Uranerz
ENERGY CORPORATION

August 13, 2014

Attn: Document Control Desk
Director
Office of Federal and State Materials and
Environmental Management Programs
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Attn: Document Control Desk
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Re: Semi-Annual Report Uranerz Energy Corporation Nichols Ranch ISR Project SUA-1597

Dear Director and Deputy Director,

This letter and attachment serves as the Semi-Annual Report for the Uranerz Energy Corporation Nichols Ranch ISR Project that is required by License Condition 11.1 B and D in SUA-1597. This report replaces the report submitted under cover letter dated July 25, 2014 which inadvertently excluded two tables.

If you have any questions regarding the provided information, please contact me at 307-265-8900 or by email at mthomas@uranerz.com.

Sincerely,

Dawn C. Kalkman for Mike Thomas

Michael P. Thomas
Vice President Regulatory and Public Affairs
Uranerz Energy Corporation

MT/dk

Attachments - January-June 2014 Semi-Annual Report

FSME20

cc: Ron Linton, NRC Project Manager (email)
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Uranerz
ENERGY CORPORATION

Nichols Ranch ISR Project
License Number SUA-1597
Docket No.40-9067

Semi-Annual Report

January - June 2014

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1.0 INTRODUCTION

Uranerz received Source Material License SUA-1597 on July 19, 2011. In accordance with 10 CFR 40.65 and Source Material License SUA-1597 Uranerz Energy Corporation submits the 2014 Semi-Annual Effluent and Monitoring Report summarizing the operational and environmental activities monitored for the Nichols Ranch and Hank Units. Semi-Annual reporting is performed according to SUA-1597 License Condition 11.1 and includes information for the period of January 1, 2014 through June 30, 2014.

2.0 OPERATIONAL MONITORING

2.1 Activities Summary

Uranerz continued construction of the Nichols Ranch Unit Central Processing Plant (CPP) and Production Area #1 (PA#1) during the report period as summarized in Quarterly Reports submitted to the NRC on April 29, 2014 for first quarter and July 23, 2014 for second quarter.

The NRC performed a follow-up pre-operational inspection during January 2014. The NRC subsequently approved Uranerz to start-up on April 15, 2014. Lixiviant was officially introduced for operations April 18, 2014.

No operational activities occurred at the Hank Unit during the report period. The Environmental Assessment (EA) is pending with the Bureau of Land Management (BLM) for the 280 acres that the BLM manages.

2.2 Excursion Well Status

License Condition 11.1(B) requires a status update of any long term excursion. As reported in the Quarterly reports mentioned above, no wells were on excursion status during the report period.

2.3 Disposal Well Volumes

Uranerz presently has two permitted deep disposal wells NICH-DW-1 and NICH-DW-4 permitted through the Wyoming Department of Environmental Quality, Water Quality Division (WDEQ-WQD). The deep disposal wells were operated subsequent to start-up in April 2014.

License Condition 10.11 requires the volume disposed in each disposal well to be reported annually. The disposed volume will be included in the Annual and Semi-Annual Effluent Report submitted in January 2015.

2.4 Flow Rates and Manifold Pressures

Per License Condition 11.1C Uranerz is required to record flow rates and manifold pressures daily. A summary of these items was submitted in the above named Quarterly reports. Otherwise, these records are compiled and available to inspectors on site upon their request.

2.5 Summary of Mechanical Integrity Testing (MIT) Data

The number of wells installed and mechanical integrity test (MIT) status (License Condition 11.1B) is reported in Quarterly Reports to the NRC. Please refer to Quarterly Reports submitted April 29, 2014 and July 23, 2014.

2.6 Restoration

No areas are in restoration for the reporting period.

3.0 ENVIRONMENTAL MONITORING

3.1 Ground Water Monitoring

In accordance with License Condition 11.5 monitor wells in the production area (perimeter, overlying and underlying wells) are sampled for excursion parameters. Results of the monitor well samples are provided in Quarterly Reports submitted to the NRC.

License Condition 11.7 requires sampling of domestic and livestock wells to be sampled within 1 km of the production area on an annual basis. Collected samples are analyzed at an offsite laboratory for natural uranium, radium-226, and those constituents, chloride, conductivity, and alkalinity, as listed in Section 5.7.8.9 of the license application. The ground water analysis will be included in the Annual and Semi-Annual Effluent Report submitted in January 2015.

