



June 12, 2025  
ACO 25-0006

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**

**Supplemental Proposed Changes for American Centrifuge Operating, LLC's License Application for the American Centrifuge Plant – Phase III of HALEU Operations [Enterprise Project Identifier (EPID) L-2025-LLA-0000]**

Dear John Lubinski:

In accordance with 10 *Code of Federal Regulations* (CFR) 70.34 and 70.65, American Centrifuge Operating, LLC (ACO) requests the U.S. Nuclear Regulatory Commission's (NRC) review and approval of the proposed supplemental proposed changes to LA-3605-0001, *License Application for the American Centrifuge Plant* (ACP) in Piketon, Ohio (Materials License SNM-2011).

Enclosure 1 provides a revised detailed description, justification, and ACO's significance determination for the proposed changes previously provided under Reference 1. Enclosure 2 provides supplemental proposed changes to LA-3605-0001. Enclosure 3 provides supplemental proposed changes to NRC Materials License SNM-2011. Supplemental proposed changes are noted in tracked changes with blue highlights and revision bars in the right-hand margin.

ACO anticipates completion of the Base Contract (Phases I and II) by June 30, 2025; therefore, ACO requests NRC's approval on or before June 30, 2025, to support continued HALEU operations under the DOE HALEU contract.

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

Sincerely,

A handwritten signature in black ink that reads "Kelly L. Fitch".

Kelly L. Fitch  
Regulatory Manager

John W. Lubinski  
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Enclosures: As stated

Reference:

1. ACO 24-0108 from K.L. Fitch to J.W. Lubinski (NRC) regarding License Amendment Request for American Centrifuge Operating, LLC's License Application for the American Centrifuge Plant – Phase III of HALEU Operations (ML24366A069), dated December 19, 2024

cc: S Bazian, NRC HQ  
T. Bluth, DOE Idaho  
J. Downs, NRC HQ  
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**Enclosure 1 of ACO 25-0006**

**Revised Detailed Description, Justification, and Significance Determination As Previously  
Submitted Under ACO 24-0108 on December 19, 2024**

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

Reviewing

Official: Lori A. Hawk, ACO

Date: 06/12/2025

**Revised Detailed Description, Justification, and Significance Determination  
As Previously Submitted Under ACO 24-0108 on December 19, 2024 [ML24366A069]**

**Detailed Description of Change**

On September 30, 2024, the U.S. Department of Energy (DOE) provided preliminary notification of intention to exercise Phase III - option period 1 (CLIN 00003) of the High Assay Low Enriched Uranium (HALEU) Demonstration Cascade Completion and HALEU Production Contract (Contract Number 89243223CNE000030) from July 1, 2025, to June 30, 2028. This option period, along with the other two option periods, will be funded as outlined in the HALEU Contract for Phase III operations, and are at DOE's sole discretion and subject to the availability of Congressional appropriations. Therefore, American Centrifuge Operating, LLC (ACO) commits to submit to the U.S. Nuclear Regulatory Commission (NRC), the amended contract, funding each of the option periods (1, 2, and 3) of Phase III upon receipt from the DOE.

ACO proposes to amend the licensing documents to 1) increase the possession limits supporting the continuation of all three option periods under Phase III to meet the Licensee's planned production needs for a minimum of 900 kgs of HALEU per year to a nominal 19.75 weight percent <sup>235</sup>U; 2) clarify administrative descriptions for the newest parameters of the HALEU Contract and lease to support Phase III operations; and 3) revise the dates associated with the reference to Centrus' Annual Report Form 10-K. The proposed changes to the licensing documents are as follows:

- Enclosure 2 of ACO 24-0108 contains proposed changes to LA-3605-0001, *License Application for the American Centrifuge Plant*, specifically the Inside Cover, Updated List of Effective Pages, and Sections 1.1.8.1, 1.1.8.2, 1.1.8.4, 1.2.2, 1.2.5, 10.1, and 10.2.
- Enclosure 3 of ACO 24-0108 contains proposed changes to LA-3605-0002, *Environmental Report for the American Centrifuge Plant*, specifically, the Inside Cover, Updated List of Effective Pages, and Section 1.0.2.
- Enclosure 4 of ACO 24-0108 contains proposed changes to Appendix D of LA-3605-0001, specifically, the possession limits for Types A and C contained within Table 1.2-2, *HALEU Demonstration Program Possession Limits for NRC Regulated Materials and Substances*.
- Enclosure 5 of ACO 24-0108 contains proposed changes to NRC's Materials License SNM-2011, specifically, the possession limits for Types A, C, and D for the *HALEU Demonstration Program Possession Limits* described under Condition 8a.

