



February 13, 2023
ACO 23-0006

ATTN: Document Control Desk
John W. Lubinski, Director
Office of Nuclear Material Safety and Safeguards
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

American Centrifuge Plant; Docket Number 70-7004; License Number SNM-2011

License Amendment Request for American Centrifuge Operating, LLC's License Application for the American Centrifuge Plant

INFORMATION TRANSMITTED HERewith IS PROTECTED FROM PUBLIC DISCLOSURE AS CONFIDENTIAL COMMERCIAL OR FINANCIAL INFORMATION AND/OR TRADE SECRETS PURSUANT TO 10 CFR 2.390 AND 9.17(a)(4)

Dear John Lubinski:

The purpose of this letter is to request in accordance with 10 *Code of Federal Regulations* (CFR) 70.34 and 70.65 the U.S. Nuclear Regulatory Commission (NRC) review and approve the proposed amendment for American Centrifuge Operating, LLC's (ACO) License Application for the American Centrifuge Plant (ACP) in Piketon, Ohio (Materials License SNM-2011).

On November 10, 2022, the U.S. Department of Energy (DOE) announced an approximately \$150 million cost-shared award to ACO, a subsidiary of Centrus Energy Corp., to complete and operate a cascade of 16 centrifuges to produce high-assay low-enriched uranium (HALEU) which is used in many of the advanced reactor designs under development. The HALEU Operations Contract is intended to support DOE's near-term HALEU needs and builds upon DOE's three-year HALEU Demonstration Program contract with ACO that ended on November 30, 2022.

Enclosure 1 provides a detailed description, justification, and ACO's significance determination for the proposed changes. Enclosure 2 provides the proposed changes to LA-3605-0001, *License Application for the American Centrifuge Plant*. Enclosure 3 public releasable proposed changes to

Document/matter transmitted contains ~~CUI//SP-SRI/PROPIN~~
~~Security-Related Information - Withhold Under 10 CFR 2.390~~
~~Proprietary Information~~

NMSS01

When separated from Enclosures 4 and 5, this cover letter and Enclosures 1, 2, 3, and 6 are uncontrolled.

~~CUI//SP-SRI/PROPIN~~
~~Security-Related Information Withhold Under 10 CFR 2.390~~
~~Proprietary Information~~

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NRC's Materials License SNM-2011 for the American Centrifuge Plant. Enclosure 4 provides corresponding withheld proposed changes to NRC's Materials License SNM-2011 for the American Centrifuge Plant and Appendix D of LA-3605-0001. Enclosure 5 provides supporting reference DAC-3901-0005, *Evaluation of No Need for an Emergency Plan for the HALEU Demonstration*, Revision 5.

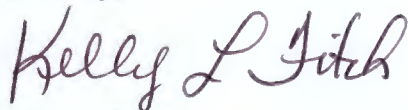
Proposed changes from the previously NRC-approved documents are noted with revision bars in the right-hand margin. Based upon the 10 CFR 70.32 and 70.72 evaluations, not all proposed changes depicted warrant the NRC's review and approval; however, are provided for completeness to assist in the review efforts. Additionally, it should be noted that a portion of Reference 1 proposed changes currently under NRC prior review and approval, are also noted within Enclosure 2 since additional changes were warranted within Sections 1.2.4 and 1.2.5 of LA-3605-0001.

Enclosures 4 and 5 contain Security-Related Information. Additionally, Enclosure 5 contains Proprietary Information. Therefore, ACO requests these enclosures be withheld from public disclosure pursuant to 10 CFR 2.390(d)(1). An affidavit required by 10 CFR 2.390(b)(1)(ii) is provided as Enclosure 6 of this letter.

After the NRC staff has had an opportunity to review the enclosures, ACO is available to support a discussion with the NRC to address questions or clarify issues. ACO respectfully requests NRC complete their review and final approval on or before February 13, 2024, to support continued HALEU operations under the new DOE HALEU contract.

If you have any questions regarding this matter, please contact me at (740) 897-3859.

Sincerely,



Kelly L. Fitch
Regulatory Manager

Enclosures: As stated

Reference:

1. ACO 22-0077 from K.L. Fitch to J.W. Lubinski (NRC) regarding License Amendment Request for American Centrifuge Operating, LLC's License Application and Supporting Documents for the American Centrifuge Plant, dated November 30, 2022

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~~Proprietary Information~~

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cc (without enclosures, unless otherwise noted):

Y. Faraz, NRC HQ (Enclosures)
A. Ford, DOE Idaho, Contracting Officer
S. Harlow, DOE NE
J. Hutson, Contract Support (Enclosures)
J. Lingard, DOE Idaho, Contract Specialist
L. Pitts, NRC Region II (Enclosures)
J. Tobin, NRC HQ (Enclosures)
T. Vukovinsky, NRC Region II

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Enclosure 1 of ACO 23-0006

Detailed Description, Justification, and Significance Determination

**Information Contained Within
Does Not Contain
Export Controlled Information**

Reviewing

Official: #1038, ACO

Date: 02/10/2023

Detailed Description, Justification, and Significance Determination

Detailed Description of Change

American Centrifuge Operating, LLC (ACO) proposes to amend the following documents to increase the possession limits supporting the continuation of Phase II production needs described in the U.S. Department of Energy's (DOE) November 2022, contract award to ACO to continue building upon the DOE's initial three-year cascade demonstration program to produce high-assay low-enriched uranium (HALEU).

