

Environmental Audit Manual Volume II



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SECTION 6

HAZARDOUS MATERIALS TRANSPORTATION ACT

Department of Energy Order 5480.3 Section 7a states that "When offered to the carrier, each shipment of hazardous materials, hazardous substances, or hazardous wastes shall be in compliance with this Order and the applicable safety regulations of the Department of Transportation, and follow the applicable packaging standards of the Nuclear Regulatory Commission." The protocol included in this section applies to Department of Energy facilities which transport hazardous materials by common carrier (i.e., highway, rail, air, water, pipeline). This protocol also applies to Department of Energy facilities that package and transport radioactive material. It includes a discussion of the relevant statutes and regulations and of procedures for determining applicability of the regulations and for evaluating the facility's performance in meeting the applicable requirements. Bulk shipments by barge or ship are handled by the U.S. Coast Guard. Shipments of hazardous wastes are covered in a protocol established by EPA as mandated by the Resource Conservation and Recovery Act (RCRA).

1.0 INTRODUCTION

The Hazardous Materials Transportation Act, also known as the "Transportation Safety Act of 1974", was signed into law in January, 1975. The law enables the Secretary of Transportation to formulate and enforce regulations regarding the transportation of hazardous materials. There are 12 different Federal agencies involved in the regulation of the transportation of hazardous materials, but the most important modes of shipment are covered by the Hazardous Materials Transportation Act. The Office of Hazardous Materials Transportation was established within DOT to coordinate activities with the EPA and the four modal transportation administrations. The Office of Hazardous Materials Transportation is responsible for promulgating and enforcing regulations in conjunction with the Federal Highway Administration, Federal Railroad Administration, Federal Aviation Administration, and the United States Coast Guard. Inspections are carried out by the agencies in an effort to safely regulate the 200 million shipments of hazardous materials within the country each year. The principal objective of the Hazardous Materials Transportation Act is to promote the protection of human health, property, and the environment against the inherent dangers associated with the transportation of hazardous materials.

The regulations promulgated by DOT establish procedures that govern the handling, packing, labeling, placarding, and routing of hazardous materials shipments. Containers which may be utilized in the shipment of hazardous materials are specified in the regulations. Regulations pertaining to the identification and classification of hazardous materials are included in Title 49 Code of Federal Regulations (CFR) along with general shipping requirements. Specific parts of Title 49 CFR also deal with requirements specific to each mode of transport and procedures which must be followed when reporting and responding to an accident or spill incident involving hazardous materials. A review of the major parts and subparts of Title 49 Code of Federal Regulations regarding hazardous materials transportation appears in Table 1, [title to be supplied] along with relevant Title 40 (RCRA) regulations listings. DOT, EPA, and OSHA requirements for the safe transport of hazardous substances in commerce are identified, by activity, in (Figure 1- Hazardous Materials Transportation Regulation), (Figure 2 - Hazardous Waste Generation - Transportation - Storage), (Figure 3 - Assignments of Shipping Responsibilities) and (Figure 4 - Multi-Agency Accident/Incident Reporting Requirement).

The Atomic Energy Act of 1954 (AEA), as amended, is the Federal law which mandates DOE to control radioactive materials to protect public safety and health. The AEA, as amended, is the cornerstone of all nuclear-energy-related regulations. Under the AEA, as amended, DOE is responsible for establishing and maintaining an environmental, health, and safety protection program.

The major DOE Orders associated with packaging, handling, and transportation of radioactive material are DOE Order 5480.3, Safety Requirements for the Packaging and Transportation of Hazardous Materials, Hazardous Substances, and Hazardous Wastes; and DOE Order 5480.4, Environmental Protection, Safety, and Health Protection Standards. Most of the Federal hazardous materials regulations (Section 1.1) are referenced by these DOE Orders.

DOE Order 5480.3, Safety Requirements for the Packaging and Transportation of Hazardous Materials, Hazardous Substances, and Hazardous Wastes, establishes requirements for the packaging and/or transportation (shipping, carrying, or receiving) of hazardous materials, hazardous substances, and hazardous wastes. Requirements of this Order address:

- o Special packaging requirements for plutonium and plutonium-bearing wastes
- o Package standards for radioactive materials in amounts greater than Type A quantities
- o Certificates of compliance for packages in excess of Type A quantities
- o Application for DOT exemption
- o Packaging standards
- o Quality assurance procedures for the fabrication, assembly, and testing of off-site shipping containers
- o Operating procedures for shippers
- o Normal conditions of transport
- o Hypothetical accident conditions
- o Tests for special form material

DOE Order 5480.4, Environmental Protection, Safety and Health Protection Standards, provides requirements for the application of mandatory environmental protection, safety, and health standards. This Order addresses the procedures for requesting exemptions from mandatory standards.

1.1 DEFINITIONS

Prior to an in-depth interpretation of the DOT regulations, the auditors should carefully review specific definitions included in 49 CFR 171.8. The auditors should familiarize themselves with the definitions and terms included in this part of the regulations. Definitions, abbreviations, and meanings may be explained in 49 CFR 171.8 or a reference will be made to the specific section of regulations where the term is used. It is important to understand definitions which apply to the transportation regulations of DOT. A given term or phrase may have quite a different usage and meaning when utilized in the context of other regulations such as the EPA or OSHA regulations. Important hazardous material class and term definitions are presented at the end of the introduction.

1.2 REPORTABLE INCIDENTS

Requirements for the oral and written reporting of incidents involving hazardous materials and hazardous wastes are included in 49 CFR 171.15. Refer to Figures 1 through 4. Earliest practical reporting is required when there is a reportable incident. Carriers shall immediately notify DOT by phoning 1-800-424-8802 when a reportable incident occurs during the loading, unloading, temporary storage, or transport of hazardous materials and/or wastes. Additional reporting and recording requirements for injuries or illnesses of handling and transport personnel may also be required pursuant to OSHA regulations, 29 CFR 1904. Incidents are immediately reportable to DOT under the following circumstances:

- o A person is killed.
- o A person received injuries requiring hospitalization.

- o Estimated carrier or other property damage exceeds \$50,000.
- o Fire, breakage, spillage, or suspected contamination associated with the release of radioactive or etiologic agents occurs.
- o A situation representing a continuing danger to life exists at an incident scene.

Each carrier that transports hazardous materials shall notify DOT (on Form 5800.1) in accordance with 49 CFR 171.16 within 15 days from the date of discovery of any reportable incidents described in 49 CFR 171.15. If a report pertains to a hazardous waste discharge:

- o A copy of the hazardous waste manifest must accompany the report.
- o An estimate of the quantity of waste removed from the scene, the manner of disposition of waste removed, and where it was taken must be reported.
- o Certain unintentional releases of hazardous materials of consumer commodities, battery fluids, or small quantities of paint are exempt from reporting requirements depending upon their mode of carriage.

1.3 REPORTABLE QUANTITIES (RQs)

In addition to the oral and written requirements for accident or incident reporting, Federal law also requires notification if a Reportable Quantity of a hazardous substance is released into the environment (Refer to Figure 4). The terms "Hazardous substance", "hazardous material", and "hazardous waste" are defined in 49 CFR 171.8. Of particular concern is the definition of a "hazardous substance". Three conditions apply when defining a hazardous substance. Hazardous Substance means a material, including its mixtures or solutions, that:

- o Is listed in the Appendix to the Hazardous Materials Table (HMT) of 49 CFR 172.101
- o Is in a quantity in one package which equals or exceeds the reportable quantity listed in the HMT Appendix (49 CFR 172.01 Appendix)
- o When in a mixture or solution is in a concentration by weight which equals or exceeds those listed in the concentration table which is included in the definition section (Refer to Figure 9 [title to be supplied])

If the above criteria are met, then a hazardous substance is present in a package. The letters "RQ", designating Reportable Quantity, should be marked on the package before or after the required shipping description. In case of transportation accidents the designation of reportable quantities must appear on the shipping papers and be obtainable from the specified vehicle operator.

In a transportation accident where a reportable quantity of hazardous substance listed by EPA or DOT is released, the carrier must immediately notify the National Response Center (Refer to Table 2). When it is unclear if enough hazardous substance has been released to constitute a reportable quantity, it is always best to contact the National Response Center. This may help avoid costly criminal and/or civil penalties if it is later determined that, in fact, a reportable quantity was released during an accident or incident. (Refer to Table 2 for Emergency Response and Information telephone numbers).

It is important to note that there are major interagency discrepancies in spill incident reporting requirements. EPA and DOT reporting requirements are quite different from each other; DOT requires reporting on a per-package basis while EPA requires reporting on a per-release basis.

1.4 COMMODITY LIST

The Hazardous Materials Table or Commodity List in 49 CFR 172.101 designates materials which

as the foundation for the application of rigorous and complex DOT transportation regulations. Shippers of hazardous materials bear the responsibility for properly packaging and presenting the containerized commodity to the carrier (Refer to Figure 3).

Correct classification of commodities which enter commerce is extremely important. Shipments must be characterized and identified in the event of an incident occurring during transport, handling, or storage. Protection of the public health, the environment, and property are the major goals of these DOT regulations. If an accidental release of hazardous materials occurs in transport, emergency response personnel base their initial activities upon the shipper's classification. Shipping personnel must become intimately familiar with utilizing information presented in the Hazardous Materials Table, since it is the cornerstone when applying DOT regulations.

The Hazardous Materials Table (49 CFR 172.101) and Hazard Class Definitions (49 CFR 173) are used to determine if a material is regulated. A material entering commerce is regulated by DOT as hazardous if it is listed in the HMT by name or if it exhibits a characteristic of one or more of the DOT hazard classes. There are 16 principal hazard classes defined by DOT. (Refer to Figure 6).

It is of paramount importance that personnel preparing shipments know how to use the information presented in the Hazardous Materials Table. Information in the table allows the user to determine if the shipment is hazardous and which regulations must be followed. The Table is composed of seven columns which are used to find requirements for hazard classification, labeling, marking, quantity limitations, and packaging requirements. Additional regulations governing shipment limitations for vessels and passenger carrying aircraft are also detailed. The Table also directs the user to other relevant portions of DOT and EPA regulations pertaining to the hazardous material being shipped, volumes permitted, and methods of carriage.

Shippers Must Use The Hazardous Materials Table To:

- o Determine if a hazardous material as defined by DOT is being shipped
- o Identify the Proper Shipping Name (PSN)
- o Identify the hazard class of materials
- o Select the identification numbers associated with the material
- o Identify the proper hazardous materials warning labels for packages
- o Select required packaging for specific compounds, mixtures, and volumes of hazardous materials
- o Determine the maximum permissible net quantity in one package if shipped via passenger-carrying aircraft, cargo aircraft, or rail car
- o Identify proper storage locations and/or conditions when carriage is by cargo or passenger vessel
- o Select placards which will be offered to the carrier
- o Identify and record relevant information which will be required to prepare shipping papers

Usage and Meaning of Hazardous Materials Table Columns

Column #1 - This column precedes the Proper Shipping Name (PSN) and includes symbols which indicate regulations compliance when shipping via water or air.

Column #2 - Proper Shipping Names (PSNs) and hazardous materials descriptions are listed in this column. Choice of the PSN sets the direction for all subsequent compliance matters.

Column #3 - The Hazard Class is listed in this column. The Hazard Class is used in the basic description and can be relevant to marking, labeling, and placarding requirements. The highest level of hazard classification is chosen based upon the DOT hazard precedence list (49 CFR 173.2). Column #3a - United

Nations (UN) and North America (NA) hazardous materials identification numbers are presented in this column. Numbers prefixed by "UN" are recognized internationally when transporting dangerous goods. "NA" listing numbers are only recognized during the carriage of hazardous materials to and from Canada.

Column #4 - Labels which must be affixed to hazardous materials packages are listed here. Where a material has more than one required label, they must all be included upon packages.

Column #5 - This section of the table provides the user with regulation numbers specifically pertaining to packaging requirements and regulation numbers of packaging exceptions.

Column #6 - Maximum net quantity per package amounts are listed. Column #6a - Specifies the maximum per-package quantities which are permissible when transporting specific hazardous materials by passenger carrying aircraft or rail car. Column #6b specifies the maximum per-package quantity which may be transported on cargo aircraft only. Both columns also contain lists of hazardous materials which are forbidden to be carried on passenger rail cars and passenger aircraft or on cargo aircraft because of the inherent dangers of the materials.

Column #7 - Column 7 specifies the authorized locations onboard cargo and passenger vessels as well as additional stowage requirements for each listed hazardous material. Section 176.63 of Title 49 sets forth the basic physical requirements for stowage locations which are listed in Column 7.

1.5 PROPER SHIPPING NAMES (PSNs)

The shipper is responsible for properly identifying and developing required descriptions of each hazardous materials shipment. Shipping personnel must determine the proper shipping name or PSN. (Refer to Figure 5). The basic description and the complete description must be formulated prior to the transport of DOT-regulated dangerous goods or hazardous materials.

Selecting the PSN is the initial regulatory requirement and is necessary for using other compliance specifications included in the Hazardous Materials Table. Choosing the PSN can be accomplished by following steps:

1. Review the Hazardous Materials Table for the technical or chemical name of the commodity to be shipped.
2. If no technical name is listed in the HMT, a generic name for the family of chemicals should be selected. For example (ALCOHOL N.O.S., UN 1987)
3. If no generic name is listed, the next choice available is selection of the application for which the hazardous material is used. For example (COMPOUND, CLEANING, LIQUID, CORROSIVE MATERIAL, NA 1760)
4. If no application is listed, then a "Not Otherwise Specified" (N.O.S.) proper shipping name should be chosen which includes the applicable hazard class (highest per the Precedence List 49 CFR 173.2). For example (FLAMMABLE SOLID N.O.S., UN 1325)
5. As a last resort the PSN Hazardous Substance Liquid or Solid, N.O.S. may be employed if the hazardous material package contains a reportable quantity (RQ) of a material listed in the Appendix to 172.101.
6. Hazardous Waste, Liquid or Solid N.O.S. may apply as the PSN if the material is a waste and the Resource Conservation and Recovery Act (RCRA) stipulates that the material must be transported using the Uniform Hazardous Waste Manifest.

7. If shipping personnel cannot develop an adequate description of the commodity shipment they should contact:

Office of Hazardous Materials Transportation
U.S. Department of Transportation
Washington, D.C. 20590
Phone: (202) 426-9280

1.6 HAZARDOUS MATERIALS DESCRIPTION

Auditors should ensure that shipping personnel are fully capable of developing basic and complete hazardous materials descriptions. (See Figures 7 [title to be supplied] and 8 [title to be supplied]). Required descriptions must be completed before hazardous materials shipments are permitted to enter the transportation system. Shippers must determine the following before a complete description can be formulated:

- o If the hazardous material being shipped is a solution or mixture, the qualifier "mixture" or "solution" must be attached to the end of the PSN. A mixture is a material which is composed of more than one chemical compound. A solution is a homogeneous mixture that is a liquid and which will not undergo segregation during transport.
- o If a RCRA hazardous waste is being shipped under a PSN other than Hazardous Waste, Liquid N.O.S., or Hazardous Waste, Solid N.O.S., the word WASTE must appear in front of the Proper Shipping Name (also see RCRA introduction).
- o Shippers must identify the UN or NA identification number which appears in Column 3a of the Hazardous Materials Table next to the PSN.
- o Hazard Classes must be selected by the shipper. The hazard class may be defined in the Hazardous Materials Table next to the PSN. If unknown, the material offered for transport may have to be tested to determine if it falls in a particular DOT hazard class. Testing methods are specified in part 171 and part 173. DOT has established a separate set of classes which it regulates. These classes are known as Otherwise Regulated Material or "ORM". ORM classes include RCRA hazardous wastes and materials which can damage vehicles or cause crew discomfort if released during transport. If a material not listed by

PSN is found to fall into more than one class by testing, it must always be listed as the highest class. Class hierarchy is presented in the Hazard Precedence List in 49 CFR 173.2 (Refer to Figure 6).

The Basic Description consists of the PSN, the Hazard Class, and the UN/NA identification number.

The Complete Description, as required by DOT, is formulated by the addition of supplemental information from three categories:

- o Reportable Quantities (RQ)
- o Limited Quantities (Ltd Qty)
- o Miscellaneous

Reportable Quantities are available from the Appendix as discussed. Limited Quantities for shipments of compressed gasses are outlined in 173.306. Miscellaneous additional required descriptions are required in some circumstances as presented in 172.203.

2.0

SHIPPING DOCUMENTATION REQUIREMENTS

DOT requires that a certain format and specific information must appear on shipping papers. DOT hazardous materials shipments must usually be accompanied by a straight bill of lading. EPA regulated shipments of RCRA-controlled hazardous wastes must be accompanied by a Uniform Hazardous Waste Manifest as specified in 40 CFR 262.20.

The straight bill of lading (SBL) is the most common form of documentation used in the hazardous materials transportation industry. Regulations require that specific data describing the characteristics of the commodities being shipped must be included in the SBL. When some limited quantities or certain hazard classes are shipped, SBL documentation may not be required for certain modes of carriage. In shipments which contain a mixture of hazardous and non-hazardous materials, the hazardous materials must either be listed first or in a different color than the other commodities or designated as such by placing an "X" in the HazMat Box on the bill of lading. DOT also requires that the shipper must certify (49 CFR 172.204) that the shipment being offered has been correctly classified, packaged, marked, and labeled and is in proper condition for transport prior to being offered to the carrier. DOE shipping personnel must ensure that shipping papers are in vehicle cabs or in the possession of the operator during transport of hazardous materials shipments.

2.1

CONTAINER AND PACKAGE MARKING REQUIREMENTS

Marking is the specific information which is required to be placed on the outside of containers or packages of hazardous materials. Requirements generally apply to packages and containers of 110 gallons or less rated capacity. Marking is required to be highly visible and must not be obscured by advertising or by labels. DOT hazardous materials package marking requirements are presented in 49 CFR Subpart D.

Each package of hazardous materials must be marked with either the consignee's or consignor's name and full address. Exceptions to the individual marking requirements include the transport by highway of a package by one carrier when the shipment will not be transferred from the original vehicle. There are also exceptions when the entire contents of a car, truck, or freight container constitute a single shipment.

Generally, every package must be marked with the PSN and the UN/NA number. A package enclosing an inner container of liquid hazardous materials must also be marked with "This End Up" or "This Side Up" to show the upward position of the inner container. Arrows indicating the orientation of the liquid container are helpful in handling, but are not required. (Refer to DOT Chart 9). Reportable Quantities (RQs) must also be marked on the packages. Reportable Quantities are predetermined quantities (HMT Appendix) which if released constitute a potential threat to human health, property, and the environment. Packages containing poisonous inhalation hazards must also be marked as such. Additional marking requirements for specific materials, for specific packagings, and for tank cars are found in Parts 173, 178, and 179 of Title 49 regulations. ORM hazard class packages containing 110 gallons or less must be marked with the appropriate ORM designations in accordance with 49 CFR 172.316. For bulk hazardous materials shipments, certain placard-type orange panel markings must be attached. Orange panel markers are in a standard printed format and available from commercial printing companies. The "hazardous waste label" described in 40 CFR 262 is not actually a label but is technically a marking requirement which is also available from printing companies. (Refer to DOT Chart 9). Marking specifications for portable tanks containing hazardous materials are presented in 49 CFR 172.

2.1.1 General DOT Package Marking Checklist

- o Proper Shipping Name
- o UN/NA Identification Number
- o Consignee's or Consignor's Name and Address
- o Technical Name (for export shipments by water)
- o Gross Weight (radioactive only)
- o Type A or Type B (radioactive only)
- o USA (exported shipments of domestic radioactive material)
- o This Side Up/This End Up (when inner package contains liquid hazardous material)
- o ORM Designation
- o "WASTE" must be marked before the PSN's on all EPA designated hazardous waste shipments
- o Name of the Hazardous Substance as shown in the HMT APPENDIX Table
- o EPA Hazardous Characteristic or Waste Stream Characteristic
- o "RQ" if a Reportable Quantity of a hazardous substance is present
- o "INHALATION HAZARD" must also be marked on the package pursuant to section 49 CFR 173.3.

2.2 CONTAINER AND PACKAGE LABELING REQUIREMENTS

Label requirements are specified in 49 CFR 172.400. (Refer to DOT Chart 9). Each package, overpack or freight container containing a hazardous material must be labeled as specified in the labeling columns of the Hazardous Materials Table (172.101) and the Optional Hazardous Materials Table (172.102). DOT does not define "labeling", but does specify in detail how labels are to be constructed.

The hazardous materials warning labels are affixed to packages next to the proper shipping name. The familiar diamond shaped labels are constructed as per requirements and are available from commercial printers. The labels are designed and color-coded to provide quick recognition of the hazards associated with each hazardous materials package. Shippers must attach the correct labels and no carrier shall accept shipments without the proper package labeling. Carriers must also maintain a supply of labels to replace those lost in transit.

With certain exceptions for small quantities of materials and ORM class materials, each package must have at least one approved DOT hazard class label affixed to it before entering the commerce system. If a package contains more than one hazard classification, the package must be labeled for each listed hazard (49 CFR 172.402). When two or more hazard classes are packed separately in the same package or outer enclosure, the outside must be labeled for each material (49 CFR 172.404). Radioactive materials requiring labeling, must be labeled on two opposite sides of the package. A Flammable Solid which is water-reactive must be labeled both Flammable Solid and Dangerous When Wet. A "Cargo Aircraft Only" label is required for shipments which cannot be carried on passenger aircraft. Auditors should also be cognizant of other miscellaneous labeling requirements in this subpart of the DOT regulations.

2.3 PLACARDING REQUIREMENTS

Placards are the familiar large diamond shaped displays seen on motor vehicles, rail cars, freight containers, bulk tanks, and portable tanks which contain hazardous materials. Hazardous material placarding requirements are presented in Part 172 Subpart F. Placards are very similar in design to the hazardous materials warning labels. (Refer to DOT Chart 9). Hazard class placards alert response

personnel to potential dangers presented when a release or threat of release of significant quantities of hazardous materials occurs when handling, storing, or transporting such commodities. "Placard" is not defined by DOT but specific manufacturing specifications are presented. There are size, design, material, and color specifications for placards. Placards are available from commercial printing companies.

The responsibility for obtaining and affixing placards varies depending upon the mode of carriage. The shipper must supply the motor carrier with proper placards. Shippers must attach placards to rail cars and tankers prior to transport. Shippers must also affix appropriate placards to cargo tanks and to portable tanks before a carrier shall accept them. When a hazardous material is transferred to cargo or portable tanks the shipper must attach the placards. Motor vehicles require placards on all four sides, while portable tanks require two-sided placarding.

DOT placarding regulations specify which shipments must be placarded and how it must be done. Guidelines for the use of hazardous warning placards is provided in Figure 10. Etiologic agents, ORM class materials, and Limited Quantities do not require placarding. However, some hazard class commodities always require placarding.

Class A & B Explosives, Poison A, Water Reactive Flammable Solids, and certain Radioactive materials in Table 1 always require placarding. Two tables outlining specific placarding requirements are presented in this subpart (refer to Figure 10).

Most common hazard classes require vehicle or freight container warning placarding only when more than 1,000 lbs of the commodity is being transported (the 1,000 lb rule; see Table 2 of Figure 10). A transport vehicle or freight container containing two or more classes in Table 2 may be placarded "Dangerous" in place of separate classes. However, when 5,000 lbs (5,000 lb rule) or more of one class of material is loaded at one loading facility, the placard specified for that class must be applied. The provision does not apply to portable tanks, tank cars, or cargo tanks. Special placarding requirements exist when residues are present in containers, for poisons and explosives carried in rail cars, and for tanks and other containers which have been fumigated or treated with poisonous liquids, solids, or gases.

2.4 PACKAGING REQUIREMENTS

Hazardous materials which are shipped by air, rail, water, or highway are required to be packaged and containerized pursuant to 49 CFR Part 173. General packaging requirements are presented in Column 5 of the Hazardous Materials Table, along with corresponding references to the sections which pertain to detailed packaging requirements and exceptions. More specific regulations relating to the potentially dangerous shipments of explosives, flammable liquids, corrosive materials, compressed gases, poisons, irritating materials, etiologic agents, and radioactives are included in this subpart.

DOE shipping personnel are responsible for ensuring that hazardous materials have been properly packaged and prepared in accordance with all applicable DOT regulations. Shippers must determine that packaging and containers conform to specifications. Design and manufacturing specifications are presented in 49 CFR Part 178. Container specifications are stipulated for cans, bottles, carboys, jugs, cylinders, barrels, drums, kegs, boxes, trunks, mailing tubes, bags, portable tanks, etc. When containers are reused the shipper must ensure that the container meets packaging requirements each time it is used. Further discussion of packaging is beyond the scope of this introduction, but auditors should know where to check container specifications and packaging requirements in the regulations.

2.5 LOADING AND UNLOADING

Loading and unloading requirements for hazardous materials shipments are presented in 49 CFR 177.834. The regulations specify how the transport, packing, loading, and unloading of hazardous materials must be handled. Requirements are stipulated for transporting hazardous materials cargos in heated areas and near ignition sources. Regulations also state that a qualified person aware of potential hazards must be present at all times and within 25 feet of the loading of explosives, flammable liquids and solids, oxidizers, and flammable gases.

2.6 COMPATIBILITIES

Shipping compatibilities of hazardous materials are discussed in 49 CFR 177.848. Auditors should determine if DOE personnel are familiar with these regulations, as they are extremely important. Charts in this subpart indicate which hazard classes may not be shipped in the same vehicle or freight container.

The Hazardous Materials Regulations promulgated by DOT outline the requirements for the preparation of shipping papers (49 CFR 172.200 through 172.205). There are some regulatory exceptions, but generally each hazardous materials shipment being offered for transport must be accompanied by proper documentation. Documentation may consist of a Straight Bill of Lading (SBL), Uniform Hazardous Waste Manifest (UHW), waybill, or other required shipping papers. The general intent of the regulations is to indicate that hazardous materials are present and that care must be exercised when loading, storing, unloading, and transporting the shipment.

3.0 TRANSPORTER REQUIREMENTS

Specific requirements exist for the mode of carriage selected to transport hazardous commodities. The responsibility for strict compliance with regulations generally lies with the carrier. In general, any person who loads, moves or unloads hazardous materials in commerce must comply with the regulations.

Carriage by Rail - Each rail carrier of hazardous material must comply with the regulations presented in 49 CFR Part 174 unless specifically excepted.

Carriage by Aircraft - Operators of civil aircraft must comply with hazardous materials loading and storage requirements while in the United States, or while under U.S. Registry. Some exceptions are presented in 49 CFR 175.10. Aircraft of U.S. Registry are not required to comply with the regulations if under lease to and if operated by foreign nationals outside the U.S.

Carriage by Vessel - With exceptions provided in 176.5 the transport requirements in 176 apply to each domestic and foreign vessel when in U.S. waters. It does not matter if the vessel is self-propelled, departing, arriving, underway, anchored, aground, moored, or in dry dock.

Carriage by Highway - Each private, common, or contract carrier of hazardous materials must comply with applicable requirements set forth in 49 CFR Parts 177 and 397.

Pipeline transportation of hazardous materials is regulated in 49 CFR Parts 190-199.

4.0 ENFORCEMENT AND PENALTIES

DOT conducts both routine and sporadic inspections of hazardous materials and hazardous waste transporters. DOT and EPA work closely to manage the storage, handling, and movement of hazardous cargos within the commerce system. DOT and EPA coordinate inspections and enforcement actions to obtain compliance with RCRA and HMTA regulations. DOT assistance numbers are provided in Table 3 for use when questions arise regarding the regulations.

DOE personnel must become thoroughly knowledgeable of the HMTA Title 49 regulations and of the specific sections which apply to each situation. Auditors should also monitor DOE personnel to determine if they are abreast of the most recent changes for this Title in the Federal Register. Education combined with a conscientious audit program should help ensure that DOE will avoid the costly civil and criminal fines allowed under the HMTA regulations. Penalties are presented in 49 CFR Subpart D. Civil penalties of \$10,000 per day per violation are possible. Furthermore, criminal penalties for willful violations can result in \$25,000 fines and five years imprisonment.

5.0 NEW AND PROPOSED REGULATIONS

Regulations by the Department of Transportation are continuously changing. Governmental and industrial personnel who are experienced in implementing DOT rules may offer advice and comments to the Office of Hazardous Materials Transportation. Data and comments by parties affected by the hazardous materials regulations are maintained in files to be utilized when updating or proposing new rules. Any individual or group may submit comments and supply supporting documentation when responding to new proposals for DOT rulemaking.

Additional rulemaking proposals and final rulings, which become regulations promulgated by DOT, are printed in the Federal Register. It would be an excellent management practice for DOE to constantly keep abreast of regulatory changes. It is suggested that a means be established and maintained to inform all shipping personnel at all facilities which ship hazardous materials in commerce of regulation changes. A coordinated effort by both government and industry will enable more efficient and safer transportation of hazardous materials.

The Department of Energy may provide comments on any hazardous materials regulatory matter to:

Office of Hazardous Materials Transportation
Research and Special Programs Administration
Department of Transportation
400 Seventh Street, S.W.
Washington, D.C. 20590

Proposed amendments and recently finalized regulations are presented in the following table, Proposed Amendments and Final Rules.

