

JUL 31 2013

LES-13-00099-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

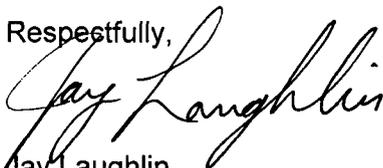
Louisiana Energy Services, LLC
NRC Docket Number: 70-3103

- Subject: Second Response to NRC Request for Additional Information on License Amendment Request (LAR) 12-10 Capacity Expansion of UUSA Facility (TAC L34193)
- Reference:
1. IN-13-00053-NRC, NRC Correspondence, dated April 25, First Request for Additional Information for License Amendment Request 12-10 Related to the Safety Analysis Report for Capacity Expansion of URENCO USA Facility (TAC L34193)
 2. LES-12-00162-NRC, License Amendment Request for Capacity Expansion of URENCO USA Facility (LAR-12-10), dated November 9, 2012
 3. LES-13-00068-NRC, Response to NRC Request for Additional Information on License Amendment Request (LAR) 12-10 Capacity Expansion of UUSA Facility (TAC L34193), dated May 28 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 Enclosure 1 response.

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
Chief Nuclear Officer and Head of Operations

- Enclosures:
- 1) Response to Request for Additional Information
 - 2) UUSA 2013, Worker Dose Assessment for 10MSWU Site Expansion Activities, CALC-S-00143, Rev.0, URENCO USA, July 2013.

LES-13-00099-NRC

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Enclosure 1

Response to Request for Additional Information

NRC Request (A)

1. Describe the significant differences between the design of SBM-1005 (Phase III) and that of currently approved design of SBM-1003 (Phase II). Include a representative sample of analysis and design calculations, as well as design and construction drawing for SBM-1005 (Phase III) that provide a representation of those differences.

UUSA Response to (A) 1

UUSA has provided a response to question (A).1 in Reference 3, LES-13-00068-NRC, Response to NRC Request for Additional Information on License Amendment Request (LAR) 12-10 Capacity Expansion of UUSA Facility (TAC L34193), dated May 28 2013.

2. To ensure that our review is comprehensive, describe the differences (if any) that are anticipated for SBM-1007 (Phase IV) and SBM-1009 (Phase V).

UUSA Response to (A) 2

UUSA has provided a response to question (A).2 in Reference 3, LES-13-00068-NRC, Response to NRC Request for Additional Information on License Amendment Request (LAR) 12-10 Capacity Expansion of UUSA Facility (TAC L34193), dated May 28 2013.

NRC Request (B)

1. For calculating radiation doses at the site boundary due to the uranium byproduct cylinder storage pad expansion, provide information to support that the minimum distances from the storage pad to the site boundary required to meet the annual dose limit of 25 millirems (mrem) in 40 CFR Part 190 include considerations for the organ dose. Demonstrate that calculated doses to any member of the public from external and internal exposures do not exceed the limits in 40 CFR Part 190.

UUSA Response to (B) 1

UUSA has provided a response to question (B).1 in Reference 3, LES-13-00068-NRC, Response to NRC Request for Additional Information on License Amendment Request (LAR) 12-10 Capacity Expansion of UUSA Facility (TAC L34193), dated May 28 2013.

UUSA Response to (B) 2

UUSA has provided a response to question (B).2 in Reference 3, LES-13-00068-NRC, Response to NRC Request for Additional Information on License Amendment Request (LAR) 12-10 Capacity Expansion of UUSA Facility (TAC L34193), dated May 28 2013.

NRC Request (C)

1. Table 4.1-2 lists a dose rate of < 0.01 mrem/hr for the plant general area excluding the separations building modules. Provide estimated dose rates in occupied areas close to the expanded uranium byproduct storage pad and describe the considerations given to these dose rates in the assessment of expanded facility operations.

