

U.S. Army Corps of Engineers Supplemental Requirements for Transporting Materials Off-Site from Formerly Utilized Sites Remedial Action Program (FUSRAP) Projects

1. PURPOSE

The U.S. Army Corps of Engineers (USACE) recognizes the importance of proper management of FUSRAP materials during off-site transportation. This fact sheet is intended to assist USACE personnel and contractors in understanding the requirements that must be followed to ensure FUSRAP materials are transported in compliance with all applicable laws and regulations. This fact sheet summarizes USACE's supplemental requirements for transporting FUSRAP materials that may exceed Federal or state transportation requirements. The discussion below includes references to additional information on the specific USACE requirements for transporting FUSRAP materials.

2. BACKGROUND

Large volumes of materials containing residual radioactivity are transported off-site by rail and truck for recycling, treatment and/or disposal in the execution of the Formerly Utilized Sites Remedial Action Program (FUSRAP) by the USACE. There are a variety of different types of materials (material includes wastes and is primarily soil and/or debris) destined for off-site transportation from the various FUSRAP sites. In general, the materials fall into the following categories of radioactive residuals or materials:

- ◆ Materials regulated under the Atomic Energy Act (AEA);
- ◆ Materials not regulated under AEA;
- ◆ Materials that are strictly hazardous waste regulated under the Resource Conservation and Recovery Act (RCRA);
- ◆ Materials that are hazardous waste and commingled with AEA regulated materials (mixed waste);
- ◆ Materials that are hazardous waste and commingled with non-AEA regulated radioactive residuals;
- ◆ Materials that must be sent off-site for disposal that are not regulated as radioactive waste or hazardous waste;
- ◆ Materials only regulated by the Department of Transportation (DOT).

Determining the category of the material is key in determining the applicability of the DOT, U.S. Environmental Protection Agency (EPA) and U.S. Nuclear Regulatory Commission (NRC) transportation regulations.

3. DISCUSSION

The transportation of hazardous materials is strictly regulated by DOT under Title 49 of the Code of Federal Regulations (CFR) parts 171 through 180. EPA or a Resource Conservation and Recovery Act (RCRA) Authorized State may also regulate hazardous material if it is hazardous waste (40 CFR 260 through 280). If the hazardous material

contains a radioactive material regulated by AEA (licensed material), it will also be regulated by the NRC or an Agreement State.

The USACE project team (e.g. project manager, construction representative, health physicist and transportation specialist) for each site will determine the necessary information and forms required for execution of their project. The site specific work plans developed by the remedial action contractor and approved by the USACE District personnel will establish the procedures that will be followed when FUSRAP material is required to be sent off-site. The work plans must be in compliance with USACE policies and all Federal, state and local regulations. USACE has identified the policies that must be followed in Engineering Circulars and Engineering Pamphlets. This fact sheet is limited to transportation issues related to the off-site transportation of FUSRAP material. USACE established an Off-Site Disposal Policy for FUSRAP materials in Engineering Circular (EC), EC 200-1-3 "[Off-Site Disposal of Materials from the Formerly Utilized Sites Remedial Action Program](#)". The EC states that shipments of FUSRAP materials will comply with all applicable DOT and NRC requirements. The EC also includes several additional requirements that are not required by the DOT, NRC or EPA. These requirements are unique to FUSRAP and not required on other USACE response actions for other remediation programs. The Hazardous, Toxic and Radioactive Waste Center of Expertise (HTRW CX) revised two Engineering Pamphlets (EP) to explain the transportation and manifesting requirements for FUSRAP materials. The pamphlets also identify the applicable DOT, NRC and EPA requirements when transporting most of the hazardous materials USACE offices encounter. The EP's are identified below and are linked to the Huntsville Engineering and Support Center web site where the complete documents may be viewed or downloaded:

- ◆ EP 415-1-266, "[Resident Engineering Management Guide for Hazardous, Toxic, and Radioactive Waste \(HTRW\) Projects](#)";
- ◆ EP 200-1-2, "[Process and Procedures for RCRA Manifesting](#)".

