



October 3, 2013

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
U.S. Nuclear Regulatory Commission
Deputy Director, Decommissioning and Uranium Recovery Licensing Directorate
Division of Waste Management and Environmental Protection
Office of Federal and State Materials and Environmental Management Protection
Mail Stop T-8F5
11545 Rockville Pike
Two White Flint North
Rockville, MD 20852-2738

RE: Uranerz Energy Corporation, Nichols Ranch Project, Source Materials License SUA-1597, Docket No. 040-09067, License Condition 12.11 parts A and B.

Dear Director and Deputy Director,

Uranerz Energy Corporation (Uranerz) has enclosed information regarding the completion and an administrative removal of License Condition 12.11.

The license condition states:

“Lists of Instruments. At least 30 days prior to the preoperational inspection, the licensee shall provide the following:

- A. A list of radiation measurement instrumentation that will be used to measure or quantify the radioactivity on air sampling media. The list will provide the manufacturer, model number and/or a description of the instrument, range, instrument sensitivity (LLD), and its planned use to measure radioactivity.
- B. A list of radiation survey instrumentation available for radiation contamination surveys. The licensee will also provide adequate information to show the capability of each instrument such as the type of instrument, range, sensitivity (lowest range limits), and planned use.”

Please refer to the attached Table 1 and Table 2 which state the radiation measurement instrumentation used to measure air sampling media. Please refer to Table 3 which states the radiation survey instrumentation used for radiation contamination surveys.

Upon review and completion of the requirements specified in License Condition 12.11 Uranerz requests administrative removal of the condition from the license.

If you should have any questions regarding this matter or this proposed plan, please contact me by phone at 307-265-8900 or by e-mail at mthomas@uranerz.com.

Sincerely,


Dawn Kalkman
Signing for Mike Thomas

Mike Thomas
Vice President, Regulatory Affairs
Uranerz Energy Corporation

MT/al

cc: Ron Linton, Project Manager, NRC
Linda Gersey, Lead Inspector, NRC

Table 1: List of Instruments for Radioactive Air Sampling

Radiation Measurement	Manufacturer	Model Number	Range	Instrument Sensitivity (LLD)	Planned Use	Instrument Description
Air Sampling	RADeCo	H-809VI	1 to 8 CFM	N/A	Particulate air grab sampler	Low flow range sampler
	RADeCo	H-809VII	8 to 28 CFM	N/A	Particulate air grab sampler	High flow range sampler
	RADeCo	HD-66A	1 to 7 CFM	± 5% of set air flow rate up to a maximum capability of the pump	Continuous flow particulate air sampler	Mobile, heavy duty constant flow air sampler
	RADeCo	C8528	4 to 28 CFM	± 5% accuracy at 29.92*Hg and 70 degrees F	Air Sampler calibrator	Air Flow Calibrator
	GilAir	800485-7	0 to 3 LPM	Accuracy of ± 0.5 % of any display reading	Breathing Zone air sampler and Radon sampler	GilAir3 lapel air sampler
	BUCK	M-30	1-6000 cc/min	Accuracy of ± 0.5 % of any display reading	BZ Air sampler calibrator	Oil drop calibrator for BZ air sampler
	F&J Specialty Products	DF-40L-AC	1 to 40 LPM	Accuracy of ± 4 % of full scale	Environmental air monitoring continuous flow air sampler	Environmental air sampler
	LUDLUM	2000	0-999999 counts	See Table 2 for MDC calculations	Scaler for Model 43-78	Scaler counter
	LUDLUM	43-78	Refer to Ludlum 2000 range	See Ludlum 2000 for MDC calculations	Alpha detection sample counting head for analyzing 4 inch air filters	Alpha sample counting head
	LUDLUM	3030	0-999999 counts	See Table 2 for MDC calculations	Scaler for bz, radon daughter, and air particulate filters	Benchtop counter for alpha and beta

