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FACILITY STANDARDS MANUAL
US ECOLOGY, INC.
LOW-LEVEL RADIOACTIVE WASTE DISPOSAL FACILITY
BEATTY, NEVADA
AUGUST 1, 1989

Control Copy No. 18

PREFACE

This Facility Standards Manual provides compliance standards and criteria for operation of US Ecology, Inc.'s Commercial Low-Level Radioactive Waste Disposal Facility located near Beatty, Nevada. These standards and criteria have been developed to ensure compliance with:

1. Rules and regulations governing the handling of radioactive materials as codified in NAC 459;

2. The license issued by the State of Nevada Division of Human Resources (Division);

3. Rules and regulations governing the transportation and disposal of low-level radioactive waste; and

4. US Ecology, Inc.'s policy, rules and regulations to maintain radiation exposures as low as reasonably achievable (ALARA).

Operational procedures have been developed and shall be followed to ensure compliance with the standards and criteria listed in this manual. These procedures represent the current mechanisms by which US Ecology implements the requirements of the Facility Standards Manual.

Changes to this manual will be initiated periodically to reflect the current status in state and federal rules and regulations. Changes will be initiated by the facility radiological control and safety officer and submitted to US Ecology's management for review and approval. Once changes have been recommended by the facility radiological control and safety officer and approved by US Ecology's management, they shall be submitted to the Division for approval.

Upon prior notification to the Division but without prior Division approval and subject to the restrictions outlined below, US Ecology may:

1. Make minor changes in the disposal facility as described in the application dated January 30, 1987, and amendments;

2. Make changes in detailed work procedures; and

3. Conduct tests or experiments not described in the application dated January 30, 1987, and amendments.

Restrictions for changes, tests and experiments described above are as follows:

1. The change does not conflict with any requirement of the license issued by the Division;

2. The change does not increase the exposure of facility personnel to radioactive or hazardous materials or otherwise cause a decrease in operational safety;

3. The change does not increase the potential for release of radioactive or other hazardous material to unrestricted areas or cause a decrease in the protection of public health or safety of individuals in unrestricted areas now or in the future;

4. The change does not affect any portion of a procedure which is directly referenced in the Facility Standards Manual; and

5. The change does not increase the potential for contamination of the environment by radiological or other hazardous material.

The Division may determine that the proposed change does not meet the above restrictions, in which case the Division shall notify US Ecology in writing requesting that a license amendment request be submitted to the Division by the CRC&SO.

Records of all changes shall be maintained by the CRC&SO and facility management. These records shall include written safety and environmental evaluations which provide the basis for the determination that the change is not in conflict with the restrictions outlined above.

The Facility Standards Manual and Beatty Operational Procedures shall be distributed on a controlled copy basis.

1.0 ORGANIZATION

US Ecology headquartered at 9200 Shelbyville Road, Suite 300, Louisville, Kentucky 40222, is a wholly owned subsidiary of American Ecology Corporation, 30423 Canwood Street, Suite 201, Agoura Hills, California 91301.

Attachment 2-1 (BOP 2) represents US Ecology's organization chart. Attachment 2-2 (BOP 2) represents US Ecology Beatty Facility organization chart. A solid line indicates operational and technical support responsibility and a dashed line indicates a reporting responsibility with respect to radiological control and safety.

The facility manager with the manager of operations and the CRC&SO's concurrence shall appoint a facility radiological control and safety officer (FRC&SO) to administer the facility radiological control and safety program.

1.1 Organizational Structure and Responsibility

1.1.1 Corporate Responsibilities

A. Manager of Operations

The vice president, manager of operations (MOO) is responsible for ensuring that facility operations are conducted in compliance with all applicable licenses, rules, regulations and US Ecology operational procedures. A facility manager shall be designated to be the manager of operations' direct representative for daily facility operation. To verify proper conduct of facility operations, the manager of operations will have comprehensive management audits conducted at least once each calendar quarter. These audits will be conducted in accordance with Section 3.1 of this manual
(BOP 4).

B. Radiological Operations Officer

When so assigned, the radiological operations officer shall assist the manager of operations in ensuring that facility operations are conducted in compliance with all applicable state and federal rules and regulations and operational procedures.

C Corporate Support Personnel

The president of US Ecology shall be responsible for maintaining the capability of providing technical support to the facility. This technical support capability shall encompass areas of expertise or specific disciplines not normally provided at the facility level. These may include geotechnical, hydrological, civil engineering, occupational safety, legal and administrative support. The president of US Ecology may choose to provide these support capabilities through permanent staffing or by subcontract through outside organizations.

1.1.2 Corporate Radiological Control and Safety Management Responsibilities

A. Chief Radiological Control and Safety Officer

The CRC&SO is responsible to the president of US Ecology for the corporate management of the radiological control and safety program and directing the program to limit occupational radiation exposures to "as low as reasonable achievable" (ALARA). The CRC&SO has the authority to, and shall, order the suspension of any facility operation when such operation presents an imminent radiological or safety threat or hazard to the employees, the environment or the general public.

The CRC&SO's responsibilities will include, but not be limited to, the following:

1. Assist in establishing standards and guidelines for facility operations to comply with US Ecology policies and applicable federal and state regulatory requirements;

2. Providing selection criteria for equipment, supplies and services for radiological control and safety work and personnel exposure monitoring;

3. Establishing standards for personnel protection to assure that exposures to ionizing radiation and radioactive contamination are maintained at levels ALARA;

4. Conducting radiological control and safety audits at least once each calendar quarter;

5. Implementing US Ecology policy to comply with state and federal statutes, rules, regulations and license conditions regarding employee occupational safety and health;

6. Ensuring the quality of protective equipment for personnel and prescribing usage standards; and

7. Establishing standards for environmental protection and monitoring.

B. Deputy Chief Radiological Control and Safety Officer

The deputy chief radiological control and safety officer (DCRC&SO), when so assigned, shall report to and assist the CRC&SO in the administration of the radiological control and safety program. In the absence of the CRC&SO, the DCRC&SO shall assume the duties of the CRC&SO.

1.1.3 Facility Management Responsibilities

A. Facility Manager

The facility manager is responsible for facility operations. The manager's duties include, but are not limited to, the following:

1. Maintaining compliance with conditions of operating licenses, rules, regulations and procedures of US Ecology, the state and federal agencies, as they apply;

2. Maintaining working conditions which assure health, safety and protection for all employees, visitors and the environment;

3. Providing physical examinations for employees as required by company policy, local, state and federal regulations;

4. Ensuring that employees are instructed regularly, or as required by law, on precautions, procedures and practices to be followed to minimize exposure to radioactive materials and to conduct operations safely;

5. Notifying the CRC&SO, manager of operations, and the Division promptly of any operation

or condition which may present a radiological hazard to employees, the public or the environment;

6. Furnishing proper personnel protective equipment, ensuring that employees are continually instructed in its proper use and enforcing rules for the equipment's utilization;

7. Staffing the facility with individuals able to conduct daily operations in compliance with regulatory requirements and to maintain a safe working environment; and

8. Supervision of the FRC&SO.

B. Assistant Facility Manager

The assistant facility manager, when so assigned, shall assist the facility manager in managing operations of the facility and shall assume all management responsibilities in the facility manager's absence.

C. Supervisory Personnel

Supervisory employees will assist in the orientation of new employees. They are responsible for assuring that radiological control and safety procedures are carried out and for immediately notifying the FRC&SO and the facility manager of any conditions which might adversely affect the safety of personnel or the environment. All supervisory personnel have the responsibility and authority to halt any operation which is, in their opinion, unsafe.

1.1.4 Facility Radiological Control and Safety Personnel Responsibilities

A. Facility Radiological Control and Safety Officer

The facility radiological control and safety officer (FRC&SO) reports directly to the facility manager for day-to-day supervision and is responsible for the facility management and implementation of the radiological control and safety program. The FRC&SO also has an administrative reporting responsibility to the CRC&SO regarding radiological controls and safety issues.

The FRC&SO has the authority to, and shall, order any facility operations suspended when such operations present or may present an imminent radiological or safety threat or hazard to employees, the environment or the general public.

B. Assistant Facility Radiological Control and Safety Officer

The assistant facility radiological control and safety officer, when so assigned, shall assist the FRC&SO and assume the management responsibilities of the radiological control and safety program in the absence of the FRC&SO.

C. Radiological Control and Safety Technicians

Radiological control and safety technicians (RC&ST) will act as the FRC&SO's representatives in specifically implementing the radiological control and safety operations as assigned by the FRC&SO.

1.1.5 Radiation Safety Committee

A radiation safety committee shall be established when deemed necessary by the CRC&SO and facility management for the purposes of review, approval and recording operational or procedural changes that significantly differ from normal operations. Once annually, the committee shall convene for review of the previous years ALARA program and to make recommendations for improvement. The radiation safety committee shall consist, as a minimum, of the CRC&SO, facility manager, FRC&SO and an employee representative.

1.2 Personnel Qualifications

Refer to Section 4.0.

1.3 Facility Staffing

The minimum staffing requirements for waste disposal operations are as follows: two persons meeting RC&ST qualifications, one of whom must be a member of management (the facility manager, the assistant manager or the FRC&SO). Waste disposal operations means unloading of waste from transport vehicles or placement of waste into a disposal unit. Operations other than waste disposal operations, as described above, shall be staffed in accordance with the facility operating procedure which specifically addresses that operation. Other operations, not subject to regulation by the Division, are subject only to staffing requirements as dictated by US Ecology administrative policy.

2.0 RADIOLOGICAL CONTROL AND SAFETY PROGRAM

US Ecology shall establish and administer a program of occupational radiation safety to minimize personnel exposure to ionizing radiation. All corporate and site personnel shall be committed to maintaining personnel exposures under the limits specified in NAC 459, "Standards for Protection Against Radiation." (BOP 6 through BOP 14).

