# 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 30, 31, 32, 33, 34, 35, 36, 39, 40, and 70, 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 Nuclear Regulatory Commission now or hereafter in effect and to any conditions specified below.

| Licensee | |
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| Louisiana Energy Services, L.L.C. | License Number: SNM-2010, Amendment 30 |
| | |
| 275 Highway 176 | Expiration Date: See Condition 13 |
| P.O. Box 1789 | Docket No. 70-3103 |
| Eunice, New Mexico 88231 | |

| 6. Source and/or Special Nuclear Material and/or Byproduct Material | 7. Chemical and/or Physical Form | 8. Maximum amount that licensee may possess at any one time under this license |
|---|---|---|
| A. Uranium (natural and depleted) and daughter products | A.1 Physical: Solid, Liquid, and Gas<br>A.2 Chemical: $UF_6$, $UF_4$, $UO_2F_2$, oxides and other compounds | A. 136,120,000 kg |
| B. Uranium enriched in isotope U-235 up to 5 percent by weight and uranium daughters | B.1 Physical: Solid, Liquid, and Gas<br>B.2 Chemical: $UF_6$, $UF_4$, $UO_2F_2$, oxides, metal and other compounds | B. 545,000 kg |
| C. Tc-99, transuranic isotopes and other contamination | C. Any | C. Amount that exists as contamination as a consequence of the historical feed of recycled Uranium at other facilities |
| D. Deleted | D. Deleted | D. Deleted |
| E. Deleted | E. Deleted | E. Deleted |
| F. Deleted | F. Deleted | F. Deleted |
| G. Co-60 | G. Sealed per §30.32(g)(1) | G. 1.00E+1 uCi |
| H. Deleted | H. Deleted | H. Deleted |
| I. Deleted | I. Deleted | I. Deleted |

**MATERIALS LICENSE**
**SUPPLEMENTARY SHEET**

License Number
SNM-2010

Docket or Reference Number
70-3103

Amendment 30

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|---|---|---|
| J. Deleted | J. Deleted | J. Deleted |
| K. Sr-90 | K. Sealed per §30.32(g)(1) | K. 5.00E+0 uCi |
| L. Deleted | L. Deleted | L. Deleted |
| M. Deleted | M. Deleted | M. Deleted |
| N. Deleted | N. Deleted | N. Deleted |
| O. Deleted | O. Deleted | O. Deleted |
| P. Deleted | P. Deleted | P. Deleted |
| Q. Cs-137 | Q. Sealed per §30.32(g)(1) | Q. 5.00E+4 uCi |
| R. Deleted | R. Deleted | R. Deleted |
| S. Po-210 | S. Sealed per §30.32(g)(1) | S. 1.00E+1 uCi |
| T. Th-230 | T. Sealed per §30.32(g)(1) | T. 1.00E+1 uCi |
| U. U-232 | U. Sealed per §30.32(g)(1) | U. 1.00E+1 uCi |
| V. U-233 | V. Sealed per §30.32(g)(1) | V. 1.00E+1 uCi |
| W. U-234 | W. Sealed per §30.32(g)(1) | W. 1.00E+1 uCi |
| X. U-235 | X. Sealed per §30.32(g)(1) | X. 1.00E+1 uCi |
| Y. U-236 | Y. Sealed per §30.32(g)(1) | Y. 1.00E+1 uCi |
| Z. U-238 | Z. Sealed per §30.32(g)(1) | Z. 1.00E+1 uCi |
| AA. Am-241 | AA. Sealed per §30.32(g)(1) | AA. 5.00E+4 uCi |
| BB. Cf-252 | BB. Sealed per §30.32(g)(1) | BB. 5.00E+2 uCi |
| CC. Ce-139 | CC. Sealed per §30.32(g)(1) | CC. 1.00E+1 uCi |

9. Authorized place of use: National Enrichment Facility (NEF), located 5 miles east of Eunice, New Mexico on Highway 176 in Lea County, New Mexico.