HAZARDOUS MATERIALS REGULATIONS

PROPOSED AMENDMENTS AND FINAL RULES

Docket Number	Subject	Date Issued
HM-22	Matter Incorporated by Reference	February 8, 1980
HM-36A	Elimination of Certain Reporting Requirements	June 5, 1980
HM-36B	Detailed Hazardous Materials Incident Reports	June 19, 1989
HM-74, 74A	Cylinders Manufactured Outside the United States	March 11, 1976
HM-90	Bottom Outlets on Flammable Compressed Gas Tank Cars	February 20, 1974
HM-126C	Emergency Response Communication Standards	June 27, 1989
HM-126D	Odorization of LPG, and Miscellaneous Proposals	September 20, 1984
HM-126F	Notice of Proposed Training Requirements	July 26, 1989
HM-142A	Etiologic Agents	November 10, 1988
HM-149F	Exceptions for Specified Quantities of Radioactive Materials	July 26, 1989
HM-153	Consolidation of Bag Specifications Advance Notice of Proposed Rulemaking	September 6, 1977
HM-154	Consolidation of Box Specification Advance Notice of Proposed Rulemaking	September 6, 1977
HM-155	Consolidation of Drum Specification Advance Notice of Proposed Rulemaking	September 6, 1977
HM-164B	Notification to RSPA of Route Plans for Radioactive Materials Transportation	July 10, 1987
HM-166V	Hazardous Materials; Uranium Hexafluoride	June 30, 1987
HM-166W	Transportation of Hazardous Materials; Proposed Miscellaneous Amendments	September 19, 1988
HM-183, 183A	Requirements for Cargo Tanks	June 12, 1989
HM-183B	Rear Bumpers on Cargo Tank Cars	May 2, 1989
HM-199	Enforcement of Motor Carrier Financial Responsibility Requirements	May 14, 1987
HM-202	Standard for Constructions of Fireworks and Novelties; Approval for Transportation	February 8, 1988

FEDERAL REGULATIONS

Hazardous Materials Regulations of the Department of Transportation Title 49-Code of Federal Regulations

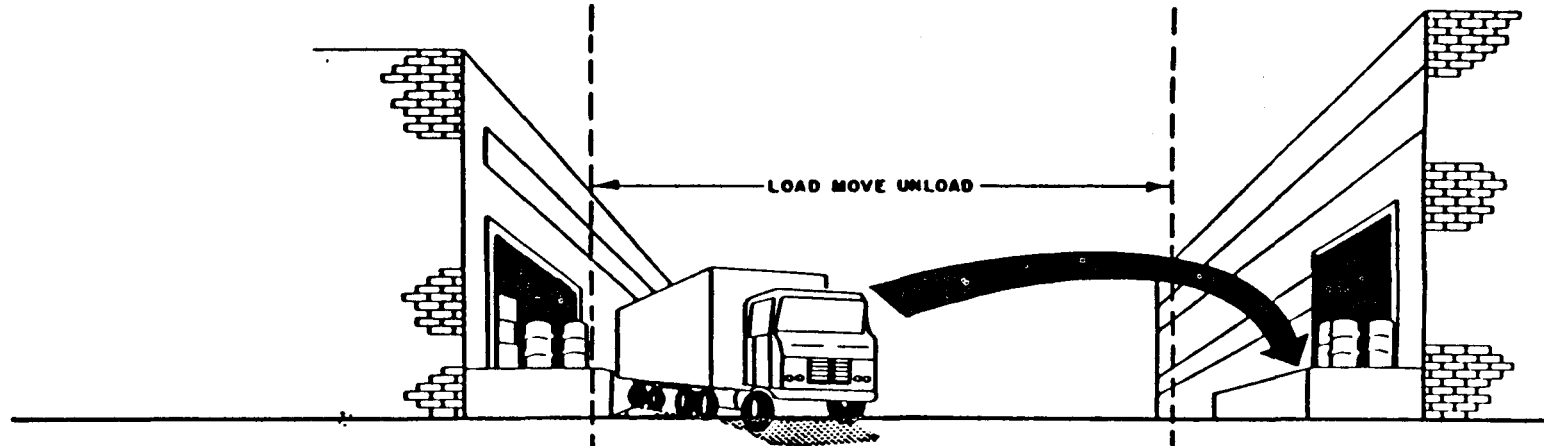
Rulemaking Procedures	Part 106
Exemptions and Procedures	Part 107
General Information, Spills: Incident Reporting	Part 171
Hazardous Materials	Part 172
Tabulation Listing	Subpart B
Shipping Papers	Subpart C
Container Marking	Subpart D
Container Labeling	Subpart E
Placarding	Subpart F
General Shipping Requirements	Part 173
Materials Classification	Subpart C-O
Dual Classification	Part 173.2
Small Quantity Exception	Part 173.4
Transporter Requirements:	
Carriage By Rail	Part 174
Carriage By Aircraft	Part 175
Carriage By Vessel	Part 176
Carriage By Highway	Part 177
Container Specifications	Part 178
Tank Car Specifications	Part 179
Transport By Pipeline	Part 190-199
Transportation Hazardous Materials; Driving and Parking Rules	Part 397

FIG 1

HAZARDOUS MATERIALS TRANSPORTATION REGULATIONS

DEPARTMENT OF TRANSPORTATION-TITLE 49 CFR PARTS

(EPA REGULATIONS TITLE 40 CFR PARTS 262 & 263 APPLY FOR TRANSPORTING HAZARDOUS WASTE)



SHIPPER:

General & Definition	List, Communications	Prepares, Offers
171	172	173
171.15 TELEPHONE REPORTING-SPILLS & RELEASES. 171.16 WRITTEN REPORTS OF ACCIDENTS & INCIDENTS.	172.101 "PSN's" 172.200 PAPERS 172.300 MARKINGS 172.400 LABELS 172.500 PLACARDS	GENERAL RULES AND PACKAGING. NRC 10CFR 71 PACKAGING / SHIPPING RADIOACTIVE MATERIALS

CARRIERS:

Mode of Transport

RAIL 174:



AIR 175:



VESSEL 176:



HIGHWAY 177 & 397:



CONSIGNEE:

Accepts Shipment

NOTE: (CARRIERS MUST ALSO COMPLY WITH STATE AND LOCAL REGULATIONS AND PERMITTING REQUIREMENTS)

CONTAINER SPECS 178-179
TRANSPORT VIA PIPELINE 190-199

FIGURE 2

HAZARDOUS WASTE GENERATION - TRANSPORTATION - STORAGE

ENVIRONMENTAL PROTECTION AGENCY - TITLE 40 PARTS

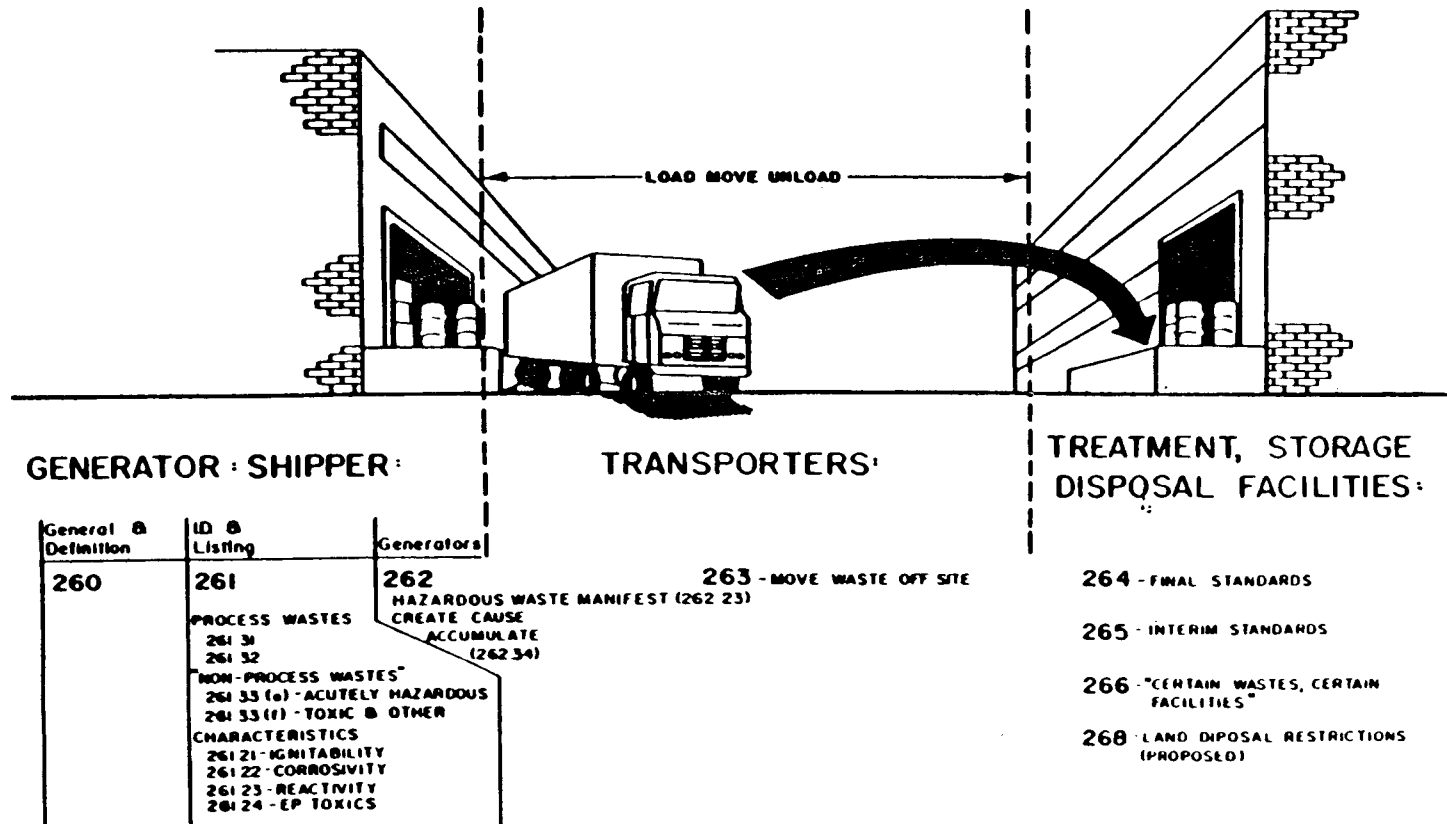


FIGURE 3

ASSIGNMENTS OF SHIPPING RESPONSIBILITIES

DOT TITLE 49-EPA TITLE 40

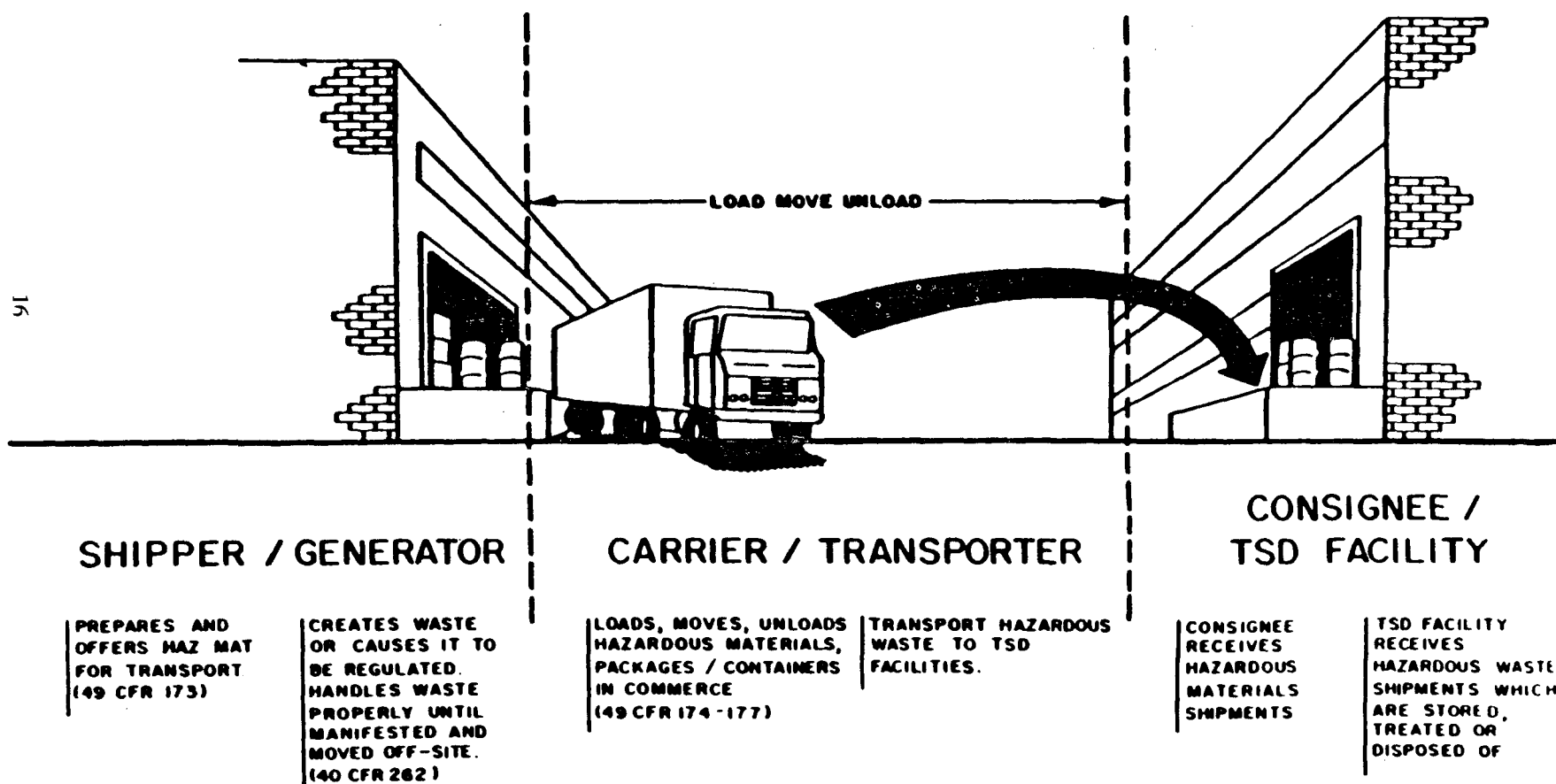


FIGURE 4
MULTI-AGENCY ACCIDENT / INCIDENT REPORTING REQUIREMENTS
OSHA - EPA - DOT

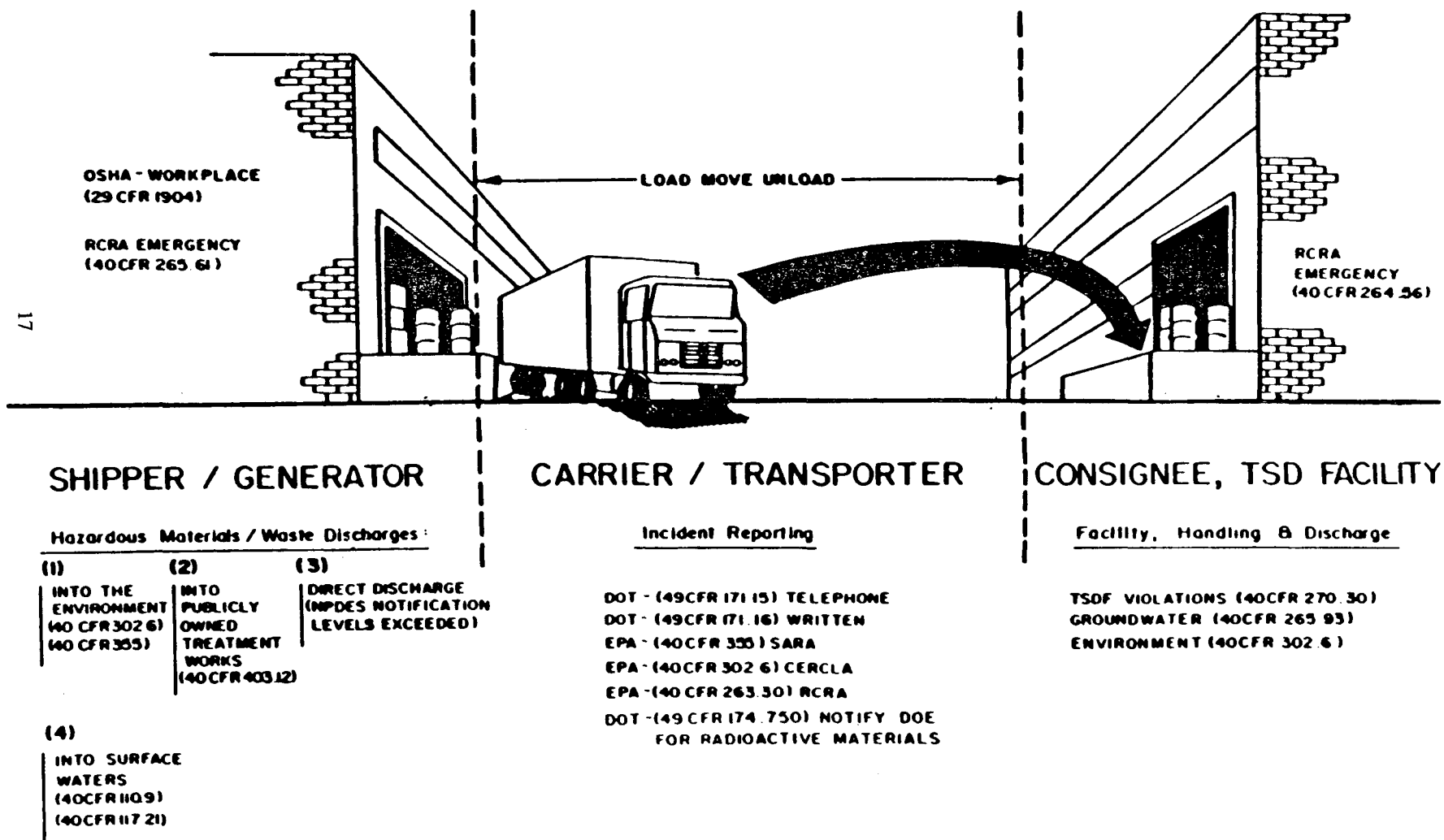


FIGURE 5

DETERMINATION OF PROPER SHIPPING NAME TO YIELD THE BASIC DESCRIPTION

TECHNICAL NAME

PARATHION, LIQUID, POISON
B, NA 2783

GENERIC NAME

ORGANIC PHOSPHOROUS
COMPOUND, LIQUID, POISON
B, NA 2783

APPLICATION

INSECTICIDE, LIQUID, N.O.S.,
POISON B, NA 2902

HAZARD CLASS ENTRY

POISON B, LIQUID, N.O.S.
POISON B, UN 2810

NONE OF THE ABOVE

HAZARDOUS SUBSTANCE,
LIQUID, N.O.S., ORM - E, NA
9188

Can be used only if the material satisfies the definition of a
"Hazardous Substance" presented in 40 CFR Section 6.

HAZARDOUS WASTE, LIQUID,
N.O.S., OREM - E,
NA 9189

Can be used only if the material can meet
the definition of a "Hazardous Waste" as
specified in 40 CFR Part 262.

FIGURE 6

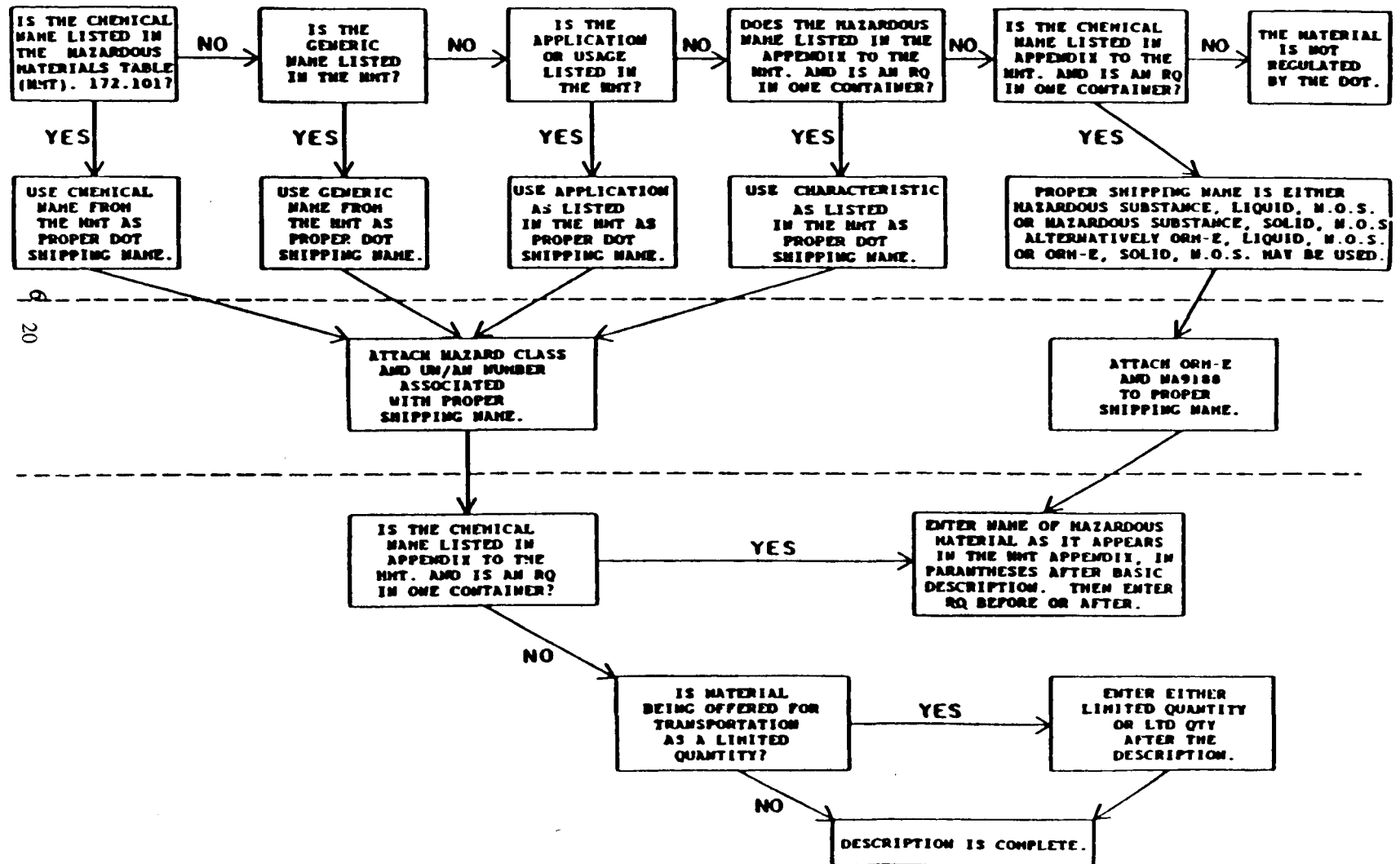
DOT HAZARDOUS MATERIALS CLASSIFICATION (49CFR 173.2)

1. Radioactive Material
2. Poison A
3. Flammable gas
4. Nonflammable gas
5. Flammable liquid
6. Oxidizer
7. Flammable solid
8. Corrosive material (liquid)
9. Poison B
10. Corrosive material (solid)
11. Irritating material
12. Combustible liquid (in containers having capacities exceeding 110 gallons)
13. ORM-B
14. ORM-A
15. Combustible liquid (in containers having capacities of 110 gallons or less)
16. ORM-E

This precedence list is used to classify multi-hazard materials. Materials having more than one hazard, as defined in 49CFR part 173, must be classified according to this order of hazards or "Precedence List." The list is not used for HMT listed materials, new explosives, lab samples, etiologic agents, or organic peroxides.

FIGURE 7

HAZARDOUS MATERIAL
IDENTIFICATION OF PROPER SHIPPING NAME,
BASIC DESCRIPTION AND COMPLETE DESCRIPTION
FOR A NON-RADIOACTIVE HAZARDOUS MATERIAL



**HAZARDOUS WASTE
IDENTIFICATION OF PROPER SHIPPING NAME,
BASIC DESCRIPTION AND COMPLETE DESCRIPTION
FOR A NON-RADIOACTIVE HAZARDOUS WASTE**

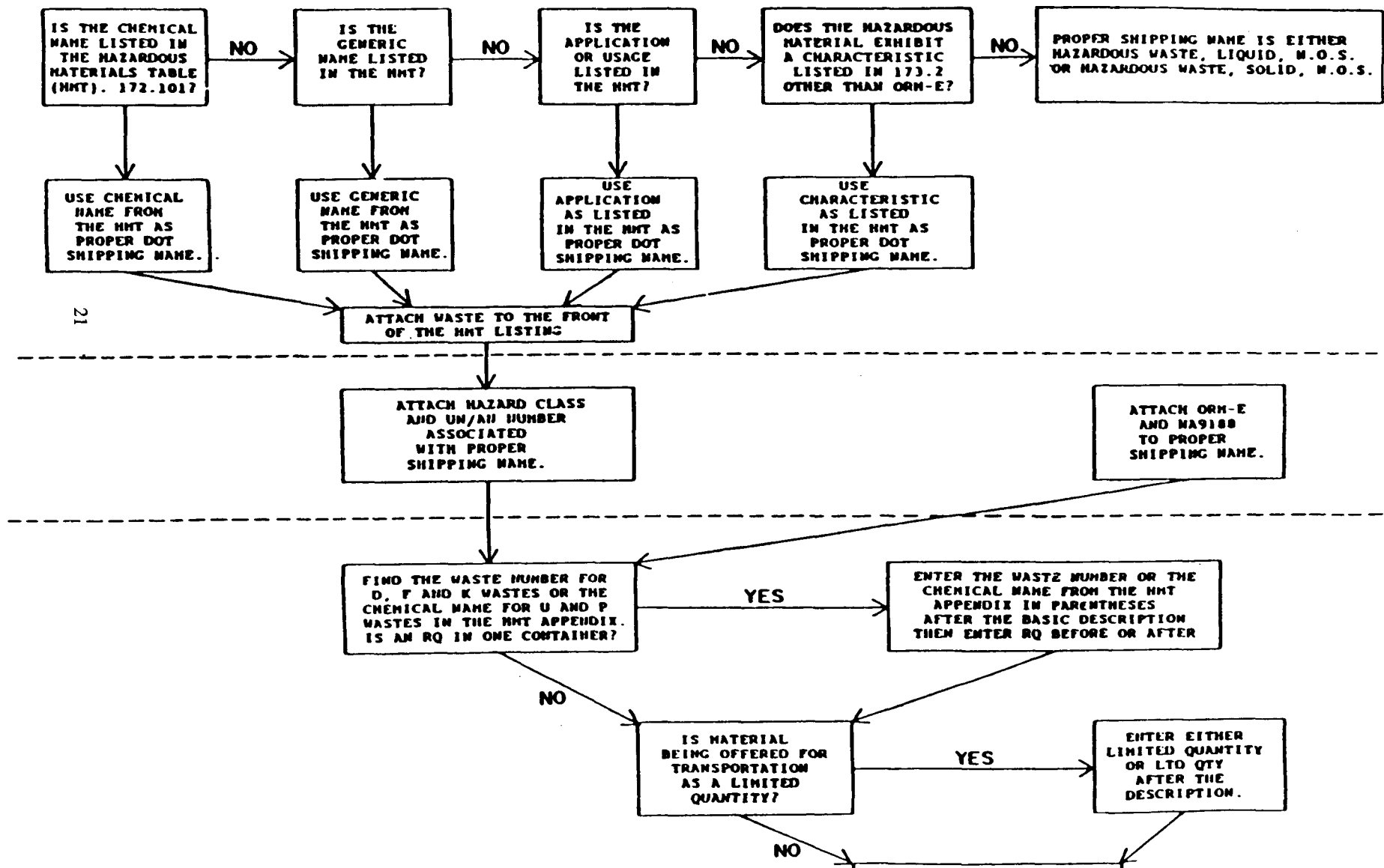


FIGURE 9

REPORTABLE QUANTITIES FOR MIXTURES OR SOLUTIONS (49 CFR 171.8 DEFINITIONS)

POUNDS (KILOGRAMS)	CONCENTRATION	
	PERCENT	PARTS PER MILLION
5000 (2270)	10	100,000
1000 (454)	2	20,000
100	0.2	2,000
10 (4.54)	0.02	200
1 (0.454)	0.002	20

Reportable Quantities (RQ's) are different for hazardous substances which are in mixtures or solutions in bulk shipments. A hazardous substance from the Hazardous Materials Table Appendix may be present in a total weight within a bulk container that exceeds the Appendix RQ. However, when in a solution or mixture, concentration values are used to determine if an RQ is present.

Example:

In a mixture which was prepared and placed in a large bulk tank the shipper knows that 15 pounds of hydrocyanic acid was added as one of the ingredients. The shipper realizes that the 15 pound amount exceeds the per package RQ listed in the HMT Appendix. However, the shipper has the bulk solution analyzed prior to transport and discovers that the concentration of hydrocyanic acid in the solution is 150 ppm. Since the corresponding concentration limit for a 10 pound per package RQ is 200 ppm, the shipper does not have an RQ for hydrocyanic acid in the bulk shipment. An analysis of all compounds which may equal or exceed concentration RQ's should be performed on mixture or solution samples prior to transport by the shipment preparer.

FIGURE 10

HAZARDOUS MATERIALS WARNING PLACARD GUIDELINES
From CFR 49 - DOT Parts 100-177

TABLE 1

If the transport vehicle, or freight container contains a material classed (described) as—	The transport vehicle or freight container must be placarded on each side and each end—
Class A explosives.....	EXPLOSIVES A.
Class B explosives.....	EXPLOSIVES B.
Poison A.....	POISON GAS.
Flammable solid (DANGEROUS WHEN WET label only).....	FLAMMABLE SOLID W.
Radioactive material.....	RADIOACTIVE.
Radioactive material: Uranium hexafluoride, fissile (containing more than 1.0 pct U^{235}).....	RADIOACTIVE AND CORROSIVE.
Uranium hexafluoride, low specific activity (containing 1.0 pct or less U^{235})....	RADIOACTIVE AND CORROSIVE.

TABLE 2

If the transport vehicle, or freight container contains a material classed (described) as —	The transport vehicle or freight container must be placarded on each side and each end—
Class C explosives.....	DANGEROUS.
Blasting agents.....	BLASTING AGENTS.
Nonflammable gas.....	NONFLAMMABLE GAS.
Nonflammable gas (chlorine).....	CHLORINE.
Nonflammable gas (fluorine).....	POISON.
Nonflammable gas (oxygen, cryogenic liquid).....	OXYGEN.
Flammable gas.....	FLAMMABLE GAS.
Combustible liquid.....	COMBUSTIBLE.
Flammable liquid.....	FLAMMABLE.
Flammable solid.....	FLAMMABLE SOLID.
Oxidizer.....	OXIDIZER.
Organic peroxide.....	ORGANIC PEROXIDE.
Poison B.....	POISON.
Corrosive material.....	CORROSIVE.
Irritating material.....	DANGEROUS.

GENERAL REQUIREMENTS

- o Placard any transport vehicle, freight container, or rail car containing any quantity of material listed in Table 1.
- o Materials which are shipped in portable tanks, cargo tanks, or tank cars must be placarded when they contain any quantity of Table 1 and/or Table 2 material.
- o Motor vehicles or freight containers containing packages which are subject to the "Poison-Inhalation Hazard" shipping paper description of Section 172.203(k)(4), must be placarded POISON in addition to the placards required by Section 172.50 (see Section 172.505).
- o When the gross weight of all hazardous material covered in TABLE 2 is less than 1000 pounds, no placard is required on a transport vehicle or freight container.
- o Placard freight containers 640 cubic feet or more containing any quantity of hazardous material classes listed in TABLES 1 and/or 2 when offered for transportation by air or water (see Section 172.512(a)). Under 640 cubic feet see Section 172.512(b).

TABLE 2

HOTLINES

American Chemical Society (ACS)	(202) 872-4511
American Petroleum Institute (API)	(202) 457-7000
Bureau of Explosives	(202) 835-9500
CANUTEC (Transport Canada) Emergency	(613) 996-6666
Information	(613) 992-4624

CHEMTREC	(800) 424-9300

(Chemical Transportation Emergency Center)

Center for Disease Control (CDC) Emergency	(404) 633-5313
Information	(404) 329-3535
Chemical Referral Center (CMA)	(800) 262-8200
Chlorine Emergency Plan (CHLOREP)	(800) 424-9300
Compressed Gas Institute	(212) 682-4324
Consumer Product Safety Commission	(800) 638-2772
Department of Transportation/ (DOT)	(202) 426-4000
EPA Emergency Planning and	
Community Right-to-Know	(800) 535-0202
EPA Industrial Assistance	(800) 424-9065
EPA Small Business	(800) 368-5888
Food and Drug Administration (FDA)	(301) 443-1544
Institute of Explosive Makers	(212) 986-6920
NIOSH	(513) 684-8302

(National Institute for Occupational Safety and Health)

National Fire Protection Association (NFPA)	(617) 328-9230
National Pesticide Telecommunication Network	(800) 858-PEST
National Response Center (NRC)	(301) 424-8802
Nuclear Regulatory Commission (NRC)	(301) 492-7000
OSHA	(202) 523-7075

(Occupational Safety and Health Administration)

RCRA/CERCLA Hotline	(800) 424-9346
Safe Drinking Water Hotline	(800) 426-4791
Title III Hotline	(202) 554-1411
U.S. Army Chemical Emergency Team	(703) 521-2185

TABLE 3

DOT ASSISTANCE NUMBERS

STANDARD DIVISION

(202) 366-4488

(discuss regulations)

TECHNICAL DIVISION

(202) 366-4545

(conducts research in support of rulemaking)

EXEMPTIONS AND APPROVALS DIVISIONS

(202) 366-4511

(issues exemptions and approvals for cylinder manufacture and reconditioning)

ENFORCEMENT DIVISION

(202) 366-4700

(enforces packaging regulations)

FEDERAL/STATE AND PRIVATE SECTOR INITIATIVES DIVISION

(202) 366-4900

(implements Federal/State cooperative programs and training)

POLICY DEVELOPMENT AND INFORMATION SYSTEMS DIVISION

(202) 366-4555

(manages the hazardous materials information system)

INTERNATIONAL STANDARDS COORDINATOR

(202) 366-0656

HAZARDOUS MATERIALS TERMS DEFINITIONS (from 49 CFR 171.8)

Approved means approval issued or recognized by the Department unless otherwise specifically indicated in this subchapter.

Atmosphere gases means gases that are commercially derived through an air separation process. For purposes of this subchapter, **atmospheric gases** means argon, krypton, neon, nitrogen, oxygen and xenon.

Barge means a non-selfpropelled vessel.

Bottle means a container having a neck of relatively smaller cross section than the body and an opening capable of holding a closure for retention of the contents.

Break-bulk means packages of hazardous materials that are handled individually, palletized, or unitized for purposes of transportation as opposed to bulk and containerized freight.

BTU means British thermal unit.