- Enclosure 6 [of ACO 24-0108](#) contains proposed changes to LA-3605-0003, *Integrated Safety Analysis Summary for the American Centrifuge Plant*, (ISA Summary) specifically, the Inside Cover, Updated List of Effective Pages, and Section 3.1.
- Enclosure 7 [of ACO 24-0108](#) contains proposed changes to NR-3605-0005, *Fundamental Nuclear Material Control Plan for the American Centrifuge Plant*, (FNMCP) specifically, the Inside Cover, Updated List of Effective Pages, and Section 1.1. Additionally, general formatting of the withholding categories shown within the headers and footers of the entire document have been made to be consistent with procedure requirements. However, the entire plan is not being submitted for prior review and approval for this administrative change to the header and footer. The pages provided will depict this overall document change.
- Enclosure 8 [of ACO 24-0108](#) contains proposed changes to SP-3605-0041, *Security Plan for the Protection of Classified Matter at the American Centrifuge Plant in Piketon, Ohio*, specifically, Section 1.2.2.
- Enclosure 9 [of ACO 24-0108](#) contains proposed changes to SP-3605-0042, *Security Plan for the Protection of Special Nuclear Material at the American Centrifuge Plant in Piketon, Ohio*, specifically, the Inside Cover, Updated List of Effective Pages, and Section 1.0.

For completeness, general formatting and grammatical corrections are also included within the proposed changes. The proposed changes contained within Enclosures 2 through 9 [of ACO 24-0108](#) are identified by the following method:

- [Blue Strikeout](#) - Identifies text to be removed
- [Red underline](#) – Identifies text to be added
- [Yellow highlighted](#) information identifies text incorporated from the Phase II+ Extension Amendment Request [EPID L-2024-LLA-0131] (ACO 24-0070 dated September 12, 2024; ACO 24-0090 dated November 7, 2024; and ACO 24-0093 dated November 21, 2024) that is anticipated to receive NRC approval on or before December 31, 2024.
- [Gray highlighted](#) information identifies text incorporated from NRC’s approval on September 20, 2024 [ML24068A194 Pkg A189] Amendment 24 that is pending implementation by the Licensee.

On May 22, 2025, based upon discussions between ACO and DOE, it has been mutually agreed to change contract line-item numbers (CLINs) 00003 of the HALEU contract from one three-year option period to three one-year option periods, aligning with DOE's funding for the first one-year option period beginning on July 1, 2025. Therefore, ACO proposes supplemental proposed changes to Sections 1.1.8.2, 1.2.2, and 1.2.5 of LA-3605-0001 to further clarify the description for Option Period 1 of Phase III to align with the newest funding parameters of the HALEU Operations contract.

Additionally, ACO has committed to submit an amendment should there be substantive changes to the HALEU contract that affects the NRC's prior authorization to increase the possession limits of Phase III in its entirety. Therefore, NRC Materials License SNM-2011, Condition 31, has also been revised to align with the supplemental proposed changes of LA-3605-0001.

The proposed changes contained within Enclosure 2 and 3 of ACO 25-0006 are identified by the following method:

- Blue Strikeout - Identifies text to be removed
- Red underline – Identifies text to be added
- Blue highlighted information identifies the newest proposed changes within Enclosures 1 and 2

### **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 changes increase the possession limits to support continued HALEU operations through all three of the 3-year option periods of Phase III [nine years total] as defined in DOE's HALEU Contract to meet the production milestones through June 30, 2034. There are no changes being made to the HALEU cascade process descriptions, number of planned operating centrifuges, or Special Nuclear Material/Tails storage capacities as previously approved by the NRC. However, there were other description clarifications that are administrative in nature and also included within this amendment.

These supplemental proposed changes to LA-3605-0001 and SNM-2011 are administrative in nature to align with the newest parameters of the HALEU contract, specifically related to the funding parameters of Option Period 1 of Phase III. There are no changes being made to the HALEU cascade process descriptions, number of planned operating centrifuges, or Special Nuclear Material/Tails storage capacities as previously approved by the NRC. ACO's programs/plans will continue be implemented in the same manner and the production rate remains unchanged for a minimum yearly production level of 900 kilograms of HALEU for all nine years

of Phase III. The previously revised programs/plans describe the phases at the highest level, specifically Phase III: “After completion of the Base Contract, the contract allows DOE to enter into a Phase III, which **could** exercise up to three three-year option periods at a minimum production level of 900 kilograms of HALEU per year.”

This latest DOE decision is linked to the funding aspect of each year for Option 1 of Phase III. Therefore, no additional changes are being proposed for the possession limits contained within Appendix D of LA-3605-0001 supporting all planned nine years of Phase III operations; LA-3605-0002, LA-3605-0003, NR-3605-0005, SP-3605-0041, or SP-3605-0042 that were submitted under ACO 24-0108 on December 19, 2024 (ML24366A069), which remain under the NRC’s review and approval.

The proposed changes will not decrease the ability of the management measures in the License Application to ensure the availability and reliability of Items Relied on for Safety (IROFS). The proposed changes do not decrease the effectiveness of the design basis as described in the License Application, nor 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, the proposed changes do not result in a degradation of safety, nor have an adverse effect on compliance with applicable regulatory requirements.

### **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.

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. After completion of the base contract (Phases I and II ending on June 30, 2025), the contract allows DOE to enter a Phase III, which could exercise up to three three-year option periods at a minimum production level of 900 kilograms HALEU per year. Each of these three option periods are structured on a cost-plus incentive fee basis for continued HALEU production. Annual Congressional appropriations will inform the duration of the contract based on the availability of funding. Currently, DOE has deemed it reasonable to redefine option period I as being divided into three one-year option periods, with the first single year funded to begin on July 1, 2025. Following the HALEU Operations contract, the centrifuge technology used at the facility will be available for commercial deployment.

