urenco

JUL 0 8 2013

LES-13-00082-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 Capacity Expansion of UUSA Facility (TAC L34193)

Reference:
1. 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, 2012

2. LES-12-00162-NRC, License Amendment Request for Capacity Expansion of URENCO USA Facility (LAR-12-10), dated November 9, 2012

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.

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) Potential Doses Due to Effluent Discharges from the NEF, New Mexico Site" Areva 2003
3) National Enrichment Facility REMP 2008 (ML090970289, 2006 – 2008)
4) 2009 NEF REMP Report (ML100900468, 2009)
5) REMP Report 1-1-2010 to 12-31-2010 (ML110940408, 2010)

NSIR08

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

6) NRC Annual Radiological Environmental Monitoring Program (REMP) Report (ML12086A310, 2011)
7) Power Consumption Forecast 2012
8) Monthly Electric Bill
9) Xcel Energy Interconnection Study

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 (1)

a) Section 3.2.4 of the Supplemental Environmental Report states: "typically two per truck although up to six product cylinders could be transported on the same truck."

However correct as written that up to six cylinders could be transported, normal shipments occur in two types. Four cylinders will be shipped in a single shipment if it is intended to travel via ocean cargo vessel. Six cylinders will be shipped in a single shipment if travel is solely by road. The average number of product cylinders is correct as discussed. To clarify, approximately 880 cylinders per year will be transported. UUSA used the more conservative shipping estimate of only 4 cylinders per shipment. Therefore increasing the total number of shipments, leading to a conservative estimate of total shipments when calculating cumulative shipments.

b) Impact calculations are described in Table 4.2-2 are based upon total number of cylinders per shipment. This is footnoted as #5 which states: "Type and number of containers shipped per year given parenthetically." Footnote 1 associated with table 4.2.3 discusses that only two cylinders are shipped per product shipments. Table 4.2-2 therefore uses 350 cylinders per year. This is correlated in table 4.2-3 using the conservative higher estimate of 175 total shipments.

Table 4.2-2 of ER Rev. 21 (UUSA, 2012) is discussed in Section 4.2.7.6, Incident-Free Scenario Dose. All calculation in this section are performed on a per year basis and therefore this information is transcribed in to the table on an annual basis.

Table 4.2-3 of ER Rev. 21 (UUSA, 2012) is discussed in Section 4.2.3 Traffic Pattern Impacts. Section 4.2.3 discusses that shipments are calculated on an annual or per year basis.

Table 4.2-4 does not exist in ER Rev. 21 (UUSA, 2012).

c) During an initial visit this topic was discussed with NRC contractors performing the Environmental Assessment expansion License Amendment Request. As such UUSA contractors are currently performing calculations to provide a response. Response is expected no later than 15 August 2013.

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 response to (2)

Section 4.2.8 states:

4.2.8 Cumulative Impacts
The ongoing construction, operation, and decommissioning of the UUSA through the proposed facility capacity expansion would result in a small to moderate impact due to traffic from commuting construction workers and operational personnel. There will be increased shipments of radiological materials to and from the UUSA facility due to the proposed facility capacity expansion. Cumulative impacts associated with transportation of radiological materials will occur with the recent licensing of the WCS facility as a disposal location, which is nearly adjacent to the UUSA facility. It is anticipated the cumulative impact to the state highway systems that service the facilities (NM176 and TX 176) will be minimal as there is sufficient capacity on these major roadways. No cumulative impact is anticipated due to other energy projects in the vicinity due to existing development in the nearby areas or due to the WIIP project, which is a significant distance from the UUSA site. There are potential cumulative impacts from the proposed construction and operation of the IIFP facility in Hobbs, New Mexico as this facility is anticipated to receive depleted materials from UUSA for

deconversion processes. The proposed IIFP site will be located approximately 20 miles from the UUSA site. It is anticipated the IIFP site will also receive depleted materials from other sources along the same or similar transportation routes. The EIS for the IIFP site concluded that the radiological impacts associated with combined Phase 1 and Phase 2 operations at IIFP would result in a total population dose of 1.7 person-Sv (170 person-rem) annually. Statistically, this dose could result in 0.10 LCFs annually. When combined with the radiological transportation impacts from operation of the UUSA facility (0.1 LCFs over the facility life) and radiological transportation impacts from the WIPP (less than 1 LCF annually), the NRC staff found that the cumulative radiological impacts from transportation would be SMALL (less than 1 LCF annually) (IIFP, 2009a). The radiological transportation impacts evaluated for the UUSA proposed facility capacity expansion remain less than 1 LCF annually, and the evaluation of the cumulative impacts from these projects will remain small as evaluated recently by NRC on the IIFP evaluation.

