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**ENERGYSOLUTIONS**

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March 9, 2013

Rusty Lundberg  
Director  
Utah Division of Radiation Control  
P.O. Box 144850  
Salt Lake City, UT, 84114-4850

RECEIVED

CD13-0076

MAR 11 2013

DEPARTMENT OF  
ENVIRONMENTAL QUALITY

Re: Radioactive Material Licenses UT2300249 and UT2300478; Revised request to amend License and approve revised *Organization*.

Dear Mr. Lundberg:

**DRC - 2013 - 001581**

In a submittal dated February 4, 2013 (CD13-0033) EnergySolutions requested amendment of License UT2300249 and UT2300478, to reflect changes to our organization. In a letter dated February 21, 2013, DRC requested additional information on these changes.

DRC requested additional information on 4 issues, paraphrased below:

1. *In section I2 Qualifications there are several positions listed that require a Bachelor's degree or equivalent experience. How much work experience is considered equivalent experience to a Bachelor's degree? How is that experience documented?*

**EnergySolutions response:** A statement has been added to section I2 (re-numbered as section 2) to address this comment.

2. *In section I2 Qualifications under Lead, Laboratory it states "The Lead, Laboratory must have a bachelor's degree in chemistry or a related field, or at least two years' experience in the nuclear field." Justify how two years' experience in the nuclear field is equivalent to a four year bachelor's degree. Also specify the type of experience in the nuclear field.*

**EnergySolutions response:** The qualifications for Lead, Laboratory have been clarified.

3. *In section I2 Qualifications under Lead, Health Physics ASRSO it states "The lead must have a bachelor's degree, preferably in health physics, or equivalent training and experience which includes at least four years' experience in a radioactive materials field." This description is a little unclear. Explain what types of Bachelor's degree besides health physics are acceptable. Clarify the "or equivalent training and experience" phrase on how much and what kind of experience and training equals a Bachelor's degree.*

**EnergySolutions response:** The qualifications for Lead, Health Physics ASRSO have been revised to reference the qualifications for RSO.

4. *Is the Lead, Health Physics ASRSO position the designate position for the Manager, Health Physics and Safety (RSO) position?...The DRC has determined that the DHP(RSO) designate(s) need to have the same training and experience as the DHP (RSO) as defined in NRC Regulatory Guide 8.31 section 2.4...*

**EnergySolutions response:** The qualifications for Lead, Health Physics ASRSO have been revised to reference the qualifications for RSO. The qualifications for RSO have been revised to more directly reflect NRC Regulatory Guide 8.31 section 2.4. NRC Regulatory Guide 8.31 is specifically focused on uranium recovery facilities; therefore, minor edits have been made to this language to reflect LLRW management as well as uranium recovery facilities.

In addition to the changes made in response to these questions, the following changes are made:

- Change title of Manager, Health Physics and Safety (RSO) to Radiation Safety Officer (RSO).
- RSO and Lead, Safety will report to the Manager, Compliance and Permitting.

Our October 24, 2012 submittal requested a number of revisions to both Radioactive Material Licenses. These revisions carry forward unchanged, with the exception of UT2300249, Conditions 31 and 32.A; and UT2300478, Condition 9.10. These should be revised as follows:

31. Radiation Safety operations for bulk, containerized and mixed waste, portable gauging device(s), radioactive source(s), and dosimeter calibrator(s)/irradiator(s) shall be conducted by or under the supervision of ~~Rick Chalk Director of Health Physics~~ Thomas A. Brown, Acting RSO.
- 32.A. The Licensee's staff shall meet the qualifications as described in ~~Appendix I~~ the current approved Organization Chart (November 7, 2011, rev 23 March 8, 2013, rev 24).
- 9.10 The Licensee's staff shall meet the qualifications as described in the currently approved ~~Appendix I, Organization Chart, Condition 32.A~~ of the Radioactive Material License UT 2300249. In addition to the responsibilities and qualifications specified in the licensee's application, the ~~DHP RSO~~ or their designate(s) shall be qualified as specified in Sections 1.2 and 2.4 of the NRC Regulatory Guide 8.31, "Information Relevant to Ensuring that Occupational Radiation Exposures at Uranium Mills will be As Low As Reasonably Achievable," as amended. In addition, the ~~DHP RSO~~ shall also receive 40-hours of related health and safety refresher training every two years.  
[Applicable UDRC Amendments: 2, 5, and 6]

For the purposes of this licensee condition, reference to “uranium mill” or “milling” in the NRC Regulatory Guide 8.31, as amended, shall mean the licensee’s facility and authorized activities.

A copy of the Organization Chart is provided in redline/strikeout format against the February 5, 2013 submittal. Please contact me at 801-649-2151 any questions regarding this issue.