2.1 ALARA Policy

2.1.1 It is the policy of US Ecology and its management to maintain control of occupational radiation exposure to levels which are as low as reasonably achievable (ALARA).

Management shall make all personnel aware of US Ecology's commitment to keep occupational exposures ALARA. Management shall maintain exposures ALARA through an integrated program of: employee training, procedural reviews, administrative exposure control levels, annual exposure reviews and exposure trend analysis. The CRC&SO and the manager of operations-nuclear will review the ALARA program during their respective quarterly audits.

2.1.2 All nonroutine, preplanned activities shall be reviewed by the FRC&SO (BOP 5) to ensure adherence to US Ecology's ALARA policy.

These reviews shall address, as a minimum, the following areas:

- Description of the activity;
- Collection and evaluation of available data;

- Evaluation of the hazards to include risk of internal and external exposure to the workers and the environment;

- Establishment of criteria to be adhered to during the operation. This shall include staffing requirements, protective clothing requirements, training requirements and monitoring requirements; and

- Documentation.

- These reviews shall be sent to the CRC&SO for concurrence.

2.1.3 The FRC&SO shall make annual occupational radiation exposure review reports (ALARA Report) to the manager of operations by June 30, covering the activities of the previous calendar year. These reports will include as a minimum the following information:

- Total exposure and exposure by classification of facility personnel;

- An analysis of exposures to personnel during various facility operations;

- A comparison of the reporting period's results to those obtained in previous years;

- Identification of trends; and

- Recommendations for further program improvements.

Copies shall be made available to facility personnel upon written request.

2.2 Occupational Dose Limits

2.2.1 The FRC&SO shall make every reasonable effort to maintain radiation exposures ALARA but, nevertheless, constrain the occupational dose to individual adults to the standards described in NAC 459, which are:

	Rem per Calendar Quarter
Whole body, head and trunk, active blood forming organs, lens of eyes or gonads	1.25
Hands and forearms, feet and ankles	18.75
Skin of whole body	7.50

Occupational dose to the whole body received by an individual may exceed 1.25 Rem per calendar quarter, but not to exceed 3.00 Rem per calendar quarter, provided the requirements of NAC 459.322 (3) are met. The dose to the whole body, when added to the accumulated occupational dose to the whole body, shall not exceed 5 (N-18) Rems where "N" equals the individual's age in years at the individual's last birthday (BOP 6, 7 and 8).

2.2.2 Administrative control levels for occupational doses shall be set by the CRC&SO and shall not exceed 50 percent of the standards described in Section 2.2.1.

Internal exposure monitoring results shall be investigated by the FRC&SO when the amount of a radionuclide in the worker's body could exceed more than one-tenth of the allowed limit of intake as

defined by the International Commission on Radiological Protection.

The FRC&SO shall evaluate exposures in excess of administrative control levels (BOP 8).

2.3 Dose Limits For Individual Members of the Public and Minors

2.3.1 Exposure of any individual member of the public or any minor shall be limited so that the annual dose equivalent due to external radiation exposure from facility operations shall not exceed 0.5 Rem per year.

2.3.2 If facility management permits members of the public or minors to have access to restricted areas, the limits for members of the public apply to those individuals.

2.3.3 US Ecology shall operate in a manner which will result in an annual dose equivalent less than 25 millirems to the whole body, 75 millirems to the thyroid and 25 millirems to any other organ of any member of the public as a result of radioactive contamination which may be released to the environment. In all cases, however, it is the policy of US Ecology to maintain exposures ALARA.

2.4 Personnel Air Monitoring/Bioassays (Internal Monitoring)

2.4.1 US Ecology shall maintain a program for evaluating internal occupational exposure due to airborne radioactive materials. The program shall consist of air sampling and bioassay analyses (e.g. whole body scans, urinalysis). Air samples shall be taken in a representative area of operations. This is defined as the breathing zone.

Sampling and analysis techniques for airborne radioactive material shall be sensitive enough to provide statistically valid minimum detection values which are below action levels.

2.4.2 The internal monitoring program shall be conducted in accordance with the requirements in this section.

A. Initial Employment

An initial baseline shall be established for all personnel who may be occupationally exposed while at the facility. These baselines shall be established prior to permitting an employee to work in a restricted area.

1. A whole body scan shall be performed within three months of an employee's initial hiring. Minimum sensitivity for this analysis shall normally be one percent of the maximum permissible body burden for gamma emitters of one MEV average energy.

2. A urine sample shall be collected and submitted for analysis within one month of an individual's initial employment. The analysis shall be for tritium, gross alpha and gross beta minus potassium 40. Minimum sensitivity for this analysis shall be less than one nanocurie per milliliter for each analysis.

B. Routine Internal Monitoring

The routine internal monitoring program is designed to provide continuity of information from initial employment to termination. This program also provides a backup for periodic assessments of an individual's radioisotope body burden. When a vendor supplies these services, minimum sensitivity will be audited in accordance with Section 3.0 (BOP 66).

1. Whole Body Count

A whole body count shall be performed each year. Minimum sensitivity for this analysis shall normally be less than two percent of the ALI for gamma emitters of energy exeeding 0.3 MeV.

2. Urinalysis

Once each year, a urinalysis shall be performed. Analyses shall be for tritium, gross alpha and gross beta minus potassium 40. Minimum sensitivity for this analysis shall be less than one nanocurie per milliliter for each analysis.

C. Nonroutine Monitoring

In the event an occupational air sample exceeds the action levels specified in Table 6.1 of this manual, or external personnel contamination levels exceed the levels specified in Section 2.12 of this manual, the FRC&SO shall evaluate and obtain the CRC&SO's approval as to the type and nature of internal monitoring to be conducted. Internal monitoring is required in the event it is determined, based upon an evaluation of airborne radioactivity concentrations, length of exposure and respiratory protection equipment protection factors that an individual has been exposed to breathing air that may result in an annual effective dose equivalent exceeding 10.0 percent of the limits stated in NAC 459.322.

Nonroutine monitoring may include nasal smears, whole body counts, and urinalysis (BOP 7).

D. Termination Monitoring

When an employee terminates employment and has been occupationally exposed while working at the facility, a whole body gamma scan and a bioassay shall be taken. In the event that this is not possible, an entry shall be made in the individual's record with an explanation to that effect.

E. Records

The FRC&SO shall keep records of all internal monitoring and any evaluation reports as a result of internal monitoring in the individual's dosimetry file.

2.5 External Radiation Monitoring Dosimetry

2.5.1 Whole Body Monitoring Dosimetry

Each person subject to occupational radiation exposure shall be provided and required to wear personnel dosimetry (BOP 9).

The dosimetry shall be worn on the frontal area of the chest or waist, unless otherwise specified by the FRC&SO.

2.5.2 Extremity Monitoring Dosimetry

All personnel who handle radioactive material shipped in shielded shipping containers shall wear extremity monitoring dosimetry (BOP 9).

2.5.3. Quality Assurance of Dosimetry

A. All personnel dosimeters, except pocket ionization chambers, shall be processed by an organization currently accredited by the National Voluntary Laboratory Accreditation Program for Personnel Dosimetry Processors of the National Institute of Standards and Technology.

B. Personnel and extremity dosimeters shall be processed at least once each month (BOP 9).

C. Pocket ion chamber dosimeters shall be checked for accuracy and drift at least every six calendar months (BOP 10).

2.6 Signs and Labels

The FRC&SO shall be responsible for complying with the posting and labeling requirements of NAC 459.342, 459.346, 459.348 and 459.350.

2.7 Instructions and Notices to Personnel

The facility manager shall be responsible for complying with the posting and notification requirements of NAC 459.7802 through 459.786, inclusive.

2.8 Notifications and Reports to Individuals

Radiation exposure data for an individual and the results of any measurements, analyses and calculations of radioactive material deposited or retained in the body of an individual, shall be reported to the individual as specified in this section.

2.8.1 Data and results required pursuant to the regulations, orders or license conditions as shown in records maintained by the facility shall be included in the report.

2.8.2 Notification reports shall be in writing prepared by the FRC&SO, issued by the CRC&SO and shall include:

A. Name of the facility;

B. Name of the individual;

C. Individual's social security number;

D. Individual's exposure information; and

E. The following statement:

"This report is furnished to you pursuant to NAC 459.784 to 459.794 inclusive, adopted by the state board of health. You should preserve this report for further reference."

2.8.3 On written request from the worker, the FRC&SO shall advise such worker annually of the worker's exposure to radiation or radioactive material as shown in the record maintained by the FRC&SO.

2.8.4 At the request of a worker formerly engaged in licensed activities controlled by the facility, a report shall be issued meeting the following requirements:

A. Such report shall be furnished within 30 days from the time the request is made or;

B. Within 30 days after the exposure has been determined, whichever is later.

C. The report shall cover:

1. The period of time specified in the request;

2. Each calender quarter in which the individual's activities involved exposure to radiation; and

3. Dates and locations of activities in which the individual participated during the period

D. When an individual terminates employment at the facility, or an individual assigned to work at the facility but not employed at the facility completes the work assignment at the facility, the FRC&SO shall prepare a report for the CRC&SO for review of the individual's exposures to radiation incurred during the period of employment or work assignment.

1. This report shall be furnished within 30 days after the exposure of the individual has been determined or 90 days after the date of termination of employment or work assignment, whichever is earlier.

2. Upon request of the worker, a report shall be furnished to the worker pursuant to NAC 459.786 (5). This report shall include the radiation dose received by that worker from operations of the facility during that specifically identified calendar quarter or fraction thereof, or provide a written estimate of that dose if the final determination of personnel monitoring results are not available at that time. Estimated doses shall be clearly indicated as such.

2.9 Instrument Check Sources

2.9.1 Security and Posting

Instrument check sources, when not in use, shall be located in a source storage locker which shall be locked when not attended. The exterior of this locker shall be posted conspicuously with a current list of personnel authorized access to these sources (BOP 52).