Manifesting and transportation checklists are included in [EP 200-1-2](#) (beginning on page A-68) to assist USACE personnel and contractors in preparing FUSRAP materials for shipment. The checklists identify important steps and requirements in preparing shipping papers, packaging, marking, and labeling containers and placarding the transport vehicle. For example, if the FUSRAP material is being shipped as Radioactive material, low specific activity (LSA)-"Exclusive Use", checklist 9 will assist in providing example "specific instructions" that must be included with the shipping papers.

The type of shipping paper needed for transporting FUSRAP material will depend on the history and characterization of the material and the regulatory status of the material. If the material is determined to be NRC regulated, a *Uniform Low-Level Radioactive Waste Manifest* ([Forms 540 & 541](#)) must be used. If the radioactive material to be disposed of is also hazardous waste, a state or EPA *Uniform Hazardous Waste Manifest* must be used in addition to the NRC manifest. A DOT Bill of Lading may be used if the material is a DOT hazardous material (e.g. Class 7 Radioactive Material or Class 9) but not NRC regulated (under AEA) or a hazardous waste. Recycling/Disposal facilities may require

shipping papers (e.g. NRC manifest) even if the material is not regulated by DOT, EPA or the NRC. In that situation, the shipping paper should include a notation that the material is not DOT, EPA or NRC regulated. Additional information on manifesting requirements may be found in [EP 200-1-2](#), page A-51. Figure 1 is included to assist in the determination whether the FUSRAP material is regulated by DOT during transportation.

4. FUSRAP SPECIFIC TRANSPORTATION REQUIREMENTS

4.1 HTRW CX Notification Requirements. All USACE Districts and Field Operating Agencies are required to coordinate disposal of all radioactive waste, to include FUSRAP radioactive materials, with the HTRW CX prior to shipment ([ER 385-1-80, paragraph 17.a.](#)). As required by HQ USACE, the HTRW CX maintains a database from the District notifications for upward reporting to HQ USACE on the quantities and types of radioactive wastes and materials that are disposed by USACE. The notification form may be found in [EP 200-1-2](#), on page A-52. The initial notification, prior to shipment, may be an estimate of radioactive materials. Final shipment quantities shall be provided to the HTRW CX upon completion of the work.

4.2 Chain-of-custody. FUSRAP materials may not always be regulated during the course of transportation by the DOT, the EPA or the NRC. In these instances, a chain-of-custody form shall be used for each shipment of material to track the material from the point of generation to the ultimate placement or disposal location. The chain-of-custody form requires information very similar to a DOT bill of lading. The form shall include a certification that the material being shipped contains low-activity of levels of radionuclides and is not NRC licensed material and is not DOT regulated as a radioactive material or a reportable quantity of a radionuclide. An example chain-of-custody form is included in [EP 200-1-2](#) on pages A-81 and A-82.

4.3 Marking Sticker. All shipments of FUSRAP materials must comply with the applicable DOT, NRC and EPA regulations. In addition, USACE requires the use of a secondary non-DOT communication “marking sticker” (Federal Railroad Administration (FRA) designation) on all bulk containers of FUSRAP material regardless of whether the material is a DOT hazardous material or not. The label indicates the destination of the shipment and a telephone number of a USACE point of contact with knowledge of the shipment. This additional marking sticker duplicates existing information that is required on shipping papers when the shipment is a DOT hazardous material. The FRA has reviewed and approved the marking sticker with the understanding that the marking sticker color (purple, pink or chartreuse) will not create any confusion or violate any DOT requirements. Marking stickers shall be placed in visible locations on the exterior sides of transport vehicles and the top of the container liner (e.g. burrito bag in rail car gondola) to ensure the workers observe the information prior to emptying the container or rail car (intermodal or gondola). A bulk container should have the marking sticker on all four sides and if the transport vehicle is an open gondola car, there should be at least two stickers on top of the closed inner liner. An example of the marking sticker may be found on page A-65 of [EP 200-1-2](#). The HTRW CX may be contacted for potential suppliers of