Sincerely,

A handwritten signature in cursive script that reads "Sean McCandless".

Sean McCandless  
Manager, Compliance and Permitting

Enclosure

CC: John Hultquist (w/enclosure)

## 1.1 ORGANIZATION

An Organization Chart is included as Figures 1 through 34, showing by responsibility the management of the Clive Facility. A discussion of the entities shown on the organization chart is provided below:

### 1.1.1 ADMINISTRATION

**President and Chief Executive Officer.** The President and Chief Executive Officer oversees and provides direction and leadership for the company.

**President of Logistics, Processing and Disposal (LP&D) Group.** The President of the LP&D Group reports to the President and Chief Executive Officer and provides oversight, direction, and leadership for all logistics, processing and disposal operations.

**Senior Vice President, Regulatory Affairs.** The Senior Vice President, Regulatory Affairs reports directly to the President and Chief Executive Officer, and provides oversight and direction to the Corporate Radiation Safety Officer and ~~Corporate Director, of Corporate QA~~ Quality Assurance.

**Vice President and General Manager, Clive Facility.** The Vice President and General Manager, Clive Facility reports to the President of the LP&D Group and is responsible for the oversight of site operations including waste acceptance, sampling, management and disposal; laboratory, engineering, environmental compliance, and health physics activities; and carrying out activities efficiently and safely in accordance with design specifications, quality assurance program requirements, and all applicable regulations.

**Corporate Radiation Safety Officer.** The Corporate Radiation Safety Officer reports to the Senior Vice President, Regulatory Affairs. The Corporate Radiation Safety Officer is responsible for implementation of and compliance with protocols and procedures of the Corporate Radiation Safety Program. The Corporate Radiation Safety Officer ensures that adequate radiation detection instrumentation and equipment is used and that adequate measurements are made to ensure that all applicable standards for personnel exposures to radiation and radioactive materials are satisfied including: airborne radioactivity, surface contamination, internal and external exposures, and effluents.

**Vice President of Health and Safety.** The Vice President of Health and Safety reports to the President and Chief Executive Officer. The Vice President of Health and Safety is responsible for implementation of and compliance with protocols and procedures for Safety and Health Management.

**Director, Corporate QA.** The Director, Corporate QA reports to the Senior Vice President, Regulatory Affairs. The Director, Corporate QA is responsible for the implementation of and compliance with the Quality Assurance Program.

From this point, personnel and classes of personnel within ~~EnergySolutions~~ the Clive facility organization will be described in terms of the following departments: Quality Assurance, Compliance and Permitting, Engineering, Clive Management, and Radiation Safety. All site employees have the authority to terminate any activities on the site that are deemed to be unsafe. They may also suspend activities until hazard-abatement measures have been performed.

## **I.1.2 QUALITY ASSURANCE**

**Quality Assurance Manager.** The Quality Assurance Manager reports directly to the Director, Corporate QA regarding quality assurance activities and indirectly to the Vice President and General Manager, Clive Facility for day to day operations. The Quality Assurance Manager supervises the Construction Quality Assurance Officer (CQAO), and Quality Assurance personnel. The Quality Assurance Manager is responsible for ensuring that the quality assurance requirements outlined in the Quality Assurance Manual are implemented. The Quality Assurance Manager has sufficient authority and autonomy to: implement and direct the Quality Assurance Program (QAP); identify quality problems and initiate, recommend, or provide solutions; and verify implementation of solutions independent of undue influences and responsibilities, such as costs and schedules.

**Construction Quality Assurance Officer.** The CQAO reports to the Quality Assurance Manager and has authorization to meet with the Manager, Compliance and Permitting as deemed necessary. The CQAO is responsible for ensuring that the construction quality assurance requirements outlined in the Construction Quality Assurance Manuals relating to embankment construction are implemented. The CQAO works closely with the Manager, Engineering and Maintenance; Lead, QC Embankment Construction; and Quality Assurance Manager to ensure that construction specifications are met and documented. EnergySolutions may contract with an independent engineer to perform CQAO duties.

## **I.1.3 COMPLIANCE AND PERMITTING**

**Manager, Compliance and Permitting.** The Manager, Compliance and Permitting reports to the Vice President and General Manager, Clive Facility for day to day activities and indirectly to the Senior Vice President, Regulatory Affairs for environmental and licensing issues, and is responsible for initiating and maintaining Clive licenses and permits. The Manager, Compliance and Permitting is also responsible for the preparation of regulatory reports submitted in accordance with EnergySolutions licenses and permits for the Clive facility. The Manager, Compliance and Permitting oversees the administration of the Radiation Safety

~~Program, Safety and Health Program, Laboratory, Groundwater Monitoring Program, the Environmental Monitoring Program, and the Document Control Program.~~ The Manager, Compliance and Permitting oversees and facilitates permit and license renewals, modifications, and amendments. The Manager, Compliance and Permitting will set compliance objectives with the Vice President and General Manager, Clive Facility, and the Senior Vice President, Regulatory Affairs. Direction and support will be provided for policy development and site training to assist in ensuring compliance.