Additionally, Centrus' Annual Report on Form 10-K, filing date of February 9, 2024, for the fiscal year ended December 31, 2023, provides the Licensee's ability to meet the financial contractual requirements defined in the HALEU contract. The Company has long-term nuclear fuel sales and supply contracts in place that extend to 2030; these contracts will provide a stream of revenue for many years and provide a foundation for growth.

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

Amendment 3 to the *Appendix I 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 HALEU contract under Phases II and III production capabilities.

The DOE continues to assume all liabilities for the decontamination and decommissioning of the facilities and equipment installed, and any work performed under the HALEU 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**

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* [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 American Centrifuge Lead Cascade Facility license. These facts remain unchanged.

On September 10, 2024, the NRC issued the *Environmental Assessment for Proposed License Amendment to Increase the Possession Limits for Licensed Material for the HALEU Program at the American Centrifuge Plant in Piketon, Ohio* [ML2425A206], which provided for the conclusion and FONSI. The basis for this FONSI is the proposed action would not result in new construction or ground disturbance, would not result in significant differences in the amounts of effluents or emissions generated, and would not significantly affect any resource area. The production of HALEU UF<sub>6</sub> would continue in the HALEU operations building, and the storage would continue onsite. These facts also remain unchanged.

As described within the license application (LA-3605-0001) and environmental report (LA-3605-0002), ACO operates the HALEU cascade (16 centrifuges) within the leased footprint of the previously regulated, now decommissioned, American Centrifuge Lead Cascade Facility. Final construction efforts to build out the HALEU cascade were completed under Phase I of the DOE contract. Following the NRC's authorization to introduce uranium hexafluoride (UF<sub>6</sub>) into the HALEU cascade on June 12, 2023 [ML23163A168], ACO began HALEU cascade operations under Phase II, which included the storage of feed, tails, and HALEU for the DOE. In February 2023 [ML23047A046], ACO requested an increase in the possession limits supporting the entire Phase II operations. In September 2024 [ML24254A206], the NRC issued an Environmental Assessment that evaluated this increase of the authorized limits for possession of licensed material (uranium) to support HALEU production.

### **Resources Not Affected by the Proposed Changes**

The proposed substantial change being evaluated under this amendment is another increase in the possession limits to support continued HALEU operations through all three of the 3-year option periods of Phase III [nine years total] as defined in DOE's HALEU Contract to meet the production milestones through June 30, 2034. There are no changes being made to the HALEU cascade design or process descriptions; the number of planned operating centrifuges; or the current storage capacities just recently approved by the NRC [ML24324A357 Pkg A356]. HALEU operations, including storage of additional wastes, will continue to be performed within currently leased buildings by existing staff in Piketon, OH. Additionally, ACO does not propose to construct new buildings, conduct ground-disturbing activities, or ship HALEU offsite. Based upon the above discussion, ACO's proposed change to increase the possession limits does not pose an impact on the following resources: land use; historic and cultural; visual and scenic; climate; geology and soils; water resources; ecological resources; socioeconomics; environmental justice; noise; or public health and safety as previously evaluated under the 2024 Increased Possession Limits [ML24254A206]. The following discussions provide the determination of no significant impacts on the remaining five resources.

### **Resources Affected by the Proposed Changes**

*Air Quality:* The HALEU cascade operates within existing buildings with concrete floors, along with being enclosed with fencing and gates. The major non-radiological hazardous air emissions associated with the HALEU cascade are from hydrogen fluoride (HF), which is a byproduct of the enrichment process that uses fluorine and low enriched uranium (feed) to produce HALEU UF<sub>6</sub>. The HALEU cascade operations may result in negligible (minimal) increase in HF concentrations.

As stated within the 2021 Environmental Assessment, the annual average HF concentration for the HALEU cascade was calculated to be 0.00227 micrograms per cubic meter (m<sup>3</sup>) at the location of the maximally exposed individual. For the period between July and December 2023, the average

HF concentration for the maximally exposed individual was  $4.8 \text{ E-9}$  micrograms/ $\text{m}^3$ . For the period between January and June 30, 2024, the average HF concentration for the maximally exposed individual was  $2.40 \text{ E-07}$  micrograms/ $\text{m}^3$ .

Vent Emissions Basic Summary from current operations of the HALEU cascade are provided below:

- 78,821,160 standard cubic feet for the total vent flow from August 2023 to December 2, 2024
- July – December 2023 Public Dose due to Gaseous Effluents  $1.3 \text{ E-06}$  mrem
- January – June 2024 Public Dose due to Gaseous Effluents  $1.6 \text{ E-05}$  mrem
- Data not yet available for the second half of calendar year 2024

As stated within Section 4.6.3.1 of the Environmental Report (LA-3605-0002), diesel generators would be used to maintain power to essential systems in the event normal power is lost or interrupted, and ACO estimates it would operate the diesel generators for less than 500 hours per year for the HALEU cascade. The increase in possession limits will not affect this estimate. Because of their intermittent use, the impact of diesel generators on non-radiological air quality would be insignificant.

