



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

March 18, 2009

SECRETARY

COMMISSION VOTING RECORD

DECISION ITEM: SECY-08-0147

TITLE: RESPONSE TO COMMISSION ORDER CLI-05-20  
REGARDING DEPLETED URANIUM

The Commission (with Chairman Klein and Commissioners Lyons and Svinicki agreeing) approved the staff's recommended Option 2 (rulemaking to specify a requirement for a site-specific analysis for large quantities of depleted uranium in § 61.55(a)(6) and technical requirements for such an analysis) in the subject paper as recorded in the Staff Requirements Memorandum (SRM) of March 18, 2009. Commissioner Jaczko voted for Option 3 (determine classification for depleted uranium within existing classification framework).

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

A handwritten signature in black ink, reading "Annette Vietti-Cook".

Annette L. Vietti-Cook  
Secretary of the Commission

Attachments:

1. Voting Summary
2. Commissioner Vote Sheets

cc: Chairman Klein  
Commissioner Jaczko  
Commissioner Lyons  
Commissioner Svinicki  
OGC  
EDO  
PDR

VOTING SUMMARY - SECY-08-0147

RECORDED VOTES

	APRVD	DISAPRVD	ABSTAIN	NOT PARTICIP	COMMENTS	DATE
CHRM. KLEIN	X				X	11/26/08
COMR. JACZKO	X				X	11/3/08
	X	X			X	3/6/09
COMR. LYONS	X				X	10/21/08
COMR. SVINICKI	X				X	12/2/08

COMMENT RESOLUTION

In their vote sheets, Chairman Klein and Commissioners Lyons and Svinicki approved the staff's recommended Option 2 and provided some additional comments. Commissioner Jaczko voted for Option 3 and provided some additional comments. Subsequently, the comments of the Commission were incorporated into the guidance to staff as reflected in the SRM issued on March 18, 2009.

**NOTATION VOTE**

**RESPONSE SHEET**

**TO:** Annette Vietti-Cook, Secretary  
**FROM:** CHAIRMAN KLEIN  
**SUBJECT:** SECY-08-0147 – RESPONSE TO COMMISSION  
ORDER CLI-05-20 REGARDING DEPLETED  
URANIUM

Approved  X  Disapproved   Abstain

Not Participating

**COMMENTS:** Below  X  Attached   None

I approve the staff's recommended Option 2 to proceed with rulemaking in 10 CFR Part 61 to specify the requirements for a site-specific analysis for the disposal of large quantities of depleted uranium in a low-level waste disposal facility. I agree with the view expressed by Commissioner Lyons that there will be an eventual need to risk-inform the entire waste classification framework, and join him in encouraging the staff to request the necessary resources in a future budget to revise the existing waste classification tables for all radionuclides.

  
\_\_\_\_\_  
**SIGNATURE**

11/26/2008  
**DATE**

Entered on "STARS" Yes  ✓  No

**NOTATION VOTE**

**RESPONSE SHEET**

TO: Annette Vietti-Cook, Secretary  
FROM: COMMISSIONER JACZKO  
SUBJECT: SECY-08-0147 – RESPONSE TO COMMISSION  
ORDER CLI-05-20 REGARDING DEPLETED URANIUM

Approved  X  Disapproved      Abstain    

Not Participating    

COMMENTS: Below      Attached  X  None    

  
\_\_\_\_\_  
SIGNATURE

11/3/08  
\_\_\_\_\_  
DATE

Entered on "STARS" Yes  X  No

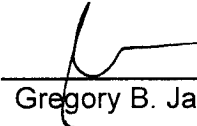
**Commissioner Jaczko's Comments on SECY-08-0147**  
**Response to Commission Order CLI-05-20 Regarding Depleted Uranium**

I approve Option 3 (determine classification for depleted uranium within existing classification framework) and I disapprove the staff's recommendation for Option 2 (rulemaking to specify requirement for site-specific analyses for the disposal of large quantities of depleted uranium). The disposal of large quantities of depleted uranium (DU) is a unique challenge because, unlike typical low-level waste, the doses increase over time rather than decrease. The technical analysis included with SECY-08-0147 indicates that additional requirements are likely needed for disposal of large quantities of DU in order to protect public health and safety; for example, increased waste disposal depth or robust radon barriers may be required. However, Option 2 does not explicitly change the classification of DU as presently provided for in 10 CFR 61.55 and therefore the waste would remain classified as Class A. I do not believe that it is logical to argue that that waste that requires additional requirements for disposal (similar to those required for Class C waste) can still be labeled as Class A waste.