**Environmental Engineer.** The Environmental Engineer reports to the Manager, Compliance and Permitting and is responsible for providing technical guidance and support to the Site Chemistry Laboratory regarding laboratory methods and procedures. The Environmental Engineer reviews waste analytical data and approves waste for appropriate management based upon that review. The Environmental Engineer provides training and guidance associated with changing laws, regulations and requirements to site personnel.

**Staff Hydrogeologist.** The Staff Hydrogeologist reports to the Manager, Compliance and Permitting. The Staff Hydrogeologist is responsible for ensuring that EnergySolutions complies with the applicable requirements for gathering groundwater ~~information data~~ and reporting groundwater monitoring results.

**Environmental Manager.** The Environmental Manager reports to the Manager, Compliance and Permitting. The Environmental Manager is charged with documenting all environmental monitoring activities except groundwater at the site, and analysis (in-house or outside) of environmental monitoring samples. The Environmental Manager is responsible for the preparation of all environmental reports, except groundwater.

#### I.1.4. ENGINEERING

**Manager, Engineering and Maintenance.** The Manager, Engineering and Maintenance reports to the Vice President and General Manager, Clive Facility. The Manager, Engineering and Maintenance performs or oversees the certification of engineering design drawings, project plans, construction reports, and As-Built Drawings. The Manager, Engineering and Maintenance is responsible for overseeing construction activities and project management to ensure work is performed in accordance with schedules and specifications. The Manager, Engineering and Maintenance provides technical and engineering support for the operation including site layout and design reviews; and approves, with oversight provided by the Quality Assurance Department, those designs and specifications.

**Site Engineer.** The Site Engineer reports to the Manager, Engineering and Maintenance and is responsible for overseeing the production, scheduling, and coordination aspects of construction projects, with the exception of QA (which is the responsibility of the Quality Assurance Manager). During cover and liner

construction, the Site Engineer will regularly inspect the construction site. The Site Engineer will review proposed design, engineering, or construction changes and submit these changes for review and approval.

**Lead, QC Embankment Construction.** The Lead, QC Embankment Construction reports to the Manager, Engineering and Maintenance. The Lead, QC Embankment Construction is responsible for ensuring that waste placement is performed in accordance with applicable specifications and requirements. The Lead, QC Embankment Construction may have direct contact (as needed) with the Quality Assurance Manager.

## **1.1.5 CLIVE MANAGEMENT**

**Manager, Waste Disposal Operations.** The Manager, Waste Disposal Operations reports to the Vice President and General Manager, Clive Facility and is responsible for disposal and treatment operations of the LLRW and Mixed Waste Facilities. The Manager, Waste Disposal Operations works closely with Health Physics, Safety and Health, and Quality Assurance to assure that all aspects of site operations are conducted according to applicable regulations.

**Manager, Health Physics and Safety-Radiation Safety Officer (RSO).** The ~~Manager, Health Physics and Safety RSO~~ reports to the ~~Vice President and General Manager, Clive Facility Manager, Compliance and Licensing/Permitting~~ for day to day activities and indirectly reports to the Corporate Radiation Safety Officer for ALARA and Radiation Safety Program issues. The RSO reports directly to the Vice President and General Manager, Clive Facility on matters of radiation safety. The ~~Manager, Health Physics and Safety RSO~~ meets the position of Radiation Safety Officer (RSO) as defined in UAC R313-12 and is responsible for implementation of and compliance with protocols and procedures of the Radioactive Material Licenses. The ~~Manager, Health Physics and Safety RSO~~ supervises the Radiation Safety, ~~Safety, and Laboratory,~~ staff and works very closely with the Manager, Disposal Operations and Manager, Shipping and Receiving. The ~~Manager, Health Physics and Safety RSO~~ is responsible for on-site radiation safety including implementation of, and compliance with the Clive Radiation Protection Program, ~~Safety and Health Program,~~ and associated procedures. The ~~Manager, Health Physics and Safety RSO~~ is responsible for the onsite laboratory and sampling activities. The ~~Manager, Health Physics and Safety RSO~~ determines whether adequate radiation instrumentation and equipment are used and whether adequate measurements are made to ensure that all applicable standards for personnel protection against exposure to radiation and radioactive materials are satisfied.

**Manager, Shipping and Receiving.** The Manager, Shipping and Receiving reports to the Vice President and General Manager, Clive Facility and is responsible for ensuring all shipments received and leaving the site are in compliance with all licenses, permits, and regulations.

