



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

March 26, 2019

Mr. Phil Noss
Licensing Manager
Orano Federal Services LLC
505 S. 336th Street, Suite 400
Federal Way, WA 98003

SUBJECT: CERTIFICATE OF COMPLIANCE NO. 9379, REVISION NO. 0, FOR THE
MODEL NO. 1105-SD TRANSPORTATION PACKAGE

Dear Mr. Noss:

As requested by your application dated July 19, 2018 [Agencywide Documents Access and Management System (ADAMS) Accession No. ML18215A182], as supplemented on January 14, 2019 (ADAMS No. ML19017A066), enclosed is Certificate of Compliance No. 9379, Revision No. 0, for the Model No. 1105-SD transportation package. The staff's safety evaluation report is also enclosed.

The approval constitutes authority to use the package for shipment of radioactive material and for the package to be shipped in accordance with the provisions of Title 49 of the *Code of Federal Regulations* 173.471.

If you have any questions regarding this certificate, please contact me or Norma García Santos of my staff at (301) 415-6999.

Sincerely,

/RA/

Ilka T. Berrios, Acting Chief
Spent Fuel Licensing Branch
Division of Spent Fuel Management
Office of Nuclear Material Safety
and Safeguards

Docket No. 71-9379
EPID L-2018-NEW-0002

Enclosures:

1. Certificate of Compliance
No. 9379, Rev. No. 0
2. Safety Evaluation Report

cc w/encls: R. Boyle, U.S. DOT
J. Shuler, U.S. DOE, c/o L. F. Gelder

SUBJECT: CERTIFICATE OF COMPLIANCE NO. 9379, REVISION NO. 0, FOR THE
MODEL NO. 1105-SD TRANSPORTATION PACKAGE, DOCUMENT
DATE: March 26, 2019

DISTRIBUTION: SFST r/f

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ADAMS Package No.: ML19087A063 LTR : ML19087A064 CoC: ML19087A065

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
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SAFETY EVALUATION REPORT
Docket No. 71-9379
Model No. 1105-SD Transportation Package
Certificate of Compliance No. 9379
Revision No. 0

SUMMARY

By letter dated July 19, 2018 (Orano, 2018), as supplemented on January 14, 2019 (Orano, 2019), Orano Federal Services LLC (thereafter, Orano or the applicant), requested that the U.S. Nuclear Regulatory Commission (NRC, the staff) approve the Model No. 1105-SD package as a Type B(U)-96 package for the transport of radioactive sealed sources (gamma, beta, and small neutron sources) or shielded irradiation devices containing their gamma sources. Quantities of fissile materials [e.g., plutonium-239 (^{239}Pu)] are less than 15 grams.

The design of the Model No. 1105-SD package is based on the design of the Model No. 435-B, certificate of compliance (CoC) No. 9355, Revision 2 (NRC, 2018a). The staff issued Revision 2 of the Model No. 435-B on January 26, 2018 (NRC, 2018a).

The staff reviewed the application for the Model No. 435-B, including relevant information in the supplements to the application, using the guidance in NUREG-1609, "Standard Review Plan for Transportation Packages for Radioactive Material." This guidance also applies to the review of Model No. 1105-SD. Based on the statements and representations in the application, as supplemented, and the conditions listed below, the staff concludes that the Model No. 1105-SD meets the requirements of Title 10 of the *Code of Federal Regulations* (10 CFR) Part 71, "Packaging and Transportation of Radioactive Material."

EVALUATION

The Model No. 1105-SD package is based on the design of the Model No. 435-B, CoC No. 9355, Revision 2 (NRC, 2018a). In Attachment 2 to the letter dated July 19, 2018 (Orano, 2018), the applicant included a "road map" related to the changes corresponding to the safety analysis report corresponding to Revision 2 of the CoC for to the Model No. 435-B compared to the application for the Model No. 1105-SD. The staff reviewed the application for the Model No. 1105-SD, Revision 0, and compared it to the safety analysis report corresponding to Revision 2 of the CoC for the 435-B and found that the two package designs are essentially the same. The main changes to the safety analysis report corresponding to CoC, Revision 2, of the Model No. 435-B were as follows:

- 1) editorial differences related to the change to Model No. 1105-SD from Model No. 435-B (e.g., drawing numbers);
- 2) changes related to the change of the package model number,

- 3) commitment to the use of the American National Standards Institute (ANSI) N14.5-2014, “American National Standard for Radioactive Materials – Leakage Tests on Packages for Shipment” (ANSI, 2014).