U.S. Nuclear Regulatory Commission's (NRC) Materials License SNM-2011 for the American Centrifuge Plant (ACP), specifically Conditions #8a.A and #8a.D regarding HALEU Demonstration Program Possession Limits

LA-3605-0001, License Application for the American Centrifuge Plant, specifically:

- The proposed changes to Table 1.2-2, *HALEU Demonstration Program Possession Limits for NRC Regulated Materials and Substances* (Appendix D) include the possession limits for Types A and C. Additionally, the description of Type A has been revised to match the material description.
- Newly proposed changes for Sections 1.2.4 and 1.2.5 are shown in addition to the proposed changes submitted to the NRC for prior review and approval by letter ACO 22-0077, regarding License Amendment Request for American Centrifuge Operating, LLC's License Application and Supporting Documents for the American Centrifuge Plant, dated November 30, 2022. The proposed changes described in the previous amendment request were administrative in nature to describe the newest parameters of the DOE HALEU Operations Contract to support Phases I and II operations through December 31, 2024, or up to the currently NRC-authorized possession limits defined within Table 1.2-2 of the license application (LA-3605-0001) and the NRC Materials License (SNM-2011) (whichever comes first). Completion of Phases I and II of the HALEU Operations Contract are considered to be the base contract, which has a period of performance which began on November 30, 2022, and continues through December 31, 2024. The Phase I amendment request is scheduled for NRC final approval during April 2023.

It is believed that the timing of the proposed license condition described within Section 1.2.4, *Authorized Uses*, would be well after the proposed condition #2 has been met. Therefore, the previous Phase I amendment proposed condition #2 is being revised as follows under this Phase II proposed change:

"For HALEU Demonstration, ACO is authorized up to the possession limits currently described within Table 1.2-2 of this license application. ~~which limits the use of one 30B feed cylinder. Upon consumption of the initial 30B feed cylinder under the HALEU Operations contract (Phases I and II), ACO will halt withdrawal of additional product, utilizing administrative tag control, until such time that the NRC has authorized an increase in the possession limits beyond those approved on June 11, 2021 (SNM-2011, Amendment 19).~~"

Following receipt of the NRC approval for this Phase II amendment request to increase the possession limits, ACO operations will be directed to remove the administrative tag control that halts the withdrawal of additional product and ACO will continue operations and product withdrawal through the end of the base contract, December 31, 2024.

Likewise, the Phase I amendment proposed changes supporting the exemption from NRC's Materials License Condition 15 related to financial funding within Section 1.2.5, *Special Exemptions or Special Authorizations*. A description of the funding source for Phase II and III is being added into Section 1.2.5 for completeness. Please note that NRC Materials License Condition 15 is not impacted by the newly proposed Phase II text, which is being revised as follows:

"... Under the November 2022 award, ACO will perform all Phase I work scope under a cost share, no fee contractual arrangement. ACO will be responsible for paying a minimum of 50 percent of the allowable incurred costs during Phase I. DOE will reimburse ACO a maximum of 50 percent cost share for the remaining allowable costs incurred during Phase I (the Government's cost share may vary depending upon the agreed upon cost share allocation but will not exceed 50 percent). ACO's cost share amount is based on the agreed upon cost share percentage of allowable incurred costs, as defined in FAR part 31, with the remaining allowable costs eligible for reimbursement under the DOE contract. For Phase II, DOE will reimburse ACO for the work performed on a cost-plus incentive fee basis. Phase III is divided into three three-year contract option period with each option period structured on a cost-plus incentive fee basis for continued HALEU Production. Centrus' Annual Report on Form 10-K, filing date of March 11, 2022, for the fiscal year ended December 31, 2021, provides the Licensee's ability to meet the financial contractual requirements defined in the HALEU contract (Reference 22). ..."

There are no changes being proposed to the currently described HALEU centrifuge cascade design as approved by Amendment 13 of the NRC's Materials License SNM-2011 issued on June 11, 2021. Furthermore, no changes are warranted under the American Centrifuge Lead Cascade Facility (Lead Cascade Facility) license application and supporting documents.

The proposed changes contained within Enclosures 2 through 4 are identified by the following method:

- ~~Blue Strikeout~~ - Identifies text to be removed
- Red underline – Identifies text to be added
- **Yellow Highlighted** – Identifies text incorporated from Phase I Amendment Request (ACO 22-0077)

Justification

In accordance with 10 *Code of Federal Regulations* (CFR) 70.34 and 70.65, the proposed changes previously discussed, require the NRC's prior review and approval. The proposed change to increase the possession limits to support continued operation of Phase II through the end of the base contract align with the DOE's HALEU Operations Contract to meet the production milestones through December 31, 2024. There are no changes in the HALEU cascade process descriptions or number of planned operating centrifuges at the current time. Therefore, the proposed changes will not alter the design or performance of an item or activity as described in the Integrated Safety Analysis; LA-3605-0003, *Integrated Safety Analysis Summary for the American Centrifuge Plant*; or LA-3605-0003A, *Addendum 1 of the Integrated Safety Analysis Summary for the American Centrifuge Plant – HALEU Demonstration*. The increase in possession limits remain significantly less than the values analyzed; therefore, the LA-3605-0003A is conservative and bounding.

Likewise, the proposed changes will not: 1) decrease the level of the design basis as described in the License Application for the ACP; 2) result in a departure from a method of evaluation described in the License Application for the ACP used in establishing the design bases; 3) result in a degradation in safety; or 4) affect compliance with applicable regulatory requirements.

Likewise, the proposed changes will not decrease the ability of the management measures in the License Application to ensure the availability and reliability of IROFS. The proposed changes do not decrease the effectiveness of the design basis as described in the License Application. The proposed changes do not result in a departure from a method of evaluation described in the License Application used in establishing the design bases for the evaluation of HALEU Demonstration Criticality Events; therefore, this results in no degradation of safety. Lastly, the proposed changes do not have an adverse effect on compliance with applicable regulatory requirements.

After completion of the base contract (Phases I and II), the contract allows DOE to enter a Phase III, which would exercise up to three three-year option periods at a minimum production level of 900 kilograms HALEU per year. It is anticipated that the contract period be approximately two years for the base contract, and 10 years in total if all option periods are exercised. Annual Congressional appropriations will inform the duration of the contract based on the availability of funding. Following the HALEU Operations project, the centrifuge technology used at the facility will be available for commercial deployment. ACO would amend the license application and applicable supporting documents to allow continued operation of the HALEU cascade with increased possession limits for the requested extended period of operation for Phase III described above.

