AUG 14 2013

urenco

LES-13-00111-NRC

ATTN: Document Control Desk
Director, Division of Security Operations
Office of Nuclear Security and Incident Response
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Louisiana Energy Services, LLC
NRC Docket Number: 70-3103

Subject: Response to NRC Request for Additional Information on License Amendment Request (LAR) 12-10 Related to the Environmental Assessment for Capacity Expansion of URENCO USA Facility (TAC NO. L34227)

Reference:

1. LES-12-00162-NRC, License Amendment Request for Capacity Expansion of URENCO USA Facility (LAR-12-10), dated November 9, 2012
2. IN-13-00061-NRC First Request for Additional Information for License Amendment Request 12-10 Related to the Environmental Assessment for Capacity Expansion of URNCEO USA Facility, dated June 7, 2013
3. LES-13-00082-NRC Response to RAI FOR LAR 12-10 Supplemental Environmental Report dated July 8, 2013
4. LES-13-00100-NRC Response to RAI FOR LAR 12-10 Supplemental Environmental Report dated July 31, 2013

Pursuant to the Ref. 1 Request for Additional Information (RAI) regarding the Ref. 2 License Amendment Request (LAR), Louisiana Energy Services, LLC (dba URENCO USA "UUSA") herewith provides the enclosed response for Reference 2.

UUSA appreciates the efforts of the NRC staff in supporting the review and approval of this License Amendment Request in a timely manner. Should there be any questions, please contact Timothy Knowles, UUSA Licensing and Performance Assessment Manager, at 575.394.6212.

Respectfully,

Jay Laughlin

Jay Laughlin
Chief Nuclear Officer and Head of Operations

Enclosures:

1. Response to Request for Additional Information
2. Revised Supplemental ER Tables for Transportation (on CD)
3. RADTRAN input and output codes (on CD)
4. Risk Assessment for the Transport of Radioactive Materials for the Proposed URENCO USA Facility Capacity Expansion (on CD)

NISIR08

LES,PO Box 1789, Eunice, New Mexico 88231,USA T:+1 575 394 4646 F:+1 575 394 4545 W:www.urenco.com/LES

cc:

Mike G. Raddatz, Project Manager
U.S. Nuclear Regulatory Commission
Executive Blvd Bldg
Mailstop: EBB2-C40M
Washington, DC 20555-0001

Brian W. Smith
Chief, Uranium Enrichment Branch
U.S. Nuclear Regulatory Commission
Executive Blvd Bldg
Mailstop: EBB2-C40M
Washington, DC 20555-0001

Enclosure 1

Response to Request for Additional Information

RAI 1: Provide clarification and additional information regarding radioactive material shipment.

a. Provide additional information on the shipment of product cylinders. Section 3.2.2.2 of the Environmental Report (ER), Rev. 21 (UUSA, 2012), states that approximately 220 product shipments/year would occur based on four cylinders per shipment (880 cylinders/year, consistent with Section 4.2.7.2 of ER, Rev. 21 (UUSA, 2012)). However, Section 3.2.4 of the Supplemental ER, Rev. 4b (UUSA, 2013), states that a typical shipment contains only two cylinders per truck. Which of the two statements is more consistent with current and future operations? Clarify what the expected average annual number of product shipments, and number of product cylinders per shipment, will be for the 10 million separative work units (MSWU) facility.

b. Provide the number of shipments associated with each set of impact calculations presented in Tables 4.2-2 through 4.2-4 of ER Rev. 21 (UUSA, 2012), and clarify that these are annual impacts.

c. Provide the RADTRAN computer code assumptions and calculations performed in support of incident-free and accident risk analyses for radioactive material transportation, including the RADTRAN input and output files with an explanation for the package or shipment-specific input parameters used (i.e., radionuclide inventory, package size, and external dose rates).

This information is needed to properly assess the potential impacts of transportation of radioactive material to and from the URENCO USA (UUSA) site during operations.