With the implementation of all current and planned or proposed future actions within the vicinity of the existing UUSA facility traffic volumes would contribute to cumulative impacts. However, no changes are anticipated in the small to moderate cumulative effects for nonradiological or radiological transportation.

Section 4.2.8 describes cumulative radiological transportation impacts due to the neighboring facilities. Latent Cancer Fatalities (LCF) are correlated to each corresponding site. Waste Control Specialist is considered in this calculation though a number is not directly associated with this facility. The International Isotopes Fluorine Products (IIFP) NUREG-2113, "Safety Evaluation Report for the International Isotopes Fluorine Products, Inc. Fluorine Extraction Process and Depleted Uranium Deconversion Plant in Lea County, New Mexico", considers the LCF of WCS and is therefore considered in section 4.2.8.

NUREG-2113 Section 4.2.2.9 Traffic and Transportation discuss Latent Cancer Fatalities of the combined use of all facilities including Waste Control Specialist. The number of Shipments to WCS is discussed in table 4-36 and Annual Accident Dose-Risk and LCF-Risk from Radiological Transportation is discussed in table 4-37. Appendix E of NUREG 2113 provides more discussion on the results of table 4-37.

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 (3) (a) & (b)

Previous NRC request, 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) posed a similar question. This question is being answered in LES-13-00068-NRC Response to RAI on LAR 12-10 Expansion of UUSA Facility. The direct/external dose exposure to the construction workers will be addressed by these calculations. Calculations will have to be modified by UUSA contractors to ensure that the question is being adequately addressed. Response is expected to be completed no later than 15 August 2013.

b). the calculation does not include contributions from gaseous effluent releases. Contribution from gaseous effluent releases has been and is expected to remain non-appreciable.

UUSA Semi-Annual Radiological Effluent Release Reports (SARERR) previously submitted to the NRC for facility operational periods of January 2009 through December 2013 document that the facility gaseous effluent discharges are historically below Minimum Detectable Activity (MDA) and/or Lower Level of Detection (LLD). The historical discharge values, partnered with the effluent ventilation system design to cease discharges when filter saturation is suspected, indicate that the gaseous effluent exposures to site personnel are not appreciable.

The SARERRs reviewed include:
NEF-09-00164-NRC (AUG 26 2009)
NEF-10-00042-NRC (FEB 26 2010)
LES-10-00202-NRC (SEP 24 2010)
LES-11-00014-NRC (FEB 23 2011)
LES-11-00121-NRC (AUG 24 2011)
LES-12-00031-NRC (MAR 01 2012)
LES-12-00130-NRC (AUG 20 2012)
LES-13-00033-NRC (FEB 28 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 (4)

Previous NRC request, NRC Correspondence, 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) posed the same question. This question was answered in LES-13-00068-NRC Response to RAI on LAR 12-10 Expansion of UUSA Facility. See below for reference:

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

UUSA is currently awaiting revised analytical data to support calculations to support this response. UUSA received verbal acknowledgement from the NRC Project Manager that the response is expected to be completed no later than 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)

Our average source term releases to the atmosphere were estimated to be 29.7 MBq (800 µCi) per year for the purposes of bounding routine operational impacts and based on URENCO's experience in Europe.

See Enclosure #2 "Potential Doses Due to Effluent Discharges from the NEF, New Mexico Site" Areva 2003. This was the basis of our assumptions and documents our input/output data and the assumed isotopic release mix.

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)

- Enclosure 3, National Enrichment Facility REMP 2008 (ML090970289, 2006 – 2008)
- Enclosure 4, 2009 NEF REMP Report (ML100900468, 2009)
- Enclosure 5, REMP Report 1-1-2010 to 12-31-2010 (ML110940408, 2010)

- Enclosure 6, LES-12-00041-NRC Annual Radiological Environmental Monitoring Program (REMP) Report (ML12086A310, 2011)

Changes made to the Environmental Report in CC-EN-2012-0001, replace Section 6.1 with the correct regulatory requirement for a Semi- Annual Radiological Release Report per 10 CFR 70.59. Thusly, there is no report available for 2012.