2.9.2 Radiation Levels

The on-contact radiation level to all accessible exterior surfaces of the storage locker shall be maintained at less than two millirem per hour. A radiation survey of the storage locker shall be performed each quarter and within one day after the receipt of any additional check sources.

2.9.3 Transfer or Disposal

In the event a particular source is no longer required, it shall be disposed of as radioactive waste (BOP 35) or, in the event of transfer to another individual or organization, it shall be transferred only to an individual licensed to possess the source. Written verification of the assignee's legal authorization to possess the source shall be maintained by the FRC&SO. The requirements of NAC 459.312 shall be met when transferring radioactive material as waste to another licensee.

2.9.4 Inventory

A physical inventory of all sources shall be conducted at least once each calendar quarter.

2.10 Maintenance and Retention of Records

2.10.1 The following radiation control program records shall be maintained at the facility by the FRC&SO:

A. Records to verify actions taken by management to demonstrate compliance with the requirements for maintaining doses ALARA and to demonstrate implementation of the ALARA program;

B. Records of surveys and calibration of survey instrumentation;

C. Records allowing for use of respiratory protection factors for estimating exposure of individuals to airborne radioactive material;

D. Records of the results of surveys to determine individual intakes of radioactive material and used in the assessment of internal dose;

E. Records of the results of surveys to determine the dose from external sources and in the absence of individual monitoring data, used in the assessment of individual dose equivalents (BOP 8);

F. Records of the results of surveys used to evaluate the release of radioactive materials to the environment;

G. Information required by U.S. Nuclear Regulatory Commission Forms NRC-4 and NRC-5 or equivalent forms. The form or record must show each period in which the individual received occupational exposure to radiation and the NRC-4 must be signed by the individual who received the exposure;

H. Reports (by telephone, telegraph, electronic media or letter) of an individual's previous exposure. The FRC&SO shall request a follow-up written verification of dose data received via telephone, telegram, electronic media or letter. An up-to-date U.S. NRC Form NRC-4 signed by the individual and countersigned by an appropriate official of the most recent employer for work involving

radiation exposure or the individual's current employer may be accepted, if the individual is not employed by the facility. For each period for which the facility obtains reports, the dose shown in the report shall be used in preparing U.S. NRC Form NRC-4. If a determination had been made that the individual was unlikely to receive doses for which monitoring was required, it shall be assumed that the individual has received a dose equal to the minimum dose which would require monitoring. For each quarter for which the facility is unable to obtain complete reports of the individual's occupational dose, it shall be assumed that the individual has received 1.25 Rems per calendar quarter of the current year.

I. Records of doses received by all individuals for whom monitoring was required under normal operating conditions and all doses due to overexposures, accidents and emergency conditions.

J. Records of monitoring devices used to assess external dose.

K. Records of calculations used to assess the significance of an intake of radioactive material.

L. U.S. NRC Form NRC-5 or equivalent form indicating the external exposure for each employee for periods of time not exceeding one calendar quarter.

M. Records of dose to an embryo/fetus which shall be maintained with the records of dose to the mother.

N. Copies of pertinent personnel dosimetry processor accreditation certificates from the National Voluntary Laboratory Accreditation Program as necessary to demonstrate compliance.

O. Any other records required to be maintained by the Division.

2.10.2 The FRC&SO shall retain each required form or record until the Division provides disposition of these records.

2.10.3 The FRC&SO shall clearly indicate the radiation units on records required by this section. The units of each record shall be as specified in NAC 459.

2.11 Reports of Overexposures and Excessive Radiation Levels and Concentrations of Radioactive Material

Reports shall be made in accordance with the requirements of NAC 459 (BOP 63).

2.12 External Contamination

All personnel shall perform a whole body frisk (BOP 23) of themselves before leaving a radiologically controlled area. If contamination is detected in excess of levels specified in Table 6.2 of this manual, the individual shall remain stationary and immediately contact, or have someone contact, either the FRC&SO or an RC&ST. Decontamination measures shall be implemented immediately by the FRC&SO. If the contamination on an individual shows greater than 10,000 dpm of beta gamma or greater than 1000

dpm alpha emitting radioactivity, nonroutine monitoring shall be implemented in accordance with Section 2.4.2.C of this manual.

If removal of contamination to levels of twice background or less is not possible, then the individual shall be accompanied by the FRC&SO or an RC&ST and transported to a medical facility for treatment. Any individual subjected to medical evaluation shall submit for analysis, and subsequent internal exposure estimation, bioassay samples until levels of radioactivity in the individual again reach background levels. The FRC&SO or RC&ST shall determine and monitor the method for removal of contamination.

2.13 Respiratory Protection

US Ecology shall supply only MSHA/NIOSH approved respiratory protection equipment (BOP 14, 15 and 16).

2.13.1 Program Administration

This facility program shall be administered by the FRC&SO under the guidance of the CRC&SO.

2.13.2 Evaluation of Hazard

No individual shall engage in an operation without respiratory protection being specified by the FRC&SO if any of the following conditions exist:

A. The operation involves the handling of radioactive material where contamination levels greater than 100,000 dpm/100cm^2 of beta gamma emitting radioactivity or greater than 1000 dpm/100cm^2 of alpha emitting radioactivity; or

B. Any air sample taken within 50 feet of an operation involving radioactive materials

indicates greater than 10 percent of a weekly maximum allowable concentration of airborne radioactivity; or

C. Respiratory protection is a specific requirement of any operational procedure.

2.13.3 Personnel Training

All facility personnel required to use respiratory protection equipment shall receive training in its use while qualifying as radiological workers and every year thereafter (Table 4.3.9). This training will be given by the FRC&SO or an individual approved by the CRC&SO under the guidance of the CRC&SO.

All personnel required to use respiratory protection equipment shall be advised that they may leave the work area at any time for relief from physical or psychological distress, communication failure, (i.e., radio malfunction) significant deterioration of operational conditions or any other condition that might require such relief. Under no circumstances shall an individual wearing respiratory protection work alone or without the direct observation of another employee who is also qualified to wear respiratory protection and has such equipment readily available for rescue purposes.

The CRC&SO shall designate in writing which personnel are qualified to give respiratory protection training. Qualifications shall be based on the designee's knowledge and professional training in the application and use of respiratory protection and the hazards associated with potential chemical and radioactive contaminants.

2.13.4 Respiratory Protection Equipment Fit Testing

All facility personnel required to wear respiratory protection and who have been qualified physically and medically to do so shall receive a respirator fit test (BOP 16) to be administered under the guidance and direction of an individual designated by the CRC&SO. Qualitative fit testing shall be performed once per calendar year.

The program shall include employee orientation, sensitivity tests, performance of the fit test in a test enclosure and respirator assignment. The qualitative fit test protocol shall be a combination of isoamyl acetate and irritant smoke tests.

All personnel shall be instructed in the proper procedure for the performance of the positive and negative pressure fit tests. These quick respirator fit checks shall be performed by all personnel immediately after donning approved respirators and prior to entering an area designated for respirator use.

Personnel shall wear only air purifying respiratory equipment for which they have successfully passed the qualitative or quantitative fit test protocols.

No respirators shall be worn by personnel who have facial hair such as beards or long sideburns which interfere with the sealing periphery of the respirator facepiece or with respirator valve function and as such are prohibited from working in a restricted area.

If the user of a respirator requires vision corrective lenses, respiratory glasses for the type of respirator worn will be used. Under no circumstances will glasses with temple pieces be used. Under no circumstances will contact lenses be worn during use of any respiratory protection equipment.

2.13.5 Issuance of Respiratory Protection Equipment

Only the FRC&SO or designee shall be permitted to issue respiratory protection to facility personnel, outside contractors or visitors (BOP 14).

All outside contractors and visitors, including corporate visitors and on-site state inspectors, shall be required to adhere to the same respiratory protection procedures as facility personnel. If respiratory protection equipment is required, those individuals who have not been qualified to wear respirators in accordance with this section shall leave the area.

2.13.6 Respiratory Equipment Inspection and Maintenance

All respiratory protection equipment shall be inspected prior to each use by the wearer. This inspection shall include the following: presence of facepiece distortion, strap elasticity, facepiece rubber deterioration, proper valve seals and cleanliness. If, at any time, a respirator is found to be deficient for any of the above criteria, the employee shall return it to the FRC&SO or a RC&ST for a suitable replacement.

All respirators shall be cleaned and disinfected after each day's use by the FRC&SO or properly trained designee.

All respiratory protection equipment shall be subjected to a detailed inspection and maintenance program by the FRC&SO or a properly trained designee. Each respirator shall be inspected on a monthly basis. If inspection reveals a deficiency in the equipment, necessary maintenance repairs shall be made. If the unit cannot be repaired at once, the respirator shall be removed from service, tagged as unusable, and repaired as soon as possible or discarded.

Only MSHA/NIOSH-approved components and repair parts shall be used. Repair and replacement parts shall be provided by the same manufacturer as the equipment being serviced. No interchanging of parts with different makes or models of respirators is permitted.

No attempt shall be made by facility personnel to repair or adjust reducing valves or regulators unless they have attended and satisfactorily completed accredited training provided by the manufacturer or vendor approved by the CRC&SO. Otherwise, equipment of this type shall be sent to the manufacturer or to an approved agency for necessary repairs.

After cleaning, disinfecting or maintenance, respiratory equipment shall be properly stored in a manner which shall prevent contamination and facepiece distortion. Fullface air-purifying devices can be placed in a clean plastic bag and

sealed. Emergency use devices such as self-contained breathing apparatus (SCBA) equipment shall be stored in the supplied carrying case.

Emergency use respirators such as SCBA equipment shall be inspected by the FRC&SO or a properly trained designee, at least once a month, to ensure its readiness. A record of inspections shall be maintained, listing the respirator, date of inspection and any defects found. All inspections shall be performed following established protocol (BOP 15).