Bulk packaging means a packaging, other than a vessel or a barge, including a transport vehicle or freight container, in which hazardous materials are loaded with no intermediate form of containment and which has: (1) An internal volume greater than 450 liters (118.9 gallons) as a receptacle for a liquid; (2) a capacity greater than 400 kilograms (881.8 pounds) as a receptacle for a solid; or (3) a water capacity greater than 1000 pounds (453.6 kilograms) as a receptacle for a gas as defined in Section 173.300.

Bureau of Explosives means the Bureau of Explosives (B of E) of the Association of American Railroads.

C means Celsius or Centigrade.

Captain of the Port means the officer of the Coast Guard, under the command of a District Commander, so designated by the Commandant for the purpose of giving immediate direction to Coast Guard law enforcement activities within his assigned area or, with respect to remaining areas in his District not assigned to officers designated by the Commandant, or the District Commander.

Carfloat means a vessel that operates on a short run on an irregular basis and serves one or more points in a port area as an extension of a rail line or highway over water, and does not operate in ocean, coastwise, or ferry service.

Cargo aircraft only means an aircraft that is used to transport cargo and is not engaged in carrying passengers.

Cargo tank means any tank permanently attached to or forming a part of any motor vehicle or any bulk liquid or compressed gas packaging not permanently attached to any motor vehicle which by reason of its size, construction, or attachment to a motor vehicle. Any packaging fabricated under specifications for cylinders is not a cargo tank.

Cargo vessel means: (1) Any vessel other than a passenger vessel; and (2), any ferry being operated under authority of a change of character certificate issued by a Coast Guard Officer-in-Charge, Marine Inspection.

Carrier means a person engaged in the transportation of passengers or property by: (1) Land or water, as a common, contract, or private carrier, or (2) Civil Aircraft.

Character of vessel means the type of service in which the vessel is engaged at the time of carriage of a hazardous material.

Competent authority means a national agency responsible under its national law for the control or regulation of a particular aspect of the transportation of hazardous materials (dangerous goods).

Consumer commodity means a material that is packaged and distributed in a form intended or suitable for sale through retail sales agencies or instrumentalities for consumption by individuals for purposes of personal care or household use. This term also includes drugs and medicines.

Containership means a cargo vessel designed and constructed to transport, within specifically designed cells, portable tanks and freight containers which are lifted on and off with their contents intact.

Cylinder means a pressure vessel designed for pressures higher than 40 psia and having a circular cross section. It does not include a portable tank, multi-unit tank car tank, cargo tank, or tank car.

District Commander means the District Commander of the Coast Guard, or his authorized representative, who has jurisdiction in the particular geographical area.

Designated facility means a hazardous waste treatment, storage, or disposal facility that has been designated on the manifest by the generator.

Engine means a locomotive propelled by any form of energy and used by a railroad.

F means Fahrenheit.

Ferry vessel means a vessel which is limited in its use to the carriage of deck passengers or vehicles or both, operates on a short run on a frequent schedule between two points over the most direct water route, other than in ocean or coastwise service, and is offered as a public service of a type normally attributed to a bridge or tunnel.

Flash point means the minimum temperature at which a substance gives off flammable vapor which will ignite if in contact with spark or flame.

Freight Container means a reusable container having a volume of 64 cubic feet or more, designed and constructed to permit being lifted with its contents intact and intended primarily for containment of package during transportation.

Fuel tank means a tank other than a cargo tank, used to transport flammable or combustible liquid, or compressed gas for the purpose of supplying fuel for propulsion of the transport vehicle to which it is attached, or for the operation of other equipment on the transport vehicle.

Gross weight means the weight of a packaging plus the weight of its contents.

Hazardous material means a substance or material, including a hazardous substance, which has been determined by the Secretary of Transportation to be capable of posing an unreasonable risk to health, safety, and property when transported in commerce, and which has been so designated.

Hazardous substance for the purpose of this subchapter, means a material, including its mixtures and solutions, that -

- (1) Is listed in the Appendix to Section 172.101 of this subchapter;
- (2) Is in a quantity, in one package, which equals or exceeds the reportable quantity (RQ) listed in the Appendix to Section 172.101 of this subchapter; and
- (3) When in a mixture or solution, is in a concentration by weight which equals or exceeds the concentration corresponding to the RQ of the material.

Hazardous waste, for the purposes of this checklist, means any material that is subject to the Hazardous Waste Manifest Requirements of the U.S. Environmental Protection Agency specified in 40 CFR Part 262.

Hermetically sealed means closed by fusion, gasketing, crimping, or equivalent means so that no gas or vapor can enter or escape.

Limited quantity, when specified as such in a section applicable to a particular material, with the exception of Poison B materials, means the maximum amount of hazardous material for which there is a specific labeling and packaging exception.

Liquid means a material that has a vertical flow of over 2 inches (50 mm) within a three minute period, or a material having one gram (1 g) or more liquid separation, when determined in accordance with the procedures specified in ASTM D 4359-84, **Standard Test Method for Determining whether a Material is a Liquid or Solid**, 1984 edition.

Magazine vessel means a vessel used for the receiving, storing, or dispensing of explosives.

Marking means applying the descriptive name, instructions, cautions, weight, or specification marks or combination thereof required by this subchapter to be placed upon outside containers of hazardous materials.

Mixture means a material composed of more than one chemical compound or element.

Mode means any of the following transportation methods: rail, highway, air, or water.

Motor vehicle includes a vehicle, machine, tractor, trailer, or semitrailer, or any combination thereof, propelled or drawn by mechanical power and used upon the highways in the transportation of passengers or property. It does not include a vehicle, locomotive, or car operated exclusively on a rail or rails, or a trolley bus operated by electric power derived from a fixed overhead wire, furnishing local passenger transportation similar to street-railway service.

Name of contents means the proper shipping name (PSN).

Navigable waters means, for the purposes of this subchapter, is limited to waters of the United States, including the territorial seas.

Net weight means a measure of weight referring only to the contents of a package, and does not include the weight of any packaging material.

Non-bulk packaging means a packaging which has (1) an internal volume of 450 liters (118.9 gallons) or less as a receptacle for a liquid; (2) a capacity of 400 kilograms (881.8 pounds) or less as a receptacle for a solid; or (3) a water capacity of 1000 pounds (453.6 kilograms) or less as a receptacle for a gas as defined in Section 173.300.

N.O.S. means "not otherwise specified".

NRC (non-reusable container) means a container whose reuse is restricted in accordance with the provisions of Section 173.28.

Officer in Charge, Marine Inspection means a person from civilian or military branch of the Coast Guard designated as such by the Commandant and who under the supervision and direction of the Coast Guard District Commander is in charge of a designated inspection zone for the performance of duties with respect to the enforcement and administration of Title 52, Revised Statutes, acts amendatory thereof or supplemental thereto, rules and regulations thereunder, and the inspection required thereby.

Operator means a person who controls the use of an aircraft, vessel, or vehicle.

ORM means "Other Regulated Materials".

Outage or ullage means the amount by which a packaging falls short of being liquid full, usually expressed in percent by volume.

Outside container means the outermost enclosure used in transporting a hazardous material other than a freight container.

Overpack, except when referenced to a packaging specified in Part 178 of this subchapter, means an enclosure that is used by a single consignor to provide protection or convenience in handling of a package or to consolidate two or more packages. **Overpack** does not include a freight container.

Packaging means the assembly of one or more containers and any other components necessary to assure compliance with the minimum packaging requirements of this subchapter and includes containers (other than freight containers or overpacks), portable tanks, cargo tanks, tank cars, and multi-unit tank car tanks. For radioactive materials, see Section 173.403 of this subchapter.

Passenger (With respect to vessels and for the purposes of Part 176 only) means a person being carried on a vessel other than:

- (1) The owner or his representative;
- (2) The operator,
- (3) A bona fide member of the crew engaged in the business of the vessel who has contributed no consideration for his carriage and who is paid for his services; or
- (4) A guest who has not contributed any consideration directly or indirectly for his carriage.

Passenger-carrying aircraft means an aircraft that carries any person other than a crewmember, company employee, an authorized representative of the United States, or a person accompanying the shipment.

Passenger vessel means: (1) A vessel subject to any of the requirements of the International Convention for the Safety of Life at Sea, 1960, which carries more than 12 passengers;

- (2) A cargo vessel documented under the laws of the United States and not subject to the Convention, which carries more than 16 passengers;
- (3) A cargo vessel of any foreign nation that extends reciprocal privileges and is not subject to the Convention and which carries more than 16 passengers; and
- (4) A vessel engaged in a ferry operation and which carries passengers.

Person means an individual, firm, co-partnership, corporation, company, association, or joint-stock association, and includes any trustee, receiver, assignee, or personal representative thereof.

Placarded car means a rail car which is placarded in accordance with the requirements of Part 172 of this subchapter except those cars displaying only the **FUMIGATION** placards as required by Section 172.510.

Portable tank means a bulk packaging (except a cylinder having a water capacity of 1000 pounds or less) designed primarily to be loaded into, or on, or temporarily attached to a transport vehicle or ship and equipped with skids, mountings, or accessories to facilitate handling of the tank by mechanical means.

Preferred route or Preferred highway is a highway for shipment of **highway route controlled quantities** of radioactive materials so designated by a State routing agency, and any Interstate System highway for which an alternative highway has not been designated by such State agency as provided by Section 177.825(b) of this subchapter.

Private track or Private siding means track located outside of a carrier's right-of-way, yard, or terminals where the carrier does not own the rails, ties, roadbed, or right-of-way and includes track or portion of track which is devoted to the purpose of its user either by lease or written agreement, in which case the lease or written agreement is considered equivalent to ownership.

Proper shipping name means the name of the hazardous material shown in Roman print (not italics) in Section 172.101 of this subchapter.

P.S.I. or psi means pounds per square inch.

P.S.I.A. or psia means pounds per square inch absolute.

P.S.I.G. or psig means pounds per square inch gauge.

Public vessel means a vessel owned by and being used in the public service of the United States. It does not include a vessel owned by the United States and engaged in a trade or commercial service or a vessel under contract or charter to the United States.

Radioactive materials, see Section 173.403 of this subchapter for definitions relating to radioactive materials.

Railroad means a person engaged in transportation by rail.

Rail freight car means a car designed to carry freight or non-passenger personnel by rail, and includes a box car, flat car, gondola car, hopper car, tank car, or an occupied caboose.

Reportable quantity (RQ) for the purposes of this subchapter means the quantity specified in Column 3 of the Appendix to Section 172.101 for any material identified in Column 1 of the Appendix.

Residue means the hazardous material remaining in a packaging, including a tank car, after its contents have been unloaded to the maximum extent practicable and before the packaging is either refilled or cleaned of hazardous material and purged to remove any hazardous vapors.

RSPA means the Research and Special Programs Administration, U.S. Department of Transportation, Washington, DC 20590.

SCF (standard cubic foot) means one cubic foot of gas measured at 60° F and 14.7 psia.

Shcathing means a covering consisting of a smooth layer of wood placed over metal and secured to prevent any movement.

Shipping paper means a shipping order, bill of lading, manifest or other shipping document servicing a similar purpose and containing the information required by Sections 172.202, .203 and .204.

STC (single-trip container) means a container that may not be refilled and reshipped after having been previously emptied, except as provided in Section 173.28.

Solid means a material which has a vertical flow of two inches (50 mm) or less within a three-minute period, or a separation of one gram (1 g) or less of liquid when determined in accordance with the procedures specified in ASTM D 4359-84 **Standard Test Method for Determining Whether a Material is a Liquid or Solid**, 1984 edition.

Solution means any homogeneous liquid mixture of two or more chemical compounds or elements that will undergo segregation under conditions normal to transportation.

Spontaneously combustible material (solid) means a solid substance (including sludges and pastes) which may undergo spontaneous heating or self-ignition under conditions normally incident to transportation or which may upon contact with the atmosphere undergo an increase in temperature and ignite.

State-designated route means a preferred route selected in accordance with U.S. DOT **Guidelines for Selecting Preferred Highway Routes for Highway Route Controlled Quantities of Radioactive Materials** or an equivalent routing analysis which adequately considers overall risk to the public.

State routing agency means an entity (including a common agency of more than one State such as one established by Interstate compact) which is authorized to use the State legal process pursuant to Section 177.825 of this subchapter to impose routing requirements, enforceable by State agencies, on carriers of radioactive materials without regard to intrastate jurisdictional boundaries. This term also includes Indian tribal authorities which have police powers to regulate and enforce highway routing requirements within their lands.

Stowage means the act of placing hazardous materials on board a vessel.

Strong outside container means the outermost enclosure which provides protection against the unintentional release of its contents under conditions normally incident to transportation.

Technical name means a recognized chemical name currently used in scientific and technical handbooks, journals, and texts. Generic descriptions authorized for use as technical names are: Organic phosphate compound, Organic phosphorus compound, Organic phosphate compound mixture, Organic phosphorus compound mixture, Methyl parathion, and Parathion.

Trailership means a vessel other than a carfloat, specifically equipped to handle highway vehicles, and fitted with installed securing devices to tie down each vehicle.

Train means one or more engines coupled with one or more rail cars, except during switching operations or where the operation is that of classifying and assembling rail cars within a railroad yard for the purpose of making or breaking up trains.

Trainship means a vessel other than a rail car ferry or carfloat, specifically equipped to transport railroad vehicles, and fitted with installed securing devices to tie down each vehicle.

Transport vehicle means a cargo carrying vehicle such as an automobile, van, tractor, truck, semitrailer, tank car or rail car used for the transportation of cargo by any mode. Each cargo-carrying body (trailer, rail car, etc.) is a separate transport vehicle.

UFC means Uniform Freight Classification.

Unit load device means any type of freight container, aircraft container, aircraft pallet with a net, or aircraft pallet with a net over an igloo.

United States means the fifty States, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, American Samoa, or Guam.

Vessel includes every description of watercraft, used or capable of being used as a means of transportation on the water.

Viscous liquid means a liquid material which has a measured viscosity in excess of 2500 centistokes at 25° C (77° F) when determined in accordance with the procedures specified in ASTM Method D 445-72.

Volatility refers to the relative rate of evaporation of materials to assume the vapor state.

Water reactive material (solid) means any solid substance (including sludges and pastes) which, by interaction with water, is likely to become spontaneously flammable or to give off flammable or toxic gases in dangerous quantities.

Water resistant means having a degree of resistance to permeability by and damage caused by water in liquid form.

W.T. means "watertight".

HAZARDOUS MATERIALS CLASS DEFINITIONS (from 49 CFR)

EXPLOSIVES

Class A Explosives - There are nine (9) types of Class A Explosives which are defined within Section 173.53. Generally, Class A explosives are detonating or otherwise a maximum hazard.

Black powder, explosive boosters, blasting caps, and explosive bombs are examples of Explosives Class A.

Class B Explosives - In general, Class B Explosives are those explosives which function by rapid combustion, rather than detonation. Class B Explosives are more specifically defined within Section 173.8.

Special fireworks, jet thrust units, rocket ammunition with solid projectile are examples of Class B Explosives.

Class C Explosives - Class C Explosives include certain types of manufactured articles which contain Class A or Class B explosives, or both, as components, but in restricted quantities. This Class of explosive also includes certain types of fireworks specifically identified as Class C Explosives. Class C explosives are more specifically defined within Section 173.100.

Explosive release devices, fuse igniters, time fuses, and igniter cords are examples of Class C explosives.

Blasting Agents - A blasting agent is a material designed for blasting and found to be so insensitive that there is very little probability of accidental initiation to explosion.

Ammonium nitrate - fuel oil mixtures, containing only prilled ammonium nitrate and fuel oil, are examples of blasting agents.

COMPRESSED GASES

The definition of compressed gas includes any material or mixture having a container a pressure exceeding 40 psi (pounds per square inch absolute) at 70°F, or 104 psi at 130°F. Compressed Gas is further defined as flammable or non-flammable.

Flammable Compressed Gas - There are a number of technical specifications for identifying a flammable compressed gas. Generally, any flammable material having in the container a pressure which exceeds 40 psi at 100°F, is considered a flammable compressed gas. The detailed specifications for determining a flammable compressed gas are contained in Section 173.300(b) of the regulations.

Acetylene, cyclopropane, and liquefied and non-liquefied hydrocarbon gas are examples of flammable compressed gases.

Non-Flammable Compressed Gas - Any compressed gas which does not meet the definition as a flammable compressed gas is considered as non-flammable compressed gas for the purpose of the hazardous materials regulations.

FLAMMABLE LIQUIDS

According to the hazardous materials regulations, a flammable liquid is any liquid having the flash point below 100°F., except those liquids which meet the definition of a compressed gas, or a mixture having one or more components with a flash point of 100°F. or higher that makes up at least 99 percent of the total volume of the mixture. Refer to Section 173.115.

Liquid paint drier, petroleum distillate, pine oil, and liquid furniture polish are examples of flammable liquids.

FLAMMABLE SOLID

A flammable solid is defined in the regulations as any solid material, other than an explosive, which under conditions incident to transportation is liable to cause fires through friction, retained heat from manufacturing or processing, or which can be ignited readily, and when ignited, such material burns so vigorously and persistently as to create a serious transportation hazard. Included within this class are spontaneously combustible and water reactive materials.

Wet hafnium metal, burnt fibers, and garbage tankage (containing less than 8% water) are examples of flammable solids.

COMBUSTIBLE LIQUID

A combustible liquid is any liquid which does not meet any other classification of hazardous materials and has a flash point at or above 100°F and below 200°F, except any mixture having one component or more with a flash point at 200°F or higher, that makes up at least 99 percent of the volume of the mixture.

ORGANIC PEROXIDE

An organic peroxide is defined as an organic compound containing the bivalent -O-O- structure and which may be considered a derivative of hydrogen peroxide where one or more of the hydrogen atoms have been replaced by organic radicals.

Lauroyl peroxide, and paramenthane hydroperoxide are examples of these types of materials.

OXIDIZING MATERIAL

A substance that yields oxygen readily to stimulate the combustion of organic matter is considered as an oxidizing material for the purposes of the Hazardous Materials Regulations.

Peracetic Acid Solution, nitric acid (over 40%) and sodium peroxide are all examples of oxidizing material.

POISONS

Under the Hazardous Materials Regulations of the DOT, poisonous materials are divided into three groups based on the degree of hazard posed in transportation -- Poison A, Poison B, and Irritating Material.

Poison A - Extremely dangerous poisons, Class A, are poisonous gases or liquids of such a nature that a very small amount of the gas, vapor of the liquid, mixed with air would be dangerous to life.

Section 173.326 defines the Class A Poison and includes a list of such hazardous materials. Some of Class A poisons include liquid bromoacetone, cyanogen gas, liquid nitrogen peroxide and phosphine.

Poison B - Class B Poisons are not considered as dangerous as Class A poisons. This class includes those substances, liquid or solid, (including pastes and semisolids), other than Class A or Irritating Material which are known to be so toxic to man as to provide a hazard to health during transportation, or which in the absence of adequate data on human toxicity, are presumed to be toxic to man based on results with test animals (e.g., oral toxicity testing).

Arsenic acid (solid), liquid chloropicrin, and solid cocculus are examples of Poison B materials.

IRRITATING MATERIAL

An irritating material is a liquid or solid substance which upon contact with fire or when exposed to air gives off dangerous or intensely irritating fumes, but does not include any material classed as Poison Class A.

Tear gas grenades, brombenzylcyanide, gas identification kits, and diphenylchlorarsine are examples of irritating materials.

CORROSIVE MATERIAL

A corrosive material is a liquid or solid that causes visible destruction or irreversible alterations in human skin tissue at the site of contact, or in the case of leakage from its packaging, a liquid that has a severe corrosion rate on steel.

Bromine, chemical kits, and solid chloroacetic acid are examples of a corrosive material.

ETIOLOGIC AGENTS

The Hazardous Materials Regulations of the Department of Transportation concerning **etiologic agents** are supplemental to the regulations of the Department of Health, Education, and Welfare as contained in Title 42 CFR Section 72.25. For the purposes of controlling the transport of such agents in commerce, the DOT defines etiologic agent as a viable microorganism, or its toxin, which causes or may cause human disease. Only those agents as listed in Section 72.25 of the HHW regulations are considered as meeting this definition.

RADIOACTIVE MATERIAL

There are sundry definitions provided within the regulations pertaining to the various aspects of radioactive materials. The term **radioactive materials** is defined in Section 173.403 as **any material having a specific activity greater than 0.002 microcuries per gram**.

Some additional explanatory definitions contained within the regulations (Section 173.403) pertaining to specific aspects or radioactive materials are listed as follows.

Fissile Materials - The term "fissile" means easily undergoing nuclear fission (the splitting apart of the nuclei of atoms). Fissile materials consist of or contain one or more fissile radionuclides. Fissile radionuclides are plutonium-238, plutonium-239, plutonium-241, uranium-233, and uranium-235. Fissile

materials are classified according to the controls needed to provide nuclear criticality safety during transportation (See Section 173.455).

Highway Route Controlled Quantity - means a quantity within a single package which exceeds:

- (1) 3000 times the A_1 value of the radionuclides as specified in Sec. 173.433 for special form radioactive materials;
- (2) 3000 times the A_2 value of the radionuclides as specified in Sec. 173.433 for normal form radioactive materials; or
- (3) 30,000 curies; whichever is least.

A_1 - means the maximum activity of special form radioactive materials permitted in a Type A package.

A_2 - means the maximum activity of radioactive materials, other than special form or low specific activity radioactive materials, permitted in a Type A package. These values are either listed in Sec. 173.433 or may be derived in accordance with the procedure prescribed in Sec. 173.433.

Limited quantity of radioactive material - means a quantity of radioactive material not exceeding the materials package limits specified in Sec. 173.423 and which conform with requirements specified in Sec. 173.421.

Special Form Radioactive Material - means radioactive materials which satisfy the following conditions:

- (1) It is either a single solid piece or is contained in a sealed capsule that can be opened only by destroying the capsule;
- (2) The piece or capsule has at least one dimension not less than 5 millimeters (0.197 inch); and
- (3) It satisfies the test requirements of Sec. 173.469. Special form encapsulations designed in accordance with the requirements of Sec. 173.389(g) in effect on June 30, 1983, and constructed prior to July 1, 1985 may continue to be used. Special form encapsulations designed or constructed after July 1, 1985 must meet the requirements of this paragraph.

Normal Form Radioactive Materials - means radioactive materials which has not been demonstrated to qualify as special form radioactive materials.

Low Specific Activity Materials - means any of the materials as listed in Sec. 173.403(n), such as uranium or thorium ores and physical or chemical concentrates of those ores, unirradiated natural or depleted uranium or unirradiated natural thorium, etc.

OTHER REGULATED MATERIAL

An Other Regulated Material, or ORM, is any material that does not meet the definition of a hazardous material, other than a combustible liquid in packaging having a capacity of 110 gallons or less, and is specifically listed in the Table of Hazardous Materials (172.101) as an ORM. A material not listed in the Table of Hazardous Materials may also be considered an ORM if it meets the characteristics of the following classes of such materials.

Other Regulated Materials - A (ORM-A) - An ORM-A material has an anesthetic, irritating, noxious, toxic or other similar property and which can cause extreme annoyance or discomfort to passengers and crews in the event of leakage during transportation.

Phencapton, thiram, chloroform, and carbaryl are examples of Other Regulated Materials -A.

Other Regulated Material - B(ORM-B) - An ORM-B material is capable of causing significant damage to a transport vehicle or vessel from leakage during transportation (includes a solid when wet with water). An ORM-B material will be so designated in the Table of Hazardous Materials (172.101), or be a liquid substance that has a corrosion rate exceeding 0.250 inch per year on aluminum at a test temperature of 130°F (173.500(a)(2)).

Ammonium hydrogen fluoride (solid), chloroplatinic acid (solid), and barium oxide are examples of materials classed as ORM-B.

Other Regulated Material - C (ORM-C) - Every material which is classed as an ORM-C will be so listed and identified in the Table of Hazardous Materials (172.101). An ORM-C material has other inherent characteristics not included within the ORM-A or ORM-B classes, but which renders the material unsuitable for shipment unless properly identified and prepared for transportation.

One material considered in the Table of Hazardous Materials as an ORM-C is a **magnetized material**. A substance is considered to be a magnetized material if, when packaged for transport by air, it has a magnetic field strength of 0.002 gauss or more at a distance of seven feet from any point of the surface of the package, or is of such a mass that it could affect the aircraft instruments, particularly the compasses.

Petroleum coke, sawdust (when dry, clean, and free from oil), copra, castor beans and feed (wet, mixed) are examples of materials classed as ORM-C.

Other Regulated Material - D (ORM-D) - Materials, such as consumer commodities which would otherwise be subject to the hazardous materials regulations, and presents a limited hazard during transportation because of its form, quantity and packaging is classed as an ORM-D; and ORM-D classification is only allowed when the material is granted an exception in a reference from the Table of Hazardous Materials.

For example, a consumer commodity which contains a flammable solid and would ordinarily be set classed as Flammable Solid, could be reclassified as an ORM-D material, provided the flammable solid is inside containers each having a net weight of one pound or less, packed in strong outside packagings each having a net weight of 25 pounds or less.

Other Regulated Materials - E (ORM-E) - Materials which are not included in any other hazard class but which are hazardous wastes or hazardous substances as defined in Sec. 171.8, and so designated by the Environmental Protection Agency's regulations (Title 40, Code of Federal Regulations).

RADIOACTIVE MATERIALS REGULATION DEFINITIONS

The following are some important definitions relating to packaging and transportation of radioactive material.

Carrier - Any person engaged in the transportation of passengers or property as common, contract, or private charter, or freight forwarder, as those terms are used in the Interstate Commerce Act, as amended, or by the U.S. Postal Service.

Close reflection by water - Immediate contact by water of sufficient thickness to reflect a maximum number of neutrons.

Containment Vessel - The receptacle in which principal reliance is place to retain the radioactive material during transport.

Fissile classification - Classification of a package or shipment of fissile materials according to the controls needed to provide nuclear criticality safety during transportation as follows:

- (1) **Fissile Class I** - Packages that may be transported in unlimited numbers and in any arrangement and that require no nuclear criticality safety controls during transportation. For purposes of nuclear criticality safety control, a transport index is not assigned to Fissile Class I packages. However, the external radiation levels may require a transport index number.
- (2) **Fissile Class II** - Packages that may be transported in any arrangement but in numbers that do not exceed a transport index of 50. For purposes of nuclear criticality safety control, individual packages may have a transport index of not less than 0.1 and not more than 10. However, the external radiation levels may require a higher transport index number but not to exceed 10. Such shipments require no nuclear criticality safety control by the shipper during transportation.
- (3) **Fissile Class III** - Shipments of packages that do not meet the requirements of Fissile Class I and II and that are controlled in transportation by special arrangements between the shipper and the carrier to provide nuclear criticality safety.

Fissile materials - Uranium-223, uranium-235, plutonium-238, plutonium-239, plutonium-241, neptunium-237, and curium-244.

Limited quantities of radioactive materials - excepted from packaging, marking, and labelling are described in 49 CFR 173.421.

Low specific activity - Material of low radioactivity level such as ores and chemical concentrations of those ores. The low specific activity definition is in 49 CFR 173.1403.

Maximum Normal Operating Pressure - The maximum gauge pressure that is expected to develop in the containment vessel under the normal conditions of transport.

Moderator - A material used to reduce the kinetic energy of neutrons by scattering collisions without appreciable neutron capture.

Optimum Interspersed Hydrogenous Moderation - The occurrence of hydrogenous material between containment vessels to such an extent that the maximum nuclear reactivity results.

Packaging - One or more receptacles and wrappers and their contents excluding fissile material and other radioactive material, but including absorbent material, spacing structures, thermal insulation, radiation shielding, devices for cooling and for absorbing mechanical shock, external fittings, neutron moderators, nonfissile neutron absorbers, and other supplementary equipment.

Primary coolant - A gas, liquid, or solid, or combination of them, in contact with radioactive material, or, if the material is in special form, in contact with its capsule, and used to remove decay heat.

Special form radioactive material - To qualify as special form the radioactive material must either be in massive solid form or encapsulated. Special tests which are required of special form material are explained in 49 CFR 173.403.

Transport index - The number placed on a package to designate the degree of control to be exercised by the carrier during transportation. The transport index to be assigned to a package of radioactive material shall be determined by either paragraph (1) or (2) below, whichever is larger. The number expressing the transport index shall be rounded up to the next higher tenth; e.g., 1.01 becomes 1.1.

- (1) The highest radiation dose rate in millirem per hour at 1 meter from any accessible external surface of the package.
- (2) The transport index of each Fissile Class II package is calculated by dividing the number 50 by the number of such Fissile Class II packages that may be transported together as determined under the limitations of 10 CFR 71.

For other definitions refer to 40 CFR 173.403, 46 CFR, 10 CFR, or other sections as applicable.

