

July 26, 2000

COMMISSION VOTING RECORD

DECISION ITEM: SECY-99-012

TITLE: 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

The Commission (with Chairman Meserve and Commissioners Dicus and Merrifield approving in part and disapproving in part and Commissioners Diaz and McGaffigan disapproving) responded to the subject paper as recorded in the Staff Requirements Memorandum (SRM) of July 26, 2000.

This Record contains a summary of voting on this matter together with the individual vote sheets, views and comments of the Commission.

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Annette L. Vietti-Cook  
Secretary of the Commission

Attachments: 1. Voting Summary  
2. Commissioner Vote Sheets

cc: Chairman Meserve  
Commissioner Dicus  
Commissioner Diaz  
Commissioner McGaffigan  
Commissioner Merrifield  
OGC  
EDO  
PDR

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VOTING SUMMARY - SECY-99-0012

RECORDED VOTES

|                  | APRVD | DISAPRVD | ABSTAIN | NOT PARTICIP | COMMENTS | DATE    |
|------------------|-------|----------|---------|--------------|----------|---------|
| CHRM. MESERVE    | X     | X        |         |              | X        | 6/8/00  |
| COMR. DICUS      | X     | X        |         |              | X        | 6/6/00  |
| COMR. DIAZ       |       | X        |         |              | X        | 4/5/00  |
| COMR. McGAFFIGAN |       | X        |         |              | X        | 6/30/00 |
| COMR. MERRIFIELD | X     | X        |         |              | X        | 4/25/00 |

COMMENT RESOLUTION

In their vote sheets, Chairman Meserve and Commissioners Dicus and Merrifield approved in part and disapproved in part and Commissioners Diaz and McGaffigan disapproved the subject paper. Subsequently, the comments of the Commission were incorporated into the guidance to staff as reflected in the SRM issued on July 26, 2000.

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## Chairman Meserve

I approve a modified Option 2 for the disposal of material other than 11e.(2) byproduct material in tailings impoundments. I also approve the staff proposal to revise the current guidance on the processing of alternate feed at uranium mills.

### DISPOSAL OF MATERIAL OTHER THAN 11E.(2) BYPRODUCT MATERIAL

Mill tailings sites can clearly provide appropriate disposal locations for materials that are physically, radiologically, and chemically similar to section 11e.(2) byproduct material. This might include non-AEA material (e.g., NORM, TENORM), as well as AEA material (i.e., source, 11e.(1) byproduct material, and special nuclear material). Moreover, in light of the fact that tailings impoundments must comply with requirements that are consistent with standards for the disposal of similar hazardous chemical wastes, see 42 U.S.C. 2022(b)(2), 2114(a)(3), such impoundments offer the opportunity for safe disposal of certain materials that are regulated under RCRA, TSCA, and CERCLA. Thus, consistent with Commission policy of lowering the cost of decommissioning waste disposal and using existing mill tailings impoundments to dispose of materials in circumstances in which there is adequate protection of the public health and safety and the environment,<sup>(1)</sup> I conclude that the Commission should allow for the disposal of material other than 11e.(2) byproduct material in tailings impoundments. Of course, no such disposal should be allowed unless there is adequate protection of the public health, safety, and the environment.

One of the significant disadvantages of authorizing the disposal of non-11e.(2) byproduct material in tailings impoundments is the fact that such action may result in the impoundment being subject to regulation by both NRC and other regulators. Because of the value of using impoundments in appropriate cases for disposal, I nonetheless believe the staff should proceed to allow disposal of non-11e.(2) byproduct material in tailings impoundments in circumstances in which the licensee is prepared to accept the consequences of dual regulation. In order to avoid the needless expenditure of staff resources on the review of applications for disposal of non-11e.(2) byproduct material, the consent of the long-term custodian (a state or, more likely, DOE **EXIT**) to accept the site should be obtained before the review is undertaken. Of course, approval of other regulators (e.g., EPA **EXIT**, a state regulatory agency, and/or affected LLW compacts) should be received before disposal proceeds.

The staff has suggested seeking an amendment of UMTRCA both to authorize disposal of non-11e.(2) byproduct material and to avoid dual regulation. But the staff has not identified any statutory barrier that prevents the Commission from proceeding to authorize disposal of materials other than 11e.(2) byproduct material in tailings impoundments. <sup>(2)</sup>

And, although an amendment of UMTRCA to eliminate needless dual regulation may be desirable, it is unlikely that such a matter would be given a high priority in the Congress. Nonetheless, I approve limited efforts by OCA and OGC to pursue a legislative initiative to avoid dual regulation. Because, as Commissioner Merrifield indicates, any such effort has important implications for DOE, any legislative actions in this area should be coordinated with DOE.