10. The licensee shall conduct authorized activities at the NEF in accordance with the statements, representations, and conditions, or as revised in accordance with Section 19 of the Quality Assurance Program Description, 10 CFR 40.35(f), 10 CFR 51.22, 10 CFR 70.32, 10 CFR 70.72, or 10 CFR 95.19 in:

    a. Application for Material License, NRC Form 313 dated December 12, 2003.
    b. Safety Analysis Report dated December 12, 2003, as revised by letters dated February 27, 2004;

July 30, 2004;September 30, 2004; April 22, 2005; April 29, 2005; May 25, 2005; June 10, 2005; February 16, 2006; February 28, 2006; March 16, 2006; March 24, 2006; January 29, 2007; April 10, 2007; July 30, 2007, October 12, 2007; October 19, 2007; November 2, 2007; November 12, 2007; November 30, 2007; February 28, 2008; November 19, 2008; January 23, 2009; and March 5, 2009.

c. Environmental Report dated December 12, 2003, as revised by letters dated February 27, 2004; July 30, 2004; September 30, 2004; April 22, 2005; June 10, 2005; March 16, 2006; March 24, 2006; January 29, 2007; April 10, 2007; July 30, 2007, October 19, 2007; November 2, 2007; November 30, 2007; October 30, 2008; January 23, 2009; and March 5, 2009.

d. Physical Security Plan dated December 12, 2003, as revised by letters dated May 12, 2004; July 30, 2004; December 10, 2004; January 12, 2005; February 12, 2008; August 11, 2008; May 1, 2009; July 16, 2009 and February 5, 2010.

e. Fundamental Nuclear Material Control Plan dated December 12, 2003, as revised by letters dated February 27, 2004; July 30, 2004; October 7, 2004; December 7, 2004; April 22, 2005; October 23, 2006; October 19, 2007; November 30, 2007; September 4, 2009; and September 24, 2009; January 13, 2010; and January 14, 2010.

f. Quality Assurance Program Description dated April 9, 2004, as revised by letter dated April 22, 2005; October 23, 2006; November 12, 2007; July 30, 2007, October 12, 2007, October 19, 2007; November 12, 2007; July 31, 2008; January 21, 2009; March 2, 2009; and March 5, 2009.

g. Emergency Plan dated December 12, 2003, as revised by letters dated July 30, 2004; September 30, 2004; April 22, 2005; October 23, 2006; July 30, 2007; October 19, 2007; November 2, 2007; March 10, 2008; September 4, 2008; September 30, 2008, February 19, 2009, March 5, 2009; and April 16, 2009.

h. Standard Practice Procedure Plan for the Protection of Classified Matter dated December 12, 2003, as revised by correspondence dated July 30, 2004; March 16, 2006; November 21, 2006; November 22, 2006; March 20, 2007; April 27, 2007; July 19, 2007; October 12, 2007; November 30, 2007; February 4, 2008; May 1, 2008; May 7, 2008; June 26, 2008; July 7, 2008; August 4, 2008; September 4, 2008; September 5, 2008; October 6, 2008; October 16, 2008; November 20, 2008; November 25, 2008; February 12, 2009; March 2, 2009; and December 29, 2009.

i. Standard Practice Procedure Plan for the Protection of Classified Matter at the Enrichment Technologies-United States. Location of the National Enrichment Facility dated October 11, 2007, as revised by letters dated December 3, 2007; April 21, 2008; July 2, 2008; October 8, 2008; October 29, 2008; November 26, 2008; March 26, 2009; August 30, 2009; December 11, 2009; December 29, 2009; and January 15, 2010.

j. Information System Security Plan (SSP) for Plant Control Training System dated October 18, 2007, as revised by letters dated January 29, 2008 and April 2, 2008.

k. Movement Plan for Transportation of Classified Centrifuge Components/Materials between Tripartite Countries and the US dated February 26, 2008, as revised by letter dated August 27, 2008.

l. Information System Security Plan for the Hot Acceptance Test Computer System dated October 24, 2008, as revised by correspondence dated December 12, 2008; March 9, 2009; and March 13, 2009.

m. Fundamental Nuclear Material Control Plan Attachment for the Hot Acceptance Testing, dated December 1, 2008, as revised by letters dated December 23, 2008; January 6, 2009; January 21, 2009; January 30, 2009; and February 4, 2009.