Financial Qualifications Determination

The November 2022 award included a \$30 million cost share during the first year to start up and operate 16 advanced centrifuges in a cascade at ACO's Piketon, Ohio enrichment facility. The contract is a performance-based contract that includes cost-shared no-fee contract line-item numbers (CLINs) and cost-plus-incentive-fee CLINs. ACO is responsible for planning, managing, integrating, and executing the work as described in section C of the DOE contract.

This performance-based contract has three phases. Phase I comprising of one CLIN, was awarded on a cost-reimbursement no-fee basis with a minimum of a 50 percent cost share requirement. Only Phase I shall be priced in accordance with the clause at Federal Acquisition Regulation (FAR) 52.216-12, Cost-Sharing Contract-No Fee. Phase II was awarded on a cost-plus incentive fee (see FAR 52.216-10) basis, resulting in the first year of HALEU production. Phase III is divided into three three-year contract option periods with each option period structured on a cost-plus incentive fee basis for continued HALEU production.

The increase in possession limits needed to complete Phase II of the DOE HALEU Operations Contract is part of the base contract and will be funded by DOE as cost-plus incentive fee.

Decommissioning Determination Based Upon Gas Centrifuge Enrichment Plant (GCEP) Lease Agreement

Amendment 3 to the *Appendix 1 Lease Agreement Between the U.S. Department of Energy and United States Enrichment Corporation for the Gas Centrifuge Enrichment Plant (GCEP) Lease Agreement*, provided by letter ACO 22-0083 regarding Submittal of Reference Material in Support of License Amendment Request for the American Centrifuge Plant, dated December 8, 2022, supports continuation of the DOE HALEU Operations Contract Phase II production capabilities through December 31, 2024. No changes are warranted at this time and continues to support this amendment request through the end of Phase II (December 31, 2024).

DOE is expected to continue to amend the GCEP Lease in support of the continuation of the HALEU Operations Contract. The DOE will continue to assume all liabilities for the decontamination and decommissioning of the facilities and equipment installed, and any work performed, under the HALEU Operations Contract with the DOE including any materials or environmental hazards on the site. No financial assurance for any liability or lease turnover conditions shall be required by the Licensee. Likewise, any liabilities of the Licensee arising from or incident to the performance of work under the HALEU Operations Contract with the DOE shall be governed solely by such contract and any financial protection afforded to the Licensee as a person indemnified under the Act.

Environmental Impact Determination

ACO believes that this proposed amendment to increase the possession limits for Phase II of the HALEU Operations Contract is eligible for categorical exclusion under the criterion of 10 CFR 51.22(c); thereby, not requiring an environmental review.

Specifically, 10 CFR 51.22(c)(11) is a categorical exclusion for issuance of amendments to licenses for fuel cycle plants and radioactive waste disposal sites and amendments to materials licenses identified in Section 51.60(b)(1) which are administrative, organizational, or procedural in nature, or which result in a change in process operations or equipment, provided that:

- (i) there is no significant change in the types or significant increase in the amounts of any effluents that may be released offsite,
- (ii) there is no significant increase in individual or cumulative occupational radiation exposure,

- (iii) there is no significant construction impact, and
- (iv) there is no significant increase in the potential for or consequences from radiological accidents.

This proposed amendment requests an increase to the previously approved possession limits for the HALEU Demonstration project to support a maximum production of approximately 1,400 kg UF₆ of HALEU during Phase II.

On June 4, 2021, the NRC issued the *Environmental Assessment for the Proposed Amendment of U.S. Nuclear Regulatory Commission License Number SNM-2011 for the American Centrifuge in Piketon, Ohio* (ADAMS Accession No. ML21085A705), which provided for the conclusion and finding of no significant impact (FONSI) for the HALEU Demonstration Program. The basis for this FONSI is the proposed action was not expected to result in new construction, and that the HALEU cascade would be assembled and operated in existing buildings that previously housed a similar system under the Lead Cascade Facility license. These facts remain unchanged.

Additionally, during the completion of the Environmental Assessment, NRC staff took into consideration the environmental impacts of operations beyond the contract expiration date of May 31, 2022, which specifically anticipated license extensions of up to 10 years. The newly awarded DOE contract for the HALEU cascade operations to support Phases I and II would not result in any significant impact on the demography, socioeconomics, and environmental justice; public and occupational health and safety; non-radiological impacts from normal operations; radiological impacts from normal operations; impacts from accidents; waste management; transportation; or cumulative impacts.

Based upon knowledge of the previous American Centrifuge Lead Cascade Facility operations waste streams, ACO conservatively estimates 400 cubic feet of radiological waste to be generated per quarter during the HALEU base operations (Phases I and II). The only foreseen increase in waste would be realized from longer operating periods. This radiological waste estimate does not take into consideration any potential decontamination or decommissioning of centrifuges, service modules, or other parts of the process as this is the responsibility of the DOE. Based upon the facts discussed above, ACO believes the environmental assessment remains valid as written and bounds the base contract operations (Phases I and II) through December 31, 2024.

Additionally, the NRC's June 2021 Safety Evaluation Report for the HALEU Demonstration stated in part, "if ACO desires to expand the scope of operation of the HALEU Demonstration Program beyond the description in the revised license application or extend operations, it will need to reassess the need for an Emergency Plan." ACO has reassessed the need for an emergency plan and determined that the technical basis provided within DAC-3901-0005 remains applicable for this amendment request.

Significance Determination for Proposed Conforming Changes

The increase in possession limits will support continued HALEU operations during Phase II through December 31, 2024. There are no changes in the HALEU cascade process descriptions or number of planned operating centrifuges at the current time. ACO has reviewed the proposed changes and provides the following Significance Determination.