### PROCESSING MATERIAL OTHER THAN NATURAL ORE

The staff seeks authorization to revise its guidance governing licensee applications to process alternate feed material. This aspect of the staff's request has been resolved by the Commission in International Uranium (USA), Corp., CLI-00-1 **Q**, 51 NRC 9 (2000). However, in light of the fact that I would allow the disposal of materials containing listed hazardous wastes in a tailings impoundment in appropriate cases, I would also allow such material to be contained in the proposed feed material so long as: (1) the feed material is being processed primarily for its source-material content, (2) the long-term custodian consents, (3) necessary approvals of other affected regulators are obtained, and (4) there is adequate protection of the public health and safety and the environment.

Of course, the Commission's conclusions with respect to the disposal of non-11e.(2) byproduct material in tailings impoundments and to the processing of material other than natural ore should be reflected in Part 41 as it is developed.

## Commissioner Dicus

With respect to the variety and complexity of issues related to the use of uranium mill tailings impoundments for the disposal of waste other than 11e.(2) byproduct material and review of applications to process material other than natural uranium ores, I commend staff for their quality assessment and options proposed in trying to envelop industry's issues and concerns. As you are aware, a number of additional issues and concerns have been presented to the Commission since the original submittal of SECYs 99-011 **Q**, 99-012, and 99-013. Examples of these additions include SECY 99-267 (IUSA Order), Addendum to the original NMA White Paper, FUSRAP inquiries, etc.

### 1. USE OF URANIUM MILL TAILINGS IMPOUNDMENTS FOR THE DISPOSAL OF WASTE OTHER THAN 11E.(2) BYPRODUCT MATERIAL

With respect to the aforementioned, giving consideration to these issues was important and necessary in order to draw conclusions for this SECY paper. **With that in mind, my vote disapproves staff's preferred Option 3 and approves Option 1, retaining staff guidance in its current form.** Under this option, material to be placed in mill tailing impoundments would continue to be limited to certain types of material regulated under the Atomic Energy Act, and the NRC would retain prohibitions against the disposal of special nuclear material and 11e.(1) byproduct material. Additionally, licensees would continue to be required to demonstrate that the material proposed for disposal was not subject to RCRA, TSCA, or CERCLA regulation and the licensee would continue to be required to obtain approvals from the appropriate LLW compacts. **The principal advantage of this option is that the NRC would remain the sole regulator of the radiological components of the 11e.(2) byproduct material disposed of in mill tailings impoundments.** Additionally, this approach remains consistent with the legislative framework governing such disposal. It is also responsive to the LLW Forum, who by resolution on February 12, 1999, encouraged the NRC not to change the criterion requiring approvals from the appropriate regional LLW compacts for disposal of material other than 11e.(2) byproduct material.

Essentially, there is no differentiation between Option 2 or Option 3, specifically with respect to potential dual or multiple regulatory roles, and the fact that without legislative clarification, dual or multiple regulation is inevitable. Additionally, I believe that seeking clarifying legislation for this portion of an overall and much larger FUSRAP issue would not be efficient use of staff or agency time and resources, and would lend additional confusion to the jurisdictional issue of pre- and post-1978 material, and what the NRC's stated and promulgated responsibilities are under UMTRCA.

**Additionally, the EPA has expressed concern over a number of issues that have not yet been resolved and encompass those issues addressed in SECY 99-012 , specifically:**

1. It is not clear what new waste streams would be disposed of;
2. TENORM is a possibility for disposal;
3. Acceptability of TSCA, RCRA, and CERCLA wastes;
4. Impoundments may have to meet latest standards if they accept expanded materials;
5. New waste streams in tailings pile may violate existing community and State agreements;
6. NESHAPS radon standard could limit types and quantities of new waste streams; and
7. An EIS would be needed for hazardous materials.

## 2. REVIEW OF APPLICATIONS TO PROCESS MATERIAL OTHER THAN NATURAL URANIUM ORES

Staff should revise the Alternate Feed Guidance consistent with the direction stated in the SRM for SECY 99-267 - International Uranium Corporation Commission Review of LBP-99-5.

### Commissioner Diaz

I disapprove the staff's recommendation to seek a legislative change to allow disposal of other than 11e. (2) byproduct material in impoundments. Instead, the staff should retain the current guidance and, as part of the rulemaking plan for new Part 41, propose incorporating the recommended changes identified in Option 2 of the paper. Option 2 would allow disposal of other than 11e. (2) byproduct material that is physically and chemically similar to the material already in the impoundment and that contains primordial elements and continue to require the concurrence of the site's long-term custodian. In doing so, the staff should acknowledge DOE's position but state that inclusion of this option in the rulemaking plan will allow for adequate input from States that may choose to consider becoming long-term custodians of sites and thus provide an additional disposal option for other than 11e. (2) byproduct material. Including this option in the rulemaking will also allow for input from LLW compacts.