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)

a) It was projected that the 10MSWU facility will require roughly 52MVA of load. See Enclosure 7, "Power Consumption Forecast 2012" for documentation. This forecast is based upon field data taken by Plant Engineering. The final results show the Phase 2 (3MSWU) facility load at approximately 18.263 MVA and the Phase 4 (10MSWU) facility load at approximately 52.478 MVA.

b) See Enclosure 8, Monthly Electric Bill, this bill provides documentation of the latest power usage numbers (demand and consumption). A formal request has been sent to Xcel Energy for an estimate of the maximum capacity of the existing lines. Xcel will provide UUSA this data upon completion of their process. Also See Enclosure 9 "Xcel Energy Interconnection Study" requested to ensure adequate capacity for the complete of Phase 3 construction.

c) A formal request has been sent to Xcel Energy for an estimate of the maximum capacity of the existing lines. Xcel will provide UUSA this data upon completion of their process.

d) A formal request has been sent to Xcel Energy for an estimate of the maximum capacity of the existing lines. Xcel will provide UUSA this data upon completion of their process.

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)

Email communication between Mr. Timothy Knowles and Mr. Mike Raddatz provided further clarification. Thusly, the NRC has provided the following question on July 1 2013. URENCO USA will provide a response no later than 31 July 2013.

RAI 8 requests for UUSA to provide an independent assessment of the purpose and need using updated projections that reflect current conditions and potential future needs for enriched uranium. The NRC staff provided a response to this request to the Atomic Safety and Licensing Board (ASLB) in the licensing proceedings for the proposed GE-Hitachi Global Laser Enrichment facility. As was explained to the ASLB the staff relied on those projections because they were the best publicly available information at the time of the development of the final environmental impact statement of the proposed GE-Hitachi Global Laser Enrichment facility. Thus the reason for RAI 8 is because of the following:

1. The ASLB hearing mentioned above occurred in 2012. Information the staff provided to ASLB was based on documents that refer to 2010 data. Three years have elapsed since then.

2. The EIA report used for the GE-Hitachi hearing used data from before the Fukushima accident which happened in April 2011. Conditions and fluctuations in the uranium enrichment market might have changed due to the Fukushima accident and other developments.

3. More important, UUSA is directly involved on the purpose and market dynamics of supply and demand for enriched uranium. UUSA by being in the uranium enrichment business is affected directly by the impact of relevant past and present developments and events on the need for enriched uranium and is in a good position to make future predictions. Thus, it is important for the staff to receive the UUSA's input, perspective, relevant assessments/studies on current estimates and future projections. UUSA needs to update the purpose and need for the capacity expansion of the UUSA facility.

   With regards to Part b of RAI 8, the information UUSA provided in the Supplemental ER concerning AREVA is incorrect. Update the purpose and need analysis, as requested above, using the best available information regarding AREVA

urenco

MAR 2 2 2012

LES-12-00041-NRC

Attn: Document Control Desk
Office of Nuclear Material Safety and Safeguards
U.S. Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, MD 20852

Louisiana Energy Services, LLC
NRC Docket No. 70-3103

Subject: Annual Radiological Environmental Monitoring Program (REMP) Report

Louisiana Energy Services, LLC (LES) is submitting as an enclosure, the sections of the subject REMP Report previously agreed upon with the NRC staff. These sections include the Cover Sheet, the Table of Contents and the Executive Summary of the monitoring events on and in the immediate area of the URENCO USA Facility. These monitoring data were gathered from January 2011 through December 2011.

The other sections listed in the Table of Contents not included in this package are available by request. Should there be any questions concerning this submittal, please contact Mr. Zackary Rad, LES Licensing Manager, at 575.394.6689.

Sincerely,

Steve Magill for
Jay Laughlin
Chief Nuclear Officer and Head of Technical Services

Enclosure: Annual Radiological Environmental Monitoring Program Report from January 2011 through December 2011: Table of Contents and Executive Summary

ML120861099

cc:

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

Deborah A. Seymour
Chief, Construction Projects Branch 1
US NRC, Region II
245 Peachtree Center Ave, NE
Suite 1200
Atlanta, GA 30303-1257

Joselito O. Calle
Chief, Fuel Facility Branch 2
USNRC, Region II
245 Peachtree Center Ave, NE
Suite 1200
Atlanta, GA 30303-1257

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

ENCLOSURE

Annual Radiological Environmental Monitoring Program Report from January 2011 through December 2011: Table of Contents and Executive Summary

Enclosure 6
LES-12-00041-NRC Annual Radiological Environmental Monitoring Program (REMP) Report (ML12086A310, 2011)

