



May 20, 2015

Attn: Document Control Desk  
Drew Persinko, Deputy Director  
Uranium Recovery Licensing Branch  
Division of Waste Management and Environmental Protection  
Office of Federal and State Materials and Environmental Management Programs  
U.S. Nuclear Regulatory Commission  
Two White Flint North, MS T8F5  
11545 Rockville Pike  
Rockville, MD 20852

Re: Follow-up to Uranerz Responses to Acceptance review, Proposal to Train Plant Operators and Other Suitable Personnel to Perform Daily Inspections, Uranerz Energy Corporation, Nichols Ranch Project, Materials License SUA-1597, Campbell and Johnson Counties, Wyoming, Submission Incomplete (TAC J00727)

Dear Mr.Persinko,

On May 15 and 19, 2014 Uranerz Energy Corporation (Uranerz) submitted a request for an alternative approach to Regulatory Guide 8.31 which would allow trained plant operators and other "suitable personnel" (i.e. designees) to perform the daily visual health physics inspection at the Nichols Ranch In Situ Recovery (ISR) Project. On August 21, 2014, the Nuclear Regulatory Commission (NRC) staff presented open issues to Uranerz regarding the proposal to train plant operators and other suitable personnel to perform daily inspections. Uranerz responded to the NRC in letter dated September 18, 2014 to which no formal response has been received from the NRC.

Uranerz contacted the NRC via email and phone communications multiple times since September 2014 along with discussing this issue during a meeting held on December 9, 2014 attempting to obtain the status or resolve any deficiencies with the responses provided. Based on phone conversations and emails with the NRC project manager, Uranerz was given to understand that there were only a few items requiring additional attention including:

1. The training should either be submitted as a stand-alone program or incorporated into the Technical Report (TR).
2. Regulatory Guide 8.31 had been incorrectly referenced.

NRC insisted that approval of the training program could be readily granted if it were boiler plated (i.e. "copy paste") off an already approved program. Uranerz is therefore submitting an administrative amendment to the TR, adding training of radiation safety designees. SUA-1597, Volume I, Chapter 5, Section 5.3.2, 5.4, have been revised and a new section 5.4.1 has been added. A redline and final version of the change is enclosed along with an Index of Change containing instructions for incorporation into the TR.

After being charged over \$16,000 for approximately 58.75 hours of review of the initial request and Uranerz responses with no formal responses from the NRC other than verbal communications, Uranerz

expects that with this submittal there should not be any additional comments, and therefore no further incurred charges from NRC as it is in the form NRC requested in order to receive approval.

Furthermore, Uranerz requests that this review and approval be conducted expeditiously. As Uranerz has previously indicated, this program will allow designees to perform the daily inspection during weekends and holiday. Currently the Uranerz Radiation Safety staff travels to the mine site on weekends and holidays to perform the daily inspection. The additional travel to and from the mine site is far more hazardous and puts employees at greater risk than conducting the daily inspections. Just this year alone, Uranerz has experienced 22 incidents regarding travel to and from the site from January to the end of April 2015. Additionally the highest number of workplace fatalities experienced in Wyoming in the last few years was transportation related. As the safety of our employees is the main priority for Uranerz, the immediate approval of the training program will reduce the risk involved with having additional staff on the interstates and highways which is the real and significant safety risk.

If you have any questions regarding the open issue text revision submittal, please contact me at 307-265-8900 or by email at: [mthomas@uranerz.com](mailto:mthomas@uranerz.com).