2.13.7 Program and Medical Surveillance

The facility manager shall ensure that appropriate and applicable medical evaluations are performed each year on facility personnel who may require the use of respiratory protection equipment.

2.14 Emergency Response Plan(Contingency Plan)

The emergency response plan shall provide the guidelines for emergency preparedness to assure; (1) that the facility is operated to limit release of radioactive materials and radiation exposures in the event of an accident; (2) that a capability exists for measuring and assessing the significance of accidental release of radioactive materials; (3) that appropriate emergency equipment and procedures are provided on-site to protect workers against radiation hazards that might be encountered following an accident; (4) that notifications are promptly made off-site to federal, state and local government agencies; and (5) that necessary recovery actions are taken in a timely fashion to return the facility to a safe condition following an accident.

The emergency response plan shall be reviewed each year by the radiation safety committee. The FRC&SO or designee shall ensure that emergency equipment required by the plan is available and ready for use; this shall include verification that listed telephone numbers are current.

The plan shall be made an integral part of the radiological worker and radiological control and safety personnel lesson plans. The emergency response plan shall identify primary, secondary and tertiary responsibilities of individuals. All personnel shall receive training on the emergency response plan.

3.0 AUDITING PROGRAM

US Ecology shall establish a program consisting of: 1) management audits, 2) radiological control and safety audits, 3) facility inspection and 4) audits of analytical, dosimetry and calibration service vendors. Audits shall be performed by persons not having direct responsibility for the areas being audited.

The program for reviews and for audits of activities affecting site safety during the operational phase shall be established to:

- Verify that these activities are performed in conformance with the Facility Standards Manual, company policy and rules, approved operating procedures, license provisions and regulatory requirements;

- Review significant proposed facility changes, tests and procedures;

- Verify events which require reporting to the Division in writing within 24 hours are promptly investigated and corrected in a manner which reduces the probability of their recurrence;

- Detect trends which may not be apparent to a day-to-day observer; and

- Verify corrective actions taken resulting from previous audits.

3.1 Management Audits

The corporate management audit program shall be administered by the president, US Ecology. The audit shall be performed by an individual designated by the president, US Ecology.

3.1.1 Audit Scope

In addition to reviewing administrative procedures normally incident to any business, the auditor will review the operational procedures and the effectiveness of corrective actions resulting from previous audit.

3.1.2 Auditor Qualification

The auditor shall be qualified by training and experience to audit facility management's adherence to the license and the Facility Standards Manual for the purpose of assuring protection of health and minimizing danger to life or property. The auditor shall have the following minimum qualifications:

A. Associates degree in science, engineering, management or equivalent as defined in Section 4.1.

B. One year's experience in heavy construction management or waste management.

3.1.3 Audit Frequency

The management audit shall be performed at least once each calendar quarter. At least two management audits each year shall be unannounced.

3.1.4 Audit Checklists

The audit shall be conducted using written protocol and checklists (BOP 4). Checklists will be tailored by the auditor in consultation with other corporate personnel.

3.1.5 Audit Performance and Report

A. The auditor shall visit the facility, conduct the audit using a checklist plus the licenses and documents incorporated by reference into the licenses as guides, conduct an exit interview with

the facility manager prior to leaving the facility and complete a written audit report and forward it directly to the facility manager with a copy to the manager of operations.

B. Within ten working days following receipt of the audit report, the facility manager will forward a written response to each audit item specifying corrective action, recommendations and completion schedule to the auditor and the manager of operations.

3.1.6 Record keeping

Copies of all audit reports and corrective actions shall be maintained at the facility by the facility manager and maintained at corporate headquarters by the CRC&SO.

3.2 Radiological Control and Safety Audits

The radiological control and safety audit program shall be administered by the CRC&SO (BOP 5). The CRC&SO may delegate the deputy chief radiological control and safety officer to perform the audit or another individual provided they meet the minimum qualifications in Section 3.2.2 below and are not associated with the facility to be audited.

3.2.1 Audit Scope

The radiological control and safety audit program shall consist of a comprehensive system of planned and documented audits to verify compliance with all aspects of the safety controls and regulatory requirements and standards. Audits of selected aspects of operational phase activities shall be performed with a frequency commensurate with their safety significance and in such

a manner as to assure that an audit of all safety-related functions is completed within a period of six months.

Audits shall include, as a minimum, verification of compliance and effectiveness of implementation of internal rules, procedures, regulations and license provisions; programs for training, retraining, qualification and performance of operating staff; corrective actions taken following abnormal occurrences; and observation of performance of operating and maintenance activities, including associated recordkeeping, the radiation protection program including ALARA and availability of safety documents to all personnel.

3.2.2 Auditor Qualifications

Radiological control and safety auditors shall have the following minimum qualifications:

A. B.S. degree in science, engineering or equivalent as defined in Section 4.1.

B. One year's experience with radiation safety program management.

3.2.3 Audit Frequencies

The radiological control and safety audits shall be performed at least once each calendar quarter. All radiological control and safety audits shall be unannounced.

All auditors shall utilize audit checklists developed from operating documents (i.e., license, the Facility Standards Manual, procedures, etc.).

3.2.4 Audit Reports and Responses

The auditor shall identify to the facility manager and the FRC&SO any items which may present a radiological or safety threat or hazard to employees, the environment or the general public. Corrective actions shall be initiated immediately.

Upon completion of an audit and prior to leaving the facility, the auditor shall meet with the facility manager or assistant facility manager and the FRC&SO to review the findings.

At the conclusion of the audit, the auditor shall prepare an audit report and submit it to the CRC&SO. The CRC&SO shall then forward the audit report to the facility manager.

The facility manager shall respond to the audit report by indicating actions scheduled, or already taken, to comply with the audit findings. All action items shall include a schedule for completion or implementation.

3.2.5 Record keeping

Copies of all audits, reports and corrective actions shall be maintained at the facility by the facility manager and maintained at corporate headquarters by the CRC&SO.

3.3 Vendor Evaluations

The CRC&SO or designee shall conduct quality control audits of vendors to assure that their QA programs are satisfactory and meet the requirements for the items or services being furnished relating to the radiological control and safety program (BOP 66). Audits of contractors, vendors and consultants providing

safety related material, equipment or services shall be performed prior to selecting a vendor. Subsequent audits shall be performed on an audit schedule specified by the CRC&SO.

A vendor, as defined here, is any individual or organization, independent of the facility, under contract to furnish items or services relating to the radiological control and safety program. The selection of a vendor shall consider both the vendor's capability and the vendor's quality. The quality of performance shall be specified through the use of procurement requirements, using ANSI and ASTM standards when available.

A formalized process to determine the vendor's capability shall be used. Written procedures shall be developed by the CRC&SO for vendor evaluation. The results of vendor evaluations shall be documented and maintained by the FRC&SO at the facility for use in future evaluations.

4.0 PERSONNEL TRAINING

The facility manager shall be responsible for providing its employees, contractors and visitors with training commensurate with their duties at the facility.

Radiological control and safety training shall be sufficient for each US Ecology employee to understand the specific radiological control and general safety aspects of the facility working environment.

The CRC&SO shall have overall responsibility for the radiation protection training program.

4.1 Personnel Selection and Qualification

Radiation protection personnel employed by US Ecology shall have a combination of training, experience and skills commensurate with their functional level of responsibility. Training can be satisfied by either academic training or related technical training. No individual shall be assigned a responsibility for radiological health and safety at the facility until that individual has completed the radiological control and safety personnel qualification.

The following outlines qualification criteria:

4.1.1 Chief Radiological Control and Safety Officer

The CRC&SO shall possess at least a bachelor of science degree in the applied sciences or engineering or demonstrate equivalency to this requirement to the satisfaction of the president of US Ecology. The CRC&SO shall have at least five years of professional experience in radiation safety.

4.1.2 Deputy Chief Radiological Control and Safety Officer

The DCRC&SO shall have the same basic qualifications as the CRC&SO with the exception that the DCRC&SO shall have at least three years' professional experience in radiation safety.

4.1.3 Radiological Operations Officer

The radiological operations officer (ROO) shall possess at least an associate's degree in the applied sciences, engineering or management, or demonstrate equivalency to this requirement to the satisfaction of the manager of operations. The ROO shall have at least three years of supervisory experience in the field of radioactive waste management.

4.1.4 Facility Manager

The facility manager shall possess at least an associate's degree in the applied sciences, engineering or management, or demonstrate equivalency to this requirement to the satisfaction of the manager of operations. A minimum of three years professional experience in some aspect of supervision involving applied nuclear industry, civil engineering or heavy construction required. At least one year of this experience must have been directly related to radioactive waste management.

4.1.5 Assistant Facility Manager

The assistant facility manager shall possess at least an associate's degree or demonstrate equivalency to this requirement to the satisfaction of the manager of operations and three years work experience in some aspect of supervision involving heavy construction or civil engineering.

4.1.6 Facility Radiological Control and Safety Officer (FRC&SO)

The FRC&SO shall possess at least an associate's degree in science or engineering or demonstrate equivalency to this requirement to the satisfaction of the manager of operations.

The FRC&SO shall have at least three years of experience in radiation protection, one year of which shall be at a nuclear facility dealing with radiation protection problems and programs similar to those at disposal facilities.

4.1.7 Radiological Control and Safety Technician (RC&ST)

At the time of appointment, an RC&ST shall possess a high school diploma or G.E.D. and have one year of working experience in radiation protection. (An acceptable substitute for experience is a bachelor's degree in science or engineering.)

4.1.8 Radiation Protection Training Instructors

Training shall be conducted by the CRC&SO or by personnel designated as qualified instructors by the CRC&SO. A list of qualified instructors and areas of expertise shall be maintained at the facility.

The instructor shall have had two years of experience in radiation protection and a working knowledge of radiation safety practices as applied at the facility.