**Manager, Container Management.** The Manager, Container Management reports to the Vice President and General Manager, Clive Facility and is responsible for decontamination activities and container storage.

**Lead, Laboratory.** The Lead, Laboratory reports to the ~~Manager, Health Physics and Safety~~ RSO. The Lead, Laboratory oversees the on-site laboratory and directs the chemical and radiological analysis of samples from shipments and from environmental sampling.

**Lead, Safety.** The Lead, Safety reports to the Manager, Compliance and Permitting for day to day activities and to the Manager, Health Physics and Safety Vice President and General Manager, Clive Facility for Safety and Health concerns. The Lead, Safety is responsible for developing and managing the Clive Safety and Health (S&H) Program and the Clive Training Program in assuring compliance with all regulatory requirements and guidance.

#### **1.6 RADIATION SAFETY**

**Lead, Health Physics/Assistant Radiation Safety Officer(ARSO).** The Lead, Health Physics/ARSO reports to the ~~Manager, Health Physics and Safety~~ RSO. The Lead, Health Physics/ARSO is responsible for managing the health physics team, performing daily site inspections, and observing field operations. The Lead, Health Physics/ARSO can serve as acting ~~Lead, Health Physics and Safety~~ RSO.

**Radiation Safety Technician I.** Radiation Safety Technician I(s) report to the Lead, Health Physics/ARSO. The Radiation Safety Technician I duties and responsibilities include:

- a. Perform workplace evaluation of radiological conditions and provide oversight and guidance in radiation safety for site personnel.
- b. Properly operate and issue radiological counting and detection equipment (scalars and other gross counting equipment friskers, PCMs, dose rate instrumentation, etc) and air sampling equipment.
- c. Properly obtain appropriate radiological measurements and samples to determine radiological status of areas, materials, and equipment.
- d. Promptly, properly, and accurately perform the calculations necessary to determine radiation levels and radioactive contamination levels and concentrations in areas, in soil, on material, on equipment, and in the air.
- e. Promptly, properly, and accurately interpret and document radiological measurements and calculations.
- f. Promptly and effectively interface with other department personnel and site groups to ensure radiological information is readily available for use in decision making.



- g. Properly interpret and implement radiation work permit (RWP) requirements and brief radiological workers on RWP requirements and radiological conditions in the work areas.
- h. Maintain data for a computer-based radiological work permit system to ensure that only properly authorized personnel are permitted access to restricted areas.
- i. Accurately and properly identify and establish area postings.
- j. Properly monitor and control personnel and material access to and egress from radiologically restricted areas.
- k. Monitor and coach radiological workers in good radiological work practices.
- l. Properly calibrate radiological counting and detection equipment (scalars and other gross counting equipment, friskers, PCMs, dose rate instrumentation, etc.), and air sampling equipment.

**Radiation Safety Technician II.** Radiation Safety Technician II(s) report to the ARSO. In addition, the Radiation Safety Technician II(s) are charged with maintaining and enforcing conformance with Radioactive Material License and regulatory requirements as set forth in site procedures. The Radiation Safety Technician II duties and responsibilities include:

- a. Perform Radiation Safety Technician I duties and responsibilities.
- b. Supervise and direct activities of Radiation Safety Technician I personnel.
- c. Perform Unrestricted Release surveys on equipment, materials, and vehicles used in the restricted area.
- d. Perform intermittent and continuous health physics coverage for high risk radiological work including High Radiation Area work and/or High Contamination Area work.
- e. Prepare radiation work permits.
- f. Review and approve radiological survey documentation for peers and Radiation Safety Technician I(s).
- g. Prepare and/or review and/or walk through site procedures in radiation safety or other areas as requested.
- h. Properly set up, use and control engineering controls (shielding, containments, HEPA vacuums and HEPA ventilation systems, dust suppression, etc.) to minimize occupational and environmental radiation exposure.
- i. Properly implement, supervise and direct personnel decontamination activities and properly document and report the activity.

EnergySolutions has access to qualified consultants to assist in the development and implementation of radiological health and safety plans, environmental monitoring programs, and industrial hygiene and safety programs. Consultants may be utilized to review safety, employee training, fire protection systems, and quality assurance programs in addition to continuous operations support. These consultants may be responsible to the Senior Vice President, Regulatory Affairs or the Vice President and General Manager, Clive Facility.

### **1.1.7 CONTRACTUAL SUPPORT**

Under the direction of EnergySolutions, contractual support may be provided for facility construction, facility operations including waste placement, engineering support, radiation safety, and technical evaluation.

### **1.1.8 REQUIRED PERSONNEL**

~~One or more~~ At least one Radiation Safety Technician II(+) must be on site whenever waste management operations are underway.

