

RAI 29

Description of Deficiency: The applicant did not provide any specifics on its ALARA policy.

Basis for Request: NUREG-1569, Acceptance Criterion 5.7.2.3(7), states: "Radiation doses will be kept as low as is reasonably achievable by following Regulatory Guide 8.10 (NRC, 1977) and Regulatory Guide 8.31 (NRC, 2002b)." RG 8.10, Regulatory Position C.1.a, recommends that plant personnel should be made aware of management's commitment to keep occupational exposures ALARA and that the commitment should appear in policy statements, instructions to personnel, and similar documents.

In TR Section 4.1.4, the applicant stated that it maintains a strict ALARA policy to keep exposures to all radioactive materials as low as possible as defined in SHEQMS, Volume IV, Health Physics Manual. However, the applicant did not provide any specifics from this reference or others, such as ALARA exposure goals and action levels associated with exposures to radioactive materials.

Request for Additional Information: Consistent with NUREG-1569, Acceptance Criterion 5.7.2.3(7), please provide specific information on the applicant's ALARA policy statements, instructions, or other similar documents, including goals and action levels, as it relates to exposures to radioactive materials.

RAI 29 Response (October 23, 2014)

Section 5.7 has been revised to address the requirements of RG 8.10 and to include the ALARA Policy elements.

Technical Report Marsland Expansion Area



- Clearly communicating general point-to-point security procedures and guidelines to all drivers and non-driving personnel
- Providing the means and methods of protecting the drivers, vehicles, and customer cargo while on the road
- Establishing consistent security guidelines and procedures that shall be observed by all personnel.

For the security of all tractors and trailers, the following will be adhered to:

- If material is stored in the vehicle, access must be secured at all openings with locks and/or tamper indicators.
- Offsite tractors will always be secured when left unattended, with windows closed, doors locked, the engine shut off, and no keys or spare keys in or on the vehicle.
- The vehicle is to be kept visible by an employee at all times when left unattended outside a restricted area.

The security guidelines and procedures apply to all transport assignments. All drivers and non-driving personnel are expected to know and adhere to these guidelines and procedures when performing any load-related activity.

5.7 Radiation Safety Controls and Monitoring

CBR has a strong corporate commitment to and support for the implementation of the radiological control program at the Crow Butte Uranium Project facilities. This corporate commitment to maintaining personnel exposures ALARA ~~will behas-been~~ incorporated into the radiation safety controls and monitoring program at the MEA.

The purpose of the ALARA (As Low As Reasonably Achievable) Policy is to keep exposures to all radioactive material and other hazardous material as low as possible and to as few personnel as possible, taking into account the state of technology and the economics of improvements in relation to benefits to the public health and safety, and other societal and socioeconomic considerations, and in relation to the utilization of atomic energy in the public interest.

The RSO shall be responsible for the development and administration of the ALARA program. A comprehensive review of the radiation protection program and ALARA program will be performed annually. The annual program evaluation will review the following:

- Employee exposures and incurred doses;
- Bioassay results;
- Inspection results;
- Documented training program activities;
- Radiation safety meetings;
- Radiological survey and sample results;
- Reports on overexposures;
- Operating procedures;
- Emergency preparedness;
- Environmental monitoring program; and



- Quality assurance program.

The audit will include trends in personnel exposures, airborne concentrations, whether equipment for exposure control is being properly used, maintained, and inspected, and recommendations to maintain exposures ALARA. The annual ALARA audit will be conducted by individuals that are knowledgeable concerning radiation protection programs at uranium recovery facilities. The RSO will assist the audit team but will not be a member.

The ALARA Policy will be required reading during initial employee training. The ALARA Policy is found in the SHEQMS Health Physics Manual, Volume IV, Chapter 2, Health Physics Organization and Management, Section 2.5 ALARA Program: describe

In order for any ALARA program to be functional, all individuals from management to the workers must participate and each is responsible in the program's success. In so doing, each will have a valued stake in the outcome and final success of the ALARA program. As such, it is the corporate policy that ALARA conditions be achieved by endeavoring to maintain and promote open communications between all employees, through training and by providing management support to philosophies which can minimize or otherwise reduce occupational exposure to radiation.

In an effort to maintain exposures ALARA, the emission control equipment will be utilized in the mode that best removes and maintains airborne radioactive material at a minimum. The ventilation rate or the air exchange rate for normal work areas will be designed to maintain airborne concentrations of natural uranium and radon gas or their daughters to 25% or less of the Derived Air Concentration (DAC) as given in Table 1 of Appendix B, Title 10, Code of Federal Regulations, Part 20.

~~d in the following sections.~~ To that end, Cameco is procuring instrumentation and other required equipment and has undertaken a sampling program to evaluate a variety of radiation protection issues raised in the context of the Crow Butte license renewal. The sampling plan identifies the sample type, location, equipment frequency/duration, and LLDs. In addition, the sampling plan presents objectives and purposes, components of the dose assessment, and a decision rule/path forward.

In summary, the sampling plan will provide site-specific data to evaluate:

- Dose to public
- Dose to office workers, lab workers, wellfield workers, and wellfield construction personnel
- Implications to worker dose from in growth of short-lived beta-emitting isotopes
- Implication of short-lived beta-emitting isotopes to contamination control, for both personal contamination and for free release of objects
- Implications of isotope mixtures in establishing the site-specific DAC
- Potential to use radium-226 concentrations in pregnant lixiviant as a component of 10 CFR 40.64 effluent reporting.

As elements of the sampling plan are completed, Cameco will provide data and propose program revisions where necessary for NRC consideration. Following deliberation, appropriate license