40-8989

DEC 17 1993

Ken Weaver
Environmental Protection
Specialist III
Radiation Control Division
Colorado Department
of Health
Mail Stop RCD-USP-B1
4300 Cherry Creek Drive South
Denver, CO 80222-1530

Dear Ken:

As you requested in our recent telephone conversation, I am transmitting under cover of this letter a copy of the Envirocare of Utah, Inc. license and two letters regarding Alternate Concentration Limits (ACL). If you have any questions regarding this information, please contact Myron Fliegel, of my staff, at (301) 504-2155.

Sincerely,

(SIGNED) PAUL H. LOHAUS

Joseph J. Holonich, Chief
Uranium Recovery Section
Division of Low-Level Waste Management
and Decommissioning
Office of Nuclear Material Safety
and Safeguard

TICKET:
DISTRIBUTION: Central File LLUR r/f NMSS r/f JHolonich MFliegel
SWastler
(w/o encl.)

Mark Small Boxes in Concurrence Block to Define Distribution Copy Preference.
In small Box on "OFC" line enter: C = Cover; E = Cover & Enclosure; N = No Copy

* SEE PREVIOUS CONCURRENCE

| OFC | LLUR* | | LLUR* | | LLUR | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NAME | SWastler | | MFliegel | | JHolonich | | | | | | |
| DATE | 12/15/93 | | 12/16/93 | | 12/17/93 | | | | | | |

S:\LLWMTYPE\JOAN\INFO.CDH OFFICIAL RECORD COPY

In small Box on "DATE" line enter: M = E-Mail Distribution Copy; H = Hard Copy

PDR: YES X NO ___ Category: Proprietary ___ or CF Only ___
ACNW: YES ___ NO X
IG: YES ___ NO X Delete file after distribution: Yes ___ No ___





delete: ACNW

NL17

Ken Weaver
Radiation Control Division
Colorado Department
of Health
Mail Stop RCD-USP-B1
4300 Cherry Creek Drive South
Denver, CO 80222-1530

Dear Ken:

As you requested in our recent telephone conversation, I am transmitting under cover of this letter a copy of the Envirocare of Utah, Inc. license and two letters regarding Alternate Concentration Limits (ACL). If you have any questions regarding this information, please contact me at (301) 504-3439, or Myron Fliegel, of my staff, at (301) 504-2155.

Sincerely,

Joseph H. Holonich, Chief
Uranium Recovery Section
Division of Low-Level Waste Management
and Decommissioning
Office of Nuclear Material Safety
and Safeguard

TICKET:
DISTRIBUTION: Central File LLUR r/f NMSS r/f JHolonich MFliegel
SWastler

Mark Small Boxes in Concurrence Block to Define Distribution Copy Preference.
In small Box on "OFC" line enter: C = Cover; E = Cover & Enclosure; N = No Copy

* SEE PREVIOUS CONCURRENCE

| OFC | LLUR | | LLUR | | LLUR | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| NAME | SWastler | | MFliegel | | JHolonich | | | | | |
| DATE | 12/15/93 | | 12/ /93 | | 12/ /93 | | | | | |

S:\LLWMTYPE\JOAN\INFO.CDH OFFICIAL RECORD COPY
In small Box on "DATE" line enter: M = E-Mail Distribution Copy; H = Hard Copy

PDR: YES X NO ___ Category: Proprietary ___ or CF Only ___
ACNW: YES ___ NO X
IG: YES ___ NO X Delete file after distribution: Yes X No ___

# MATERIALS LICENSE

Pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974 (Public Law 93-438), and Title 10, Code of Federal Regulations, Chapter I, Parts 30, 31, 32, 33, 34, 35, 39, 40 and 70, and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, possess, and transfer byproduct, source, and special nuclear material designated below; to use such material for the purpose(s) and at the place(s) designated below; to deliver or transfer such material to persons authorized to receive it in accordance with the regulations of the applicable Part(s). This license shall be deemed to contain the conditions specified in Section 183 of the Atomic Energy Act of 1954, as amended, and is subject to all applicable rules, regulations and orders of the Nuclear Regulatory Commission now or hereafter in effect and to any conditions specified below.

| Licensee | |
|---|---|
| 1. Envirocare of Utah, Inc.<br>2. 46 W. Broadway<br>Suite 240<br>Salt Lake City, Utah 84101 | 3. License number SMC-1559<br>4. Expiration date November 30, 2003<br>5. Docket or Reference No 40-8989 |

| 6. Byproduct, source, and/or special nuclear material | 7. Chemical and/or physical form | 8. Maximum amount that licensee may possess at any one time under this license |
|---|---|---|
| 11e.(2) byproduct material | Packaged or Bulk Radioactive Waste | 3.3 Million Cubic Yards |