n. Information System Security Plan for the Centrifuge Assembly building Classified Network dated October 24, 2008, as revised by correspondence dated December 12, 2008; December 22, 2008; March 9, 2009; and March 13, 2009.

o. Information system Security Plan for the Plant Control and Core Systems, Plant Control System, Local Control Centers dated February 3, 2009; as revised by correspondence dated April 24, 2009; and November 18, 2009.

p. Information System Security Plan for the Classified Plant Management Network dated April 30, 2009; as revised by correspondence dated November 25, 2009.

q. Notwithstanding the commitments in Sections 2.0 and 3.0 of the Fundamental Nuclear Material Control Plan identified in Condition 10 to use certified reference standards, the licensee shall have until August 1, 2010 to fulfill the above stated commitments relative to the use of well characterized materials for its instrument calibration identified in the February 1, 2010, request letter.

11. Introduction of $UF_6$ into any module of the NEF shall not occur until the Commission completes an operational readiness and management measures verification review to verify that management measures that ensure compliance with the performance requirements of 10 CFR 70.61 have been implemented and confirms that the facility has been constructed and will be operated safely and in accordance with the requirements of the license. The licensee shall provide the Commission with 120 days advance notice of its plan to introduce $UF_6$ in any module of the NEF.

12. The licensee is hereby granted the special authorizations and exemptions identified in Section 1.2.3.6 of the National Enrichment Facility Safety Evaluation Report, dated June 2005.

13. This license will expire 30 years after the date of license issuance.

14. For the disposition of depleted $UF_6$, the licensee shall not use a depleted $UF_6$ deconversion facility that employs a process that results in the production of anhydrous hydrofluoric acid.

15. a. The licensee shall provide proof of $5 million liability insurance, as required under 10 CFR 140.13b, at least 30 days prior to the planned date for obtaining possession of test material (less than or equal to 50 kg) of depleted or natural uranium hexafluoride

    b. The licensee shall provide proof of full liability insurance, as required under 10 CFR 140.13b, at least 30 days prior to the planned date for obtaining feed material (greater than 50 kg uranium hexafluoride). If the licensee is proposing to provide less than $300 million of liability insurance coverage, the licensee shall provide, to the NRC for review and approval, an evaluation supporting liability insurance coverage in amounts less than $300 million, at least 120 days prior to the planned date for obtaining feed material.

16. a. The licensee shall provide an updated Decommissioning Funding Plan cost estimate update and final copies of the proposed financial assurance instruments to NRC for review at least six months prior to the planned date for obtaining test material (less than or equal to 50 kilograms of uranium hexafluoride), and provide to NRC final executed copies of the reviewed financial assurance instruments at least 21 days prior to the receipt of test material. In this Decommissioning Funding Plan update, the licensee shall provide full funding for decontamination and decommissioning of the Centrifuge Test Facility, the Post Mortem Facility, the Cylinder Receipt and Dispatch Building, and all other plant areas where licensed material is used. The amount of the financial assurance instrument shall be updated to current year dollars and include any applicable changes to the decommissioning cost estimate.

    b. The licensee shall provide an updated Decommissioning Funding Plan cost estimate update and final copies of the proposed financial assurance instruments to NRC for review at least six months prior to the planned date for obtaining feed material (greater than 50 kilograms of uranium hexafluoride) for initial production in Separations Building Module (SBM) 1001, and provide to NRC final executed copies of the reviewed financial assurance instruments at least 21 days prior to the receipt of feed material. In this Decommissioning Funding Plan update, the licensee shall provide full funding for decontamination and decommissioning of SBM 1001 and all other plant areas where licensed material is used.