The surficial aquifer well, URNZG-15, located in Production Area #1 was sampled during the report period. In accordance with License Condition 11.3C the surficial well will be analyzed for parameters listed in Table D6-6a of the license application. Sampling was attempted; however, no water was available to sample during the report period. The sampling dates for the surficial well are as follows.

Date	Waterlevel Results
1/21/2014	dry
3/6/2014	dry
4/1/2014	dry
5/1/2014	dry
6/9/2014	dry

3.2 Surface Water Monitoring

In accordance with Section 5.7.7.3.1 of the license application surface water will be collected and analyzed for total uranium, Th-230, Ra-226, and Pb-210. There are three surface water self-samplers on site with two located at the Nichols Ranch Unit and one at the Hank Unit. Grab samples from the surface water sampling locations were collected at various times during the report period. Uranerz inadvertently forgot to request that thorium and lead be analyzed initially; however, the laboratory has been contacted and is currently analyzing the samples for the two constituents. With the thorium and lead results pending, surface water results will be submitted to the NRC under separate cover.

3.3 Summary of Unplanned Releases

There were two reportable unplanned releases of production solution during the reporting period. Verbal notifications, emails, and written notifications were provided to the NRC and WDEQ-LQD accordingly. Documentation pertaining to the unplanned releases is maintained onsite per License Condition 11.6.

3.4 Sediment and Soil Sampling

In accordance with Section 5.7.7.5 of the license application, sediment samples will be collected annually and analyzed for uranium, radium-226, lead-210 and thorium.

Soil samples are also collected annually in the vicinity of where radon is monitored. The sediment and soil analyses will be included in the Annual and Semi-Annual Effluent Report submitted in January 2015.

3.5 Air Particulate, Radon, and Gamma Radiation Monitoring

Uranerz maintains an environmental air monitoring program at six locations around the licensed Nichols Ranch facility. These stations are used to monitor air particulates, radon, and passive gamma measurements. Uranerz also maintains radon monitors at four locations surrounding the active wellfield and eight surrounding the CPP. These are compared to background for use in calculating annual dose to the public.

The air station locations are as follow:

- NA-1 monitors the nearest full time resident at Dry Fork Ranch
- NA-2 is at the southern license boundary and monitors the down wind conditions of the north west winds for the CPP.
- NA-3 is at the northern license boundary and monitors the downwind conditions of south west winds for the wellfield and the CPP
- NA-4 is at the easterly license boundary and is the background station being upwind from the wellfield and the CPP.
- NA-5 is located west of the CPP and monitors the down wind conditions of the easterly winds that occur at night.
- NA-6 is located north east of the CPP and monitors the man camp that is the maximally exposed member of the public.

Air Particulate samples are collected weekly and then composited quarterly for analysis by an outside laboratory. Review of the data shows that the concentration of the parameters are less than the 10 CFR 20 Appendix B, Effluent Concentration Limits. Table 1 shows the air particulate

data collected for the first and second quarters. At the time of preparation of this report the laboratory analysis was pending for the second quarter. The data for the second quarter will be included in the next semi-annual report.

Radon gas is monitored continuously at the six air particulate stations. These locations are used for environmental monitoring and for use in public dose assessments. There are eight additional radon detectors surrounding the CPP which are used for public dose assessments and for personnel dose assessments. There are also four radon monitors surrounding the active wellfield. that are used for public as well as personnel dose assessments. Passive outdoor radon detectors are exchanged quarterly or semi-annually, as required, and sent to Landauer for analysis. The data is shown in Table 2. Data is given as raw data without subtracting the background location. These values will be compared to radon daughter effluent releases found in 10 CFR 20 Appendix B values to assess dose to the public.

Passive gamma radiation is monitored continuously at the six air particulate stations and at other monitoring stations located throughout the licensed area. The added locations are additional data points that are intended to be used for determining dose to the public. The monitoring is performed using Optically Stimulated Luminescence (OSL) dosimeters that are exchanged and analyzed by Landauer quarterly. The passive gamma radiation monitoring data is shown in Table 3. Data is given as raw data without subtracting the control badge.