1. No significant change to any conditions to the License.

The proposed changes are not prohibited by 10 CFR Part 70, license condition, or order. However, Materials License Condition 6 is being modified to make a corresponding possession limit increases to support continued operations during Phase II through December 31, 2024. No other License Conditions are impacted by this amendment.

2. No significant increase in the probability of occurrence or consequences of previously evaluated accidents.

The proposed change to increase the possession limits does not remove or change an IROFS that is listed in the ACP Integrated Safety Analysis (ISA) Summary or Addendum 1. The proposed changes do not alter any IROFS listed in the ISA Summary or Addendum 1, that is the sole item preventing or mitigating an accident sequence that exceeds the performance requirements of 10 CFR 70.61.

3. No new or different type of accident.

The proposed change to increase the possession limits does not create new types of accident sequences that, unless mitigated or prevented, would exceed the performance requirements of 10 CFR 70.61 and that have not previously been described in the ISA Summary/Addendum 1. The original accident analysis assumed 10 years of HALEU cascade operations; therefore, the HALEU cascade operations through Phase II is bound by the existing analyses and no changes are warranted.

4. No significant reduction in the margins of safety.

The proposed change to increase the possession limits does not decrease the margin of safety associated with any IROFS being credited to ensure the performance requirements of 10 CFR 70.61 are met.

5. No significant decrease in the effectiveness of any programs or plans contained in the licensing documents.

- No changes are required for the Piketon security plans SP-3605-0041 and SP-3605-0042 under this amendment. Therefore, the proposed changes will not decrease the overall level of security performance needed to protect against the loss or compromise of classified matter or SNM, while in use or in storage, nor classified matter in transit. The control of classified storage areas or vaults, training of classifiers, documentation of classification of matter will

be maintained at an equivalent level. Additionally, no changes are required for security plan SEC-18-0002, *American Centrifuge Operating, LLC (ACO) Information System Security Plan (ISSP) for Oak Ridge, TN; Piketon, OH; and Bethesda, MD*, which provides for the protection of cyber systems, maintaining the necessary computer security requirements at an equivalent level as previously approved by the NRC.

- No changes are required for the Fundamental Nuclear Material Control Plan (FNMCP) (NR-3605-0005); therefore, the proposed changes will have no effect on the FNMCP meeting the applicable requirements of 10 CFR Parts 70 and 74 for ACP. Likewise, the proposed changes do not affect the function or process to control nuclear material as described within the FNMCP or Addendum 1 of the FNMCP.
- The proposed changes do not result in a decrease in effectiveness of the approved ACP Emergency Plan. For HALEU Cascade Operations, no Emergency Plan as discussed under 10 CFR 70.22(i) is required. Likewise, the proposed changes will not decrease the abilities of the DOE reservation Responses Organization to mitigate accident consequences or reasonably assure the adequate protection of the health and safety of the off-site and on-site personnel in the event of an emergency.
- The proposed changes do not result in a change to the Quality Assurance Program Description; thereby, do not represent a relaxation of a requirement of Quality Assurance Program Description.

Based on the above, the proposed increase in the possession limits for Phase II will not result in a decrease in the effectiveness of the Security Programs/Plans, FNMCP, Emergency Plan, or the Quality Assurance Program Description contained in the licensing documents.

6. The proposed change does not result in undue risk to: 1) public health and safety; 2) common defense and security; and 3) the environment.

The proposed change to increase the possession limits does not change the response to accidents or events associated with licensed material. There will be no generation or increase in hazardous material quantities such that it impacts public health and safety. The proposed changes have no impact to the plant boundary protection, documentation of patrols, performance of rounds, or training of protective force personnel. The proposed changes will not increase the likelihood classified matter or SNM will be accessible to unauthorized personnel. Physical protection methods for SNM remain unchanged. Therefore, the proposed changes do not result in undue risk to public health and safety, the environment, or to the common defense and security.

7. There is no change in the type or significant increases in the amounts of any effluents that may be released off-site.

The proposed change to increase the possession limits do not result in any new or unusual sources of hazardous substances, hazardous waste, or new waste streams that could be generated or used in unacceptable levels that exceed applicable regulatory requirements. In addition, there is no change in the type or significant increases in the amounts of any effluents that may be

released off-site. The amount of material is much less than currently evaluated.

8. There is no significant increase in individual or cumulative occupational radiation exposure.

DAC-3901-0005, *Evaluation of No Need for an Emergency Plan for the HALEU Demonstration*, provides the evaluation stipulated in 10 CFR 70.22(i)(1)(i) to demonstrate that no Emergency Plan is needed for the HALEU cascade operations and has been written with consideration of the format and content guidance provided in Section 8.4.3.2, "Evaluation that No Emergency Plan is Required." The evaluation satisfies the 10 CFR 70.22(i)(1)(i) requirement to demonstrate "that the maximum dose to a member of the public offsite due to a release of radioactive materials would not exceed 1 rem effective dose equivalent or an intake of 2 milligrams of soluble uranium."

DAC-3901-0005 was revised (Revision 5) in support of this proposed amendment to reassess the need for an emergency plan and is provided within Enclosure 5 of this letter. It has been determined that the technical basis remains applicable if the nuclear material possession limit is increased; thereby, no Emergency Plan is required for continued 16-centrifuge HALEU cascade operations through Phase II of the DOE HALEU contract. The proposed changes will not increase radiological or chemical releases beyond applicable regulatory limits (10 CFR 70.61) and will not create any new or unusual sources of radioactive waste. Likewise, the proposed changes will not result in significant increase in individual or cumulative occupational radiation exposure.

9. There is no significant construction impact.

HALEU cascade and storage construction activities are being finalized in preparation of the final required NRC required ORR inspections to receive NRC's final authorization to introduce gas into the HALEU cascade to meet the DOE's Phase I obligations and move into Phase II milestones. Currently, there are no foreseen environmental concerns based upon the fact that the HALEU cascade and storage is being constructed within leased buildings used during the operations of the previous American Centrifuge Lead Cascade Facility; however, on a much smaller scale. Additionally, there will be no new building construction involved during Phase II HALEU cascade activities.