I agree that the staff needs to take action with respect to disposal of large quantities of DU. A more transparent and unambiguous approach would be to classify DU within the current waste classification system. Therefore, I believe the staff should implement Option 3 and classify DU within the existing classification framework, and the waste classification tables in 10 CFR 61.55 should be revised to include depleted uranium. Regardless of what waste class the DU is determined to be through this process, the staff analysis has shown that it may still be disposed of in a manner that is protective of public health and safety under certain circumstances.

I also believe the staff should, in a future budget request, include the necessary resources to completely revise 10 CFR 61 using updated methodologies and assumptions, and taking into consideration advances and changes that have taken place in the low-level waste arena since the original 10 CFR 61 was promulgated.

I commend the staff for the thorough technical analysis that was included with SECY-08-0147 and for the comprehensive range of options that were analyzed and provided for Commission consideration.

  
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Gregory B. Jaczko      11/3/08  
Date

SUPPLEMENTAL VOTE

NOTATION VOTE

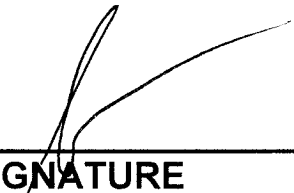
RESPONSE SHEET

TO: Annette Vietti-Cook, Secretary  
FROM: COMMISSIONER JACZKO  
SUBJECT: SECY-08-0147 – RESPONSE TO COMMISSION  
ORDER CLI-05-20 REGARDING DEPLETED URANIUM

Approved  X  Disapproved  X  Abstain

Not Participating

COMMENTS: Below   Attached  X  None

  
\_\_\_\_\_  
SIGNATURE

03/6 /2009  
\_\_\_\_\_  
DATE

Entered on "STARS" Yes  X  No

## SUPPLEMENTAL VOTE

### Commissioner Jaczko's Revised Comments on SECY-08-0147 Response to Commission Order CLI-05-20 Regarding Depleted Uranium

In my original vote on SECY-08-0147, I approved Option 3 (determine classification for depleted uranium within existing classification framework) and I disapproved the staff's recommendation for Option 2 (rulemaking to specify requirement for site-specific analyses for the disposal of large quantities of depleted uranium). Since that vote, which was dated November 3, 2008, more information has come to light that I would like to address in my vote.

The disposal of large quantities of depleted uranium (DU) is a unique challenge because, unlike typical low-level waste, the doses increase over time rather than decrease. The technical analysis included with SECY-08-0147 indicates that additional requirements are likely needed for disposal of large quantities of DU in order to protect public health and safety; for example, increased waste disposal depth or robust radon barriers may be required. However, Option 2 does not explicitly change the classification of DU as presently provided for in 10 CFR 61.55 and therefore the waste would remain classified as Class A. I do not believe that it is logical to argue that that waste that requires additional requirements for disposal (similar to those required for Class C waste) can still be labeled as Class A waste.

The work of analyzing DU in a manner similar to the analysis done for other radionuclides has already been done in the Draft Environmental Impact Statement (DEIS) for 10 CFR 61 (NUREG-0782, Vol. 2). Table 7.2, Waste Classification Table, of the DEIS presents concentration values for various radionuclides for determining classification. This table gives a value of  $0.05 \mu\text{Ci}/\text{cm}^3$  for depleted uranium. In other words, DU that is above concentrations of  $0.05 \mu\text{Ci}/\text{cm}^3$  would not be considered Class A. In addition, staff has indicated that the previous analysis done to obtain the value of  $0.05 \mu\text{Ci}/\text{cm}^3$  in the DEIS likely did not include what may be a significant contribution from radon, which may require that the limit should be even lower. The concentrations of DU that will be produced by the commercial enrichment facilities is expected to be approximately  $0.5 \mu\text{Ci}/\text{cm}^3$ , which is ten times higher than the value given for the limit for Class A for DU in the DEIS. I do not believe that these facts should be ignored.

