



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

January 23, 2020

Mr. Walter Nelson, Coordinator,  
Safety, Health, Environment & Quality  
Cameco Resources  
Post Office Box 169  
Crawford, NE 69339-0169

SUBJECT: U.S. NUCLEAR REGULATORY COMMISSION VERIFICATION  
REGARDING THE 2020 SURETY UPDATE, CROW BUTTE  
RESOURCES, INC., CRAWFORD, NEBRASKA, SOURCE  
MATERIALS LICENSE SUA-1534

Dear Mr. Nelson:

By letter dated September 26, 2019 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML19275D255), Crow Butte Resources, Inc. (CBR) submitted its 2020 surety update to the U.S. Nuclear Regulatory Commission (NRC) staff. As a result of this submittal, the overall effect of this surety update is to increase the 2019 surety amount by \$1,108,085 to a total of \$51,772,730.

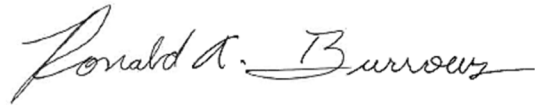
Based on the information provided in CBR's aforementioned surety update submittal, the NRC staff has determined that the surety estimate is acceptable as documented in the NRC staff's verification (enclosed). License Condition 9.5 of Materials License SUA-1534 will be revised to reflect the current updated surety amount during a future licensing action.

As a result of this verification, the NRC staff has completed its work on Cost Activity Code (CAC) 000092 associated with docket and Enterprise Project Identifier (EPID) 04008943/L-2019-DFA-0010. Therefore, this CAC/docket/EPID combination will be closed with no further charges against it.

In accordance with 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, please contact Mr. Ronald Burrows, Project Manager, at 301-415-6443 or, by email at [ronald.burrows@nrc.gov](mailto:ronald.burrows@nrc.gov).

Sincerely,

A handwritten signature in cursive script that reads "Ronald A. Burrows". The signature is written in dark ink and is positioned above the typed name and title.

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

Docket No.: 40-8943  
License No.: SUA-1534

Enclosure: NRC Staff Verification  
of 2020 Surety Estimate

cc: Crow Butte listserv

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REGARDING THE 2020 SURETY UPDATE, CROW BUTTE  
RESOURCES, INC., CRAWFORD, NEBRASKA, SOURCE  
MATERIALSLICENSE SUA-1534 **DATE January 23, 2020**

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**\* via email**

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DATE	1/16/2020	1/17/2020	1/21/2020	1/22/2020	1/23/2020	1/23/2020

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**U.S. Nuclear Regulatory Commission  
Staff Verification of 2020 Surety Estimate  
Crow Butte Resources, Inc.  
Source Material License SUA-1534**

DATE: January 23, 2020

DOCKET: 040-08943

LICENSE NO.: SUA-1534

LICENSEE: Crow Butte Resources, Inc.

SITE: Crow Butte Project

PROJECT MANAGER: Ronald A. Burrows

TECHNICAL REVIEWERS: Tom Lancaster, Trent Wertz

## **Background**

By letter dated September 26, 2019, Crow Butte Resources, Inc. (CBR, or the licensee) submitted its 2020 annual surety update for the Crow Butte Project to the U.S. Nuclear Regulatory Commission (NRC) (CBR, 2019). As documented in e-mail dated November 19, 2019 (NRC, 2019), the NRC staff determined that the surety update was acceptable for NRC staff's technical review.

## **Staff Review and Analysis**

This report includes the results of the NRC staff's technical review of its 2020 annual surety update. The NRC staff reviewed CBR's Crow Butte surety estimate in accordance with requirements in 10 CFR Part 40, Appendix A, Criterion 9, "Financial Criteria" and in License Condition (LC) 9.5 of Materials License SUA-1534. Additionally, the NRC staff used NUREG-1569, "Standard Review Plan for In Situ Leach Uranium Extraction License Applications" (SRP) (NRC, 2003) as guidance in determining elements to be included in a surety review. Specifically, the NRC staff used the review procedures and acceptance criteria guidance in Section 6.0 and in Appendix C of the SRP. The NRC staff also used Nebraska Department of Labor (NDOL), Office of Labor Market Information, Occupational Employment Statistics Program (NDOL, 2019) when applicable, to verify that reasonable unit costs were included in the surety calculations.

