 450	250.0
Magnesium	10 - 50	1.7 ± 2.1	6 - 29	none
Molybdenum[2]	62	<0.01 ± 0.01	6,200	none
Potassium	25 - 250	2.5 ± 1.6	10 - 100	none
Radium 226+228 (picoCuries/liter)	100 - 1,000	0.45 ± 0.17	222 - 2,222	5.0 pCi/L
Selenium[2]	4.6	<0.001 ± 0.001	46,000	0.05
Sodium	500 - 1,600	120.5 ± 8.2	4 - 13	none
Sulfate	100 - 1,200	70.3 ± 23.8	1.4 - 17	250.0
Tot. Diss. Solids	1,500 - 2,500	371 ± 39.6	4 - 6.7	500.0
Uranium	50 - 250	0.0025 ± 0.0025	20,000 - 100,000	0.0203

[1]Data from Tables 2.1, 3.12, 4.13 of NRC *FEIS*, 1997.
[2]Data for selected trace metals based on Mobil Sec. 9 pilot project lixiviant concentrations.
[3]USEPA proposed drinking water standard, 1991.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of	
HYDRO RESOURCES, INC.	Docket No.(s) 40-8968-ML

CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing SECY MEMO RE 6/17 COMM. TRANS. have been served upon the following persons by U.S. mail, first class, except as otherwise noted and in accordance with the requirements of 10 CFR Sec. 2.712.

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24 day of June 1999

Adria T. Byrdsong
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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of

INTERNATIONAL URANIUM (USA) CORPORATION (IUSA)
(Receipt of Material from Tonawanda, New York)

Docket No.(s) 40-8681-MLA-4

CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing SECY MEMO RE 6/17 COMM. TRANS. have been served upon the following persons by U.S. mail, first class, except as otherwise noted and in accordance with the requirements of 10 CFR Sec. 2.712.

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of INTERNATIONAL URANIUM (USA) CORPORATION (IUSA) (Request for Material License Amendment)	Docket No.(s) 40-8681-MLA-5

CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing SECY MEMO RE 6/17 COMM. TRANS. have been served upon the following persons by U.S. mail, first class, except as otherwise noted and in accordance with the requirements of 10 CFR Sec. 2.712.

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Docket No.(s)40-8681-MLA-5
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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of

INTERNATIONAL URANIUM (USA) CORPORATION (IUSA)
(Request for Materials License Amendment)

Docket No.(s) 40-8681-MLA-6

CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing SECY MEMO RE 6/17 COMM. TRANS. have been served upon the following persons by U.S. mail, first class, except as otherwise noted and in accordance with the requirements of 10 CFR Sec. 2.712.

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