Table 2: MDA Calculations for airborne radioactive material sampling

Sampling Method	Scaler	Equation (MDA)*	Background Count Rate, R_b (in cpm)****	Background Count Time, t_b (in min.)****	Gross Count Time, t_g (in min.)****	Efficiency (Counts/Dis-integration)	Volume**** (in l)	Kusnetz Factor (K) or Conversion Factor (C)*****	Calculated MDA*****
Radon	298901	$\frac{3 + 3.29 \sqrt{R_b t_g} (1 + \frac{t_g}{t_b})}{(Eff.) (t_g) (Vol.) (2.1)**} (K)$	0.4	60	3	0.3479	15	60	0.03
	290505	$\frac{3 + 3.29 \sqrt{R_b t_g} (1 + \frac{t_g}{t_b})}{(Eff.) (t_g) (Vol.) (2.1)(K)}$	0.4	60	3	0.3775	15	60	0.03
Air Particulate	298901	$\frac{3 + 3.29 \sqrt{[R_b t_g (1 + \frac{t_g}{t_b})]} (Eff.) (t_g) (Vol.) (C)}$	1.1	60	1	0.3479	2.83E+03	2.22E+09	2.96E-12
	290505	$\frac{3 + 3.29 \sqrt{[R_b t_g (1 + \frac{t_g}{t_b})]} (Eff.) (t_g) (Vol.) (C)}$	1.5	60	1	0.3775	2.83E+03	2.22E+09	2.98E-12
4" Filters (Air particulate only)	Model 200 with 43-78 detector*****	$\frac{3 + 3.29 \sqrt{[R_b t_g (1 + \frac{t_g}{t_b})]} (Eff.) (t_g) (Vol.) (C)}$	0.6	60	1	0.3	2.83E+03	2.22E+09	2.96E-12
Beathing Zone Air Samples	298901	$\frac{3 + 3.29 \sqrt{[R_b t_g (1 + \frac{t_g}{t_b})]} (Eff.) (t_g) (Vol.) (C)}$	0.4	60	60	0.3479	1.86E+02	2.22E+09	2.99E-12
	290505	$\frac{3 + 3.29 \sqrt{[R_b t_g (1 + \frac{t_g}{t_b})]} (Eff.) (t_g) (Vol.) (C)}$	0.4	60	60	0.3775	1.86E+02	2.22E+09	2.76E-12

* The MDA equation is from Strom and Stansbury 1992 and was referenced in NUREG-1507. This equation was used as an equivalent replacement for the LLD equation stated in Regulatory Guide 8.30. This was used in agreement with License Condition 9.7 which allows for the use of an NRC-approved equivalent to guidance set forth in NRC Regulatory Guide 8.30.

** .21 is the decay factor taken from Regulatory Guide 8.30

*** Values are administrative limits established by Uranerz Energy Corporation

**** Instrument has not been received yet, but values used are conservative numbers received from manufacturer

***** Kusnetz Factor (K) converts MDA to Working Levels (WL), Conversion Factor (C) converts MDA to $\mu\text{Ci}/\text{ml}$

***** MDA for radon samples need to be 0.03 WL and for particulate air samples need to be 3.0 E -12 $\mu\text{Ci}/\text{ml}$

Table 3: List of Radiation Survey Instrumentation

Radiation Measurement	Manufacturer	Model Number	Range	Instrument Sensitivity (LTD)	Planned Use	Instrument Description
Contamination Surveys	LUDLUM	19	0 to 5000 μ R	linearity: reading within 10% of true value	Performing micro-R dose rate surveys	Micro-R dose rate meter
	LUDLUM	2224-1	Alpha: 0-1,000 cpm; Beta: 10-1,000,000 cpm	See 43-93 probe for sensitivity information	Alpha beta ratemeter	Scaler/Ratemeter
	LUDLUM	43-93	Refer to Ludlum 2224-1 and 177-84 for range	Background: in 10 μ R/hr field 3 or less for alpha and 300cpm or less for beta. Response Uniformity: 10% or less from average reading. Dead Time: typically 5 μ sec or less	Alpha beta survey probe to be attached to 2224-1 and 177-84	Zinc sulfide scintillator used for detecting alpha particles and a thin plastic scintillator for detecting betas.
	LUDLUM	177-84	Alpha: 0-1,000 cpm; Beta: 100-100,000 cpm	See model 43-93 probe for sensitivity information	Alpha beta personnel survey station	Benchtop ratemeter
	LUDLUM	43-92	N/A	Background: 3 cpm or less alpha. Efficiency for Th-230 is approximately 20%. Uniformity: 10% or less from average reading. Dead Time: typically 5 μ sec or less	Alpha survey probe to be attached to model 3 ratemeter	Alpha detector
	LUDLUM	3	0-500,000cpm	See model 43-92 probe for sensitivity information	Alpha ratemeter	General purpose rate meter
	Thermo Eberline	RO-20	0-50 R/hr.	Accuracy of \pm 2 %	Gamma dose ratemeter	Ion chamber mR meter