ANNUAL RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM REPORT
JANUARY 1, 2011 THROUGH DECEMBER 31, 2011
URENCO USA
FACILITY OPERATING LICENSE SNM-2010
LEA COUNTY, NEW MEXICO

by

Haley & Aldrich, Inc.
Tucson, Arizona

for

URENCO USA
Lea County, New Mexico

File No. 37262-023
March 2012

HALEY & ALDRICH

EXECUTIVE SUMMARY

This report summarizes the results of the URENCO USA Radiological Environmental Monitoring Program (REMP) conducted in the vicinity of URENCO USA for the period from January 1, 2011 through December 31, 2011. This document has been prepared pursuant to 10 CFR 20 and 10 CFR 50 and in accordance with the requirements of the URENCO USA Environmental Report, Section 6.1.2. Initiated in September 2006, the REMP includes the collection, analysis, and evaluation of radiological data to assess the potential impact of URENCO USA operations on the environment and general public.

Sampling and Analysis

During 2011, the URENCO USA REMP sampling was performed for the following environmental media: ambient radiation thermoluminescent dosimeters (TLDs); airborne particulate filters; co-located on-site and off-site soil and vegetation; water from a lined stormwater retention basin (Pond 2); groundwater; domestic wastewater at Lift Station 1; and HVAC condensate samples (condensate generated from normal operations of the heating, ventilating and air conditioning systems).

Radiological Impact to the Environment and General Public

A comparison of 2011 airborne particulate filter samples, co-located on-site and off-site soil and vegetation samples, and groundwater samples to pre-operational baseline samples indicates that no detectable radioactivity in environmental samples was attributable to URENCO USA operations during 2011.

During 2011, annualized ambient radiation (corrected for control) ranged from 7 to 16 millirems per year; and annualized neutron exposure rates were all less than the minimum detectable activity. The corrected-for-control values are below the dose limit of 100 millirem/year (which is exclusive of dose from background radiation) per 10 CFR 20.1301 *Dose Limits for Individual Members of the Public.*

The 2011 REMP results for air particulates, soil, vegetation, surface water and groundwater were less than pre-operational results, or the difference was within the same order of magnitude and consistent with the pre-operational results. Differences between pre-operational results and 2011 results are attributable to normal variability in the analytical method, the sample method, and ambient background radiation.

For a few groundwater samples, results were more than one order of magnitude higher than pre-operational results. These higher groundwater activities were correlated with higher concentrations of total dissolved solids, chloride and sulfate in groundwater and with lower pH values. Differences between pre-operational results and 2011 results are attributable to background groundwater conditions.

In addition, gaseous and liquid effluent data collected during 2011 indicate there were no releases to the public during 2011 that exceeded the requirements set forth in 10 CFR 20.1301, 10 CFR 20.1302, and 10 CFR 20.1101(d), as described in NRC Regulatory Guide 4.20 "*Constraint on Releases of Airborne Radioactive Materials to the Environment for Licensees Other Than Power Reactors*" dated December 1996. The effluent results are provided in *Semi-annual Radioactive Effluent Release Reports* (Haley & Aldrich, 2011a, 2011b). The effluent monitoring data and the REMP data indicate that no detectable radioactivity was attributable to URENCO USA operations during 2011.

TABLE OF CONTENTS

Enclosure 7
"Power Consumption Forecast 2012"