4.1.9 Supervisory Personnel

The Beatty facility operates with one shift and has one operations foreman, who supervises at the facility and is directly responsible to the facility manager. The operations foreman is responsible for coordinating facility equipment, labor and maintenance to ensure that all operations are adequately staffed and equipped.

The operations foreman must possess at least a high school education or GED, successfully complete US Ecology's radiological worker training and have at least two years of supervisory experience in construction or burial facility operations.

4.2 Procedures/Lesson Plans

The facility shall utilize a formalized written training program developed by the CRC&SO (BOP 17 - BOP 26). The formalized training procedures shall include as a minimum: a purpose statement, facility management responsibilities, training procedures and lesson plans. Training procedures shall define:

- o program content and course outlines
- o training and retraining frequency
- o records required
- o student performance evaluation and examinations

The review and update of lesson plans shall be performed every two years or whenever changes in the license or regulatory documents affect training requirements.

4.3 Lesson Plans

4.3.1 General Orientation

The following general orientation shall be administered to all personnel, contractors and visitors requiring unescorted access to the restricted areas of the facility:

A. The location of restricted areas;

B. Methods of marking and posting of radiological areas and packages;

C. Requirement for personnel dosimetry prior to entering radiological areas;

D. Completion of "US Ecology Visitor Radiation Exposure Authorization" Form; and

E. Review of Regulatory Guide 8.13 "Instructions Concerning Prenatal Radiation Exposure," Appendix A.

F. Facility Security;

G. US Ecology Notice to Personnel.

This general orientation qualification shall expire on the last day of each calendar year. The escorts shall have, as a minimum, radiological worker qualification.

Nonoccupationally exposed personnel employed by the facility shall be provided with the general orientation for unescorted personnel. This training shall be readministered on a biennial basis.

4.3.2 Radiological Worker Training

Radiological workers are those personnel who work in restricted areas, handle or transport radioactive material or otherwise receive occupational exposure to radiation during the course of their job function. Radiological worker's training shall address, as a minimum, the items listed in the general orientation for unescorted personnel plus the following:

A. Principles and practices of radiation protection;

B. Radioactivity measurement, standardization, and monitoring techniques and instruments;

C. Mathematics and calculations basic to the use and measurement of radioactivity;

D. Biological effects of radiation; and

E. Provisions of licenses.

Following the formal period of training, the employee shall have developed an appreciation and respect for the dangers of ionizing radiation and recognize the importance of performing each job in a safe manner.

Training shall consist of at least four hours of classroom work and four hours of practical factors for a minimum total training time of eight hours. Newly qualified employees shall have their radiation safety practices closely monitored by their supervisors, radiological control and safety personnel and other employees qualified as radiological workers in order to assist the new employee in the development of better radiation exposure control practices.

Personnel shall successfully complete the radiological worker qualification requirements prior to functioning as radiological workers.

Requalification of radiological workers shall be required two years from their initial qualification or requalification date. Qualification or requalification of training shall consist of passing a written examination with a score of 70 percent or better.

4.3.3 Specialized Radiological Worker

Specialized radiological worker training shall be conducted in the event a radiological worker is required to work on a special project. This training shall be documented and maintained as a part of the radiological control training record and shall focus on the unique conditions of the project.

The requalification shall be required if a worker has not performed the job within six months. Initial qualification and requalification shall consist of passing a written examination with a score of 70 percent or better.

4.3.4 Radiological Control and Safety Technician (RC&ST)

The RC&ST's are those personnel trained specifically to perform radiological control safety surveillance functions.

The RC&ST training will consist of those items listed in the general orientation and radiological workers sections as described above (BOP 24). A minimum of 40 hours classroom study shall be required. Until this training has been completed, the trainee shall work under the direct supervision of the FRC&SO or a qualified RC&ST. The following topics shall be addressed:

A. Facility licenses, state and federal regulatory documents;

B. Units of radiation and radioactivity;

C. Types of radiation and shielding;

D. Radiation detection;

E. Biological effects of radiation;

F. Sources of radiation;

G. Counting statistics;

H. Radiation surveys;

I. Airborne radioactivity surveys;

J. Contamination control and surveys;

K. Protective clothing;

L. Decontamination;

M. Environmental monitoring;

N. Respiratory protection;

O. Radiation exposure control;

P. Department of Transportation regulations;

Q. Emergency situations; and

R. Facility Standards Manual.

4.3.5 Facility Radiological Control and Safety Officer (FRC&SO)

The FRC&SO shall meet the minimum training requirements of an RC&ST (BOP 25). In addition, the FRC&SO shall have additional training in the following areas:

A. External and internal dose assessment calculations;

B. Isotopic analysis;

C. Data review and evaluation; and

D. Radiation protection and safety program management.

4.3.6 Respiratory Protection Training

Personnel who may be required to wear respiratory protection shall receive training in the proper wearing and use of all respiratory protection devices available at the facility (BOP 23). The training shall include a description of how radioactive material enters the human body and how the respirator minimizes this occurrence. In addition, respirator operation and limitations shall be emphasized.

Training in the use of respiratory protection shall be given by a qualified and experienced instructor. The instructor may be the manufacturer's training representative or an individual approved by the CRC&SO. To be qualified, the instructor shall be knowledgeable in the application and use of respiratory protection equipment and of the hazards associated with radioactive airborne contaminants. In addition, the instructor shall have had one year's experience in the practical selection and use of respirators for protection against airborne radioactivity.

Lesson plans for the respiratory protection training program shall be documented (BOP 23).

4.3.7 Female Radiation Worker Training

Training of female radiological workers shall include a review of the concepts contained in USNRC Regulatory Guide 8.13 (BOP 23).

4.3.8 Weekly Safety Meeting

All facility personnel working with radioactive material shall receive safety training under the direction of the FRC&SO to ensure a safe working environment (BOP 20 and BOP 21).

4.3.9 Training/Retraining Frequency

Facility personnel shall receive initial training and, thereafter, retraining often enough so that a high degree of proficiency is maintained. The required training frequencies for general employees, radiation worker and radiological control and safety personnel training are compiled in the following table.

Radiation Protection Training/Frequency Summary (4.3.9)

Type of Training	Employees Receiving Training	Completion of Initial Training	Minimum Frequency of Retraining	Minimum Duration of Training/Retraining
General Employee	Unescorted Visitors and Contractors (As defined in BOP 22)	Prior to entering restricted areas	Once Per Calendar Year	1 hour classroom
	All Facility Personnel	Within One Week of Employment	Biennial	1 hour classroom
Radiological Worker	Radiological Workers	Prior to handling Radioactive Materials	Biennial & Biennial Requalification	4-hour classroom minimum and 4-hour practical factors training
Radiological Control and Safety Personnel	RC&ST	Prior to assuming responsibility	Ongoing, Biennial Requalification	40-hour classroom and hands-on training as needed
	FRC&SO	Prior to assuming responsibility	Ongoing, Biennial Requalification	RC & ST Qualified, Additional as needed, with CRC&SO approval
Respiratory Protection	Personnel required to wear respirators or supervise respirator work	Prior to first use	Annual	Incorporated into Radiological Worker Training (1 - Hour)
Safety Meetings	All Facility Radiological Personnel	N/A	N/A	Minimum Presentation 15 minutes per week

4.3.10 Performance Examinations

A. Written Examinations

A comprehensive written examination shall be administered to each radiological worker, specialized radiological worker and radiological control and safety personnel trainee. The examination shall demonstrate an understanding of the material discussed during training. Examinations shall be developed by the CRC&SO and distributed for initial qualification and subsequent requalification of employees. Original copies of examinations and keys shall be maintained by the CRC&SO. A copy of the completed examination shall be maintained in the trainee's dosimetry file. An examination grade of 70 percent or better is required for qualification or requalification.

After the examination has been graded, the instructor shall interview the trainee to discuss the trainee's weaknesses. The date of the interview and any pertinent comments shall be noted on the examination cover page.

B. Oral Board Examinations

An oral board examination shall be required for all radiological control and safety personnel. A rating of 70 percent or better for the oral board examination shall be required.

The oral board shall consist of at least three management/supervisory personnel holding a current radiological controls personnel qualification. The chairperson of the oral board normally will be the CRC&SO. If the CRC&SO cannot be a member of the board, the CRC&SO shall appoint a chairperson.

The oral board examination shall be conducted by presenting the candidate with questions regarding situations that may be encountered at the facility. It shall include at least one emergency scenario involving a contaminated and injured person and address any weak areas identified in the written examination.

The chairperson shall, upon completion of a satisfactory board, inform the CRC&SO. The CRC&SO shall then review the candidate's qualification record and oral board performance and shall validate by signature the candidate's qualification or shall recommend additional training.

C. Qualification Record

Satisfactory completion of each block of instruction or training shall be documented and verified by the signature of a qualified instructor on the "Radiological Control Training Record." The information required to verify qualification shall be (1) qualification date, (2) written examination score, (3) instructor and CRC&SO signature validating examination results, (4) if applicable, oral board members' signatures and scores, (5) CRC&SO's signature granting qualification, and (6) signature of the examinee.

D. Records Retention

Records of training shall be maintained by the FRC&SO (BOP 24).

5.0 RECEIPT AND DISPOSITION OF WASTE

5.1 Receipt Criteria

Prior to the acceptance of any waste shipment for disposal, the facility manager, assistant manager, FRC&SO or RC&ST shall perform inspections necessary to determine:

5.1.1 If each shipment is in compliance with DOT regulations regarding radiation and contamination levels. To evaluate the radiation and contamination levels, a survey shall be performed in accordance with Table 6-2.