    In addition, the licensee shall provide funding for the disposition of depleted uranium tails in an amount needed to disposition the first three years of depleted uranium tails generation. The decommissioning cost

estimate shall include an update to the U.S. Department of Energy (DOE) depleted uranium disposition cost estimate. The total amount funded for depleted uranium disposition shall be no less than the updated DOE cost estimate. The amount of the financial assurance instrument shall be updated to current year dollars and include any applicable changes to the decommissioning cost estimate.

c. The licensee shall provide an updated Decommissioning Funding Plan cost estimate update and final copies of the proposed financial assurance instruments to NRC for review at least six months prior to introducing feed material in SBM 1003, and provide to NRC final executed copies of the reviewed financial assurance instruments at least 21 days prior to introducing feed material into SBM 1003. In this Decommissioning Funding Plan update, the licensee shall provide full funding for decontamination and decommissioning of SBM 1003 and all other plant areas where licensed material is used. The amount of the financial assurance instrument shall be updated to current year dollars and include any applicable changes to the decommissioning cost estimate.

d. After the first three years of initial plant production, subsequent updated decommissioning cost estimates and revised funding instruments for depleted uranium disposition shall be provided annually on a forward-looking basis to reflect projections of depleted uranium byproduct generation. The depleted uranium disposition cost estimate shall include an update to the DOE depleted uranium disposition cost estimate. The total amount funded for depleted uranium disposition shall be no less than the updated DOE cost estimate.

17. Deleted

18. Deleted

19. To define the boundaries of each item relied on for safety (IROFS), the licensee shall utilize its procedure, "IROFS Boundary Definitions." Completed IROFS boundaries for all IROFS shall be available for inspection at the time of the operational readiness review.

20. Currently, there are no IROFS that have been specified as using software, firmware, microcode, programmable logic controllers, and/or any digital device, including hardware devices which implement data communication protocols (such as fieldbus devices and Local Area Network controllers), etc. Should the design of any IROFS be changed to include any of the preceding features, the licensee shall obtain Commission approval prior to implementing the change(s). The licensee's design change(s) shall adhere to accepted best practices in software and hardware engineering, including software quality assurance controls as discussed in the Quality Assurance Program Description throughout the development process and the applicable guidance of the following industry standards and regulatory guides as specified in Safety Analysis Report Chapter 3:

a. American Society of Mechanical Engineers (ASME) NQA-1-1994, Part II, subpart Part 2.7, "Quality Assurance Requirements of Computer Software for Nuclear Facility Applications," as revised by NQA-1a-1995 Addenda of NQA-1-1994 and ASME NQA-1-1994, Part 1, Supplement 11S-2, "Supplementary Requirements for Computer Program Testing." (Refer to SAR Chapter 11, Appendix A, Section 3.)

b. Electric Power Research Institute (EPRI) NP-5652, "Guideline for the Utilization of Commercial Grade Items in Nuclear Safety Grade Applications," June 1988.

c. EPRI Topical Report (TR) -102323, "Guidelines for Electromagnetic Interference Testing in Power Plants," Revision 1, December 1996.

d. EPRI TR-106439, "Guideline on Evaluation and Acceptance of Commercial Grade Digital Equipment for Nuclear Safety Applications," October 1996.

e. Regulatory Guide 1.152, "Criteria for Digital Computers in Safety Systems in Nuclear Power Plants," Revision 1, January 1996.

f. Regulatory Guide 1.168, "Verification, Validation, Reviews, and Audits for Digital Software Used in Safety Systems of Nuclear Power Plants," Revision 1, February 2004.

g. Regulatory Guide 1.169, "Configuration Management Plans for Digital Computer Software Used in Safety Systems of Nuclear Power Plants," September 1997.

h. Regulatory Guide 1.170, "Software Test Documentation for Digital Computer Software Used in Safety Systems of Nuclear Power Plants," September 1997.

i. Regulatory Guide 1.172, "Software Requirements Specifications for Digital Computer Software Used in Safety Systems of Nuclear Power Plants," September 1997.

j. Regulatory Guide 1.173, "Developing Software Life Cycle Processes for Digital Computer Software Used in Safety Systems of Nuclear Power Plants," September 1997.

If any above changes result in IROFS requiring operator actions, a human factors engineering review of the human-system interfaces shall be conducted using the applicable guidance in NUREG-0700, "Human-System Interface Design Review Guidelines," Revision 2, dated May 2002 (NRC, 2002d), and NUREG-0711, "Human Factors Engineering Program Review Model," Revision 2, dated February 2004.