UUSA Response to RAI 1 a)

UUSA has provided a response to RAI 1 a) in Reference 3, LES-13-00082-NRC response to RAI FOR LAR 12-10 supplemental Environmental Report dated July 8th 2013

UUSA Response to RAI 1 b)

UUSA has provided a response to RAI 1 b) in Reference 3, LES-13-00082-NRC response to RAI FOR LAR 12-10 supplemental Environmental Report dated July 8th 2013

UUSA Response to RAI 1 c)

In preparing the RADTRAN input and output files, and reconciling the information in the Supplemental ER text and the model inputs, it was determined that an additional model run would be necessary to include the 30B cylinder product shipments that were inadvertently omitted in the previous evaluation. As this model rerun was undertaken, we also identified a change in the external dose rates for the cylinders (as determined in response to RAI #3 and according to the most recent advances in determining dose). These revised external doses have been used for the assessment of occupational health and to consistently evaluate the impacts of the proposed action, the new

external dose rates were applied during this recent model rerun. The resulting impacts due to transportation are presented in Enclosure 2, Revised Supplemental ER Tables for Transportation (on CD), these tables will be incorporated in the next revision of the Supplemental Environmental Report, and will be provided to the NRC once revised.

It should be noted that the original Supplemental ER, submitted with LAR 12-10 for capacity expansion, includes the results for each proposed phase of construction. To be conservative, UUSA reran the model at the plant's proposed full capacity to provide worst case scenario to evaluate potential impacts. The conclusions from this evaluation result in higher impacts however; they remain less than significant and are categorized as Moderate to Small both to the site and to the public.

See Enclosure 3 for the RADTRAN input/output files (on CD).
See Enclosure 4 for Risk Assessment for the Transport of Radioactive Materials for the Proposed URENCO USA Facility Capacity Expansion (on CD).

RAI 2: Provide additional information on cumulative radiological transportation impacts.

Section 4.2.8 of the Supplemental ER, Rev. 4b (UUSA, 2013), discusses the potential cumulative impacts from transportation associated with the proposed UUSA facility capacity expansion (i.e., UUSA, U.S. Department of Energy Waste Isolation Pilot Plant, and International Isotopes Fluorine Products Plant shipment impacts). However, no discussion is included on any radiological impacts associated with radioactive waste shipments going to the Waste Control Specialists (WCS) disposal facility that is located adjacent to the UUSA site. Provide a discussion on the radioactive waste shipments going to the WCS disposal facility and the related cumulative radiological transportation risks associated with the proposed UUSA facility capacity expansion.

This information is needed to properly assess the potential cumulative impacts of transportation of radioactive material to and from the UUSA site during operations.

UUSA has provided a response to RAI 2 in Reference 3, LES-13-00082-NRC response to RAI FOR LAR 12-10 supplemental Environmental Report dated July 8th 2013.

Further information was requested from the NRC as written below. UUSA will provide a response to the proposed question no later than August 15, 2013.

"The response to the RAI 2 still does not answer the question with regards to the cumulative impacts due to Waste Control Specialists (WCS). UUSA refers to the Table 4-36 from NUREG-2113 which is the "Environmental Impact Statement for the Proposed Extraction Process and Depleted Uranium Deconversion Plant in Lea County, New Mexico." The information discussed in Table 4-36 of NUREG-2113 with regards to WCS is for only the shipments from the International Isotopes Fluorine Products. Incorporated (IIFP), proposed plant to WCS. Thus, Table 4-36 from NUREG-2113 does not provide the information requested under RAI 2.

RAI 2 is requesting a discussion on the radioactive waste shipments from all facilities to WCS, including those from the IIFP facility which are discussed in Table 4-36 in NUREG-2113.

In addition this RAI is requesting for the related cumulative radiological transportation risks associated with the proposed UUSA facility capacity expansion. This should include the risks from shipments from all facilities to WCS, not just those from the IIFP facility. Section 4.2.2.9 of NUREG-2113 does not provide cumulative radiological transportation risks associated with the proposed UUSA facility capacity expansion.

Please provide the information requested above."

UUSA Response to RAI 2

Phone Conversation on Thursday August 1 2013 between UUSA Vice President of Regulatory Affairs, Licensing and Performance Assessment Manager, and NRC Project Manager indicated that the NRC has withdrawn the above questions.

RAI 3: Provide additional information on radiological impacts to construction workers during the construction of the facility expansion.