Sincerely,



Mike Thomas  
Vice President Regulatory and Public Affairs  
Uranerz Energy Corporation

MT/dk

Cc: Bill Von Till, NRC, via email  
Ron Linton, NRC, via email

Attachments

**USA OPERATIONS**

P.O. Box 50850 T: 307 265 8900  
1701 East E Street F: 307 265 8904  
Casper WY 82605-0850

**CANADA OPERATIONS**

Suite 1410 T: 604 689 1659  
800 West Pender Street F: 604 689 1722  
Vancouver BC V6C 2V6

American Stock Exchange: URZ  
Toronto Stock Exchange: URZ  
Frankfurt Exchange: U9E  
[www.uranerz.com](http://www.uranerz.com)

---

**TABLE OF CONTENTS (Continued)**

	<u>Page</u>
5.0 OPERATIONS.....	TR-201
5.1 ORGANIZATIONS.....	TR-201
5.1.1 Management.....	TR-201
5.1.2 ALARA.....	TR-204
5.1.2.1 Philosophy.....	TR-205
5.1.2.2 Responsibilities.....	TR-205
5.2 MANAGEMENT CONTROL PROGRAM.....	TR-207
5.2.1 Administrative Procedures.....	TR-207
5.2.1.1 Operating Procedures.....	TR-207
5.2.1.2 Radiation Work Permits.....	TR-207
5.2.1.3 Record Keeping .....	TR-208
5.2.1.4 Reporting.....	TR-209
5.2.2 Safety and Environmental Review Panel.....	TR-209
5.2.2.1 Organization.....	TR-209
5.2.2.2 SERP Procedures .....	TR-210
5.2.2.3 SERP Records.....	TR-210
5.2.2.4 SERP Reports.....	TR-211
5.2.3 Cultural Resource Inventory .....	TR-211
5.3 MANAGEMENT AUDIT AND INSPECTION PROGRAM .....	TR-211
5.3.1 Audit .....	TR-211
5.3.2 Inspections .....	TR-212
5.4 QUALIFICATIONS FOR PERSONNEL CONDUCTING THE RADIATION SAFETY PROGRAM .....	TR-212
5.4.1 QUALIFICATIONS AND REQUIREMENTS FOR CONDUCTING DAILY INSPECTION .....	TR-214
5.5 RADIATION SAFETY TRAINING.....	TR-214b
5.6 SECURITY.....	TR-216
5.7 RADIATION SAFETY CONTROLS AND MONITORING.....	TR-216
5.7.1 Effluent Control Techniques.....	TR-216
5.7.1.1 Airborne Radioactive Effluents .....	TR-216
5.7.1.1.1 Particulate .....	TR-217
5.7.1.1.2 Radon.....	TR-218
5.7.1.2 Liquid Radioactive Effluents .....	TR-218
5.7.1.2.1 Contingency for Unplanned Releases.....	TR-219
5.7.1.3 Surface Releases .....	TR-220
5.7.1.3.1 Subsurface Releases.....	TR-220
5.7.2 External Radiation Exposure Monitoring Program .....	TR-221
5.7.2.1 Personnel Monitoring.....	TR-221
5.7.2.2 Exposure Rate Surveys .....	TR-222
5.7.3 Airborne Radiation Monitoring Program.....	TR-224
5.7.3.1 Airborne Uranium Particulate Monitoring.....	TR-224
5.7.3.1.1 Breathing Zone.....	TR-225

---



---

### **5.3.2 Inspections**

Inspections will be conducted periodically, as described below, of the wellfield and process areas. The purpose of the inspections will be to ensure that radiation protection, monitoring, and safety requirements are being followed and/or are properly functioning. The inspections will be performed and documented in accordance with a written procedure.

#### Daily

An ~~ES&H radiation safety~~ staff representative or designee will conduct a daily walkthrough inspection of the process and storage areas. The inspection will provide for a visual survey of proper implementation of procedures, housekeeping, and contamination control.

#### Weekly

~~The ES&HA radiation staff representative~~ The RSO or designee will complete a weekly inspection of the site. The scope of the inspection will include radiation safety practices, procedural compliance, environmental monitoring, and environmental conditions at the site.

#### Monthly

The ~~Vice President, ESHESH Manager~~ will provide to site management a written summary of the conditions of radiation safety and environmental monitoring. The report will include summaries of personnel monitoring, radiation and contamination surveys, trends important to ALARA considerations, a general assessment of compliance, and a description of problems with recommendations for corrective action.

