



January 30, 2017
ES-NRC 17-001
Docket No. 71-9320

ATTN: Document Control Desk
Director, Division of Spent Fuel Management
Office of Nuclear Material Safety and Safeguards
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Subject: Request to Amend Certificate of Compliance No. 9320, Revision 5 for the MIDUS Transportation Package

References: (1) Certificate of Compliance 9320, Docket No. 71-9320, Revision 5.

EnergySolutions (ES) hereby submits an application to the U.S. Nuclear Regulatory Commission (NRC) to amend the Certificate of Compliance (CoC) for the MIDUS Transportation Package (Reference 1). The application supports NorthStar's Mo-99 shipping campaign. NorthStar's development program is supported by the National Nuclear Security Administration (NNSA) and is critical to the efforts to develop a domestic source of medical Mo-99 and further non-proliferation by reducing the dependence on using highly-enriched uranium in the production of Mo-99. The NRC recently approved solid Mo-99 as an authorized content. EnergySolutions is currently fabricating MIDUS casks for NorthStar, and has encountered a material supply issue for which an amended CoC is necessary.

The only change requested is to reduce the minimum specification for the depleted uranium (DU) density. This is necessary because the DU stock that was available when MIDUS was designed and first manufactured is no longer available. The stock available today results in castings with slightly lower densities than that specified in the current MIDUS design. We have run parametric studies on the effect of DU density on NCT and HAC package exposure rates and determined that the limiting case (HAC) is less sensitive to DU density because the HAC dose rates are dominated by streaming through steel. Our revised minimum DU density was selected to both satisfy the NRC requirements and provide assurance that MIDUS can be manufactured now and in the foreseeable future.

We request that the CoC amendment be issued by April 20, 2017 to support the vital national interests expressed by the NNSA for this project and NorthStar's need date to support the on-going Mo-99 production program. We believe that the submittal is complete and the changes are straightforward to support an expedited review.

A summary of the specific proposed changes to the MIDUS SAR is provided in Attachment 1 of this letter. Enclosure 1 contains one (1) paper copy of the non-public version of the revised SAR that contains proprietary and security-related information that should be withheld under

NM5320

10 CFR 2.390. Enclosure 2 contains one (1) paper copy of the public version of the revised SAR in which all proprietary and security-related information is redacted. An affidavit containing a full statement of the reasons that the proprietary information in the SAR should be withheld from the public, pursuant to the requirements of 10 CFR 2.390, is included in Attachment 2 of this letter. Attachment 3 contains a preflight report for the documentation provided on Computer Disk (CD).

Should you or any member of your staff have questions, please contact me at (860) 462-9707.

Sincerely,



Gerard P. van Noordennen
Vice President, Regulatory Affairs

Attachments:

- 1) Summary of Changes, MIDUS Transportation Package SAR, Revision 6
- 2) Affidavit pursuant to 10 CFR 2.390
- 3) Pre-Flight Report for Enclosures 1 and 2

Enclosures:

- 1) MIDUS Transportation Package Safety Analysis Report, Document No. TYC01-1600, Revision 6, January 2017, Non-Public Version (1 paper copy), **(Proprietary and Security-Related Information – Withhold Under 10 CFR 2.390)**,
- 2) MIDUS Transportation Package Safety Analysis Report, Document No. TYC01-1600, Revision 6, January 2017, Public Version (1 paper copy),

cc) Norma Garcia-Santos, USNRC, NMSS, DSFM

Summary of Changes, MIDUS Transportation Package SAR, Revision 6

Section	Page(s)	Change	Purpose
1.3.2	1-9	Changed drawing revision numbers.	Updated for revised drawings.
1.3.2		Revised Dwg. No. TYC01-1606, Sheet I: Note 3, Change the minimum DU density to 18.0 g/cc.	Minimum density of DU reduced based on material availability.
2.3.2	2-53	Change the minimum DU density to 18.0 g/cc.	Minimum density of DU reduced based on material availability.
5.1.2	5-3	Change in margin factors.	Change in margin factors due to re-evaluation of MIDUS shielding for DU density of 18.0 g/cc.
5.1.2	5-4	Change in DU density in Tables 5-1 and 5-2.	Minimum density of DU reduced based on material availability.
5.1.2	5-5	Change in dose rates in Tables 5-3 and 5-4.	Change in dose rates due to re-evaluation of MIDUS shielding for DU density of 18.0 g/cc.
5.3.2	5-12	Change in DU density.	Minimum density of DU reduced based on material availability.
5.3.2	5-13	Removed the sentence from note 3 which stated that the nominal density of DU is 19.0 g/cc.	Minor editorial change for clarification.
5.4.4 and all sub-sections	5-23 to 5-27 5-27 to 5-37	Change in dose rate values and margin factors. Change in Figures 5-9 to 5-17 due to change in dose rate profiles.	Change in dose rate values and margin factors due to re-evaluation of MIDUS shielding for DU density of 18.0 g/cc.
9.5.1.2	9-5	Change in dose rate values.	Change in dose rate values and margin factors due to re-evaluation of MIDUS shielding for DU density of 18.0 g/cc.

