



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

November 4, 2020

Mr. Brad Bingham
Closure Manager
Grants Reclamation Project
Homestake Mining Company of California
P.O. Box 98/Highway 605
Grants, NM 87020

SUBJECT: HOMESTAKE MINING COMPANY OF CALIFORNIA, U.S. NUCLEAR REGULATORY COMMISSION ACCEPTANCE REVIEW AND REQUEST FOR SUPPLEMENTAL INFORMATION, MODIFICATION OF RADIATION SAFETY TECHNICIAN QUALIFICATION PROGRAM, LICENSE CONDITION 32, MATERIALS LICENSE SUA-1471

Dear Mr. Bingham,

By letter dated August 12, 2020 (Agencywide Documents Access and Management System [ADAMS] Accession No. ML20225A272), the Homestake Mining Company of California (HMC or the licensee) submitted to the U.S. Nuclear Regulatory Commission (NRC) staff a license amendment request for review and approval. Specifically, the licensee requested to modify license condition 32 to remove the requirements for radiation safety technicians to meet the education, training and experience requirements of Regulatory Guide 8.31, "*Information relevant to ensuring that occupational radiation exposure at uranium recovery facilities will be as low as is reasonably achievable.*" The NRC staff has completed its acceptance review of the information provided by the licensee and has determined that it does not contain adequate information for the NRC staff to begin a detailed technical review and that supplemental information is needed.

The information needed to continue our review is described in the enclosed request for supplemental information (RSI). Responses to the enclosed RSI should be provided within 90 days from the date of this letter. If HMC is unable to meet this response date, please notify the NRC staff, within two weeks of receipt of this letter, of your new submittal date. If the RSI response does not provide sufficient information, the application may not be accepted for review. Please be advised that the NRC has previously made decisions associated with reductions in training and qualifications for radiation safety technicians that can preclude them from releasing materials and equipment for unrestricted use and the information provided in response to this RSI could result in similar restrictions being implemented based on your responses.

In accordance with Title 10 Code of Federal Regulations (10 CFR) 2.390 of the NRC's "Agency Rules of Practice and Procedure," a copy of this letter will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records component of NRC's ADAMS. ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>.

If you have any questions regarding this matter, please contact me at 301-415-7777, or via email at Ron.Linton@nrc.gov.

Sincerely,

Ron C. Linton, Project Manager
Uranium Recovery and Materials
Decommissioning Branch
Division of Decommissioning, Uranium Recovery
and Waste Programs
Office of Nuclear Materials Safety
and Safeguards

Docket No.: 040-08903
License No.: SUA-1471

Enclosure:
Request for Supplemental Information

SUBJECT: HOMESTAKE MINING COMPANY OF CALIFORNIA, U.S. NUCLEAR REGULATORY COMMISSION ACCEPTANCE REVIEW AND REQUEST FOR SUPPLEMENTAL INFORMATION, MODIFICATION OF RADIATION SAFETY TECHNICIAN QUALIFICATION PROGRAM, LICENSE CONDITION 32, MATERIALS LICENSE SUA-1471

DATED: November 4, 2020

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ADAMS Accession Number: ML20287A399

***via email**

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Request for Supplemental Information
Homestake Mining Company of California, Modification of Radiation Safety Technician
Qualification Program, License Condition 32, Materials License SUA-1471

Request for Supplemental Information (RSI) -1

- a. Provide a description of the radiation safety technician (RST) duties under the current program and describe how the duties of RSTs have changed at the Homestake Mining Company of California (HMC or the licensee) Grants Reclamation Project (GRP) as the risks have changed. In addition, address the measures in place to ensure adequate protection of the occupational workers, the public and the environment.
- b. Provide details on what, if any, duties and responsibilities will no longer be assigned to the RSTs under the proposed reduced training and qualifications program. Identify which of these duties and responsibilities will be reassigned and what will no longer be required.
- c. Provide an overview of HMC's compliance history at the GRP going back at least five years. Summarize any violation and enforcement action in the areas of radiation safety and environmental compliance and whether the licensee or NRC identified the potential or actual violation(s).

Discussion

The licensee's submission does not describe how the work responsibilities of an RST under the proposed training and experience requirements compares to the work historically performed after meeting the training and experience program in accordance with Regulatory Guide 8.31. The proposed training and qualifications are significantly reduced from what is currently required though the risks at the site do not seem to be significantly different from a fully operational uranium mill from an environmental and radiation safety standpoint.