I disapprove the staff's recommendation for revising the current guidance on processing of alternate feed as discussed in SECY-99-012. Instead, the staff should consider the views and guidance provided by the Commission in response to SECY-99-267 on International Uranium Corporation's license amendment to process alternate feed and should revise the guidance on processing of alternate feed to accurately reflect the intent of UMTRCA. The revised guidance should require that: 1) the alternate feed is primarily processed for the extraction or concentration of uranium or thorium, i.e., the extraction or concentration of uranium or thorium is not incidental to the processing of material for other substances; 2) the processing of alternate feed ensures that more than a minute or negligible amount of uranium or thorium is extracted or concentrated; 3) the alternate feed does not contain hazardous waste; and 4) the processing of the alternate feed and disposal of the resulting 11e. (2) byproduct material does not compromise public health and safety nor the environment.

The staff should revise and issue final guidance for processing of alternate feed within 12 months and codify the guidance in the rulemaking plan for the new Part 41. I do not believe the revised guidance itself should include the staff's proposal for a one-time, performance-based licensing amendment. Instead, I recommend that the staff consider and, if appropriate, include its proposal for a one-time, performance-based licensing amendment as part of the rulemaking plan for the new Part 41. In doing so, the staff should fully consider the consequences, and methods of addressing, a licensee's processing of alternate feed in violation of requirements and commingled the waste with 11e. (2) byproduct material in a mill tailings impoundment.

### Commissioner McGaffigan

I disapprove the staff recommendations and offer the following comments on the two issues discussed in the paper.

#### **DISPOSAL OF MATERIAL OTHER THAN 11E.(2) BYPRODUCT MATERIAL**

I join the majority of the Commission in disapproving the staff recommendation to pursue Option 3--to seek legislation to allow disposal of material other than 11e.(2) byproduct material in mill tailings impoundments--and in approving Option 2--to revise NRC guidance to allow for disposal of non-11e.(2) material. Option 2 would allow more flexibility for licensees and the industry in using the disposal capacity of mill tailings impoundments. Ideally, radioactive materials which pose a similar level of risk should be addressed holistically and rationally by Congress instead of continuing to rely on Federal agencies and individual States to plug the Swiss cheese regulatory framework that currently exists for managing these materials. Such materials include uranium mill tailings, low-level waste (LLW), exempt source material, naturally-occurring (NORM) and accelerator-produced radioactive material (NARM), technologically-enhanced naturally-occurring radioactive material (TENORM), and material from the Formerly Utilized Sites Remedial Action Program. However, I agree with the comments of Chairman Meserve and Commissioner Merrifield that the probability of such legislation being passed at this time appears quite slim, and any legislative actions in this area should be coordinated with and possibly led by the Department of Energy (DOE) because of the high potential for long-term care of these sites by DOE. Therefore, I agree with my fellow Commissioners that we should do the best we can to address this situation now.

As I stated in my vote on SECY-99-011, the staff should proceed with its efforts to promulgate a new Part 41 for uranium recovery through the public rulemaking process. In parallel with this effort, the staff should modify its existing guidance to allow disposal of materials (other than 11e.(2) byproduct material) that are radiologically, physically and chemically similar to material already being disposed of in mill tailings impoundments. This revised position should be codified in the new rule after interaction with stakeholders and, in particular, DOE, the Environmental Protection Agency (EPA), the States and industry. I also recognize that, as the likely long-term custodian of these sites, DOE has expressed concern that placing hazardous waste in

mill tailings impoundments would open a site to the potential for perpetual dual regulation by either EPA or individual States, in addition to NRC. However, the paper also states that DOE has allowed an NRC-licensed impoundment to accept Toxic Substance Control Act (TSCA) waste under specified conditions, (e.g., increased long-term care funding and additional ground water monitoring required by the EPA permit). Moreover, DOE possesses large quantities of wastes that could, from a health and safety perspective, be disposed of safely in mill tailings impoundments which will likely be under DOE's long-term custodial care anyway. Therefore, DOE, in its role as long term custodian, might be supportive of NRC's approach. Therefore, I believe that the staff should interact with stakeholders and proceed to develop a rule to codify the revised approach to allow disposal of non 11e.(2) byproduct material, including TSCA material, Resource Conservation and Recovery Act (RCRA) material, Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) material, and NORM, NARM and TENORM since this approach would provide more flexibility in the national waste management program while adequately protecting public health and safety and the environment.

