NRC FORM 699 (03-2013)

U.S. NUCLEAR REGULATORY COMMISSION

CONVERSATION RECORD

DATE OF SIGNATURE: 02/28/2014

NAME OF PERSON(S) CONTACTED OR IN CONTACT WITH YOU	DATE OF CONTACT	TYPE OF CONVERSATION
Jeremy A. Laakso, Radiation Safety Officer (RSO)	02/25/2014	☐ E-MAIL ☑ TELEPHONE ☐ INCOMING ☑ OUTGOING
E-MAIL ADDRESS: jeremy.laakso@cliffsnr.com	TELEPHONE NUMBER: (906) 475-3408	

ORGANIZATION	DOCKET NUMBER(S)
Empire Iron Mining Partnership - Empire Mine	030-04814/070-01721
LICENSE NUMBER(S): 21-03076-01	CONTROL NUMBER(S): 582244

SUBJECT

Our review of your license renewal application dated October 3, 2013

SUMMARY

We have reviewed your license renewal application and find that we are unable to continue this action until we have received additional information outlined on pages 1-3 of this conversation record. Any response to this request should be submitted under a signed and dated cover letter.

Please FAX your response to my attention at (630) 515-1078, referencing Control No. 582244 in the cover letter or cover sheet to your response. You may also scan your response and send to me via email, as a pdf file at sara.forster@nrc.gov.

As discussed, we expect to receive your written response on or before March 7, 2014. If you need additional time to complete your response, or if you have questions regarding this conversation record, please contact me at (630) 829-9892 or at the email address above.

Continue on Page 2

ACTION REQUIRED (IF ANY)

We have requested that you provide additional information as follows:

- cover letter signed by duly authorized management official
- street address with street number
- Future RSO statement, AU training, and additional information regarding "Level II" designations in the renewal application
- Facility information including NOLA use location and scale/key for campus diagram
- Radiation Safety Program and Facility & Equipment statements and additional information per NUREG 1556 checklist
- Explanation or removal of procedures submitted via Appendix B to your renewal application
- Non-routine operations information per NUREG 1556 appendix including personnel monitoring information

NAME OF PERSON DOCUMENTING CONVERSATION

Sara A.B. Forster, Materials Licensing Branch, Region III Office, 2443 Warrenville Road, Suite 210, Lisle, Illinois 60532

SIGNATURE: Sara A. Forster 02/28/2014

CONVERSATION RECORD (continued)

SUMMARY: (Continued from page 1)

J. Laakso

As discussed, each license application must be signed by a licensee representative duly authorized to make commitments and sign official documents on behalf of applicants. Therefore, your response to the items listed below should include a management signed cover letter, acknowledging intent to renew your license, in accordance with the October 3, 2013, application. Refer to NUREG 1556, Volume 4, found at http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1556/v4/ for additional information, when responding to this request. Additional items to be addressed in the response follow:

1. The NRC generally includes a street number as part of any street address listed on the applicants mailing address. Please indicate whether the listed street address may be modified to include the "101" street number; i.e. 101 Empire Mine Rd.

2. The October 3, 2013, renewal application included training and experience for the current Radiation Safety Officer (RSO) but excluded a statement regarding the naming of any future RSOs. Please confirm the statement, regarding future RSOs, as indicated on the attached annotated NUREG p. 8-11.

3. Regarding your required Authorized User (AU) training, the radiation safety training program description should include topics covered, groups of workers, qualifications of instructors, assessment of training, qualifications of instructors, training methods (e.g., lecture, videotape, self-study, etc.), and duration & frequency of training. Please provide additional training information:

   a. For the Radiation Technology, Inc. "Level I" AU training course, please provide a course outline (including subjects covered), training assessment methods, and minimum course instructor qualifications. See attached annotated NUREG training appendix pp. G-1 to G-3 for subjects that should be emphasized (important to the safe use of the gauge), sample training assessment methods, and suggested minimum course instructor qualifications.

   b. Regarding the proposed "Level II" authorization category, please explain the scope of the proposed authorization. For example, please indicate whether a "Level II" individual would be permitted to operate the gauges, conduct routine maintenance, or perform non-routine operations, unsupervised. Indicate whether all licensed activities conducted by a Level II individual would be conducted under the direct supervision of a Level I AU, regardless of the physical presence of the Level I AU. If the Level I AU may not be physically present for licensed activities, please explain the method by which the direct supervision of the use of licensed material will be accomplished. Confirm that any use of licensed materials will be conducted under the direct supervision of a Level I AU. Note that any reference to AUs on your license is limited to "Level I" AUs discussed above.

   c. For non-routine operations, as noted on attached NUREG p. G-3, please provide additional training and experience authorization with additional non-routine operations information submitted; discussed above.