## **5.4 QUALIFICATIONS FOR PERSONNEL CONDUCTING THE RADIATION SAFETY PROGRAM**

The qualifications are described below for personnel assigned responsibility for developing, conducting, and administering the radiation safety program. The qualifications will be consistent with NRC Regulatory Guide 8.31, "Information Relevant to Ensuring that



Occupational Radiation Exposures at Uranium Mills Will Be As Low As Is Reasonably Achievable,” Revision 1, 2002 at Section 2.4. [Additional information regarding the qualifications and requirements for people conducting the daily inspection are contained in section 5.4.1](#)

#### Radiation Safety Officer

The RSO should have the following education, training, and experience:

Education: A bachelor’s degree in the physical sciences, industrial hygiene, or engineering from an accredited college or university, or an equivalent combination of training and relevant experience in radiation safety. Two years of relevant experience may be considered equivalent to one year of academic study.

Radiation Safety Experience: At least one year of work experience relevant to uranium recovery operations in applied radiation safety, industrial hygiene, or similar work. This experience should involve actually working with radiation detection and measurement equipment, and administrative duties.

Specialized Training: At least four weeks of specialized classroom training in radiation safety applicable to uranium recovery. Refresher training on relevant radiation safety matters should be completed every two years.

Specialized Knowledge: Knowledge of the proper application and use of all radiation safety equipment used at the facility, the analytical procedures used for radiological sampling and monitoring, methodologies used to calculate personnel exposure to uranium and its daughters, an understanding of the processes and equipment used at the facility, and how the radiation hazards are generated and controlled.

#### Radiation Safety Technician

The radiation safety technician should have one of the following combinations of education, training, and experience:

---

Education: An associate degree or two or more years of study in the physical sciences, engineering, or a health-related field;

Training: At least four weeks of generalized training (up to two weeks may be on-the-job training) in radiation safety applicable to uranium recovery facilities;

Experience: One year of work experience using sampling and analytical laboratory procedures that involve radiation safety, industrial hygiene, or industrial safety measures to be applied at a uranium recovery facility;

Or

Education: A high school diploma;

Training: A total of three months of specialized training (up to one month may be on-the-job training) in radiation safety relevant to uranium recovery facilities;

Experience: Two years of relevant work experience in applied radiation safety.

The radiation safety technician should demonstrate a working knowledge of the proper operation of radiation safety instruments used in the facility, surveying and sampling techniques, and personnel dosimetry requirements.

#### 5.4.1 Qualifications and Requirements for Conducting Daily Inspections

##### Radiation Safety Staff Designee

The radiation safety staff designee will only be responsible for performing the daily walkthrough visual inspections in accordance with section 5.3.2. Designees will only perform the inspections on weekends or holidays when radiation safety staff representatives are not present. Reports from designees are will be reviewed the next standard work day by a radiation safety staff



representative. This review will occur within 3 days of completion of the inspection except in the case of holidays or extenuating circumstances, such as an adverse weather event. If staff cannot review documents and perform the walkthrough for more than 3 days the staff representative will call the designee and review previous un-reviewed reports and current operational conditions over the phone.

Because of their knowledge of the plant area, the process, and associated equipment such as pumps, sumps, and the plant ventilation system, pPlant operators will primarily be chosen for training in completing daily radiation safety inspections. ~~but other~~Other suitable personnel ~~which could include other ESH personnel~~, such as environmental technicians, ~~and~~ safety officers, as well as ~~personnel cross trained and qualified as plant operators, such as wellfield operators, or other supervisors~~ may also be trained as a Radiation Safety Staff Designee if they meet the education and experience requirements.

