January 22, 2007

Mr. John McCarthy
Manager-Health, Safety
and Environmental Affairs
Power Resources, Inc.
P.O. Box 1210
Glenrock, WY 82637

SUBJECT: REQUEST TO REVISE RADIOLOGICAL DOSE ASSESSMENT- SMITH RANCH-HIGHLAND URANIUM PROJECT NRC LICENSE SUA-1548 - CONSTRUCT NEW SATELLITE FACILITY (TAC NO. J00504)

Dear Mr. McCarthy:

As part of the U.S. Nuclear Regulatory Commission (NRC) staff's evaluation of Power Resources, Inc's October 11, 2006, request to construct *In Situ* Leach (ISL) Satellite SR-2 at the Smith Ranch-Highland Uranium Project (SR-HUP) facility, staff has reviewed existing radiological dose assessment calculations for the SR-HUP facility, including MILDOS-AREA radiological dose estimates for the Smith Ranch contained in Rio Algom Mining Corp.'s Smith Ranch Source Material License SUA-1548 Application (Volumes IV and V), dated October 26, 1999 (RAMC 1999). Additional radon source term calculations contained in Table 4-1 of Power Resources Inc.'s SR-HUP Source Material License SUA-1548 Application (Volume I) dated May 6, 2003 (PRI 2003), were also reviewed.

Staff has provided the following comments:

1. The source term values and sequence of wellfield operations contained in the cumulative average annual source terms spreadsheet in Table 4.1 (PRI 2003) and source parameter input for the MILDOS-AREA radiological dose estimates (RAMC 1999) are not consistent. Both appear to be based on outdated assumptions concerning projected operating periods.

2. The source term values contained in Table 4.1 (PRI 2003) and source parameter input for the MILDOS-AREA radiological dose estimates (RAMC 1999) appear to be based on the assumption that process streams, from production and injection wells to ion exchange (IX) columns in the Smith Ranch Central Processing Plant (CPP) and satellite facilities, are all in a closed-loop circuit. However, no rationale for this assumption has been provided.

3. Radon source terms used in the MILDOS-AREA radiological dose estimates appear to account for only the venting component of the source terms. Radon sources related to IX columns and wastewater (Smith Ranch CPP and satellites facilities), and restoration (wellfields) do not appear to be included in the simulation.

4. The Smith Ranch dose assessments do not account for any contribution from the Highland facility, despite the fact that Highland's Satellite #3, an operating facility, is located approximately 3 miles east of the Smith Ranch CPP.

5. The discussion of the Smith Ranch MILDOS-AREA radiological dose estimates (RAMC 1999, Appendix I, pages 1-4 and 1-5) contain a recommendation that two locations at the nearest downwind points of the prevailing wind direction for SR-2 and CPP should be monitored during a portion of the mine life; however, this recommendation does not appear to have been implemented.

10 CFR Part 51.60 (a) requires a licensee to update or supplement a previously performed environmental evaluation for subsequent amendments, as appropriate. Consequently, please submit an updated radiological dose assessment for the entire SR-HUP facility, including both Smith Ranch and Highland. The analytical derivation, as well as the rationale for including or excluding radiological source terms in the assessment, should be provided. With respect to MILDOS-AREA radiological dose estimates, where deviation from conservative input parameters occur, please provide justification for such deviations.

If you have any questions concerning this letter, please contact me, either by telephone at 301-415-7612 or, by e-mail, at pxm2@nrc.gov.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice for Domestic Licensing Proceedings and Issuance of Orders," 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 the NRC's agencywide Documents Access and Management system (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html.

Sincerely,

/RA/

Paul Michalak, Hydrogeologist
Uranium Recovery Licensing Branch
Decommissioning and Uranium Recovery
Licensing Directorate
Division of Waste Management
and Environmental Protection
Office of Federal and State Materials
and Environmental Management Programs

Docket No.: 40-8964
License No.: SUA-1548

4. The Smith Ranch dose assessments do not account for any contribution from the Highland facility, despite the fact that Highland's Satellite #3, an operating facility, is located approximately 3 miles east of the Smith Ranch CPP.

5. The discussion of the Smith Ranch MILDOS-AREA radiological dose estimates (RAMC 1999, Appendix I, pages 1-4 and 1-5) contain a recommendation that two locations at the nearest downwind points of the prevailing wind direction for SR-2 and CPP should be monitored during a portion of the mine life; however, this recommendation does not appear to have been implemented.

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