This license shall be deemed to contain and is subject to the conditions specified in the Commission's regulations set forth in 10 CFR Chapter I, Parts 19; 20; 21; 40, including Appendix A; 51; 61.80; and 61.82 and is subject to the rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:

## SECTION 9.0: Administrative Conditions

9.1 All notices to the Nuclear Regulatory Commission required under this license shall be addressed to the Chief, Uranium Recovery Branch, Division of Low-Level Waste Management and Decommissioning, Office of Nuclear Material Safety and Safeguards.

9.2 Authorized place for use shall be the licensee's facility located in Section 32 of Township 1 S, Range 11 W, Tooele County, Utah, near Clive.

9.3 Authorized use is for the receipt, storage, and disposal of 11e.(2) byproduct material in accordance with statements, descriptions, and representations contained in the licensee's application, including appendices, submitted by cover letter dated 12/23/91; as amended by page changes submitted on 07/02/92, 08/10/92, 04/05/93, 04/07/93, 04/10/93, 05/03/93, 05/06/93, 05/11/93, 05/21/93, 07/1/93, 07/25/93, 8/3/93, 8/11/93, 8/19/93, and 8/25/93.

Notwithstanding the above, the following conditions shall override any conflicting statements contained in the licensee's application and supplements.

9.4 The licensee shall prepare and record an environmental evaluation of any activity not previously assessed by the NRC before engaging in the activity. When the evaluation indicates that such activity may result in a significant adverse environmental impact that was not previously assessed or that is greater than that previously assessed, the licensee shall provide to the NRC, for review

and approval, a written evaluation of the activity prior to engaging in the activity.

9.5 In order to assure that no unapproved disturbance of cultural resources occurs, the licensee shall cease any work resulting in the discovery of previously unknown cultural artifacts and report the discovery, in writing, to the NRC and the Utah State Historic Preservation Office (SHPO). The artifacts shall be inventoried and evaluated in accordance with 36 CFR Part 800, and no disturbance shall occur until the licensee has received written authorization from the NRC to proceed.

9.6 Prior to the initial receipt and storage of any 11e.(2) byproduct material at the site, the licensee shall:

a) establish and implement standard operating procedures (SOPs) for all operational activities involving the handling, storing or disposing of radioactive materials. SOPs for operational activities shall enumerate pertinent radiation safety practices to be followed. In addition, SOP's shall be established and implemented for nonoperational activities to include environmental monitoring, bioassay analysis, and instrument calibration. An up-to-date copy of each written SOP, as controlled under the quality assurance (QA) procedures, shall be kept in each area where it is used.

b) submit and obtain NRC approval on the trust agreement, allowing at least 120 days for NRC review. The separate trust for the 11e.(2) byproduct material disposal facility should be fully funded and executed. In accordance with the Branch Technical Position (BTP) on "Financial Assurances For Reclamation, Decommissioning, and Long-Term Surveillance and Control of Uranium Recovery Facilities" (December, 1988), the licensee shall submit an executed and fully-funded trust fund agreement, it should contain the following:

1) The trust fund agreement should be worded as recommended in Appendix D of the BTP.

2) The trust agreement should be signed by the applicant and the trustee and be properly notarized.

3) Two corporate officers, preferably the president and vice-president, should sign the instrument and should indicate their legal capacity.

4) The trust fund will be funded. The trust must contain sufficient assets to accomplish decommissioning, reclamation, and long-term surveillance and control of the applicant's facility. Based on the cost estimates in the license application (8/25/93 revision), along with the long-term surveillance and control fund figure being adjusted by $33,000.00 to reflect 1993 dollars, the trust should be funded in an amount no less than $2,386,698.00.