4.0 SUMMARY OF EMPLOYEE URINALYSIS RESULTS

Bioassay samples are collected on all employees at initial hiring. Monthly samples are collected from plant operators. Analysis is performed by an outside laboratory. The bioassay results are summarized annually, pursuant to 10 CFR Part 20, Subpart M and will be included in the Annual and Semi-Annual Effluent Report submitted in January 2015.

5.0 PUBLIC DOSE

10 CFR 20.1301 requires that each NRC licensee conduct their operations in a manner that the total effective dose equivalent (TEDE) to members of the public does not exceed 100 mrem in a year, and that the dose from external sources in any unrestricted area does not exceed 2 mrem in any hour.

Additionally, 10 CFR 20.1302 requires licensees to show compliance to these dose limits by demonstrating one of the following:

1. Show by actual measurement or calculation that the TEDE to the public does not exceed 100 mrem; or
2. Show that the annual average concentration of radioactive effluent released at the restricted boundary do not exceed the values in Table 2 of Appendix B in 10 CFR 20. Also that the external dose to an individual continuously present in an unrestricted area would not exceed 2 mrem in an hour.

The public dose data is summarized annually and will be included in the Annual and Semi-Annual Effluent Report submitted in January 2015.

6.0 SAFETY AND ENVIRONMENTAL REVIEW PANEL (SERP) EVAULATIONS

Per License Condition 9.4E, Uranerz shall furnish, in an annual report to the NRC, a description of such changes, tests, or experiments, including a summary of the evaluations made by the safety and environmental evaluation panel (SERP). Uranerz completed a total of eleven (11) SERPs during the year. A summary of SERPs performed during the annual report period will be included in the Annual and Semi-Annual Effluent Report submitted in January 2015.

7.0 ALARA REVIEW

As required by License condition 11.2, the licensee shall submit the results of the annual review of the radiation protection program content and implementation performed in accordance with 10 CFR 20.1101(c). These results shall include doses to individual members of the public. This submittal will occur once the Nichols Ranch facility is has processed licensed material for a calendar year. After the year, an ALARA audit will occur and will be submitted with the semi-annual effluent report in July 2015. This allows all data from the fourth quarter to arrive before issuing doses to the public.

8.0 SURETY

All activities conducted, to date, at the Nichols Ranch ISR Project are covered in the surety estimate as required by License Condition 9.5. The surety estimate is reviewed annually and submitted to the NRC by December 29. The WDEQ-LQD also requires an annual surety review in December and therefore Uranerz reviews the surety annually in December, thus aligning the NRC and LQD surety reviews for consistency, standardization and reduced redundancy.

Uranerz updated the surety estimate and submitted it to the NRC on December 9, 2013. The updated surety pends approval from the NRC. The WDEQ-LQD Administrator has approved this surety update. The next annual surety review will occur in December 2014.