## **1.2 QUALIFICATIONS**

This section outlines the minimum qualifications required for the individual positions listed below. Unless otherwise specified below, two years of relevant experience are considered equivalent to one year of academic study. Experience is documented on the individual's resume and confirmed via background check at the time of employment.

### **1.2.1 ADMINISTRATION**

**President and Chief Executive Officer.** The President and Chief Executive Officer must have executive business experience.

**President of Logistics, Processing and Disposal (LP&D) Group** The President of the LP&D Group must have three years managerial experience.

**Senior Vice President, Regulatory Affairs.** The Senior Vice President, Regulatory Affairs must have a bachelor's degree in a science/engineering or related discipline, and five years experience related to management, engineering, quality assurance, and radioactive materials management; or similar related experience.

**Vice President and General Manager, Clive Facility.** The Vice President and General Manager, Clive Facility must have a bachelor's degree in a science or engineering discipline or an equivalent combination of training and relevant experience. Two years of relevant experience are generally considered equivalent to 1 year of academic study. The Vice President and General Manager, Clive Facility must have at least two year's experience related to management, engineering, quality assurance, radioactive materials management; including experience in radiation safety.

**Corporate Radiation Safety Officer.** The Corporate Radiation Safety Officer must have a bachelor's degree in engineering, chemistry, physics, or a physical science-related field and a minimum of ten years of experience in operational health physics. The Corporate Radiation Safety Officer must also have two years of supervisory experience in uranium mining/milling operations, UMTRA Projects, or NORM disposal operations where handling and/or disposal of low-activity or low-level radioactive materials are involved. Experience must have provided a basis for understanding issues involved with the management of

radioactive waste. The Corporate Radiation Safety Officer must also have a thorough understanding of health physics and be able to communicate using technical knowledge.

**Vice President, Health and Safety.** The Vice President, Health and Safety must have three years managerial experience in the safety and health industry.

## **4.2.2 QUALITY ASSURANCE**

**Director, Corporate QA-** The Director, Corporate QA must have a bachelor's degree, preferably in a science or engineering field or a closely associated discipline, or equivalent technical experience; an understanding of general construction techniques; an understanding of laboratory safety, methodology, and general chemistry concepts; and an understanding of industrial health and safety concerns, testing techniques, and ALARA concepts.

**Quality Assurance Manager.** The Quality Assurance Manager must have a bachelor's degree, preferably in a science or engineering field or a closely associated discipline, or equivalent technical experience; an understanding of materials testing methods for soil classification and compaction, of surveying methods for establishing the location of point coordinates and elevations, and of general construction techniques; an understanding of laboratory safety, methodology, and general chemistry concepts; and an understanding of industrial health and safety concerns, testing techniques, and ALARA concepts.

**Construction Quality Assurance Officer.** The CQAO must have a bachelor's degree, preferably in a science or engineering field or a closely associated discipline, or equivalent technical experience; an understanding of materials testing methods for soil classification and compaction, of surveying methods for establishing the location of point coordinates and elevations, and of general construction techniques; an understanding of laboratory safety, methodology, and general chemistry concepts; and an understanding of industrial health and safety concerns, testing techniques, and ALARA concepts. The CQAO shall be a Utah certified professional engineer.

## **4.2.3 COMPLIANCE/PERMITTING**

**Manager, Compliance and Permitting.** The Manager, Compliance and Permitting must have a bachelor's degree in engineering, chemistry, physics, or a physical science-related field; or equivalent experience.

**Environmental Engineer.** The Environmental Engineer must have a bachelor's degree in engineering, chemistry, physics, or a physical science-related field; and supervisory experience in hazardous waste operations, where handling and/or disposal of hazardous materials is involved.

**Staff Hydrogeologist.** The Staff Hydrogeologist must have a bachelor's degree in engineering, chemistry, physics, or a physical science-related field; and 2 years of experience related to groundwater monitoring.

**Environmental Manager.** The Environmental Manager must have a bachelor's degree in engineering, chemistry, physics, or a physical science-related field; or equivalent Environmental Monitoring experience.

#### **1.2.4. ENGINEERING**

**Manager, Engineering and Maintenance.** The Manager, Engineering and Maintenance must have a bachelor's degree in an engineering field and at least four years of experience. The Manager, Engineering and Maintenance shall be a Utah certified professional engineer.

**Site Engineer.** The Site Engineer must have a bachelor's degree in an engineering field and at least four years of engineering experience. The Site Engineer should be familiar with embankment construction, soil classification and compaction testing, construction techniques, building codes, and construction surveying.

**Lead, QC Embankment Construction.** The Lead, QC Embankment Construction must have at least two years post high school education with emphasis in science, engineering, and/or mathematics with two years experience in survey methods – OR – a minimum of five years experience in soils testing.