LIST OF HAZARDOUS MATERIALS TRANSPORTATION CHECKLISTS

<u>Performance Checklist</u>	<u>Revision No.</u>	<u>Date</u>	<u>Checklist Title</u>
HMT-DOE	0	12/29/89	Safety for Packaging/Transporting Hazardous Materials, Substances and Wastes.
HMT-A	0	12/29/89	Applicability and Definitions
HMT-T	0	12/29/89	Hazardous Materials Tables
HMT-P	0	12/29/89	Shipping Papers
HMT-M	0	12/29/89	Marking of Hazardous Materials Packages
HMT-L	0	12/29/89	Hazard Warning Labels
HMT-PL	0	12/29/89	Placarding Transport Vehicles
HMT-RM	0	12/29/89	Special Packaging/Shipping Requirements for Transporting Radioactive Material
HMT-SP	0	12/29/89	General Requirements for Packaging/Shipping Hazardous Materials
HMT-CR	0	12/29/89	Carriage By Rail
HMT-GLA	0	12/29/89	General Information
HMT-TA	0	12/29/89	In Transit Accident and Transportation on Passenger Vehicles
HMT-CA	0	12/29/89	Carriage By Air
HMT-CV	0	12/29/89	Carriage By Vessel
HMT-CH	0	12/29/89	Carriage By Public Highway
HMT-CS	0	12/29/89	Shipping Container Specifications
HMT-TC	0	12/29/89	Tank Car Specifications
HMT-PS	0	12/29/89	Pipeline Safety
HMT-DP	0	12/29/89	Driving and Parking Rules
HMT-NRC	0	12/29/89	Requirements for Packaging and Transportation of Radioactive Material (Title 10 CFR)

AUDITOR(S): _____

BLDG/AREA/UNIT(S): _____

DATE: ____/____/____

ESO NO.: _____

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
<u>DOE Order 5480.3: Safety Requirements For Packaging/Transport of Hazardous Materials/Substances/Wastes</u>			
<u>Section 7: Requirements</u>			
1. Does this facility offer radioactive material shipments to be transported in commerce? - If YES, proceed to Question 3. - If NO, proceed with checklist.	Y N		
2. Does this facility offer non-radioactive hazardous material shipments to be transported in commerce? - If YES, proceed to checklist HMT-A. - If NO, checklist is complete.	Y N		
3. Does this facility package or ship plutonium? - If YES, proceed with checklist. - If NO, proceed to Question 7. Note: Solid plutonium in excess of 20 curies per package in the following forms is not subject to the requirements specified in Question 3. o Reactor fuel elements. o Metal or metal alloy. o Special Form materials. o Other forms of plutonium-bearing materials, e.g., wastes or contaminated equipment, as approved by the Office of Operational Safety.	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
4. Are solid plutonium or plutonium-bearing wastes in greater than A2 quantities for normal form or greater than A1 quantities for special form, packaged in accordance with a specified DOE Certificate of Compliance, an NRC Certificate of Compliance, a DOT exempt packaging system, or a DOT Specification package?	Y N		
5. Is plutonium (for air transport) in greater than A2 quantities for normal form or greater than A1 quantities for special form in DOE or NRC certified packaging (equivalent to, or meeting the criteria of NUREG-0360), e.g., USA/0361/BF, USA/9150/B(J), or USA 9509/B(U) (DOE-A1)?	Y N		
6. Are the following packaging requirements for any surface mode of transportation followed:			
a. Is plutonium in excess of 20 curies per package shipped as a solid?	Y N		
b. Is plutonium in excess of 20 curies per package packaged in a separate inner container placed within outer packaging that meets the requirements of a Type B package for material in normal form?	Y N		
c. With respect to packaging referenced above (Question 6b) are the following tests performed on the packaging design:			
1) If the entire package is subjected to the design tests specified in DOE 5480.3, paragraph 11, "Normal Conditions of Transport," does the separate inner container restrict the loss of plutonium to no more than $1/10^4$ A2/hour?	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
2) If the entire package is subjected to the design tests specified in DOE 5480.3, paragraph 12, "Hypothetical Accident Conditions," does the separate inner container restrict the loss of plutonium to not more than an A2 quantity in one week? - If YES to Questions 4 - 6 c 2), ENTER STATUS "S". - If NO to any of Questions 4 - 6 c 2), ENTER STATUS "U".	Y N ☐		
7. Are DOT specification containers used for packaging amounts greater than Type A quantities and fissile materials? Note: If the answer to Question 7 is YES, then the standards of DOE Order 5480.4 are considered to be met and no specific DOE Certificate of Compliance is required.	Y N		
8. Are nuclear weapons and their components packaged and transported in accordance with the standards in this Order or with other standards such as 49 CFR 173.403, which provide a degree of safety at least equivalent to that provided by DOE and DOT regulations?	Y N		
9. Are packages of radioactive materials in amounts greater than Type A quantities shipped under the National Security Exemption, 49 CFR 173.7(b), in compliance with the standards in DOE 5480.4 and also in compliance with the provisions of other pertinent DOE Orders?	Y N		
10. Has a quality assurance program been established and implemented to ensure that packages for radioactive materials in amounts greater than Type A quantities are fabricated, maintained, and used in accordance with the regulations and approved design features? (Reference 10 CFR 71.73; 10 CFR 71.121; 10 CFR 71.137)	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
11. Have DOE Certificates of Compliance for packages of radioactive material in excess of Type A quantities been issued when package design has been determined to meet the requirements of DOE Order 5480.3?	Y N		
- If YES to Questions 7 - 11, ENTER STATUS "S".			
- If NO to any of Questions 7 - 11, ENTER STATUS "U".			
12. Does the field organization serve as the consignor of radioactive materials?	Y N		
- If YES, proceed with checklist.			
- If NO, proceed to Question 14.			
13. Have independent internal procedures been established to ensure compliance with the standards contained in DOE Order 5480.3?	Y N		
- If YES, ENTER STATUS "S".			
- If NO, ENTER STATUS "U".			
14. Have exemptions for packages that do not meet the standards in the DOT Hazardous Materials Regulations and that do not qualify for shipment under the National Security Exemption been approved as required in DOE Order 5480.3, Section 6(c)?	Y N		
- If YES, proceed with checklist.			
- If NO, proceed to Question 16.			
15. When exemptions as discussed in Question 14 have been approved, have applications for a DOT exemption been prepared in accordance with 49 CFR 107.103 and forwarded through the Safety Engineering and Analysis Division to the DOT?	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
- If YES to Questions 14 <u>and</u> 15, ENTER STATUS "S". - If NO to Question 14 <u>or</u> 15, ENTER STATUS "U".			
<u>Section 8: Package Standards</u>			
16. Is the packaging used to ship a quantity of radioactive material greater than Type A designed and constructed in compliance with the structural standards of 10 CFR 71?	Y N		
17. Are structural standards for Type B packaging which differ from those specified in Questions 8 and 9 approved by the Head of the Field Organization or other designated official if the controls proposed to be exercised by the shipper are demonstrated to be adequate to ensure the safety of the shipment?	Y N		
18. With regard to load resistance, is Type B packaging capable of withstanding a static load, normal to and uniformly distributed along its length, equal to five times its fully loaded weight, without generating stress in any material of the packaging in excess of its yield strength?	Y N		
19. With regard to external pressure, is Type B packaging adequate to ensure that the containment vessel will suffer no loss of contents if subjected to an external pressure of 25 pounds per square inch gauge?	Y N		
20. Are packages used for the transport of fissile material so designed and constructed and their contents so limited that they would be subcritical if it is assumed that water leaks into the containment vessel, and:			
a. Water moderation of the contents occurs to the most reactive credible extent consistent with the chemical and physical form of its contents?	Y N		
b. The containment vessel is fully reflected on all sides by water?	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
21. Are packages used for the transport of fissile material so designed and constructed and their contents so limited that they would be subcritical if it is assumed that any contents of the package that are liquid during normal transport leak out of the containment vessel, and that the fissile material is then: a. In the most reactive credible configuration consistent with the chemical and physical form of material? b. Moderated by water outside of the containment vessel to the most reactive credible extent? c. Fully reflected on all sides by water? - If YES to Questions 16 - 21 c, ENTER STATUS "S". - If NO to any of Questions 16 - 21 c, ENTER STATUS "U".	Y N Y N Y N ☐		
22. If exemptions to DOE Order 5480.3, Section 8(c) (See Questions 20 and 21) are made, does the head of the Field Organization or other designated official ensure that the containment vessel incorporates special design features that would preclude leakage of liquids in spite of any single packaging error, and that appropriate measures are taken before each shipment to verify the leak tightness of each containment vessel?	Y N		
23. Are the effects of the transport environment on the safety of any single package of radioactive material evaluated as follows: a. Can the package withstand conditions likely to occur in normal transport as determined by subjecting a sample package or scale model, by test or other assessment, to the normal conditions of transport specified in DOE Order 5480.3, Section 8(e)? b. Is the effect on a package of conditions likely to occur in an accident assessed by subjecting a sample package or scale model, by test or other assessment, to the hypothetical accident conditions specified in DOE Order 5480.3 Section 8(f)?	Y N Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
- If YES to Questions 22 - 23 b, ENTER STATUS "S". - If NO to any of Questions 22 - 23 b, ENTER STATUS "U".	☐		
24. When normal conditions of transport and hypothetical accident conditions differ from those specified in DOE Order 5480.3, Sections 8e - f, are approved by the Head of the Field Organization or other designated official, is it ensured that the controls proposed to be exercised by the shipper are demonstrated to be adequate to ensure the safety of the shipment?	Y N		
25. Are packages used for the shipment of fissile material of more than Type A quantity of radioactive material designed and constructed, and their contents so limited, that under the normal conditions of transport specified in DOE Order 5480.3, Section II:			
a. There will be no release of radioactive materials from the containment vessel?	Y N		
b. The effectiveness of the packaging will not be substantially reduced?	Y N		
c. There will be no mixture of gases or vapors in the package that could, through any combination of pressure or an explosion, significantly reduce the effectiveness of the package?	Y N		
d. Radioactive contamination of the liquid or gaseous primary coolant will not exceed $1/10^7$ curies of activity of Group I radionuclides per milliliter, $5/10^6$ curies of activity of Group II radionuclides per milliliter, and $3/10^4$ curies of activity of Group III and Group IV radionuclides per milliliter?	Y N		
e. There will be no loss of coolant or loss of operation of any mechanical cooling device?	Y N		
- If YES to Questions 24 - 25 e, ENTER STATUS "S".	☐		
- If NO to any of Questions 24 - 25 e, ENTER STATUS "U".			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
26. Are packages used for the shipment of fissile material designed and constructed, and their contents so limited, that under normal conditions of transport specified in DOE Order 5480.3, Section II, considered individually:			
a. A package will be subcritical?	Y N		
b. The geometric form of package contents would not be substantially altered?	Y N		
c. There will be no leakage of water into the containment vessel?	Y N		
Note: This requirement need not be met if, in the evaluation of undamaged packages under DOE Order 5480.3, Section 8h, I or j, it has been ensured that moderation is present to such an extent as to cause maximum reactivity consistent with the chemical and physical form of the material.			
d. There will be no substantial reduction in the effectiveness of the packaging, including:			
1) Reduction by more than 5 percent in the total effective volume of the packaging on which nuclear safety is assessed?	Y N		
2) Reduction by more than 5 percent in the effective spacing on which nuclear safety is assessed between the center of the containment vessel and the outer surface of the packaging?	Y N		
3) Occurrence of any aperture in the outer surface of the packaging large enough to permit the entry of a four-inch cube?	Y N		
- If YES to Questions 26 a - d 3) ENTER STATUS "S".	☐		
- If NO to any of Questions 26 a - d 3) ENTER STATUS "U".			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
27. Are packages used for the shipment of more than Type A quantity of radioactive material designed and constructed, and their contents so limited, that under normal conditions of transport specified in DOE Order 5480.3, Section II, considered individually, the containment vessel would not be vented directly to the atmosphere?	Y N		
28. Are packages used for the shipment of more than Type A quantity of radioactive material designed and constructed, and their contents so limited, that if subjected to the sequence of the hypothetical accident conditions specified in DOE Order 5480.3, Section 12, it will meet the following conditions:			
a. The reduction of shielding would not be sufficient to increase the external radiation dose rate to more than one rem per hour at one meter from the external surface of the package?	Y N		
b. No radioactive material containing total radioactivity exceeding a total amount of A2 in 1 week would be released from the package except for gases and contaminated coolant?	Y N		
- If YES to Questions 27 - 28 b, ENTER STATUS "S".			
- If NO to any of Questions 27 - 28 b, ENTER STATUS "U".			
29. Are packages used for the shipment of fissile material designed and constructed, and their contents so limited, that if subjected to the sequence of hypothetical accident conditions specified in DOE Order 5480.3, Section 12, the package would be subcritical? In determining whether this standard is satisfied, do the following assumptions apply:	Y N		
a. The fissile material is in the most reactive credible configuration consistent with the damaged condition of the package and the chemical and physical form of the contents?	Y N		
b. Water moderation occurs to the most reactive credible extent consistent with the damaged condition of the package and the chemical and physical form of the contents?	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
c. There is reflection by water on all sides and as close as is consistent with the damaged condition of the package? - If YES to Questions 29 a - c, ENTER STATUS "S". - If NO to any of Questions 29 a - c, ENTER STATUS "U".	Y N ☐		
30. Are the fissile characteristics of each package and array of packages evaluated for criticality and the proper fissile Class I, II, or III (10 CFR 71) assigned? - If YES, ENTER STATUS "S". - If NO, ENTER STATUS "U".	Y N ☐		
Section 10: Operating Procedures			
31. When the isotopic abundance, mass, concentration, degree of irradiation, degree of moderation, or other pertinent property of fissile material in any package is not known, does the shipper package the fissile material as if the unknown properties have such credible values as will cause the maximum nuclear reactivity?	Y N		
32. When a package has unknown properties (See Question 31), are any special instructions needed to safely open the package made available to the consignee?	Y N		
33. Prior to the first use of any packaging for the shipment of more than a Type A quantity of radioactive material or fissile materials, is such packaging inspected to ascertain that there are no cracks, pinholes, uncontrolled voids, or other defects that could significantly reduce its effectiveness?	Y N		
34. Prior to the first use of any packaging for the shipment of more than a Type A quantity of radioactive or fissile materials, where the maximum normal operating pressure will exceed five pounds per square inch gauge, is the containment vessel tested to ensure that it will not leak at an integral pressure 50 percent higher than the maximum normal operating pressure?	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
35. Is packaging marked conspicuously and durably with its model number?	Y N		
36. Prior to applying the model number, is an inspection made to determine that the packaging has been fabricated in accordance with the approved design?	Y N		
37. Prior to each use of a package for shipment of radioactive or fissile materials, has the shipper ascertained that the package with its contents satisfies the applicable requirements of DOE Order 5480.3, Section 8, including determination that:			
a. The packaging has not been significantly damaged?	Y N		
b. Any moderators and nonfissile neutron absorbers, if required, are as authorized?	Y N		
c. The closure of the package and any sealing gaskets present are free from defects?	Y N		
d. Any valve through which primary coolant can flow is protected against tampering?	Y N		
e. The internal gauge pressure of the package will not exceed, during the anticipated period of transport, the maximum normal operating pressure?	Y N		
f. Contamination of the primary coolant will not exceed, during the anticipated period of transport, the limits prescribed in Paragraph 8e(1)(d)?	Y N		
38. Does the shipper maintain for 2 years or more a record of each shipment of fissile material and each shipment of amounts of radioactive material greater than Type A quantities in single packages?	Y N		
Note: Specific record requirements are given in DOE Order 5480.3, Section 10(e).			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
39. Have contractors been required by the Heads of Field Organizations to prepare a distributable document (See DOE Order 5480.3, Section 10(b)) for each new specification or certified packaging designed, developed, and fabricated for offsite shipment of fissile and other radioactive materials in quantities exceeding Type A?	Y N		
40. When obsolete packages and containers used onsite only (which do not require documentation as noted in Question 38) are reactivated, altered, or requested for offsite use, has the party requiring reactivation or alterations prepared or had prepared the appropriate documentation? (See DOE Order 5480.3, Section 10(f))	Y N		
41. To reduce to a minimum the number of shipments that must ultimately be considered lost, have the following procedures been implemented:			
a. Prior to each shipment of fissile radioactive materials, or shipments of more than Type A quantity of radioactive material, has the shipper notified the consignee of the dates of the shipment and of expected arrival?	Y N		
b. Has the shipper notified each consignee of any special loading or unloading instructions prior to the first shipment to that consignee?	Y N		
c. Has the consignee been requested to notify the shipper immediately at the end of four days after the estimated arrival date if the shipment has not been received?	Y N		
d. Has prompt notification by telephone or teletype been followed by receipted registered mail to provide a written notice?	Y N		
e. Are lost, strayed, or stolen shipments that are not recovered or accounted for reported to the field organization transportation officer as unusual occurrences?	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
f. When a shipment is lost, strayed, or stolen, does the cognizant field organization head determine if an investigation is warranted and advise the Office of Operational Safety, PE-24, of his or her decision at the time of the unusual occurrence report?	Y N		
g. For all radioactive material shipments, (Type A, Type B, low specific activity) is a return receipt requested?	Y N		
h. Does the shipper follow up on the shipment status if the return receipt is not received within one month?	Y N		
- If YES to Questions 31 - 41 h, ENTER STATUS "S".			
- If NO to any of Questions 31 - 41 h, ENTER STATUS "U".			
42. Are each of the following normal conditions of transport applied separately to determine its effect on a package:			
a. <u>Heat</u> - Direct sunlight has an ambient temperature of 130 degrees Fahrenheit in still air?	Y N		
b. <u>Cold</u> - An ambient temperature of -40 degrees Fahrenheit in still air and shade?	Y N		
c. <u>Pressure</u> - Atmospheric pressure of 1.5 times standard atmospheric pressure?	Y N		
d. <u>Vibration</u> - Vibration is normally incident to transport?	Y N		
e. <u>Water Spray</u> - A water spray sufficiently heavy to keep the entire exposed surface of the package except the bottom continuously wet during a period of 30 minutes?	Y N		
f. <u>Free Drop</u> - Between 1-1/2 and 2-1/2 hours after the conclusion of the water spray test, a free drop through the distance specified in Figure 1, below, onto a flat essentially unyielding horizontal surface, striking the surface in a position for which maximum damage is expected?	Y N		

AUDIT QUESTIONS AND PROCEDURES

RESPONSE

REFERENCE

COMMENTS

<u>Package Weight (pounds)</u>	<u>Distance (feet)</u>
Less than 10,000	4
10,000 to 20,000	3
20,000 to 30,000	2
More than 30,000	1

Figure 1
Free Fall Distance

g. Corner Drop - A free drop onto each corner of the package in succession or, in the case of a cylindrical package, onto each quarter of each rim, from a height of 1 foot onto a flat essentially unyielding horizontal surface. This test applies only to packages which are constructed primarily of wood or fiberboard and do not exceed 100 pounds gross weight, and to all Fissile Class II packages?

Y N

h. Penetration - Impact of the hemispherical end of a vertical steel cylinder 1-1/4 inches in diameter and weighing 18 pounds, dropped from a height of 40 inches onto the exposed surface of the package which is expected to be more vulnerable to puncture. The long axis of the cylinder shall be perpendicular to the package surface?

Y N

i. Compression - For packages not exceeding 10,000 pounds in weight, a compressive load equal to either five times the weight of the package or two pounds per square inch multiplied by the maximum horizontal cross section of the package, whichever is greater. The load shall be applied during a period of 24 hours, uniformly against the top and bottom of the package in the position in which the package would normally be transported?

Y N

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
- If YES to Questions 42 a - I, ENTER STATUS "S". - If NO to any of Questions 42 a - I, ENTER STATUS "U".			
43. Are the following hypothetical accident test conditions applied sequentially, in the order indicated, to determine their cumulative effect on a package or array of packages? a. <u>Free Drop</u>. A free drop through a distance of 30 feet onto a flat essentially unyielding horizontal surface, striking the surface in a position for which maximum damage is expected. b. <u>Puncture</u>. A free drop through a distance of 40 inches striking, in a position for which maximum damage is expected, the top end of a vertical cylindrical mild steel bar mounted on an essentially unyielding horizontal surface. The bar shall be six inches in diameter, with the tip horizontal and its edge rounded to a radius or not more than 1/4 inch, and of such length as to cause maximum damage to the package, but not less than 8 inches long. The long axis of the bar shall be perpendicular to the unyielding horizontal surface. c. <u>Thermal</u>. Exposure to a thermal test in which the heat input to the package is not less than that which would result from exposure of the whole package to a radiation environment of 1475 degrees Fahrenheit for 30 minutes with an emissivity coefficient of 0.9, assuming the surfaces of the package have an absorption coefficient of 0.8. The package shall not be cooled artificially until three hours after the test period unless it can be shown that the temperature on the inside of the package has begun to fall in less than three hours. d. <u>Water Immersion (fissile material packages only)</u>. Immersion in water to the extent that all portions of the package to be tested are under at least three feet of water for a period of not less than eight hours.	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
44. Are the following tests performed for special form material:			
a. <u>Free Drop</u> - A free drop through a distance of 30 feet onto a flat essentially unyielding horizontal surface, striking the surface in such a position as to suffer maximum damage?	Y N		
b. <u>Percussion</u> - Impact of the flat circular end of a one-inch diameter steel rod weighing three pounds dropped through a distance of 40 inches. The capsule or material shall be placed on a sheet of lead, of hardness number 3.5 to 4.5 on the kickers scale, and not more than one inch thick, supported by a smooth essentially unyielding surface?	Y N		
c. <u>Heating</u> - Heating in air to a temperature of 1475 degrees Fahrenheit and remaining at that temperature for a period of 10 minutes?	Y N		
d. <u>Immersion</u> - Immersion for 24 hours in water at room temperature. The water shall be pH5 to pH8 with a maximum conductivity of 10 microohms per centimeter?	Y N		
- If YES to Questions 43 - 44 d, ENTER STATUS "S".			
- If NO to any of Questions 43 - 44 d, ENTER STATUS "U".			
This checklist is complete.			

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AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
<u>Section 5(b)(4)</u>			
1. When exemptions to 49 CFR 171 - 179 are requested, are the procedures set forth in 49 CFR 157 and DOE 5480.3 followed?	Y N		
<u>Attachment 1, Section 3</u>			
2. When exemptions to 10 CFR 71 are requested, are the procedures set forth in DOE 5480.4, Attachment 1, Section 3 followed?	Y N		
3. Are the requirements of IAEA Safety Series No. 6, "Regulations for the Safe Transport of Radioactive Material", followed as required by DOE policy?	Y N		
4. When exemptions to IAEA Safety Series No. 6 are made, are the procedures set forth in DOE 5480.4, Attachment 2, Section 3 followed?	Y N		
5. Are the requirements of the "International Air Transport Association (IATA) Restricted Article Regulations" with respect to the transport of radioactive materials followed as required by DOE policy?	Y N		
6. When exemptions to the IATA regulations are made, are the procedures set forth in DOE 5480.4, Attachment 2, Section 3 followed?	Y N		
<u>Attachment 3, Section 2(a)(4)</u>			
7. Are the following used as references on good practice and for general ES&H informational purposes with respect to radioactive materials packaging and transportation:			
a. ORNL-NSIC-68, 1970, "Cask Designers Guide" (ORNL)?	Y N		
b. ANSI N14.1-1971, "Packaging of Uranium Hexafluoride for Transport" (ANSI)?	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
c. NRC Guide 7.4, "Leakage Tests for Shipment of Radioactive Materials (NRC)"? - If YES to Questions 7 a - c, ENTER STATUS "S". - If NO to any of Questions 7 a - c, ENTER STATUS "U". This checklist is complete.	Y N		

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AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
49 CFR 171.8: Definitions			
1. Can facility shipping personnel determine if a commodity is regulated by DOT as a hazardous material?	Y N		
2. Can facility shipping personnel determine if a Reportable Quantity of a DOT hazardous material is present in a shipment?	Y N		
3. Can facility personnel determine if a Reportable Quantity of a hazardous Substance is present in a mixture or solution in bulk shipment containers?	Y N		
4. Can personnel offering the commodity for shipment determine if the shipment is classified as a hazardous waste?	Y N		
5. Are shipping personnel supplied with or have access to DOT Regulations of 49 CFR Parts 101-199 and Part 397?	Y N		
- If YES to Questions 1 - 5, ENTER STATUS "S".	☐		
- If NO to any of Questions 1 - 5, ENTER STATUS "U".			
49 CFR 171(a)			
6. Does this DOE facility offer hazardous material shipments to be transported in commerce (as described in this section)?	Y N		
- If YES to Question 6, the hazardous materials shipments offered by DOE are subject to Department of Transportation and related regulations.			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
<u>49 CFR 171(b)</u> 7. Does this facility manufacture, fabricate, mark, test, repair, or recondition containers or packages which are used in commerce to transport hazardous materials? If YES, auditors may conduct a detailed container specifications audit. To conduct and complete a detailed and thorough container specifications compliance check, auditors must be in possession of Title 49 CFR Part 178, "Shipping Container Specifications." This checklist is complete.	Y N		

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AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
49 CFR 172: Tables and Indexes			
1. Do shipping personnel have access to the indexes, Appendices, and Tables presented in this part of the regulations?	Y N		
2. Are shipping personnel familiar with the use of the indexes, Appendices, and Tables in this part?	Y N		
3. Can DOE personnel who are offering the commodity for shipment develop basic and complete descriptions required for identifying the hazardous materials, hazardous substances, and hazardous wastes which are being transported?	Y N		
19 - If YES to Questions 1 - 3, ENTER STATUS "S"	☐		
- If NO to any of Questions 1 - 3, ENTER STATUS "U" and note deficiencies.			

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AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
<u>49 CFR 172.201: General Shipping Paper Entries</u>			
1. Are the hazardous materials being transported listed first in different contrasting colors on originals or highlighted on copies of shipping papers?	Y N		
2. Are hazardous materials listed in a column marked "HM"?	Y N		
3. Does an "X" or "RC" appear in the HM column to designate hazardous materials being transported?	Y N		
- If YES to Questions 1, 2 and 3, ENTER STATUS "S".	☐		
- If NO to any Question 1, 2 or 3, ENTER STATUS "U".			
<u>49 CFR 172.202: Required Descriptions</u>			
4. Does the proper shipping name for the prescribed hazardous material appear correctly on the shipping papers?	Y N		
5. Does the materials hazard class appear after the proper shipping name? Note: Materials can have only one hazard class.	Y N		
6. Does the "UN" or "NA" Identification Number appear after the hazard class?	Y N		
7. Except for empty packagings, compressed gas cylinders, and packages greater than 110-gallon capacity, are the total quantities and units of measurement (e.g. "800 lbs." or "60 gal", etc.) written before or after the required description?	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
- If YES to Questions 4, 5, 6 <u>and</u> 7, ENTER STATUS "S". - If NO to Question 4, 5, 6 <u>or</u> 7, ENTER STATUS "U" and note deficiencies.	☐		
49 CFR 172.203: Additional Shipping Paper Description Requirements			
8. For each hazardous material which has an exemption by DOT, does the notation "DOT-E" appear next to and clearly associated with the correct corresponding description?	Y N		
9. When a Limited Quantity of hazardous materials is being shipped, do the words "Limited Quantity" or "Ltd Qty" follow the corresponding basic description in the shipping papers?	Y N		
10. When the proper shipping name does not specifically identify a hazardous substance, is the hazardous substance identified in accordance with the HMT Appendix?	Y N		
11. When a hazardous waste is transported, does the waste stream number and EPA hazardous characteristic appear on the manifest forms?	Y N		
Note: "RC" must also appear on papers if applicable. Hazardous waste shipments must comply with regulations set forth in 49 CFR 261, 262, and 263 as well as with regulations prescribed in 49 CFR 171-178.			
- If YES to Questions 8, 9, 10 <u>and</u> 11, ENTER STATUS "S". - If NO to Question 8, 9, 10 <u>or</u> 11, ENTER STATUS "U" and note which files were examined and where they were located.			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
12. Are radioactive materials described with: a. The name of each radionuclide in the radioactive material? b. A description of the physical and chemical form of the material? c. The activity in each package in terms of curies, millicuries, microcuries? d. The category of label (e.g., radioactive-white 1) applied to the package? e. The transport index? f. The addition of the shipment's fissile class, DOE-approved packages, package certificates, etc.? g. The letters "RQ" on the shipping paper either before or after the basic description? h. The words "Highway Route Controlled Quantity" when a shipment of such radioactive quantities is being transported? 13. When transported by rail does the shipping paper contain the notation "PLACARDED" followed by the name of the required placard, such as "RADIOACTIVE"? 14. Are "Dangerous Goods Declaration Forms" properly prepared and offered to the operator when shipments are transported by aircraft? 15. Are the entries "____ Percent Water" for ammonias, "Noncorrosive", and "Not For Q and T Tanks" included on shipping papers where required for rail cargo tanks? 16. Are packing and weight descriptions included for shipments by vessel? 17. Are additional shipping paper descriptions included for foreign shipments of hazardous materials by vessel?	Y N Y N Y N Y N Y N Y N Y N Y N Y N Y N Y N Y N Y N Y N Y N Y N Y N Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
18. Do the words "Dangerous When Wet" appear after the basic description for hazardous materials which must be labeled as such?	Y N		
19. If a hazardous material represents an inhalation hazard as defined in Section 173.3(a) do the words "Poison-Inhalation Hazard" appear on the shipping papers in association with the shipping description?	Y N		
20. Does the designation "Poison" appear when appropriate on shipping papers in the shipping name?	Y N		
- If YES to Questions 12 a - 20, ENTER STATUS "S".	☐		
- If NO to any of Questions 12 a - 20, ENTER STATUS "U".			
<u>49 CFR 172.204: Shipper's Certification</u>			
20. Do the shipping papers include the required certification statement whereby the shipper certifies that the materials are "properly classified, described, packaged, marked, and labeled and in proper condition for transportation", according to the applicable regulations of the Department of Transportation?	Y N		
21. Are certification statements which are required for both passenger and/or cargo aircraft listed only on the shipping papers?	Y N		
22. Does a manual or mechanical signature appear on Bills of Lading as part of the certification statement?	Y N		
23. Are shipper's declarations for air shipments of hazardous materials signed manually?	Y N		
- If YES to Questions 20, 21, 22 <u>and</u> 23, ENTER STATUS "S".	☐		
- If NO to Question 20, 21, 22 <u>or</u> 23, ENTER STATUS "U" and note deficiencies.			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
49 CFR 172.205: Hazardous Waste Manifest			
24. Is a hazardous waste manifest prepared, signed, and carried in accordance with EPA Title 40 CFR 262.20 when hazardous wastes are transported, returned, or transferred?	Y N		
Note: For detailed information on regulations, see RCRA Checklists, especially 40 CFR Parts 262-263.			
- If YES, ENTER STATUS "S".	☐		
- If NO, ENTER STATUS "U" and note deficiencies.			
This checklist is complete.			

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AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
<u>49 CFR 172.301: General Marking Requirements</u>			
1. Are all packages of less than 110 gallons capacity marked with the proper shipping name, ID number, and "Inhalation hazard" if required?	Y N		
2. Are packages marked with "This End Up" when inner packaging contains liquid hazardous material?	Y N		
3. Are packages marked with "RQ", indicating Reportable Quantity, when designated in the Appendix to 172.101?	Y N		
4. Does the word "WASTE" appear on the package preceding the Proper Shipping Name when appropriate for EPA-designated hazardous wastes?	Y N		
5. Do waste materials and packages also bear the EPA markings prescribed by 40 CFR 262.32?	Y N		
6. Are export shipments marked as prescribed in Section 172.302?	Y N		
7. When DOE ships materials such as PCBs are marking requirements and TSCA regulations followed?	Y N		
<u>49 CFR 172.304: Marking Requirements</u>			
8. Is package marking in English printed on or affixed to the surface of a package, label, or tag and is writing in a sharply contrasting color?	Y N		
9. Are the package markings located away from advertising and unobstructed by other marking or package attachments?	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
49 CFR 172.306: Name and Address			
10. When shipments are conducted (except for carload lots, truckload lots, freight container lots) or when the entire contents of a rail car, truck, or freight container tendered from one consignor to one consignee are shipped, all packages marked with the name and address of the consignee or consignor?	Y N		
- If YES to Questions 1 - 10, ENTER STATUS "S".			
- If NO to any of Questions 1 - 10, ENTER STATUS "U".			
49 CFR 172.310: Radioactive Materials			
11. Is each package of radioactive material over 110 pounds marked with its gross weight on the outside of the package?	Y N		
12. Is each Type A or B package marked on the outside as "Type A" or "Type B"?	Y N		
13. Are all export radioactive materials packages marked "USA"?	Y N		
14. Do Type B containers have the COC Number of the container marked upon the data plate?	Y N		
15. Are inner packagings of radioactive materials which are Limited Quantities marked "Radioactive"?	Y N		
- If YES to Questions 11 - 15, ENTER STATUS "S".			
- If NO to any of Questions 11 - 15, ENTER STATUS "U".			
49 CFR 172.316: ORM Packaging			
16. Are packages of 110 gallons or less of ORM class materials durably and legibly marked on at least one side or one end with the appropriate ORM designation immediately following or below the proper shipping name?	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
49 CFR 172.324: Hazardous Substances			
17. Is each package of 110 gallons or less that contains a hazardous substance marked with the Appendix (172.101) name, waste stream number, or EPA characteristic and "RC" where appropriate?	Y N		
49 CFR 172.328: Portable Tanks			
18. Are facility portable tanks marked with numbers and letters at least 2 inches high?	Y N		
19. Are facility portable tanks of 1,000 gallons or less capacity marked as required on two opposing sides?	Y N		
20. Are facility portable tanks of 1,000 gallons or more capacity marked as required on each side and each end?	Y N		
69 - If YES to Questions 16 - 20, ENTER STATUS "S".			
- If NO to any of Questions 16 - 20, ENTER STATUS "U" and note deficiencies.			
Note: Auditors should refer to sections 172.328 through 172.331 for requirements when transporting hazardous materials cargo tanks, multi-unit tank cars, and bulk packagings.			
49 CFR 172.332: Identification Number Markings			
21. Are all portable tanks, cargo tanks, tank cars, and multi-unit tank car tanks and bulk packagings of hazardous materials properly marked with the appropriate orange panels, placards, or when required with white square-on-point configurations as required?	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
<u>49 CFR 172.34: Prohibited Display of Identification Numbers</u>	Y N		
22. Have facility personnel checked to ensure that no identification numbers are present on Poison Gas, Radioactive, Explosives A&B, Blasting Agent, or Dangerous placards?			
<u>49 CFR 172.336: Special Provisions and Exceptions</u>			
Note: Auditors should check the exceptions sections to determine the few situations which do not require the posting of identification numbers and list these in Comments.			
<u>49 CFR 172.338: Replacement of Identification Numbers</u>			
23. Are identification numbers on placards, orange panels, or white square-on-point configurations replaced as soon as practicable when more than one is damaged or lost during transportation?	Y N		
- If YES to Questions 21, 22 <u>and</u> 23, ENTER STATUS "S".	☐		
- If NO to Question 21, 22 <u>or</u> 23, ENTER STATUS "U".			
This checklist is complete.			