Uranerz Energy Corporation
Table 1 Air Particulate Locations
January - June 2014

Sample Location	Sample Period	Radionuclide	Concentration (µCi/ml)	Error ±(µCi/ml)	LLD (µCi/ml)	10CFR 20 APP B Table 2 Values (µCi/ml)	Percent Concentration %
NA-1 Air Station Nearest Resident	1st Quarter 2014	U-Nat	1.1E-16	NA	1.0E-16	9E-14	0.1
		Th-230	ND	NA	1.0E-16	3E-14	0.0
		Ra-226	ND	NA	1.0E-16	9E-13	0.0
		Pb210	1.7E-14	1.6E-15	2.0E-15	6E-13	2.8
	2nd Quarter 2014	U-Nat				9E-14	0.0
		Th-230				3E-14	0.0
		Ra-226				9E-13	0.0
		Pb-210				6E-13	0.0
NA-2 Air Station Downwind Southern Boundary	1st Quarter 2014	U-Nat	1.0E-16	NA	1.0E-16	9E-14	0.1
		Th-230	ND	NA	1.0E-16	3E-14	0.0
		Ra-226	ND	NA	1.0E-16	9E-13	0.0
		Pb210	1.1E-14	1.2E-15	2.0E-15	6E-13	1.8
	2nd Quarter 2014	U-Nat				9E-14	0.0
		Th-230				3E-14	0.0
		Ra-226				9E-13	0.0
		Pb-210				6E-13	0.0
NA-3 Air Station Downwind North Boundary	1st Quarter 2014	U-Nat	1.1E-16	NA	1.0E-16	9E-14	0.1
		Th-230	ND	NA	1.0E-16	3E-14	0.0
		Ra-226	ND	NA	1.0E-16	9E-13	0.0
		Pb210	1.4E-14	1.4E-15	2.0E-15	6E-13	2.3
	2nd Quarter 2014	U-Nat				9E-14	0.0
		Th-230				3E-14	0.0
		Ra-226				9E-13	0.0
		Pb-210				6E-13	0.0
NA-4 Air Station Background Site	1st Quarter 2014	U-Nat	ND	NA	1.0E-16	9E-14	0.0
		Th-230	ND	NA	1.0E-16	3E-14	0.0
		Ra-226	ND	NA	1.0E-16	9E-13	0.0
		Pb210	1.5E-14	1.3E-15	2.0E-15	6E-13	2.5
	2nd Quarter 2014	U-Nat				9E-14	0.0
		Th-230				3E-14	0.0
		Ra-226				9E-13	0.0
		Pb-210				6E-13	0.0

Uranerz Energy Corporation
Table 1 Air Particulate Locations
January - June 2014

Sample Location	Sample Period	Radionuclide	Concentration (µCi/ml)	Error ±(µCi/ml)	LLD (µCi/ml)	10CFR 20 APP B Table 2 Values (µCi/ml)	Percent Concentration %
NA-5 Air Station Downwind West of CPP	1st Quarter 2014	U-Nat	ND	NA	1.0E-16	9E-14	0.0
		Th-230	1.4E-16	6.8E-17	1.0E-16	3E-14	0.0
		Ra-226	ND	NA	1.0E-16	9E-13	0.0
		Pb210	1.5E-14	1.5E-15	2.0E-15	6E-13	0.0
	2nd Quarter 2014	U-Nat				9E-14	0.0
		Th-230				3E-14	0.0
		Ra-226				9E-13	0.0
		Pb-210				6E-13	0.0
NA-6 Air Station Downwind North East of CPP	1st Quarter 2014	U-Nat	ND	NA	1.0E-16	9E-14	0.0
		Th-230	ND	NA	1.0E-16	3E-14	0.0
		Ra-226	ND	NA	1.0E-16	9E-13	0.0
		Pb210	1.3E-14	1.3E-15	2.0E-15	6E-13	2.2
	2nd Quarter 2014	U-Nat				9E-14	0.0
		Th-230				3E-14	0.0
		Ra-226				9E-13	0.0
		Pb-210				6E-13	0.0

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Table 2 Radon Monitoring
January-June 2014

Location Nichols Ranch Project	1st Quarter (µCi/ml)	Uncertainty (µCi/ml)	2nd Quarter (µCi/ml)	Uncertainty (µCi/ml)	Location Average (µCi/ml)	10CFR 20 APP B Table 2 Values (µCi/ml)
NR-1 (Nearest Resident)	5.00E-10	5.00E-11	4.00E-10	4.00E-11	4.50E-10	1.00E-10
NR-2 (Southern Boundary Downwind)	6.00E-10	5.00E-11	3.00E-10*	3.00E-11	6.00E-10	1.00E-10
NR-3 (North Boundary Downwind)	5.00E-10	5.00E-11	5.00E-10	5.00E-11	5.00E-10	1.00E-10
NR-4 (North Wellfield Boundary)	3.00E-10*	4.00E-11	N/A	N/A	#DIV/0!	1.00E-10
NR-5 (Background)	3.00E-10	4.00E-11	7.00E-10	6.00E-11	5.00E-10	1.00E-10
NR-6 (West of CPP downwind)	3.00E-10*	4.00E-11	6.00E-10	6.00E-11	6.00E-10	1.00E-10
NR-7 (North East of CPP Downwind Maximally Exposed Member of the Public)	5.00E-10	5.00E-11	7.00E-10	6.00E-11	6.00E-10	1.00E-10