4. The renewal application "Facilities and Equipment" section noted NOLA gauge locations, stated that gauge conditions meet vendor's recommendations, and included a campus map. Please provide additional facilities information:

   a. As discussed, confirm that conditions in which the gauges will be used will not exceed those specified in the Sealed Source and Device registry certificate.

   b. For the facility diagram, please provide the building name and number where the NOLA custom gauges are used and stored. Indicate the dimensions, or scale, of the diagram, and a key indicating what is meant by listed triangles and rectangles, etc.

5. As we discussed, for Item 9 - "Facilities and Equipment" and Item 10 - "Radiation Safety Program," include statements, with any additional information, as needed, as noted on the attached annotated NUREG checklist, pp. B-4 to B-6. You may include the information on separate, typed sheets, or as completed, marked copies of the referenced checklist.

6. The renewal application included an Appendix B. However, for programs where gauges meet safety conditions listed on NUREG p. 8-26, those procedures need not be submitted to the NRC for review. If a procedure is needed due to a safety condition that is not met, please indicate the gauge(s) to which the procedure applies. Otherwise, please confirm that the procedures listed in Appendix B need not be submitted to the NRC for review, and that you understand they will not be reviewed as part of the application review.

7. As discussed, we understand non-routine operations may not be performed under your license. To continue this authorization, please submit information requested in NUREG pp. N-1 to N-3, including individuals and personnel monitoring information.

Response from Applicant: Provide the following:

- Name of the proposed RSO;

AND EITHER

- Statement that: "Before obtaining licensed materials, the proposed RSO will have successfully completed the training described in Criteria in the section entitled 'Radiation Safety Officer' in NUREG-1556, Vol. 4, 'Consolidated Guidance about Materials Licenses: Program-Specific Guidance about Fixed Gauges Licenses,' dated October 1998"; and
- Statement that: "Before being named as the RSO, future RSOs will have successfully completed the training described in Criteria in the section entitled 'Radiation Safety Officer' in NUREG-1556, Vol. 4, 'Consolidated Guidance about Materials Licenses: Program-Specific Guidance about Fixed Gauges Licenses,' dated October 1998. Within 30 days of naming a new RSO, we will submit the new RSO's name to NRC to include in our license."

OR

- Alternative information demonstrating that the proposed RSO and any future RSO are qualified by training and experience.

Note:

- It is important to notify NRC, as soon as possible, of changes in the designation of the RSO; such notifications will be handled as administrative amendments not requiring fees as long as the application contains the commitment listed in the third bullet under "Response from Applicant."
- Alternative responses will be evaluated using the criteria listed above.

8.7.2 AUTHORIZED USERS

Regulations: 10 CFR 30.33(a)(3).

Criteria: Authorized users (AUs) must have adequate training and experience. Successful completion of one of the following is evidence of adequate training and experience:

- Fixed gauge manufacturer's or distributor•s course for users
- Re:• Equivalent course that meets Appendix G criteria

all attached

Applicants requesting to perform non-routine operations such as installation, initial radiation survey, repair, and maintenance of components related to the radiological safety of the gauge,

gauge relocation, replacement and disposal of sealed sources, alignment, or removal of a gauge from service, must provide additional training. See the section in this report entitled "Radiation Safety Program - Maintenance" and Appendix N.

Discussion: An AU is a person whose training and experience meet NRC criteria, who is named either explicitly or implicitly on the license, and who uses or directly supervises the use of licensed material. AUs must ensure the proper use, security, and routine maintenance of fixed gauges containing licensed material. AUs must attend the training and instruction given at the time of installation or receive equivalent training and instruction.

An AU is considered to be supervising the use of licensed material when he or she directs personnel in operations involving the material. Although the AU may delegate specific tasks to supervised users (e.g., maintaining records), he or she is still responsible for safe use of licensed material.

Response from Applicant: Provide either of the following:

- The statement: "Before using licensed materials, authorized users will have successfully completed one of the training courses described in Criteria in the section entitled 'Authorized Users' in NUREG-1556, Vol. 4, 'Consolidated Guidance about Materials Licenses: Program-Specific Guidance about Fixed Gauge Licenses,' dated October 1998."