Designees will be trained to perform daily inspections of operational areas as is required in Regulatory Guide 8.31. This includes the processing plant, looking for leaks and properly operating ventilation systems, but does not require the wellfield or the header houses to be inspected daily for radiological safety concerns. The wellfield and header houses are inspected daily by operations staff for operational concerns. Header-houses and the wellfield are inspected by the RSO weekly and are not considered process areas because processing of materials does not occur. Designees will also be trained to observe whether staff are performing work while wearing appropriate PPE, specifically PPE related to radiation hazards, such as rubber gloves or protective coveralls. They will observe if radiological postings are in good working order and will correct minor deficiencies as trained. For example, if a radiation area sign has fallen off of a rope they will be trained to replace the posting or if a barrier has fallen down they will be trained to properly place the barrier upright. In ~~thean situation~~instance where they cannot fix the situation, such as a sign has blown away and they cannot find and replace the sign, they will be trained to notify the radiation safety staff and staff will correct the discrepancy as soon as is practicable. Designees will not be trained to operate radiation detecting instruments (besides personnel scanning stations) and will not be trained to move or post new radiological areas. As



operational areas expand additional items will be added to the inspection details through the SERP/MOC process.

Designees are trained to perform the inspection and note discrepancies as required.

In the case where a problem or question arises during the daily inspection, radiation safety staff will be available by phone to direct any additional action that may be required. Radiation safety staff would then direct the designee on appropriate actions or they may choose to go to the site to assist with the corrective action if they deem necessary. Additionally, all employees are trained as radiation workers and have a responsibility for identifying, reporting, and if possible correcting radiation hazards.

All personnel are also trained during new hire radiation and safety training on how to respond to emergency situations without radiation safety staff present. Uranerz has created Emergency Response Manuals (ERM) that all employees are trained to. The ERM addresses situations such as emergency conditions such as like uncontained leaks and spills that require radiation safety staff notification.

Radiation safety staff representatives who have been approved as a radiation safety officer or as a radiation safety technician will be allowed to train designees. Designees will not be allowed to perform unsupervised daily inspections unless they have met the education and experience requirements and training is complete and signed off by Radiation safety staff.

Education and experience requirements: Trainees will have education and experience commensurate with risks associated with the task being performed. Uranerz will therefore require the following qualifications from personnel who will be trained and perform daily radiation safety inspections.

- a. High school diploma or equivalent;
- b. At least three months of experience working in uranium recovery as a radiation worker or qualification as a plant operator.
- c. Classroom training covering the sections regarding daily inspections in Uranerz procedures. Training will also cover ALARA principles related to an operational uranium recovery facility. A written test will be performed at the

- 
- completion of the training where an 80% or better must be achieved to display appropriate knowledge base for performing inspections.
- d. Upon successful completion of classroom training and subsequent test, trainees will observe at least 3 inspections performed by radiation safety staff. Plant operators are already trained in performing operations focused inspections daily. Radiation safety staff will demonstrate and coach trainees on how to perform an inspection focusing on ALARA principles and radiation control techniques.
  - e. After observing at least three inspections, trainees will perform two inspections. The first inspection will be accompanied by a radiation safety staff member who will coach and instruct during the inspection. The final inspection will be completed while being observed by the RSO. The RSO will grade the trainee on the inspection as either pass or fail.
  - f. If the trainee passes the final inspection then ~~TRN-LOG-40~~the training documents will be completed and placed in the employees training file for review during inspection.
  - g. Re-training of the employee will occur within six months of initial training and at least annually thereafter. Re-training will require observing one inspection by a radiation safety staff member, and re-completion of the two inspections listed in point "e" above.
  - h. If during the original training or re-training the trainee fails the final inspection the trainee will be required to complete training starting back at point "c" listed above.

## 5.5 RADIATION SAFETY TRAINING

All personnel will be provided training before entering controlled areas or beginning their jobs. The scope of the training will be based on access requirements to the facility and potential for exposure to radiation and radioactive materials. The scope of training will initially be determined with respect to whether the individual is a visitor, or an employee or contractor. Training of visitors will be applicable to newly hired employees and contractors, and visitors who will not or have not completed other site-specific training (e.g. as described below). All visitors to the facility will receive instruction on what they should do to avoid possible radiological and nonradiological hazards in the areas of the facility they will be visiting, escort requirement, and actions to take during an emergency.