In the January 14, 2019, letter (Orano, 2019), the applicant supplemented its application by responding to a request for supplemental information (NRC. 2018c) as part of the acceptance review of the application (NRC, 2019). As part of the response to question RSI-1, the applicant included a list of documents that constitute the licensing basis for the Model No. 1105-SD. (Appendix A of this Safety Evaluation Report includes the list of documents provided by the applicant in its January 2019 letter.) The staff considers the information provided in the January 14, 2019, letter part of the application for Revision 0 for the Model No. 1105-SD package.

In observation OBS-Co-1 (NRC. 2018c), the staff requested clarification about the applicant’s requirements to develop and approve procedures to perform leak tests to verify the applicant’s commitment to follow the 2014 Edition of ANSI N14.5 (ANSI, 2014). Moreover, the staff wanted to ensure the following:

- 1) **personnel developing and approving leakage rate testing procedures** is certified as an American Society for Nondestructive Testing (ASNT) nondestructive testing (NDT) Level III, and
- 2) **personnel performing leakage rate testing** is qualified and certified in accordance with ASNT Recommended Practice No. SNT-TC-1A (ASNT), in accordance with Sections 8.5, “Leakage rate testing,” and 8.8, “Quality assurance,” of ANSI N14.5-2014 (ANSI, 2014).

The applicant noted in its response to OBS-Co-1 (Orano, 2019) that leakage rate testing procedures must be approved by personnel certified as an ASNT NDT Level III. The staff finds the applicant’s response acceptable based on the staff’s review of Sections 8.5 and 8.8 of ANSI N14.5-2014 (ANSI, 2014). The applicant also noted in its response to OBS-Co-1 (Orano, 2019) that leakage rate testing must be performed by personal qualified and certified personnel in accordance with ASNT Recommended Practice No. SNT-TC-1A (ASNT). The staff also finds this part of the applicant’s response acceptable based on the staff’s review of Sections 8.5 and 8.8 of ANSI N14.5-2014 (ANSI, 2014).

The applicant summarized in the response to OBS-Co-1 (Orano, 2019) that written leakage rate testing procedures for the 1105-SD package are developed, approved, and performed by qualified and certified NDT personnel for leakage testing in accordance with industry standards. The staff confirmed that ANSI N14.5-2014 is referenced in Chapters 7 and 8 of the application and that Chapters 7 and 8 are also referenced in the CoC. The applicant will use the NRC-approved quality assurance program under Docket No. 71-0938 (NRC, 2018b) for this package (Orano, 2019).

EVALUATION FINDINGS

The staff concludes that besides the above described differences and other minor editorial differences (e.g., replace “435-B” with “1105-SD”), the two applications are essentially the same, with the exceptions noted in Attachment 2 to the application submitted in July 2018). As the package design has already been approved as part of the 435-B technical review, the staff concludes that the same safety evaluation findings can be made for the 1105-SD.

Based on the statements and representation in the application, as supplemented, and the conditions listed below, the staff concludes that the package design meets the requirements of 10 CFR Part 71 and is described in sufficient detail to provide an adequate basis for its evaluation.