OR

- A description of the training and experience for proposed authorized users.

see attached.

Note: Alternative responses will be evaluated using the criteria listed above.

8.8 ITEM 8: TRAINING FOR INDIVIDUALS WHO IN THE COURSE OF EMPLOYMENT ARE LIKELY TO RECEIVE OCCUPATIONAL DOSES OF RADIATION IN EXCESS OF 1 mSv (100 mrem) IN A YEAR (OCCUPATIONALLY EXPOSED WORKERS) AND ANCILLARY PERSONNEL

Regulations: 10 CFR 19.11, 10 CFR 19.12, 10 CFR 19.13, 10 CFR 20.1801, 10 CFR 20.1802, 10 CFR 30.7, 10 CFR 30.9, 10 CFR 30.10, 10 CFR 30.33.

Criteria: Individuals who in the course of employment are likely to receive occupational doses of radiation in excess of 1 mSv (100 mrem) in a year must receive training according to 10 CFR 19.12. The extent of this training must be commensurate with potential radiological health protection problems present in the work place.

Discussion: Licensees need to perform a prospective evaluation to determine radiation doses likely to be received by different individuals or groups. AUs, and individuals performing installations, relocations, non-routine maintenance, or repairs would be most likely to receive doses in excess of 1 mSv (100 mrem) in a year. See the previous section for a discussion of training and experience for AUs.

Licensee personnel who work in the vicinity of a fixed gauge but do not use gauges (ancillary staff) are not required to have radiation safety training as long as they are not likely to receive 1 mSv (100 mrem) in a year. However, to minimize potential radiation exposure when ancillary staff are working in the vicinity of a fixed gauge, it is prudent for them to work under the supervision and in the physical presence of an AU or to be provided some basic radiation safety training. Such ancillary staff should be informed of the nature and location of the gauge and the meaning of the radiation symbol, and should be instructed not to touch the gauge and to keep away from it as much as their work permits.

Some ancillary staff, although not likely to receive doses over 1 mSv (100 mrem), should receive training to ensure adequate security and control of licensed material. Licensees may provide these individuals with training commensurate with their assignments in the vicinity of the gauge, to ensure the control and security of licensed material.

Response from Applicant: The applicant's training program, for individuals who in the course of employment are likely to receive occupational doses of radiation in excess of 1 mSv (100 mrem) in a year (occupationally exposed workers) and ancillary personnel, will be examined during inspections, but should not be submitted in the license application.

8.9 ITEM 9: FACILITIES AND EQUIPMENT

Regulations: 10 CFR 30.33(a)(2), 10 CFR 32.210.

Criteria: Facilities and equipment must be adequate to protect health and to minimize danger to life or property. This may be demonstrated by the following:

- The location of the gauge is compatible with the "Conditions of Normal Use" and "Limitations and/or Other Considerations of Use" on the SSD Registration Certificate
- The fixed gauge is secured to prevent unauthorized removal or access (e.g., located in a locked room, permanently mounted, or chained and locked to a storage rack).

Discussion: Fixed gauges incorporate many engineering features to protect the user from unnecessary radiation exposure in a wide variety of environments. Fixed gauges may be located in harsh environments involving variables such as pressure, vibration, mounting height/method, temperature, humidity, air quality, corrosive atmospheres, corrosive chemicals including process

materials and cleaning agents, possible impact or puncture conditions, and fire, explosion, and flooding potentials. Applicants need to consult the sections on the SSD Registration Certificate entitled, "Conditions of Normal Use" and "Limitations and/or Other Considerations of Use" to determine the appropriate gauge for a location. In those instances when a proposed location is not consistent with the SSD Registration Certificate, the applicant may ask the source or device manufacturer or distributor to request an amendment to modify the SSD Registration Certificate to include the new conditions. If the manufacturer or distributor does not request an amendment, the applicant must provide the NRC with specific information demonstrating that the proposed new conditions will not impact the safety or integrity of the source or device.

Response from Applicant: Provide one of the following:

- A statement that: "We will ensure that the location of each fixed gauge meets the criteria in the section entitled 'Facilities and Equipment' in NUREG-1556, Vol. 4, 'Consolidated Guidance about Materials Licenses: Program-Specific Guidance about Fixed Gauge Licenses,' dated October 1998."

