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

April 22, 1999

Mr. Michael L. Griffin
Manager of Environmental and Regulatory Affairs
Crow Butte Resources, Inc.
86 Crow Butte Road
P.O. Box 169
Crawford, NE 69339-0169

SUBJECT: COMPLETION OF REVIEW OF REQUEST TO REMOVE RESTRICTED AREA BOUNDARY CONDITION AND ADD A PERIMETER MONITOR WELL CONDITION OF SOURCE MATERIAL LICENSE SUA-1534 CROW BUTTE URANIUM PROJECT, NEBRASKA

Dear Mr. Griffin:

The U.S. Nuclear Regulatory Commission (NRC) staff has completed its review of the request from Crow Butte Resources, Inc. to amend Source Material License SUA-1534, submitted by letters dated March 12, 1999, March 22, 1999, and March 30, 1999. The requests propose that the restricted area boundary be changed for part of the Reverse Osmosis Building, that License Condition 9.14 be removed, and that a condition specifying spacing requirements for perimeter monitor wells be added.

Based on its review, the staff approves the licensee's request to change the restricted area boundary for part of the Reverse Osmosis building and to remove License Condition 9.14. The staff concludes that the changes to the restricted area are adequate to protect the health and safety of the employees and the public. The staff also concludes that 10 CFR 20.1402 adequately defines criteria for the location of restricted area boundaries. Therefore, it can be the responsibility of the licensee to determine if the location of restricted area boundaries meet the requirements of 10 CFR 20.

The spacing of perimeter monitor wells are usually conditioned in NRC licenses for *in situ* leach uranium recovery facilities. This condition insures that an adequate number of monitor wells are constructed at appropriate intervals and distances from the well field. In agreement with the licensee, the staff has added License Condition 10.16, which specifies the spacing of perimeter monitor wells. This license condition is in agreement with the licensee's Underground Injection Control Program license with the State of Nebraska and, therefore, does not impose additional monitoring costs on the licensee.

If you have any questions concerning this amendment, please contact the NRC Project Manager, Mr. William Ford, at (301) 415-6630.

Sincerely,

Original Signed By

N. King Stablein, Acting Chief
Uranium Recovery and
Low-Level Waste Branch
Division of Waste Management
Office of Nuclear Material Safety
and Safeguards

Docket No. 40-8934
License No. SUA-1534

Enclosure: As stated

cc: H. Borchert, RCPD, NE
NDEQ
PDR, NE

Case Closed: L51799

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If you have any questions concerning this amendment, please contact the NRC Project Manager, Mr. William Ford, at (301) 415-6630.

Sincerely,

N. King Stablein, Acting Chief
Uranium Recovery and
Low-Level Waste Branch
Division of Waste Management
Office of Nuclear Material Safety
and Safeguards

Docket No. 40-8934
License No. SUA-1534

Enclosure: As stated

cc: H. Borchert, RCPD, NE
NDEQ
PDR, NE

TECHNICAL EVALUATION REPORT

DATE:	**April 08, 1999**
DOCKET NO.:	**40-8943**
LICENSE NO.	**SUA-1534**
LICENSEE:	**Crow Butte Resources, Inc.**
FACILITY:	**Crawford, Nebraska**
PROJECT MANAGER:	**William Ford**
TECHNICAL REVIEWERS:	**William Ford (Hydrogeologist)** **John Lusher (Health Physicist)**

SUMMARY AND CONCLUSIONS:

In letters dated March 12, 1999, March 22, 1999, and March 30, 1999, it was requested that the restricted area boundary be changed for part of the Reverse Osmosis Building, that License Condition 9.14 be removed and that Crow Butte Resources, Inc. (CBR) be allowed to change restricted area boundaries in accordance with performance-based License Condition 9.4, which allows CBR to make changes in the facility, process, or procedures based on evaluations and determinations made by the CBR Safety and Environmental Review Panel. Additionally, CBR will continue to meet the requirements of 10 Code of Federal Regulations (CFR) Part 20 and 40.

It was also agreed that a license condition specifying spacing requirements for perimeter monitor wells should be added. This Technical Evaluation Report documents the results of the NRC staff's review of the amendment.

Based upon information provided by the licensee, the U.S. Nuclear Regulatory Commission staff approves the change in the restricted area boundary for the Reverse Osmosis building. The staff also approves the license amendment requests.