All new employees and contractors will be instructed by means of an established course in the inherent risk of exposure to radiation and the fundamentals of protection against exposure to uranium and its daughters before beginning their jobs. The training will be commensurate with the risks and hazards associated with their requirements for access to the site. Those personnel who need unescorted access to the wellfield and process area will be provided a course of instruction covering those topics identified in NRC Regulatory Guide 8.31, "Information Relevant to Ensuring that Occupational Radiation Exposures at Uranium Recovery Facilities Will Be As Low As Is Reasonably Achievable," Revision 1, 2002 at Section 2.5. The instruction will be consistent with NRC Regulatory Guide 8.29, "Instruction Concerning Risks from Occupational Radiation Exposure," Revision 1, 1996 and NRC Regulatory Guide 8.13, "Instruction Concerning Prenatal Radiation Exposure," Revision 3, 1999.

Those employees and contractors who will work in the wellfield or process area (i.e. working around radiation and/or with radioactive materials) will be provided additional training. The additional training will include more depth on the previously identified topics, particular instruction on the health and radiation safety aspects and nonradiological hazards of tasks, and the requirements of procedures and instructions pertaining to radiation safety.

A written or oral test will be given to each individual. The test will cover radiation safety and health protection principles and requirements as applicable to the Nichols Ranch ISR Project site. The test will be reviewed with the individual(s), including discussion of wrong answers. Individuals who fail the test will be provided additional training and successfully retested if the intention remains to place them in the wellfield or process area.

Employees and contractors will be provided refresher training annually. The refresher training will be an abbreviated form of the original training. Refresher training will also include relevant information available since the previous training, review of safety issues since the previous training, applicable changes in regulations and license conditions, and personnel exposure trends.

Training will be documented to include individuals name and employer, topic, date, and identification of instructor. Records will be maintained of this documentation and test results.

*Do not make corrections to this form after printing. Forms bearing strikeouts, ink changes, etc will not be accepted.*

**INDEX SHEET FOR MINE PERMIT AMENDMENTS OR REVISIONS**

Page 1 of 1  
Date May 20, 2015  
TAC J00727  
License NO.: SUA-1597

MINE COMPANY NAME: Uranerz Energy Corporation  
MINE NAME: Nichols Ranch ISR Project

Statement: I, Michael P. Thomas, an authorized representative of Uranerz Energy Corporation declare that only the items listed on this and all consecutively numbered Index Sheets are intended as revisions to the current permit document. In the event that other changes inadvertently occurred due to this revision, those unintentional alterations will not be considered approved. Please initial and date. MPt 5-20-15

**NOTES:**

- 1) Include all revision or change elements and a brief description of or reason for each revision element.
- 2) List all revision or change elements in sequence by volume number; number index sheets sequentially as needed.

Volume Number	Page, Map or other Permit Entry to be REMOVED	Page, Map or other Permit Entry to be ADDED	Description of Change
Volume I	Table of Contents, pg. TR-vi	Table of Contents, pg. TR-vi	Page TR-vi has been revised with the addition of Section 5.4.1 Qualifications and Requirements for Conducting Daily Inspections
Volume I	Chapter 5, Sections 5.3.2 and 5.4, pgs. TR-212 through TR-215	Chapter 5, Sections 5.3.2 and 5.4, and 5.4.1, pgs. TR-212 through TR-215	Section 5.3.2 and 5.4 have been revised and Section 5.4.1 has been added.
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____