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AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
<u>49 CFR 172.400: General Labeling Requirements</u>			
1. Are all packages, overpacks, and freight containers that contain hazardous materials which are offered for transport, properly labeled as specified in the Hazardous Materials Table and the Optional Hazardous Materials Table? Note the exceptions for cylinders, DOD shipments, ORM materials, and low specific activity radioactive materials. Note that the exceptions do not apply to the CARGO AIRCRAFT ONLY label and RAM LTD QTY.	Y N		
<u>49 CFR 172.401: Prohibited Labeling</u>			
2. Do the labels used represent the appropriate hazard of the packaged material being transported?	Y N		
3. Do the labels used on packages conform to the prescribed color, design, and shape?	Y N		
<u>49 CFR 172.402: Additional Labeling Requirements</u>			
4. Is each package which contains hazardous materials of more than one hazard class labeled for each class as required? Note: This mainly applies to Poison B, Oxidizer, Corrosive, Flammable Solids and Liquids, Dangerous When Wet, and Cargo Aircraft Only packages.	Y N		
5. When unknown samples are shipped from the facility for laboratory analysis, are the packages labeled based upon the shipper's knowledge of the material and in accordance with the Hazard Precedence List of 49 CFR 173.27	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
- If YES to Questions 1 - 5, ENTER STATUS "S" - If NO to any of Questions 1 - 5, ENTER STATUS "U" and note deficiencies.	☐		
<u>49 CFR 172.403: Radioactive Material</u>			
6. Are all packages of radioactive materials which are shipped labeled correctly according to transport index, fissile class, and highest exhibited label category? Note: Radioactivity level as measured at the surface of the package is also a factor in label selection. Also note that Highway Route Controlled Quantities must always bear the yellow III label.	Y N		
7. Are other labeling requirements such as the listing of the radionuclides and activity of the material in curies, millicuries, or microcuries written on package labels? Note: Labels for radioactive material shipments being transported internationally must show the activity of the material in becquerels or multiples thereof. When curies are shown they should be presented in brackets after becquerels. This is a requirement anytime the IATA regulations are utilized. Some domestic carriers (e.g., Flying Tigers, United Airlines) require IATA labeling even for domestic RAM shipments.	Y N		
8. Is the transportation index as prescribed in Subpart I of 49 CFR marked on the label to inform the carrier about the degree of control required for transport?	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
9. Do all packages receiving radioactive labels in this section have two labels affixed to opposite sides of the package or enclosed freight container? - If YES to Questions 6 - 9, ENTER STATUS "S". - If NO to any of Questions 6 - 9, ENTER STATUS "U" and note deficiencies. <u>49 CFR 172.404: Labels for Mixed and Consolidated Packaging</u>	Y N ☐		
10. In packages having hazardous materials of different hazard classes which are mixed or consolidated within the same outside container, is the outside container labeled as required for each hazard class of material contained therein? - If YES, ENTER STATUS "S". - If NO, ENTER STATUS "U" and note the location and how many packages were not labeled correctly. <u>49 CFR 172.406: Placement of Labels</u>	Y N ☐		
11. Are labels affixed to hazardous materials packages near the marked proper shipping name?	Y N		
12. When two or more labels from different hazard classes are used, are they affixed next to each other?	Y N		
13. Are package labels affixed to a background of contrasting color or separated from the background with a dotted or solid line outer border?	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
14. Are hazardous materials warning labels displayed on at least two sides or two ends of packages when packages containing radioactive material are greater than 64 cubic feet in volume, in freight containers of 64-640 cubic feet, and for each portable tank of 1,000 gallons or less capacity?	Y N		
15. Are labels attached to packages such that they are not obscured in any way by other markings or attachments?	Y N		
- If YES to Questions 11 - 15, ENTER STATUS "S".			
- If NO to any of Question 11 - 15, ENTER STATUS "U".			
<u>49 CFR 172.407: Label Specifications</u>	Y N		
16. Are all hazardous materials warning labels used by this facility in compliance with the DOT specifications set forth in 49 CFR 172.407, pertaining to label color, design, shape, durability, weather resistance, and construction?	Y N		
- If YES, ENTER STATUS "S".			
- If NO, ENTER STATUS "U" and note variances from label specifications.			
This checklist is complete.			

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AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
<u>49 CFR 172.500: Applicability of Placarding Requirements</u>			
1. Are all transport vehicles, portable tanks, and freight containers which contain hazardous materials, with the exception of Etiologic Agents, ORM materials, and Limited Quantity shipments, placarded with appropriate hazardous materials warning placards prior to transport?	Y N		
<u>49 CFR 172.502: Prohibited Placarding</u>			
2. Are warning placards affixed or displayed only on transport vehicles, portable tanks, and freight containers which do contain hazardous materials and are indicative of the hazard exhibited by the enclosed material?	Y N		
<u>49 CFR 172.503: Identification Numbers</u>			
3. Do warning placards which are affixed to hazardous materials tank cars, cargo tanks, portable tanks, and bulk packagings have the UN or NA identification numbers printed on them where required by 172.334?	Y N		
- If YES to Questions 1, 2 <u>and</u> 3, ENTER STATUS "S".			
- If NO to Question 1, 2 <u>or</u> 3, ENTER STATUS "U" and note where placarding requirements were not adhered to.			
<u>49 CFR 172.504: General Placarding Requirements (Refer to Placarding Tables #1 and #2 of This Subpart When Determining Placarding Compliance)</u>			
4. Are all transport vehicles, freight containers, and rail cars which contain any quantity of material listed in Table 1 placarded with the appropriate hazardous material warning placard?	Y N		
5. Are all portable tanks, cargo tanks, and tank cars placarded with the correct hazardous materials warning placards when they contain any quantity of Table 1 material or in excess of 1,000 lbs. (gross) of Table 2 material?	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
6. Are all transport vehicles and freight containers which contain more than 1,000 pounds of Table 2 material placarded with the correct hazardous material warning placards? Note: When the gross weight of hazardous materials listed in Table 2 is less than 1,000 pounds no warning placard is required on transport vehicles or freight containers.	Y N		
7. When transport vehicles or freight containers are loaded with more than 5,000 pounds of one Table 2 class material at one facility is that vehicle or container placarded separately according to the specified hazardous materials warning placards? Note: A transport vehicle or freight container containing more than 1 hazard class with each class being less than 5,000 gross pounds, may be placarded with "Dangerous" placards instead of the separate placards which are specified for each class.	Y N		
<u>49 CFR 172.505: Placarding Requirements for Certain Poisonous Materials</u>			
8. In addition to the placards required in 172.504, do all transport vehicles, portable tanks, and freight containers described on shipping papers as carrying "Poison Inhalation Hazards" affixed to them on each side and each end a "Poison" placard in addition to the other required placards? - If YES to Questions 4, 5, 6, 7 <u>and</u> 8, ENTER STATUS "S". - If NO to Question 4, 5, 6, 7 <u>or</u> 8, ENTER STATUS "U" and note which placarding requirements are not satisfied.	Y N		
<u>49 CFR 172.506: Providing and Affixing Placards - Highway Carriage</u>			
9. Unless the carrier already has affixed appropriate placards, do facility personnel offer the carrier the required warning placards prior to or at the time the hazardous material is offered for transport?	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
10. Do facility personnel ensure that all appropriate warning placards are attached to the motor vehicle before the carrier is allowed to transport the hazardous material? Note: A statement should be included on the Bill of Lading which is signed by the carrier indicating that the vehicle was placarded, or that placards were offered before the vehicle departed from the facility. This would be a Best Management Practice that is not required by the regulations. However, if an accident occurs with that vehicle, a law suit against the shipper may be better defended in the event that placards were not affixed by the carrier at the time of the incident. <u>49 CFR 172.507: Special Placarding - Highway</u>	Y N		
11. Is each motor vehicle which leaves the facility with a highway route controlled quantity of radioactive materials placarded with a "Radioactive" warning placard on a square background? - If YES to Questions 9, 10 and 11, ENTER STATUS "S". - If NO to Question 9, 10 or 11, ENTER STATUS "U" and note problems.	Y N		
<u>49 CFR 172.508: Placarding and Affixing Placards When Transporting by Rail</u>			
12. Do facility personnel ensure that each rail car containing hazardous materials is placarded with the placards required by 172.502 and 172.504 prior to offering the rail car to the rail carrier?	Y N		
<u>49 CFR 172.510: Special Placarding Provisions for Rail Transport</u>			
13. Are tank cars containing residues of hazardous materials placarded with the appropriate hazardous warning residue placards which correspond to the material which was last contained in the tank?	Y N		
14. Are transport vehicles and freight containers which are offered for transport by rail and which have been fumigated with poisonous liquids, solids, or gas so designated by the affixing of the appropriate square background fumigated warning placards?	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
15. Are Explosives A, Poison Gas Residue, and Poison Gas square background placards used when warning of these hazards in rail cars?	Y N		
16. Are rail cars which contain chemical ammunition placarded with both the Explosives A and Poison Gas placards?	Y N		
- If YES to Questions 12 - 16, ENTER STATUS "S".			
- If NO to any of Questions 12 - 16, ENTER STATUS "U".			
<u>49 CFR 172.512: Freight Containers and Aircraft Unit Load Devices</u>			
17. Are freight containers and aircraft unit load devices placarded when required except for situations specific to the particular methods of transport presented in this section?	Y N		
<u>49 CFR 172.514: Placarding of Cargo Tanks and Portable Tanks</u>			
18. Is each large-capacity cargo and portable tank (greater than 5,000 gallons) placarded pursuant to 172.504 (a) with the designated hazardous materials warning placards?	Y N		
19. Are placards kept on cargo tanks and portable tanks except when they are reloaded with materials which don't require placarding and except for when they are cleaned and purged of vapors to remove any potential hazard?	Y N		
<u>49 CFR 172.516: Visibility and Display of Placards</u>			
20. When affixed to a motor vehicle or rail car, are warning placards displayed on each end and on each side and is the placard readily visible from the direction it faces (except to the direction of another vehicle or rail car)?	Y N		
21. Are placards placed so that dirt and water from the wheels of the vehicle are not directed at them?	Y N		
22. Are placards on transport vehicles, portable tanks, and freight containers located clear of any appurtenances such as ladders, pipes, etc.?	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
23. Are placards securely affixed to or placed within approved placard holders? - If YES to Questions 17 - 23, ENTER STATUS "S". - If NO to any of Question 17 - 23, ENTER STATUS "U" and note discrepancies.	Y N ☐		
<u>49 CFR 172.519: General Specifications for Placards</u>			
23. Do placards used by the facility meet the construction and materials specifications stipulated by the Department of Transportation for hazardous materials warning placards (i.e., weight per rear, weather resistance, etc.)?	Y N		
<u>49 CFR Sections 172.521 through 172.558: Placard Designs and Other Requirements</u>			
24. Do hazardous materials warning placards used by the facility comply with DOT requirements set forth in these sections with regard to placard color, size, design, inscriptions, print, symbols, borders, etc.? - If YES to Questions 24 and 25, ENTER STATUS "S". - If NO to Question 24 or 25, ENTER STATUS "U" and note deficiencies.	Y N ☐		
This checklist is complete.			

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AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
<u>49 CFR 173.411: General Requirements</u>			
1. Are the radioactive materials packages used for shipment designed in accordance with General Requirements of 49 CFR 173.411?	Y N		
<u>49 CFR 173.412: Additional Design Requirements</u>			
2. Are the design requirements for Type A packaging followed as specified in 49 CFR 173.412?	Y N		
<u>49 CFR 173.413: Requirements for Type B Packages</u>			
3. Are the Type B packages used for shipment designed and constructed to meet the requirements in 10 CFR 71?	Y N		
<u>49 CFR 173.415: Authorized Type A Packages</u>			
4. When shipments of quantities of radioactive materials are less than A_1 or A_2 quantities, does the packaging conform to all DOT specifications for Type A packages?	Y N		
5. When foreign-made Type A packages are used to transport hazardous materials, do the packages conform to the manufacturing, design, and testing requirements of the country of origin?	Y N		
<u>49 CFR 173.416: Authorized Type B Packages</u>			
6. When quantities exceeding A_1 or A_2 are shipped, are they transported in packages which are designed, manufactured, and tested in accordance with DOT, NRC, and IAEA requirements?	Y N		
<u>49 CFR 173.417: Authorized Packaging for Fissile Material</u>			
7. Are fissile material shipments of less than A_1 or A_2 quantities packaged in DOT-approved packagings?	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
Note: If auditors discover any variances in packaging utilized by facilities they should discuss the problem with facility managers and may plan to conduct a detailed package specifications audit. If discrepancies in any packagings are noted, all pertinent information should be recorded from the package markings by the auditors before conducting more detailed inspections of package manufacturing, testing, and /or purchase records. <u>49 CFR 173.418: Authorized Packaging Pyrophoric Radioactive Material</u> 8. Are the packaging of pyrophoric radioactive materials performed as specified in 49 CFR 173.418? <u>49 CFR 173.419: Authorized Packaging Oxidizing Radioactive Materials</u> 9. Are the oxidizing radioactive materials referenced in 49 CFR 172.101, which are not fissile and not in quantities exceeding A_2, packed in suitable packagings as specified in 49 CFR 173.418? <u>49 CFR 173.420: Uranium Hexafluoride</u> 10. Has the radioactive material Uranium Hexafluoride been cleaned and packaged as a solid prior to transport? <u>49 CFR 173.421: Limited Quantities of Radioactive Materials</u> 11. Are the radioactive materials classified as limited quantities based on limits specified in 49 CFR 173.423? - If YES to all Questions 1 - 11, ENTER STATUS "S". - If NO to any of Questions 1 - 11, ENTER STATUS "U" and note the locations, markings and quantities of questionable radioactive materials packagings.	Y Y Y ☐	N N N	

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
12. Is the packaging of these limited quantities of radioactive materials performed pursuant to requirements specified in 49 CFR 173.421?	Y N		
<u>49 CFR 173.425: Transport Requirements for LSA Radioactive Materials</u>			
13. Are the Low Specific Activity (LSA) materials transported in accordance with requirements specified in 49 CFR 173.425?	Y N		
<u>49 CFR 173.427: Empty Radioactive Material Packaging</u>			
14. Is the packaging of containers which held radioactive materials previously prepared for shipment as specified in 49 CFR 173.421-1, with the criteria exceptions found in 49 CFR 173.427?	Y N		
15. Are the activity limits for Type A packages as specified in 49 CFR 173.422 satisfied?	Y N		
16. Are the activity limits for Type B, Type B(u) and or Type B(m) packages pursuant to those prescribed in 49 CFR 173.416?	Y N		
- If YES to Questions 13, 14, 15 <u>and</u> 16, ENTER STATUS "S"			
- If NO to Question 13, 14, 15 <u>or</u> 16, ENTER STATUS "U" and note in detail any deficiencies.			
<u>49 CFR 173.433: Requirements for Determination of A₁ and A₂ Values</u>			
17. Can shipping personnel at the facility determine appropriate A ₁ and A ₂ values, by following procedures developed in this section?	Y N		
18. Do the radiation levels exceed 200 millirem per hour?	Y N		
19. Is the package transported by exclusive shipment as specified in 49 CFR 173.441(b)?	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
<u>49 CFR 173.443: Contamination Control</u>			
20. Is the radioactive contamination on the external surfaces kept as low as practicable as described in 49 CFR 173.443?	Y N		
<u>49 CFR 173.444, 173.446, and 173.447: Pretransport Preparation</u>			
21. Are the requirements for labeling, placarding, storing, and handling complied with prior to transporting or offering the material for transport by a commercial, private, or contract carrier?	Y N		
<u>49 CFR 173.448: General Transportation Requirements</u>			
22. Are the general requirements specified in 49 CFR 173.448 followed?	Y N		
<u>49 CFR 173.451 - 173.459: Fissile Materials</u>			
23. Are fissile materials properly described and correctly classified?	Y N		
24. Can facility personnel develop transportation control plans which are to be utilized by the carrier to provide nuclear criticality safety protection when handling and storing the shipment and developing of a pre-planned transport route?	Y N		
25. When different fissile material packages are commingled in shipments, is the mixed shipment prepared in compliance with 49 CFR 173.459?	Y N		
- If YES to all Questions 17 -25, ENTER STATUS "S".	☐		
- If NO to any of Questions 17 - 25, ENTER STATUS "U", note deficiencies, and obtain available package and files data information.			
<u>49 CFR 173.461 - 173.469: Demonstration of Compliance with Tests</u>			
26. Are tests of packages, prototypes, scale models, package materials, etc., conducted pursuant to the techniques and conditions set forth in these sections?	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
49 CFR 173.471: USNRC Approved Packages			
27. Are Type B and fissile material packages in compliance with regulations in 49 CFR Parts 171 - 177, 10 CFR Part 71, and with requirements for use established by U.S. Competent Authority Packaging Certifications?	Y N		
49 CFR 173.472 - 173.478: Additional Shippers Requirements			
28. Are the additional requirements for shippers set forth in these sections satisfied fully by the facility?	Y N		
- If YES to Questions 26, 27 <u>and</u> 28, ENTER STATUS "S".	☐		
- If NO to Question 26, 27 <u>or</u> 28, ENTER STATUS "U" and note deficiencies.			
This checklist is complete.			

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AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
Note: Auditors should be aware of the detailed packaging and general shipment preparation requirements presented in these Subparts. Subparts A and B of 49 CFR 173 prescribe general packaging requirements, quantity limitations, reuse limitations, requirements for maintenance, and testing procedures for cylinders and other packagings. However, Subparts C through O of 49 CFR 173 provide the user with the specific requirements for the packaging of hazardous materials according to the potentially dangerous characteristics of the materials. Once the proper shipping name is found on the Hazardous Materials Table (49 CFR 172.101), the corresponding materials definitions and packaging requirements for that hazardous material can be determined. If radioactive materials are being shipped the auditor should refer to 49 CFR 173 Subpart I and 10 CFR Part 71 for shipping and packaging requirements. Columns 5(a) and 5(b) of the HMT give the user the exact section to refer to for applicable requirements. There are hundreds of specific packaging requirements prescribed in these Subparts of 49 CFR 173. Auditors must research the packaging requirements within these subparts when hazardous materials packagings used by facilities are of concern. To determine if containers used by DOE are as prescribed by DOT, refer to the Shipping Container Specifications checklist of 49 CFR Part 178. <u>49 CFR 173.1: Purpose and Scope - Subpart A</u> 1. Are facility personnel in shipping operations fully aware of the responsibilities to be observed when they are preparing hazardous materials for shipment by air, highway, rail, water, or any combination thereof?	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
2. Do shipping managers instruct as required, their officers, agents and employees, who have <u>any</u> responsibility for preparing hazardous materials shipments as to the applicable regulations regarding their activities? Note: It is a Best Management Practice (BMP) to establish comprehensive facility training programs for transporting hazardous materials in commerce.	Y N		
<u>49 CFR 173.2: Classification of Material (Hazard Precedence List)</u>			
3. Do shipping personnel know how to utilize the Hazard Precedence List for determining the appropriate hazard classes of packages containing hazardous materials of more than one class?	Y N		
- If YES to Questions 1, 2 <u>and</u> 3, ENTER STATUS "S".	☐		
- If NO to Question 1, 2 <u>or</u> 3, ENTER STATUS "U" and note deficiencies.			
<u>49 CFR 173.3: Packagings and Exceptions</u>			
4. Are the packagings for all hazardous materials shipments in accordance with those specified in this subpart by DOT?	Y N		
5. Are packages of hazardous materials that are damaged or discovered leaking placed in an approved salvage drum?	Y N		
6. Are leaked hazardous materials liquids collected and placed in a metal removable-head salvage drum?	Y N		
7. Do facility personnel know how to handle spills of the common hazardous materials which they handle and transport on a regular basis?	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
49 CFR 173.4: Exceptions for Shipping Small Quantities			
8. Can facility personnel take advantage of the small-quantity exceptions to reduce the facility's handling, shipping, and paperwork expenses?	Y N		
- If YES to Questions 4, 5, 6, 7 <u>and</u> 8, ENTER STATUS "S".			
- If NO to Question 4, 5, 6, 7 <u>or</u> 8, ENTER STATUS "U" and note deficiencies.			
49 CFR 173.7: Shipments of U.S. Government Materials			
Note: Auditors should be particularly cognizant of material in this section as reference is made specifically to activities and requirements involving DOE hazardous materials shipments.			
9. Are all radioactive materials shipments which are not prepared and transported in compliance with DOT regulations, provided with escort personnel designated by the agency?	Y N		
10. Are shipments of radioactive materials which are not transported in compliance with Parts 170 - 189 of this subchapter exempt from those parts for reasons of national security?	Y N		
11. Are packages made by or for the DOE equivalent to similar packages which are specified in 10 CFR Part 71?	Y N		
12. Are DOE radioactive packages marked and otherwise prepared for shipment in a manner equivalent to that required by this subchapter for packagings approved by the Nuclear Regulatory Commission?	Y N		
- If YES to Questions 9, 10, 11 <u>and</u> 12, ENTER STATUS "S".			
- If NO to Question 9, 10, 11 <u>or</u> 12, ENTER STATUS "U" and note deficiencies.			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
49 CFR 173.21: Preparation of Hazardous Materials for Transportation - Subpart B			
13. Are facility shipping personnel shipping hazardous materials in compliance with this section such that forbidden materials will not intermix or react when released to create explosions, harmful gasses, smoke, fires, material decomposition, polymerizing, etc. of materials?	Y N		
14. Are magnetized shipments from the facility tested to determine the strength of their magnetic fields prior to transporting the material by air?	Y N		
- If YES to Questions 13 <u>and</u> 14, ENTER STATUS "S".	☐		
- If NO to Question 13 <u>or</u> 14, ENTER STATUS "U" and note discrepancies.			
49 CFR 173.22: Shipper's Responsibility			
15. Have the facility shipping personnel properly classed and described the hazardous materials being shipped and offered them for transport only when each shipment is properly packaged or contained according to DOT regulations?	Y N		
16. Do facility personnel notify the consignees of shipments of radioactive materials which are being transported and also provide special loading and unloading precautions for the handling of fissile radioactive materials?	Y N		
17. Are facility personnel complying with the additional requirements for packagings, overpacks, reuse of packages, loading and unloading vehicles and IM tanks, and repair and maintenance of cylinders?	Y N		
- If YES to Questions 15, 16 <u>and</u> 17, ENTER STATUS "S".	☐		
- If NO to Question 15, 16 <u>or</u> 17, ENTER STATUS "U" and note differences.			
This checklist is complete.			

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AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
<u>49 CFR 174.1: Purpose and Scope</u>			
1. In addition to requirements prescribed in 49 CFR 171, 172, 173, and 179, when hazardous materials are shipped from this facility are the requirements of this part for rail shipments satisfied?	Y N		
2. Have facility personnel researched the planned route's local conditions of acceptance for transporting and delivering hazardous materials shipments?	Y N		
3. Have facility personnel acquired from the Bureau of Explosives publications and other up-to-date information regarding their hazardous materials shipments?	Y N		
- If YES to Questions 1, 2 and 3, ENTER STATUS "S".	☐		
- If NO to Question 1, 2 or 3, ENTER STATUS "U".			
<u>49 CFR 174.24: Shipping Papers</u>			
4. Have the proper shipping papers (49 CFR 172 Subpart C) and other required certificates (49 CFR 172.204) been prepared and offered to the rail carrier prior to transporting the hazardous materials shipment from the facility?	Y N		
<u>49 CFR 174.700: Detailed Requirements for Radioactive Materials</u>			
5. Are the loading requirements and restrictions specified in 49 CFR 173.4.25 followed?	Y N		
6. Is the total number of packages placed or stored for shipment in a rail car within a transport index of 50 as defined in 49 CFR 173.403?	Y N		
7. Is the placement of radioactive material in a rail car beyond three feet from any passenger, rail employee, or shipment of animals and at least 15 feet from any undeveloped film?	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
8. Are the methods prescribed in 49 CFR 173.455 followed?	Y N		
9. Is the external radiation of packages at surface in excess of 200 millirem/m?	Y N		
10. Are the requirements specified in 49 CFR 173.403 satisfied and the radiation level below two millirem/m in the car?	Y N		
11. Is the transport vehicle surveyed to meet the requirements of 49 CFR 173.403 and 49 CFR 173.443 after use in transporting radioactive materials?	Y N		
12. Have internal DOE procedures been established to report and address any leakage of radioactive materials which are transported by rail?	Y N		
13. Do DOE personnel have access to copies of Bureau of Explosives pamphlets which describe procedures to be followed in the event of a rail car wreck which results in the release of radioactive materials?	Y N		
- If YES to Questions 5 - 13, ENTER STATUS "S".	☐		
- If NO to any of Questions 5 - 13, ENTER STATUS "U".			
<u>49 CFR 174.25 through 174.840</u>			
14. Have all the remaining requirements in part 174 been satisfied regarding the loading and unloading shipments of radioactive materials, specific positioning of rail cars, and tank car placement?	Y N		
Note: This will normally be done by the rail carrier when off of facility property. However, it is BMP to follow rail shipment regulations even when transporting by rail is only within DOE properties.			

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AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
15. Are all hazardous materials rail shipments segregated and separated according to the charts provided in this part? - If YES to Questions 14 <u>and</u> 15, ENTER STATUS "S". - If NO to Question 14 <u>or</u> 15, ENTER STATUS "U" and note deficiencies. This checklist is complete.	Y N		

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AUDIT QUESTIONS AND PROCEDURES

RESPONSE

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49 CFR 175.1: Purpose and Scope

1. In addition to requirements prescribed in 49 CFR 171, 172, and 173, when hazardous materials are transported by air carrier, have the shipments been prepared and offered according to regulations in this part?
2. When shipped internationally, or when required by domestic air carriers, can DOE personnel prepare hazardous materials shipments in accordance with IATA regulations?

Y N

Y N

49 CFR 175.5: Applicability

3. Are all hazardous materials shipments, when not exempt from regulations, prepared in accordance with regulations of this part when offered to aircraft in the United States and when transported within aircraft of United States registry when operating in commerce?

Y N

49 CFR 175.33 and 175.35: Notification and Shipping Papers to Pilot

4. Has the pilot-in-command of the aircraft been notified according to ICAO Technical Instructions and provided with the proper shipping papers for hazardous materials shipments?

Y N

- If YES to Questions 1 - 4, ENTER STATUS "S".

- If NO to any of Questions 1 - 4, ENTER STATUS "U" and note deficiencies.

This checklist is complete.

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AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
49 CFR 177.853 - 177.870: When DOE is the Carrier			
1. Are DOE shipments transported and delivered in accordance with 49 CFR 177.853?	Y N		
2. Are procedures to maintain the integrity of the hazardous materials lading followed when transport vehicles break down on public highways and during vehicle repairs?	Y N		
3. Are the procedures in 49 CFR 177.855 - 177.861 followed when accidents occur involving explosives, flammable liquids, flammable solids, oxidizers, corrosive materials, gasses, poisons, and radioactive materials?	Y N		
- If YES to Questions 1, 2 <u>and</u> 3, ENTER STATUS "S".	☐		
- If NO to Question 1, 2 <u>or</u> 3, ENTER STATUS "U" and note deficiencies.			
This checklist is complete.			

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AUDIT QUESTIONS AND PROCEDURES

RESPONSE

REFERENCE

COMMENTS

49 CFR 175.40 through 175.705: When DOE is the Air Carrier

1. Does DOE maintain a supply of extra warning labels in the event that in-transit replacement is required?
2. Are this part's additional requirements for loading and unloading, handling, and storing of hazardous materials satisfied?
3. Are all air shipments of hazardous materials in accordance with the regulations which are applicable to the classifications of the materials being shipped?
4. Are the regulations in Parts 175.700 - 175.705 regarding radioactive materials transport complied with?

Y N

Y N

Y N

Y N

- If YES to Questions 1, 2, 3 and 4, ENTER STATUS "S".

- If NO to Question 1, 2, 3 or 4, ENTER STATUS "U" and note deficiencies.

This checklist is complete.

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AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
49 CFR 176.1: Purpose and Scope			
1. When shipping hazardous materials by vessel, are the requirements of this part observed, in addition to the requirements set forth in 49 CFR 171, 172, and 173? - If YES, ENTER STATUS "S". - If NO, ENTER STATUS "U" and note deficiency.	Y N ☐		
49 CFR 176.24: Shipping Papers			
2. Have shipping papers been properly prepared and offered to the master of the vessel carrying the hazardous materials shipment?	Y N		
49 CFR 176.27: Certificate			
3. Have facility personnel certified in writing, as required by 49 CFR 172.204, that the hazardous materials have been properly classed, described, marked, packaged, and labeled pursuant to 49 CFR 172?	Y N		
49 CFR 176.30: Dangerous Cargo Manifest			
4. Does the carrier utilized by DOE prepare, use, and maintain required dangerous cargo manifests, lists, and stowage plans? - If YES to Questions 2, 3 <u>and</u> 4, ENTER STATUS "S". - If NO to Question 2, 3 <u>or</u> 4, ENTER STATUS "U" and note deficiencies.	Y N ☐		

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AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
<u>49 CFR 176.31 through 176.906:</u>			
5. Does this carrier transport DOE hazardous materials in accordance with the additional requirements of this part?	Y N		
6. Are radioactive materials transported pursuant to stowage, segregation, spill response, and contamination control requirements which are set forth in 49 CFR 176.700 - 176.715?	Y N		
- If YES to Questions 5 and 6, ENTER STATUS "S".	☐		
- If NO to Question 5 or 6, ENTER STATUS "U".			
This checklist is complete.			

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AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
<u>49 CFR 177.806: U. S. Government Material</u> Note: As mentioned in Part 173, certain DOD and DOE hazardous materials shipments are exempt from DOT regulation. For instance, hazardous materials may be transported and sold in packages not marked or constructed per DOT regulations, if the DOD certifies in writing that the packagings meet or exceed DOT requirements. Shipments of radioactive material made under the direction or supervision of DOE or DOD, which are escorted by personnel specially designated by or under to authority of those agencies, for national security purposes, are exempt from DOT regulations in 49 CFR 170 - 189. However, when DOE transports hazardous materials for purposes other than national security, it is the intent of DOE orders to comply with applicable DOT regulations. When DOE transports hazardous materials "in commerce", the regulations set forth in 49 CFR 177 and 397 should be followed. <u>49 CFR 177.807: Reporting Hazardous Materials Incidents</u> 1. If an accident or incident occurs during transport of hazardous materials, do DOE drivers and escort personnel know whom to contact and when? 2. Are the required Incident/Accident forms always filled out properly and submitted to DOT within the time-frames specified (see 49 CFR 171.5 and 171.16)? <u>49 CFR 177.810: Vehicular Tunnels</u> 3. Are routes of transport and municipal/state regulations researched when DOE transports hazardous materials through any urban vehicular tunnels used for mass transportation?	Y N Y N Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
<u>49 CFR 177.817: Shipping Papers</u>			
4. Are the proper shipping papers, including the shipper's certification, in possession of the driver of the vehicle?	Y N		
<u>49 CFR 177.821: Hazardous Materials Forbidden or Limited for Transport</u>			
5. Do DOE personnel and its hired carriers refuse to accept and transport shipments of hazardous materials which are known to be "forbidden" as listed in the HMT or in poor condition?	Y N		
<u>49 CFR 177.823: Marking and Placarding</u>			
6. Does DOE and its hired carriers ensure that transport vehicles are always placarded in accordance with 49 CFR 172?	Y N		
<u>49 CFR 177.825: Routing and Training Requirements for Radioactive Materials</u>			
7. Does DOE ensure that highway shipments of radioactive materials are routed with the consideration of accident rates, transit time, population density, traffic, etc., in order to minimize radiological risk to the public?	Y N		
8. Does DOE supply its own drivers and carrier drivers (when transporting a HRCQ of AAM) with a written route plan?	Y N		
9. Are written route plans for exclusive use shipments developed before departure?	Y N		
10. Do written work plans contain:			
a. The origin and destination points of the shipment?	Y N		
b. Route selected with all planned stops?	Y N		
c. Estimated departure and arrival times?	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
d. Telephone numbers to access emergency response in all states traveled?	Y N		
e. Statement that the vehicle driver has received written training on 49 CFR Parts 172, 173, and 177?	Y N		
f. Statement that the vehicle driver has been trained on the properties and hazards of the radioactive materials being transported?	Y N		
11. Is a plan prepared to ensure the physical security of irradiated reactor fuel pursuant to requirements of this section and of 10 CFR Part 73?	Y N		
12. Does DOE prepare and submit to the RSPA or DOT reports for HRCQ AAM shipments within 90 days of the shipment that include:			
a. The original route plan and required amendments showing actual routes?	Y N		
b. A statement indicating the names and addresses of shippers, carriers, and consignees?	Y N		
c. A copy of the shipping paper or description of radioactive material which was transported?	Y N		
- If YES to Questions 1 - 12 c, ENTER STATUS "S".	☐		
- If NO to any of Questions 1 - 12 c, ENTER STATUS "U" and note deficiencies.			
Note: Auditors should inspect facility files to determine compliance with recordkeeping and reporting provisions of this section.			
This checklist is complete.			