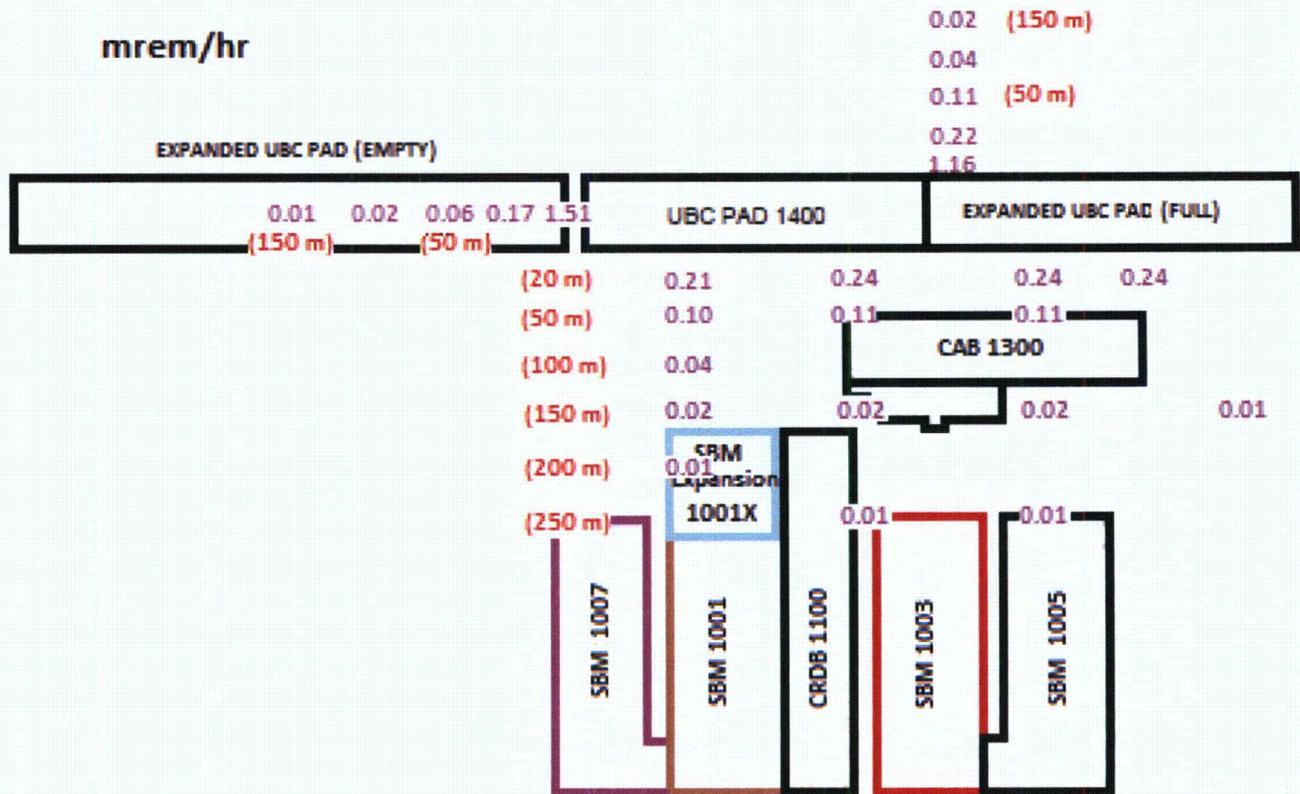
UUSA Response to (C) 1

The URENCO USA site will expand in various stages over the next 8 years to accommodate the increase to 10 MSWU. The Uranium Byproduct Cylinder (UBC) Storage Pad is estimated to be expanded in the following increments [1]:

- Expansion 1 - this expansion of the UBC Storage Pad will be to the east and will be ongoing during 2016. The current, or existing, UBC Storage Pad is expected to be full with 3700 triple stacked 48Y cylinders by March 2016. The expanded segment to the east can store an additional 4050 triple stacked 48 cylinders.
- Expansion 2 – the east-expanded UBC Storage Pad is expected to be full with 4050 triple stacked 48Y cylinders by February 2019. An additional segment will be added to the UBC Storage Pad in the west direction. This expansion of the UBC Storage Pad (to the west) will be ongoing during 2018. Upon completion, an additional 3050 triple stacked 48Y cylinders can be stored.
- Expansion 3 – the first west-expanded UBC Storage Pad is expected to be full with 3050 triple stacked 48Y cylinders by January 2021. A second UBC Storage Pad expansion to the west will be undertaken and is estimated to be able to store an additional 3000 triple stacked 48Y cylinders.
- Expansion 4 (north expansions) – Following reaching the full storage capacity of the additional west segment/section, estimated to take place in March of 2023, the UBC Storage Pad will be expanded to the north in three phases. First, a north-east section will be completed with a storage capacity of 4500 48Y cylinders, allowing for a total storage capacity on the UBC Storage Pad of 18300 triple stacked 48Y cylinders. It is estimated that the north-east section will be filled by July 2026. The north-center section of the UBC Storage Pad will then be completed allowing for a total storage capacity of 22,800 triple stacked cylinders. The north-center section is estimated to be full around October of 2029, upon which the last north-west section of the UBC Storage Pad will be employed allowing for a storage capacity of around 25000 triple stacked 48Y by February of 2033.

Figure 1 below illustrates a dose map, in units of mrem/hr, of the existing UBC Storage Pad full with triple stacked filled 48Y feed cylinders. The estimated dose impact to the construction work force during the expansion/addition of the east segment of the UBC storage pad show that the maximum individual dose to a construction worker is estimated to be about 292mrem. Furthermore, if a worker, conservatively estimated, occupied an area 20 m from the surface of a cylinder stored on the UBC Storage Pad for 2000 hrs, he/she will receive a yearly dose of approximate 405 mrem. Both of these dose estimate values are below the annual occupational dose limit of 5 rams per 10CFR20.1201.