DESCRIPTION OF LICENSEE'S AMENDMENT REQUEST:

License Condition 9.14 states that "The boundaries of the licensee's restricted area shall be those identified in the submittal dated April 22, 1996." The licensee proposes to change the boundary of the restricted area identified in the April 22, 1996, submittal for the reverse osmosis building. This building was originally used as the recovery plant during research and development at Crow Butte in the mid 1980's. Since the construction of the commercial plant, the building has been used to house the reverse osmosis system and other equipment used in

mine restoration. The west end of the building is currently used for construction and maintenance activities associated with mine unit development.

The licensee plans to construct a solid metal wall to separate the restricted and unrestricted portions of the Reverse Osmosis Building. The licensee also proposes that License Condition 9.14 be removed, and that a condition specifying spacing requirements for perimeter monitor wells be added.

TECHNICAL EVALUATION:

Based on its review, the staff approves the licensee's request to change the restricted area boundary for part of the Reverse Osmosis building and to remove License Condition 9.14. CBR has requested an amendment to release the west end of the Reverse Osmosis Building from the restricted area boundaries. The construction and maintenance activities performed in this area are associated with mine unit development, so none of the work involves contaminated tools or materials. Another shop area is located in the restricted area at the Main Plant that allows work on contaminated materials or equipment. Since the entire Reverse Osmosis Building is currently part of the designated restricted area, CBR must perform release surveys on all items leaving the work area. As a result, CBR is taking new and uncontaminated materials into the area to perform work and then must perform release surveys to remove them from the area.

CBR plans to construct a solid metal partition wall between the restricted and unrestricted portions of the Reverse Osmosis Building. This wall will act to control the ingress and egress of personnel and equipment between the two areas. The wall will be sealed to the floor to protect the unrestricted area from potential contamination by any unintentional leaks or spills occurring from the reverse osmosis units. A door will be located in the wall to allow access between the areas. The door will be equipped with a frisker station for contamination control between the restricted and unrestricted portions of the building. Access control will continue to be implemented in accordance with CBR's approved program.

CBR shall perform a detailed release survey of the area prior to release for unrestricted status. The survey shall be performed in accordance with License Condition 9.8, which references "Guidelines for Decontamination of Facilities and Equipment Prior to Release for Unrestricted Use or Termination of Licenses for Byproduct, Source, or Special Nuclear Materials," dated May 1987. The survey shall include all structural surfaces and equipment in the unrestricted areas. CBR shall maintain the complete records of the release surveys at the mine for future inspection by the NRC.

The NRC staff concludes that the amendment request for the change of the west end of the Reverse Osmosis Building is appropriate. However, CBR needs to include the west end of the Reverse Osmosis Building in future unrestricted area surveys as indicated in Section 5.0 of the application.

The staff also concludes that 10 CFR 20.1402 adequately defines criteria for the location of restricted area boundaries. Therefore, it is appropriate for the licensee to make future changes to the location of restricted area boundaries as long as those changes meet the restricted area requirements of 10 CFR 20.

The spacing of perimeter monitor wells is usually conditioned in NRC *in situ* leach uranium recovery facility licenses. This condition ensures that an adequate number of monitor wells are constructed at appropriate intervals and distances from the well field. Therefore, the staff, in agreement with the licensee, has added License Condition 10.16. This license condition is in agreement with the licensee's Underground Injection Control Program license with the State of Nebraska and, therefore, does not impose additional monitoring costs on the licensee. This license condition is more conservative than recommended perimeter monitor well locations identified in NRC, 1997 (pages 5-40) and is, therefore, acceptable to the NRC staff.

SUMMARY:

As discussed above, the staff approves the new restricted area boundary, the removal of License Condition 9.14, and the addition of License Condition 10.16.

RECOMMENDED LICENSE CHANGE:

Pursuant to Title 10 of the Code of Federal Regulations, Part 40, Source Material License SUA-1534 is amended by revising License Condition No. 9.4 and adding 10.16 as follows:

9.14 Deleted by amendment number four.

10.16 Production zone monitor wells drilled after April 1999 shall be spaced no greater than 300 feet from a mine unit and no greater than 400 feet between the wells.

ENVIRONMENTAL IMPACT EVALUATION:

Approval of this amendment request will not result in increased environmental impacts because the restricted area boundary and future restricted area boundary will comply with 10 CFR 20, which will assure that radiological hazards are at acceptable levels. This amendment will also appropriately condition the spacing of perimeter monitor wells so that groundwater quality is adequately monitored and protected.

References Cited:

U.S. Nuclear Regulatory Commission, 1997, "Draft Standard Review Plan for In Situ Leach Uranium Extraction License Applications," NUREG-1569