OR

- Confirm that the fixed gauge is secured to prevent unauthorized removal or access; and submit specific information demonstrating that the proposed conditions will not impact the safety or integrity of the source or device. Address any instances where the proposed conditions exceed any conditions listed in the SSD Registration Certificate.

Note:

- Any deviations from an SSD Registration Certificate will require specific NRC approval.
- Alternative responses will be evaluated using the criteria listed above.

References: INs are available in the "Reference Library" on NRC's Home Page at <http://www.nrc.gov>. For hard copies, see the Notice of Availability (on the inside front cover of this report).

Criteria for Acceptable Training for Authorized Users and Radiation Safety Officers

Provide the following for the course provided by Radiation Technology, Inc., for "Level I" users:

Course Content

Classroom training may be in the form of lecture, videotape, or self-study emphasizing practical subjects important to safe use of the gauge:

Radiation Safety:

- Radiation vs. contamination
- Internal vs. external exposure
- Biological effects of radiation
- Types and relative hazards of radioactive material possessed
- ALARA concept
- Use of time, distance, and shielding to minimize exposure
- Location of sealed source within the gauge

Regulatory Requirements:

- Applicable regulations
- License conditions, amendments, renewals
- Locations of use and storage of radioactive materials
- Material control and accountability
- Annual audit of radiation safety program
- Transfer and disposal
- Recordkeeping
- Prior events involving fixed gauges
- Handling incidents
- Recognizing and ensuring that radiation warning signs are visible and legible
- Licensing and inspection by regulatory agency
- Need for complete and accurate information

- Employee protection
- Deliberate misconduct

Practical Explanation of the Theory and Operation for Each Gauge Possessed by the Licensee:

- Operating and emergency procedures
- Routine vs. non-Routine maintenance
- Lock-out procedures

On-the-job training must be done under the supervision of an AU or RSO:

- Supervised Hands-on Experience Performing:
  - — Operating procedures
  - — Test runs of emergency procedures
  - — Routine maintenance
  - — Lock-out procedures

Training Assessment

Management will ensure that proposed AUs are qualified to work independently with each type of gauge with which they may work. Management will ensure that proposed RSO's are qualified to work independently with and are knowledgeable of the radiation safety aspects of all types of gauges to be possessed by the applicant. This may be demonstrated by written or oral examination or by observation.

Course Instructor Qualifications

Instructor should have:

- Bachelor's degree in a physical or life science or engineering
- Successful completion of a fixed gauge manufacturer's or distributor's course for users (or equivalent)
- Successful completion of an 8 hour radiation safety course; and
- 8 hours hands-on experience with fixed gauges

OR

- Successful completion of a fixed gauge manufacturer's or distributor's course for users (or equivalent)
- Successful completion of 40 hour radiation safety course; and
- 30 hours of hands-on experience with fixed gauges.

OR

- The applicant may submit a description of alternative training and experience for the course instructor.

Note: Additional training is required for those applicants intending to perform non-routine operations such as installation, initial radiation survey, repair, and maintenance of components related to the radiological safety of the gauge, gauge relocation, replacement, and disposal of sealed sources, alignment, or removal of a gauge from service. See Appendix N - "Non-Routine Operations."

See attached page N-2. Provide names and experience of individuals providing non-routine (e.g. gauge relocation) operations & provide a course outline of additional required training and experience for such authorizations.

* Confirm that records of all approved authorized users, including training, experience, and approved activities, will be retained for ~~five yrs~~ three years following the last date they are so authorized.

Item No. and Title	Suggested Response	Yes	Alternative Procedures Attached
9. Facilities and Equipment	We will ensure that the location of each fixed gauge meets the Criteria in the section entitled "Facilities and Equipment" in NUREG-1556, Vol. 4, dated October 1998.	[ ]	[ ]
10. Radiation Safety Program - Audit Program	The applicant is *not* required to, and should not, submit its audit program to the NRC for review during the licensing phase.	Need Not Be Submitted with Application	
10. Radiation Safety Program - Survey Instruments	Surveys pursuant to 10 CFR 20.1501 will be performed by a person specifically authorized by the NRC or an Agreement State to perform these surveys. **OR** We will use instruments that meet the Criteria in the section entitled "Radiation Safety Program - Instruments," in NUREG-1556, Vol. 4, dated August 1998, and *one* of the following: Each survey meter will be calibrated by the manufacturer or other person authorized by the NRC or an Agreement State to perform survey meter calibrations. **OR** We will implement the model survey instrument calibration program in Appendix I to NUREG-1556, Vol. 4, dated October 1998.	[ ]	[ ]
10. Radiation Safety Program - Material Receipt and Accountability	Physical inventories will be conducted at intervals not to exceed 6 months or at other intervals approved by the NRC, to account for all sealed sources and devices received and possessed under the license.	[ ] submitted previously	[ ]
10. Radiation Safety Program - Occupational Dosimetry	We will perform a prospective evaluation demonstrating that unmonitored individuals are not likely to receive, in one year, a radiation dose in excess of 10% of the allowable limits in 10 CFR Part 20 or we will provide dosimetry that meets the Criteria in the section entitled "Radiation Safety Program - Occupational Dosimetry," in NUREG-1556, Vol. 4, dated October 1998.	[ ]	[ ]