UBC STORAGE PAD - DOSE MAP



NOTES: Drawing not to scale.

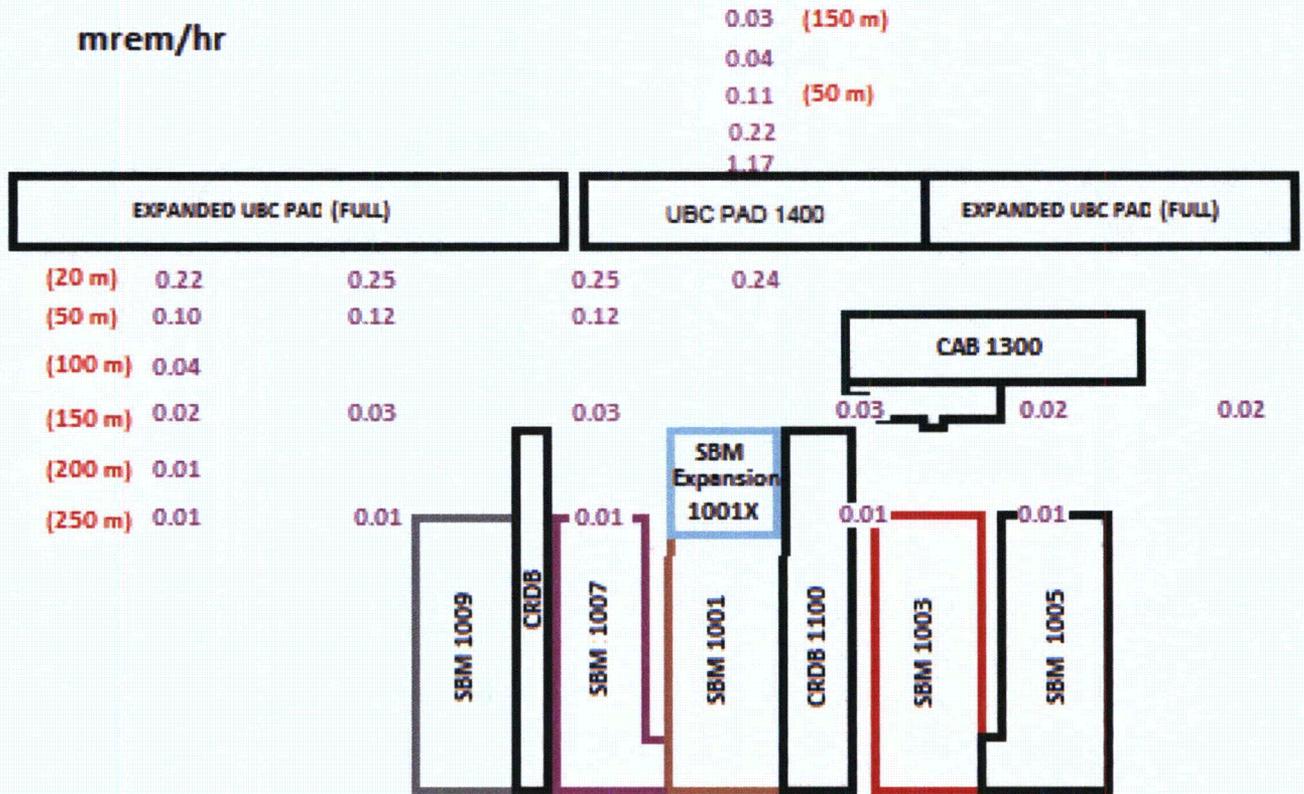
Distances shown are from the surfaces of the stored cylinders.

No shielding credit is taken for the structures/walls of any of the buildings.

Figure 2 Dose Map from 48Y Feed Cylinder Storage on Existing UBC Storage Pad and East Expanded UBC Storage Pad

Figure 3 below illustrates a dose map, in units of mrem/hr, of the existing UBC Storage Pad and the east/west-expanded segments full with triple stacked filled 48Y feed cylinders. The estimated dose impact to the construction work force during the expansion/addition of the second west segment of the UBC storage pad show that the maximum individual dose to a construction worker is estimated to be about 295 mrem. Furthermore, if a worker, conservatively estimated, occupied an area 20 m from the surface of a cylinder stored on the UBC Storage Pad for 2000 hrs, he/she will receive a yearly dose of approximate 494 mrem. Both of these dose estimate values are below the annual occupational dose limit of 5 rem per 10CFR20.1201.