#### **1.2.5 CLIVE MANAGEMENT**

**Manager, Waste Disposal Operations.** The Manager, Waste Disposal Operations must have a minimum of five years experience in landfill construction and operations.

**Manager, Container Management.** The Manager, Container Management must have a minimum of two years experience in the nuclear field or a bachelor's degree in chemistry or related field. This position requires a complete working knowledge of hazardous waste regulations.

**Manager, Shipping and Receiving.** The Manager, Shipping and Receiving must have completed an approved DOT training certification course and have a minimum of five years experience in transportation inspection and shipping.

**Manager, Health Physics and Safety Radiation Safety Officer (RSO).** In accordance with NRC Regulatory Guide 8.31, revision 1, section 2.4.1, the RSO should have the following education, training, and experience: The Manager, Health Physics and Safety (RSO) must have a bachelor's degree with an emphasis in health physics, the sciences, engineering, and/or mathematics, or four years of experience

~~in the nuclear field; two years of supervisory experience in uranium mining/milling operations, UMTRA Projects, or NORM disposal operations where handling and/or disposal of low activity or low level radioactive materials are involved; a good understanding of radiologic analyses and laboratory quality control techniques; and the ability to learn and understand radiation safety principles and practices. Must have a thorough understanding of health physics and be able to communicate using technical knowledge. The Manager, Health Physics and Safety (RSO) shall also receive 40 hours of related health and safety refresher training every two years.~~

**Education:** A bachelor's degree in the physical sciences, industrial hygiene, or engineering from an accredited college or university or an equivalent combination of training and relevant experience in uranium recovery (UR) or low-level radioactive waste (LLRW) facility radiation protection. Two years of relevant experience are generally considered equivalent to 1 year of academic study.

**Health Physics Experience:** At least 1 year of work experience relevant to UR or LLRW operations in applied health physics, radiation protection, industrial hygiene, or similar work. This experience should involve actually working with radiation detection and measurement equipment, not strictly administrative or "desk" work.

**Specialized Training:** At least 4 weeks of specialized classroom training in health physics specifically applicable to uranium recovery or LLRW management. In addition, the RSO should attend refresher training on UR or LLRW facility health physics every 2 years.

**Specialized Knowledge:** A thorough knowledge of the proper application and use of all health physics equipment used at the facility, the chemical and analytical procedures used for radiological sampling and monitoring, methodologies used to calculate personnel exposure to uranium and its daughters, and a thorough understanding of the process and equipment used in the facility and how the hazards are generated and controlled.

**Lead, Laboratory.** The Lead, Laboratory must have a bachelor's degree in chemistry or a related field, or equivalent experience in chemistry or a related field; and at least two years experience in the nuclear field. This position requires a strong working background in basic lab chemistry and analytical methods; and a complete working knowledge of hazardous waste regulations.

**Lead, Safety.** The Lead, Safety must have 2 years of post-high school education and 2 years of experience in OSHA compliance and training programs; or equivalent experience.

## **I.2.6 RADIATION SAFETY**

**Lead, Health Physics/ARSO.** The Lead, Health Physics/ARSO must meet the qualifications for RSO stated in section 2.5 above. ~~have a bachelor's degree, preferably in health physics, or equivalent training and experience which includes at least four years experience in a radioactive material field; and be able to effectively communicate technical concepts and procedures in both oral and written form. The Lead Health Physics/ARSO must have the ability to supervise health physics personnel with regards to the radiation protection program.~~

**Radiation Safety Technician I.** Radiation Safety Technician I(s) must have a high school diploma or equivalent, ability to pass the HP exam, valid driver's license, and be physically able to meet all requirements of the job.

**Radiation Safety Technician II.** Radiation Safety Technician II(s) must have a high school diploma or equivalent, three years working directly with radioactive material and two years direct health physics experience equivalent to the Radiation Safety Technician I level, or an equivalent combination of education and experience, ability to pass the Radiation Safety Technician II exam, valid driver's license, and be physically able to meet all requirements of the job.

## **1.2.87 CONTRACTUAL SUPPORT**

All individuals providing contractual support for radiation safety, quality assurance, facility operations including waste placement must meet the minimum qualifications and receive the necessary training for the positions held.

