GARG CONSULTING SERVICES, INC.
ENGINEERS • CONSULTANTS • CONSTRUCTION MANAGERS

GARG CONSULTING SERVICES

RADIATION SAFETY PLAN (RSP)

Ver. 1.0_2009

10 CFR 20.1101(a): Each licensee shall develop, document, and implement a radiation protection program commensurate with the scope and extent of licensed activities.

This Radiation Safety Plan will be implemented at all times. A copy of these procedures shall be kept in Garg radioactive materials file folder in the office, and another copy should be maintained in the shipping/storage case(s) of the Garg possessed nuclear gauge(s) at all times.

SIGNED_____ DATE August 18, 2009

General Statement

This Radiation Safety Plan (RSP) covers the procedures for the safe and proper use and possession of radioactive material as contained in portable moisture/density gauges used to measure soil and other materials. When handled in accordance with this plan, the radioactive materials present no hazard to Garg Consulting Services employees, customers, or the general public.

Operation Procedures

1. The operator will excersise suitable control over the gauge at all times. At no time is it to be left unattended or in the possession of an unauthorized person;
2. The operator will stand no more than 10 feet from the gauge while a test in progress. The operator will ensure that no equipment or vehicles are within 20 feet of where a gauge is being used to take a test, unless they are shut down;
3. When testing is complete, the guage will be locked and returned to its storage/transportation case and returned to the permanent storage location as soon as possible;
4. When using a gauge, the operator will wear the personal dosimetry device assigned. When the operator is not using gauges, the dosimeter device will be kept in a radiation free, low heat area;
5. At all times operators will observe ALARA (As Low As Reasonably Achievable) principles to minimize any dose received.
6. While the equipment is in the operator's possession, the operator will have a copy of the:

Radiative Material License	Gauge Operation Manual
Radiation Safety Plan	Current Leak Test Certificate
Letter of Authorization from the RSO	Shipping Paper

Transportation Guidelines

1. During transportation, the shipping container shall be fully secured in the transport vehicle, locked, and located away from personnel. When transported in a closed vehicle (car or van), the vehicle should be locked when unattended. When transported in an open bed vehicle, such as pickup truck, the case should be locked and securely fastened and locked to the truck bed using a chain or cable passing through the handles of the case;
2. The equipment shall be transported in an approved DOT shipping container with all the required labels and markings;
3. During transportation, the operator will have a proper shipping paper within arm's length in the driver's compartment and visible from outside the vehicle;
4. When an open bed vehicle is parked overnight outside of a building, the

operator/transporter should lock the case in a closed cab, such as the driver's compartment, and chain or cable the case to a fixed structure, such as steering wheel, and then cover the case;
5. When shipping by common carrier, the package shall be in compliance with the U.S. D.O.T. Regulations, 49 CFR 170-179.

Storage

1. Gauges shall always securely stored in the cabinet / closet at job site, or in the radioactive material storage room at 1960 Silas Deane Highway, Rocky Hill, CT;
2. Gauges shall be secured against unauthorized removal by at least two locks and key mechanism;
3. The gauge storage location shall be posted with a "Caution, Radioactive Material" sign;
4. An In/Out Utilization Log shall be kept at the storage location and used by gauge operators;
5. Gauges shall only be stored at temporary sites that meet the security, posting, and safe dose to the general public requirements of the permanent storage location.

Maintenance

1. Periodic maintenance will include cleaning the gauge, and the gauge clean-out plate and shutter mechanism. The operator will have received proper instruction on how to clean the gauge and will wear his assigned dosimeter device;
2. No maintenance will be performed in which the radioactive source is removed from the gauge. The gauge will be returned to the manufacturer or an approved service center
3. A leak test shall be performed annually using an approved leak test kit provided by the gauge manufacturer or other licensed leak test providers. The operator will have received proper instruction on how to leak test the gauge and will wear his assigned monitoring device when performing the test;
4. The shipping case shall be periodically checked for cracks, to make sure the latches are functional, and to verify that all labels are present and readable. A damaged case should be factory repaired or replaced.

Training

1. All operators will complete a manufacturer's or licensed training provider's Operator's Training Course. A written record of completion will be retained on file;
2. All operators will receive refresher (recurrent) training at intervals not to exceed

one year. Refresher training may be provided by either the gauge manufacturer or the Radiation Safety Officer (RSO). A written record of completion will be retained on file;

EMERGEBCY PROCEDURES

Emergency Call List

RSO 24 Hour cell 1-860-328-0851

STATE HAZARDOUS EMERGENCY _____

LICENSING AGENCY _____

MANUFACTURER (CPN) EMERGENCY SERVICES 1-800-852-7550

Physical Damage

1. If any moving equipment is involved, stop its movement first, until the extent of contamination, if any, can be estimated;
2. Cordon off an area with a 15 feet radius around the incident;
3. Visually inspect the gauge to determine the extent of the damage to the source(s) housing(s), and shielding. If the source(s), source housing(s) and shielding are intact and functional, the gauge can be removed from the site, returned to the shipping container, and shipped back to manufacturer for repair or replacement;
4. If the integrity or location of the source(s) cannot be positively identified, at the earliest possible time, when the situation is under control, contact the RSO, describe the conditions and follow the instructions. The RSO will immediately notify the appropriate regulatory agency;
5. The RSO shall follow the instructions of the regulatory agency;
6. If the source rod is extended and bent, or the shielding is damaged such that dose rates are likely to exceed those of an undamaged gauge, call the manufacturer for instructions before shipment.

Lodged or Lost Doen-Hole Probe

1. Operating procedure to prevent a probe from becoming stuck or lost in a bore-hole:
   a. All access holes for probe(s) shall be lined with a continuous casing from the lowest depth to a minimum of six inches above the surface;
   b. The cable connectors to both the probe and surface electronics shall be

checked daily to assure they are tight;

c. For all access hole sites greater than 12 feet in depth, a dummy probe, whose stiffness, outside diameter and effective length are equal to that of the active probe, will be lowered to the bottom of the hole before deploying the radioactive source(s).

2. Emergency procedures if a probe becomes stuck in a bore-hole and it becomes apparent that efforts to recover the sealed source will not be successful:
   a. Immediately secure the area around the hole;
   b. Notify the NRC authority immediately by telephone of the circumstances that resulted in the inability to retrieve the source;
   c. Follow instructions of the NRC authority;

Theft or Loss

1. Immediately notify the RSO. The RSO will immediately notify the appropriate regulatory agency and the police.

Fire Hazardous

1. Call the Fire Department;
2. Take action appropriate with a fire to protect personnel;
3. Notify RSO;
4. Stand by to advise the fire fighters as to the nature, location, and potential hazardous of the radioactive materials. Supply them with an information packet consisting of the facility layout and a data sheet of the equipment, including a photograph. Be sure to include any other important information.
   Melting Points of gauge building materials:

Stainless Steel	2550	1400
Carbide	2000	1090
Aluminum	1005	540
Lead	620	327
Polyethylene	257	125

Temperature in an industrial fire normally ranges from 500 at floor level to a high at the ceiling of 1400 to 1800. The polyethylene and lead will melt in most fires, the aluminum only in a severe fire. The stainless steel capsule will not reach its melting point in normal fire hazards.

Disposal / Decommissioning

1. Disposal of gauges shall only be by transfer to a properly licensed organization. A Disposition of Materials form must be completed and submitted to the licensing agency before a license will be terminated;

2. The regulatory agency will be notified 30 or more days in advance of any relocation of the permanent storage location. Formal decommissioning will not be required, provided leak tests are current.

END OF RADIATION SAFETY PLAN