**TABLE OF CONTENTS (Continued)**

	<b><u>Page</u></b>
5.0 OPERATIONS.....	TR-201
5.1 ORGANIZATIONS.....	TR-201
5.1.1 Management.....	TR-201
5.1.2 ALARA.....	TR-204
5.1.2.1 Philosophy.....	TR-205
5.1.2.2 Responsibilities.....	TR-205
5.2 MANAGEMENT CONTROL PROGRAM.....	TR-207
5.2.1 Administrative Procedures.....	TR-207
5.2.1.1 Operating Procedures.....	TR-207
5.2.1.2 Radiation Work Permits.....	TR-207
5.2.1.3 Record Keeping .....	TR-208
5.2.1.4 Reporting.....	TR-209
5.2.2 Safety and Environmental Review Panel.....	TR-209
5.2.2.1 Organization.....	TR-209
5.2.2.2 SERP Procedures .....	TR-210
5.2.2.3 SERP Records.....	TR-210
5.2.2.4 SERP Reports.....	TR-211
5.2.3 Cultural Resource Inventory .....	TR-211
5.3 MANAGEMENT AUDIT AND INSPECTION PROGRAM .....	TR-211
5.3.1 Audit .....	TR-211
5.3.2 Inspections .....	TR-212
5.4 QUALIFICATIONS FOR PERSONNEL CONDUCTING THE RADIATION SAFETY PROGRAM .....	TR-212
5.4.1 QUALIFICATIONS AND REQUIREMENTS FOR CONDUCTING DAILY INSPECTION .....	TR-214
5.5 RADIATION SAFETY TRAINING.....	TR-214b
5.6 SECURITY.....	TR-216
5.7 RADIATION SAFETY CONTROLS AND MONITORING.....	TR-216
5.7.1 Effluent Control Techniques.....	TR-216
5.7.1.1 Airborne Radioactive Effluents .....	TR-216
5.7.1.1.1 Particulate .....	TR-217
5.7.1.1.2 Radon .....	TR-218
5.7.1.2 Liquid Radioactive Effluents .....	TR-218
5.7.1.2.1 Contingency for Unplanned Releases.....	TR-219
5.7.1.3 Surface Releases .....	TR-220
5.7.1.3.1 Subsurface Releases.....	TR-220
5.7.2 External Radiation Exposure Monitoring Program .....	TR-221
5.7.2.1 Personnel Monitoring.....	TR-221
5.7.2.2 Exposure Rate Surveys .....	TR-222
5.7.3 Airborne Radiation Monitoring Program.....	TR-224
5.7.3.1 Airborne Uranium Particulate Monitoring.....	TR-224
5.7.3.1.1 Breathing Zone.....	TR-225

### **5.3.2 Inspections**

Inspections will be conducted periodically, as described below, of the wellfield and process areas. The purpose of the inspections will be to ensure that radiation protection, monitoring, and safety requirements are being followed and/or are properly functioning. The inspections will be performed and documented in accordance with a written procedure.

#### **Daily**

A radiation safety staff representative or designee will conduct a daily walkthrough inspection of the process and storage areas. The inspection will provide for a visual survey of proper implementation of procedures, housekeeping, and contamination control.

#### **Weekly**

The RSO or designee will complete a weekly inspection of the site. The scope of the inspection will include radiation safety practices, procedural compliance, environmental monitoring, and environmental conditions at the site.

#### **Monthly**

The ESH Manager will provide to site management a written summary of the conditions of radiation safety and environmental monitoring. The report will include summaries of personnel monitoring, radiation and contamination surveys, trends important to ALARA considerations, a general assessment of compliance, and a description of problems with recommendations for corrective action.

### **5.4 QUALIFICATIONS FOR PERSONNEL CONDUCTING THE RADIATION SAFETY PROGRAM**

The qualifications are described below for personnel assigned responsibility for developing, conducting, and administering the radiation safety program. The qualifications will be consistent with NRC Regulatory Guide 8.31, "Information Relevant to Ensuring that Occupational Radiation Exposures at Uranium Mills Will Be As Low As Is Reasonably Achievable," Revision 1, 2002 at Section 2.4. Additional information regarding the qualifications and requirements for people conducting the daily inspection are contained in section 5.4.1.

### Radiation Safety Officer

The RSO should have the following education, training, and experience:

Education: A bachelor's degree in the physical sciences, industrial hygiene, or engineering from an accredited college or university, or an equivalent combination of training and relevant experience in radiation safety. Two years of relevant experience may be considered equivalent to one year of academic study.

Radiation Safety Experience: At least one year of work experience relevant to uranium recovery operations in applied radiation safety, industrial hygiene, or similar work. This experience should involve actually working with radiation detection and measurement equipment, and administrative duties.

Specialized Training: At least four weeks of specialized classroom training in radiation safety applicable to uranium recovery. Refresher training on relevant radiation safety matters should be completed every two years.

