

APPENDIX I

POTENTIAL FOR SPILLS AND GENERAL PREVENTIVE MEASURES

1. **GENERAL.** The following paragraphs discuss different types of activities commonly conducted at ORARNG facilities where POL and hazardous substances are used and stored. Review of this chapter will help identify the types of activities that can create a spill and techniques that can be used to minimize and control spills that do occur.
2. **ABOVE GROUND STORAGE TANKS**
 - a. If a facility has been provided with permanently installed above ground fuel storage tanks, it must have site-specific an SPCCP prepared by AGI-ENV and signed by a registered Professional Engineer. Specific guidance for managing and inspecting these tanks is provided in those plans.
 - b. The general guidelines provided in this appendix apply and should be used in managing all mobile fuel equipment that is periodically or routinely used as an above ground fuel storage system. Of particular importance vehicles used to refuel aircraft on flight lines at the two flight facilities and HEMETs parked at other ORARNG locations throughout the state.
 - c. Spill Potential
 - (1) Above ground tanks are much more vulnerable to vehicle collision damage and vandalism than were underground tanks.
 - (2) While it is easier to spot a leak in an above ground tank than an underground tank, it is similarly easier to disregard the need for close inspection of the tank and its support structure. Small leaks could go unnoticed for a short period of time. Although most tanks are relatively new now, tanks that are painted several times over a period of years may rust completely through in some spots without leaking. When the tank is filled, the paint may give way and a large leak can develop instantly. If this occurs and the site is not checked, the entire contents may be spilled.
 - (3) Spills can occur when filling and dispensing fuels from above ground tanks, as discussed below.
 - d. Physical Protection. State law requires that above ground tanks must be protected from vehicle impacts by bollards, fences, signs, barriers, etc. These should be provided at all permanently installed fuel points. They are also required at temporary fuel storage and dispensing sites within the confines of a facility and using mobile equipment. Guides should always be used where vehicle backing is necessary. Fences, signs, padlocks, lighting, and security personnel help to deter potential vandals. If not part of the installed equipment, dispensing units for both above ground storage tanks should be mounted on an elevated concrete pad or protected against collision by suitable means.
 - e. Inspections. Above ground storage facilities and mobile equipment should be

inspected to look for obvious leaks and weakening of support structures. Check peeling paint, corrosion of fixtures, joints or seams and wet spots on both the tank and the support structure.

3. MAINTENANCE FACILITIES

- a. Maintenance facilities generally have small quantities of lubricant oils, antifreeze, battery acid, paint products, fuels, and solvents stored in work areas or in storage rooms. Any number of other supplies used at the facility may also be present. In addition to the possibilities for rupture or leakage from containers of stored items, the potential for small spills to occur during oil changes, solvent bath changes, and other handling and operational procedures exists. These spills are generally confined within the facility and do not present a threat to the environment if spilled material does not reach an unattended, open floor drain or exit the building through cracks or holes in the floor or under a doorway.
- b. Primary methods used to prevent spills in these areas are good housekeeping and care in handling materials. The following practices should be used:
 - (1) Keep quantities of stored products adequate but as small as possible. This reduces the magnitude of a potential spill.
 - (2) Ideally, there should be no floor drains unless they are closed by a gate valve or are plugged. Most floor drains flow to the sanitary sewer. Some have an in-line oil-water separator; some do not. Floor drains that are not controlled by valves should be covered at all times to contain any spills. This applies to drains which flow to oil-water separators, too, since many solvents are not trapped in the separator. Also, the holding capacity of a separator may be exceeded by a large spill.
 - (3) Oil-water separators should be inspected weekly. All personnel working in an area with a separator should understand how it works. The depth of sediment and floating material that will initiate cleaning procedures are addressed in Appendix H, ORARNGR 420-47.
 - (4) Liquid products, including parts washers in the work bays, should be stored or positioned away from floor drains and expansion joints. Where this is not feasible, consider providing secondary containment by using cans or lined containment boxes in which the materials may be stored.
 - (5) Products dispensed from drums stored horizontally should have drip pans attached to catch the inevitable spillage and drips that occur during filling of containers. Funnels should be used when filling small-mouthed containers.
 - (6) Products, whether in the shop or in a storage room, should be well organized. Only compatible substances should be stored together and routes of exit should not be blocked. Containers must be placed so the labels, including warnings, can be read without moving the containers.
 - (7) *Absorbent materials must be located close to all storage and use areas.*

- (8) All personnel should know where absorbent materials are kept, what they are used for, and how to use them. They should also be aware of where brooms, mops, shovels, and other spill control/cleanup equipment and materials are located.
- (9) Emphasis should be placed on good housekeeping. Workers should clean up after themselves. Spillage from leaking containers or equipment should be reported and cleaned up immediately.
- (10) Storage areas and containers should be informally observed daily to ensure leakage has not occurred. A formal inspection should be made weekly.

