



CAMECO RESOURCES

Corporate Office
2020 Carey Avenue
Suite 600
Cheyenne, WY
82001 USA

Tel: (307) 316-7600
Fax: (307) 635-9949
www.cameco.com

April 30, 2013

Andrew Persinko, Deputy Director
Decommissioning and Uranium Recovery Licensing Directorate
Division of Waste Management and Environmental Protection
Office of Federal and State Materials and Environmental Management Programs
U.S. Nuclear Regulatory Commission
Mail Stop T8-F5
Washington D.C. 20555-0001

Subject: Request for Alternate Decommissioning (Groundwater Restoration)
Schedule – Mine Unit #3
Source Materials License SUA-1534
Docket Number 40-8943

Dear Mr. Persinko:

Introduction

As you are aware, by letter dated February 8, 2012, Cameco Resources requested a 10 CFR § 40.14(a) exemption from the requirements of 10 CFR § 40.42, as applied to groundwater restoration schedules. Although submission of this request is required by regulation, it should not be interpreted in a manner that waives the request for exemption.

In conformance with 10 CFR Part 40.42(d), Cameco Resources – Crow Butte Operation (CBO) must notify the Nuclear Regulatory Commission (NRC) and initiate decommissioning (groundwater restoration) in accordance with its approved restoration plan within 60 days of a decision to permanently cease injection of lixiviant in a particular mine unit. By letter dated April 19, 2004, License Amendment 17 to Source Material License SUA-1534, NRC approved CBO's request to amend License Condition 10.3C to incorporate by reference the Groundwater Restoration Plan (Revision 3). Also, CBO's Underground Injection Control (UIC) Permit Number NE0122611 issued by the Nebraska Department of Environmental Quality (NDEQ) requires that CBO submit a plan to restore each mine unit after the cessation of mining activities. As specified in 10 CFR Part 40.42(h)(1), CBO must also complete mine unit restoration within 24 months after mine unit restoration is initiated. If mine unit restoration requires more than 24 months, 10 CFR Part 40.42(h)(2)(i) allows the NRC to approve a request for an alternate schedule for completion of decommissioning if certain conditions are met. By letter dated July 24, 2009, CBO submitted a request to NRC for an alternate decommissioning (groundwater restoration) schedule for Mine Unit 3.

By letter dated August 20, 2009 and Technical Evaluation Report dated August 5, 2009, the NRC approved CBO's request to complete groundwater restoration in Mine Unit 3 by July 1, 2013.

Based on the conditions that are included in the following summary of the restoration activities at CBO, CBO is requesting a revision to the approved restoration date.

Mine Unit 3

The restoration plan for this mine unit was submitted to NDEQ on March 24, 1999 and was amended and approved by NDEQ in a letter dated February 13, 2008. The injection of lixiviant into this mine unit was ceased on July 22, 1999. Since that time period, the mine unit has been in IX and RO treatment with the following exception.

On August 9, 2007 the entire restoration circuit was shut down so that changes could be made to increase the flow through IX and RO treatment. During this time period the mine unit was in recirculation to maintain a hydrologic bleed until April 1, 2009, when IX treatment resumed in this mine unit. On May 26, 2009, the RO circuit was restarted and this mine unit was placed back into RO treatment.

In February 2009, Crow Butte contracted with a third party hydrogeologist to develop a restoration flow model for Mine Units 2 through 5. The groundwater flow at the facility was simulated using MODFLOW2000, a three-dimensional groundwater flow model developed by the United States Geological Survey. The groundwater flow model was calibrated to pre-mining conditions using water level data collected prior to the mining activities in January 1983. Initial estimates of aquifer properties and boundary water levels were adjusted slightly as part of the model calibration process in order to achieve the best possible match between observed and simulated water levels. The calibrated groundwater flow model is currently being used to optimize restoration in Mine Units 2 through 5 given certain practical limitations on treatment rates, disposal capacity, and existing well injection and extraction rates. The model is calibrated periodically to reflect current mine conditions. Based on this model, eight additional restoration wells were installed to remediate the excursion of lixiviant along the perimeter monitor wells PR-8, PR-15, and IJ13-P. On February 1, 2010 the Safety Environmental Review Panel approved the startup of these additional wells.

Based on these conditions, it is estimated that Mine Unit 3 will be placed into stability monitoring by June 1, 2013 and complete restoration including regulatory approval by July 1, 2016.

Restoration Upgrade

On August 9, 2007 the restoration circuit was shut down so that the following changes could be made to the circuit. 1. Three exiting IX Treatment columns were moved from the Central Processing Plant to the RO Building. An additional IX column and piping were added to this circuit increasing the IX Treatment flow from 750 GPM to 1000 GPM. 2. The two existing RO units were decommissioned and a new unit was constructed so that the RO Treatment flow could be increased from 100 GPM to 600 GPM. 3. Extensive piping changes were made in the wellfields so that the mine units in restoration could be isolated from the Central Processing Plant. 4. Piping changes were made to the waste water circuit to handle the increased restoration flow. This included re-tubing of the deep disposal well from 2.375 inch to 4 inch stinger pipe and the addition of two new transfer lines from the Central Processing Plant to the Commercial Evaporation Ponds and the Deep Disposal Well. 5. A consultant was hired to do hydrologic modeling and sequencing of the mine units in restoration. 6. IX Treatment was re-started on April 1, 2009 and RO Treatment was re-started on May 26, 2009. 7. Two additional IX columns were added in 2011 bring the total IX flow capacity to 1500 GPM. 8. In 2011 a new addition was added to the south side of the RO Building so that additional RO units could be installed. On November 6, 2013 two additional 250 GPM RO units were put into operation

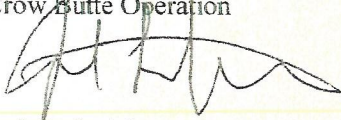
increasing the RO Treatment flow from 600 GPM to 1100 GPM. 9. On November 29, 2011, Crow Butte began operating a second deep disposal well. The well was installed to help accommodate the disposal of additional waste water generated by the increased RO flow.

Conclusion

The size of the mine units, flow and piping capacity of the restoration circuit, deepwell disposal capacity, and the need to maintain a hydrologic balance between the mining and restoration units, creates a technical barrier for restoring each mine unit in a two year period. CBO believes that the alternate schedule is technically feasible and will not be detrimental to the public health and safety and is otherwise in the public interest.

If you have any questions, please feel free to contact me at (307)-316-7600.

Sincerely,
Cameco Resources
Crow Butte Operation



Josh Leftwich
Director SHEQ

Attachments: As Stated

cc: Shar Sapp - NDEQ
CBO - File
ec: CR - Cheyenne