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AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
49 CFR 178.0 Through 178.350 Note: 49 CFR 178 contains hundreds of specifications for the construction, testing, design, manufacture, and maintenance of hazardous materials shipping containers. Specifications are set forth for carboys, jugs in tubs, inside containers/linings, cylinders, metal barrels, metal drums, metal kegs, metal cases, metal trunks, metal boxes, wooden barrels, wooden kegs, wooden boxes, wooden kits, wooden drums, fiberboard boxes, fiberboard drums, fiberboard mailing tubes, cloth bags, burlap bags, paper bags, plastic bags, portable tanks, motor vehicle transportation containers, and for general packagings. 1. Do DOE personnel always used DOT-approved hazardous materials shipping containers? 2. Is information available on purchase orders or from manufacturers which certify that containers used meet DOT specifications? Note: Auditors should randomly inspect a predetermined number of shipping containers for stamped or printed certification markings such as DOT-1A, DOT-23G40 etc. to ensure that they are approved by DOT for their intended purpose.	Y N Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
- If YES to Questions 1 <u>and</u> 2 or, if all hazardous materials shipping containers can be documented, by inspection of containers or records, to be approved by DOT, ENTER STATUS "S". - If NO to Question 1 <u>or</u> 2 and if any hazardous materials shipping containers are not approved, ENTER STATUS "U", and note the locations where containers are located at the facility and whether they are transported off-site. Auditors should also note where containers were purchased, from whom, and how many are still at the facility. This checklist is complete.			

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49 CFR 179.1 Through 179.500

Note: This part of Title 49 CFR prescribes specifications for the design, construction, testing, maintenance, and altering of tank cars. Pressure tank car tanks, nonpressure tank car tanks, multi-unit tank car tanks, cryogenic liquid tank car tanks, and seamless steel tanks are discussed in this part. These regulations may not be applicable to DOE unless DOE manufactures such tanks. However, if DOE purchases any of these types of tanks, personnel should obtain the Certificate of Construction and submit proper ownership documentation to the Bureau of Explosives, Association of American Railroads, and to any other agency when required.

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AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
<u>49 CFR 190.1 through 190.235: Pipeline Safety Program Procedures</u> Note: This part of the pipeline safety regulations prescribes procedures used by DOT's Research and Special Programs Administration (RSPA) and DOT's Office of Pipeline Safety (OPS) in carrying out and defining their duties with respect to pipeline safety. Definitions are presented in these sections along with procedures utilized by the OPS for achieving and maintaining pipeline safety. Mechanisms are developed within these sections which allow OPS to perform pipeline system inspections, conduct hearings, issue orders, and assess civil or criminal fines and/or penalties. <u>49 CFR 191.1 through 191.25: Transportation of Natural and Other Gas by Pipeline</u> Note: Regulations in these sections prescribe requirements for the reporting of incidents and safety-related conditions and for filing required annual reports. 1. Does DOE have a policy in effect to immediately notify the Office of Pipeline Safety in the event of: a. The release of gas from a pipeline of liquefied natural gas from an LNG facility?	Y	N	

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
b. The death or hospitalization of an individual as a result of a pipeline-related accident?	Y N		
c. Damage to property, including the cost of gas lost during the incident, in excess of \$50,000?	Y N		
d. An incident judged significant by the operator that may affect the safe operation of a pipeline system?	Y N		
2. Is an annual report for each pipeline system submitted to the DOT if required by 49 CFR 191.11?	Y N		
3. Are the other reporting regulations in 49 CFR 191 complied with at DOE facilities which utilize pipeline systems?	Y N		
<u>49 CFR 192.1 through 192.755: Minimum Federal Safety Standards for Transportation of Gas by Pipeline</u>			
4. Are pipelines operated by DOE in compliance with the design, welding, corrosion control, uprating, operations, and maintenance requirements of 49 CFR 192.1 through 192.755?	Y N		
- If YES or NOT APPLICABLE to Questions 1 - 4, ENTER STATUS "S".			
- If NO to Questions 1 - 4, ENTER STATUS "U" and note deficiencies.			
<u>49 CFR 193.2001 through 193.2917: LNG Facilities - Federal Safety Standards</u>			
5. Are liquefied natural gas facilities which are operated by DOE, located, designed, constructed, equipped, operated, and maintained in accordance with 49 CFR 193.2001-193.2917?	Y N		
6. Are the fire protection requirements of Part 193 satisfied in an effort to prevent or respond to a fire if it develops?	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
7. Is the pipeline and distribution system provided with protective enclosures, warning signs, security lighting, security monitoring, and security communications and are security procedures for the system developed and implemented?	Y N		
<u>49 CFR 195.0 through 195.440: Transport of Hazardous Liquids by Pipeline</u>	Y N		
8. Are DOE pipeline systems which carry hazardous liquids designed, tested, operated, and maintained in accordance with requirements set forth in 49 CFR 195?			
- If YES to Questions 5, 6, 7 <u>and</u> 8, ENTER STATUS "S".	☐		
- If NO to Question 5, 6, 7 <u>or</u> 8, ENTER STATUS "U" and note deficiencies.			
This checklist is complete.			

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AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
- If YES to Questions 1, 2 <u>and</u> 3, ENTER STATUS "S". - If NO to Question 1, 2 <u>or</u> 3, ENTER STATUS "U" and note the problems.			
<u>49 CFR 397.9: Routes</u>			
4. Unless no alternative exists, are travel routes for placarded motor vehicles planned so as to avoid heavily populated areas, large crowds, tunnels, narrow streets, and alleys?	Y N		
<u>49 CFR 397.11: Fires</u>			
5. Are DOE drivers instructed not to drive closer than 300 feet from burning fires and not to smoke if 25 feet or less from the vehicle?	Y N		
6. Do DOE drivers and attending personnel refrain from smoking when driving or in the vicinity of a motor vehicle containing explosives, oxidizers, or flammable materials, or when near an empty tank which contains residues of flammable liquids or gases?	Y N		
- If YES to Questions 4, 5 <u>and</u> 6, ENTER STATUS "S". - If NO to Question 4, 5 <u>or</u> 6, ENTER STATUS "U" and note deficiencies.			
<u>49 CFR 397.15: Fueling</u>			
7. When fueling DOE motor vehicles which are carrying hazardous materials, is the engine turned off and is a person in control at the point where the fuel tank is being filled?	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
<u>49 CFR 397.17: Tires</u>			
8. When a DOE motor vehicle with dual wheels on any axle is carrying hazardous materials, does the driver of the vehicle stop the vehicle in a safe location during each two hours or 100 miles of travel to examine the condition of the tires?	Y N		
9. When transporting hazardous materials, at the beginning of every trip and each time the vehicle is parked, do DOE drivers inspect vehicle tires?	Y N		
<u>49 CFR 397.19: Instructions and Documents</u>			
10. If DOE carries Class A or Class B explosives, is the driver of the vehicle instructed on procedures to be followed in the event of an accident and is the driver given a copy of these regulations, a document on procedures for accidents or delays, and a copy of the written planned route?	Y N		
11. Has the driver acknowledged receiving the shipping and routing documents by signing a receipt which is then retained in the proper DOE office files for a period of one year?	Y N		
12. Is the driver of the vehicle in possession of all necessary telephone numbers for reporting of accidents or incidents which occur during transport of the hazardous materials shipment?	Y N		
- If YES to Questions 7 - 12, ENTER STATUS "S".			
- If NO to any of Questions 7 - 12, ENTER STATUS "U" and note problems.			
This checklist is complete.			

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AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
<u>NRC Requirements For Packaging And Transportation Of Radioactive Material</u>			
<u>10 CFR 71: Packaging and Transportation of Radioactive Material</u>			
<u>10 CFR 71.12: General License - NRC Approved Package</u>			
1. Is this facility an NRC licensee?	Y N		
- If YES, proceed with checklist.			
- If NO, proceed with checklist but ignore references to NRC license and/or NRC approval.			
2. Does the facility have a copy of the specific license, certificate of compliance, or other approval of the package and have records relating to the use and maintenance of the packaging and the actions to be taken prior to shipment?	Y N		
3. Does the facility comply with the terms and conditions of license, certificate, or other approval?	Y N		
4. Does the facility submit (in writing) the licensee's name, license number, and package identification number specified in the package approval, to the Office of Nuclear Material Safety and Safeguards (NRC) prior to the licensee's first use of the package?	Y N		
- If YES to Questions 2 - 4, ENTER STATUS "S".	☐		
- If NO to any of Questions 2 - 4, ENTER STATUS "U".			

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AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
<u>10 CFR 71.13: Previously Approved Type B Package</u>			
5. Has a Type B package previously approved by the NRC, but not designated as B(U) or B(M) in the NRC certificate of compliance, been used under the general license?	Y N		
- If YES, proceed with checklist.			
- If NO, proceed to Question 7.			
6. Does the package meet the additional limitations of 10 CFR 71.13 prior to being used under the general license?	Y N		
- If YES, ENTER STATUS "S".			
- If NO, ENTER STATUS "U".			
<u>10 CFR 71.14: General License - DOT Specification Container</u>			
7. Has a general license been issued to transport (or to deliver to a carrier for transport) licensed material in a specification container for fissile or Type B quantities as specified in DOT regulations (49 CFR 173 and 178)?	Y N		
8. Does the licensee have an NRC-approved quality assurance program?	Y N		
9. Are packages approved by a foreign authority revalidated by DOT (49 CFR 171.12) prior to transport to or from locations outside the United States?	Y N		
- If YES to Questions 7 - 9, ENTER STATUS "S".			
- If NO to any of Questions 7 - 9, ENTER STATUS "U".			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
<u>10 CFR 71.18: General License: Type A, Fissile Class II Package</u>			
10. Does material shipped as a Fissile Class II package under a Type A General license exceed:			
a. A Type A quantity of radioactive material?	Y N		
b. 40 grams of uranium - 235?	Y N		
c. 30 grams of uranium - 233?	Y N		
d. 25 grams of the fissile radionuclides of plutonium (except for encapsulated plutonium-beryllium neutron sources in special form)?	Y N		
e. A combination of radionuclides in which the sum of the ratios of the maximum amounts listed above is greater than 1?	Y N		
- If YES to any of Questions 10 a - e, ENTER STATUS "U".			
- If NO to Questions 10 a - e, ENTER STATUS "S".			
11. Is material shipped as a fissile Class II package containing more than 15 grams of fissile radionuclides labeled with a transport index as specified by the equation in 10 CFR 71.18?	Y N		
- If YES, ENTER STATUS "S".			
- If NO, ENTER STATUS "U".			
<u>10 CFR 71.20: General License - Restricted, Fissile Class II Package</u>			
12. Does material shipped as a fissile Class II package under a Restricted General license contain:			
a. Beryllium or hydrogen material enriched in deuterium?	Y N		
b. A total mass of graphite exceeding 150 times the total mass uranium-235 plus plutonium?	Y N		

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AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
c. Substances having a higher hydrogen density than water (excluding polyethylene used for packing or wrapping)?	Y N		
d. Uranium-233?	Y N		
e. An amount of plutonium exceeding 1% of the amount of uranium-235?	Y N		
f. An amount of uranium-235 exceeding the values given in Tables I and II of 10 CFR 71?	Y N		
g. A transport index exceeding 10 times the number of grams of U-235 divided by the maximum allowable grams per package?	Y N		
- If YES to any of Questions 12 a - g, ENTER STATUS "U".	☐		
- If NO to Questions 12 a - g, ENTER STATUS "S".			
<u>10 CFR 71.22: General License - Type A Package, Fissile Class III Shipment</u>			
13. Do Type A packages for Fissile Class III shipment under a general license contain:			
a. More than a Type A quantity of radioactive material?	Y N		
b. More than 400 grams total of the fissile radionuclides of plutonium encapsulated as plutonium-beryllium neutron sources in special form?	Y N		
c. More than 500 grams of uranium-235?	Y N		
d. More than 300 grams total of uranium-233 and the fissile radionuclides of plutonium?	Y N		
e. A total quantity of uranium-233, uranium-235, and fissile radionuclides of plutonium in which the sum of the ratios of the maximum amounts (12c and 12d) exceeds 1?	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
- If YES to any of Questions 13 a - e, ENTER STATUS "U".	☐		
- If NO to Questions 13 a - e, ENTER STATUS "S".			
<u>10 CFR 71.24: General License - Restricted, Fissile Class III Shipment</u>			
14. Do Fissile Class III shipments under a restricted general license contain:			
a. More than a Type A quantity of radioactive material?	Y N		
b. Lead shielding exceeding five cm in thickness, tungsten shielding, or uranium shielding?	Y N		
c. Beryllium or hydrogenous material enriched in deuterium?	Y N		
d. A total mass of graphite exceeding 150 times the total mass of uranium-235 and plutonium?	Y N		
e. Substances having a higher hydrogen density than water (excluding polyethylene used for packing or wrapping)?	Y N		
f. Fissile radionuclides that contain no uranium-233 and less than 1% total plutonium (not uniformly distributed) that exceed the maximum uranium-235 values given in Table III of 10 CFR 71?	Y N		
g. Fissile radionuclides that contain no uranium-233 and less than 1% total plutonium (uniformly distributed) that exceed the maximum uranium-235 values given in Table IV of 10 CFR 71?	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
h. Fissile contents containing uranium-233 or more than 1% plutonium that exceed the total mass limit as calculated using the equation give in 10 CFR 71.24?	Y N		
- If YES to any of Questions 14 a - h, ENTER STATUS "U".			
- If NO to Questions 14 a - h, ENTER STATUS "S".			
15. Are restricted fissile Class III shipments transported without any intermediate transit storage?	Y N		
<u>10 CFR 71.31: Contents of Application</u>			
16. Do applications for package approval include package descriptions, package evaluations, quality assurance program descriptions, and an identification of the proposed fissile class?	Y N		
- If YES to Questions 15 <u>and</u> 16, ENTER STATUS "S".			
- If NO to Question 15 <u>or</u> 16, ENTER STATUS "U".			
<u>10 CFR 71.33: Package Description</u>			
17. Does the description of the packaging include:			
a. Classification (Type B(U), B(M), or fissile material)?	Y N		
b. Gross weight?	Y N		
c. Model number?	Y N		
d. Identification of containment system?	Y N		
e. Specific materials of construction, weights, dimensions, and fabrication methods?	Y N		
f. Identification and volumes of any receptacles containing coolant?	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
- If YES to Questions 17 a - f, ENTER STATUS "S".			
- If NO to any of Questions 17 a - f, ENTER STATUS "U".			
18. Does the description of the contents of a package include:			
a. Identification and maximum radioactivity of radioactive constituents?	Y N		
b. Identification and maximum quantities of fissile constituents?	Y N		
c. Chemical and physical form?	Y N		
d. Extent of reflection, the amount and identity of nonfissile materials used as neutron absorbers or moderators, and the atomic ratio of moderators to fissile constituents?	Y N		
e. Maximum normal operating temperature?	Y N		
f. Maximum weight?	Y N		
g. Maximum amount of decay heat?	Y N		
h. Identification and volumes of any coolants?	Y N		
- If YES to Questions 18 a - h, ENTER STATUS "S".			
- If NO to any of Questions 18 a - h, ENTER STATUS "U".			
<u>10 CFR 71.35: Package Evaluation</u>			
19. Does the package approval application include a demonstration that the package meets package approval standards and package/special form tests?	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
20. Does the package approval application for a Fissile Class III shipment include any proposed special controls and precautions for the transport, loading, unloading, and handling, and any proposed special controls in the event of accident or delay? - If YES to Questions 19 and 20, ENTER STATUS "S". - If NO to Question 19 or 20, ENTER STATUS "U".	Y N ☐		
<u>10 CFR 71.37: Quality Assurance</u>			
21. Does the facility describe the quality assurance program for the design, fabrication, assembly, testing, maintenance, repair, modification, and use of the proposed package?	Y N		
22. Does the facility identify any established codes and standards proposed for use in package design, fabrication, assembly, testing, maintenance, and use?	Y N		
23. Does the facility describe the basis and rationale used to formulate the package quality assurance program in the absence of any codes and standards?	Y N		
24. Does the facility identify any specific provisions of the quality assurance program which are applicable to the particular package design under consideration, including a description of the leak testing procedures? - If YES to Questions 21 - 24, ENTER STATUS "S". - If NO to any of Questions 21 - 24, ENTER STATUS "U".	Y N ☐		
<u>10 CFR 71.41: Demonstration of Compliance</u>			
25. Are the effects on a package of the tests specified in 10 CFR 71.71 and 10 CFR 71.73 evaluated by subjecting a sample package or scale model to the tests?	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
26. Are the environmental and test conditions specified by 10 CFR 71.71 and 10 CFR 71.73 approved by the NRC? - If YES to Questions 25 and 26, ENTER STATUS "S". - If NO to Question 25 or 26, ENTER STATUS "U". <u>10 CFR 71.43: General Standards for all Packages</u>	Y N ☐		
27. Is the smallest overall dimension of any package greater than 10 cm (four inches)?	Y N		
28. Does the outside of a package incorporate a seal which would indicate whether a package has been opened by unauthorized persons?	Y N		
29. Does each package include a containment system securely closed by a positive fastening device which cannot be opened unintentionally?	Y N		
30. Are packages made of materials and construction which ensure that there will be no significant chemical, galvanic, or other reaction among or between the packaging components and package content?	Y N		
31. Are package valves protected against unauthorized operation and (except for pressure relief devices) provided with an enclosure to retain any leakage?	Y N		
32. Are packages designed, constructed, and prepared for shipment so that under test conditions there would be no loss dispersal of radioactive contents, no increase in external radiation levels, and no substantial reduction in the effectiveness of the packaging?	Y N		
33. Are packages designed, constructed, and prepared for transport in still air at 38°C (100°F) in a non-exclusive-use shipment or 82°C(180°F) in an exclusive-use shipment?	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
34. Does a package incorporate a feature which is intended to allow continuous venting during transport? - If YES to Questions 27 - 34, ENTER STATUS "S". - If NO to any of Questions 27 - 34, ENTER STATUS "U".	Y N ☐		
<u>10 CFR 71.45: Lifting and Tie-Down Standards for all Packages</u>			
35. Are lifting attachments that are a structural part of the package designed with a minimum safety factor of 3 against yielding when used to lift the package, and designed so that failure of any lifting device under excessive load would not impair the ability of the package to meet other requirements?	Y N		
36. Are tie-down systems capable of withstanding (without generating stress in any material of the package in excess of its yield strength) a static force applied to the center of gravity of the package having a vertical component of two times the weight of the package with its contents, a horizontal component along the direction in which the vehicle travels of ten times the weight of the package and its contents and a horizontal component in the transverse direction of five times the weight of the package and its contents?	Y N		
37. Are any structural parts of the package which could be used to tie down the package capable of being rendered inoperable for tying down the package during transport, or designed with strength equivalent to that required for the tie-down devices?	Y N		
38. Is each tie-down device which is a structural part of a package designed so that failure of the device under excessive load would not impair the ability of the package to meet other requirements of 10 CFR 717? - If YES to Questions 35 - 38, ENTER STATUS "S" - If NO to any of Questions 35 - 38, ENTER STATUS "U"	Y N ☐		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
<u>10 CFR 71.47: External Radiation Standards for all Packages</u>			
39. Are packages designed and prepared for shipment so that the radiation level does not exceed 200 millirem per hour at any point on the external surface of the package and the transport index of the package does not exceed 10?	Y N		
40. Do packages transported as exclusive use by rail, highway, or water which exceed 200 millirem per hour on the external accessible surface of the package meet the following conditions:			
a. A radiation limit of 1000 millirem per hour?	Y N		
b. Shipments made in a closed transport vehicle?	Y N		
c. Packages secured to remain in a fixed position during transport?	Y N		
d. No loading or unloading operations between the beginning and end of transport?	Y N		
e. A radiation limit of 200 millirem per hour at any point on the outer surface of the vehicle including upper and lower surfaces?	Y N		
f. A radiation limit of 10 millirem per hour at any point two meters from the outer surfaces of the vehicle?	Y N		
g. A radiation limit of two millirem per hour in any normally occupied positions of the vehicle unless the vehicle is occupied by a private motor carrier provided with health supervision personnel monitoring devices and special training?	Y N		
- If YES to Questions 39 - 40 g, ENTER STATUS "S".			
- If NO to any of Questions 39 - 40 g, ENTER STATUS "U".			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
<u>10 CFR 71.51: Additional Requirements for Type B Packages</u>			
41. Do Type B packages meet the additional requirements of :			
a. No loss or dispersal of radioactive contents as demonstrated to a sensitivity of 10^{-6} A ₂ per hour?	Y N		
Note: See Table A-1 of 10 CFR 71 for A ₂ values.			
b. No significant increase in external radiation level?	Y N		
c. No substantial reductions in the effectiveness of the packaging?	Y N		
d. No escape of krypton-85 exceeding 10,000 curies in one week?	Y N		
e. No escape of other radioactive material exceeding a total of A ₂ amount in one week?	Y N		
Note: See Table A-1 of 10 CFR 71 for A ₂ values.			
f. No external radiation dose rate exceeding 1 rem per hour at 1 meter from the external surface of the package?	Y N		
g. Compliance with the above limits must not depend upon filters or a mechanical cooling system?	Y N		
- If YES of Questions 41 a - g, ENTER STATUS "S".	☐		
- If NO to any of Questions 41 a - g, ENTER STATUS "U".			
Note: Packages are excluded from the requirements of 10 CFR 71.51 if they contain only low specific activity material and are transported as exclusive use.			
42. Do packages declared exempt from fissile material standards meet the following requirements:			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
a. Package contains not more than 15 grams of fissile radionuclides?	Y N		
b. Package contains natural or depleted uranium irradiated in a thermal reactor only?	Y N		
c. Package contains homogeneous hydrogenous solutions or mixtures where the minimum ratio of hydrogen atoms to atoms of fissile radionuclides is 5,200?	Y N		
d. The maximum concentration of fissile radionuclides is five grams per liter?	Y N		
e. The maximum mass of fissile radionuclides is 800 grams (except for a mixture where the total mass of plutonium and uranium-233 exceeds one percent of the mass of uranium-235, the limit is 500 grams)?	Y N		
f. Package contains uranium enriched in uranium-235 to maximum of one percent by weight, and with a total plutonium and uranium-233 content of up to one percent of the uranium-235 if the fissile radionuclides are distributed homogeneously and do not form a lattice within the package?	Y N		
g. Package containing fissile material does not contain more than five grams of fissile radionuclides in any 10 liter volume?	Y N		
h. Package contains not more than one kilogram of plutonium of which not more than 20 percent by mass consists of plutonium-230, plutonium-241 or any combination of these radionuclides?	Y N		
i. Package contains liquid solutions of uranyl nitrate enriched in uranium-235 to a maximum of two percent by weight, with total plutonium and uranium-233 not more than one-tenth percent of the mass of uranium-235?	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
- If YES to Questions 42 a - i, ENTER STATUS "S". - If NO to any of Questions 42 a - i, ENTER STATUS "U".	☐		
10 CFR 71.55: General Requirements for all Fissile Material Packages			
43. Are packages used for shipment of fissile material designed and constructed so the contents would be subcritical if water were to leak into the containment system or liquid contents leak out of the containment system? Note: The NRC may approve exceptions if the package incorporates special design features that ensure the no single packaging error would permit leakage and if appropriate measures are taken before each shipment to ensure that the containment system does not leak.	Y N		
44. Are packages designed and constructed so that the geometric form of the contents would not be substantially altered?	Y N		
45. Are packages designed and constructed so that there will be no substantial reduction in the effectiveness of the packaging including:			
a. No more than 5 percent reduction in the total effective volume?	Y N		
b. No more than 5 percent reduction in the effective spacing between fissile content and the outer surface of the packaging?	Y N		
c. No occurrence of an aperture in the outer surfacing of a package large enough to permit entry of a 10 cm (four inch) cube?	Y N		
- If YES to Questions 43 - 45 c, ENTER STATUS "S". - If NO to any of Questions 43 - 45 c, ENTER STATUS "U".	☐		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
46. Are Fissile Class I packages designed and constructed so that any number of undamaged packages would be subcritical in any arrangement and with optimum interspersed hydrogenous moderation unless there is a greater amount of moderation in the packaging?	Y N		
47. Are Fissile Class I packages designed and constructed so that 250 packages would be subcritical if stacked together in any arrangement, closely reflected on all sides of the stack by water and with optimum interspersed moderation?	Y N		
- If YES to Questions 46 and 47, ENTER STATUS "S".			
- If NO to Question 46 or 47, ENTER STATUS "U".			
<u>10 CFR 71.59: Specific Standards for a Fissile Class II Package</u>			
48. Are Fissile Class II packages controlled by a carrier during transport in the allowable number of packages so as not to exceed a transport index of 50?	Y N		
49. Are Fissile Class II packages designed and constructed so that five times the allowable number of undamaged packages would be subcritical if stacked together in any arrangement and closely reflected on all sides of the stack by water, and twice the allowable number of packages would be subcritical if stacked together in any arrangement, closely reflected on all sides by water and with optimum interspersed moderation?	Y N		
50. Is the transport index for criticality control for each Fissile Class II package calculated by dividing 50 by the allowable number of Fissile Class II packages which may be transported together with the result not exceeding 10?	Y N		
- If YES to Questions 48 - 50, ENTER STATUS "S".			
- If NO to any of Questions 48 - 50, ENTER STATUS "U".			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
<u>10 CFR 71.61: Specific Standards for Fissile Class III Shipment</u>			
51. Are Fissile Class III packages designed and constructed so that twice the number of packages in a shipment would be subcritical if stacked together in any arrangement, closely reflected on all sides of the stack by water and with optimum interspersed moderation?	Y N		
- If YES, ENTER STATUS "S".			
- If NO, ENTER STATUS "U".			
<u>10 CFR 71.63: Special Requirements for Plutonium Shipments</u>			
52. Is plutonium in excess of 20 curies per package shipped as a solid?	Y N		
53. Is plutonium in excess of 20 curies per package packaged in a separate inner container placed within outer packaging?	Y N		
54. Does the separate inner container restrict the loss of plutonium to not more than A_2 in one week (see table A-1 of 10 CFR 71 for A_2 values)?	Y N		
55. Is solid plutonium in the following forms exempt from the requirements of 10 CFR 71.63:			
a. Reactor fuel elements?	Y N		
b. Metal or metal alloys?	Y N		
c. Other NRC approved solids?	Y N		
- If YES to Questions 52 - 55 c, ENTER STATUS "S".			
- If NO to any of Questions 52 - 55 c, ENTER STATUS "U".			
<u>10 CFR 71.71: Normal Conditions of Transport</u>			
56. Are initial conditions for testing packages based on a constant ambient temperature between -29°C (-20°F) and +38° (+100°F), and an initial internal pressure which is the maximum normal operating pressure?	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
57. Are packages subjected to the following tests: a. Heat to an ambient temperature of 38°C (100°F) and total isolation for a 12 hour period? b. Cold to an ambient temperatures of -40°C (-40°F) in still air and shade? c. A reduced external pressure of 24.5 kilopascal (3.5 psi) absolute? d. An increased external pressure of 140 kilopascal (20 psi) absolute? e. Vibration normally incident to transport? f. A water spray that simulates exposure to rainfall of five cm (two inches) per hour for one hour? g. A free drop onto a flat, unyielding horizontal surface in a position which maximum damage is expected and at a distance specified in the table (10 CFR 71.71)? Note: Free drop test should be between 1 1/2 and 2 1/2 hours after the water spray test. h. A corner drop on each corner of a package in succession from a height of 0.3 m (one foot)? Note: Test applies only to fiberboard or wood rectangular packages not exceeding 50 kg (110 pounds) and cylindrical packages not exceeding 100 kg (220 pounds). i. For packages weighing up to 5000 kg, a compressive load of five times the weight of the package or 12.75 kilopascal (1.85 psi) multiplied by the vertically projected area of the package, for 24 hours?	Y N Y N Y N Y N Y N Y N Y N Y N Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
j. Impact of the hemispherical end of a vertical steel cylinder of 3.2 cm (1 1/4 inches) diameter and 6 kg (13 pounds) mass dropped from a height of one meter (40 inches) onto the exposed surface of the package expected to be most vulnerable to puncture? - If YES to Questions 56 - 57 , ENTER STATUS "S". - If NO to any of Questions 56 - 57 , ENTER STATUS "U".	Y N ☐		
<u>10 CFR 71.73: Hypothetical Accident Conditions</u>			
58. Are packages tested for hypothetical accident conditions by:			
a. A free drop from nine meters (30 feet) onto a flat and unyielding surface striking in a position for maximum expected damage?	Y N		
b. A free drop from one meter (40 inches) onto the upper end of a solid vertical cylindrical steel bar with a 15 cm (six inch) diameter and 20 cm (eight inch) length?	Y N		
c. Exposure for at least 30 minutes to a heat flux not less than 800°C (1475°F) with an emissivity coefficient of at least 0.9?	Y N		
d. Immersion under a head of water of at least 0.9 m (three feet) for a period of not less than 8 hours?	Y N		
e. Immersion under a head of water of at least 15 m (50 feet) for a period of not less than 8 hours?	Y N		
- If YES to Questions 58 a - e, ENTER STATUS "S".	☐		
- If NO to any of Questions 58 a - e, ENTER STATUS "U".			
<u>10 CFR 71.75: Qualification of Special Form Radioactive Material</u>			
59. Are specimens of solid radioactive material or capsules normally prepared for loading in a single package?	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
60. Are different specimens used for each of the tests?	Y N		
61. Do specimens break or shatter during impact, percussion, or bonding tests?	Y N		
62. Do specimens melt or disperse during the heat test?	Y N		
63. Are specimens tested for leak-tightness after each test?	Y N		
64. Do each assessment methods limit the activity detected in the water to 0.05 microcuries?	Y N		
- If YES to Questions 59 - 64, ENTER STATUS "S".			
- If NO to any of Questions 59 - 64, ENTER STATUS "U".			
<u>10 CFR 71.77: Tests for Special Form Radioactive Material</u>			
65. Are specimens impact tested from a height of not less than nine meters (30 feet)?	Y N		
66. Are specimens percussion-tested by impacting a steel billet of 1.4 kg (three pounds) from a height of one meter (40 inches) on a specimen resting on a lead sheet of no more than 25 mm (one inch) thickness?	Y N		
67. Are specimens (long slender sources only) bend-tested by impacting a steel billet of 1.4 kg (three pounds) from a height of one meter on a clamped specimen?	Y N		
68. Are specimens heated to a temperature of not less than 800° C (1475° F) in an atmosphere of air for 10 minutes and then allowed to cool?	Y N		
- If YES to Questions 65 - 68, ENTER STATUS "S".			
- If NO to any of Questions 65 - 68, ENTER STATUS "U".			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
<u>10 CFR 71.83: Assumptions as to Unknown Properties</u>			
69. Is fissile material of unknown isotopic abundance, mass, concentration, degree of irradiation, or degree of moderation packaged as if the material will cause the maximum nuclear reactivity?	Y N		
- If YES, ENTER STATUS "S".			
- If NO, ENTER STATUS "U".			
<u>10 CFR 71.85: Preliminary Determinations</u>			
70. Prior to the first use of any packaging for shipment of licensed material does the licensee ensure that there are no circles, pinholes, uncontrolled voids, or other defects which reduce the effectiveness of the packaging?	Y N		
71. Does the facility test the containment system at an internal pressure at least 50 percent higher than the maximum normal operating pressure (if the maximum normal operating pressure will exceed 34.3 kilopascal (five psi gauge)) to verify the structural integrity of the package?	Y N		
72. Does the facility label the packaging with its model number, gross weight, and a package identification number assigned by the NRC, after determining that the packaging has been fabricated in accordance with an NRC-approved design?	Y N		
- If YES to Questions 70 - 72, ENTER STATUS "S".			
- If NO to any of Questions 70 - 72, ENTER STATUS "U".			
<u>10 CFR 71.87: Routine Determinations</u>			
73. Does the facility ensure that:			
a. The package is proper for the contents to be shipped?	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
b. The package is in unimpaired physical condition except for superficial marks or dents?	Y N		
c. Each closure device of the packaging is properly installed, secured, and free of defects?	Y N		
d. Any system for containing liquid is adequately sealed and has space for expansion of the liquid?	Y N		
e. Any pressure relief device is agreeable and set in accordance with written procedures?	Y N		
f. The package is loaded and closed in accordance with written procedures?	Y N		
g. Any moderator or neutron absorber (for fissile material) is present and in proper condition?	Y N		
h. Any structural part of the package which can be used to lift or tie-down the package during transport is rendered inoperable?	Y N		
i. The level of non-fixed (removable) radioactive contamination on the external surfaces of each package is ALARA?	Y N		
j. The amount of radioactivity measured on the surface of the package does not exceed the limits of Table V of 10 CFR 71 (excluding exclusive use shipments)?	Y N		
k. Exclusive use shipments by rail or highway only, cannot exceed ten times the limits of Table V of 10 CFR 71 at any time?	Y N		
l. External radiation levels around the package and the vehicle will not exceed the limits of 10 CFR 71.47?	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
m. Accessible package surface temperature will not exceed the limits of 10 CFR 71.43?	Y N		
- If YES to Questions 73 a - m, ENTER STATUS "S".			
- If NO to any of Questions 73 a - m, ENTER STATUS "U".			
<u>10 CFR 71.88: Air Transportation of Plutonium</u>			
74. Does the facility ensure that plutonium for air transport is either:			
a. Contained in a medical device for individual human application?	Y N		
b. Contained in a material in which the specific activity is not greater than 0.002 microcuries per gram?	Y N		
c. Shipped in a single package containing no more than an A ₂ quantity of plutonium?	Y N		
d. Shipped in a package specifically authorized for shipment of plutonium by air in the Certificate of Compliance for that package?	Y N		
<u>10 CFR 71.89: Opening Instructions</u>			
75. Does the facility ensure that special instructions to safely open the package have been given to the shipping consignee?	Y N		
- If YES to Questions 74 a - 75, ENTER STATUS "S".			
- If NO to any of Questions 74 a - 75, ENTER STATUS "U".			
<u>10 CFR 71.91: Records</u>			
76. Does the facility maintain for a period of 2 years after shipment a record of each shipment of licensed material not exempt under 10 CFR 71.10 denoting:			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
a. Identification of packaging by model number?	Y N		
b. Verification of no significant defects in the packaging?	Y N		
c. Volume and identification of coolant?	Y N		
d. Type and quantity of licensed material in each package and shipment?	Y N		
e. Identification by model and serial number, irradiation and decay history, and any abnormal conditions relevant to radiation safety for irradiated fissile material?	Y N		
f. Date of shipment?	Y N		
g. Any special controls exercised for fissile Class III and Type B packages?	Y N		
h. Name and address of transferee?	Y N		
i. Address to which shipment was made?	Y N		
j. Results of surveys (10 CFR 71.87)?	Y N		
- If YES to Questions 76 a - j, ENTER STATUS "S".	☐		
- If NO to any of Questions 76 a - j, ENTER STATUS "U".			
<u>10 CFR 71.93: Inspections and Tests</u>			
77. Does the facility permit the NRC to inspect the licensed material, packaging, premises, and facilities where the material or packaging is used, produced, tested, stored, or shipped?	Y N		
78. Does the facility notify the NRC at least 45 days prior to fabrication of a package for material having a decay heat load in excess of five kilowatts or with a maximum normal operating pressure in excess of 103 kilopascal (15 psi) gauge?	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
<u>10 CFR 71.95: Reports</u>			
79. Does the facility report to the NRC within 30 days any instance of significant reduction in the effectiveness of any packaging during use and details of any defects with safety significance in packaging after first use as well as measures to prevent recurrence?	Y N		
- If YES to Questions 77 - 79, ENTER STATUS "S".	☐		
- If NO to any of Questions 77 - 79, ENTER STATUS "U".			
<u>10 CFR 71.97: Advance Notification of Shipment of Nuclear Waste</u>			
80. Does the facility provide advance notification to the governor of a State of the shipment to, through, or across the boundary of the State, of any licensed material?	Y N		
81. Is advanced notification given when:			
a. Licensed material is in Type B packaging?	Y N		
b. Licensed material (other than irradiated fuel) is being transported to a disposal site?	Y N		
c. The quantity of licensed material in a single package exceeds 5000 curies of special form radionuclides; 5000 curies of uncompressed gas of argon-41, krypton-85 m, krypton-87, xenon-131m, or xenon-135; 50,000 curies of argon-37 or of uncompressed gases of krypton-85, xenon-133, or hydrogen-3 as a gas, luminous paint or absorbed on a solid material; 20 curies of other non-special form radionuclides for which A_2 is less than or equal to 4 curies; or 200 curies of other non-special form radionuclides for which A_2 is greater than 4 curies?	Y N		
d. The quantity of irradiated fuel is less than the requirements of 10 CFR 73?	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
- If YES to Questions 80 - 81 d, ENTER STATUS "S".	☐		
- If NO to any of Questions 80 - 81 d, ENTER STATUS "U".			
82. Does the facility provide notification in writing to each appropriate State governor postmarked at least 7 days prior to the beginning of the 7-day period of shipment departure or if delivered by messenger, at least four days prior to shipment departure?	Y N		
83. Does the facility retain a copy of the notification as a record for 1 year?	Y N		
84. Does the notification contain:			
a. The name, address, and telephone number of the shipper, carrier, and receiver of the nuclear waste shipment?	Y N		
b. A description of the nuclear waste contained in the shipment?	Y N		
c. The point of origin of the shipment and the 7-day period during which shipment departure will occur?	Y N		
d. The 7-day period when arrival of the shipment at the State boundaries will occur?	Y N		
e. The destination of the shipment and the 7-day period of arrival?	Y N		
f. A point of contact and phone number for current shipment information?	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
85. Does the facility telephone the governor to notify that the shipment schedule has been delayed and maintain the record of schedule revision for 1 year?	Y N		
- If YES to Questions 82 - 85, ENTER STATUS "S".	☐		
- If NO to any of Questions 82 - 85, ENTER STATUS "U".			
86. Does the facility notify the governor of any cancelled shipments and maintain the record of cancellation notice for 1 year?	Y N		
<u>10 CFR 71.101: Quality Assurance Requirements</u>			
87. Does the facility establish, maintain, and execute a quality assurance program applicable to the licensee's activities including procurement of packaging?	Y N		
88. Does the facility obtain NRC approval of its quality assurance program?	Y N		
This checklist is complete.			