2012 Forecast	Power Consumption (kVA) Designed	Actual	Adjusted Actual	Comparison	Notes
1610-732-SWG6A	553.8	97.6	97.6	0.176236909	
1610-732-SWG6B	626.2	48.8	48.8	0.077930374	
1300-732-SWG7A	1045.4	415.1	415.1	0.397072891	
1300-732-SWG7B	1248.6	0	0	0	
1300-732-SWG8A	1247.1	0	0	0	
1300-732-SWG8B	1235.3	439.6	439.6	0.355864972	
1301-732-SWG9A	3199.8	293.1	293.1	0.091599475	
1301-732-SWG9B	2932.6	219.8	219.8	0.074950556	
1500-732-SWG10A	980.4	268.6	268.6	0.273969808	
1500-732-SWG10B	1033.2	268.6	268.6	0.259969028	
1600-732-SWG9A	2510.4	200	200	0.079668579	
1600-732-SWG9B	2472.8	171	171	0.069152378	
1600-732-SWG11A	862.8	138.6	138.6	0.160639777	
1600-732-SWG11B	1099.4	48.8	138.6	0.126068765	
1600-732-SWG12A	1074.1	73.3	138.6	0.129038265	
1600-732-SWG12B	807.8	48.8	138.6	0.171577123	
1100-732-SWG13A	3260.3	293.1	293.1	0.089899702	
1100-732-SWG13B	2333.5	268.6	268.6	0.115106064	
1910-732-SWG	473.1	12.2	70.9	0.149862608	
2000-732-SWG	298.7	97.6	97.6	0.326749247	
2210-732-SWG	48.6	10	10	0.205761317	
Admin Bldg (Commons)	500	500	500	1	Estimated load
1620-732-SWG1A	2189	2189	2189	1	Only combined load estimate available
1620-732-SWG1B					
1620-732-SWG9A	1334	1334	1334	1	Only combined load estimate available
1620-732-SWG9B					
1630-732-SWG1A	2189	2189	2189	1	Only combined load estimate available
1630-732-SWG1B					
1630-732-SWG9A	1334	1334	1334	1	Only combined load estimate available
1630-732-SWG9B					
1640-732-SWG1A	2189	2189	2189	1	Only combined load estimate available
1640-732-SWG1B					
1640-732-SWG9A	1334	1334	1334	1	Only combined load estimate available
1640-732-SWG9B					
Total BOP	40412.9	14482.2	14785.8	0.365868324	
1001-732-SWG1A	2621.1	436.8	436.8	0.166647591	
1001-732-SWG1B	2165.1	403.2	403.2	0.186226964	
1002-732-SWG1A	2596.5	310.8	310.8	0.119699596	
1002-732-SWG1B	2626.5	352.8	352.8	0.134323244	
1001-742-SWG1/2	2315	2315	2315	1	Actual Load (interpolated to 12 cascades)
1002-742-SWG1/2	2315	2315	2315	1	Actual Load (interpolated to 12 cascades)
1003-732-SWG1A	1904.5	1904.5	285.6	0.14996062	
1003-732-SWG1B	1926	1926	288.9	0.15	
1004-732-SWG1A	2287.9	2287.9	343.2	0.150006556	
1004-732-SWG1B	1970.6	1970.6	295.6	0.150005075	
1003-742	7200	7200	7200	1	Only combined load estimate available
1004-742					
1005-732-SWG1A	3434	3434	515.1	0.15	Only combined load estimate available
1005-732-SWG1B					
1006-732-SWG1A					
1006-732-SWG1B					
1005-742	7200	7200	7200	1	
1006-742					
1007-732-SWG1A	3434	3434	515.1	0.150005075	Only combined load estimate available
1007-732-SWG1B					
1008-732-SWG1A					
1008-732-SWG1B					
1007-742	7200	7200	7200	1	
1008-742					
1009-732-SWG1A	3434	3434	515.1	0.15	Only combined load estimate available
1009-732-SWG1B					
1010-732-SWG1A					
1010-732-SWG1B					
1009-742	7200	7200	7200	1	
1010-742					
Total BOP Load (10 MSWU Plant)	61830.2	53324.6	37692.2	0.60960825	

Notes:

1) "Design Load" is based on latest design calculations
2) "Actual Load" is based on observations from 13.8kV breaker protective relays
3) "Adjusted Actual Load" is based on other field observations and more accurately represents the actual load
4)
5)
6)
7)
8)

Phase 1 Design Load	Actual Load
BOP	29343.9	3716.8
Process	14639.2	6133.6
Total	43983.1	9850.4