Although the value for depleted uranium was not subsequently carried forward into the final tables in 10 CFR 61, this was a policy decision, made simply because "[A]nalysis of the data bases for the Part 61 EIS indicates that the types of uranium-bearing wastes being typically disposed of by NRC licensees do not present a sufficient hazard to warrant limitation on the concentration of this naturally occurring material." The staff explicitly excluded from its analysis any consideration of depleted uranium from uranium enrichment facilities, which at the time were owned by the Federal government. However, now that large-scale commercial enrichment will be taking place, this type of waste does need to be considered and should not be allowed to fall through the loophole given by 10 CFR 61.55(a)(6).

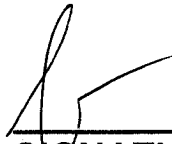
I agree that DU is a low-level waste, and I understand that some people may be concerned that this waste may be orphaned if it is decided that this waste stream is not Class A. I also understand that the staff recommendation would require that a site-specific analysis would be required for disposal of large quantities of DU and this is meant to protect public health and safety regardless of what class the waste is designated. It is important to note that a site-specific analysis does not guarantee that the waste will not eventually end up orphaned regardless; for example, if a site-specific analysis shows that the DU would need to be disposed of at least 8 meters below ground, a disposal facility may not be willing or able to do so.

SUPPLEMENTAL VOTE

## SUPPLEMENTAL VOTE

In summary, I do not believe the Commission should undermine the entire waste classification system, which is designed in such a way that Class A waste is meant to be that waste that poses the least hazard and requires the fewest restrictions on waste form and disposal. DU certainly does not fit this description.

I continue to believe the staff should, in a future budget request, include the necessary resources to completely revise 10 CFR 61 using updated methodologies and assumptions, and taking into consideration advances and changes that have taken place in the low-level waste arena since the original 10 CFR 61 was promulgated.



SIGNATURE

03/6/2009

Date

SUPPLEMENTAL VOTE



**NOTATION VOTE**

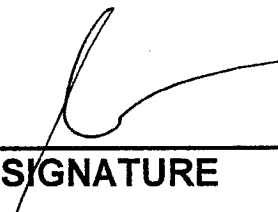
**RESPONSE SHEET**

TO: Annette Vietti-Cook, Secretary  
FROM: COMMISSIONER JACZKO  
SUBJECT: SECY-08-0147 – RESPONSE TO COMMISSION  
ORDER CLI-05-20 REGARDING DEPLETED URANIUM

Approved  X  Disapproved   Abstain

Not Participating

COMMENTS: Below   Attached  X  None

  
\_\_\_\_\_  
SIGNATURE  
12/31/08  
\_\_\_\_\_  
DATE

Entered on "STARS" Yes  X  No

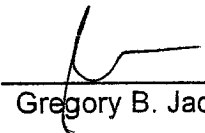
Commissioner Jaczko's Comments on SECY-08-0147  
Response to Commission Order CLI-05-20 Regarding Depleted Uranium

I approve Option 3 (determine classification for depleted uranium within existing classification framework) and I disapprove the staff's recommendation for Option 2 (rulemaking to specify requirement for site-specific analyses for the disposal of large quantities of depleted uranium). The disposal of large quantities of depleted uranium (DU) is a unique challenge because, unlike typical low-level waste, the doses increase over time rather than decrease. The technical analysis included with SECY-08-0147 indicates that additional requirements are likely needed for disposal of large quantities of DU in order to protect public health and safety; for example, increased waste disposal depth or robust radon barriers may be required. However, Option 2 does not explicitly change the classification of DU as presently provided for in 10 CFR 61.55 and therefore the waste would remain classified as Class A. I do not believe that it is logical to argue that that waste that requires additional requirements for disposal (similar to those required for Class C waste) can still be labeled as Class A waste.

I agree that the staff needs to take action with respect to disposal of large quantities of DU. A more transparent and unambiguous approach would be to classify DU within the current waste classification system. Therefore, I believe the staff should implement Option 3 and classify DU within the existing classification framework, and the waste classification tables in 10 CFR 61.55 should be revised to include depleted uranium. Regardless of what waste class the DU is determined to be through this process, the staff analysis has shown that it may still be disposed of in a manner that is protective of public health and safety under certain circumstances.