Section 4.12.6 of the Supplemental ER (UUSA 2013) discusses the potential external radiation hazard at the site fence line from the Uranium Byproduct Cylinder (UBC) Storage Pad. However, the estimated radiation dose to the onsite construction worker would be greater than the estimated dose at the facility fence line because the construction worker would be much closer to the UBC Storage Pad and the Cylinder Receipt and Dispatch Building (CRDB) than the fence line. At different phases of construction, the estimated number of cylinders stored at the UBC Storage Pad and CRDB may be different and construction workers may be exposed to gaseous effluent releases from the additional Separation Building Modules (SBM) as they are brought online (according to Sections 4.10.1 and 4.13.1.1 of the Supplemental ER, the initial construction of the site is anticipated to be completed in 2013 and the construction period for the proposed facility capacity expansion would continue approximately 8 years beyond the initial construction period).

a. Provide the locations and average numbers of construction workers with respect to existing radiological hazards from facility operations during the different phases of construction.

b. Provide the estimated doses to construction workers from all applicable exposure pathways during the different phases of construction for the facility capacity expansion. Include the exposure to gaseous effluent releases and direct external exposure from the UBC Storage Pad and cylinders stored in the CRDB.

This information is needed to properly assess the radiological human health impacts to construction workers from operations at the UUSA facility.

UUSA Response to RAI 3 a)

UUSA has provided a response to RAI 3 a) in Reference 4, LES-13-00100-NRC Response to RAI FOR LAR 12-10 Supplemental Environmental Report dated July 31, 2013

UUSA Response to RAI 3 b)

UUSA has provided a response to RAI 3 b) in Reference 3, LES-13-00082-NRC response to RAI FOR LAR 12-10 supplemental Environmental Report dated July 8th 2013

RAI 4: Provide additional information on expected external dose rate estimates from the UBC Storage Pad.

The estimated direct exposure from the UBC Storage Pad (capacity of 25,000 UBCs, plus a quantity of empty feed and empty clean product cylinders – total 28,500 cylinders) and the CRDB provided in Table 4.12-1 for the 10 MSWU facility in the Supplemental ER, Rev. 4b (UUSA, 2013), is much lower than the estimated direct exposure in Table 4.12-1 of the National Enrichment Facility (NEF) ER Report, Rev. 5 (Louisiana Energy Service, 2005). The lower estimated dose from the UBC Storage Pad with more cylinders for the proposed expansion is the result of removing some excessive conservatism associated with the dose estimation method. Provide the updated estimated direct exposure from the storage pad and CDRB in the NEF ER, Rev. 5, Table 4.12-1 using the new dose estimation method. Provide a copy of the reference document (UUSA, 2012, Radiation Dose Rate Calculation of the Site Boundary due to UBC Storage Pad Expansion, CALC-S-00141, Rev.1, URENCO USA, August 2012) with the response.

This information is needed to properly assess radiological human health impacts from the storage of uranium hexafluoride cylinders at the UUSA facility during facility capacity expansion and during current and future operations. The information will also be used to better compare the radiological human health impacts from an updated Table 4.12-1 from the NEF ER Report, Rev. 5 (LES, 2005), to the impact during facility capacity expansion and during current and future operations.

UUSA Response to RAI 4

UUSA has provided a response to RAI 4 in Reference 4, LES-13-00100-NRC Response to RAI FOR LAR 12-10 Supplemental Environmental Report dated July 31, 2013

RAI 5: Provide additional information on radiological air emissions during operation of the expanded UUSA facility and associated dose estimations.

Annual air emission values of 800 microcuries/year (µCi/yr) and 240 µCi/yr were used in the ER (UUSA, 2012) and Supplemental ER (UUSA, 2013) to estimate the bounding and average potential doses, respectively, to members of the public associated with the routine operation of the proposed 10 MSWU facility. Provide the expected isotopic release mix in the gaseous effluent releases for each of the two annual air emission values. Also provide the input and output files for the dose estimations for the proposed 10 MSWU facility.

This information is needed to properly assess radiological human health impacts to members of the public from routine air emissions during operation of the proposed expanded UUSA facility.

UUSA response to (5)

UUSA has provided a response to RAI (5) in Reference 3, LES-13-00082-NRC response to RAI FOR LAR 12-10 supplemental Environmental Report dated July 8th 2013

RAI 6: Provide additional information on the UUSA radiological environmental monitoring.