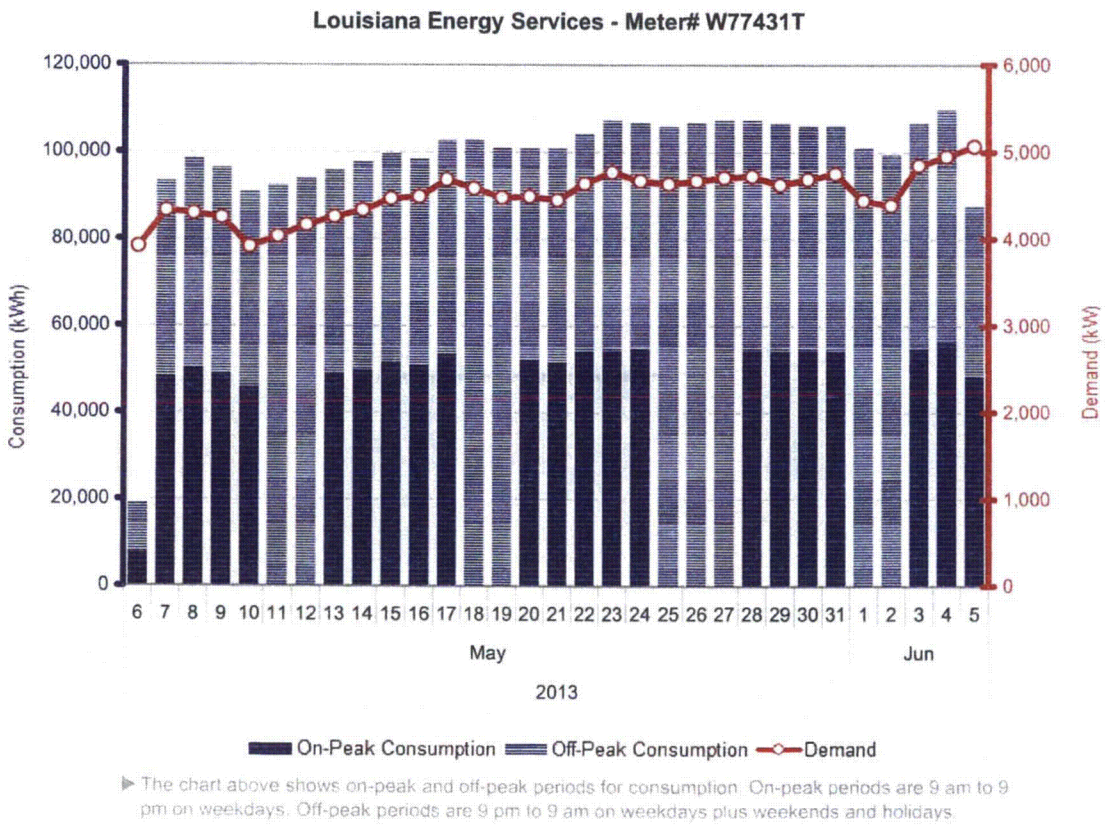
Phase 2 Design Load	Actual Load
BOP	29343.9	3716.8
Process	29928.2	14546.9
Total	59272.1	18263.7

Phase 3 Design Load	Actual Load
BOP	33366.9	7739.8
Process	40562.2	22262
Total	73929.1	30001.8

Phase 4 Design Load	Actual Load
BOP	40412.9	14785.8
Process	61830.2	37692.2
Total	102243.1	52478

Enclosure 8,
Monthly Electric Bill

GX Meter Monthly
Billing Period Page



▶ The chart above shows on-peak and off-peak periods for consumption. On-peak periods are 9 am to 9 pm on weekdays. Off-peak periods are 9 pm to 9 am on weekdays plus weekends and holidays.

NM LGS Rate

Estimated Cost

▶ Estimated total cost for the reported period based on your rate selection above.

Max Demand

5,065 kW

Average:	4,504 kW
Peak Interval:	06/05/13 - 04:00 PM

▶ Demand is the maximum power in kilowatts (kW) for each day for the reported period.

Consumption

3,053,213 kWh

On-Peak:	1,098,476 kWh (36%)
Off-Peak:	1,954,737 kWh (64%)

▶ Consumption is the total energy in kilowatt hours (kWh) for the reported period.

Enclosure 9
Xcel Energy Interconnection Study

SPS – NEF SUBSTATION

LOAD INTERCONNECTION STUDY REPORT

STUDY # 121026

DPA – 2012 – JUNE - 200

Southwestern Public Service Company (SPS)
An Xcel Energy Company

October 26, 2012

Executive Summary

SPS Retail Accounts on October 2012 requested a study for the new load forecast on the existing 115 kV NEF Substation in Lea County, NM. The location of the delivery point is shown in Appendix A. The anticipated total load for the study is 19 MVA in summer and winter peak loads starting 2013. From 2013 to 2015, the load will be gradually increased up to 30 MVA. The load forecast provided by the customer is shown in Appendix B.

The purpose of this study is to determine the impact of the new load forecast to the SPS local transmission system in Lea County area and neighboring zones as well as the required upgrades to mitigate the impacts. This is the key area of interest since the new load is situated in this area, which would be impacted most.

Power flow analysis was performed to determine impacts and mitigations with the introduction of the additional load to the local SPS transmission grid in the area of study. Based on the availability of power flow models and the requested in service date the new load request was studied on 2013, 2015 and 2019 summer and winter peak models only. The power flow models simulated for the requested amount of load did not trigger any new violations during system intact conditions as well as single contingency events.