4. STORAGE ROOMS

- a. Storage buildings and rooms of various sizes are used to store a multitude of products. It is important to keep a current inventory of what is stored in each room and ensure that stored products are compatible. The ability of the storage area to provide secondary containment for stored materials should be determined. Volumes of the largest containers, presence or absence of floor drains, vents near the floor, expansion joints, holes in the floor, slope of the floor, etc., are points that should be considered in this evaluation. Frequently, a storage room will (or can be made to) provide sufficient secondary containment. In some cases, a small lip can be installed at the door to increase the containment capabilities or volume provided by the room. Small sheds and CONEX boxes can be placed on curbed pads.
- b. The primary potential for spills in these areas is through handling and dispensing of stored products. In all cases, care in handling and good housekeeping practices must be emphasized. All spills, even drips, must be cleaned up immediately and/or reported to the person in charge. Post the name and phone number of the person to notify near the entrance to the area. If large quantities of material are stored, a copy of the appropriate spill response procedures should also be conspicuously posted. All personnel likely use the storage room should be trained in handling, containment, cleanup, and reporting procedures.
- c. All containers must be arranged to provide at least three foot of aisle space to allow proper container inspection and access to the entire room in the event of fire, spill, or other emergency.

5. OUTDOOR NEW PRODUCT STORAGE

- a. These areas are generally in a fenced compound that may contain a few small containers or one or more 55-gallon drums of various products. The drums may be on a rack of some sort, may stand on the ground or on pallets, and may be oriented vertically or horizontally. They may or may not have dispensing taps or manual pumps, and may or may not be in use. Other container types may also be present.
- b. Ideally, this type of storage area should be located on a concrete pad with curbing. Consideration should be given to ensuring the floor is impermeable. Use sand bags or construct berms to help contain a spill. Covers (such as awnings or a roof) should also be considered. The area should not drain directly into a stream or storm drain that leads to a stream.

- c. Drip pans should be placed beneath dispensing taps used to fill other containers.
- d. Absorbent materials should be available to clean up any spillage or leakage.
- e. Leaking containers should be repaired, replaced or placed in over-pack containers immediately upon their discovery.
- f. Contaminated soil must be cleaned up and disposed of IAW ORARNGR 210-6.
- g. All containers must have legible labels that identify the contents. Under the Hazard Communication Standard, all containers must be identified with labels that describe the contents, hazard warnings, and manufacturer's name. Containers must be oriented so labels may be read without having to move the containers. The MSDS for each product must also be available for personnel to use.
- h. Only compatible materials should be stored together.
- i. The area should be informally inspected daily and a formal written inspection should be conducted weekly.

6. OUTDOOR USED PRODUCT STORAGE

- a. Used products are normally considered to be wastes unless they are managed as a recyclable product. Wastes can be solid waste, hazardous waste, special waste, or universal waste. Hazardous and special wastes are typically stored in above ground containers such as 55-gallon drums. Waste products must be clearly marked and stored with container lids closed to eliminate spillage and prevent the collection of rainwater in the container.
- b. If waste products are stored in drums, original labels must be obliterated and the type of waste being stored must be stenciled on the outside of the container.
- c. Careful pouring of waste material into storage containers must be emphasized. This will avoid contaminating the exterior of the container and allowing spilled material to contact surrounding surfaces. Personal protective equipment must be worn, as required by the type of materials and wastes being handled.
- d. Spilled material should be cleaned up immediately and disposed of properly.
- e. The quantities of waste material in the containers should be monitored frequently in order to ensure that sufficient headspace is maintained.
- f. Spill response equipment, absorbent materials, and other suitable supplies should be available for containing and cleaning up spillage.
- g. The area should be diked, bermed and/or covered to prevent spilled material from draining into natural or manmade drainage systems, and to provide cover from rain and snow, as necessary.

7. BATTERY ROOMS

- a. Although most lead acid batteries are now procured by the ORARNG through contract, many existing facilities contain battery rooms. Battery rooms are generally used to charge and/or add electrolyte (sulfuric acid) to batteries. This requires on-hand storage of new electrolyte. There is usually a water source with a sink of some kind. The sink drain and a floor drain will often be present and both will drain to a sanitary or a storm sewer.
- b. In the past, maintenance personnel neutralized spent electrolyte on site and poured it down the drain. This is no longer acceptable and should never be done. Spent electrolyte is considered a hazardous waste. Therefore, it can only be "treated" (including neutralization) in a facility permitted under RCRA. Dilution of electrolyte is forbidden by law. Therefore, all unserviceable lead-acid batteries must be turned in to the commercial battery vendor supplying the batteries or to the DOL with the electrolyte intact.
- c. If a spill of used electrolyte occurs through overturning a battery or a cracked casing, the spilled material must be treated as hazardous waste. Cleanup includes absorbing the hazardous waste, gathering the absorbed material into a plastic container, accumulating the waste as a hazardous waste, and disposing of the waste IAW the provisions of ORARNGR 420-47.
- d. New acid electrolyte, if spilled, may be neutralized, tested with litmus paper or some other pH indicator and discharged to the sanitary sewer. Thus, floor and sink drains should be stopped (plugged or covered) during transfer and handling of acid. Also, storage areas for new acid should have no drains or outlets. If in doubt on how to correct the spill, contain the material and call AGI-ENV.
- e. Battery cases with a residue of acid on them should be handled carefully to avoid contact with employee's skin or clothes. Spent battery cases cannot be rinsed with water or sodium bicarbonate solution as this action is considered "treatment" of a hazardous waste and is forbidden without the appropriate regulatory agency permit. PMCS on batteries, as described in applicable technical manuals, is allowable.
- f. Care must be taken in selecting containers for spent acid storage to ensure they are approved for such use.

