

CARDINAL SURVEYS COMPANY

Ejector Loading Procedures

REV. 5/03

I. INTRODUCTION

The safe handling of radioactive materials dictates the use of written procedures to ensure that all necessary steps/actions are taken, consistent with the Cardinal Surveys Company ALARA Policy. All operations personnel are required to adhere to this policy when loading ejector tools. Only trained personnel as defined in the applicable regulations are allowed to load ejector tools. Trainees may be utilized for the purpose of instruction in safe loading procedures under the direct, careful attention of properly trained and certified field supervisors. At no time will unqualified personnel be allowed to participate in or observe the loading of radioactive material ejectors. Non-essential personnel will be asked to vacate the area prior to commencement of the loading procedure. The loading procedure is said to begin upon the removal of D.O.T. transport containers from their designated locked storage compartments.

II. PREPARATION FOR TOOL LOADING

A. SURVEY AREA - Use hand-held survey meter to monitor location. Include survey of logging unit, area around the well-head, and any other position on the location that might be likely to have residual radiation left by prior users (pits, tanks, etc.).

B. NOTIFY ALL AFFECTED PERSONNEL - Make sure all personnel on location are notified that radioactive materials are about to be transferred.

1. No unauthorized personnel in close proximity during handling of radioactive material.
2. No smoking, eating, or drinking during handling of radioactive material. This applies even to personnel not directly involved in the loading procedure.
3. Prepare to wear the proper protective equipment, required for the type of material:
 - a. Latex gloves.
 - b. Goggles (splashing and Beta protection).
 - c. Respirator for oil / gas tracer material.
4. Select a place for loading:
 - a. Not in a working pathway, or where traffic might interfere with the tool loading procedure.
 - b. Choose an area downwind from personnel and equipment.
 - c. Locate ejector tool where the tool and personnel will be in visual contact with logging control panel operator. The best location is normally at the rear of the logging truck.
 - d. Place tool over an area with removable soil. In the event of a small spill of radioactive material, it may be necessary to shovel and bag contaminated soil.

III. EJECTOR LOADING PROCEDURE

A. SECURING THE EJECTOR.

1. Place the ejector away from the logging compartment for loading. NEVER place the tool inside the logging compartment or in the door way to the logging compartment.
2. Support the tool in order to hold it securely in position.
3. Have absorbent material in a catch tray and placed under the screw-in port (pump) section of the ejector tool.
4. The panel operator will reverse the tool in order to relieve any possible pressure trapped in the pump section.
5. Locate the power / signal control wire so no one will trip over it. Clip power leads to tool using approved banana plug assembly. Do not touch power wire leads until panel is checked to verify that power is off.
6. Take all steps necessary to prevent accidental spills.

B. PREPARING THE RADIOACTIVE MATERIAL AND NECESSARY IMPLEMENTS.

1. Transportation box and all necessary equipment, should be located for easy excess, but at the greatest practical distance. Remember time, distance and shielding.
2. Hand tools secured and ready.
3. Ample supply of absorbent towels.
4. Syringe or funnel cleaned and ready.
5. Open transportation box, remove shield (lead pig) and remove tape. Unscrew lid to bottle, and leave bottle in lower portion of the shield. Make sure there is no likelihood of accidental spillage.

C. LOADING THE EJECTOR TOOL.

1. Remove the blank plug (not the pop-off port), insert funnel and circulate pump system. Remember to place port plug on the absorbent material, as it will be contaminated.
2. Remove R/A bottle from transport box and lead shield, put contents into funnel, seal bottle and return the empty bottle to box. Remember not to lean directly over open bottle or funnel.

3. Reverse the tool pump and load ejector. Remember to step away during loading (distance). Make sure that the tool cannot rotate or spill material. Watch for leaks around the funnel or out of the pump section pressure equalization drains.
4. Hold absorbent towel under port area when removing funnel to catch any possible leakage. Replace the blank plug. Remember to place funnel on the absorbent material, it will be contaminated.
5. Inspect discharge (pop-off) port for leakage. Wash port area with spray cleaner to remove any possible contamination. Place all waste products in LSA container.
6. Cover discharge port with adequate thickness of absorbent towel and test fire. Use lower shot size settings, and be very careful. Be wary of delayed release from the pop-off port. Wipe clean, and re-wash port area. Back tool up one shot to relieve internal pressure.
7. Return all radioactive material, waste material and handling equipment to the proper locked bin storage compartment of the logging unit.
8. Under no circumstances is the person preparing the ejector tool to eat, drink or smoke while loading or handling the ejector tool.

D. PLACING EJECTOR TOOL ON LINE.

1. Do not jar or drop tool during handling procedures.
2. Do not place hands in the vicinity of the pump section of the tool.
3. Never stand loaded tool in a position where it might fall.
4. Do not handle detector tool or other tools in the assembled string without first changing gloves.