UBC STORAGE PAD - DOSE MAP



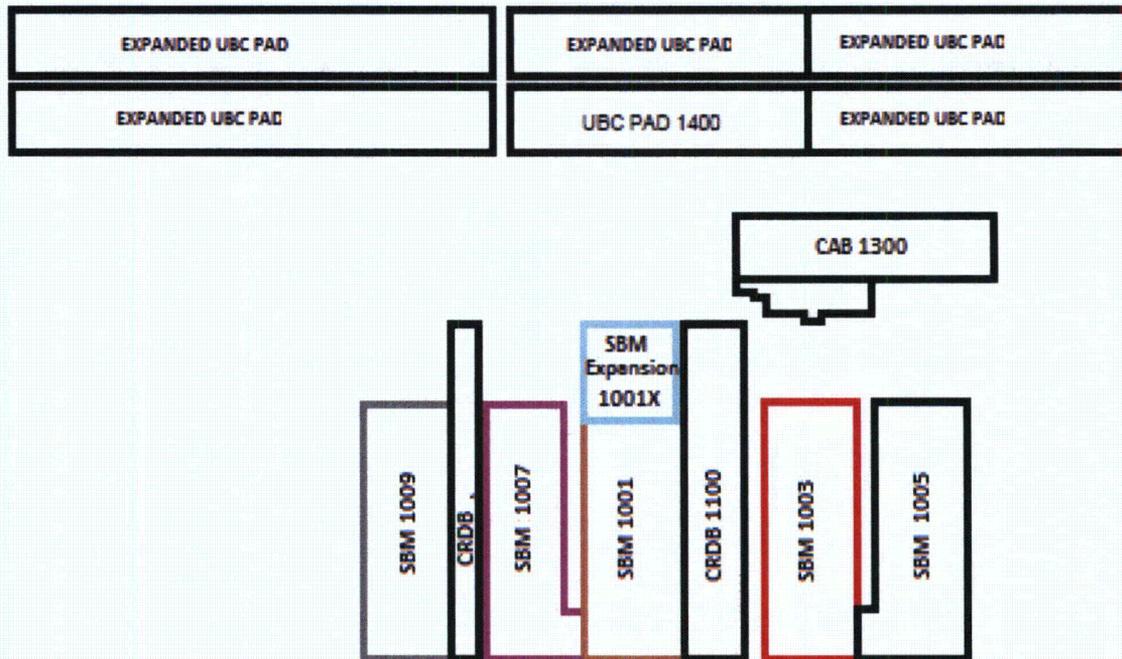
NOTES: Drawing not to scale.

Distances shown are from the surfaces of the stored cylinders.

No shielding credit is taken for the structures/walls of any of the buildings.

Figure 3 Dose Map from 48Y Feed Cylinder Storage on Existing UBC Storage Pad and East/West Expanded UBC Storage Pad

The estimated dose impact to the construction work force during the additions of the north-east, north-center, and north-west segments(see Figure 4) of the UBC storage pad show that the maximum individual dose to a construction worker is estimated to be about 280 mrem, 572 mrem, and 573 mrem, respectively. Furthermore, if a worker, conservatively estimated, occupied an area 20 m from the surface of a cylinder stored on the UBC Storage Pad for 2000 hrs, he/she will receive a yearly dose of approximate 437 mrem during the north expansion activities. These dose estimate values are below the annual occupational dose limit of 5 rem per 10CFR20.1201.



NOTE: Drawing not to scale.

Figure 4 Expected Site Layout upon Completion of Expansion Activities

It should also be mentioned that worker dose assessments have also been carried for work forces associated with the Separations Building Modules (SBM's) expansions [1]. The dose contributions from UF6 cylinder storage on the UBC Storage Pad were considered and the results showed that the worker and occupational doses were below the regulatory limit. For more information, please see the answer to RAI 3, Supplemental ER Request on LAR 12-10.

Reference

1. UUSA 2013, Worker Dose Assessment for 10MSWU Site Expansion Activities, CALC-S-00143, Rev.0, URENCO USA, July 2013.

NRC Request (D)

1. Provide a drawing showing locations of the soil borings relative to the proposed facility expansion, assess stability of the materials beneath the proposed expansion, and justify that additional geotechnical investigation is not needed to support design of the proposed expansion.

UUSA Response to (D) 1

UUSA has provided a response to question (D) 1 in Reference 3, LES-13-00068-NRC, Response to NRC Request for Additional Information on License Amendment Request (LAR) 12-10 Capacity Expansion of UUSA Facility (TAC L34193), dated May 28 2013.

NRC Request (E)

1. Provide the updated aircraft hazard risk determination report demonstrating that the low-level federal airway passing within 9 km (-6 statute miles) northeast of the facility is not a safety hazard to the entire facility including the proposed expanded portion.

UUSA Response to (E) 1

UUSA has provided a response to question (E) 1 in Reference 3, LES-13-00068-NRC, Response to NRC Request for Additional Information on License Amendment Request (LAR) 12-10 Capacity Expansion of UUSA Facility (TAC L34193), dated May 28 2013.