5) Schedule A of the trust agreement should include the NRC license number and the cost estimate applicable to the agreement. Specification of this information is necessary to inform the trustee of essential terms of the agreement.

c) establish and obtain NRC approval of procedures to ensure that all wastes, other than 11e.(2) byproduct material, are precluded from disposal in the NRC licensed disposal site. The procedures should include obtaining, from the generator or owner of the wastes, certification by a responsible company authority, that the material is 11e.(2) byproduct material, and does not contain other radioactive waste or hazardous waste. The

certification should be based on generator or owner documentation of the source or origin of the waste. The certification should also include documentation as to the non-radiological constituents in the waste.

d) submit and obtain NRC approval of the detailed description of the as-low-as-reasonably-achievable (ALARA) program. The description shall address the detailed procedures for significant elements of the ALARA program, specifically ALARA philosophy and goals, responsibilities for overseeing and revising the ALARA program, ALARA program audit functions, respiratory protection, effluent controls, facility equipment design, ALARA training, and fire control.

e) modify the Quality Control/Quality Assurance Plan to provide quality controls for waste sampling, characterization, and classification as higher or lower specific activity waste. The plan must also be modified to provide controls for the quality of the protective equipment (e.g., anticontamination clothing and equipment that meets the ANSI Z-88.2 guidance (ANSI, 1989)) and respiratory protection equipment.

f) design and implement an effective air sampling program in the work place based on Revision 1 to NRC Regulatory Guide 8.25 (1992) entitled "Air Sampling in the Workplace," or an equivalent program.

9.7 Prior to the initial disposal of 11e.(2) byproduct material, the licensee shall:

a) conduct appropriate tests and demonstrate that the test results verify the compatibility of the waste leachate solution and clay material proposed for use as the bottom liner of the disposal cell. These tests should demonstrate that no significant deterioration of permeability or stability properties will occur with continuous exposure of clay to waste leachate solution and that the integrity of the liner will not be impaired with time. Representative waste solutions and clay material samples shall be used in conducting these tests, and the tests shall be carried out by a licensed laboratory, under the supervision of qualified staff, and according to established industry standards. If the proposed clay material fails the compatibility test, the licensee shall, by license amendment, make any needed changes to proposed clay material, and conduct testing of the alternative clay sources as described above to demonstrate compatibility. The licensee shall submit a report fully documenting the testing and the test results to NRC for approval.

b) notify the NRC at least 30 days prior to initial disposal of 11e.(2) byproduct material disposal so that an "as built" inspection may be scheduled.

c) develop and obtain NRC approval of the detailed construction specifications for the disposal site. Construction specifications must be available for the "as built" inspection.

In the area of erosion protection, the licensee shall provide construction specifications which address the extent of testing, testing frequency, and number of tests in the areas of riprap durability, gradation, and placement.

In the areas of geotechnical engineering/construction, the licensee shall provide construction specifications which address the extent of testing, testing frequency, and number of tests for the following:

1. In-place density
2. Moisture-density relations

3. Soil gradation
4. Atterburg limits
5. Specific gravity
6. Moisture content
7. Microwave oven moisture comparisons (if applicable)
8. Verification of lift thickness
9. Bentonite content of amended soils
10. Permeability
11. Shrinkage/dispersive characteristics
12. Resistance to freeze-thaw
13. Chemical compatibility
14. Settlement monitoring

In addition, the licensee shall provide alternate specifications for situations in which the material is untestable due to excessive percentage of coarse material. Both laboratory and field control procedures shall be covered in the specifications.

The licensee shall conduct a comprehensive laboratory control program to assure that equipment and operations are in accordance with applicable guidelines. Furthermore, the licensee shall maintain adequate records such that test records and locations can be confirmed, and so that re-test of failing areas can be confirmed.

The licensee shall include in the specifications procedures to insure that the cover is constructed with a lower hydraulic conductivity than the bottom liner, which may require the addition of blended bentonite to the cover, or other methodology approved by the NRC.

d) establish and submit for NRC approval the baseline background ground-water quality for each of the constituents in the hazardous constituent list (license condition 11.1) in each monitoring well. The licensee shall base these values on the analysis of representative samples for at least one full year for each of the monitoring wells included in the proposed preoperational monitoring program for the disposal site area.

9.8 The licensee shall have all written SOP's reviewed and approved by the CRSO, or designate, qualified by way of specialized radiation protection training equivalent to that required for the CRSO as defined in LC 9.10, before being implemented and whenever a change in a procedure is proposed.

9.9 Any change to the licensee's corporate organizational structure, as presented in the license application, affecting the assignment or reporting responsibility of the radiation staff shall require approval by the Chief, Uranium Recovery Branch, Division of Low-Level Waste Management and Decommissioning, Office of Nuclear Material Safety and Safeguards.