*Transportation:* Section 4.2.3.2.1.2 of LA-3605-0002, *Environmental Report for the American Centrifuge Plant*, states in part “The Tails material from HALEU will be stored onsite in 12-series cylinders. Currently, there are no plans for shipment of HALEU Demonstration Tails Material. The product material from the HALEU demonstration will be stored onsite in 5-series cylinders. Currently, there are no plans for shipment of HALEU Demonstration product material.” The are no changes to the number of operating or spare centrifuges, the only shipments that will occur as a result of the proposed increase in the possession limits would be the additional shipment of feed material needed to support the production levels (i.e., approximately two 30B feed cylinders per year). For the HALEU cascade, ACO receives a very small fraction of the estimated 1,100 yearly feed shipments for the commercial ACP. Therefore, operation of the HALEU cascade for this additional nine-year period will not pose any significant transportation impacts related to feed shipments. Additionally, the DOE contract does not allow for the shipment of product or tails; therefore, these cylinders are securely stored inside the building. ACO has assessed that the transportation impacts of the proposed increase in possession limits would not be significant and are bounded by the impacts previously assessed in the 2021 HALEU cascade Environmental Assessment.

Occupational Health and Safety:

*Non-Radiological Impacts:* As stated within the Environmental Report (LA-3605-0002), for operation of the HALEU cascade, environmental monitoring of chemical parameters is required by state and federal regulations and/or permits. Exposures to chemical agents are controlled by administrative and engineering methods and/or personal protective equipment. Extremely hazardous substances, such as fluorine or HF, are stored and used in accordance with state regulations and permits. ACO takes precautions to avoid impacts from accidental discharges of fuel, waste, and sewage. These precautions include the use of spill response plans, safety procedures, spill controls, countermeasure plans, and spill response equipment (in accordance with federal and state laws) that would minimize the likelihood and severity of potential impacts from accidental discharges. HF emissions resulting from the proposed increase in possession limits would likely not be detectably different from the current HF emissions; therefore, the potential non-radiological impacts on workers from the proposed increase in possession limits would not be significant.

*Radiological Impacts:* The increase in possession limits does not result in any significant change in effluents released offsite or any significant increase in individual or cumulative occupational radiation exposure. The effluents released would be proportional to the production level (centrifuges in use) rather than the possession limit itself. The existing process building exhaust vent remains unchanged and supports this increase in possession limits. Therefore, ACO has assessed there is no change in the type or significant increases in the amounts of effluents that may be released off-site for Phase III operations.

ACO began operating the HALEU cascade in August 2023 and continues operations to date. ACO has been collecting and submitting an effluent monitoring report for these HALEU activities. For the period of July 1, 2023, through December 31, 2023, ACO's total exposure to the nearest resident was 3.49 E10-06 millirem [ML24072A044]. The total release data for this same reporting period is as follows:

<b>Radionuclide</b>	<b>Total Gaseous Releases</b>	<b>Total Liquid Releases</b>	<b>Unit of Measure</b>
<sup>234</sup> U	2.40 E-03	6.04 E-02	milliCurie (mCi)
<sup>235</sup> U	4.75 E-04	2.30 E-03	mCi
<sup>238</sup> U	7.56 E-04	3.47 E-02	mCi
<sup>99</sup> Tc	0.00 E+00	0.00 E+00	mCi

- <sup>99</sup>Tc lab results were undetectable.

For the period of January 1, 2024, through June 30, 2024, ACO’s public dose due to gaseous effluents was 1.6 x E-05 millirem [ML24253A175]. The total release data for this same reporting period is as follows:

<b>Radionuclide</b>	<b>Total Gaseous Releases</b>	<b>Total Liquid Releases</b>	<b>Unit of Measure</b>
<sup>234</sup> U	8.94 E -03	1.30 E -01	milliCurie (mCi)
<sup>235</sup> U	1.10 E -03	5.47 E -03	mCi
<sup>238</sup> U	8.75 E -03	9.08 E -02	mCi
<sup>99</sup> Tc	0.00 E +00	0.00 E +00	mCi

- <sup>99</sup>Tc lab results were undetectable.

As shown above, the total release data is well below ACO’s As Low As Reasonably Achievable goals for both airborne and waterborne radioactive releases as committed within Chapter 9 of LA-3605-0001, *License Application for the American Centrifuge Plant*. The proposed increase in possession limits would not affect the rate of production and would not result in any greater radiological air emissions than those described above. Therefore, ACO has assessed that the radiological air emissions impacts from the increase in possession limits would not be significant.

*Impacts from Accidents:* The events presented within LA-3605-0003A, *Addendum 1 of the Integrated Safety Analysis Summary for the American Centrifuge Plant – HALEU Demonstration*, are consequence based. These consequences are based on a hypothetical maximum inventory for HALEU Demonstration. This inventory is not based on any specific time periods or duration and is significantly greater than the current (and likely any future) possession limits specified in the Materials License. The increase in possession limits remain significantly less than the values analyzed and LA-3605-0003A is conservative and bounding.