SECTION 7

NATURAL AND CULTURAL RESOURCES PROTECTION ACTS AND EXECUTIVE ORDERS

The United States has in place numerous laws that involve the protection of the environment. These include acts that deal with specific media, such as the Clean Air Act and the Clean Water Act; laws that address waste management and hazardous materials handling issues, such as the RCRA, CERCLA, and TSCA; and laws that deal with the preservation and enhancement of the nation's natural and cultural resources. The first two sets of legislative actions are covered in other DOE audit checklists. This protocol addresses those natural and cultural resource protection laws, regulations, and Executive Orders that should be considered by Department of Energy Facilities.

Many of these natural and cultural resource protection laws are applied during the environmental impact assessment process, as laid out in the National Environmental Policy Act and its implementing regulations. This process will be audited by an affiliated DOE group. As such, the intent of this protocol is to provide general guidance to applicable resource protection laws to enable auditors to determine whether the intent of the requirements are being addressed by the facility. Therefore, it includes brief descriptions of the appropriate laws and Executive Orders, including applicability to DOE, and several general screening questions. Immediately following this introduction is a table of the laws and orders with cross-references to the appropriate public law number, U.S. Code, implementing regulation, or Executive Order.

REFERENCE SOURCES FOR NATURAL/CULTURAL RESOURCES

PROTECTION ACTS AND EXECUTIVE ORDERS

Legal Requirement	Code	Public Law	Regulations	Executive Order
National Environmental Policy Act	42 USC 4321	91-190	10 CFR 1021 (DOE Compliance) 40 CFR 8 & 1500 (Guidelines)	
Endangered Species Act	16 USC 1531-1544	93-205	50 CFR 17 (List of endangered species) 50 CFR 218-227 (Marine species) 50 CFR 402 (interagency cooperation) 50 CFR 450-453 (Application and exemptions)	EO 11911
Fish and Wildlife Coordination Act	16 USC 661-666			
Wild and Scenic Rivers Act	16 USC 1271-1287	90-542		
Marine Mammal Protection Act	16 USC 1361 <u>et seq</u>	92-522 96-386	50 CFR 12, 13 50 CFR 18 50 CFR 218	
Rivers and Harbors Act	33 USC 401-413	85-802 88-643 88-172	33 CFR 322 (Permits)	
Marine Protection, Research, and Sanctuaries Act	16 USC 1431-1434 33 USC 1401-1444	92-532	15 CFR 921 (Estuarine sanctuary guidelines) 40 CFR 220 <u>et seq</u> (Ocean dumping)	
Coastal Zone Management Act	16 USC 1451-1464	92-583	15 CFR 923 (Approval regulations) 15 CFR 930 (Federal consistency) 15 CFR 931 (Coastal energy impacts)	
Federal Land Policy Management Act	42 USC 1701 <u>et seq</u>			
Noise Control Act	42 USC 4901-4918 49 USC 1431	92-574	40 CFR 203-205	
Soil and Water Resources Conservation Act	16 USC 2001	95-192		
National Historic Preservation Act	16 USC 470	94-422	36 CFR 800 43 CFR 7	
Archaeological Resources Protection Act		96-95	36 CFR 1215 (Permitting)	
National Wilderness Preservation Act	16 USC 1131 <u>et seq</u>		43 CFR 19	
Bald and Golden Eagle Protection Act	16 USC 666-666(d)		50 CFR 10, 11, 12, 13, 22	
Migratory Bird Treaty Act	16 USC 703-712		50 CFR 10.13 50 CFR 20-21 50 CFR 12-13	
Wild Free Roaming Horses and Burros Act of 1971	16 USC 1331-1340			
Antiquities Act of 1906	16 USC 431-433			
National Forest Management Act	16 USC 1600 <u>et seq</u>			
Farmland Protection Policy Act	7 USC 4201-4209		7 CFR 658	
Historic Sites Act of 1935	16 USC 461 <u>et seq</u>		36 CFR 82	
American Indian Religious Freedom Act	42 USC 1996			
National Trails System Act	16 USC 1214-1249			
EO on Floodplain Management			10 CFR 1022 (DOE implementation)	11968 (amended by EO 12146)
EO on Protection of Wetlands	16 USC 1221-1226		10 CFR 1022 (DOE implementation)	11990
EO on Federal Compliance and Pollution Control Standards				12068 (amended by EO 12580)
EO on Environmental Safeguards for Animal Damage Control on Federal Lands				12342
EO on Responses to Environmental Damage				12316

**LIST OF NATURAL AND CULTURAL RESOURCES ACTS
AND EXECUTIVE ORDERS CHECKLISTS**

<u>Performance Checklist</u>	<u>Revision No.</u>	<u>Date</u>	<u>Checklist Title</u>
NE-US	0	12/29/89	National Environmental Policy Act
NE-ES	0	12/29/89	Endangered Species Act
NE-FW	0	12/29/89	Fish and Wildlife Coordination Act
NE-W	0	12/29/89	Wild and Scenic Rivers Act
NE-MM	0	12/29/89	Marine Mammal Protection Act
NE-R	0	12/29/89	Rivers and Harbors Act
NE-MP	0	12/29/89	Marine Protection Research and Sanctuaries Act
NE-CZ	0	12/29/89	Coastal Zone Management Act
NE-FL	0	12/29/89	Federal Land Policy Management Act
NE-NC	0	12/29/89	Noise Control Act
NE-SW	0	12/29/89	Soil and Water Resources Conservation Act
NE-NH	0	12/29/89	National Historic Preservation Act
NE-AR	0	12/29/29	Archeological Resources Protection Act
NE-NW	0	12/29/89	National Wilderness Preservation Act
NE-BG	0	12/29/89	Bald and Golden Eagle Protection Act
NE-MB	0	12/29/89	Migratory Bird Treaty Act
NE-WF	0	12/29/89	Wild Free-Roaming Horses and Burros Act of 1971
NE-AA	0	12/29/89	The Antiques Act of 1906
NE-NF	0	12/29/89	National Forest Management Act
NE-FP	0	12/29/89	Farmland Protection Policy Act

**LIST OF NATURAL AND CULTURAL RESOURCES ACTS
AND EXECUTIVE ORDERS CHECKLISTS**

(continued)

<u>Performance Checklist</u>	<u>Revision No.</u>	<u>Date</u>	<u>Checklist Title</u>
NE-HS	0	12/29/89	Historic Sites Act of 1935
NE-AI	0	12/29/89	The American Indian Religious Freedom Act
NE-NT	0	12/29/89	National Trails Systems Act
NE-FM	0	12/29/89	EO Floodplain Management
NE-PW	0	12/29/89	EO Protection of Wetlands
NE-FC	0	12/29/89	EO Federal Compliance and Pollution Control Standards
NE-ESA	0	12/29/89	EO Environmental Safeguards for Animal Damage Control on Federal Lands
NE-RE	0	12/29/89	EO Responses to Environmental Damage

NATIONAL ENVIRONMENTAL POLICY ACT (42 USC 4321; 40 CFR 6 AND 1500 AND 10 CFR 1021)

The purpose of the National Environmental Policy Act (NEPA) was to establish a national policy for the environment and provide for the establishment of the Council on Environmental Quality (CEQ). NEPA requires all Federal agencies, including DOE, to prepare a detailed statement (environmental impact statement (EIS)) on the environmental effects of proposed "major federal actions significantly affecting the quality of the human environment." This detailed statement must include: the environmental impact of the proposed action, any adverse environmental effects which cannot be avoided, alternatives to the proposed action and their environmental impacts, the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity, and any irreversible and irretrievable commitments of resources.

If it is uncertain whether the proposed action is a major Federal action involving a significant effect, an environmental assessment may be necessary to provide sufficient evidence and analysis for determining whether an EIS is necessary. If it is determined by the environmental assessment that the environmental impacts are not significant then a Finding of No Significant Impact (FONSI) must be published in the Federal Register.

EXECUTIVE ORDER 11514 (AMENDED BY EO 11991) - PROTECTION AND ENHANCEMENT OF ENVIRONMENTAL QUALITY

Executive Order 11514 established responsibilities of Federal agencies for environmental protection and required the Council on Environmental Quality (CEQ) to issue guidelines to Federal agencies on preparation of detailed statements on proposed actions affecting the environment. The amending Executive Order 11991 directs the CEQ to issue regulations to Federal agencies for implementing the procedural provisions of NEPA and required Federal agencies to comply with the regulations.

AUDITOR(S): _____

BLDG/AREA/UNIT(S): _____

DATE: _____

ESO NO.: _____

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
1. Have any EISs been prepared for the site?	Y N		
2. Have any EAs been prepared for the site?	Y N		
3. Have there been and Findings of No Significant Impact (FONSI) determined for the site?	Y N		
This checklist is complete.			

ENDANGERED SPECIES ACT (16 USC 1531-1544; 50 CFR Parts 17, 216-227, 402, and 450-453)

The Endangered Species Act provides for the designation and protection of wildlife, fish, and plant species which are in danger of becoming extinct and to conserve the ecosystems on which such species depend. Under Section 7 of the Act and implementing regulations (50 CFR 402) all Federal agencies, including DOE, must ensure, in consultation with the Secretary of Interior or Commerce, that any action authorized, funded, or carried out by the agency is not likely to jeopardize the continued existence of any endangered or threatened species or adversely affect any critical habitat.

The consultation process generally involves preparation and submittal of a biological assessment to identify any endangered or threatened species which is likely to be affected by a proposed action. After consultation, the Secretary renders an opinion on the impacts of the Department's action on the species or its habitat. If jeopardy or adverse modification is found, the Secretary suggests alternatives to the proposed action that would not violate Section 7(a)(2). If DOE is not able to implement the suggested alternatives, it may choose to apply for an exemption.

AUDITOR(S): _____

BLDG/AREA/UNIT(S): _____

DATE: ____/____/____

ESO NO.: _____

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
1. Have any threatened or endangered plan or animal species or their critical habitats currently on the formal U.S. Fish and Wildlife Service (USFWS) list been identified on-site?	Y N		
2. Have any threatened or endangered species or their critical habitats proposed for a listing by the USFWS been identified on-site?	Y N		
3. If YES, have there been any formal Section 7 consultations with the USFWS?	Y N		
4. Have any Biological Assessments been prepared?	Y N		
5. Have any threatened or endangered or other protected (e.g., "rare") species or their critical habitats listed or proposed for listing by the State or local government agency been identified on-site?	Y N		
6. If YES to Questions 1, 2, or 5, have any of these critical habitats (State as well as Federal) been mapped and appropriately delineated in the field?	Y N		
7. When was the last time consultation occurred between the U.S. Fish and Wildlife Service and/or State or local agencies concerning the listed or proposed listing of plan and/or animal species and their critical habitats?			
This checklist is complete.			

FISH AND WILDLIFE COORDINATION ACT (16 USC 661-666)

The purpose of the Fish and Wildlife Coordination Act (FWCA) is to assure that fish and wildlife resources receive equal consideration with other values in the planning of development projects affecting water resources. The FWCA requires all Federal agencies (including DOE) to consult with the U.S. Fish and Wildlife Service (Department of the Interior) whenever an agency plans to conduct, license, or permit an activity involving the impoundment, diversion, deepening, control, or modification of a stream or a body of water. The Act also requires consultation with the head of the state agency that administers wildlife resources in the affected state. Although the recommendations of the Secretary of the Interior and state officials are not binding, DOE must give them full consideration and include the recommendation in any report prepared by DOE for water-resource development authorization.

AUDITOR(S): _____

BLDG/AREA/UNIT(S): _____

DATE: ____/____/____

ESO NO.: _____

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
1. Are there any waterways located on-site?	Y N		
2. If YES to Question 1, have any of these waterways been modified or impacted?	Y N		
3. Have there been any consultations with the U.S. Fish and Wildlife Service with regard to modifications or impacts to waterways on site? If so, when?	Y N		
4. Have there been any consultations with appropriate state resource agencies with regard to modifications or impacts to waterways on-site? If so, when?	Y N		
This checklist is complete.			

WILD AND SCENIC RIVERS ACT (16 USC 1271-1287)

Section 7 of the Wild and Scenic Rivers Act prohibits any Federal agency (including DOE) from assisting, by licensing or otherwise, the construction of any water resources project that would have a direct, adverse effect on the values for which a national wild and scenic river was established. This does not include developments above or below a wild, scenic or recreational river area or any stream tributary that flows into the river unless the development invades the area or unreasonably diminishes its value. This Act is particularly relevant to the power marketing administration activities of DOE.

AUDITOR(S): _____

BLDG/AREA/UNIT(S): _____

DATE: ____/____/____

ESO NO.: _____

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
1. Are there any waterways that have been designated as wild and scenic rivers under the Wild and Scenic Rivers Act that may be potentially affected by DOE facility activities?	Y N		
2. If YES to Question 1, is the wild and scenic river segment classified as either "wild", "scenic", or "recreation"?	Y N		
3. Are there any rivers located on the site that have been formally identified as a study river under the Wild and Scenic Rivers Act?	Y N		
4. If YES to Question 3, has the relevant administering agency been contacted (National Park Service, Bureau of Land Management, Forest Service, or State or local agency) regarding any site activity that could affect wild and scenic rivers?	Y N		
5. Are there any waterways listed or proposed for listing under any State protective acts that would possibly be affected by DOE facility activities?	Y N		
6. Are there any rivers located adjacent to site that have been identified under the National Park Service's Nationwide Rivers Inventory that could be affected by site activities?	Y N		
7. If YES to Question 6, has consultation been initiated with the Regional Office of the National Park Service? When?	Y N		
This checklist is complete.			

MARINE MAMMAL PROTECTION ACT (16 USC 1361 et seq., 50 CFR 12, 13, 18, AND 216)

The Marine Mammal Protection Act was enacted to protect and manage marine mammals and their products (use of hides, meat, etc.). If the DOE approves, licenses, or funds any project that will be sited in an area that will require or result in the removal, capture, hunting or killing of marine mammals, the Department must obtain a permit (depending on the species) from either the Department of Interior, Fish and Wildlife Service or the Department of Commerce, National Marine Fisheries Service. The permit will specify how the mammals should be handled. Also, if DOE is involved in the direct research use of marine mammals, a permit may be required.

AUDITOR(S): _____

BLDG/AREA/UNIT(S): _____

DATE: _____

ESO NO.: _____

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
1. Have any activities required or resulted in the removal, capture, hunting, or killing of marine mammals?	Y N		
2. If YES to Question 1, has a permit from the U.S. Fish and Wildlife Service (FWS) or National Marine Fisheries Service (NMFS) been obtained?	Y N		
3. Have any activities involved the direct research use of marine mammals?	Y N		
4. If YES to Question 3, has a permit from the FWS or NMFS been obtained?	Y N		
This checklist is complete.			

RIVERS AND HARBORS ACT (33 USC 401-413; 33 CFR 322 AND 323)

Section 9 of the Rivers and Harbors Act requires that any construction of bridges, causeways, dams, or dikes in navigable waters of the U.S. may only be conducted under the consent of Congress or the appropriate state and approval from the Secretary of the Army or the Secretary of Transportation. Authority of approval depends on the type of structure involved. Section 9, however, does not apply to bridges or causeways that would (1) span waters amenable to the transport of interstate or foreign commerce or (2) cross waters not subject to tidal action.

Section 10 of this Act requires the Secretary of the Army to authorize various structures or excavations if they are to occur outside established harbors or within navigable waters of the U.S. These structures include: piers, mooring structures, permanently moored vessels, and power transmission lines, as well as other items.

As a result, DOE is required to obtain a permit from the U.S. Army Corps of Engineers (COE) if a proposed project includes structures or work in or affecting navigable waters of the U.S. and may be required to obtain a permit from the COE for any discharges of dredged or fill material into waters of the U.S.

AUDITOR(S): _____

BLDG/AREA/UNIT(S): _____

DATE ____/____/____

ESO NO: _____

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
1. Are there any navigable waters of the U.S. located on the site?	Y N		
2. Have any activities involved structures or work in or affecting navigable waters of the U.S.?	Y N		
3. If YES to Question 2, has a permit from the U.S. Corps of Engineers (COE) been obtained?	Y N		
4. Have any activities involved structures under or over a navigable water of the U.S.?	Y N		
5. If YES to Question 4, has a permit from the COE been obtained?	Y N		
6. Have any activities involved the deposit of fill material into navigable waters of the U.S. or has any navigable water been excavated?	Y N		
7. If YES to Question 5, has a permit from the COE been obtained?	Y N		
This checklist is complete.			

MARINE PROTECTION, RESEARCH, AND SANCTUARIES ACT (33 USC 1401-1444; 16 USC 1431-1434; 15 CFR 921; 40 CFR 220 et seq.)

The purpose of the Marine Protection, Research, and Sanctuaries Act is to regulate the transportation of material to be dumped into ocean waters and the dumping of material into ocean waters. Under this Act and implementing regulations, DOE must obtain a permit from the U.S. Army Corps of Engineers for transportation of any dredged materials (excavated from waters of the U.S.) for the purposes of dumping it into the ocean waters (beyond the territorial limit or 3 miles from shore).

DOE must also obtain a permit from EPA for dumping other wastes besides dredged materials into the ocean, except for radiological, chemical, and biological warfare agents, high-level radioactive waste, and medical waste for which no permit may be issued. These permits may only be obtained if there is no reasonable alternative for disposal of the wastes.

NEPA - 33 USC 1401 - 1444; 16 USC 1431 - 1434 - MARINE PROT., RES. AND SANC. ACT

(NE-MP, 1/1)

SITE ID: _____

AUDITOR(S): _____

BLDG/AREA/UNIT(S): _____

DATE: ____/____/____

ESO NO.: _____

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
<u>NEPA - 33 USC 1401 - 1444; 16 USC 1431-1434; 15 CFR 220 et seq. - Marine Protection, Research and Sanctuaries Act</u>			
1. Are any dredged materials from waters of the U.S. disposed of into the ocean waters beyond the territorial limit of the U.S.?	Y N		
2. If YES, has a permit from the U.S. Corps of Engineers been obtained?	Y N		
3. Are any other wastes besides dredged material disposed of into the ocean waters?	Y N		
4. If so, has a permit from EPA been obtained?	Y N		
This checklist is complete.			

COASTAL ZONE MANAGEMENT ACT (16 USC 1451-1464; 15 CFR PARTS 923, 930, AND 931)

Under the Coastal Zone Management Act (CZMA), any Federal agency, including DOE, that conducts, supports, licenses, or permits any activities directly affecting the coastal zone or undertakes any development project in the coastal zone of a State must ensure that it is, to the maximum extent practicable, consistent with approved State management programs. Federal property is exempt from the definition of the State's coastal zone, but activities occurring on Federal property with direct effect on the State's coastal zone must comply with the CZMA. A written "consistency determination" must be provided to the authorized State CZM agency for all activities directly affecting the State's coastal zone. DOE may not issue a license or permit for any activity that may affect a State's coastal zone until the State or its designated agency concurs with the certification (or the Secretary of Commerce overrides the State's nonconcurrence).

AUDITOR(S) _____

BLDG/AREA/UNIT(S): _____

DATE: ____/____/____

ESO NO.: _____

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
1. Is any portion of the site situated in a State-designated coastal zone?	Y N		
2. If YES to Question 1, does any activity on the site involve or directly impact a State coastal zone?	Y N		
3. If YES to Question 2, has there been any contact with the State Coastal Zone Management (CZM) agency?	Y N		
4. If YES to Question 3, has a written consistency determination been provided to the authorized State CZM agency?	Y N		
5. If YES to Question 4, has the State CZM agency concurred with a consistency determination?	Y N		
This checklist is complete.			

FEDERAL LAND POLICY MANAGEMENT ACT (42 USC 1701 et seq.)

The Federal Land Policy Management Act establishes public land policy; establishes guidelines for administering the land policy; and provides for the management, protection, development, and enhancement of public lands.

If DOE needs to use, obtain, or develop Federally-owned lands, the Department must obtain permission from the Department of Interior. This can be done in one of three ways depending on the use: withdrawal, cooperative agreement, or permit for right-of-way.

AUDITOR(S) _____

BLDG/AREA/UNIT(S): _____

DATE: ____/____/____

ESO NO: _____

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
1. Have public lands administered by the Bureau of Land Management been used, obtained, or developed by the DOE?	Y N		
2. If YES to Question 1, what type of permission was obtained (withdrawal, right-of-way grant, special use permit, etc.)?	Y N		
3. If YES to Question 2, who authorized the permission and when?	Y N		
4. Are there any other public lands administered by the Forest Service, National Park Service, U.S. Fish and Wildlife Service, or any other Federal agency affected directly or individually by on-site DOE activities?	Y N		
5. Are there any State lands affected directly or indirectly by on-site DOE activities?	Y N		
This checklist is complete.			

NOISE CONTROL ACT (42 USC 4901-4918; 49 USC 1431; 40 CFR 203-205)

Under Section 4 of the Noise Control Act, all Federal agencies, including DOE, having jurisdiction over any property or facility, or engaged in any activity resulting, or which may result, in the emission of noise shall comply with Federal, State, interstate, and local requirements respecting control and abatement of environmental noise to the same extent that any one person is subject to such requirements.

AUDITOR(S): _____

BLDG/AREA/UNIT(S): _____

DATE: ____/____/____

ESO NO.: _____

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
1. Does the DOE facility or operation produce ambient noise levels which are covered by these regulations?	Y N		
2. Have steps been taken to ensure compliance with applicable State and local noise regulations?	Y N		
3. Have steps been taken to ensure compliance with EPA regulations concerning noise?	Y N		
This checklist is complete.			

SOIL AND WATER RESOURCES CONSERVATION ACT (16 USC 2001)

The purpose of the Soil and Water Resources Conservation Act is to provide for furthering the conservation, protection, and enhancement of the Nation's soil, water, and related resources for sustained use, and for other purposes. This Act created the Soil Conservation Service (SCS) of the U.S. Department of Agriculture and directed the SCS to develop and administer programs for the conservation of soil, water, and related resources that are responsive to the long-term needs of the Nation. This Act does not have direct impact on DOE activities.

AUDITOR(S): _____

BLDG/AREA/UNIT(S): _____

DATE: ____/____/____

ESO NO: _____

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
No relevant audit questions. This checklist is complete.			

NATIONAL HISTORIC PRESERVATION ACT (16 USC 470; 43 CFR 7; 36 CFR 800)

Under Section 106 of the National Historic Preservation Act and implementing regulations, any Federal agency, including DOE, prior to undertaking any proposed Federal or federally assisted project must adopt measures when feasible to mitigate potential adverse effects of the undertaking on any district, site, building, structure, or object that is included in or eligible for inclusion in the National Register of Historic Places. The Act's requirements are to be implemented in cooperation with the State Historic Preservation Officers and, upon notice to and when appropriate, in consultation with the Advisory Council on Historic Preservation.

AUDITOR(S): _____

BLDG/AREA/UNIT(S): _____

DATE: ____/____/____

ESO NO: _____

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
1. Have any cultural resources inventories (Class I, II or III inventories) been conducted of the site?	Y N		
2. Are any historic sites listed in the <u>National Register of Historic Places</u> located on site?	Y N		
3. Has the State Historic Preservation Office (SHPO) been contacted to help determine whether there are any historic sites located on site?	Y N		
4. If so, what was the outcome:			
- Memorandum of Agreement?	Y N		
- Memorandum of Understanding?	Y N		
This checklist is complete.			

ARCHAEOLOGICAL RESOURCES PROTECTION ACT (16 USC 470; 36 CFR 1215)

The Archaeological Resources Protection Act was enacted to provide a comprehensive framework for protecting and regulating the use of archaeological resources on public and Indian lands protected by the Antiquities Act of 1906. The Act requires that a permit be received from the Federal land manager (Department of Interior) for the excavation and removal of archaeological resources on public lands.

AUDITOR(S): _____

BLDG/AREA/UNIT(S): _____

DATE: ____/____/____

ESO NO.: _____

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
1. Has an archaeological survey been conducted of the site?	Y N		
2. If YES to Question 1, have any archaeological resources been discovered?	Y N		
3. What is being done by the site to avoid or protect known archaeological resources?	Y N		
4. If NO to Question 3, should an archaeological resources survey of the site be conducted?	Y N		
5. Have there been any consultations with the State Historic Preservation Office (SHPO)?	Y N		
6. If YES to Question 5, when did this consultation between the SHPO and site personnel occur?	Y N		
This checklist is complete.			

THE NATIONAL WILDERNESS PRESERVATION ACT (16 USC 1131 ~~et seq.~~; 43 CFR 19)

The National Wilderness Preservation Act establishes a national wilderness preservation system composed of Federally-owned areas designated by Congress as "wilderness areas." These wilderness areas are to be protected in order to maintain their "wilderness" qualities and to remain untouched by man.

AUDITOR(S): _____

BLDG/AREA/UNIT(S): _____

DATE: ____/____/____

ESO NO.: _____

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
1. Are there designated Wilderness Areas potentially affected by the site?	Y N		
2. Has the Bureau of Land Management, Forest Service, National Park Service, or U.S. Fish and Wildlife Service having jurisdiction of "Wilderness Area" or potential area under study for possible Wilderness Area designation been contacted?	Y N		
3. Are there any Bureau of Land Management Wilderness Study Areas potentially affected by the site?	Y N		
4. Are there any U.S. Forest Service Roadless Area Review and Evaluation II Units potentially affected by the site?	Y N		
This checklist is complete.			