9.10 The licensee shall have a CRSO responsible for the site who shall report directly to the Executive Vice-President on matters dealing with radiological safety aspects of the licensed facility. In addition to the responsibilities and qualifications specified in the licensee's application, the CRSO, or his designate shall be qualified as specified in Sections 1.2 and 2.4 of Regulatory Guide 8.31, "Information Relevant to Ensuring that Occupational Radiation Exposures at Uranium Mills will be As Low As Reasonably Achievable," dated May 1983. In addition, the CRSO, or his designate shall have the authorities and responsibilities recommended in Section 2.1 of NRC Regulatory guide 8.31. The CRSO shall also receive 40-hours of related health and safety refresher training every two years.

The Field Radiation Safety Officer (FRSO) is responsible to the CRSO and works very closely with the Site Manager. Individuals designated as Radiation Technician (RT) and Radiation Monitor (RM) shall report to the Site Manager and the FRSO on matters dealing with radiological safety. In addition, the CRSO, or his designate shall be accessible to the FRSO, RT, and RM at all times. In addition to the responsibilities and qualifications specified in the license application, the FRSO, RM, and RT shall have qualifications as specified in Section 2.4 of Regulatory Guide 8.31, or equivalent. Any person newly hired as an FRSO, RT, and RM shall have all work reviewed and approved by the CRSO as part of a comprehensive training program until appropriate course training is complete, and for at least 6 months from the date of appointment.

For the purposes of this license condition, reference to "uranium mill" or "milling" in NRC Regulatory Guide 8.31 shall mean the licensee's facility and authorized activities.

9.11 The licensee shall conduct:

a) annual training for its facility inspectors that covers all areas included in the daily inspections of the 11e.(2) byproduct material and the disposal area.

b) annual operational training that covers all aspects of operational safety and emergency procedures for all employees. The SOP's will be used to conduct operations training to assure consistency and thoroughness.

9.12 The licensee shall maintain an NRC-approved financial surety arrangement, consistent with 10 CFR 40, Appendix A, Criterion 9, adequate to cover the estimated costs, if accomplished by a third party, for completion of the NRC approved reclamation/decommissioning plan including; above-ground decommissioning and decontamination and groundwater restoration, as warranted.

Annual updates to the surety amount, required by 10 CFR 40, Appendix A, Criterion 9, shall be provided to the NRC at least 3 months prior to August 21 of each year. If the NRC has not approved a proposed revision 30 days prior to the expiration date of the existing surety arrangement, the licensee shall extend the existing arrangement, prior to expiration, for 1 year. Along with each proposed revision or annual update of the surety, the licensee shall submit supporting documentation showing a breakdown of the costs and the basis for the cost estimates with adjustments for inflation, maintenance of a minimum 15 percent contingency, changes in engineering plans, activities performed, and any other conditions affecting estimated costs for site closure. The licensee must also ensure that the surety covers the above-ground decommissioning and decontamination, soil and water sample analyses, and ground-water restoration associated with the site. The basis for the cost estimate is the NRC approved reclamation/decommissioning plan or the NRC-approved revisions to the plan.

Envirocare of Utah, Inc. shall continuously maintain a currently approved surety instrument, in favor of the Federal Government for the purpose of complying with 10 CFR Part 40, Appendix A, Criterion 9, until a replacement is authorized by the NRC.

9.13 The licensee shall require a radiation work permit (RWP) for work where the potential for significant exposure to radioactive materials exists and for which no SOP exists. Such permits shall describe the following:

a) The scope of work to be performed.

b) Any precautions necessary to reduce exposure to uranium or thorium and their daughters to ALARA levels.

c) Any supplemental radiological monitoring and sampling required during and following completion of the work. Nonroutine maintenance involving exposure of workers to airborne particulates of uranium and its daughters shall require the use of continuous breathing zone monitoring.

The CRSO, or designate, qualified by way of special radiation protection training equivalent to that required for the CRSO as defined in LC 9.10, shall indicate by signature, the review and approval of each RWP, prior to the initiation of the work.

9.14 The licensee shall provide SOP's for controlling internal contamination of workers from dust inhalation, which shall include the use of dust suppressants (e.g., magnesium chloride or water) on all operational roads, as necessary.

9.15 The licensee shall have the CRSO, or designate, qualified by way of specialized radiation protection training equivalent to that required for the CRSO as described in LC 9.11, perform qualitative respirator fit tests using irritant smoke for all employees required to wear respirators prior to the initial use of a respirator and annually thereafter. During the annual fit test, the CRSO shall ensure that the employee is correctly performing negative pressure fit checks and shall instruct the employee that the fit test is to be performed each time a respirator is donned and prior to entering an area where respirators are required. The licensee shall follow the guidance provided in Regulatory Guide 8.15 " Acceptable Programs for Respiratory Protection." The fit tests and fit instructions shall be documanted in the SOP's.