AFFIDAVIT PURSUANT TO 10 CFR 2.390

State of California)
) SS.
County of Santa Clara)

I, Gerard P. van Noordennen, depose and say as follows:

- (1) I am the Vice President, Regulatory Affairs of *EnergySolutions*, and have been delegated the function of reviewing the information described in paragraph (2) which is sought to be withheld, and have been duly authorized to apply for its withholding.
- (2) The information sought to be withheld is contained in the document listed in Table 1. This document has been appropriately designated as proprietary.

TABLE 1

Document No.	Document Title	Rev/Date
TYCOI-1600	MIDUS Transportation Package Safety Analysis Report	6

- (3) I have personal knowledge of the criteria and procedures used by *EnergySolutions* in designating information as trade secret, privileged, or as confidential commercial or financial information.
- (4) Pursuant to the provisions of paragraph (b)(4) of 10 CFR 2.390, the following is furnished for consideration by the Commission in determining whether the information sought to be withheld from public disclosure, including the information as designated in paragraph (2) above, should be withheld.

- (i) The information sought to be withheld from public disclosure is included in the report documenting information which is owned and has been held in confidence by *EnergySolutions*.
- (ii) The information is of a type customarily held in confidence by *EnergySolutions* and not customarily disclosed to the public. *EnergySolutions* has a rational basis for determining the types of information customarily held in confidence by it and, in that connection, utilizes a system to determine when and whether to hold certain types of information in confidence. The application of that system and the substance of that system constitutes *EnergySolutions'* policy and provides the rational basis required.

Under that system, information is held in confidence if it falls in one or more of several types, the release of which might result in the loss of an existing or potential competitive advantage, as follows:

- (a) The information reveals the distinguishing aspects of a process or component, structure, tool, method, etc., and the prevention of its use by *EnergySolutions'* competitors, without license from *EnergySolutions*, gives *EnergySolutions* a competitive economic advantage.
- (b) The information consists of supporting data (including test data) relative to a process or component, structure, tool, method, etc. and gives *EnergySolutions* a competitive economic advantage, e.g., by optimization or improved marketability.
- (c) The information, if used by a competitor, would reduce the competitor's expenditure of resources or improve the competitor's advantage in the design, manufacture, shipment, installation, assurance of quality, or licensing of a similar product.

- (d) The information reveals cost or price information, production capacities, budget levels, or commercial strategies of *EnergySolutions*, its customers or suppliers.
 - (e) The information reveals aspects of past, present, or future *EnergySolutions* or customer funded development plans and programs of potential commercial value to *EnergySolutions*.
 - (f) The information contains patentable ideas, for which patent protection may be desirable.
 - (g) The information is third-party Proprietary Information.
-
- (iii) The information is being transmitted to the Commission in confidence and, under the provisions of 10 CFR 2.390, it is to be received in confidence by the Commission.
 - (iv) The information sought to be protected is not available in public sources or available information has not been previously employed in the same original manner or method to the best of our knowledge and belief.
 - (v) The proprietary information sought to be withheld in this submittal is that which is appropriately marked and being transmitted by *EnergySolutions* to the Document Control Desk. The proprietary information has been presented to the Nuclear Regulatory Commission and is being voluntarily provided by *EnergySolutions*.
 - (vi) Public disclosure of the information is likely to cause substantial harm to the competitive position of *EnergySolutions* because:
 - (a) Similar products are manufactured and sold by competitors of *EnergySolutions*.

- (b) The development of this information by *EnergySolutions* is the result of a significant expenditure of staff effort and a considerable sum of money. To the best of my knowledge and belief, a competitor would have to undergo similar effort and expense in generating equivalent information.
- (c) In order to acquire such information, a competitor would also require considerable time and inconvenience.
- (d) The information consists of detailed descriptions, properties and test data. The availability of such information to competitors would enable them to modify their product to better compete with *EnergySolutions*, take marketing or other actions to improve their product's position or impair the position of *EnergySolutions'* product, and avoid developing fabrication data in support of their processes, methods, and/or apparatus.
- (e) In pricing *EnergySolutions'* products and services, significant research, development, engineering, analytical, licensing, fabrication, quality assurance and other costs must be included. The ability of *EnergySolutions'* competitors to utilize such information without similar expenditure of resources may enable them to sell their product at prices reflecting significantly lower costs.

Further the deponent sayeth not.

I declare under penalty of perjury that the forgoing is true and correct.

Executed on January 30, 2017



Gerard P. van Noordennen

Vice President, Regulatory Affairs

This document serves as preflight report for Enclosures 1 and 2 to the letter ES-NRC 17-001. The following files do not pass pre-flight criteria or do not meet NRC criteria, but text is word searchable with clarity/legibility of high quality.

Reference Document Name	File Name	Preflight Status	Reason
MIDUS Transportation Package Safety Analysis Report Revision 6, January 2017 (Non Public Version)	MIDUS-71SARr6_Non_Public	Failed	Document contains embedded fonts, logos, digital photos, CAD drawings, graphics, and signatures < 300 ppi, clear and legible
MIDUS Transportation Package Safety Analysis Report Revision 6, January 2017 (Public Version)	MIDUS-71SARr6_Public	Failed	Document contains embedded fonts, logos, digital photos, CAD drawings, graphics, and signatures < 300 ppi, clear and legible

Enclosure 2

MIDUS Transportation Package Safety Analysis Report,
Document No. TYC01-1600, Revision 6, January 2017
Public Version
(1 paper copy)