DOT Requirements for Radioactive Material

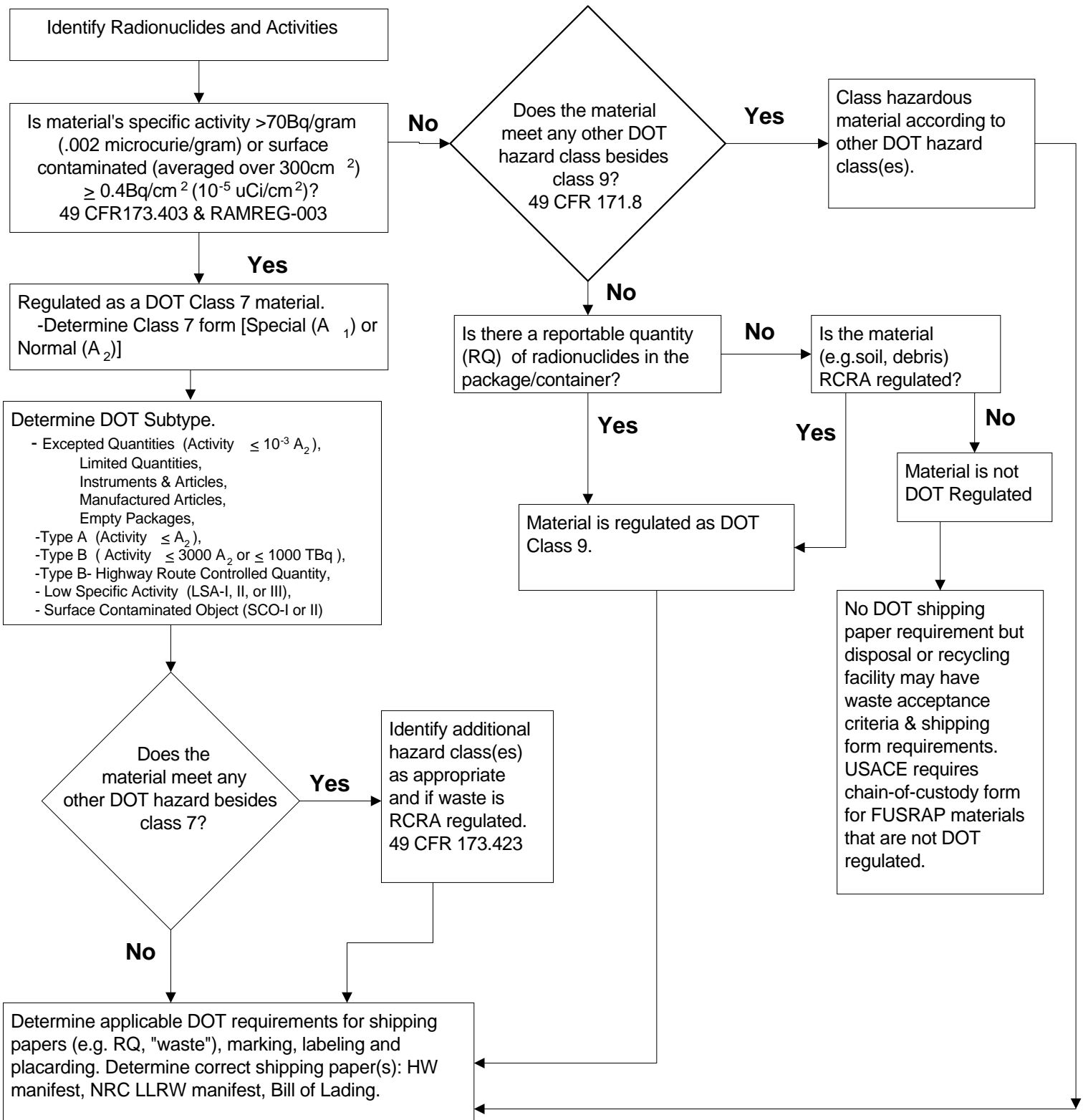


Figure 1 – Flowchart to determine if radioactive material is DOT regulated.

the marking stickers.

4.4 Certificate of Disposal. A Certificate of Disposal/Destruction or Placement is required for all off-site shipments of FUSRAP materials. The comeback copy of shipping papers (Uniform Hazardous Waste Manifest, Uniform Low-Level Radioactive Waste Manifest) does not satisfy the requirement for a Certificate of Disposal/Destruction or Placement. The comeback copy of the shipping papers typically acknowledges receipt of the material by the facility but does not state that the material has been properly disposed of. The certificate must correlate to each shipment of material to the facility and the corresponding shipping papers. This policy may be found in [EP 415-1-266](#) in Section 7, page 12.