Additionally, ACO’s ISA Summary documentation (LA-3605-0003 and LA-3605-0003A), demonstrate compliance with the performance requirements in 10 CFR 70.61 to limit the risk of credible high- and intermediate consequence accident sequences, including nuclear criticality accidents. This proposed change does not create any new types of accident sequences that, unless mitigated or prevented, would exceed the performance requirements of 10 CFR 70.61 and that have not been described in the ISA Summary documentation (LA-3605-0003 or LA-3605-0003A).

**Waste Management:** The bulk of the waste (i.e., low-level waste) is personnel protective equipment and other non-fissile waste generated in routine maintenance and operations. Based upon the current waste generation rate, it is estimated that seven B-25 boxes would be generated per each three-year option period of Phase III, meaning a total of approximately 21 B-25 boxes over the nine-year period. Additionally, these waste containers are stored inside the process building. 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.

As discussed in Chapter 9.0 of the License Application (LA-3605-0001), onsite sanitary wastewater is treated by a DOE contractor at the DOE reservation and other wastes are managed using existing DOE sitewide services. DOE is also responsible for the management and disposal of low-level radioactive waste from the HALEU cascade operation. Waste is collected, packaged, and segregated for off-reservation disposal or treatment in accordance with applicable State and Federal regulations.

Based upon the above, ACO concludes that the impacts of waste management associated with the proposed increase in possession limits would not be significant and are bounded by the impacts previously assessed by the NRC in the 2021 Environmental Assessment.

*Cumulative Effects:* As previously stated within the 2021 Environmental Assessment, the NRC found that the construction and operation of the HALEU cascade would not have a significant incremental impact and, when added to the effects of other past, present, or reasonably foreseeable future actions in this area, would not result in significant cumulative effects except for a potential increase in air emissions (e.g., dust and heavy equipment emissions) during construction of the full ACP, when built. As of November 8, 2024, the NRC terminated the Materials License (SNM-7003) [EPID L-2023-LLA-0159] for the American Centrifuge Lead Cascade Facility, thereby, eliminating any future cumulative effects from this license.

The increase in possession limits of licensed material would result in a very small increase in the amount of waste and tails material to be managed in comparison to the full commercial ACP; therefore, ACO has assessed the incremental effects of this proposed possession limit increase would be minor as to not change the cumulative effects conclusions presented in the NRC's 2021 Environmental Assessment.

Based upon the above discussions, ACO has assessed that the proposed change to increase the possession limits of licensed material through the end of the DOE contract to support production and onsite storage would not significantly affect the quality of the human environment. Therefore, this conclusion supports a finding of no significant impact as defined under 10 CFR 51.32. Additionally, ACO has assessed that the proposed amendment to increase the possession limits for Phase III of the HALEU Operations is bound by NRC's Environmental Assessment for Proposed License Amendment to Increase Possession Limits for Licensed Materials for the HALEU Program at the American Centrifuge Plant in Piketon, Ohio [ML2425A206].

### **Significance Determination for Proposed Conforming Changes**

The substantive change being proposed for review and approval is the increase in the possession limits supporting the continuation of all three 3-year option periods under Phase III, meeting the Licensee's planned production needs for a minimum of 900 kgs of HALEU per year to a nominal

19.75 weight percent <sup>235</sup>U. The clarifications in Phase III and lease descriptions are administrative in nature to capture the newest parameters of the HALEU Contract supporting Phase III continued operations. There are no changes being made to the HALEU cascade process descriptions, number of planned operating centrifuges, or Special Nuclear Material/Tails storage capacities as previously approved by the NRC. 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 to increase the possession limits and clarify descriptions of Phase III and the lease are not prohibited by 10 CFR Part 70, license condition, or order. However, Materials License SNM-2011, Conditions 6a, 7a, and 8a are being modified to make a corresponding possession limit increases to support continued operations during Phase III through the end of the DOE HALEU contract. Additionally, license condition 31 is being revised to address ACO's commitment to submitting an amendment should there be a substantive change to the HALEU contract terms. 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 changes being made to the ACP Integrated Safety Analysis (ISA) Summary (LA-3605-0003) are administrative in nature to clarify Phase III. These proposed changes do not remove or change an IROFS that is listed in LA-3605-0003 or LA-3605-0003A. Additionally, the proposed changes do not alter any IROFS listed in the LA-3605-0003 or LA-3605-0003A, 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 events presented within Addendum 1 of the Integrated Safety Analysis (ISA) Summary (LA-3605-0003A) are consequence based. These consequences are based on a hypothetical maximum inventory for HALEU Demonstration. This inventory is not based on any specific time periods or duration and is significantly greater than the current (and likely any future) possession limits specified in the Materials License. The increase in possession limits remain significantly less than the values analyzed and LA-3605-0003A is conservative and bounding. Therefore, the increase in the possession limits will not alter the design or performance of an item or activity as described in ACP ISA Summary (LA-3605-0003) or LA-3605-0003A. Additionally, the proposed changes do not create any 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 LA-3605-0003 or LA-3605-0003A.

