



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

November 1, 2017

MEMORANDUM TO: Bill Von Till, Chief
Uranium Recovery Licensing Branch
Division of Decommissioning, Uranium Recovery,
and Waste Programs
Office of Nuclear Material Safety
and Safeguards

FROM: Ronald A. Burrows, Project Manager */RA/*
Uranium Recovery Licensing Branch
Division of Decommissioning, Uranium Recovery,
and Waste Programs
Office of Nuclear Material Safety
and Safeguards

SUBJECT: PUBLIC MEETING SUMMARY

On October 16, 2017, a public teleconference was held at the U.S. Nuclear Regulatory Commission (NRC) Headquarters, at the request of Cameco Resources, Crow Butte Operation, to discuss its proposed approach to calculating scan minimum detectable concentrations for beta-gamma contamination surveys. A summary of the meeting is enclosed.

Enclosure: Meeting Summary

CONTACT: R. Burrows, NMSS/DUWP
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SUBJECT: PUBLIC MEETING SUMMARY, DATED NOVEMBER 1, 2017

DISTRIBUTION:

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ADAMS Accession No.: ML17304A201

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| NAME | RBurrows | DBrown | RBurrows |
| DATE | 10/17/17 | 10/19/17 | 11/1/17 |

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MEETING SUMMARY

DATE: October 16, 2017

TIME: 1:00 p.m. to 2:00 p.m.

PLACE: Teleconference

PURPOSE: This meeting was held at the request of Cameco Resources, Crow Butte Operation (Cameco), to discuss its proposed approach to calculating scan minimum detectable concentrations for beta-gamma contamination surveys.

ATTENDEES: See Attached Attendees List.

By e-mail dated August 8, 2017 (U.S. Nuclear Regulatory Commission's (NRC's) Agencywide Documents Access and Management System (ADAMS) Accession No. ML17230A043), Cameco submitted clarifications to its response to License Condition 11.10 addressing its contamination control program. These clarifications included a discussion of Cameco's proposed approach to calculating scan minimum detectable concentrations for beta-gamma contamination surveys.

After introductions, Cameco led the discussion by requesting clarification on several issues including nomenclature used in reference to branching ratios (e.g., specific radionuclide decay fractions in the uranium decay series) for detector efficiency calculations, and two-stage scanning as discussed in NUREG-1575 Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM) (ML003761445). Regarding branching ratios, the NRC staff stated that exact nomenclature used in proposed methodologies is not as important as being clear on the proposed approach. As long as the methodology is justified and technically correct, the NRC staff is not going to reject the approach based solely on nomenclature.

Cameco requested guidance on the two stages of scanning as discussed in MARSSIM starting on page 6-39. The intent of scanning a potentially contaminated surface is to identify a small area of elevated radioactivity. The NRC staff notes that the first stage of scanning is considered a "brief look" at a potentially contaminated surface and is depicted by relatively quick scan speeds and an index of sensitivity (d' , or d') that allows for a high proportion of false positive readings (e.g., 0.6). Values for d' are found in Table 6.5 of MARSSIM. Once a surveyor notices a positive instrument response (i.e., the surveyor has identified an area of elevated radioactivity), an action must be accomplished to disposition that positive response.

The NRC staff expects that a licensee will either rescan the area with a positive response (i.e., second stage of scanning) or take a static measurement of the area identified as having elevated radioactivity. While rescanning the area with a positive response, it is expected that a more restrictive value of d' will be chosen to decrease the possibility of a false positive signal (e.g., 0.05) and will generally involve a slower scan speed. Both of these variables will affect the minimum detectable concentration for the scan process. Prior to initiating release surveys,

Enclosure

a licensee should determine beforehand how areas identified as having elevated radioactivity will be assessed.

One member of the public attended this teleconference. There were no questions from this individual.

No specific action items were identified during this meeting.

ATTACHMENTS:

1. Agenda
2. List of Attendees

PUBLIC MEETING AGENDA
Crow Butte scan MDC calculations
October 16, 2017, 1:00 PM to 2:00 PM
Teleconference

NRC Two White Flint North
11545 Rockville Pike
Rockville, MD

Introductions

Discuss Crow Butte scan minimum detectable concentration (MDC) calculations

Closing Remarks



MEETING ATTENDEES

Date: October 16, 2017

Topic: Discussion of Cameco's proposed scan minimum detectable concentration calculations

| NAME | AFFILIATION | PHONE NUMBER | E-MAIL |
|-------------------|---|----------------|------------------------|
| Ronald A. Burrows | Nuclear Regulatory Commission | 1-800-368-5642 | ronald.burrows@nrc.gov |
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| Walt Nelson | Cameco | | |
| Tammy Dyer | Cameco | | |
| Casey Yada | Cameco | | |
| Kari Toews | Cameco | | |
| Larry Teahon | Cameco | | |
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| David Frankel | Counsel for Consolidated Intervenor In re Crow Butte Renewal | | |
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