4.5 Spill Reporting Procedures. USACE policy on spill reporting procedures for USACE personnel involved with HTRW and FUSRAP projects may be found in [EP 415-1-266](#) on page 12 of Section 7. The EP directs the reader to spill reporting procedures at: <http://www.environmental.usace.army.mil/info/technical/comply/complys/complys.html#guidance>. The Internet site includes a useful flowchart that explains reporting responsibilities for three common types of spill scenarios. The USACE spill policy memorandum outlines the major reporting requirements and delineates reporting responsibilities. USACE ER 500-1-1, chapter 11, requires all Districts to have a designated Emergency Operations Center or an Emergency Management Office (EOC/EMO) and have a plan outlining the upward reporting requirements should a natural disaster or hazardous material (e.g. FUSRAP material in transportation) spill occurs. Each District should build upon the existing emergency response structure by including any additional FUSRAP reporting requirements within their existing plans. Some basic steps should be taken to ensure the District emergency response plan adequately addresses FUSRAP spills at the project site or while the material is in transportation. Recommendations are as follows:

- 4.5.1 Meet with District EOC/EMO staff and review District emergency response plan and identify unique FUSRAP transportation and reporting issues.
- 4.5.2 Review existing emergency response plans for conformance with USACE spill reporting procedures. Develop standard procedures with Call-Down lists for District, Division and HQUSACE points of contact for FUSRAP incidents. Each District should have an internal 24-hour emergency telephone number for reporting DOT incidents or spills of FUSRAP material. This telephone number is not to be confused with the DOT requirement for a 24-hour emergency telephone number that is monitored at all times by a person delegated to accept responsibility and make decisions (49 CFR 172.604) when a hazardous material is offered for transportation.
- 4.5.3 Include Contractor reporting requirements on all FUSRAP projects to report DOT incidents and spills to the District point of contact. Contractor should be required to immediately notify District EOC/EMO (within 1 hour) of spill or incident. Refer to [Table 1](#) of spill policy for notification requirements.

- 4.5.4 Appropriate District personnel (including onsite construction representatives) shall be informed of proper reporting procedures. All reporting should go through the EOC/EMO to activate the emergency response procedures.
- 4.5.5 Each District shall ensure that all appropriate persons within the District and field offices have the required emergency response training.
- 4.5.6 All FUSRAP contracts involving off-site transportation or management should include language as per Corps of Engineers guide specification 02120, *Transportation and Disposal of Hazardous Materials*, paragraph 3.8.

“The Contractor shall respond to any spill of hazardous materials or hazardous waste which are in the custody or care of the Contractor pursuant to this contract. Any direction from the Contracting Officer concerning a spill or release shall not be considered a change under the contract. The Contractor shall comply with all applicable requirements of Federal, state, or local laws or regulations regarding any spill incident.”

4.6 Training Requirements. FUSRAP manifests and shipping documents will be signed by USACE personnel that have been appropriately trained (see Table 1) and authorized by the District Commander or delegated representative to sign “On behalf of the U.S. Army Corps of Engineers.” The USACE personnel must be trained in accordance with DOT regulations (49 CFR 172, Subpart H), DOD regulation ([DOD 4500.9-R](#), dated October 1999) and USACE ([EP 415-1-266](#), [EP 200-1-2](#) & [EC 200-1-3](#)) policies. The USACE personnel that perform functions associated with transporting DOT hazardous materials, such as developing shipping papers or manifests, marking, labeling, placarding or packaging of materials or wastes are considered hazmat employees by DOT and USACE. Hazmat employees, by DOT and DOD regulation and USACE policy must receive the following training:

- 4.6.1 General awareness/familiarization training designed to provide the employee with an understanding of DOT requirements, and to enable the person to recognize and identify hazardous materials in accordance with the applicable regulations.
- 4.6.2 Function-specific training which is specifically applicable to the functions the employee performs (e.g. FUSRAP- DOT & NRC radioactive material regulations and EPA if hazardous waste).
- 4.6.3 Safety training that covers emergency response, worker protection, accident prevention and meets the requirements established by the Occupational Safety and Health Administration (OSHA) of the Department of Labor as applicable.
- 4.6.4 Recurrent training every two years as required by DOD 4500.9-R instead of every three years as required by DOT. USACE is responsible for maintaining a current record of the USACE employees’ training and certification.