5.1.2 That prior to acceptance of any radioactive waste at the facility, the shipping documents are in compliance with state and federal requirements:

A. A properly completed Radioactive Waste Shipment and Disposal Manifest form (forwarded by the shipper at the time of the shipment). This manifest must be completed in its entirety with all entries legible;

B. A Certificate of Compliance, if applicable, for specification shipping containers required by 10 CFR 71 must accompany each shipment or be on file at the facility;

C. A DOE/NRC 741 form, if required;

D. Exclusive-use instructions provided by the shipper to the carrier for shipments consigned as exclusive-use; and

E. Certification of limited quantity or instruments and articles, if required.

5.1.3 That the shipment does not contain material prohibited by NAC 459 or the conditions of License 13-11-0043-02.

5.1.4 If any violation exists which poses a hazard to personal safety or the environment, that receipt and handling operation shall cease. The Division (in this case, the on-site state inspector), CRC&SO and the manager of operations, shall be notified. The process for that shipment may resume when authorization has been granted by the Division. Minor violations, such as administratively co rectable document errors and improper labeling or placarding, shall not be cause to suspend operations provided that such errors have been corrected, documented and brought to the attention of the Division on-site inspector.

5.2 Offloading Inspection

5.2.1 During unloading of any shipment, the facility manager or his designee shall perform inspections to determine:

A. That waste meets the packaging and waste form requirements of License 13-11-0043-02 as applicable.

B. That all of the waste packages are as represented on the manifest and identify any discrepancies that exist between manifested waste and the shipment.

5.2.2 Unless specifically authorized by the Division, no package containing radioactive material sent for disposal shall be opened except under the following conditions:

A. Repairing, repackaging or overpacking leaking containers or containers damaged in transport.

B. Inspection in the presence of or at the request of the Division for compliance with Nevada rules and regulations for radiation protection, conditions of US Ecology's operating license and the free liquid requirements of License #13-11-0043-02. The package shall be sealed after inspection so that it may be disposed of in the disposal unit. If the package is in noncompliance with any applicable listed requirements, the generator shall be notified and corrective action taken to comply with requirements or to remanifest the package for return to the shipper.

C. Returning outer shipping containers.

5.2.3 Under no circumstances will any package be opened without the permission of the facility manager, the CRC&SO and the Division and then only when radiological control and safety personnel are present (BOP 68).

5.3 Waste Handling

Package Separation

Upon shipment receipt pursuant to Section 5.1, the facility manager or his designee will determine, by manifest examination and package correlation, the separation and segregation requirements of various waste packages delineated in Section 5.9.2. The waste will be separated according to ultimate disposition in the disposal unit and stored or disposed in accordance with the standards established therein.

Per license requirement, this will apply to the following categories of waste:

A. Class C waste;

B. Class B waste;

C. Waste containing greater than one percent chelates by weight; and

D. Special nuclear material waste.

5.4 Storage

Packages containing radioactive material or source material shall not be stored aboveground for a period greater than sixty days from date of receipt. Retention of packaged waste aboveground for not more than three working days, pending disposal, does not constitute storage. Storage areas shall be designated by the FRC&SO and shall be located within the restricted area of the disposal facility.

5.4.1 The following aboveground storage limits shall not be exceeded:

A. 60,000 curies by-product material;

B. 36,000 kilograms source material; and

C. 350 grams of uranium 235 or 200 grams of uranium 233 or combinations thereof such that the sum of the fractions of each quantity of special nuclear material does not exceed unity as determined by the following formula:

$$\frac{\text{Grams U-235}}{350} + \frac{\text{Grams U-233}}{200} + \frac{\text{Grams Pu}}{200} \leq 1$$

5.4.2 Shipments of packages containing SNM shall be stored at least four meters from other shipments of packages containing SNM.

5.4.3 Storage inventories shall be monitored by the facility manager to ensure compliance with the above stated limits.

5.4.4 Packages in aboveground storage shall be placed to maintain exposures ALARA.

5.5 Overpacking or Repairing Disposal Containers

During operations and transportation, a very small percentage of disposal containers either fail or are damaged. If this occurs, the FRC&SO will determine the overpacking, repairs or remedial actions necessary for both the protection of the environment and facility employees. Written procedures shall be followed (BOP 39).

Any package whose integrity has been breached and does not otherwise exhibit evidence of waste form or packaging violations will be repaired or overpacked as a condition of receipt. Package repairs shall be effected if it is deemed adequate to re-establish package integrity, consistent with ALARA principles, as in the case of minor holes which do not compromise the strength of the package.

Overpacking shall be required when package integrity cannot be established through repairs and the package is otherwise acceptable for disposal. Overpacking shall be accomplished as quickly as practicable using readily available materials. Overpack containers shall be capable of maintaining their integrity during conventional disposal handling techniques.

5.6 Decontamination

All vehicles and items for unconditional release as well as facility areas, equipment and tools outside restricted areas shall be surveyed and decontaminated if necessary in accordance with written procedures (BOP 44 and 45), such that they do meet release limits of Table 6.2 or shall be disposed on site as radioactive waste.

Waste generated as a result of decontamination operations shall be processed, packaged and manifested and be in compliance with the company's radioactive material licenses and this manual. The waste is exempt from the requirements of DOT unless it is to be sent elsewhere. After decontamination operations have been completed, a radiological survey shall be performed prior to release of tools, vehicles or equipment to ensure compliance with release criteria specified in this manual.

5.7 Casks and High Integrity Containers

Waste packaged in high integrity containers shall be off-loaded in accordance with the handling procedures specified in the design reports submitted to the Division for approval. Cask shipments shall be off-loaded in accordance with the cask handling requirements in the certificate of compliance.

5.8 General Administrative and Procedural Requirements

5.8.1 Instrumentation Requirements

Radioactive waste material receipt, handling, packaging, repackaging and disposal operations shall not be conducted unless the inventory of properly calibrated and functioning radiation detection instruments and samplers is available as specified in Section 6.6.3.

Instruments will be properly calibrated in accordance with written procedures (BOP 54).

During any of the operations cited above, a person trained in accordance with Section 4.3.4, shall be present and shall use these instruments to evaluate radiation and contamination levels.

5.8.2 Worker Protection

Receipt, handling, overpacking, storage and disposal operations shall not be conducted unless radiological workers have been issued as discussed in Section 1, the tools, equipment, and protective gear necessary to perform assigned tasks.

5.8.3 Records and Reports

The facility manager or FRC&SO, as appropriate, shall comply with all reporting requirements contained in License 13-11-0043-02.

A. All records pertaining to the transportation, receipt and disposal of radioactive materials, including vehicle survey forms, shall be maintained for inspection at the facility until each agency to whom records apply gives approval for disposition. Completed manifests or equivalent documentation shall be kept until the Division authorizes their transfer.

B. Records of radiological vehicle release surveys and decontamination operations shall be maintained for inspection at the facility for an indefinite period.

C. Records of overpacking and reports of packaging inspection findings and corrective measures shall be maintained for inspection at the facility for an indefinite period.

D. Copies of all operational procedures developed to comply with this standards manual shall be kept at the facility with controlled distribution maintained by the CRC&SO.

5.8.4 Transportation Release Surveys

Radiological contamination surveillance shall be conducted on vehicles used to transport radioactive waste to the facility prior to their release (BOP 43). Release limits as listed in Table 6-2 shall be met. If a vehicle exceeds a contamination release limit, the FRC&SO and the on-site Division inspector shall be notified.

5.9 Disposal Requirements

5.9.1 General

All waste will be disposed of in accordance with the requirements of License 13-11-0043-02.

Waste will be disposed of in disposal units (subsequent to trench 22) constructed in accordance with plans and specifications approved by the Division.

Waste will be placed in disposal units in a way which maintains package integrity and permits void spaces to be filled with soil. Spatial distribution, depth and segregation requirements, specified below, will be adhered to.

5.9.2 Segregation of Waste Placed in Disposal Units

Disposal units shall be designed, constructed and operated so that physical separation between stable and unstable units is maintained. This separation consists of both horizontal and vertical separation. Stable units shall not rely on any portion of the unstable units for their stability.

Specific waste emplacement requirements are as follows:

A. Class A, unstable waste shall be segregated from Class B and C wastes. This segregation is not necessary for Class A, stable waste.

B. Class C waste shall be disposed of so that the top of the waste is a minimum of 5 meters (16.5 feet) below the natural grade (grade established prior to excavation and recorded on construction drawings) or with intruder barriers designed to protect against inadvertent intrusion. Any such barriers, including their design and placement shall be approved by the Division.

C. Wastes containing chelating agents in concentrations of greater than one percent by weight chelates shall be segregated from other wastes by at least ten feet of soil.

5.9.3 Disposal Unit Construction

Disposal units under construction will be inspected on a daily basis by facility management personnel (BOP 64). Construction status shall be recorded and reported weekly to the manager of operations.

Disposal units are to be separated by a minimum of ten feet of soil material at the units' natural grade. Documentation for trench side-slope design shall be included in submittals to the Division prior to special trench construction.

5.9.4 Backfilling

Backfilling will occur as soon as possible after waste placement. Fill shall be placed so that at least 3 feet of backfill covers the waste. In cases where high

exposure rates warrant, backfill shall be sufficient to lower exposure rates as determined by the FRC&SO or his designee.

5.9.5 Disposal Unit Covers

After all or part of a trench has been filled to within eight feet of approximate natural grade, a minimum of eight feet of cap material as measured from the top of the waste to the crown of the cap shall be placed above the waste.

Disposal unit cover material will consist of dry and freeflowing material.

Excess material, displaced by waste, may be added to the top of the trenches which have been closed. This material may be incorporated into the overall site closure design to minimize gullying and/or slumping of the trench caps.

Trench cover design may be varied from natural, pre-excavation conditions if natural slopes would promote gullying or slumping. In this case, slopes shall be minimized to prevent such occurrences.

