

**CROW BUTTE RESOURCES, INC.**

216 Sixteenth Street Mall, Suite 810  
Denver, Colorado 80202

(303) 825-2266  
(303) 825-1544 - FAX

---

October 21, 1996

Mr. Joseph J. Holonich, Chief  
Uranium Recovery Branch  
Division of Waste Management, NMSS (T-7-J9)  
Office of Nuclear Material Safety & Safeguards  
U.S. Nuclear Regulatory Commission  
11545 Rockville Pike  
Rockville, MD 20850

RE: Docket No. 40-8943  
License No. SUA-1534  
Notification of Process Modification

Dear Mr. Holonich:

Crow Butte Resources (CBR) is presently authorized to operate at a flow rate of 5,000 gallons per minute (gpm). The present flow rate was authorized by Amendment No. 34, issued March 14, 1996. As part of the Amendment process, the USNRC prepared an Environmental Assessment (EA) to evaluate the impact of the increased flowrate. The EA evaluated the impact from a 5,000 gpm production flowrate and 1,000 gpm of restoration flow. The production flow rate estimate included 3,500 gpm of upflow ion exchange processing and 1,500 gpm of processing in pressurized downflow ion exchange columns. Under the conditions evaluated, the annual Radon emissions were 4,904 curies and the potential total effective dose equivalent (TEDE) to the most affected residence was 20.3 mrem per year or 20.3% of the public dose limit of 100 mrem/year found in 10CFR20.1301.

By this notification, CBR is requesting authorization to operate at a flow of 5,000 gpm using the existing upflow ion exchange columns and 1,000 gpm of restoration flow. This process change will result in an increase in the Radon emissions from 4904 curies per year to 5937 curies per year. The increase in the amount of Radon released is due to the higher Radon release rate (100%) when using upflow ion exchange columns as compared to the release rate (approximately 10%) when using pressurized downflow ion exchange columns. The calculations used to derive the Radon Source Term are found in Appendix A.

[960234.015] October 4, 1996

9610300255 961021  
PDR ADOCK 04008943  
C PDR

NL051

Mr. Joseph J. Holonich

October 21, 1996

page 2

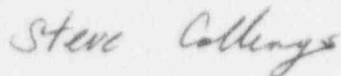
The impacts of this process change have been evaluated and follow.

1. The in-plant radiological impact from the proposed process change will be insignificant since all of the Radon is vented to the atmosphere by a Radon exhaust system which vents through a single point source 15.9 meters above the plant foundation.
2. Radiological impacts to the public will be below the NRC regulatory limit. The proposed process change will result in a 21.1% increase in Radon emissions. The maximum potential dose to the receptor located one kilometer from the discharge point based on the previous MILDOS run was 20.3 mrem/year. CBR recognizes that dose does not increase linearly relative to the Radon emissions but CBR conservatively estimates that the 21.1% increase in Radon emission will increase the maximum potential dose to less than 30 mrem/year. Since this is still a small fraction of the regulatory limit, CBR does not feel it is necessary to run MILDOS for this process change.
3. The process change will have no impact on liquid effluents.

CBR would appreciate a timely review of this minor process modification, and if you need any further information please contact the undersigned.

Sincerely,

CROW BUTTE RESOURCES, INC.



Steve Collings

SC/dfm  
enc.