Pursuant to Section 3107 of the USEC *Privatization Act*, the United States Enrichment Corporation leases the portions of the DOE reservation from DOE on which the ACP is located. The Licensee subleases those portions of the DOE reservations from the United States Enrichment Corporation. Under its lease with DOE and the sublease, and in accordance with Section 3107, the United States Enrichment Corporation and the Licensee are indemnified under Section 170d of the *Atomic Energy Act* for liability claims arising out of any occurrence within the United States, causing, within or outside the United States, bodily injury, sickness, disease, or death, or loss of or damage to property, or loss of use of property, arising out of or resulting from the radioactive, toxic, explosive, or other hazardous properties of chemical compounds containing source or special nuclear material arising out of activities under the lease. This indemnification is sufficient to meet the requirements of Section 193(d) of the *Atomic Energy Act* of 1954, as amended, and 10 CFR 140.13b, because the DOE indemnity provides greater financial protection than commercially available liability insurance. Therefore, the appropriate amount of separate liability insurance that should be required by the NRC is zero and an exemption from the requirements of 10 CFR 140.13b crediting DOE indemnity in lieu of nuclear liability insurance as discussed in this section is provided in Section 1.2.5 of this license application.

By letter dated May 14, 2007 (AET 07-0030) the Licensee provided status of its efforts to obtain nuclear liability insurance in accordance with NRC License Condition #14. The NRC agreed on July 16, 2007 that the Licensee had satisfied the requirements of this license condition and no further action is required concerning this license condition.

Information indicating how reasonable assurance will be provided that funds will be available to decommission the facility as required by 10 CFR 70.22(a)(9), 10 CFR 70.25, and 10 CFR 40.36 is described in Chapter 10.0 of this license application.

1.2.3 Type, Quantity, and Form of Licensed Material

The type, quantity, and form of NRC-regulated special nuclear, source, and by-product material are shown in Table 1.2-1 for the proposed commercial plant and Table 1.2-2 for the HALEU Demonstration Program (see Appendix D of this license application).

1.2.4 Authorized Uses

The commercial ACP operation enriches UF₆ up to 10 wt. percent ²³⁵U. The specific authorized uses for each class of NRC-regulated material are shown in Table 1.2-3.

The HALEU Demonstration cascade enriches UF₆ up to a target enrichment of 19.75 wt. percent ²³⁵U, but less than 20 wt. percent ²³⁵U. Enrichment levels up to 25 wt. percent ²³⁵U are authorized to permit for process fluctuations which can create small amounts of higher weight percent material. The specific authorized uses for each class of NRC-regulated material for the HALEU Demonstration Program are shown in Table 1.2-4. The Licensee proposes that the license be conditioned as follows:

- 1) ACP shall not enrich UF₆ in excess of 20 wt. percent ²³⁵U other than in the course of cascade performance adjustments, thus providing the operational flexibility to

generate material to satisfactorily fulfill customer orders up to 20 wt. percent ^{235}U . ACP shall not input parameters to extract product material for the assay above 20 wt. percent ^{235}U at any time.

2) For HALEU Demonstration, ACO is authorized up to the possession limits currently described within Table 1.2-2 of this license application, ~~which limits the use of one 30B feed cylinder. Upon consumption of the initial 30B feed cylinder under the HALEU Operations contract (Phases I and II), ACO will halt withdrawal of additional product, utilizing administrative tag control, until such time that the NRC has authorized an increase in the possession limits beyond those approved on June 11, 2021 (SNM-2011, Amendment 19).~~

3) Within the ACP Operations, the Licensee will provide a minimum 60-day notice to the NRC prior to initial customer product withdrawal of licensed material exceeding 5 wt. percent ^{235}U enrichment. This notice will identify the necessary equipment and operational changes to support customer product withdrawal, storage, processing, and shipment for these assays.

1.2.5 Special Exemptions or Special Authorizations

The following exemption to the applicable 10 CFR Part 20 requirements are identified in Section 4.8 of this license application:

- 1) UF_6 feed, product, and depleted uranium cylinders, which are routinely transported inside the DOE reservation boundary between ACP locations and/or storage areas at the ACP, are readily identifiable due to their size and unique construction and are not routinely labeled as radioactive material. Qualified radiological workers attend UF_6 cylinders during movement.
- 2) Containers located in Restricted Areas within the ACP are exempt from container labeling requirements of 10 CFR 20.1904, as it is deemed impractical to label each and every container. In such areas, one sign stating that every container may contain radioactive material will be posted. By procedure, when containers are to be removed from contaminated or potentially contaminated areas, a survey is performed to ensure that contamination is not spread around the reservation.
- 3) In lieu of the requirements of 10 CFR 20.1601(a), each High Radiation Area with a radiation reading greater than 0.1 Roentgen Equivalent Man per hour (REM/hour) at 30-centimeters (cm) but less than 1 REM/hour at 30 cm is posted Caution, High Radiation Area and entrance into the area shall be controlled by an RWP. Physical and administrative controls to prevent inadvertent or unauthorized access to High and Very High Radiation Areas are maintained. The on-site radiological impacts from the proposed exemptions to the requirements of 10 CFR 20.1904 and 20.1601 would be minimal and are consistent with previously approved exemptions found in the GDP certification. Moreover, pursuant to the regulations in 10 CFR 20.2301, the requested exemption is authorized by law and would not result in undue hazard to life or property.

10.1(c)). To the extent required by the Lease, the Licensee will obtain such financial protection and will provide proof of such financial protection to the NRC prior to commencing operations.