Item No. and Title	Suggested Response	Yes	Alternative Procedures Attached
10. Radiation Safety Program - Public Dose	The applicant is not required to submit a response to the public dose section during the licensing phase. However, during NRC inspections, licensees must be able to provide documentation demonstrating, by measurement or calculation, that the total effective dose equivalent to the individual likely to receive the highest dose from the licensed operation does not exceed the annual limit for individual members of the public.	Need Not Be Submitted with Application	
10. Radiation Safety Program - Operating & Emergency Procedures	If the gauge meets one or more of the safety conditions specified in "Discussion," in the section entitled "Radiation Safety Program-Operating Emergency Procedures," in NUREG 1556, Vol. 4, dated August 1998 state the following: (see attached p. 8-26) Operating and emergency procedures will be developed, implemented, maintained, and distributed, and will meet the Criteria in the section entitled "Radiation Safety Program - Operating and Emergency Procedures," in NUREG-1556, Vol. 4, dated August 1998. For each gauge requested that does not meet one or more of the safety conditions specified in "Discussion," in the section entitled "Radiation Safety Program-Operating Emergency Procedures," in NUREG 1556, Vol. 4, dated August 1998 provide your operating, emergency and lock-out (if applicable) procedures to NRC for review. * indicate, for any submitted procedures, which gauge(s) they apply to	[ ] [ ] Procedures Attached	[ ]
10. Radiation Safety Program - Leak Test	Leak tests will be performed at intervals approved by the NRC or an Agreement State and specified in the Sealed Source and Device Registration Certificate. Leak tests will be performed by an organization authorized by NRC or an Agreement State to provide leak testing services for other licensees or using a leak test kit supplied by an organization authorized by NRC or an Agreement State to provide leak test kits to other licensees and according to the kit supplier's instructions. **OR** We will implement the model leak test program published in Appendix M to NUREG-1556, Vol. 4, dated October 1998.	[ ] [ ]	[ ]

Item No. and Title	Suggested Response	Yes	Alternative Procedures Attached
10. Radiation Safety Program - Maintenance	ROUTINE MAINTENANCE We will implement and maintain procedures for routine maintenance of our fixed gauges according to each manufacturer's or distributor's written recommendations and instructions.		[ ]
	NON-ROUTINE MAINTENANCE OPERATIONS The gauge manufacturer, distributor or other person authorized by NRC or an Agreement State will perform non-routine operations such as installation, initial radiation survey, repair, and maintenance of components related to the radiological safety of the gauge, gauge relocation, replacement, and disposal of sealed sources, alignment, or removal of a gauge from service.	[ ]	[ ] The information listed in Appendix N supporting a request to perform non-routing operations in-house is attached
10. Radiation Safety Program - Transportation	The applicant is *not* required to submit its response to transportation during the licensing process; this issue will be reviewed during inspection. However, the licensee should develop, implement, and maintain transportation procedures according to NRC and DOT regulations.	Need Not Be Submitted with Application	
10. Radiation Safety Program - Fixed Gauges Used at Temporary Job Sites	This is not applicable to our program. We will not use fixed gauges at temporary job sites.	[ ] Not Applicable	
	OR		
	We will develop, implement, maintain and distribute procedures that meet the Criteria in the section entitled "Radiation Safety Program - Fixed Gauges Used at Temporary Job Sites" in NUREG-1556, Vol. 4, dated October 1998.	[ ]	[ ]
10. Radiation Safety Program - Minimization of Contamination	The applicant is not required to submit a response to minimization of contamination if the applicant's responses meet the criteria for the following sections: Radioactive Material - Sealed Sources and Devices, Facilities and Equipment, Radiation Safety Program - Operating and Emergency Procedures, Radiation Safety Program - Leak Testing, and Waste Management - Gauge Transfer and Disposal.	Need Not Be Submitted with Application	

— Do not attempt repair or authorize others to attempt repair of the gauge except as specifically authorized in a license issued by the NRC or an Agreement State.