Regarding the licensing process, I agree with the staff's proposed performance-based approach to issue a generic exemption to the requirements of Part 61 which would eliminate the need for individual exemptions for each proposed disposal. I also agree with the staff, and thereby disagree with Chairman Meserve and Commissioner Merrifield, that it may be possible to relax the NRC criterion that a mill licensee obtain concurrence from the appropriate Low-Level Waste Compact since placement of non-11e.(2) materials in the tailings impoundment will ultimately require consent from the long-term custodian, i.e., DOE or, less likely, the State. While I recognize that LLW Compact approval was not originally proposed by the staff in SECY-91-243 but was added to the guidance at the direction of the then sitting Commission, I believe that, based on the fact that the Compacts have made virtually no progress in siting additional LLW sites coupled with the need for increased disposal options, the issue of Compact approval warrants discussion with appropriate stakeholders. Regarding consent of the long-term custodian, I agree with Commissioner Merrifield that consideration should be given to requiring written confirmation from DOE or the State that it would accept responsibility for the maintenance of the site prior to NRC approving the disposal of non-11e.(2) material.

I would also argue that the disposal of material other than 11e.(2) byproduct material in tailings impoundments is safe. I believe that NRC-licensed disposal facilities including mill tailings impoundments are adequately protective of workers, public health and safety, and the environment. NRC's regulations for mill tailings are based on the EPA hazardous waste standards applicable to RCRA disposal cells. State-of-the-art tailings impoundments, like RCRA disposal cells, rely in part on a system of liners and leachate detection and collection systems to prevent and detect releases of hazardous and radioactive materials to the environment. Also, long-term stability, government ownership, and enduring or perpetual institutional controls are measures used by NRC and EPA to ensure safety. As a result, I am confident that materials other than mill tailings may be safely disposed of in the tailings impoundments. Clearly, safe disposal of these materials in tailings impoundments is an area where NRC, DOE, EPA and the States can work effectively together to manage these materials rationally from a national perspective.

#### **PROCESSING OF MATERIAL OTHER THAN NATURAL ORE**

I join my fellow Commissioners in disapproving the staff recommendation for revising the current guidance on processing alternate feed as discussed in this paper. Instead, consistent with the Commission's decision on CLI-00-01 on the International Uranium Corporation, the staff should revise the 1995 Alternate Feed Guidance to allow alternate feed material to be processed for uranium without any inquiry into a licensee's economic "motives" in determining whether the processed materials fall in the "11e.(2)" category since no such inquiry is compelled by the Uranium Mill Tailings Radiation Control Act. However, like the Chairman, since I would allow the disposal of materials containing a listed hazardous material in a tailings impoundment in appropriate cases, I would also allow such material to be contained in the proposed alternate fee material under conditions specified by the Chairman in his vote on this paper.

I agree with Commissioner Merrifield and I support the staff recommendation that the revised guidance be performance-based, in that it would allow mill licensees to process alternate feed material without always obtaining prior NRC approval. The paper states that a performance-based approach is consistent with that currently used for licensees processing natural ore where such activities are reviewed during routine inspections. Since the Part 41 rulemaking will take years, I believe that the alternate feed guidance should be issued and implemented as soon as possible to form the basis for the current licensing practice for mill tailings sites and reflect the recent Commission decision on the IUC case and any decisions resulting from this paper.

#### **Commissioner Merrifield**

I approve in part and disapprove in part the staff's recommendations in SECY-99-012 which addresses (1) the use of uranium mill tailings impoundments for the disposal of other than 11e.(2) byproduct material and (2) licensee applications to process other than natural uranium ores. These issues are fairly complicated and valid reasons were presented both for and against each recommended resolution. Specifically, I disapprove the staff's recommendation to seek legislation to allow disposal of non-11e.(2) material on a tailings pile and approve codifying the current guidance with modifications. Additionally, I reaffirm the Commission decision on CLI-00-01 (concerning a license amendment for White Mesa) directing the staff to revise the guidance on alternative feed criteria. Finally, I am providing guidance concerning the application of performance based regulations for the new Part 41. The following paragraphs explain my current views on these matters. However, the Commission decisions on this paper will be the basis for the initial version of a new 10 CFR Part 41 rule; and I will be willing to revisit my decisions based on the results of this rulemaking process.