SPS at their discretion reserves the right to modify or change the long term recommended transmission upgrades based on requested load projects, and generation interconnections; or guidance from the Southwest Power Pool (SPP). The long term recommended upgrades are the best solution at this time based on current data available and are subject to SPP's Integrated Transmission Process (ITP) review. These upgrades could be changed in order to meet present and long-term goals; however, changes will be accomplished provided the new upgrades meet the same level of safety and system reliability.

Table of Contents

1. Introduction

SPS Retail Accounts on October 2012 requested a study for the new load forecast on the existing 115 kV NEF Substation in Lea County, NM. The location of the delivery point is shown in Appendix A. The anticipated total load for the study is 19 MVA in summer and winter peak loads starting 2013. From 2013 to 2015, the load will be gradually increased up to 30 MVA. The load forecast provided by the customer is shown in Appendix B.

The primary objective of this study is to determine if the new load forecast will adversely impact transmission loadings or system voltages during the system intact or with N-1 contingency conditions. This study also proposes any new upgrades that may be required in order to serve the load without any violations. In addition, this study gives the estimated costs, which are associated with the interconnection of the proposed new load transmission facilities to the SPS transmission system.

2. Study Methodology

This study was performed using the Power Technologies, Inc. ("PTI") Power System Simulator for Engineering (PSS/E) program and contains a steady-state analysis using AC Contingency Checking (ACCC) with a Fixed Slope Decoupled Newton–Raphson (FDNS) solution. The study was conducted to ensure that current NERC Planning Standards[1] are fulfilled. As an example, for system intact conditions, bus voltages must be maintained between 0.95 – 1.05 per unit of their nominal value and thermal system intact conditions must not exceed their designated A-rating. For contingencies, the voltages are allowed to deviate between 0.90 – 1.05 per-unit of their nominal value. Additionally, the loading on transmission system equipment cannot exceed 100% of the emergency B-rating.

The study uses a comparative study approach to determine system impacts caused by this proposed new load forecast for the power flow models considered. The base case models include the power flow cases with transmission service requests granted by the Southwest Power Pool ("SPP") for the respective year/season studied with the existing load forecast. All additional "test" power flow cases include the proposed new load forecast for the summer and winter peak seasons. The violations from each contingency in the test cases were compared to the respective violation, under the same contingency, of the base case and the impact was thus determined.

3. Study Assumptions[2]

The 2013, 2015 and 2019 summer and winter peak power flow models were used for this study and represent the 2013 Southwest Power Pool (SPP) MDWG Model Series and includes all Path 2 updates. No new speculative load or loads without signed agreements

[1] Requirement for TPL-001-R1 and TPL-002, R1
[2] Requirement for FAC 002-R1.5

were added to the models or any additional load requests not already present in these models.

4. Results

The results presented in this study refer to SPS transmission system in the Lea County area and neighboring zones (zones 1508, 1506 and 1507) and are only valid for the power flow cases noted in Section 3. The results are not for all the variations that could exist in load, generation patterns and network transmission service that could be granted by SPP.

The power flow models simulated for the requested amount of load did not trigger any new violations during system intact conditions as well as single contingency events.

5. System Intact Conditions

The new load forecast was modeled to the respective seasonal power flow models as part of test cases. Table 2 shows the total amount of load modeled at 115 kV NEF substation for this study as part of test cases. The Seasonal models simulated with the new load forecast at 115 kV NEF substation did not trigger any new system intact violations.

Table 1.Total Load

Seasonal Model	Total Load modeled at 115 kV NEF Substation	
	MW	MVAr
2013S	15.79	10.58
2013W	15.79	10.58
2015S	24.06	17.92
2015W	24.06	17.92
2019S	24.06	17.92
2019W	24.06	17.92

6. Thermal/Voltage Single Contingency Analysis

Using the power flow models noted above, ACCC single-element contingency analysis showed no indication that new thermal or voltage violations would be triggered on the transmission system as a result of this new load forecast.

7. Discussion of Alternatives

No alternatives are required in order to serve the requested change.

8. Requirements for Transmission Service

No transmission service is required for serving the requested change.

9. Fault or Short Circuit Study[3]

The approximate available fault currents and fault impedance values at 115 kV N.E.F. substation are shown in Table 4 below. This study was performed using the Power Technologies, Inc. ("PTI") Power System Simulator for Engineering (PSS/E) program.

Table 2.Available Short Circuit Values for 115 kV bus at NEF Substation

Fault Values at the 115 kV Bus at NEF Substation						
FAULT TYPE	FAULT CURRENT (Amps)			FAULT IMPEDANCE (Ω)		
	+ seq	- seq	0 seq / 3Io	+ seq	- seq	0 seq
LG	777	777	777 / 2330	5.86793+j15.88455	5.86264+j15.87397	16.24956+j49.73394
3-PHASE	3952	0	0	5.86793+j15.88455	5.86264+j15.87397	16.24956+j49.73394

10.Estimated Costs

No capital cost associated with this study since there is no transmission upgrades required to serve the new load forecast.