Table 1 - DOT Training Summary Chart for USACE HAZMAT Employees

Course Name	Basic Course Needed for General Awareness and Function-Specific Training	Basic Course Needed for Recurrent (Refresher) Training
OSHA/DOT Safety Training	HAZWOPER (29 CFR 1910.120)	HAZWOPER - 8 hours Refresher
Hazardous Waste (HW) Certification Only	PROSPECT 223 or DOD approved equivalent	PROSPECT 429 –12 Hours
DOT Class 7 Certification	PROSPECT 441 (excludes HW)	PROSPECT 429 –16 Hours (with Radioactive Module option)
DOT Class 9 (for Radionuclides only, includes HW)	PROSPECT 223 (with Radioactive Module option)	PROSPECT 429 – 16 Hours (with Radioactive Module option)
Ordnance and Explosives (Does not include HW)	See list in DOD 4500.9-R, dated Oct 1999	See list in DOD 4500.9-R, dated Oct 1999

4.7 Off-Site Rule Requirements. FUSRAP materials, including radionuclides, sent off-site for recycling/disposal must meet the notification requirements of the “Off-Site Rule,” found in the *National Contingency Plan (NCP)*, at 40 CFR 300.440. Since FUSRAP response actions are being performed under Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) authority, the “Off-Site Rule” must be satisfied. Prior to shipping any FUSRAP material off-site, USACE or their contractor must notify the EPA Regional Off-Site Coordinator (ROC), in the region where the selected facility is located, of the intent to send CERCLA waste to that facility. The regulation requires that the facility receiving the CERCLA waste must be in compliance with their permit and not releasing hazardous waste, hazardous constituents, or hazardous substances into the environment. The EPA ROC will provide USACE or their contractor with the facility status. [EC 200-1-3](#) requires that this notification occurs prior to shipment of FUSRAP materials and if shipments are delayed for 60 days that the facility current status be verified with EPA. Shipments may only be made after the EPA ROC has provided a determination that the facility meets the compliance and release criteria of 40 CFR 300.440. The EPA ROC telephone number for the selected facility may be obtained by calling the EPA Hotline (1-800-424-9346). A record of the telephone conversation with the EPA ROC shall be placed in the project files.

5. SUMMARY

This fact sheet summarizes the USACE supplemental transportation requirements for off-site shipment of FUSRAP materials and highlights some important Federal requirements. USACE transportation requirements may exceed Federal or state transportation requirements. As discussed in the fact sheet, USACE policy requires non-regulated shipments of FUSRAP material, at a minimum, to have a chain-of-custody form when no other type of shipping paper is required by regulation. All bulk shipments of FUSRAP material, even if non-regulated, must include the USACE unique communication

“marking stickers” in addition to any other DOT, EPA, or NRC marking or labeling requirements. Proper disposal and placement of FUSRAP material is verified by USACE with a requirement for the final destination facility to provide a certificate of disposal/destruction or placement for all off-site shipments of FUSRAP materials. USACE specific spill reporting requirements exceed Federal, state and local regulations by requiring that the USACE chain of command be informed of any incidents or spills of FUSRAP material. USACE personnel involved in any phase of hazardous material transportation must be trained in accordance with DOT regulations and USACE requirements. USACE personnel must be formally designated by the District Commander or authorized representative to sign shipping papers “on behalf of the U.S. Army Corps of Engineers.” In addition, USACE requires that off-site transportation of radioactive material be coordinated with the HTRW CX prior to shipment. Finally, USACE requires that all shipments of FUSRAP materials comply with the NCP “Off-Site Rule” notification requirements to ensure the disposal facility is in compliance and able to accept the material for disposal.

In summary, the US Army Corps of Engineers is committed to complying with all applicable laws and regulations governing the transportation of FUSRAP materials in order to ensure safe passage of these materials to their final destination.