9.16 The licensee shall complete "as built drawings" of the facility on a annual basis. The "as built drawings" shall be certified by a professional engineer.

9.17 The licensee shall provide for an independent internal audit of facility operations to assure compliance with applicable regulations and license conditions. The licensee shall submit the qualifications of the consultant to conduct the independent audit and a summary of the proposed audit for NRC review and approval. The independent internal audit will be conducted annually. The contractor report shall be submitted as part of the annual report.

SECTION 10.0: Operational Controls, Limits, and Restrictions

10.1 The licensee shall restrict eating and drinking to the administrative offices and enclosed lunch areas that are separated from the disposal areas. With the exception of drinking from closeable containers, there will be no eating, drinking, smoking, defecating, or urinating in the restricted areas, at any time.

10.2 The licensee shall analyze and adequately characterize:

a) all incoming waste to identify any new hazardous constituents not listed in license conditio 11.1. The licensee shall develop and implement methodologies and procedures for systematic characterization and analysis of the incoming waste, so that any new hazardous constituents are identified. Furthermore, the licensee shall assume that the baseline background concentrations for any new constituents are below their detection levels, unles the licensee demonstrates to NRC staff satisfaction that the constituents will not reach the water table in one year and proceeds to establish background based on direct monitoring o these constituents in the Point of Compliance (POC) wells for one full year (see LC 9.7(d)).

b) the following key radon attenuation model parameter values during placement to verify that the values used in the licensee's radon attenuation model have been achieved: 1) porosity (calculated from as-placed density and specific gravity); 2) emanation factor (contaminated material only); and 3) diffusion coefficient for the upper ten feet of 11e.(2) byproduct material and the radon barrier material at several moisture levels, including the long-term moisture content value for that material. Testing shall be conducted at least once every 5000 cy of contaminated and radon barrier material placed or at least two every month of material placement. The licensee shall use American Society for Testing and Materials (ASTM) testing procedures, or the equivalent. Average values for each parameter will be calculated and provided in the semi-annual effluent and environmental monitoring reports (see L.C. 12.1).

c) the distribution of the $^{226}Ra$ and $^{230}Th$ concentrations in the 11e.(2) byproduct material in the upper 3.3 meters (10 feet) of the contaminated material to verify that the concentration in any lift does not exceed the values used in the radon attenuation model. The licensee shall measure the $^{226}Ra$ and $^{230}Th$ concentrations using standard analytical procedures, for every 3,000 cy of material placed for compaction or at least once a week during material placement. The data will include the elevation (or lift number) of the sample location. The results will be presented as average values for each lift in the semi-annual effluent and environmental monitoring report (see L.C. 12.1).

10.3 The licensee shall assume full responsibility for cleaning up the groundwater of all hazardous constituents detected at the POC in concentrations that exceed the limits specified in LC 11.1. It shall be assumed that the 11e.(2) disposal facility is the source of all of the hazardous constituents detected in the POC wells, unless it can be demonstrated to the NRC's satisfaction, based on field and laboratory data, that the 11e.(2) facility is not the source of particular constituents. NRC shall have the final decision concerning any claim by the licensee that the 11e.(2) facility is not the source of a particular constituent that is detected at the POC.

The licensee shall undertake corrective action to clean up groundwater contamination if and when required, no later than 18 months from the date when exceedence of a standard has first been discovered, and without taking credit for any delays caused by disagreements as to the source of contamination. The licensee shall consider and evaluate existing and new groundwater cleanup technologies, and provide a proposed cleanup program for effective restoration of the contaminated groundwater in the disposal site area for NRC approval prior to implementation.

10.4 The licensee shall continue groundwater and land surface monitoring at all POC locations throughout the post closure period until the disposal facility is transferred to long-term government custody.

10.5 The licensee shall implement the quality assurance plan as provided in the license application.

10.6 The licensee shall use the Environmental Protection Agency Paint Filter Liquid Test (SW-846, Method 9095) on radioactive waste shipments prior to acceptance on site to insure that the no waste is accepted for storage or disposal with free standing liquid.

10.7 The licensee shall, upon arrival of waste, ensure that wastes will be segregated into two categories of specific activities: lower activity and higher activity. The licensee shall not accept higher activity waste (those with average concentrations at or greater than 1,000 pCi/g for any radionuclide), unless it can be disposed of within 10 days of acceptance.