The indemnity agreement contained in the Lease will “cover liability claims arising out of any occurrence within the United States that causes, within or outside the United States, bodily injury, sickness, disease, death, loss of or damage to property, or loss of use of property arising out of or resulting from the radioactive, toxic, explosive, or other hazardous properties of chemical compounds containing source material or special nuclear material.” Section 193(d) affords the Commission the discretion to determine the type and amount of liability insurance that is required to cover liability claims. The Commission has the discretion to conclude that no liability insurance is required in light of the DOE indemnity agreement. Therefore, the requested exemption is authorized by law.

Moreover, the requested exemption is in the public interest since it will facilitate deployment of the ACP, thereby maintaining domestic enrichment capacity using more efficient centrifuge technology. Requiring separate nuclear liability insurance would at best impose an unnecessary financial burden on the licensee and at worst preclude the construction of the ACP if commercial insurance ultimately is unavailable for facilities, such as the ACP, which are located on a DOE owned site. ANI, the only company providing commercial nuclear liability insurance in the U.S., has informed us that it has never insured a facility located on a DOE owned site. Furthermore, the separate liability insurance would not provide a commensurate benefit to the public since the DOE indemnity covers any public liability under Section 170 of the AEA up to the statutory limit of liability. The DOE indemnity agreement in the Lease adequately provides financial protection for the public for public liability as defined in the AEA. Therefore, the requested exemption is in the public interest.

The following exemption from NRC’s Materials License Condition 15 related to financial funding as discussed in Section 1.2.2 of this license application.

- In order to meet the financial qualifications requirements for construction and operation of the facility, the Licensee proposes that the license be conditioned as follows:

Construction of each incremental **phase** of the ACP shall not commence before funding for that increment is available or committed. Of this funding, **ACO must have in place** before constructing such increment, **commitments for one or more of the following: Equity contributions from ACO, affiliates, and/or partners, along with lending and/or lease arrangements that solely or cumulatively are sufficient to ensure funding for the particular increment’s construction costs. ACO shall** make available for NRC inspection, documentation of both the budgeted costs for such phase and the source of funds available or committed to pay those costs.

Operation of the ACP, with the exception of operation of the HALEU demonstration cascade until expiration of DOE's HALEU contract on December 31, 2024 or up the currently authorized possession limits defined within this Materials License (whichever comes first), shall not commence until the Licensee has in place, either: (1) long term contracts lasting five years or more that provide sufficient funding for the estimated cost of operating the facility for the five year period; (2) documentation of the availability of one or more alternative sources of funds that provide sufficient funding for the estimated cost of operating the facility for five years; or (3) some combination of (1) and (2).

In general, the Licensee's financial qualifications to construct and operate the HALEU 16-centrifuge cascade under the Demonstrations' Contract is demonstrated by the contract with DOE and the Selected Financial Data and detailed Consolidated Financial Statements within the latest information filed with the U.S. Securities Exchange Commission by its parent Centrus.

Under the initial HALEU Contract, DOE agreed to reimburse the Company for up to 80 percent of its costs incurred in performing the contract. The Company's cost share is the corresponding 20 percent and any costs incurred above these amounts. Costs under the HALEU Contract include *program costs*, including direct labor and materials and associated indirect costs that are classified as *Cost of Sales*, and an allocation of corporate costs supporting the program that are classified as *Selling, General, and Administrative Expenses*. Services to be provided over the HALEU Contract period include constructing and assembling centrifuges and related infrastructure in a cascade formation and production of up to 600 kgU HALEU. When estimates of remaining program costs to be incurred for such an integrated construction-type contract exceed estimates of total revenue to be earned, a provision for the remaining loss on the contract is recorded to *Cost of Sales* in the period the loss is determined. Our corporate costs supporting the program are recognized as expense as incurred over the duration of the contract term. The accrued loss on the contract will be adjusted over the remaining contract term based on actual results and remaining program cost projections. The Licensee requests an exemption to this condition during the HALEU Contract period.

Under the November 2022 award, ACO will perform all Phase I work scope under a cost share, no fee contractual arrangement. ACO will be responsible for paying a minimum of 50 percent of the allowable incurred costs during Phase I. DOE will reimburse ACO a maximum of 50 percent cost share for the remaining allowable costs incurred during Phase I (the Government's cost share may vary depending upon the agreed upon cost share allocation but will not exceed 50 percent). ACO's cost share amount is based on the agreed upon cost share percentage of allowable incurred costs, as defined in FAR part 31, with the remaining allowable costs eligible for reimbursement under the DOE contract. For Phase II, DOE will reimburse ACO for the work performed on a cost-plus incentive fee basis. Phase III is divided into three

three-year contract option period with each option period structured on a cost-plus incentive fee basis for continued HALEU Production. Centrus' Annual Report on Form 10-K, filing date of March 11, 2022, for the fiscal year ended December 31, 2021, provides the Licensee's ability to meet the financial contractual requirements defined in the HALEU contract (Reference 22).

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	MATERIALS LICENSE	

Pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974 (Public Law 93-438), and Title 10, *Code of Federal Regulations*, Chapter I, Parts 11, 30, 31, 32, 33, 34, 35, 36, 39, 40, 70, 73, and 74 and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, possess, and transfer byproduct, source, and special nuclear material designated below; to use such material for the purpose(s) and at the place(s) designated below; to deliver or transfer such material to persons authorized to receive it in accordance with the regulations of the applicable Part(s). This license shall be deemed to contain the conditions specified in Section 183 of the Atomic Energy Act of 1954, as amended, and is subject to all applicable rules, regulations, and orders of the U.S. Nuclear Regulatory Commission now or hereafter in effect and to any conditions specified below.