11.Construction Schedule

There is no construction associated with this study.

[3] Use as required by NERC Standard FAC-002-0 R1.4 "Evidence that the assessment included steady-state, short-circuit, and dynamics studies as necessary to evaluate system performance in accordance with Reliability Standard TPL-001-0."

12. Appendix A

Figure 1. Vicinity Map at NEF Substation

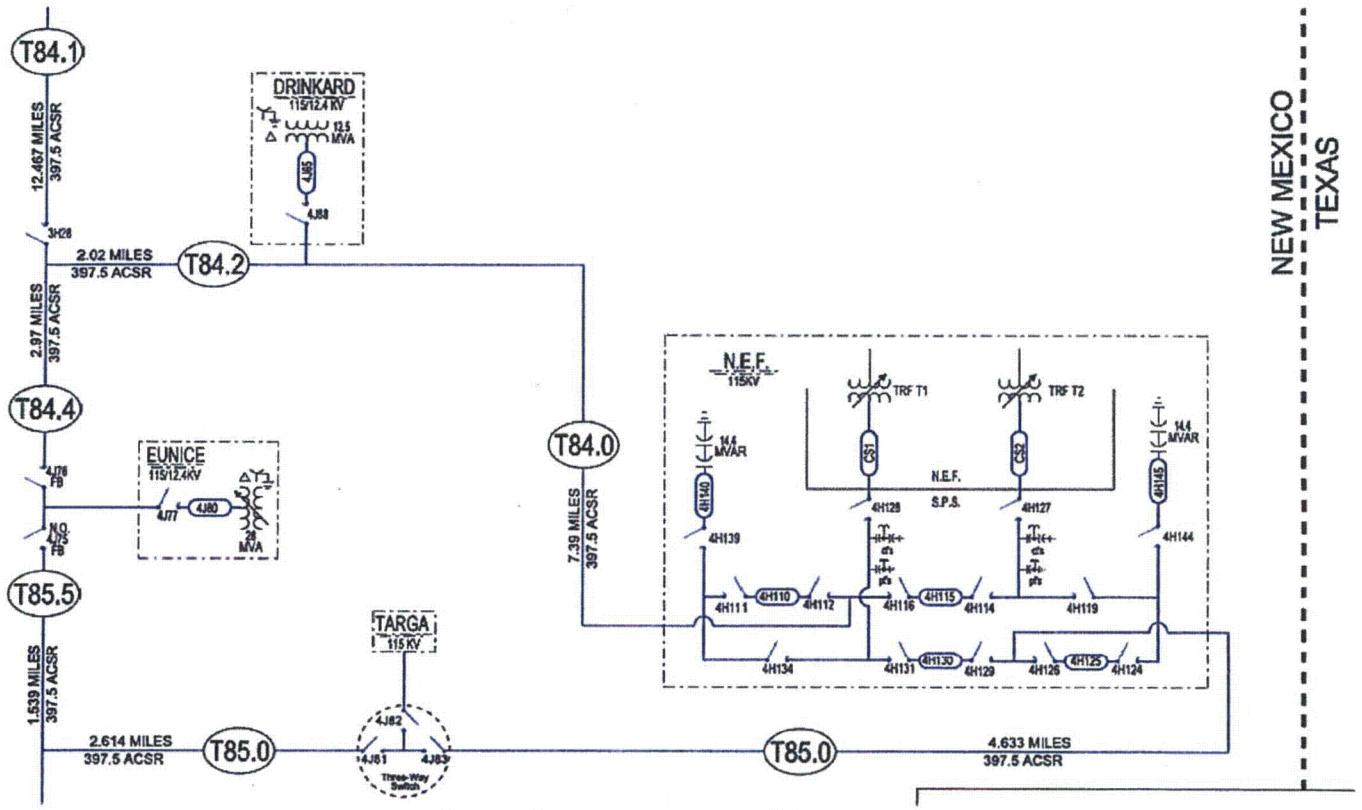


Figure 2.One line diagram vicinity map at NEF Substation

13.Appendix B

Table 3.Load Forecast

Year	115kV NEF Substation Total Load (MVA)
2012	9
2013	19
2015	30
2019	30

– END OF REPORT –