The licensee has indicated that the current requirement to have RSTs qualified in accordance with the guidance in Regulatory Guide 8.31 is in conflict with Title 10 *Code of Federal Regulations* (10 CFR) 20.1101 as the risks at the GRP are less than those at a fully operational uranium recovery facility. NUREG-2150 "Proposed Risk Management Regulatory Framework" identifies uranium recovery facilities as low risk and indicates there is low radiological risk to workers and the public under normal conditions. According to NUREG-2150, the primary operational radiation risk at uranium recovery facilities is presented by yellowcake dryer operations. The licensee does not have this operational risk, but the environmental risks for uranium recovery sites identified in NUREG-2150 are present. For example, groundwater contamination, tailings management, and radon emissions are all present at the GRP. Additional justification is required to address why the environmental risks present at the GRP are less than those risks assumed under Regulatory Guide 8.31, such that Regulatory Guide 8.31 should not remain as part of the license.

Additionally, NUREG-0706, "Final Generic Environmental Impact Statement on Uranium Milling" calls attention to the fact that at an operating uranium mill, the greatest radiological impacts with respect to health effects are the radionuclides: Rn-222, Ra-226, and Pb-210 which come from the tailings pile. The licensee is proposing that due to their non-operational status, the radiological risks are lessened. This is true to an extent as the facility does not possess risk from uranium associated with yellowcake drying operations. However, in operational and non-

operational facilities alike, the most significant risk is from the radionuclides associated with the tailings pile, which the licensee still possesses.

Lastly, the guidance in NUREG-1620, "Standard Review Plan for Uranium Mill Tailings Sites under Title II of the Uranium Mill Tailings Radiation Control Act of 1978", Appendix B, suggests that the NRC staff evaluate the historical record of site operations, including the licensee's compliance history, for license amendments. Some of the suggested areas for review include:

- License violations identified during U.S. Nuclear Regulatory Commission (NRC) site Inspections;
- Exceedances of any regulatory standard or license condition pertaining to radiation exposure, contamination, or release limits, and;
- Changes to any site characterization information important to the evaluation of the reclamation plan such as changes to site location and layout, uses of adjacent land and waters, meteorology, seismology, the geologic or hydrologic setting, ecology, background radiological or non-radiological characteristic, and other environmental features.

Basis

This information is needed to determine compliance with the following requirements:

- 10 CFR 20.1101 – this regulation requires the radiation protection program to be "commensurate with the scope and extent of license activities and sufficient to ensure compliance with the provisions of this part."

RSI-2

- a. Provide the education requirements for new RSTs and more details regarding the training and qualification requirements.
- b. Provide the criteria that will be used to determine what level of training and qualification the individual will be required to complete based on education level. If differing levels of formal education will warrant differing levels of training and qualification requirements, describe those as well.
- c. Provide the details on the subjects that will be covered in training and the number of hours for each subject (math, physics, radiation protection, sampling, etc.).
- d. Provide the justification for deviating from the Regulatory Guide 8.31 guidance associated with education, training and experience qualifications required for fully operational uranium recovery facilities versus the operations at the GRP.
- e. Provide details regarding how these different training and qualification requirements will continue to provide adequate protection to the public as they relate to the current duties of the RSTs as required by 10 CFR 40.45 (referring to 10 CFR 40.32).

Discussion

As submitted, the RST candidate will be required to attend training, but will not be required to have any prior education including a high school diploma. Regulatory Guide 8.31 contains differing training requirements based on differing levels of education (high school diploma or associate degree). Regulatory Guide 8.31 describes a system where candidates with more prior education require less training and experience, whereas candidates with less prior education require more training and experience to be considered for the position. Criteria should be developed that will be used to determine what level of training and qualification the individual will be required to complete based on education level.

To decide if there is reasonable assurance of adequate protection, the NRC staff needs to have a complete picture of the proposed program. The licensee's submission lacks details on the subjects that will be covered in training and the number of hours for each subject (math, physics, radiation protection, sampling, etc.). Additionally, the licensee has not justified deviating from the Regulatory Guide 8.31 guidance associated with education, training and qualifications required for fully operational uranium recovery facilities versus the operations at the GRP.

A review of inspection reports identified that RST training has been a concern in the past as documented in IR 040-08903/2019-001 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML19129A405) which indicated the RSTs in training were only provided 10 specialized training sessions between May 2017 and March 2019. This same inspection also cited the licensee for failure to provide specialized training to the RSTs in training (individuals were assigned as RSTs without the required 3 months of specialized training in radiation protection as specified in Regulatory Guide 8.31). The submission should include levels of training that are commensurate with the level of education of the RST in training.