Environmental monitoring was started in 2006 at the UUSA site. The facility has been operational for the last 3 years, and the site is submitting part of the annual Radiological Monitoring Program (REMP) report to the U.S. Nuclear Regulatory Commission (NRC). The parts submitted include, the cover letter, Table of Contents, and the Executive Summary for the monitoring events on and in the immediate area of the facility. Provide complete copies of all of the REMP reports. The reports include those summarized in ADAMS documents with the following ADAMS Accession Numbers: ML090970289 (2006 – 2008), ML100900468 (2009), ML110940408 (2010), and ML12086A310 (2011). Also include the report for 2012 is now available.

This information is needed to properly document the REMP in the Environmental Assessment (EA) and to assess any changes at the site after the start of operations.

UUSA response to (6)

UUSA has provided a response to RAI (6) in Reference 3, LES-13-00082-NRC response to RAI FOR LAR 12-10 supplemental Environmental Report dated July 8th 2013

RAI 7: Provide additional information on the electric power requirements for the proposed expanded UUSA facility.

The electric power requirement to operate the proposed 10 MSWU facility is expected to be approximately 62 MVA, which is 42 MVA above that for the 3 MSWU facility. Provide documentation that:

a. The 3 MSWU facility is anticipated to require about 20 MVA Section 2.1.12.2.6 of the Supplemental ER (UUSA, 2013) and the proposed 10 MSWU facility is expected to require about 67 MVA Section 2.1.12.2.6 of the Supplemental ER (UUSA, 2013);

b. Shows the current power consumption of the existing facility and the maximum amount of power that Xcel (the power provider) can provide to UUSA on the existing transmission lines;

c. The current transmission lines providing power to the UUSA facility are capable of handling the increased power load for the proposed 10 MSWU facility; and

d. Xcel does not have to add extra generating capacity to support the expansion.

This information is needed to verify that no additional actions such as transmission line upgrades/replacement or additional construction and operation of power generation facilities is necessary for expansion of the UUSA facility. Otherwise, it would be necessary to address the environmental impacts of such additional actions in the EA.

UUSA response to (7)

UUSA has provided a response to RAI (7) in Reference 3, LES-13-00082-NRC response to RAI FOR LAR 12-10 supplemental Environmental Report dated July 8th 2013

RAI 8: Provide an updated rationale for the purpose and need for the capacity expansion of the UUSA facility.

a. In the ER (UUSA, 2012) and Supplemental ER, Rev. 4b, Section 1.1.4 (UUSA, 2013), the basis document for the annual demand for enrichment services in the United States, Energy Information Administration (EIA), DOE, "U.S. Nuclear Fuel Cycle Projections 2000-2025," 2003 (EIA, 2003), is 10 years old. During the General Electric (GE)-Hitachi Global Laser Enrichment LLC (GLE) mandatory hearing in 2012, the Atomic Safety and Licensing Board (ASLB) questioned why the forecasts for annual demand for enrichment services are based on 2003 projections. Given the economic turmoil in the past few years, the ASLB asked if these forecasts are accurate. Also the ASLB questioned if the domestic and international demand for low enriched uranium may be affected by the Fukushima Daiichi accident and international economic downturn (ASLB, 2012). Provide an updated purpose and need analysis using updated projections that reflect current conditions and potential future needs for enriched uranium.

b. In addition, the license granted to AREVA Enrichment Services LLC for the Eagle Rock Enrichment Facility (EREF) on October 12, 2011, is for a capacity of 6.6 MSWU, not 3.0 MSWU as considered in the ER (UUSA, 2012) and Supplemental ER (UUSA, 2013). Use the correct license capacity for EREF in the updated purpose and need analysis requested in the RAI8a above

This information is needed to justify the need to expand the capacity of the UUSA facility.

UUSA response to (8)

UUSA has provided a response to RAI 8) n Reference 4, LES-13-00100-NRC Response to RAI FOR LAR 12-10 Supplemental Environmental Report dated July 31, 2013

Enclosure 2
Revised Supplemental ER Tables for Transportation (on CD)

Enclosure 3
RADTRAN input and out put codes (on CD)

Enclosure 4
Risk Assessment for the Transport of Radioactive Materials for the Proposed URENCO USA Facility Capacity Expansion (on CD)