I also believe the staff should, in a future budget request, include the necessary resources to completely revise 10 CFR 61 using updated methodologies and assumptions, and taking into consideration advances and changes that have taken place in the low-level waste arena since the original 10 CFR 61 was promulgated.

I commend the staff for the thorough technical analysis that was included with SECY-08-0147 and for the comprehensive range of options that were analyzed and provided for Commission consideration.

  
\_\_\_\_\_  
Gregory B. Jaczko

12/3/08  
\_\_\_\_\_  
Date

NOTATION VOTE

RESPONSE SHEET

TO: Annette Vietti-Cook, Secretary  
FROM: COMMISSIONER LYONS  
SUBJECT: SECY-08-0147 – RESPONSE TO COMMISSION  
ORDER CLI-05-20 REGARDING DEPLETED URANIUM

Approved  X  Disapproved \_\_\_\_\_ Abstain \_\_\_\_\_

Not Participating \_\_\_\_\_

COMMENTS: Below \_\_\_\_\_ Attached  X  None \_\_\_\_\_

  
Peter B. Lyons  
\_\_\_\_\_  
SIGNATURE


10/21/08  
\_\_\_\_\_  
DATE

Entered on "STARS" Yes  ✓  No \_\_\_\_\_

Commissioner Lyons' Comments on SECY-08-0147

I approve the staff's recommended Option 2 to proceed with rulemaking in 10 CFR Part 61 to specify the requirements for a site-specific analysis for the disposal of large quantities of depleted uranium in a Low-Level-Waste disposal facility and to include the technical requirements for such an analysis. I would like to thank the staff for its thorough technical analysis and for working closely with the Agreement States during development of the Commission Paper.

Additionally, recognizing the eventual need to risk-inform the entire waste classification framework to address wastes from further facilities, I encourage staff to consider in a future budget request the necessary resources to revise the existing waste classification tables for all radionuclides, not just for DU. As staff has noted, this revision would involve different methodologies and assumptions than the original Part 61 methodology for key variables, such as: disposal configurations, performance periods, institutional control periods, waste forms, site conditions, exposure pathways, and receptor scenarios, thus, requiring additional time and resources.

  
Peter B. Lyons \_\_\_\_\_ 10/21/08  
Date

**NOTATION VOTE**

**RESPONSE SHEET**

TO: Annette Vietti-Cook, Secretary  
FROM: COMMISSIONER SVINICKI  
SUBJECT: SECY-08-0147 – RESPONSE TO COMMISSION  
ORDER CLI-05-20 REGARDING DEPLETED URANIUM

Approved XX Disapproved \_\_\_\_\_ Abstain \_\_\_\_\_

Not Participating \_\_\_\_\_

COMMENTS: Below \_\_\_\_\_ Attached XX None \_\_\_\_\_

  
\_\_\_\_\_  
SIGNATURE

12/ 3/08  
\_\_\_\_\_  
DATE

Entered on "STARS" Yes XX No \_\_\_\_\_

Original vote on 12/02/08.

**Commissioner Svinicki's Comments on SECY-08-0147**  
**Response to Commission Order CLI-05-20 Regarding Depleted Uranium**

I approve Option 2 (rulemaking to specify a requirement for a site-specific analysis for large quantities of depleted uranium and technical requirements for such an analysis) as recommended by staff. I also approve the development by staff of a guidance document for public comment that outlines the parameters and assumptions to be used in preparation of such site-specific analyses.

Staff's parametric analysis of the disposal of "large" quantities of DU concluded that disposal facility performance is strongly dependent on site-specific hydrologic and geochemical conditions. In light of this, the requirement for a site-specific analysis as proposed in Option 2 will provide the consideration of long-term stability and isolation from the accessible environment of the associated source term over the longer timeframes relevant in this case.

I join the Chairman and my fellow Commissioners, however, in noting that a comprehensive revision to risk-inform 10 CFR Part 61 using updated assumptions and referencing the latest ICRP methodology – while undoubtedly resource intense -- is likely due and should be proposed in future budgets. Finally, I also join my colleagues in thanking the staff for the analysis of depleted uranium disposal which accompanied the paper and proved quite useful in scoping the issue and assessing the proposed options.

  
\_\_\_\_\_  
Kristine L. Svinicki      12/3/08