10.8 The licensee shall operate the facility in compliance with the following specifications:

a) The maximum bulk mass of waste disposed of annually will not exceed $4.536 \times 10^5$ tonnes ($5 \times 10^5$ tons).

b) The maximum annual disposal area will not exceed 229 m x 168 m (equivalent to 38,472 $m^2$).

c) The 11e.(2) waste will be disposed of in no more than two-thirds of the annual disposal area at any one time.

d) The total embankment capacity will not exceed $2.52 \times 10^6$ $m^3$ ($3.3 \times 10^6$ $yd^3$).

e) The maximum volume of waste that may be stored on site prior to disposal will not exceed $2.743 \times 10^4$ $m^3$ ($9.687 \times 10^5$ $ft^3$) at any one time.

f) Waste with an average concentration above 2,000 pCi/g for any radionuclide in the uranium series or above 6,000 pCi/g for any radionuclide in the thorium series in any truck load or railcar will not be accepted.

g) The annual bulk concentration of higher activity material at the site will be restricted to an average of 1,000 pCi/g for any radionuclide and to 10% of the bulk waste.

h) The yearly average concentrations of any radionuclide will be restricted to 500 pCi/g.

The licensee shall maintain the detailed documents demonstrating compliance with the above specifications on-site and summarize the data in the annual report.

## SECTION 11: Inspection, Monitoring, and Recording Requirements

11.1 The licensee shall conduct detection monitoring, compliance monitoring, corrective action monitoring, and post-closure monitoring in the POC wells as provided in the license application. The monitoring shall involve collecting representative samples from each POC well, including those POC wells defined in the license application and any new POC wells that may be added in the future. The water samples shall be analyzed for the hazardous constituents included in the following list, and for any new hazardous constituents that may be added to this list in the future, as a result of an adequate characterization of the incoming waste by the licensee during the facility operation, in conformance with license condition 10.2(a).

Arsenic
Barium
Beryllium
Cadmium
Chromium
Cyanide
Fluorine
Lead
Mercury
Molybdenum
Nickel
Selenium
Silver

Radium-226
Radium-228
Thorium-230
Thorium-232
Uranium

Acetone
2-Butanone
Chloroform
Carbon disulfide
1,2-Dichloroethane
Methylene Chloride
Naphthalene

Diethylphthalate
2-Methylnaphthalene

Detection monitoring shall involve quarterly sampling and analysis of the POC wells during the facility operation, for as long as the POC wells are contaminant-free. Compliance monitoring, which shall be triggered if one or more constituents are detected, and corrective action monitoring, which shall be triggered if the standards are exceeded and corrective action is implemented, shall involve quarterly sampling of the POC wells and analysis for those constituents requiring compliance/corrective action. Post-closure monitoring shall involve quarterly sampling and analysis of the POC wells. The licensee shall also be prepared to revise the frequency of sampling and analysis of the POC wells, if required by NRC based on data collected in the future in the disposal site area.

If a baseline background water quality (see LC 9.7(d)) for any of the above constituents is exceeded, or if a new hazardous constituent, identified based on waste characterization (see LC 10.2(a)) is detected, in a POC well, the licensee shall take a confirmatory sample within 24 hours and have it analyzed. Upon receipt of the sample analysis, if the second sample does not indicate exceedence/detection, a third sample shall be taken within 48 hours and analyzed. If neither the second nor third samples indicate exceedence/detection, the first sample shall be considered in error. If the second or third sample indicates exceedence/detection, the licensee shall establish and submit for NRC approval, within 30 days from the receipt of the analysis results, a compliance monitoring plan that shall include the licensee's proposed site-specific concentration limits for individual constituents that have been detected at the POC.

All water sampling and analysis activities shall be carried out in accordance with the sampling procedures of a certified laboratory. The sampling of the monitoring wells shall be conducted according to acceptable industry standards and in conformance to the proposed quality assurance measures provided in Appendix Z of the license application.

11.2 The licensee shall analyze or submit for analysis by a certified laboratory any monitoring samples within two weeks of the end of the appropriate monitoring compliance period. Inclusion of results into occupational exposure calculations shall be performed within 1 week of receipt of the analysis results. Nonroutine samples shall be submitted for analysis by a certified laboratory or the licensee shall begin analysis within 2 working days after sample collection and the CRSO shall review results within 2 working days of receipt of results.