5.9.6 Monuments

Trench markers, as specified in the facility license, will be installed at each end of the disposal trenches within six months of filling a trench. These markers will be made of concrete. The following information will be inscribed:

A. The number assigned to the disposal unit;

B. The dates of start and completion of disposal operation in the disposal unit;

C. Total activity of radioactive material in curies (excluding source and special nuclear materials), total amount of source material in kilograms and total amount of special nuclear material in grams in the trench;

D. The total volume in cubic feet of waste disposed in the disposal unit; and

E. The dimensions of the boundaries of the disposal unit.

5.9.7 Location of Disposal Units

As a minimum, the location of the disposal unit will be accomplished initially by a registered professional land surveyor.

A permanent record of the waste disposal trenches shall be maintained on a scaled engineering topographical map. A permanent record of this map will be maintained in the corporate office and at the facility.

5.10 Engineering Plans and Specifications

The facility shall submit for review by the Division, prior to commencement of construction of new disposal units an engineering plan showing the design of the next trench. The plan must discuss the reasoning for the choice of design and must include detailed drawings and calculations sufficient to support the conclusions reached. As a minimum, the plan must include:

5.10.1 The proposed location of and construction methods of the disposal unit in relation to other existing and proposed disposal unit, support building facilities, access roads, traffic patterns to and from and within the disposal unit, and all drainage and surface water control structures, existing and proposed environmental

monitoring locations, buffer zones, temporary and permanent fencing, gates and signs, the direction of filling within the disposal unit and areas used to segregate wastes. The plans must include a survey grid with baselines and be modified to include at least three permanent survey marker control points, referenced to United States Geological Survey (USGS) or National Geodetic Survey (NGS) survey control stations, to provide horizontal and vertical controls.

5.10.2 Soil characteristics to be determined and incorporated into design of the site and disposal units.

5.10.3 The methods used to control surface water runoff and run-on including drainage patterns and surface water drainage control structures when appropriate. The methods chosen to control surface water shall, to the maximum extent practicable, require little or no active ongoing maintenance during closure and perpetual care and maintenance periods. The surface water control portion of the comprehensive engineering plan shall accommodate the 100-year, 24-hour storm event, including perturbations due to frozen groundcover, snowfall accumulation and melt water. The drainage plan shall provide for the diversion and/or conveyance of surface water to minimize erosion of the site surface, on-site contamination resulting from run-on, off-site contamination resulting from runoff and infiltration into the disposal units.

5.11 Proper surface water management techniques will be used at the facility to ensure that runoff and run-on is directed away from active and closed disposal areas in a manner which minimizes erosion. This will be achieved by use of diversion channels, berms or dikes where necessary.

5.12 As-built drawings shall be forwarded to the Division within 60 days of completion of construction of each trench.

6.0 ENVIRONMENTAL MONITORING, RADIOLOGICAL SURVEILLANCE AND FACILITY SECURITY PROGRAM

This section describes the environmental monitoring, radiological surveillance and facility security program which shall be implemented by the FRC&SO and be in effect for detecting any releases of radioactive material to the environment and minimizing any potential for release of radioactive material. This program shall verify or determine projected or anticipated radioactivity concentrations and related public exposures.

Collection and analysis of environmental samples for radiological analysis, the radiological surveillance of the facility and facility security measures shall be performed according to this section.

6.1 General Requirements

6.1.1 Quality Assurance/Quality Control

A. The quality assurance/quality control program for environmental and surveillance monitoring consists of an integrated system providing for documentation of key sample parameters, chain-of-custody, procedures and audits per this manual.

B. Quality assurance programs shall meet the criteria of U.S. Nuclear Regulatory Commission Regulatory Guide 4.15.

C. Monitoring systems and procedures shall be developed to meet requirements of this section and shall be designated to be sufficiently sensitive to provide statistically valid results below the action levels specified in Table 6.1.

D. Unless specifically stated, all measuring equipment used to perform environmental and radiological surveillance shall be calibrated at

six month intervals per the manufacturer's specifications or following repair, whichever occurs sooner. Maintenance of measuring equipment shall be performed following manufacturer's recommendations.

6.1.2 Record keeping and Documentation

A. Records of radiological surveys, facility inspections, decontamination operations and environmental monitoring data (soil, vegetation, aqueous, air, direct and indirect radiation exposure) shall be maintained for inspection at the facility for an indefinite period.

B. Visitor exposure records shall be maintained at the facility until the end of the following calendar year, at which time they shall be forwarded to the corporate office.

C. Records of all monitoring locations and elements shall be maintained by the FRC&SO. These records shall include:

1. A map showing all environmental monitoring locations;

2. A record of all calculations, including factors and constants, used for obtaining the final result;

3. Current labels and calibration certification on all instruments showing the date and results of the most recent calibration, recalibration due date and appropriate correction factors to be used;

4. Copies of laboratory results; and

5. Field log books denoting time and dates, locations, person(s) collecting sample(s), instruments used and conditions under which samples were collected, i.e., flow rates for air samples; species for vegetation samples; depth to water table and well number for groundwater samples.

6.1.3 Data Review and Evaluation

The data shall be reviewed and evaluated, as obtained, by the CRC&SO to assess:

A. Whether results are reasonable considering operational and environmental conditions;

B. Actual or potential exposure of critical groups averaged over extended periods (e.g. one year);

C. Potential for exceeding action levels;

D. Validity of results compared with sample size and minimum detectable activity; and

E. Trends.

6.1.4 Notification and Reports

A. Monthly burial reports shall be furnished as specified in License 13-11-0043-02.

B. The Division shall be notified when an action level is met or exceeded as specified in Table 6.1.

C. Whenever the Division is to be notified of a Type I or Type II event, as specified in Table 6.1, a written report shall be furnished to the Division within 30 days describing the actions taken and proposed to be taken. These reports shall be made a part of the permanent record of environmental and surveillance monitoring at the facility.

D. In the event any security related discrepancies are identified, they shall be brought to the immediate attention of the facility manager who shall ensure that the manager of operations and CRC&SO are apprised immediately. The CRC&SO or manager of operations shall notify the Division if appropriate, within one working day after receipt of the information when a condition exists or existed wherein the security of radioactive materials received at the facility was compromised.

6.1.5 Action Levels and Corrective Actions

A. Action Levels

Action levels have been set for each radiological survey and environmental sample. These action levels are specified in Table 6.1. Action levels are set to ensure the potential doses to off-site individuals are significantly less than the limits stated in NAC 459.8155. Action categories have been assigned for each action level and notification shall be in accordance with 6.1.4.

B. Corrective Actions

In the event an environmental monitoring action level is met or exceeded, a corrective action program shall be initiated which shall include, but not be limited to:

a. Notification of Division per action category (Table 6.1);

b. Verification of all sample data and calculations;

c. Analysis and review of probable cause(s);

d. Isolation, if possible, of causative factor(s); and

e. Increased frequency of sampling and analysis until the Division authorizes resumption of alternative frequency.

6.2 Air Monitoring

6.2.1 Locations (See Table 6.1)

A. Environmental

A continuous air monitoring station shall be located in the trench area for the purpose of establishing background radioactivity levels.

B. Other

Grab air samples and other samples shall be taken at the direction of the FRC&SO (BOP 46).

6.2.2 Frequency (See Table 6.1)

A. Environmental

The environmental air monitoring station shall operate continuously, unless circumstances beyond the facility's control occur (e.g. power failure, equipment failure, etc.) (BOP 46). In this case, air sampling shall be reestablished as quickly as is possible.

B. Occupational

Air samplers shall operate whenever people may be exposed to airborne radioactivity (BOP 46). The particulate cartridge shall be removed at the end of each working day during disposal operations and counted on the next working day.

C. Grab Air Samples

Grab samples shall be taken for assessment of air concentrations during nonroutine operations (BOP 46). The FRC&SO shall determine the time interval, flow rate and number of samples to be taken during the nonroutine operations in order to provide meaningful results, taking into account collection efficiency and minimum detectable activity for each nuclide of concern.

6.2.3 Equipment, Calibration and Maintenance

A. Environmental

Radioactivity in the air shall be sampled by pumping air through filters or media designed for the collection or particulate radioactivity.

These air samplers shall be capable of drawing air through calibrated flow metering device with a minimum sampling flow rate of at least one CFM.

B. Occupational

Air samplers shall be capable of sampling for particulates. The sampler shall have a minimum flow rate of at least one CFM as determined by a calibrated flow meter.

6.3 Soil and Vegetation Monitoring (BOP 47, 48, 51)

6.3.1 Soil and vegetation monitoring shall be conducted in accordance with the requirements of Table 6.1

6.3.2 Soils

A. Soil samples shall be taken from undisturbed soil. Sampling equipment shall be cleaned after each sampling to prevent cross-contamination. The sampling equipment shall be protected from contamination between samplings (BOP 48).

B. Vegetation

Whenever possible, green foliage shall be collected. Sampling equipment shall be treated as discussed for soils above. The amount of sample taken shall be of sufficient volume to permit the laboratory to meet the minimum detectable activities (BOP 47).

6.4 Groundwater Monitoring

Groundwater monitoring shall be conducted in accordance with the requirements of Table 6.1 (BOP 51).

6.5 Direct Gamma Monitoring Of Environment

Direct gamma radiation monitoring shall be conducted in accordance with the requirements of Table 6.1 (BOP 50).

6.6 Radiation Surveys

6.6.1 Radiological

Surveys shall be conducted in the locations and as specified in Table 6.2.

6.6.2 Special Considerations for Radiological Surveys

A. A thin window (1.4-2.0 mg/cm^2) G-M detector shall be used for low-level fixed radioactivity surveys. Radiation levels less than 0.1 mRem per hour may be assumed for instrument readings of less than 300 counts per minute above background, providing maximum background is less than 300

counts per minute. This is derived from using a pure gamma emitter with a one percent detector efficiency.

B. Surveys shall be documented at the end of the work day or after detecting contamination whichever is more frequent.

6.6.3 Equipment Calibration and Maintenance

A. Portable Survey Instruments

The following inventory of radiological survey instrumentation shall be available to conduct facility operations. At least one of each type of instrument shall be in use in the area in which receipt, handling and disposal operations are conducted.