— Require timely reporting to NRC pursuant to 10 CFR 20.2201-20.2203, 10 CFR 30.50, and 10 CFR 21.21.

— Take additional steps, dependent on the specific situations.

- Provide copies of operating and emergency procedures to all gauge users.
- Post copies of operating and emergency procedures at each location of use or if posting procedures is not practicable, post a notice which briefly describes the procedures and states where they may be examined.

Discussion: NRC will permit an applicant greater flexibility when licensing certain types of gauges. For each gauge that is requested, if one or more of the following safety conditions are met, the applicant must develop, implement, maintain, and distribute operating and emergency procedures but need *not* submit these procedures for NRC review:

- The air gap between the radiation source and detector of the device is less than 45 cm (18 inches)
- The air gap of the device would not allow insertion of a 30 cm (12 inches) diameter sphere into the radiation beam of the device without removal of a barrier
- The radiation dose rate in the radiation beam of the device at 45 cm (18 inches) from the radiation source with the device shutters, if any, in the open position does not exceed 1 mSv/hour (0.1 rem/hour)
- Entry into vessels (e.g., bins, tanks, hoppers, or pipes) with a gauge installed is not necessary under any foreseeable circumstances and is prohibited.

Operating and emergency procedures should be developed, maintained, and implemented to ensure that gauges are used only as they were designed to be used, control and accountability are maintained, and radiation doses received by occupational workers and members of the public are ALARA. Copies of operating and emergency procedures should be provided to all gauge users. In addition, licensees must post current copies of operating and emergency procedures applicable to licensed activities at each site. If posting of procedures is not practicable, the licensee may post a notice which describes the documents and states where they may be examined.

Improper operation could lead to the damage or malfunction of a gauge and elevated exposure rates in the gauge's immediate vicinity. A list of specific items that should be addressed in operating and emergency procedures is contained in Appendix L. Figure 8.6 illustrates proper response to fire involving a fixed gauge. Emergency procedures should be developed to address a spectrum of incidents (e.g., fire, explosion, mechanical damage, flood, or earthquake).

Information Needed to Support Applicant's Request to Perform Non-Routine Operations

Applicants should review the section in this document on "Maintenance," which discusses, in general, licensee responsibilities before any maintenance or repair is performed.

Non-routine operations include installation of the gauge, initial radiation survey, repair or maintenance involving or potentially affecting components, including electronics, related to the radiological safety of the gauge (e.g., the source, source holder, source drive mechanism, shutter, shutter control, or shielding), gauge relocation, replacement, and disposal of sealed sources, alignment, removal of a gauge from service, and any other activities during which personnel could receive radiation doses exceeding NRC limits. See Figure 8.9.

Any non-manufacturer/non-distributor supplied replacement components or parts, or the use of materials (e.g., lubricants) other than those specified or recommended by the manufacturer or distributor need to be evaluated to ensure that they do not degrade the engineering safety analysis performed and accepted as part of the device registration. Licensees also need to ensure that, after maintenance or repair is completed, the gauge is tested and functions as designed, before the unit is returned to routine use.

If non-routine operations are not performed properly with attention to good radiation safety principles, the gauge may not operate as designed and personnel performing these tasks could receive radiation doses exceeding NRC limits. Radionuclides and activities in fixed gauges vary widely. For illustrative purposes in less than one minute, an unshielded cesium-137 source with an activity of 100 millicuries can deliver 0.05 Sv (5 rems) to a worker's hands or fingers (i.e., extremities), assuming the extremities are 1 centimeter from the source. However, gauges can contain sources of even higher activities with correspondingly higher dose rates. The threshold for extremity monitoring is 0.05 Sv (5 rems) per year.

Thus, applicants wishing to perform non-routine operations must use personnel with special training and follow appropriate procedures consistent with the manufacturer's or distributor•s instructions and recommendations that address radiation safety concerns (e.g., use of radiation survey meter, shielded container for the source, and personnel dosimetry (if required)). Accordingly, provide the following information:

Describe the types of work, maintenance, cleaning, repair that involve:

- Installation, relocation, or alignment of the gauge
- Components, including electronics, related to the radiological safety of the gauge (e.g., the source, source holder, source drive mechanism, shutter, shutter control, or shielding)
- Replacement and disposal of sealed sources
- Removal of a gauge from service

- A potential for any portion of the body to come into contact with the primary radiation beam; or
- Any other activity during which personnel could receive radiation doses exceeding NRC limits.