**4. No significant reduction in the margins of safety.**

The proposed changes to increase the possession limits and clarify descriptions of Phase III and lease do 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.**

- The proposed changes being made to security plans SP-3605-0041 and SP-3605-0042 are administrative in nature to clarify Phase III; therefore, 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 the same level.

No changes are required for security plan SEC-18-0002, *Information System Security Plan (ISSP) for Oak Ridge, TN; Piketon, OH; and Bethesda, MD*, which provides the protection of cyber systems, maintaining the necessary computer security requirements at the same level as previously approved by the NRC. Additionally, no changes are required for the following security plans: NR-3605-0010, *Transportation Security Plan for Classified Matter Shipments for the American Centrifuge Plant*; NR-SP-ACO-OR-0001, *Security Program for American Centrifuge Operating, LLC at Oak Ridge, Tennessee*; SP-3605-0043, *Classified Distributed Control System (DCS) Information System Security Plan (ISSP)*; SP-3605-0044, *Classified Process Telephone System (PTS)*; or SP-3605-0045, *Security Plan for the Protection of Classified Matter at Centrus Energy Corp. Headquarters*.

- The proposed changes being made to the FNMCP (NR-3605-0005) are administrative in nature to clarify Phase III; therefore, the proposed changes will have no effect on the FNMCPs meeting the applicable requirements of 10 CFR Parts 70 and 74. 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 to increase the possession limits and clarify descriptions of Phase III and the lease do not result in a change to the ACP Emergency Plan, nor decrease the effectiveness. 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. DAC-3901-0005 (Revision 6) was reassessed and still concludes that “ACO has reassessed the need for an emergency plan and

*determined that the technical basis provided herein remains applicable if the nuclear material possession limit is increased because total UF<sub>6</sub> inventory is not a parameter of the analysis. Even a substantial increase in the number of feed, tails, and product cylinders would not impact the conclusion that no emergency plan is required under the assumption that the operational restrictions and practices used for the HALEU Demonstration remain the same.*” This amendment request does not propose any new storage of cylinders external to the buildings nor introduce any new chemicals or energy sources that could potentially drive the requirements to have an Emergency Plan. Additionally, since there are no changes being made to the HALEU cascade process descriptions or the number of planned operating centrifuges, the number of cylinders and hence material on-site is not a factor in changing the need for an Emergency Plan.

- The proposed changes to increase the possession limits and clarify descriptions of Phase III and the lease do not result in a change to the Quality Assurance Program Description; thereby, do not represent a relaxation of any requirements of Quality Assurance Program Description.

Based on the above, the proposed changes to increase the possession limits and clarify descriptions of Phase III 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 changes to increase the possession limits and clarify descriptions of Phase III and the lease do 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 changes to increase the possession limits and clarify descriptions of Phase III and the lease 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 under the American Centrifuge Plant.

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

Based upon current operations, the proposed changes to increase the possession limits and clarify descriptions of Phase III and the lease do not result in any significant change in effluents released offsite or any significant increase in individual or cumulative occupational radiation exposure.

- 9. There is no significant construction impact.**

HALEU storage expansion construction activities and Vehicle Barrier System construction activities are being currently planned, material being procured, and material being staged for use in the upcoming calendar year. All of these activities will take place on the currently authorized ACP footprint with minimal impact to ongoing HALEU cascade operations. Additionally, there are no foreseen environmental concerns for these construction activities as no earth movement is required. Additionally, there will be no new building construction involved during Phase III HALEU cascade operations.

**Enclosure 2 of ACO 25-0006**

**Supplemental Proposed Changes for LA-3605-0001, *License Application  
for the American Centrifuge Plant***

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

Reviewing

Official: Lori A. Hawk ACO

Date: 06/12/2025

# **License Application**

## **for the American Centrifuge Plant in Piketon, Ohio**

**Proposed Change**

**Docket No. 70-7004**

**June 2025**

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

Reviewing

Official: Lori Hawk / ACO

Date: 06/12/2025

On November 10, 2022, the DOE announced an approximately \$150 million cost-shared award to ACO, the Licensee, to demonstrate the nation's ability to produce HALEU. This award builds on DOE's previous three-year cascade demonstration program with the Licensee to manufacture and demonstrate the centrifuge enrichment cascade to produce up to 600 kilograms of HALEU in the form of UF<sub>6</sub> for the DOE contract which expires on November 30, 2022.

This new HALEU performance-based contract will have three phases. During Phase I of the new DOE HALEU contract (Reference 74), the Licensee will complete the final steps of centrifuge assembly and clear an operational readiness review (ORR) to start up the demonstration cascade. The Licensee will complete testing once the centrifuges have been installed and process gas (feed material) has been introduced following the required NRC ORRs. Once the HALEU demonstration cascade is operational, the Licensee will begin enriching UF<sub>6</sub> gas to produce 19.75 weight (wt.) percent enriched HALEU, meeting the contract requirement for the initial 20 kilograms of HALEU in the form of UF<sub>6</sub>. Upon completion of Phase I, ACO plans to continue to produce HALEU under Phase II of the contract up to the currently NRC-authorized possession limits described in Table 1.2-2 of this license application. Phase II includes production of a minimum 900 kilograms of HALEU to a nominal 19.75 wt. percent <sup>235</sup>U. This production will be utilized to resolve any issues with full scale production. Completion of Phases I and II are considered the Base Contract.