### *Sufficiency of the Cost Estimate*

In the surety calculations, the licensee includes costs for decommissioning and decontamination, reclamation of sites, structures, and equipment used in conjunction with facility operations.

CBR estimated the cost to decommission and decontaminate the Crow Butte facility by an independent party at \$51,772,730. This constitutes an increase of \$1,108,085 above the previous year's surety estimate of \$50,664,645. The most significant category that contributed to the surety estimate change was the increasing cost for electricity (+8.5%), which was partially offset set by a slight decrease in fuel costs. The cost estimate is based on costs of a third-party contractor, does not take credit for any salvage value, and includes a 15 % contingency factor. Chemical and electrical costs are based on actual invoices and are adjusted by the Consumer Price Index for inflation.

This surety estimate maintains 11 pore volumes (PVs) as a basis to complete restoration for each mine unit (MU) consisting of 3 ion exchange PVs, 6 reverse osmosis PVs, and 2 recirculation PVs. The NRC staff previously approved 11 PVs for restoration purposes during the 2009 surety update (NRC, 2009) based on the licensee's experience with restoring MU-1. The NRC staff finds nothing to invalidate the previous findings regarding the licensee's estimate of 11 PVs required for MU restoration and therefore the NRC staff's previous conclusions remain valid.

The NRC staff determined that the licensee's surety estimate, and the associated cost breakdowns, were adequately summarized and calculated in accordance with Appendix C of NUREG-1569. The NRC staff spot-checked the calculations within cost breakdowns, using Microsoft Excel and found the calculations to be correct. The NRC staff observes that 10 CFR Part 40, Appendix A, Criterion 9, does not specify a specific contingency factor to be used in the surety calculations. However, LC 9.5 requires the licensee to maintain a minimum 15 percent contingency. The NRC staff finds that the contingency used by the licensee meets the requirement of LC 9.5.

As a result of this review, the NRC staff determined that the cost adjustments are consistent with the proposed changes in the licensee's operations. The NRC staff found that the licensee has included in the update all activities: (1) listed in the reclamation plan or in Section 6.0 of NUREG-1569; and (2) conducted during the period covered by the estimate. The NRC staff has also found that the licensee has based the assumptions for the financial surety analysis on site conditions, including experiences with generally accepted industry practices, research and development at the site, and previous operating experience. Therefore, The NRC staff finds that the licensee has established an acceptable financial assurance cost estimate based on the requirements in 10 CFR Part 40, Appendix A, Criterion 9.

## **Conclusion**

Based on the information provided in the application and the detailed review conducted of the surety estimate for CBR's Crow Butte Uranium Project, the NRC staff concludes that the 2020 surety estimate reasonably includes funds sufficient to cover the estimated current costs of completing groundwater restoration, decommissioning, reclamation, and waste disposal by an independent party. The staff determined that the updated surety amount meets the requirements of 10 CFR Part 40, Appendix A, Criterion 9 and LC 9.5 (NRC, 2018) and is therefore acceptable.

## **REFERENCES**

10 CFR Part 40. *Code of Federal Regulations*, Title 10, Energy, Part 40, "Domestic Licensing of Source Material."

CBR, 2019. 2020 Surety Estimate, Cameco Resources Crow Butte Operation, Source Materials License SUA-1534, September 26, 2018, ADAMS Accession No. ML19275D255.

NDOL, 2019. Nebraska Department of Labor, Office of Labor Market Information, Nebraska Wages by Occupation, Occupational Employment Statistics, accessed December 16-17, 2019, <https://neworks.nebraska.gov/admin/gsipub/htmlarea/uploads/OESWageBook.pdf>.

NRC, 2019. E-mail from R. Burrows, US NRC, to W. Nelson, Crow Butte Resources, Inc., Acceptance review 2020 financial surety estimate, November 19, 2019, ADAMS Accession No. ML19323D324.

NRC, 2018. Crow Butte Resources, Inc., Materials License SUA-1534, Amendment No. 4, December 14, 2018, ADAMS Accession No. ML18268A212.

NRC, 2009. Letter from K. McConnell, US NRC, to L. Teahon, Crow Butte Resources, Inc., License Amendment No. 24, 2009 Surety Update, October 21, 2009, ADAMS Accession No. ML092220124.

NRC, 2003. NUREG-1569, "Standard Review Plan for In Situ Leach Uranium Extraction License Applications—Final Report." June 2003.