Two portable instruments for measuring high levels of beta gamma radiation.

Two portable instruments for measuring low levels of beta gamma radiation.

The instruments listed above must meet the criteria of ±20 percent calibration stability.

Two portable instruments for measuring alpha radiation must be able to detect ≥ 3 MeV alpha and have ±20 percent calibration stability.

Two portable instruments for measuring beta gamma radioactive contamination have criteria ±20 percent calibration stability and a window thickness of 1.4 - 2.0 mg/cm^2

Calibration of portable survey instruments shall be at one-third and two-thirds of each scale and shall be in accordance with Section 6.1.

Radiation and contamination survey instruments shall be source checked once each week. Documentation of these checks shall be maintained (BOP 54).

Battery and response checks shall be performed each time an instrument is turned on.

Any instrument found to respond improperly shall be taken out of use until repaired and/or recalibrated.

An instrument status and history file shall be maintained for each instrument (BOP 54).

B. Scaler Instruments

Calibration shall be performed as required by Section 6.1. Additionally, a voltage plateau shall be established and recorded indicating the optimum operating voltage.

Reliability tests for scalers shall be performed as prescribed in BOP 59.

6.7 Quarterly Inspection and Maintenance

The FRC&SO shall conduct visual inspections and radiation surveys of completed disposal units each calendar quarter to determine the condition of trench caps, changes in radiation levels, general condition of the disposal facility and status of security measures (BOP 60 and 61). Records shall be maintained of this inspection.

6.8 Facility Security

The physical security of the facility and materials it contains are the responsibility of the facility manager. The facility shall employ both passive systems, i.e. fences, and direct surveillance to achieve security.

6.8.1 Fenced Areas

A positive physical control against unauthorized access to the disposal facility shall be maintained at all times. Security of material (i.e., SNM, source material, by-product) shall be provided by surrounding the perimeter of the operational area of the facility with a continuous eight-foot high chainlink fence topped with barbed wire with an entrance gate which shall be under surveillance during working hours and locked during nonworking hours. The entrance gate shall be posted as a restricted area.

6.8.2 Key Control

Distribution of keys to personnel is the responsibility of the facility manager (GOP 62).

TABLE 6.1 page 1

STDS. MAN. REF. 6.2	MEDIUM	LOCATION	FREQUENCY	ANALYSIS	ACTION LEVELS	ACTION
	Air-Tritium	Operational Trench Southeast Corner Northeast Corner	Continuous collection; changed weekly	Tritium	2.0×10^{-8} uCi/CC *1	II
	Air - Occupational	One downwind at the location of potential exposure	Continuous during operations	Gross A-daily Gross B-daily	5.0×10^{-13} *2 3.0×10^{-9} *2	I
	Air-Environmental	Southeast Corner Northeast Corner	Continuous collection; changed weekly	Gross A-weekly Gross B-weekly	5.0×10^{-13} *2 3.0×10^{-9} *2	
	Air - Other	As needed	As needed	As needed	10% MPC	II

Note *1 - Gross alpha and beta monitoring shall be performed and measured weekly to develop a one year historical record.

Note *2 - Action level is 3.0×10^{-13} if Ac-227 is present.

TABLE 6.1 page 2

STDS. MAN. REF 6.3	MEDIUM	LOCATION	FREQUENCY	ANALYSIS	ACTION LEVELS	ACTION
	SOIL	North Quad. East Quad. West Quad. Wash S.E. @ 1000 ft. Office Area Lathrop Wells *2	Quarterly	Gross A Gross B	30 pCi/gm (dry) *1 90 pCi/gm (dry.*1	II
			Whenever above action levels are exceeded.	Gamma Spec		
	VEGETATION	North Quad. East Quad. West Quad. Wash S.E. @ 1000 ft. Lathrop Wells *2	Quarterly	Gross A Gross B	20 pCi/gm (dry) *1 200 pCi/gm (dry) *1	II
			Whenever above action levels are exceeded.	Gamma Spec		

Note *1 - Ashed to wet ratio will be provided

Note *2 - Background Control Well

TABLE 6.1 page 3

STDS. MAN. REF	MEDIUM	LOCATION	FREQUENCY	ANALYSIS	ACTION LEVELS	ACTION
6.4						
	GROUNDWATER	US Ecology Wells #301 #001 #002 Site Well Well at Lathrop Wells	Quarterly Grab (BOP 49)	Gross A (dis.) Gross B minus K-40 (dis.) Tritium Gamma Spectral Analysis	30 pCi/l 90 pCi/l 2,000 pCi/l	II
6.5						
	Direct Gamma Dose	North Quad. East Quad. West Quad. Wash S.E. @ 1000 ft.	Quarterly	Thermoluminescent Dosimeters	500 mRem/yr. *1 500 mRem/yr. *1 500 mRem/yr. *1 500 mRem/yr. *1	II
		North Fenceline South Fenceline East Fenceline West Fenceline	Quarterly		500 mRem/yr. *1	
		Fenceline position(s) likely to monitor nearest the active disposal trench	Quarterly		500 mRem/yr. *1	II

*1 - Above background.

STDS. MAN. REF 6.8	MEDIUM	LOCATION	FREQUENCY	ANALYSIS	ACTION LEVELS	ACTION CATEGORY
	RADIOLOGICAL SURVEYS					
	Fixed/Removable Contamination	Personnel, maintenance vehicles and equipment not coming in contact with known or suspected contamination, upon exiting restricted area	Each occurrence	Rate meter with appropriate detector *3	100 cpm above bkgd (beta gamma)	III
		Radiologically controlled bldgs. or facilities	Daily	Scaler with *1 appropriate detector	2,200 dpm/100 cm^2 (beta gamma) 220 dpm/100 cm^2 (alpha)	III
		Site equipment inside restricted area	Weekly	Scaler with *1 appropriate detector	2,200 dpm/100 cm^2*2 (beta gamma) 220 dpm/100 cm^2*2 (alpha)	III
		Outside restricted area or unconditional release	Weekly	Scaler with *1 appropriate detector or rate meter with appropriate detector *3	1,000 dpm/100 cm^2 (beta gamma) No detectable alpha above MDA	III

TABLE 6.2 page 2

STDS. MAN. REF 6.8	MEDIUM	LOCATION	FREQUENCY	ANALYSIS	ACTION LEVELS	ACTION CATEGORY
	RADIOLOGICAL SURVEYS					
	Fixed/Removable Contamination	Nonradiologically controlled facilities/buildings	Monthly	Rate meter with appropriate detector *3	1,000 dpm/100 cm^2 (beta gamma) No detectable alpha above MDA	III
			Annually	Liquid Scintillation	96,000 dpm/100 cm^2 for H-3 4,800 dpm/100 cm^2 for C-14	III
		Each waste transport vehicle	Arrival 2 smears on right 2 smears on left 2 smears on rear 2 smears inside (floor) 3 smears of cargo	Rate meter/ scaler with appropriate detector *3	Per NAC Requirements	III
			Unloading 3 smears of cargo		Per D.O.T. Requirements	III
			Departure smears on suspect areas if direct frisk is greater than action level	Rate meter/ scaler with appropriate detector *1	2,200 dpm/100 cm^2 (beta gamma) 220 dpm/100 cm^2 (alpha)	III

TABLE 6.2 page 3

STDS. MAN. REF 6.8	MEDIUM	LOCATION	FREQUENCY	ANALYSIS	ACTION LEVELS	ACTION CATEGORY
	RADIOLOGICAL SURVEYS					
	Fixed Contamination	Radiologically controlled facilities and buildings (exclusive of designated contaminated areas)	Weekly	Direct radiation Rate meter with appropriate detector *3	100 cpm *2	III
		Operational trench	Daily	Rate meter with appropriate detector *4	100 mR/Hr at waist level at edge of operating trench	III
		Site equipment (inside restricted area) (Outside restricted area)	Weekly	Rate meter with appropriate detector *4	0.5mR/hr 0.1mR/hr	III
		Non rad controlled building/facilities	Monthly	Rate meter with appropriate detector *4	0.1 mR/hr	III
		Waste transport vehicles	Each arrival	Rate meter with appropriate detector *4	200 mR/hr on contact with sides or under 10 mR/hr @ 2 m. from sides 2 mR/hr in Cab	III

TABLE 6.2 page 4

STDS. MAN. REF 6.8	MEDIUM	LOCATION	FREQUENCY	ANALYSIS	ACTION LEVELS	MDA	ACTION CATEGORY
	RADIOLOGICAL SURVEYS						
	Fixed or External Radiation	Waste transport vehicles	Each departure	Rate meter with appro-priate detector *3	100 cpm above bkgd 300 cpm	0.1 mrem/hr or 100 cpm above bkgd	III

ACTIONS REQUIRED WHEN ACTION LEVEL MET OR EXCEEDED

1) Type I Event
Potential for bioassay examined by FRC&SO
Report to CRC&SO immediately upon confirmation
Take corrective action

2) Type II Event
Report to CRC&SO within two working days of receipt of lab report
Take corrective action

3) Type III Event
Take actions as stated in operating procedures and notify CRC&SO and State of Nevada as stated in operating procedures.

FOOTNOTES FOR TABLE 6.2

*1 Appropriate Detector
1. Initial screen with 1.4 - 2.0 mg/cm^2 G-M Tube
2. Additional analysis if greater than action level depending upon probable radionuclides.

*2 Certain tools and equipment may be above these limits if appropriate contamination controls, specified by the FRC&SO, are applied.

*3 Appropriate detector is 1.4 - 2.0 mg/cm^2 G-M tube.

*4 Dose rate instrument. A pancake 1.4-2.0 mg/cm^2 G-M tube may be used to satisfy this requirement 300 cpm above background equals less than .1 mR/hr.