Licensee	
1. American Centrifuge Operating, LLC	3. License Number: SNM-2011, Amendment 19
2. American Centrifuge Plant	4. Expiration Date: See Condition 13
P.O. Box 628	5. Docket No. 70-7004
Piketon, Ohio 45661-0628	

Commercial ACP Possession Limits

<p>6. Source, Special Nuclear Material, By-product Material</p> <p>A. Uranium (natural and depleted) and daughter products</p> <p>B. Uranium enriched in isotope U-235 up to 10 percent by weight and uranium daughters</p> <p>C. Tc-99, transuranic isotopes and other contamination</p>	<p>7. Chemical and/or Physical Form Under This License</p> <p>A.1 Physical: Solid, Liquid, and Gas</p> <p>A.2 Chemical: UF₆, UF₄, UO₂F₂, oxides, metal, and other compounds</p> <p>B.1 Physical: Solid, Liquid, and Gas</p> <p>B.2 Chemical: UF₆, UF₄, UO₂F₂, oxides, metal, and other compounds</p> <p>C. Any</p>	<p>8. Maximum amount that Licensee May Possess at any One Time</p> <p>A. [Security-Related Information Withheld Under 10 CFR 2.390]</p> <p>B. [Security-Related Information Withheld Under 10 CFR 2.390]</p> <p>C. [Security-Related Information Withheld Under 10 CFR 2.390]</p>
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U.S. NUCLEAR REGULATORY COMMISSION	License Number SNM-2011, Amendment 19
MATERIALS LICENSE SUPPLEMENTARY SHEET	Docket or Reference Number 70-7004

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| D. Source Material isotopes and other contamination | D.1 Physical: Solid, Liquid (excluding UF ₆) | D. [Security-Related Information Withheld Under 10 CFR 2.390] |
| | D.2 Soluble and insoluble Chemicals, metal | |
| E. Uranium enriched in isotope U-235 from 10 percent to 20 percent by weight and uranium daughters | E.1 Physical: Solid, Liquid, and Gas | E. [Security-Related Information Withheld Under 10 CFR 2.390] |
| | E.2 Chemical: UF ₆ , UF ₄ , UO ₂ F ₂ , oxides, metal, and other compounds | |
| F. Uranium enriched in isotope U-235 from 20 percent to 98 percent by weight and uranium daughters | F.1 Physical: Solid, Liquid, and Gas | F. [Security-Related Information Withheld Under 10 CFR 2.390] |
| | F.2 Chemical: UF ₆ , UF ₄ , UO ₂ F ₂ , oxides, metal, and other compounds | |
| G. Special Nuclear Material | G. Any | G. [Security-Related Information Withheld Under 10 CFR 2.390] |
| H. Special Nuclear Material Source | H. Any | H. [Security-Related Information Withheld Under 10 CFR 2.390] |
| I. By-product Material | I. Any | I. [Security-Related Information Withheld Under 10 CFR 2.390] |

HALEU Demonstration Program Possession Limits

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|--|---|--|
| 6.a. Source, Special Nuclear Material, By-product Material | 7a. Chemical and/or Physical Form Under This License | 8a. Maximum amount that Licensee May Possess at any One Time |
| A. Uranium (non-fissile) and daughter products | A.1 Physical: Solid, Liquid (excluding UF ₆), and Gas | A. [Security-Related Information Withheld Under 10 CFR 2.390] |
| | A.2 Chemical: UF ₆ , UF ₄ , UO ₂ F ₂ , oxides, metal, and other compounds | Proposed Change see withheld Enclosure 4 of ACO 23-0006 |

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U.S. NUCLEAR REGULATORY COMMISSION	License Number SNM-2011, Amendment 19
MATERIALS LICENSE SUPPLEMENTARY SHEET	Docket or Reference Number 70-7004

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| B. Source Material isotopes and other contamination | B.1 Physical: Solid, Liquid (excluding UF ₆)
B.2 Soluble and insoluble chemicals, metal | B. [Security-Related Information Withheld Under 10 CFR 2.390] |
| C. Special Nuclear Material Uranium enriched in isotope ²³⁵ U up to 5 percent by weight and uranium daughters | C.1 Physical: Solid, Liquid (excluding UF ₆), and Gas
C.2 Chemical: UF ₆ , UF ₄ , UO ₂ F ₂ , oxides, metal, and other compounds | C. [Security-Related Information Withheld Under 10 CFR 2.390] |
| D. Special Nuclear Material Uranium enriched in isotope ²³⁵ U from 5 up to but less than 20 percent by weight | D.1 Physical: Solid, Liquid (excluding UF ₆), and Gas
D.2 Chemical: UF ₆ , UF ₄ , UO ₂ F ₂ , oxides, metal, and other compounds | D. [Security-Related Information Withheld Under 10 CFR 2.390]
Proposed Change see withheld Enclosure 4 of ACO 23-0006 |
| E. Special Nuclear Material Uranium enriched in isotope ²³⁵ U from 20 up to 25 percent by weight | E.1 Physical: Solid, and Gas
E.2 Chemical: UF ₆ , UF ₄ , UO ₂ F ₂ , oxides, and other compounds | E. [Security-Related Information Withheld Under 10 CFR 2.390] |
| F. Special Nuclear Material Plutonium | F. Sealed Source | F. [Security-Related Information Withheld Under 10 CFR 2.390] |
| G. Special Nuclear Material Plutonium | G. Unsealed Source | G. [Security-Related Information Withheld Under 10 CFR 2.390] |
| H. Special Nuclear Material Americium | H. Process Contaminants | H. [Security-Related Information Withheld Under 10 CFR 2.390] |
| I. By-product Material | I. Any | I. [Security-Related Information Withheld Under 10 CFR 2.390] |

**AFFIDAVIT OF LARRY B. CUTLIP
SUPPORTING APPLICATION TO WITHHOLD FROM
PUBLIC DISCLOSURE CERTAIN INFORMATION PROVIDED TO NRC IN
LETTER ACO 23-0006**

I, Larry B. Cutlip, of American Centrifuge Operating, LLC (ACO), having been duly sworn, do hereby affirm and state:

1. I have been authorized by ACO to (a) review the information owned by ACO which is referenced herein relating to ACO's License Amendment Request for the American Centrifuge Plant (ACP) (NRC Materials License SNM-2011) as the described in letter ACO 23-0006, which ACO seeks to have withheld from public disclosure pursuant to section 147 of the Atomic Energy Act (AEA), as amended, 42 U.S.C. § 2167, and 10 CFR 2.390(a)(4), and 9.17(a)(4), and (b) apply for the withholding of such information from public disclosure by the Nuclear Regulatory Commission (NRC) on behalf of ACO.
2. Consistent with the provisions of 10 CFR 2.390(b)(4) of the Commission's regulations, the following is furnished for consideration by the Commission in determining whether the information sought to be withheld from public disclosure should be withheld.
 - i. The information sought to be withheld from public disclosure is owned and has been held in confidence by ACO.
 - ii. The information is of a type customarily held in confidence by ACO and not customarily disclosed to the public. ACO 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 constitute ACO policy and provide 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.) where presentation of its use by any of ACO's competitors without license from ACO constitutes a competitive economic advantage over other companies.
 - b) It consists of supporting data, including test data, relative to a process (or component, structure, tool, method, etc.), the application of which data secures a competitive economic advantage (e.g., by optimization or improved marketability).
 - c) Its use by a competitor would reduce their expenditure of resources or improve their competitive position in the design, manufacture, shipment, installation, assurance of quality, or licensing a similar product.
 - d) It reveals cost or price information, production capacities, budget levels, or commercial strategies of ACO, its customers or suppliers.
 - e) It reveals aspects of past, present, or future ACO or customer funded development plans and programs of potential commercial value to ACO.
 - f) It contains patentable ideas, for which patent protection may be desirable.
 - g) It reveals information concerning the terms and conditions, work performed, administration, performance under or extension of contracts with its customers or suppliers.
- iii. There are sound policy reasons behind the ACO system which include the following:
- a) The use of such information by ACO gives ACO a competitive advantage over its competitors. It is, therefore, withheld from disclosure to protect the ACO competitive position.

- b) It is information, which is marketable in many ways. The extent to which such information is available to competitors diminishes ACO's ability to sell products and services involving the use of the information.
 - c) Use by our competitors would put ACO at a competitive disadvantage by reducing their expenditure of resources at ACO expense.
 - d) Each component of proprietary information pertinent to a particular competitive advantage is potentially as valuable as the total competitive advantage. If competitors acquire components or proprietary information, any one component may be the key to the entire puzzle, thereby depriving ACO of a competitive advantage.
 - e) Unrestricted disclosure would jeopardize the position of prominence of ACO in the world market, and thereby give a market advantage to the competition of those countries.
 - f) The ACO capacity to invest corporate assets in research and development depends upon the success in obtaining and maintaining a competitive advantage.
- iv. The information is being transmitted to the Commission in confidence and, under the provisions of 10 CFR Section 2.390, it is to be received in confidence by the Commission.
- v. 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.

3. The proprietary information sought to be withheld is contained within Enclosure 5 of letter ACO 23-0006. Enclosure 5 provides proposed changes to DAC-3901-0005, *Evaluation of No Need for an Emergency Plan for the HALEU Demonstration*. This enclosure provides the evaluation stipulated in 10 CFR 70.22(i)(1)(i) to demonstrate that no Emergency Plan is needed for the deployment of ACO's high-assay low-enriched uranium (HALEU) Demonstration program as referenced within Chapter 8.0 of LA-3605-0001, *License Application for the American Centrifuge Plant*; therefore, determined to be proprietary.

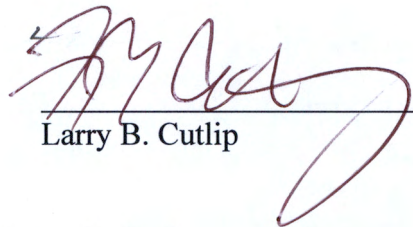
Public disclosure of this proprietary information is likely to cause substantial harm to the competitive position of ACO because it may enhance the ability of competitors to position and provide similar products. Moreover, disclosure of this information may provide insights into the design of ACO's American Centrifuge technology, including structures, systems, and components categorized as Security-Related Information and/or Export Controlled Information. This evaluation also discusses the types of accidents associated with the HALEU Demonstration Program as documented within LA-3605-0003A, *Addendum 1 of the Integrated Safety Analysis Summary for the American Centrifuge Plant – HALEU Demonstration*.

Further, this information has substantial commercial value as follows:

- The development of the information described in part is the result of applying many hundreds of person-hours and the expenditure of thousands of dollars on design and analysis activities to achieve the information that is sought to be withheld; and
- In order for a competitor of ACO to duplicate the information sought to be withheld, a similar process would have to be undertaken and a significant effort and resources would have to be expended.

Further the deponent sayeth not.

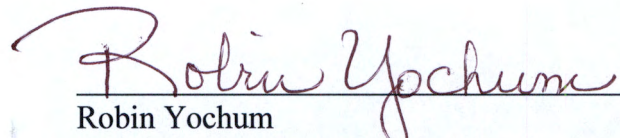
Larry B. Cutlip, having been duly sworn, hereby confirms that I am the Senior Vice President, Field Operations of American Centrifuge Operating, LLC, that I am authorized on behalf of ACO to review the information attached hereto and to sign and file with the U.S. Nuclear Regulatory Commission this affidavit and the attachments hereto, and that the statements made and matters set forth herein are true and correct to the best of my knowledge, information, and belief.



Larry B. Cutlip

On this 13th day of February 2023, Larry B. Cutlip personally appeared before me, is known by me to be the person whose name is subscribed to within the instrument and acknowledged that he executed the same for the purposes therein contained.

In witness hereof I hereunto set my hand and official seal.



Robin Yochum
State of Ohio Notary Public, Pike County
My commission expires February 6, 2027



Robin Yochum
Notary Public, State of Ohio
My Commission Expires:
February 6, 2027