### 1.1.8.2 High Assay Low Enriched Uranium Demonstration Continuation

After completion of the Base Contract as described above, the contract allows DOE to enter into a Phase III, which wcould exercise up to three three-year option periods for a combined total of 10 years of production (Phase II and III) at a minimum production level of 900 kilograms per year. The associated possession limit increases supporting the entirety of Phase III to meet the Licensee's planned production are provided within Table 1.2-2 (Appendix D of this license application).

Currently, based on availability of Congressional appropriations, DOE has deemed it reasonable to redefine option period 1 as being divided into three one-year option periods, with the first single year funded to begin on July 1, 2025. Changes to the funding method of the HALEU contract do not impact the associated possession limit increases supporting the entirety of Phase III production.

Materials License SNM-2011, Condition 31, states in part, "ACO shall provide at least a 30-day prior written notification to the NRC of anticipated or needed changes to its HALEU Demonstration contract that are material to ACO's license, including contract completion date extensions and DOE funding at similar or higher levels for additional option periods. Such written notifications shall include the anticipated or needed changes to the contract and the status of DOE's review with respect to a proposed change." Should substantive changes be made to the HALEU Demonstration contract that affects the NRC's prior authorization to increase the possession limits of Phase III in its entirety, ACO shall submit a request to amend the necessary licensing documentation.

Performance of Phases I and II do not guarantee ACO will be authorized to proceed with the Phase III option periods of production. DOE expects this duration to approach 10 years, including base and all option years, assuming all options are exercised under the DOE contract.

## 1.2.2 Financial Qualifications

Under the previous HALEU Contract (Reference 17), DOE agreed to reimburse the Company for 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 included *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 provided over the HALEU contract period included constructing and assembling centrifuges and related infrastructure in a cascade formation. 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 (Reference 22).

On November 10, 2022, the DOE announced an approximately \$150 million cost-shared award with ACO, the Licensee, to demonstrate the nation's ability to produce HALEU. This award builds on DOE's previous three-year cascade demonstration program with the Licensee to manufacture and demonstration the centrifuge enrichment cascade to produce up to 600 kilograms of HALEU in the form of UF<sub>6</sub> for the DOE contract which expires on November 30, 2022.

The November 2022 award includes 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. This new HALEU performance-based contract (Reference 74) 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 the DOE contract.

Additionally, this performance-based contract will have three phases. Phase I comprising of one CLIN, will be 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, comprising of one CLIN, will be awarded on a cost-plus incentive fee basis. Phase III, comprising of ~~three multiple~~ CLINs, will be divided into three three-year contract option periods with each option period structured on a cost-plus incentive fee basis for continued HALEU Production. Phase III will be funded as outlined in the HALEU contract (Reference 74) and is subject to the availability of Congressional appropriations. Currently, DOE has deemed it reasonable to redefine option period I as being divided into three one-year option periods, with the first single year funded to begin on July 1, 2025.

The Licensee will perform all Phase I work scope under a cost share, no fee contractual arrangement. The Licensee will be responsible for paying a minimum of 50 percent of the allowable incurred costs during Phase I. DOE will reimburse the Licensee 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

- 1) ACP shall not enrich UF<sub>6</sub> in excess of 20 wt. percent <sup>235</sup>U 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 <sup>235</sup>U. ACP shall not input parameters to extract product material for the assay above 20 wt. percent <sup>235</sup>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.
- 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 <sup>235</sup>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:

- UF<sub>6</sub> 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<sub>6</sub> cylinders during movement.
- 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.
- 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.

The following exemption from the applicable 10 CFR 70.50 reporting requirement is identified in Section 11.6.3 of this license application:

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~~ February 9, 2024, for the fiscal year ended December 31, 2023~~1~~, provides the Licensee's ability to meet the financial contractual requirements defined in the HALEU contract (Reference 22).

- Additionally, the Licensee proposes that the license be conditioned as follows regarding the HALEU Demonstration contract (Reference 74.)

ACO shall provide at least a 30-day prior written notification to the NRC of anticipated or needed changes to its HALEU Demonstration contract that are material to ACO's license, including contract completion date extensions and DOE funding at similar or higher levels for additional option periods. Such written notifications shall include the anticipated or needed changes to the contract and the status of DOE's review with respect to a proposed change. If it is not possible for ACO to provide the 30-day prior notification, ACO shall provide the prior notification before the change is made, and as early as possible, with an explanation of why the required 30-day prior notification time period could not be met. Should substantive changes be made to the HALEU Demonstration contract that affects the NRC's prior authorization to increase the possession limits of Phase III in its entirety, ACO shall submit a request to amend the necessary licensing documentation.

The following Special Authorization has been identified in this license application:

- Surface Contamination Release Levels for Unrestricted Use – Items may be released for unrestricted use if the surface contamination is less than the levels listed in Table 4.6-1.