Figure 1: Administration

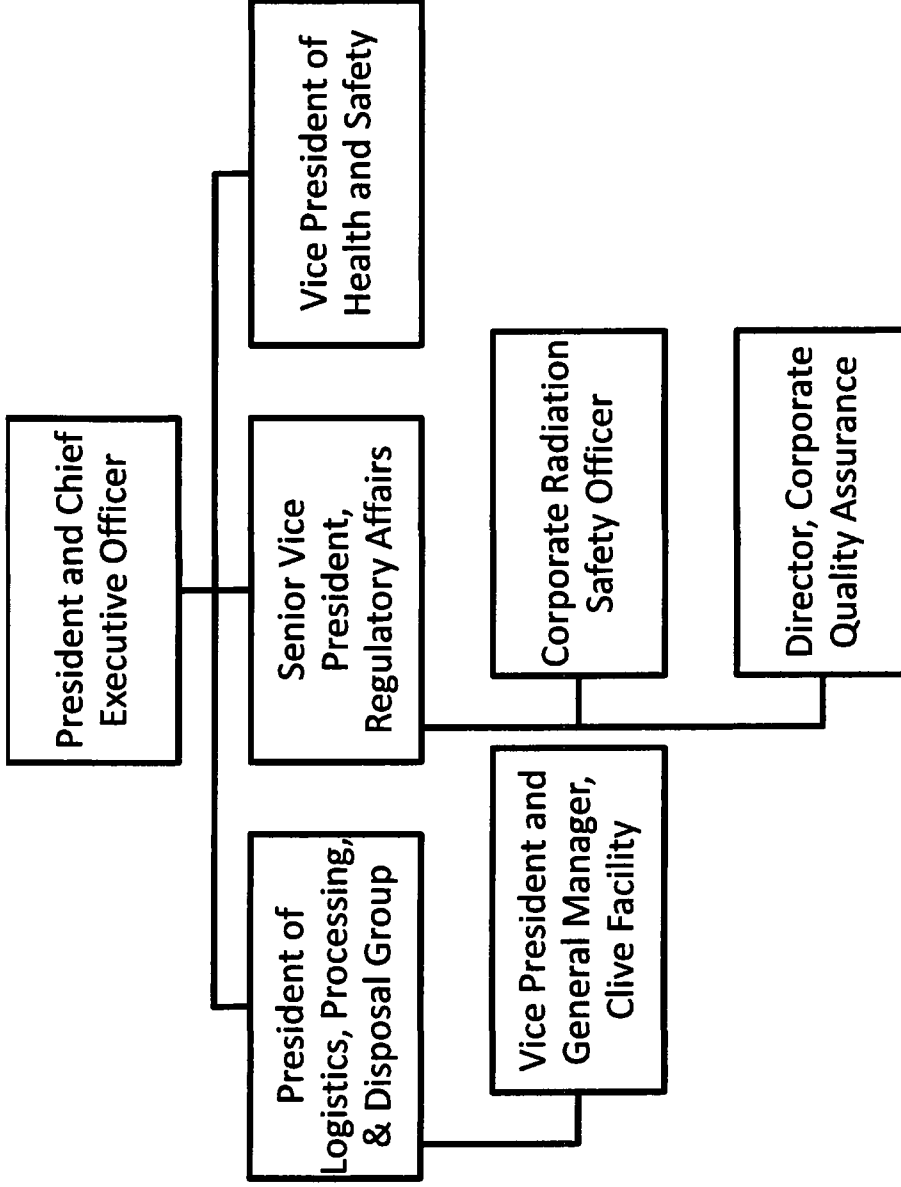


Figure 2: Clive Management

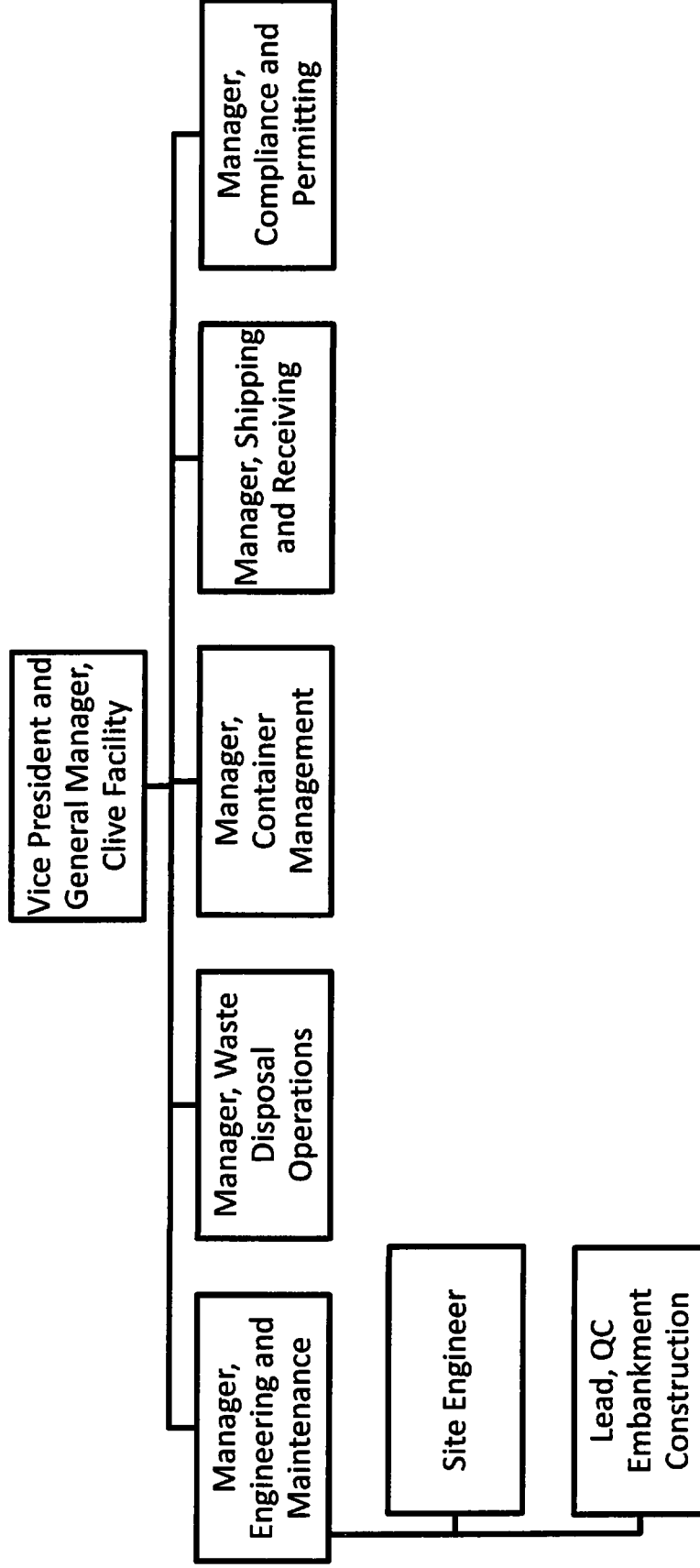