Specialized Knowledge: Knowledge of the proper application and use of all radiation safety equipment used at the facility, the analytical procedures used for radiological sampling and monitoring, methodologies used to calculate personnel exposure to uranium and its daughters, an understanding of the processes and equipment used at the facility, and how the radiation hazards are generated and controlled.

### Radiation Safety Technician

The radiation safety technician should have one of the following combinations of education, training, and experience:

Education: An associate degree or two or more years of study in the physical sciences, engineering, or a health-related field;

Training: At least four weeks of generalized training (up to two weeks may be on-the-job training) in radiation safety applicable to uranium recovery facilities;



Experience: One year of work experience using sampling and analytical laboratory procedures that involve radiation safety, industrial hygiene, or industrial safety measures to be applied at a uranium recovery facility;

Or

Education: A high school diploma;

Training: A total of three months of specialized training (up to one month may be on-the-job training) in radiation safety relevant to uranium recovery facilities;

Experience: Two years of relevant work experience in applied radiation safety.

The radiation safety technician should demonstrate a working knowledge of the proper operation of radiation safety instruments used in the facility, surveying and sampling techniques, and personnel dosimetry requirements.

#### **5.4.1 Qualifications and Requirements for Conducting Daily Inspections**

##### **Radiation Safety Staff Designee**

The radiation safety staff designee will only be responsible for performing the daily walkthrough visual inspections in accordance with section 5.3.2. Designees will only perform the inspections on weekends or holidays when radiation safety staff representatives are not present. Reports from designees will be reviewed the next standard work day by a radiation safety staff representative. This review will occur within 3 days of completion of the inspection except in the case of holidays or extenuating circumstances, such as an adverse weather event. If staff cannot review documents and perform the walk-through for more than 3 days; the staff representative will call the designee and review previous un-reviewed reports and current operational conditions over the phone.

Because of their knowledge of the plant area, the process, and associated equipment such as pumps, sumps, and the plant ventilation system, plant operators will primarily be chosen for training in completing daily radiation safety inspections. Other suitable personnel, such as environmental technicians, safety officers, wellfield operators, or other supervisors may also be trained as a RadiationSafety Staff Designee if they meet the education and experience requirements.

Designees will be trained to perform daily inspections of operational areas as is required in Regulatory Guide 8.31. This includes the processing plant, looking for leaks and properly operating ventilation systems, but does not require the wellfield or the header houses to be inspected daily for radiological safety concerns. The wellfield and header houses are inspected daily by operations staff for operational concerns. Headerhouses and the wellfield are inspected by the RSO weekly and are not considered process areas because processing of materials does not occur. Designees will also be trained to observe whether staff are performing work while wearing appropriate PPE, specifically PPE related to radiation hazards, such as rubber gloves or protective coveralls. They will observe if radiological postings are in good working order and will correct minor deficiencies as trained. For example, if a radiation area sign has fallen off of a rope they will be trained to replace the posting or if a barrier has fallen down they will be trained to properly place the barrier upright. In an instance where they cannot fix the situation, such as a sign has blown away and they cannot find and replace the sign, they will be trained to notify the radiation safety staff and staff will correct the discrepancy as soon as is practicable. Designees will not be trained to operate radiation detecting instruments (besides personnel scanning stations) and will not be trained to move or post new radiological areas. As operational areas expand additional items will be added to the inspection details through the SERP process.

In the case where a problem or question arises during the daily inspection, radiation safety staff will be available by phone to direct any additional action that may be required. Radiation safety staff would then direct the designee on appropriate actions or they may choose to go to the site to assist with the corrective action if they deem necessary. Additionally, all employees are trained as radiation workers and have a responsibility for identifying, reporting, and if possible correcting radiation hazards.

Personnel are also trained during new hire radiation and safety training on how to respond to emergency situations without radiation safety staff present. Uranerz has created Emergency Response Manuals (ERM) that employees are trained to. The ERM addresses situations such as emergency conditions like uncontained leaks and spills that require radiation safety staff notification.