21. Onsite storage of $DUF_6$ generated at the NEF shall be limited to a maximum of 15,727 48Y cylinders (or the equivalent amount of uranium stored in other NRC accepted and Department of Transportation ("DOT") certified cylinder types) of $DUF_6$. The generation of any additional $DUF_6$ to be stored onsite by the licensee beyond this limit shall constitute noncompliance with the license. The licensee shall suspend production of any additional $DUF_6$ for onsite storage until this noncompliance is remedied. In no event shall the licensee store $DUF_6$ generated at the NEF in New Mexico other than at the NEF.

22. Onsite storage of any one cylinder of $DUF_6$ generated at the NEF shall be limited to a maximum of 25 years, beginning from the date that each cylinder is filled in accordance with the licensee's standard procedures. The storage of any one $DUF_6$ cylinder beyond this limit by the licensee shall constitute noncompliance with the license. The licensee shall suspend production of any additional $DUF_6$ for onsite storage until this noncompliance is remedied. In no event shall the licensee store $DUF_6$ generated at the NEF in New Mexico other than at the NEF.

23. The licensee shall provide financial assurance for the offsite disposal of $DUF_6$ from the NEF using a minimum contingency factor of twenty-five percent (25%).

    Upon reaching 15,727 cylinders of $DUF_6$ in 48Y cylinders (or the equivalent amount of uranium stored in other NRC accepted and DOT certified cylinder types) in onsite storage, the licensee shall immediately increase the financial assurance to provide a fifty percent (50%) contingency factor for disposition of $DUF_6$ stored at the NEF unless: (a) an application to construct and operate a deconversion facility outside of New Mexico that is specifically designated to deconvert the $DUF_6$ stored onsite at the NEF has been docketed by the agency responsible for reviewing the application; (b) an application for such a facility has been approved by the agency

responsible for reviewing the application; or (c) the licensee is using another alternate method for removing the $DUF_6$ stored onsite.

In addition, upon reaching the limit of 15,727 cylinders of $DUF_6$ in 48Y cylinders (or the equivalent amount of uranium stored in other NRC accepted and DOT certified cylinder types) in onsite storage, the licensee shall immediately increase the financial assurance to provide fifty percent (50%) contingency factor for disposition of $DUF_6$ stored at NEF if the contingency factor has not already been increased to fifty percent (50%). The contingency factor shall remain at fifty percent (50%) until the number of cylinders stored onsite is reduced to ninety-eight percent (98%) of the 15,727 limit and either: (a) an application to construct and operate a deconversion facility outside of New Mexico that is specifically designated to deconvert the $DUF_6$ stored onsite at the NEF has been docketed by the agency responsible for reviewing the application; (b) an application for such a facility has been approved by the agency responsible for reviewing the application; or (c) the licensee is using another alternate method for removing the $DUF_6$ from New Mexico.

Nothing herein shall release the licensee from other financial assurance obligations set forth in applicable laws and regulations.

24. The licensee shall maintain and follow the Fundamental Nuclear Material Control Program for control and accounting and measurement control of uranium source material and special nuclear material at the NEF pursuant to 10 CFR 74.33(b). The licensee shall make no change to material control procedures essential for the safeguarding of uranium source material or special nuclear material that would decrease the effectiveness of the material control and accounting program implemented pursuant to 10 CFR 74.33(b) without prior approval of the Commission. If the licensee desires to make changes that would decrease the effectiveness of its material control and accounting program or its measurement control program, the licensee shall submit an application for amendment to its license pursuant to 10 CFR 70.34.

    The licensee shall maintain records of changes to the material control and accounting program made without prior Commission approval a period of five years from the date of the change. The licensee shall furnish to the Director, Division of Nuclear Security, Office Nuclear Security and Incident Response, using an appropriate method listed in 10 CFR 70.5(a), a report containing a description of each change within six months of the change if it pertains to uranium enriched less than 20 percent in the uranium-235 isotope.

25. If there are any revisions to the nuclear criticality safety validation report, then the licensee shall provide a letter to NRC describing the changes and shall provide the revised validation report upon request. The licensee may not implement the changes in the revised validation report until NRC approves the changes.