Figure 3: Quality Assurance

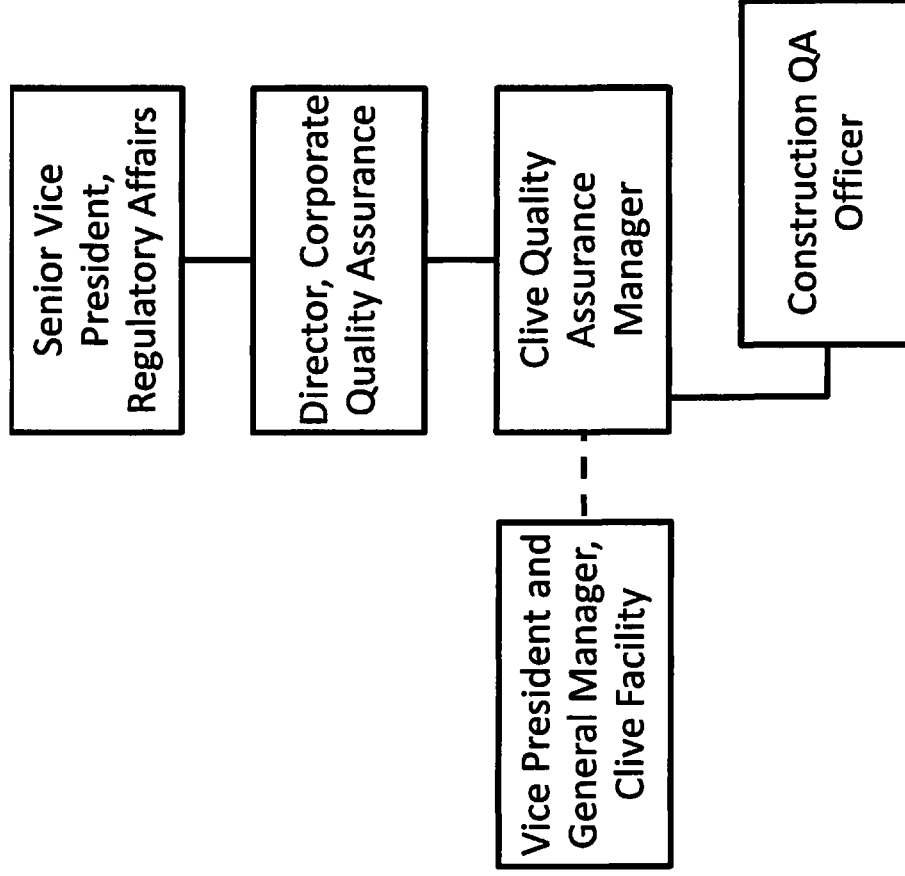


Figure 4: Compliance, Permitting, Radiation Safety