Radiation safety staff representatives who have been approved as a radiation safety officer or as a radiation safety technician will be allowed to train designees. Designees will not be allowed to



perform unsupervised daily inspections unless they have met the education and experience requirements and training is complete and signed off by Radiation safety staff.

Education and experience requirements: Trainees will have education and experience commensurate with risks associated with the task being performed. Uranerz will therefore require the following qualifications from personnel who will be trained and perform daily radiation safety inspections.

- a. High school diploma or equivalent;
- b. At least three months of experience working in uranium recovery as a radiation worker or qualification as a plant operator.
- c. Classroom training covering the sections regarding daily inspections in Uranerz procedures. Training will also cover ALARA principles related to an operational uranium recovery facility. A written test will be performed at the completion of the training where an 80% or better must be achieved to display appropriate knowledge base for performing inspections.
- d. Upon successful completion of classroom training and subsequent test, trainees will observe at least 3 inspections performed by radiation safety staff. Plant operators are already trained in performing operations focused inspections daily. Radiation safety staff will demonstrate and coach trainees on how to perform an inspection focusing on ALARA principles and radiation control techniques.
- e. After observing at least three inspections, trainees will perform two inspections. The first inspection will be accompanied by a radiation safety staff member who will coach and instruct during the inspection. The final inspection will be completed while being observed by the RSO. The RSO will grade the trainee on the inspection as either pass or fail.
- f. If the trainee passes the final inspection then the training documents will be completed and placed in the employees training file for review during inspection.
- g. Re-training of the employee will occur within six months of initial training and at least annually thereafter. Re-training will require observing one inspection by a radiation safety staff member, and re-completion of the two inspections listed in point "e" above.
- h. If during the original training or re-training the trainee fails the final inspection the trainee will be required to complete training starting back at point "c" listed above.

## 5.5 RADIATION SAFETY TRAINING

All personnel will be provided training before entering controlled areas or beginning their jobs. The scope of the training will be based on access requirements to the facility and potential for exposure to radiation and radioactive materials. The scope of training will initially be

determined with respect to whether the individual is a visitor, or an employee or contractor. Training of visitors will be applicable to newly hired employees and contractors, and visitors who will not or have not completed other site-specific training (e.g. as described below). All visitors to the facility will receive instruction on what they should do to avoid possible radiological, and nonradiological hazards in the areas of the facility they will be visiting, escort requirement, and actions to take during an emergency.

All new employees and contractors will be instructed by means of an established course in the inherent risk of exposure to radiation and the fundamentals of protection against exposure to uranium and its daughters before beginning their jobs. The training will be commensurate with the risks and hazards associated with their requirements for access to the site. Those personnel who need unescorted access to the wellfield and process area will be provided a course of instruction covering those topics identified in NRC Regulatory Guide 8.31, "Information Relevant to Ensuring that Occupational Radiation Exposures at Uranium Recovery Facilities Will Be As Low As Is Reasonably Achievable," Revision 1, 2002 at Section 2.5. The instruction will be consistent with NRC Regulatory Guide 8.29, "Instruction Concerning Risks from Occupational Radiation Exposure," Revision 1, 1996 and NRC Regulatory Guide 8.13, "Instruction Concerning Prenatal Radiation Exposure," Revision 3, 1999.

Those employees and contractors who will work in the wellfield or process area (i.e. working around radiation and/or with radioactive materials) will be provided additional training. The additional training will include more depth on the previously identified topics, particular instruction on the health and radiation safety aspects and nonradiological hazards of tasks, and the requirements of procedures and instructions pertaining to radiation safety.

A written or oral test will be given to each individual. The test will cover radiation safety and health protection principles and requirements as applicable to the Nichols Ranch ISR Project site. The test will be reviewed with the individual(s), including discussion of wrong answers. Individuals who fail the test will be provided additional training and successfully retested if the intention remains to place them in the wellfield or process area.

Employees and contractors will be provided refresher training annually. The refresher training will be an abbreviated form of the original training. Refresher training will also include relevant information available since the previous training, review of safety issues since the previous training, applicable changes in regulations and license conditions, and personnel exposure trends.