REFERENCES

- (ANSI, 2014) American National Standards Institute, ANSI N14.5-2014, "American National Standard for Radioactive Materials - Leakage Tests on Packages for Shipment," ANSI, New York, NY.
- (ASNT) American Society for Nondestructive Testing (ASNT) Recommended Practice No. SNT-TC-1A, "Personnel Qualification and Certification in Nondestructive Testing," ASNT, Columbus, OH.
- (NRC, 2018a) Rahimi, Meraj, U. S. Nuclear Regulatory Commission (NRC), letter to Al-Daouk, Ahmad M., National Nuclear Security Administration (NNSA), January 26, 2018, Agencywide Documents Access and Management System (ADAMS) Package Accession No. ML18026A874.
- (NRC, 2018b) Rahimi, Meraj, U. S. Nuclear Regulatory Commission (NRC), letter to Lloyd, Christopher, Orano Federal Services (Orano), June 4, 2018, ADAMS Package Accession No. ML18155A238.
- (NRC, 2018c) García Santos, Norma, U.S. Nuclear Regulatory Commission (NRC), letter to Noss, Phillip, Orano Federal Services LLC (ORANO), December 21, 2018, ADAMS Package Accession No. ML18360A572.
- (NRC, 2019) García Santos, Norma, U.S. Nuclear Regulatory Commission (NRC), letter to Noss, Phillip, Orano Federal Services LLC (ORANO), February 6, 2019, ADAMS Package Accession No. ML19036A911.
- (Orano, 2018) Noss, Phillip, Orano Federal Services LLC (ORANO), letter to U. S. Nuclear Regulatory Commission (NRC) (Attn: Document Control Desk), July 19, 2018, ADAMS Package Accession No. ML18215A243.
- (Orano, 2019) Noss, Phillip, Orano Federal Services LLC (ORANO), letter to U. S. Nuclear Regulatory Commission (NRC) (Attn: Document Control Desk), January 14, 2019, ADAMS Package Accession No. ML19017A066.

CONDITIONS

The conditions for the CoC for the 1105-SD are the same as CoC, Revision 2, for the Model No. 435-B, with the following main exceptions:

- 1) CoC holder's information,
- 2) application's title,

- 3) references to the Model No. 1105-SD instead of the Model No. 435-B, and
- 4) changes in drawing names.

The expiration date for this CoC is March 31, 2024.

CONCLUSION

Based on the statements and representations contained in the application, as supplemented, and the conditions listed above, the staff concludes that the applicant adequately described and evaluated the design of the Model No. 1105-SD transportation package and that the package meets the requirements of 10 CFR Part 71.

Issued with Certificate of Compliance No. 9379, Revision No. 0,
on 3/26/19.

Appendix A. Licensing Basis Documents Applicable to the Model No. 1105-SD (Orano, 2019)

Discipline	Title	Document Number	Documentum	Revision No.	Date	Description
Structural	"435-B Drop Analysis"	01916.01.C004.01-07	CALC-3006972-000	0	5/14/12	This calculation forms the basis for Section 2.12.4 SAR. This analysis includes computer files.
	"435-B Weight Calculation"	01916.01.C004.01-01	CALC-3003541-000	0	3/1/12	This calculation forms a partial basis for the structural analysis in the SAR. This analysis includes computer files.
	"Buckling Analysis for the Model No. LANL-B" (i.e., Model No. 435-B)	01916.01.C004.01-02	CALC-3003967-000	0	2/7/11	This calculation forms a partial basis for the structural analysis in the SAR. This analysis includes computer files.
Thermal	"Thermal and Gas Generation Analysis for the 435-B Package"	01916.01.C004.01-08	CALC-3007066-005	5	1/25/17	This calculation forms the basis for the thermal evaluation in the SAR. This analysis includes computer files.
Shielding	"LANL-B Device Shielding Analysis"	01916.01.C004.01-05	CALC-3006640-001	1	4/11/12	This calculation forms the basis for Section 5.5.3 of the SAR. This analysis includes computer files.
	"435-B LTSS Shielding Analysis"	01916.01.C004.01-06	CALC-3006972-001	1	9/10/15	This calculation forms the basis for the shielding analysis in the SAR. This analysis includes computer files.
Certification Test	"435-B Package Certification Test Procedure"	PKG-TP-SPC-008	SPC-3004633-002	2	11/2/11	Includes the description of the requirements of the certification tests to be performed on the 435-B with a LTSS and Shielded Device.
	"435-B Package Certification Test Report"	PKG-TR-SPC-011	SPC-3006329-001	1	4/17/12	This calculation forms the basis for Section 2.12.3 of the SAR. This analysis includes computer files.