8. MOBILE STORAGE

- a. Mobile storage, in this case, refers to hauling of POL and/or hazardous materials in tank trucks and trucks or trailers with fuel pods. It may be done to transport products from site to site, or for delivery to aircraft, other vehicles, storage tanks, or individual containers. Mobile units that travel on public highways are technically exempt from SPCCP requirements if they are not used for more than temporary storage at a facility. However, these vehicles are covered by Department of Transportation regulations. Since mobile equipment containing any regulated materials have the potential for spills to occur, it is necessary to address this issue in spill plans, take measures deemed reasonable to prevent accidental discharges, and prepare for appropriate response and mitigation if accidental spills occur.

- b. When parked, mobile storage units should be located in a concrete, bermed secondary containment pad, or at a minimum, an area that would not permit spilled material to get into a storm sewer or natural drainage system, or contaminate groundwater. If a dedicated site is not provided, some sort of secondary containment should be attempted when locating the parking place. This may be a depressed area, a wash pad with the drain temporarily sealed, an area where sand bags have been placed, a site surrounded by an earthen berm, or some other existing location where spilled materials would be contained.
- c. Absorbent materials, shovels, brooms, and collection containers carried on mobile units allow quick cleanup of accidental spills that may occur during dispensing procedures. Spill kits have been provided for all ORARNG equipment that transports fuel for dispensing to other vehicles. The driver should be required to remain with the vehicle and be attentive during refueling operations, and trained in the proper response and reporting of spills. An SOP for spill prevention and emergency response, to include a copy of AGI Form SRG-1/2, Spill Response Guide, should be kept in the vehicle log book. The driver should be aware of its existence and contents.

9. FUEL POINTS

- a. General. Fuel points (in this case, above ground storage tanks) can involve at least three separate operations: storage, receiving, and dispensing of fuel.
 - (1) Storage. Storage areas should be posted with names and phone numbers of emergency contacts. Signs with instructions for spill response and reporting should also be posted. Cleanup equipment and absorbent materials should be readily available. Lighting should be installed and provide sufficient light for supporting required activities.
 - (2) Receiving. The most common spills during receiving operations occur from inattention to detail and overfilling of storage tanks. Other potential spills include a tank truck rupture, dislodging or breaking of delivery lines, valve failures, and leakage or rupture of the receiving storage tank. **Two people must always be present during deliveries of fuel.** Do not allow delivery personnel to do it alone. The receiving tank should be gauged before and after delivery, as a matter of inventory control.
 - (3) Dispensing
 - (a) Dispensing is the transfer of fuel from a storage tank or tanker truck to the fuel tanks of vehicles or equipment, or to other containers such as drums of "jeep cans".
 - (b) Fuel dispensing pumps should be padlocked whenever not in use or under the direct supervision of a responsible person. Electricity to the pumps should be located inside a securable building or be securable themselves. Electricity should be turned off when the pumps are not in use.
 - (c) Secondary containment is not required for simple service station type fuel points. However, fuel points should be evaluated to determine the location of storm drains or other paths in the immediate area that could allow spilled fuel

to be channeled to a waterway. Most spills that occur during dispensing will be small if the operator is attentive; however, the cumulative effects of frequent small spills, if they are not cleaned up immediately, can be significant. Although spills may be absorbed by the top few inches of soil or spread and can evaporate over time on a concrete or asphalt surface, much of the deposited material will be lifted and carried to drainage during the first good rain that follows the spill. For this reason, continued emphasis on daily inspections, proper cleanup, and responsible operations is necessary.

10. INSPECTIONS

- a. Generally, inspections are necessary to ensure compliance with requirements. The more frequently inspections are performed, the better.
- b. Routine walk-and-look inspections of most facilities should be performed daily. This will provide early warning of any potential problems or identify actual releases they may have occurred or begun since the last visit.
- c. Formal, detailed inspections should be performed and documented weekly in all of the areas noted above, as applicable to the facility. These inspections should be documented (date, findings, comments, and initials of the inspector) on the Weekly Inspection Sheet provided at Appendix L, ORARNGR 210-6.
- d. Records of weekly inspections are sometimes required and, even if not required by regulation, show inspectors that best management practices are being employed at the site. If inspections are required, as in the case where hazardous wastes are being stored, regulatory agencies follow the rule of thumb that if there is no record of the inspection having been done, it probably was not performed.

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