26. The licensee shall not use, process, store, reproduce, transmit, handle, or allow access to classified matter except provided by applicable personnel and facility clearances as required under 10 CFR Part 95.

27. The licensee shall be limited to possession of no greater than 50 kg of $UF_6$ in the Centrifuge Assembly Building.

28. The licensee is exempted from the definitions of “commercial grade item,” “basic component,” “critical characteristics,” dedicating entity,” and “dedication” in 10 CFR 21.3, as replaced by the following:

    *Commercial grade item*: A commercial grade item means a structure, system, or component, or part thereof that affects its IROFS function that was not designed and manufactured as a basic component. Commercial grade items do not include items where the design and manufacturing process require in-process inspections and

verifications to ensure that defects or failures to comply are identified and corrected (i.e., one or more critical characteristics of the item cannot be verified).

*Basic component:* A basic component means a structure, system, or component, or part thereof that affects their IROFS function, that is directly procured by the licensee or activity subject to the regulations in part 70 and in which a defect or failure to comply with any applicable regulation in this chapter, order, or license issued by the Commission would create a substantial safety hazard (i.e., exceed performance requirements of 10 CFR 70.61). In all cases, basic components include IROFS-related design, analysis, inspection, testing, fabrication, replacement parts, or consulting services that are associated with the component hardware whether these services are performed by the component supplier or others.

*Critical characteristics*: Critical characteristics are those important design, material, and performance characteristics of a commercial grade item that, once verified, will provide reasonable assurance that the item will perform its intended IROFS function.

*Dedication*: Dedication is an acceptance process undertaken to provide reasonable assurance that a commercial grade item to be used as a basic component will perform its intended IROFS function and, in this respect, is deemed equivalent to an item designed and manufactured under a 10 CFR 50, Appendix B, quality assurance program. This assurance is achieved by identifying the critical characteristics of the item and verifying their acceptability by inspections, tests, or analyses performed by the purchaser or third-party dedicating entity after delivery, supplemented as necessary by one or more of the following: commercial grade surveys; product inspections or witness at holdpoints at the manufacturer's facility, and analysis of historical records for acceptable performance. In all cases, the dedication process must be conducted in accordance with the applicable provisions of 10 CFR Part 50, Appendix B. The process is considered complete when the item is designated for use as a basic component.

*Dedicating entity*: Dedicating entity means the organization that performs the dedication process. Dedication may be performed by the manufacturer of the item, a third-party dedicating entity, or the licensee itself. The dedicating entity, pursuant to Section 21.21(c) of this part, is responsible for identifying and evaluating deviations, reporting defects and failure to comply for the dedicated item, and maintaining auditable records of the dedication process. In cases where the Licensee applies the commercial grade item procurement strategy and performs the dedication process, the Licensee would assume full responsibility as the dedicating entity.

Prior to implementing the above commercial grade procurement strategy and dedication process, the Licensee shall submit a license amendment request to the NRC for approval amending its Quality Assurance Program Description to include its commitments described in its exemption request submittals dated November 21, 2008, and November 24, 2008.

| MATERIALS LICENSE<br>SUPPLEMENTARY SHEET | License Number<br>SNM-2010 |
|---|---|
| | Docket or Reference Number<br>70-3103 |
| | Amendment 30 |

29. The licensee shall ensure that:

    a. The Emergency Exit and Control Point will be placed in full operation a minimum of two weeks before the receipt of feed material on site, to allow for operational testing, operator training, and sufficient time for operators to become fully trained and familiar with the operation of equipment and procedures;\
    b. LES will ensure that during the period of reduced Controlled Access Area security, the requirements of the Standard Practices and Procedures Plan for the protection of classified matter will not be compromised; and
    c. In accordance with 10 CFR 70.32(e), a revised PSP is submitted to reinstate the original security procedures that were suspended by the licensee's February 5, 2010, license amendment request.

FOR THE NUCLEAR REGULATORY COMMISSION

Date: April 5, 2010

By: **/RA/** B. Smith for
Michael D. Tschiltz, Deputy Director
Fuel Facility Licensing Directorate
Division of Fuel Cycle Safety
and Safeguards
Office of Nuclear Material Safety
and Safeguards
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001