The following exemption from the requirements in 10 CFR 95.57(c) is identified in Section 1.17.c) of the *Security Plan for the Protection of Classified Matter at the American Centrifuge Plant*:

- NRC regulations in 10 CFR 95.57(c) require that all classification actions (documents classified, declassified, or downgraded) to be submitted to the NRC Division of Security Operations. These may be submitted either on an "as completed" basis or monthly. The information may be submitted either electronically by an on-line system or by paper copy using NRC Form 790. Historically, the Licensee has utilized NRC Form 790 for each classification action, has compiled them monthly, and submitted them to the NRC. The Licensee must also submit a quarterly classification summary

**Enclosure 3 of ACO 25-0006**

**Supplemental Proposed Changes for NRC Materials License SNM-2011**

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

Reviewing

Official: Lori A. Hawk ACO

Date: 06/12/2025

**FOR INFORMATION ONLY**

NRC FORM 374	<b>U.S. NUCLEAR REGULATORY COMMISSION</b>	Page 1 of 13
<b>MATERIALS LICENSE</b>		

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*, (10 CFR) 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 (SNM) 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 (NRC) now or hereafter in effect and to any conditions specified below.

Licensee	
1. American Centrifuge Operating, LLC (ACO)	3. License Number: SNM-2011, Amendment 28
2. American Centrifuge Plant (ACP)	4. Expiration Date: See Condition 13
P.O. Box 628	5. Docket No. 70-7004
Piketon, Ohio 45661-0628	

**Commercial ACP Possession Limits**

6. Source, Special Nuclear Material, Byproduct Material	7. Chemical and/or Physical Form Under This License	8. Maximum amount that Licensee May Possess at any One Time
A. Uranium (natural and depleted) and daughter products	A.1 Physical: Solid, Liquid, and Gas	A. [Security-Related Information Withheld Under 10 CFR 2.390]
	A.2 Chemical: UF <sub>6</sub> , UF <sub>4</sub> , UO <sub>2</sub> F <sub>2</sub> , oxides, metal, and other compounds	
B. Uranium enriched in isotope U-235 up to 10 percent by weight and uranium daughters	B.1 Physical: Solid, Liquid, and Gas	B. [Security-Related Information Withheld Under 10 CFR 2.390]
	B.2 Chemical: UF <sub>6</sub> , UF <sub>4</sub> , UO <sub>2</sub> F <sub>2</sub> , oxides, metal, and other compounds	
C. Tc-99, transuranic isotopes and other contamination	C. Any	C. [Security-Related Information Withheld Under 10 CFR 2.390]

<b>U.S. NUCLEAR REGULATORY COMMISSION</b>	License Number SNM-2011, Amendment 28
<b>MATERIALS LICENSE SUPPLEMENTARY SHEET</b>	Docket or Reference Number 70-7004

29. DELETED by Amendment 23

30. ACO shall establish and maintain a Vehicle Barrier System in accordance with Section 3.7 of SP-3605-0042. Additionally, ACO shall not produce more than the authorized possession limits beyond those approved on June 11, 2021, until such time that the additional physical security measures have been installed and NRC has confirmed they meet the new commitments described within Section 3.7 of SP-3605-0042. Upon a successful NRC validation, ACO will be authorized to continue production efforts up to the authorized possession limits described in SNM-2011.

and DOE funding at similar or higher levels for additional option periods

31. ACO shall provide at least a 30-day prior written notification to the NRC of anticipated or needed changes to its HALEU Demonstration contract that are material to ACO's license, including contract completion date extensions. Such written notifications shall include the anticipated or needed changes to the contract and the status of DOE's review with respect to a proposed change. If it is not possible for ACO to provide the 30-day prior notification, ACO shall provide the prior notification before the change is made, and as early as possible, with an explanation of why the required 30-day notification time period could not be met.

32. Should substantive changes be made to the HALEU Demonstration contract that affects the NRC's prior authorization to increase the possession limits of Phase III in its entirety, ACO shall submit a request to amend the necessary licensing documentation.

- a. the handling, storage, and transportation (on-site transportation of 30-series feed cylinders received from an NRC licensed shipper) of HALEU Demonstration 30-series cylinders containing less than or equal to 5.0 weight percent uranium-235;
- b. operations involving special nuclear material less than 1 weight percent uranium-235 or below 100 grams uranium-235 (i.e., "non-fissile material operations");
- c. areas in which the licensee determines criticality is not credible. Determinations of 'not credible' require, at a minimum, that, under normal and credible abnormal conditions, inventory is below 700 grams uranium-235 and massive moderators or reflectors made of graphite, heavy water, or beryllium are not present;
- d. the storage of special nuclear material contained in packages as defined in 10 CFR Part 71 or specifically exempt according to 10 CFR 71.15, provided fissile exempt packages are limited to the size and configuration of the transport conveyance and fissile packages are limited to a criticality safety index of 100, fissile exempt packages and fissile packages are not stored in the same area or are otherwise commingled, and at least 6 meters of spacing is maintained between areas; and
- e. planned events in which the criticality accident alarm system (CAAS) or its associated equipment is out of service, provided compensatory measures are employed and remain effective until the CAAS has been restored to service.