First, I am concerned about the lack of disposal options for various low-level wastes in the United States. I would agree, in principal, that if we can use existing facilities, such as licensed mill tailings sites, to dispose of appropriate forms of low-level waste in a manner that protects the public health, safety, and the environment, then we should explore the possibilities. The staff has explored the possibilities for the mill tailing sites; and the industry is very much interested in expanding into this area. In my opinion, if waste material exists which is physically, chemically, and radiologically identical to 11e.(2) byproduct material and if there are no statutory impediments to the type of disposal action, it may be acceptable for such waste to be disposed on a tailings pile which is approved for physically similar material.

The current staff guidance on approving non-11e.(2) byproduct material for disposal on mill tailings piles is considered too restrictive by the industry. In particular, industry believes that the criteria prohibiting non-AEA, RCRA, TSCA, and CERCLA materials is overly restrictive. I disagree. The current guidance is the result of literally years of negotiations with DOE and is based on a clear direction from Congress in passing UMTRCA to avoid dual

regulation in the long term disposal at mill tailings sites. Although the staff guidance would, in general, prohibit the disposal of non-AEA, RCRA, TSCA, and CERCLA material on the tailings, the staff guidance does allow the disposal of such material if the long term custodian (in most cases DOE, or, at its discretion, a State) agrees to accept responsibility for the material and the potential of dual regulation. I believe that is an acceptable position which should be codified in the new Part 41. I would go one step further in the staff guidance and require written confirmation from the long term custodian that they would accept responsibility for the tailings pile under UMTRCA with the non 11e.(2) material placed on the pile.

Industry would have the NRC remove all such disposal restrictions from its guidance and simply approve the disposal. Industry's argument is that the licensee would obtain approval from EPA and DOE at the appropriate time and it is not NRC's responsibility to ensure this occurs. I do not agree. I do not believe it is responsible regulation for the NRC to allow non-11e.(2) material to be placed on the pile without first obtaining written confirmation from the long term custodian that they will accept responsibility for the pile under the requirements of UMTRCA.

Consistent with Congressional consent provided in Title II of the Low Level Radioactive Waste Interstate Compact Consent Act, I approve continued implementation in the draft Part 41 rulemaking the staff guidance to require approval from both the appropriate regional LLW compact from which the non-11e.(2) byproduct waste originated and the appropriate regional LLW compact (if different from originating compact) where the disposal impoundment is located before allowing disposal of non-11e.(2) byproduct material in a tailings impoundment.

The staff recommends seeking legislative change to authorize specific types of materials to be placed in a tailings impoundment under the long-term care of DOE. However, such a move would directly increase the responsibility and authority of DOE. A legislative solution offers many possible advantages, i.e., eliminating dual regulation, opening more sites to the disposal of specific waste, etc. But I believe that if any proposal is made to increase DOE's long term custodial responsibilities, DOE should have the lead in proposing such legislation to Congress and NRC should be in a supportive role. I have no problems with the staff discussing the possibility of a legislative solution and the advantages and disadvantages of such action with DOE as part of this rulemaking process and reporting back to the Commission the results of these discussions. But unless DOE is willing to take the lead on this issue, I do not support NRC independent involvement with this legislative proposal.

Concerning the processing of material other than natural ore, I affirm the Commission decision in CLI-00-001 (memorandum and order relating to a license amendment for alternative feed for White Mesa) and the staff should rewrite its guidance on alternative feed to reflect this Commission decision concerning economic considerations. In the Statement of Consideration for the new Part 41, the staff, with input from OCAA, should explain the Commission decision in CLI-00-001.

The staff guidance, as modified above, should be codified in the new Part 41 regulations proposed in SECY-99-011. But I do have one other comment that I want the staff to address in the Part 41 rulemaking. The specific comment relates to approving alternative feed material, but it applies to all of Part 41 as well. As part of the development of the new Part 41, I expect the staff to investigate making the new regulation more risk informed and performance based (as appropriate). As an illustrative example, the staff could be considering codifying requirements for alternative feed in the new Part 41 and in appropriate licensing conditions such that a license amendment would no longer be required for each use of alternative feed material. The licensee would certify that the material met the criteria for alternative feed and would only request permission from the NRC if an exemption to the regulations was necessary. Conceptually, I have no problem with codifying the approach through public rulemaking. However, as part of the performance based solution, the staff should also require the implementation of appropriate administrative controls to ensure the performance criteria are achieved with a process that is both inspectable and enforceable.

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1. See Staff Requirements Memorandum for COMSECY-96-058 - Decommissioning - Non-Reactor Facilities, (DSI-9) (March 31, 1997). See also Memorandum from William Travers to Chairman Meserve, (April 21, 2000), Update to Staff Response to Tasking Memorandum and Stakeholder Concerns

2. Indeed, the staff indicates that one tailings impoundment already has been used for the disposal of TSCA waste with the consent of DOE, the long-term custodian.