11.3 The licensee shall require that the CRSO and the Site Engineer perform and document joint inspections of all work areas at least monthly. The licensee shall correct any deficiency noted during the inspection within 7 working days. The results of the inspections and any necessary corrective actions should be reported in the annual report.

11.4 The licensee shall:

a) monitor the following to demonstrate compliance with Subpart C of Part 20, in addition to any personnel monitoring required by 10 CFR 20.1502:

(1) Continuously monitor at least the following areas for airborne concentrations of $^{222}Rn$ and $^{220}Rn$ as per Section 7.3.2 of the license application (see LC 9.3):

(i) Waste Unloading Area,
(ii) Waste Storage Area,

(iii) Covered Waste Area, and
(iv) the Security Guard Trailer;

(2) Shall perform Airborne Particulate Monitoring as per Section 7.3.1 of the license application (see LC 9.3);

(3) Shall perform gamma radiation exposure measurements of the work area as per Section 7.3.3 of license application (see LC 9.3); and

(4) Shall demonstrate that the monitoring locations are representative of the occupational exposure to radiation and radioactive materials.

b) monitor the following to demonstrate compliance with Subpart D of Part 20:

(1) Continuously monitor the site perimeter as per Section 7.4 of the license application (see LC 9.3) for $^{222}Rn$ and $^{220}Rn$ airborne concentrations;

(2) Shall monitor the effluent release of airborne particulates as per Section 7.4 of the license application (see LC 9.3) at the air sampling stations listed in Table 7.2 of the license application (see LC 9.3);

(3) Shall perform gamma radiation exposure measurements of the unrestricted area as per Section 7.3.3 of the license application (see LC 9.3); and

(4) Shall assume that the measured net values originated solely from the 11e.(2) disposal facility.

c) calculate total effective dose equivalent (TEDE) for its occupational workers and the public to demonstrate that the 5000 mrem (50 mSv) and 100 mrem (1 mSv) dose limits, respectively are not exceeded.

## SECTION 12: Reporting Requirements

12.1 In addition to reporting the results of effluent and environmental monitoring in accordance with 10 CFR Part 40.65, the licensee shall also report the radon attenuation parameters of LC 10.2(b) and the distribution of $^{226}Ra$ and $^{230}Th$ concentrations in LC 10.2(c).

12.2 The licensee shall notify the NRC, in the event a baseline background water quality value or a groundwater quality standard established for the site by the NRC is exceeded or if a new hazardous constituent, identified in the incoming waste that was not originally included in the initial list of hazardous constituents, is detected in the POC wells, as confirmed by ground-water monitoring. The licensee shall notify Region IV and the Chief, Uranium Recovery Branch, Division of Low-Level Waste Management and Decommissioning, Office of Nuclear Material Safety and Safeguards by telephone within 24 hours and by letter within 7 days from the time the exceedence is confirmed or a new constituent identified.

12.3 The licensee shall perform an annual ALARA audit of the radiation safety program which shall be led by the CRSO or designate, qualified by way of specialized radiation protection training equivalent to that required for the CRSO as defined in LC 9.10, in accordance with Section 2.3.3 of Regulatory Guide 8.31. The audit team should contain a representative from corporate

management. A report of this audit shall be submitted to corporate headquarters and the Chief, Uranium Recovery Branch, Division of Low Level Waste Management and Decommissioning, within 60 days after conducting the audit. The report shall include detailed summaries of the analytical results of the radiological surveys. In order to evaluate the ALARA objective, the licensee shall, at a minimum, review the following records:

a) Bioassay results including any actions taken when the results exceeded action levels in Table 1 of Regulatory Guide 8.22, "Bioassay at Uranium Mills," dated January 1987.

b) Records of external and internal exposure.

c) Safety meeting minutes, attendance records, and training program records.

d) Daily inspection log entries and summary reports of the monthly reviews.

e) Radiological survey and monitoring data, as well as environmental radiological effluent and monitoring data.

f) Surveys required by radiation work permits.

g) Reports on overexposure submitted to NRC and the State of Utah.

h) Reviews of operating and monitoring procedures completed during the period.

The audit shall also address any noticeable trends in personnel exposures for identifiable categories of workers and types of activities, any trends in radiological effluent data, and the performance of exposure and effluent control equipment as well as its utilization, maintenance, and inspection history. Any recommendations to further reduce personnel exposures or environmental releases of uranium or radon and radon progeny shall be included in the report.