The principal reason for obtaining this information is to assist in the evaluation of the qualifications of individuals who will conduct the work and the radiation safety procedures they will follow.

A licensee may initially mount a gauge, without specific NRC or Agreement State authorization, if the gauge's SSD Certificate explicitly permits mounting of gauges by users and under the following conditions:

- The gauge must be mounted according to written instructions provided by the manufacturer or distributor;
- The gauge must be mounted in a location compatible with the "Conditions of Normal Use" and "Limitations and/or Other Considerations of Use" in the certificate of registration issued by NRC or an Agreement State;
- The on-off mechanism (shutter) must be locked in the off position, if applicable, or the source must be otherwise fully shielded;
- The gauge must be received in good condition (package was not damaged); and
- The gauge must not require any modification to fit in the proposed location.

Mounting does not include electrical connection, activation, or operation of the gauge. The source must remain fully shielded and the gauge may not be used until it is installed and made operational by a person specifically licensed by the Commission or an Agreement State to perform such operations.

- Identify who will perform non-routine operations and their training and experience. Acceptable training would include manufacturer's or distributor•s courses for non-routine operations or equivalent.
- Submit procedures for non-routine operations. These procedures should ensure the following:
  - — doses to personnel and members of the public are within regulatory limits and ALARA (e.g., use of shielded containers or shielding);
  - — the source is secured against unauthorized removal or access or under constant surveillance;
  - — appropriate labels and signs are used;
  - — manufacturer's or distributor•s instructions and recommendations are followed;
  - — any non-manufacturer/non-distributor supplied replacement components or parts, or the use of materials (e.g., lubricants) other than those specified or recommended by the

manufacturer or distributor are evaluated to ensure that they do not degrade the engineering safety analysis performed and accepted as part of the device registration; and

— before being returned to routine use, the gauge is tested to verify that it functions as designed and source integrity is not compromised.

- Confirm that individuals performing non-routine operations on gauges will wear both whole body and extremity monitoring devices or perform a prospective evaluation demonstrating that unmonitored individuals performing non-routine operations are not likely to receive, in one year, a radiation dose in excess of 10% of the allowable limits.
- Verify possession of at least one survey instrument that meets the criteria in "Radiation Safety Program - Instruments in NUREG-1556, Vol. 4, 'Consolidated Guidance about Materials Licenses: Program-Specific Guidance about Fixed Gauges Licenses,' dated October 1998."
- Describe steps to be taken to ensure that radiation levels in areas where non-routine operations will take place do not exceed 10 CFR 20.1301 limits. For example, applicants can do the following:
  - — commit to performing surveys with a survey instrument (as described above);
  - — specify where and when surveys will be conducted during non-routine operations; and
  - — commit to maintaining, for 3 years from the date of the survey, records of the survey (e.g., who performed the survey, date of the survey, instrument used, measured radiation levels correlated to location of those measurements), as required by 10 CFR 20.2103.

Forster, Sara

From: Forster, Sara
Sent: Friday, February 28, 2014 1:15 PM
To: 'jeremy.laakso@cliffsnr.com'
Subject: Additional Information Request for Empire Iron Mining Partnership, NRC Lic. No. 21-03076-01, C/N 582244
Attachments: 03120.582244.21-03076-01 telecon signed.pdf

Dear Mr. Laakso:

See the attached file for additional information needed to complete the review of the renewal application of NRC Lic. No. 21-03076-01. Note that the attached phone conversation record requests additional information, including statements related to the Radiation Safety Program, as outlined in our guidance, NUREG 1556, Vol. 4, "Program-Specific Guidance About Fixed Gauge Licenses," which may be found at:

http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1556/v4/sr1556v4.pdf

As we discussed, we are expecting your response by next Friday, March 7, 2014. You may submit your response via facsimile to (630) 515-1078 as a pdf file attached to an email. Do not hesitate to call me with any questions you may have, or if you need additional time to respond to this request.

Sincerely yours,
Sara A. B. Forster, Health Physicist Licensing Reviewer
U.S. Nuclear Regulatory Commission - Region III
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