Basis

This information is needed to determine compliance with the following requirement:

- 10 CFR 20.1101 – this regulation requires the radiation protection program to be “commensurate with the scope and extent of license activities and sufficient to ensure compliance with the provisions of this part.”
- 10 CFR 40.45 – this regulation requires that the NRC apply the criteria in 10 CFR 40.32 to license amendment requests, that includes finding the licensee “qualified by reason of training and experience to use the source material for the purpose requested in such a manner as to protect health and minimize danger to life or property”.

RSI-3

Provide details on the criteria that will be used for each candidate to demonstrate proficiency to the satisfaction of the Radiation Safety Officer (RSO) including: (1) the criteria that the RSO will use to evaluate the individual's proficiency and performance; (2) the areas in which the candidate must demonstrate proficiency; and, (3) details on what criteria would be acceptable to demonstrate proficiency.

Discussion

The licensee proposes that the RST candidate demonstrate proficiency to the satisfaction of the RSO. The submission should include details on those areas where proficiency must be demonstrated. The program description should include details such as if the individual will be required to complete a series of practical performance demonstrations and/or take a test demonstrating performance knowledge. The submission should specify the frequency of these proficiency assessments and at what frequency each area will be assessed, if periodic assessments of each individual's performance will be conducted. The submission should include details on what constitutes acceptable performance to demonstrate proficiency.

Basis

This information is needed to determine compliance with the following requirement:

- 10 CFR 20.1101 – this regulation requires the radiation protection program to be “commensurate with the scope and extent of license activities and sufficient to ensure compliance with the provisions of this part.”

RSI-4

- a. Describe the components of the training and qualification program that will ensure the RSTs are able to act independently during normal and abnormal situations onsite, due to the location of RSO and Assistant Radiation Safety Officer (ARSO) offsite.
- b. Provide details on any guidance or documentation that directs the RST to stop work or contact the RSO or ARSO.
- c. Provide details on any hazard recognition or emergency response training provided to the RSTs to allow these individuals to act independently to protect health, safety and the environment.
- d. Provide the specialized radiation protection training required by License Condition 24, if RSTs will be expected to approve Radiation Work Permits (RWPs)

Discussion

The RSO and ARSO are not onsite every day at the GRP. Therefore, the RSTs need to have the ability and the confidence to act independently to maintain radiation protection standards and requirements during normal and abnormal operations. The licensee must have training and proper procedures in place for the RST, acting independently, to make proper decisions on a day to day basis.

Inspection history at this site implies that the RST staff, acting independently, have not recognized radiological hazards. For example, during an inspection conducted in 2017 (IR 040-8903/2017-002; ADAMS Accession No. ML17353A414) the NRC inspectors identified workers making repairs to the embankment of the zeolite system who were not working under an RWP.

The RST and RST in training at the time had not recognized the potential for airborne exposure based on the work being performed..

Basis

This information is needed to determine compliance with the following requirements:

- 10 CFR 20.1101 – this regulation requires the radiation protection program to be “commensurate with the scope and extent of license activities and sufficient to ensure compliance with the provisions of this part.”
- License Condition 24 requires that RWPs be approved by either the Radiation Protection Administrator or his designee, qualified by way of specialized radiation protection training.

RSI-5

- a. Provide specific technical training requirements for RSTs that will enable the licensee to meet all of its license requirements, including releasing equipment and packages from the restricted area.
- b. Provide RSO oversight responsibilities that will ensure that equipment and packages released from the restricted area will be in accordance with all relevant license conditions.

Discussion

The NRC staff has requested justification from the licensee on procedures and processes used for releasing materials for unrestricted use on two prior occasions (ADAMS Accession Nos. ML20107J517, ML19256B148). These prior requests have indicated potential misunderstandings on the licensee’s part of the requirements of License Condition 14 and NRC guidance on how to correctly evaluate contamination surveys (e.g., calculating the minimum detectable concentrations for scan surveys, accounting for mixtures of radionuclides). These types of technical requirements do not appear to be addressed by the licensee’s proposed revised RST qualifications.

Basis

This information is needed to determine compliance with the following requirements:

- License Condition 14 requires the licensee to use the “Guidelines for Decontamination of Facilities and Equipment Prior to Release for Unrestricted Use or Termination of Licenses for Byproduct or Source Materials,” dated September 1984, when releasing equipment and packages from the restricted area.