12.4 The licensee shall conduct an annual land use survey for a 5 km radius around the site. The purpose is to assess population growth or industry growth in the immediate vicinity of the Clive facility and provide an inventory of domestic and agricultural wells within the survey area. The licensee shall document this survey in the annual report.

12.5 The licensee shall immediately notify Region IV and the Chief, Uranium Recovery Branch, Division of Low-Level Waste Management and Decommissioning, Office of Nuclear Material Safety and Safeguards by telephone within 24 hours and by letter within 7 days of any waste shipment where a violation of applicable regulations or license conditions has been found.

12.6 The licensee shall, unless otherwise specified, submit an annual report documenting: 1) the annual reporting requirements as specified in the license conditions, 2) the results of calibration of equipment, 3) reports on audits and inspections completed during the year, 4) the results of all meetings and training courses required by this license, and 5) any other significant subsequent information, reviews, investigations, and corrective actions. This report, covering the calendar year, shall be submitted to the NRC by March 1 following the first full year after receipt of this license, and by March 1 every year thereafter. Unless otherwise specified in the NRC regulations, all such documentation shall be maintained at the site and corporate headquarters for a period of at least five (5) years.

12.7 The licensee shall, at least three months prior to license termination, provide a report which demonstrates the site has met all applicable provisions for license termination and transfer of the

facility to the government for long-term custody in accordance with 10 CFR Part 40, Appendix A, Criterion 11. Specifically, the licensee shall document that: (1) the concentrations of all of the listed hazardous constituents at the POC are within their designated concentration limits (standards); (2) if a corrective action program was carried out that the hazardous constituents contaminating the ground-water were returned to their designated limits; and, (3) the facility has been properly decontaminated and decommissioned in accordance with the decontamination and decommissioning plan proposed by the applicant in the license application and approved by the NRC. The license termination will not occur until the licensee has demonstrated that these actions have been completed.

12.8 The licensee shall immediately report: 1) any failure of the 11e.(2) byproduct material disposal cell that results in a release of waste into unrestricted areas; or 2) any unusual conditions that if not corrected could indicate the potential or lead to the failure of the system and result in a release of waste into an unrestricted area; to NRC Region IV and the Chief of the Uranium Recovery Branch, Division of Low Level Waste Management and Decommissioning, Office of Nuclear Materials Safety and Safeguards.

FOR THE NUCLEAR REGULATORY COMMISSION

Date: November 19, 1993

Joseph J. Holonich, Acting Chief
Uranium Recovery Branch
Division of Low-Level Waste Management
and Decommissioning
Office of Nuclear Material Safety
and Safeguards

CC List for letter dated: NOV 19 [illegible]

Mr. W. Sinclair, Director
Utah Department of Environmental Quality
Department of Radiation Control
168 N 1950 W
PO Box 144850
Salt Lake City, Utah 84116-4850

Mr. Richard J. Donohue
Counselor at Law
47 Summit Avenue
Hackensack, NJ 07601

The Honorable Patrick J. Roma
New Jersey General Assembly
40 East Midland Avenue
Paramus, NJ 07652

The Honorable Matthew Feldman
New Jersey Senate
500 Frank W. Burr Boulevard
Teaneck, NJ 07666-6880

Mr. Albert R. Chernoff
Uranium Mill Tailings Remedial Action Project Office
U.S. Department of Energy
Albuquerque Operations Office
P.O. Box 5400
Albuquerque, New Mexico 87115

Greg Zimmerman, Project Manager
Integrated Analysis and Assessment Section
Energy Division
Oak Ridge National Laboratory
Post Office Box 2008
Oak Ridge, Tennessee 37831

Mr. Thomas Ortciger, Director
Illinois Department of Nuclear Safety
1035 Outer Park Drive
Springfield, Ill 62704

Mr. G. Rice
Kerr-McGee Corporation
Kerr-McGee Center
Oklahoma City, OK 73125

Mr. David Hiller
Attorney at Law
1737 Gaylord Street
Denver, Colorado 80206

BCC list for letter dated: NOV 19 1993

Paul J. Merges, Ph.D
New York Department of
Environmental Conservation
50 Wolf Road
Albany, NY 12233

Maxine Dunkleman
Washington Department of Health
Division of Radiation Protection
P.O. Box 47827
Olympia, WA 98504-7827

Mr. Bill Seay
Formerly Utilized Sites Remedial
Action Program
U.S. Department of Energy
Oak Ridge Operations Office
P.O. Box 2001
Oak Ridge, TN 37831-8723