BALD AND GOLDEN EAGLE PROTECTION ACT (16 USC 668-668(d); 50 CFR 10-13, AND 22)

The Bald and Golden Eagle Protection Act affords protection to bald and golden eagles by establishing penalties for the unauthorized taking, possession, selling, purchase, or transportation of eagles, their nests, or their eggs. The U.S. Fish and Wildlife Service has the authority to issue permits for the taking or disturbing of eagles or their nests for certain purposes.

AUDITOR(S): _____

BLDG/AREA/UNIT(S): _____

DATE: ____/____/____

ESO NO.: _____

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
1. Have any bald or golden eagles, their nests, or their eggs been identified on site?	Y N		
2. If YES to Question 1, have there been any consultations with the U.S. Fish and Wildlife Service?	Y N		
3. Has the U.S. Fish and Wildlife Service issued any permits for the site related to the taking or disturbing of eagles or their nests or eggs?	Y N		
This checklist is complete.			

MIGRATORY BIRD TREATY ACT (16 USC 703-712; 50 CFR 10.13, 12-13, AND 20-21)

The Migratory Bird Treaty Act affords protection to many species of migratory birds by prohibiting the pursuit, hunting, taking, capture, possession, or killing of such species or their nests and eggs. No permit is required under this Act, however, consultation with the U.S. Fish and Wildlife Service is required regarding impacts to migratory birds and the evaluation of how to avoid or minimize these effects in accordance with the U.S. Fish and Wildlife Service's mitigation policy.

AUDITOR(S): _____

BLDG/AREA/UNIT(S): _____

DATE: ____/____/____

ESO NO.: _____

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
1. Have any migratory birds listed under 50 CFR 10.13 or their nests been identified on-site?	Y N		
2. If YES to Question 1, have there been any consultations with the U.S. Fish and Wildlife Service?	Y N		
This checklist is complete.			

THE WILD FREE-ROAMING HORSES AND BURROS ACT OF 1971 (16 USC 1331-1340)

The Wild Free-Roaming Horses and Burros Act of 1971 declares wild horses and burros to be "living symbols of the historic and pioneer spirit of the West." This Act protects wild horses and burros from capture, branding, harassment, or unlawful death. It provides for the protection and management of wild horses and burros on public lands administered by the Secretary of the Interior through the Bureau of Land Management or by the Secretary of Agriculture through the Forest Service.

AUDITOR(S): _____

BLDG/AREA/UNIT(S): _____

DATE ____/____/____

ESO NO: _____

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
1. Have any wild horses or burros been identified on site?	Y N		
2. If YES to Question 1, has the Bureau of Land Management or the Forest Service been consulted?	Y N		
This checklist is complete.			

THE ANTIQUITIES ACT OF 1906 (16 USC 431-433)

The Antiquities Act of 1906 provides for the protection of historic and prehistoric remains and monuments on Federal lands by setting penalties for destruction of historic ruins on public lands. This Act also establishes a permit system for conducting scientific archeological investigation, which could only be conducted by recognized institutions that would report results and maintain all collections for the public.

AUDITOR(S): _____
_____BLDG/AREA/UNIT(S): _____

DATE: ____/____/____

ESO NO: _____

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
1. Are there any historic or prehistoric ruins or monuments, or any object of antiquity on site?	Y N		
2. If YES to Question 1, has a permit from the Secretary of Interior or the Secretary of Agriculture been obtained to examine, excavate, or gather the object?	Y N		
This checklist is complete.			

NATIONAL FOREST MANAGEMENT ACT (16 USC 1600 nt)

The National Forest Management Act states that the National Forest Service, Department of Agriculture, in cooperation with other agencies, shall assess the Nation's renewable resources, and develop and prepare a national renewable resource program, which is periodically reviewed and updated. Under this Act, the National Forest Service in developing the Renewable Resource Assessment reports shall consult with other Federal agencies. It is the policy under this Act that all forested lands in the National Forest System shall be maintained in appropriate forest cover with species of trees, degree of stocking, rate of growth, and conditions of stand designed to secure the maximum benefits of multiple use sustained yield management in accordance with land management plans.

AUDITOR(S): _____
_____BLDG/AREA/UNIT(S): _____

DATE ____/____/____

ESO NO: _____

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
1. Are there any national forests located on site?	Y N		
2. If so, have there been any consultations and coordination with the National Forest Service concerning the use of the national forests located on site?	Y N		
This checklist is complete.			

FARMLAND PROTECTION POLICY ACT (7 USC 4201-4209; 7 CFR 658)

The Farmland Protection Policy Act seeks to minimize the extent to which Federal programs contribute to the unnecessary and irreversible conversion of farmlands to nonagricultural uses. Any Federal activity or Federally-supported activity must be reviewed to determine if any land designated either as prime or unique, or farmlands of state or local importance will be affected.

AUDITOR(S): _____

BLDG/AREA/UNIT(S): _____

DATE: ____ / ____ / ____

ESO NO.: _____

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
1. Are there any farmlands or land designated as prime or unique potentially affected by the site?	Y N		
2. Has there been any consultation with the Soil Conservation Service to determine if farmlands are located on or adjacent to the site?	Y N		
3. Are there any plans for the conversion of lands designated as prime or unique farmlands for use by the DOE facility?	Y N		
This checklist is complete.			

HISTORIC SITES ACT OF 1935 (16 USC 461 et seq.; 36 CFR 62)

The purpose of the Historic Sites Act is to provide for the preservation of historic American sites, buildings, objects and antiquities of national significance, and for other purposes. This Act also authorized the Department of Interior, through the National Park Service, to initiate preservation programs.

AUDITOR(S): _____

BLDG/AREA/UNIT(S): _____

DATE: ____/____/____

ESO NO. _____

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
1. Has the DOE facility conducted a study to determine whether any potential National Natural Landmarks exist on or near the site?	Y N		
2. Are there any National Natural Landmarks listed or is there a potential for listing on the National Registry of Natural Landmarks affected by the site?	Y N		
3. Has an agreement been made (Memorandum of Agreement) or has consultation occurred between DOE and the National Park Service concerning any National Natural Landmark?	Y N		
4. If YES to Question 3, is DOE in compliance with all the conditions of the MOA?	Y N		
This checklist is complete.			

THE AMERICAN INDIAN RELIGIOUS FREEDOM ACT (42 USC 1996)

The American Indian Religious Freedom Act states that it is the policy of the U.S. to protect and preserve for Native Americans (including American Indians, Eskimos, Aleuts, and Native Hawaiians) their inherent right of freedom to believe, express, and exercise their traditional religions. These rights include access to religious sites, use and possession of sacred objects, and the freedom to worship through traditional ceremonies and rites.

AUDITOR(S): _____
_____BLDG/AREA/UNIT(S): _____

DATE: ____/____/____

ESO NO.: _____

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
1. Has a survey of any sacred religious site of any Native American group been conducted?	Y N		
2. If YES to Question 1, are there any sacred religious sites of any Native American group located on site?	Y N		
3. Have there been any consultations with Native American leaders to determine if there is an infringement on the free exercise of that religion?	Y N		
4. When was the last consultation with Native American leaders?			
This checklist is complete.			

NATIONAL TRAILS SYSTEM ACT (16 USC 1214-1249)

The National Trails System Act established a system of national recreation trails in order to provide a variety of outdoor recreation uses in or reasonably accessible to urban areas, to provide for maximum outdoor recreation potential, and for the conservation and enjoyment of the nationally significant scenic, historic, natural, or cultural qualities of the areas through which such trails may pass.

AUDITOR(S): _____
_____BLDG/AREA/UNIT(S): _____

DATE: ____/____/____

ESO NO.: _____

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
1. Are there any national trails (e.g., recreational, scenic, historic) potentially affected by the site?	Y N		
2. Are there any trails under current or proposed study, including State and local trails of importance, potentially affected by the site?	Y N		
This checklist is complete.			

EXECUTIVE ORDER 11988 (AMENDED BY EO 12148) - FLOODPLAIN MANAGEMENT (10 CFR 1022)

According to this Executive Order, all Federal agencies, including DOE, must review their proposed actions to determine if any action will occur in a floodplain. For those actions occurring in a floodplain, the Federal agency must evaluate the potential effects and consider alternatives to avoid any adverse effects and incompatible development in the floodplain. This determination can be made by consulting Flood Insurance Rate Maps, Flood Hazard Boundary Maps, or other Federal agencies involved with floodplain determinations.

AUDITOR(S): _____

BLDG/AREA/UNIT(S): _____

DATE: ____/____/____

ESO NO.: _____

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
1. Are there any floodplains (100-year) located on site? - If YES, see RCRA and TSCA Checklist requirements for protection of PCBs and/or HW storage at the site.	Y N		
2. Have any projects been located in a floodplain?	Y N		
3. Have any floodplain assessments been developed?	Y N		
4. Have there been any consultations concerning floodplain impacts and if so, with whom?	Y N		
This checklist is complete.			

EXECUTIVE ORDER 11990 - PROTECTION OF WETLANDS (16 USC 1221 - 1226; 10 CFR 1022)

Executive Order 11990 states that all Federal agencies must avoid, to the extent possible, the long- and short-term adverse impacts of destroying or modifying wetlands, and to avoid direct or indirect support of new construction in wetlands if there is a practicable alternative. DOE may determine if the proposed action is in a wetland by consulting the U.S. Fish and Wildlife Service; U.S. Department of Agriculture, Soil Conservation Service maps; USGS topographical maps; State or local wetlands inventory; or other Federal agencies involved. If the proposed project is determined to potentially impact a wetland then a notice must be published in the Federal Register and an EA or EIS may be necessary.

AUDITOR(S): _____
_____BLDG/AREA/UNIT(S): _____

DATE: ____/____/____

ESO NO.: _____

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
1. Are there any wetlands located on-site?	Y N		
2. If YES to Question 2, have any projects been located in a wetland?	Y N		
3. Have any wetland assessments been developed?	Y N		
4. Have there been any consultations concerning wetland impacts and if so, with whom?	Y N		
5. What site consideration are being give to avoid, if possible, construction activities in wetlands?			
This checklist is complete.			

EXECUTIVE ORDER 12088 - FEDERAL COMPLIANCE AND POLLUTION CONTROL STANDARDS

Executive Order 12088 states that the head of each executive agency is responsible for ensuring that the agency takes all necessary actions for the prevention, control, and abatement of environmental pollution with respect to Federal facilities and activities under its control. All Federal agencies must comply with applicable administrative and procedural pollution control standards established by, but not limited to, the following Federal laws:

- o Toxic Substances Control Act (15 USC 2601 et seq.)
- o Federal Water Pollution Control Act (33 USC 1251 et seq.)
- o Public Health Service Act, as amended by the Safe Drinking Water Act (42 USC 300(f) et seq.)
- o Clean Air Act (42 USC 7401 et seq.)
- o Noise Control Act (42 USC 4901 et seq.)
- o Resource Conservation and Recovery Act (42 USC 6901 et seq.)

AUDITOR(S): _____
_____BLDG/AREA/UNIT(S): _____

DATE: ____ / ____ / ____

ESO NO.: _____

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
1. Are there policy, procedure, and reporting mechanisms for implementing the following: a. Toxic Substances Control Act? b. Federal Water Pollution Control Act? c. Public Health Service Act, as amended by the Safe Drinking Water Act? d. Clean Air Act? e. Noise Control Act? f. Resource Conservation and Recovery Act? Note: This is also required in DOE Order 5480.4, in addition to EO 12088. This checklist is complete.	Y N Y N Y N Y N Y N Y N		

**EXECUTIVE ORDER 12342 - ENVIRONMENTAL SAFEGUARDS FOR ANIMAL DAMAGE
CONTROL ON FEDERAL LANDS**

Revokes Executive Order 11643 in order to permit effective predator control with environmental safeguards under Federal statutory programs.

AUDITOR(S): _____

BLDG/AREA/UNIT(S): _____

DATE: ____/____/____

ESO NO.: _____

AUDIT QUESTIONS AND PROCEDURES

RESPONSE

REFERENCE

COMMENTS

No relevant audit questions.

This checklist is complete.

EXECUTIVE ORDER 12316 (REPLACED EO 12286) - RESPONSES TO ENVIRONMENTAL DAMAGE

Executive Order 12316 clarifies the requirements of CERCLA and reinforces the need for EPA to amend the National Contingency Plan (NCP) to include responses to hazardous substance releases. The Executive Order also identifies responsibilities of the various Federal agencies in implementing CERCLA; DOE is included as a member of the National Response Team (NRT). Specific duties of the NRT are described in 40 CFR 300.23.

AUDITOR(S): _____

BLDG/AREA/UNIT(S): _____

DATE: ____/____/____

ESO NO.: _____

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
1. Is there a mechanism for responding to a discharge of oil or a release of a hazardous substance, pollutant or contamination? (Required under CWA, Sect. 112, see CWA checklist).	Y N		
2. Is there a mechanism for reporting any releases of hazardous substances and oil discharges? See DOE Orders 5480.4, 5400.1-Ch. 4, and 5484.1-Change 2 (IV-10, No. 2) requirements.	Y N		
3. Have these mechanisms been implemented? (See Management Controls checklist)	Y N		
This checklist is complete.			

SECTION 8

RESOURCE CONSERVATION AND RECOVERY ACT

This protocol applies to Department of Energy (DOE) facilities that manage solid waste hazardous waste, or mixed waste (radioactive and hazardous), or store regulated substances in underground storage tanks (USTs). It includes a discussion of the relevant statutes and regulations (Introduction) and procedures for determining applicability of the regulations and evaluating the facilities' performance in meeting the applicable requirements (Working Papers).

1.0 INTRODUCTION

The Resource Conservation and Recovery Act of 1976 (RCRA) and the Hazardous and Solid Waste Amendments of 1984 (HSWA), which amended RCRA, provide the statutory basis for the regulation of solid waste (RCRA Subtitle D), hazardous waste (RCRA Subtitle C), and USTs (RCRA Subtitle I).

The principle objectives of RCRA, as amended, are as follows:

- o Promote the protection of human health and the environment from potential adverse effects of improper solid and hazardous waste management.
- o Conserve material and energy resources through waste recycling and recovery.
- o Reduce or eliminate the generation of hazardous waste as quickly as possible.
- o Minimize or eliminate the threat posed to groundwater by the storage of materials in underground tanks.

1.1 SOLID WASTE MANAGEMENT

Solid wastes that are not also classified as hazardous wastes are subject to regulation under Subtitle D of RCRA. State regulatory programs have primary jurisdiction over the management of solid waste. However, the U.S. Environmental Protection Agency (EPA) has promulgated regulations in 40 Code of Regulations (CFR) 240, 241, 243, and 245 that should be considered as they establish specific requirements for federal agencies. Regulations found at 40 CFR 257 may also apply.

The promulgated federal regulations cover the following areas:

- o Guidelines for the Thermal Processing of Solid Waste (40 CFR 240)
- o Guidelines for the Land Disposal of Solid Waste (40 CFR 241)
- o Guidelines for the Storage and Collection of Residential, Commercial and Institutional Solid Waste (40 CFR 243)
- o Guidelines for Resource Recovery Facilities (40 CFR 245)
- o Criteria for Classification of Solid Waste Disposal Facilities and Practices (40 CFR 257)

State requirements primarily exist for the design, construction, operation, maintenance, and closure of solid waste landfills; because states have the primary permitting authorities, their permit requirements must also be considered. Solid waste incineration would most likely also be subject to regulation under state air pollution programs.

In addition to state and EPA requirements for solid waste management, DOE Orders 5400.1 and 5482.113 apply.

1.2 HAZARDOUS WASTE MANAGEMENT AND CATEGORIES

RCRA authorizes U.S. EPA to regulate the generation, treatment, storage, transportation, and disposal of hazardous wastes. The structure of the national hazardous waste regulatory program envisioned by Congress is laid out in Subtitle C of RCRA (Sections 3001 through 3019), which provides EPA with specific authorities with respect to the following:

- o Promulgating standards governing hazardous waste generation and management
- o Promulgating standards for permitting hazardous waste treatment, storage, and disposal facilities (TSDFs)
- o Requiring corrective actions for releases of hazardous waste or hazardous waste constituents to the environment
- o Inspecting hazardous waste management facilities
- o Enforcing RCRA standards
- o Authorizing states to manage the RCRA Subtitle C program, in whole or in part, within their respective borders, subject to EPA oversight

Federal RCRA hazardous waste regulations are promulgated in 40 CFR 260 through 272. The core of the RCRA regulations establish the "cradle-to-grave" hazardous waste regulatory program through seven major sets of regulations:

- o Identification and listing of hazardous wastes (40 CFR 261)
- o Standards for generators of hazardous waste (40 CFR 262)
- o Standards for transporters of hazardous waste (40 CFR 263)
- o Standards for owners and operators of hazardous waste TSDFs (40 CFR 264, 265, and 267)
- o Standards for the management of specific hazardous wastes and specific types of hazardous waste management facilities (40 CFR 266)
- o Land disposal restriction standards (40 CFR 268)
- o Requirements for the issuance of permits to hazardous waste facilities (40 CFR 270)

The first group of federal RCRA standards was promulgated in May 1980. Additional standards have been added periodically since that time to complete the scope of the initial program mandated in RCRA, respond to new statutory initiatives, and improve the original program. HSWA provided additional significant changes to the federal hazardous waste management program.

Under Section 3006 of RCRA, EPA may authorize states to administer and enforce a state hazardous waste program, in lieu of the federal Subtitle C program, within their respective jurisdictions.

States have generally received authorization in stages for two reasons: (1) the incremental implementation of the federal RCRA program (that is, the ongoing development of regulations governing new waste management units and practices), (2) and the unavoidable lag between federal promulgation of Subtitle C standards and development and adoption of equivalent standards by the states. Thus, states may be authorized to administer the program covering certain types of waste management practices within the state and may not be authorized for other requirements, such as the land disposal restriction regulations. Therefore, some facilities in a state may be subject to state regulation, and while other facilities may be subject to federal regulation through the EPA regional offices. Facilities with several types of units may be subject to joint federal and state regulations.

The most significant differences between state and federal law generally address the following:

- o The definition of hazardous waste (for example, the State of New Jersey considers waste oil hazardous waste and federal law does not)
- o The definition of small quantity generator and length of time a waste can be stored on-site
- o State storage criteria; (for example, the State of New Jersey does not allow storage of hazardous waste in "waste piles" under any circumstances, but such storage is allowed under federal regulations).

The auditor must determine whether the state within which the facility is located is authorized, and if so, determine the differences between the federal and state programs. The RCRA Performance Checklist should be modified, as necessary, to reflect these differences.

1.2.1 Generators

The Subtitle C regulations broadly define the term "generator" to include the following:

- o Facility owner, operator, or person who first creates a hazardous waste
- o Person who first makes the waste subject to the Subtitle C regulations (for example, imports a hazardous waste, initiates a shipment of hazardous waste from a TSDF, or mixes hazardous wastes of different Department of Transportation (DOT) shipping descriptions by placing them in a single container).

To define the subset of solid waste generators who must comply with Subtitle C generator regulations, it is necessary to distinguish between generators who produce or handle nonhazardous solid waste and generators who produce or handle hazardous solid waste. Subtitle C separates these two groups by requiring all generators of solid waste to determine whether any of their waste is hazardous. Once a generator determines that all or part of the waste produced is hazardous, he or she must comply with the regulatory requirements of Subtitle C.

Generators of more than 100 kg of hazardous waste or 1 kg of acutely hazardous waste per month must (with a few exceptions) comply with all of the generator regulations developed under Subtitle C (40 CFR 262). Subtitle C requires generators to ensure and fully document that the hazardous waste they produce is properly identified and managed, including transportation to a RCRA TSDf if the waste is not disposed of on-site.

The regulatory requirements for hazardous waste generators include the following:

- o Obtaining an EPA ID number
- o Handling hazardous waste before transport
- o Manifesting waste shipments
- o Keeping records and reporting

The generator of hazardous waste has continuing liability for the waste after it leaves the site. Because of this continuing liability, the generator must carefully scrutinize off-site hazardous waste treatment, storage, and disposal vendors, as well as vendors who provide sampling and analytical services. The DOE interim policy memorandum issued by the Assistant Secretary for Environment, Safety and Health on July 24, 1986, entitled Policy on Off-Site Treatment, Storage, and Disposal of Nonradioactive Hazardous Waste, requires the generator to use "suitable" vendors as determined by consultations with EPA and the states. In addition to consultations, it may be appropriate for the generator to audit the prospective vendor's facility.

1.2.2 Transporters

A transporter under Subtitle C is defined as any person engaged in the off-site transportation of hazardous waste within the United States, if such transportation requires a manifest under 40 CFR 262. This definition covers transport by air, rail, highway, or water. The transporter regulations do not apply to the on-site transportation of hazardous waste by generators who have their own TSDFs or to TSDFs transporting wastes within a facility.

Under certain circumstances, a transporter of hazardous waste may be subject to regulatory requirements other than those contained in 40 CFR 263. Once a transporter accepts hazardous waste from a generator or another transporter, he or she can store it at a transfer station for up to 10 days without being subject to any new regulations. However, if the storage time exceeds 10 days, the transporter is considered a storage facility and must comply with the regulations for such a facility. In addition, transporters who bring hazardous waste into the United States or mix hazardous wastes of different DOT shipping descriptions by placing them in the same container are classified as generators and must comply with the regulations applicable to generators.

A transporter is subject to a number of regulations, including ones for the following:

- o Obtaining an EPA ID number
- o Complying with the manifest system
- o Dealing with hazardous waste discharges

1.2.3 Treatment, Storage, and Disposal Facilities

TSDFs are the last link in the cradle-to-grave hazardous waste management system. Subtitle C requires all TSDFs handling hazardous waste to obtain an operating permit and abide by the TSDF regulations. The TSDF regulations establish performance standards that owners and operators must apply to minimize the release of hazardous waste into the environment. Because treatment, storage, and disposal of waste involve many different types of facilities (such as a landfill or an incinerator), these regulations are far more extensive than those for generators and transporters.

The definition of a TSDF, according to 40 CFR 260.10, encompasses three different functions:

- o Treatment -- Any method, technique, or process, including neutralization, designed to change the physical, chemical, or biological character or composition of any hazardous waste so as to neutralize it, recover material from it, or render it nonhazardous or less hazardous, safer to transport, store, or dispose of, or amenable for recovery, storage, or volume reduction
- o Storage -- The holding of hazardous waste for a temporary period, at the end of which the hazardous waste is treated, disposed of, or stored elsewhere
- o Disposal -- The discharge, deposit, injection, dumping, spilling, leaking, or placing of any solid waste or hazardous waste into or on any land or water so that any constituent thereof may enter the environment or be emitted into the air or discharged into any waters, including ground waters.

TSDFs are required to meet two sets of standards. The first set of standards or requirements includes those considered administrative and nontechnical and generally applies to all facilities. These include requirements such as preparedness and prevention, contingency planning, waste analysis, security, and training. A full listing of these requirements is contained in 40 CFR 265 Subparts B, C, D, and E. The financial responsibility requirement found in Subpart H does not apply to federal facilities.

The second set of requirements are those more technical in nature. Some of these requirements, such as ground-water monitoring and closure, apply to several types of facilities. These requirements can be found in 40 CFR 265 Subparts F and G. Other technical requirements apply according to the nature of the waste management activity. These requirements are found in 40 CFR 265 Subparts I through R. The waste management units covered include containers; tanks; surface impoundments; waste piles; land treatment areas; landfills; incinerators; thermal treatment units; chemical, physical, and biological treatment units; and underground injection.

TSDFs are required to obtain operating permits. Until they receive a permit from EPA or an authorized state, TSDFs are allowed to operate on an interim basis under the standards described above. These general interim status standards are replaced with more facility-specific operating standards and conditions when a permit is issued. These standards are found in 40 CFR 264. To determine the requirements that a permitted facility must meet, a detailed review of the operating permit is necessary. Although the regulations provide a guide, the permit requirements are tailored to the specific facility. The required management plans, such as the waste analysis plans, the contingency plans, and the closure and post-closure care plans will have already been reviewed and approved by the regulatory agencies during the permitting process. The purpose of an audit at a permitted facility would be, in part, to evaluate whether the approved plans are being followed. Permits may also contain compliance schedules for implementation of certain requirements, such as corrective action.

The standards and requirements discussed above are the minimal federal requirements. Many authorized states have requirements that are identical; however, some states may have more stringent requirements.

1.2.4 Recycling Facilities

Regulations found at 40 CFR 266 address the operation of specific hazardous waste management facilities involved in recycling waste or recovering energy from waste. These regulations define the applicability of the previously discussed standards of 40 CFR 262, 263, 264, and 265 to such operations.

1.3 UNDERGROUND STORAGE TANKS

Congress created a new program under HSWA (Subtitle I) to control and prevent leakage from USTs. An "underground storage tank" is defined as any tank with at least 10 percent of its volume buried below ground, including any pipes attached to the tank. Thus, aboveground tanks with extensive underground piping may be regulated under the new law. The UST program breaks new ground because for the first time, the RCRA program applies to products as well as wastes. Subtitle I regulates underground tanks storing petroleum products (including gasoline and crude oil) and any substance defined as hazardous under the Comprehensive Environmental Response, Compensation and Liability Act. It is important to note that Subtitle I does not regulate tanks storing hazardous wastes as defined by RCRA, since these tanks are already regulated under Subtitle C.

Subtitle I requires EPA to develop performance standards for new tanks and regulations for leak detection, prevention, and correction at all underground tank sites. Regulations for the management of USTs are found in 40 CFR 280. While the regulations are being developed, the amendments impose an interim standard (effective since May 7, 1985), that bars installation of unprotected tanks under most conditions.

1.4 FACILITIES WITH FINAL RCRA PERMITS

The Department of Energy (DOE) facility to be audited has been issued a Resource Conservation and Recovery Act (RCRA) permit by either the U.S. Environmental Protection Agency (EPA) or an authorized State, or perhaps by both agencies. The issuance of the permit terminates interim status at the facility and establishes a new set of standards and regulations that must be met. In preparing to conduct an audit at a permitted facility, the auditor must understand the nature of this new set of standards. For some operations, they are identical to the interim status standards. Generic standards apply to any and all permitted facilities. There are standards similar in nature to the interim status standards but with some significant differences. Standards for certain types of processes are substantially different from the interim status standards and may be tailored to the particular facility. Finally, each facility may have specific permit conditions unique to that particular facility. Following is a brief discussion of the various permit standards and conditions that may apply, as described in the Code of Federal Regulations (CFR).

1.4.1 40 CFR 270

Standards found at 40 CFR 270, Subpart C, apply to all facilities that have received a permit. They generally deal with a variety of reporting requirements. Subparts D and E deal with administrative requirements for modifying permits and extending permits. This regulation also allows the establishment of compliance schedules that may be unique to each permit and facility.

1.4.2 40 CFR 264

Standards found at 40 CFR 264 deal with the technical operation at the facility. They are similar in nature to the interim status standards found at 40 CFR Part 265. These operational standards can be divided into three categories. First are standards virtually identical to the interim status standards. These would include standards found at 40 CFR 264 Subparts B, C, D, E, and G. Second are standards similar to the interim status standards that apply to certain management practices, such as storage in containers. These standards would include 40 CFR 264 Subparts I, J, K, L, and N. Finally, standards found at 40 CFR 264 Subparts F, M, O, and X are substantially different from their interim status counterparts.

1.4.3 Special Conditions

The language in 40 CFR 270.32(b) allows the regional administrator or State director to include terms and conditions determined to be "necessary to protect human health and the environment." A permit may include such conditions. In addition, compliance schedules may or may not be associated with these special conditions.

Checklists have been prepared to guide the auditor in evaluating the facility's performance in meeting its permit conditions. These checklists include those conditions applicable to all permitted facilities and those conditions applicable to facilities with certain management processes.

Checklists for special conditions unique to a given facility must be prepared by the auditor. The same format should be followed as for the other requirements. It is therefore critical to review the facility's permit in advance of the audit so that special conditions and compliance schedules can be identified and checklists prepared.

Compliance schedules are generally covered in the generic permit conditions portion of the checklist. Specific checklists may need to be prepared to evaluate the facility's performance in meeting specific compliance schedule requirements.

The following list of RCRA Hazardous Waste Permit (R-HP) Performance Checklists will aid the auditor in determining which checklists to complete for a facility that has been issued a final RCRA permit. These checklists will cover only those activities for which a permit has been issued. Other hazardous waste requirements such as those for generators or transporters may still apply.

1.5 KEY DEFINITIONS

Following are some important definitions to aid in understanding the solid waste, hazardous waste, and USTs regulatory programs. These definitions are extracted from the regulations found in 40 CFR.

1.5.1 Solid Waste

Solid wastes includes garbage, refuse, sludges, and other discarded solid materials resulting from industrial and commercial operations and from community activities. It does not include solids or dissolved material in domestic sewage or other significant pollutants in water resources, such as silt, dissolved or suspended solids in industrial wastewater effluents, dissolved materials in irrigation return flows or other common water pollutants.

Transfer station refers to a site at which solid wastes are concentrated for transport to a processing facility or land disposal site. A transfer station may be fixed or mobile.

Bottom ash is the solid material that remains on a hearth or falls off the grate after thermal processing is complete.

Fly ash includes suspended particles, charred paper, dust, soot, and other partially oxidized matter carried in the products of combustion.

Daily cover is cover material that is spread and compacted on the top and side slopes of compacted solid waste at least at the end of each operating day to control vectors, fire, moisture, and erosion and to ensure an aesthetic appearance.

Leachate is liquid that has percolated through solid waste and has extracted dissolved or suspended materials from the wastes.

Sanitary landfill is a land disposal site using an engineered method of disposing of solid wastes on land in a manner that minimizes environmental hazards by spreading the solid wastes in thin layers, compacting the solid wastes to the smallest practical volume, and applying and compacting cover material at the end of each operation day.

Infectious waste includes (1) equipment, instruments, utensils, and fomites of a disposal nature from the rooms of patients who are suspected to have or who have been diagnosed as having a communicable disease and must therefore be isolated as required by public health agencies; (2) laboratory wastes, such as pathological specimens (for example, all tissues, specimens of blood elements, excreta, and secretions obtained from patients or laboratory animals) and disposable fomites (any substance that may harbor or transmit pathogenic organisms) attendant thereto; and (3) surgical operating room pathological specimens and disposable fomites attendant thereto and similar disposal materials from outpatient areas and emergency rooms.

Mining wastes includes residues resulting from the extraction of raw materials from the earth.

Other relevant definitions associated with the management of solid waste can be found in 40 CFR 240.101, 241.101, 243.101, 245.101, and 257.2.

1.5.2 Hazardous Waste

Hazardous waste is defined in 40 CFR 261.3. A hazardous waste is a solid waste that is not excluded from regulation under 40 CFR 261.4(h) and meets one of the following criteria:

- o It exhibits any of the characteristics of ignitability, corrosivity, reactivity, or extraction procedure (EP) toxicity.
- o It is listed in 40 CFR 261 Subpart D.
- o It is a mixture of solid waste and a waste listed in 40 CFR 261 Subpart D.

The definition of a hazardous waste is very complex and a thorough review of the regulations found at 40 CFR 261.3 is necessary to determine whether a solid waste is also a hazardous waste.

Radioactive waste is solid, liquid, or gaseous material that contains radionuclides regulated under the Atomic Energy Act of 1954, as amended, and of negligible economic value considering costs of recovery.

Mixed waste is any waste that meets the definition of a hazardous waste and contains radioactive waste.

Hazardous waste management unit refers to a contiguous area of land on or in which hazardous waste is placed, or the largest area in which there is significant likelihood of mixing hazardous waste constituents in the same area. Examples of hazardous waste management units include a surface impoundment, a waste pile, a land treatment area, a landfill cell, an incinerator, a tank and its associated piping and underlying containment system, and a container storage area. A container alone does not constitute a unit; the unit includes containers and the land or pad upon which they are placed.

Existing hazardous waste management (HWM) facility or existing facility refers to a facility that was in operation or for which construction commenced on or before November 19, 1980. A facility has commenced construction if any of the following conditions have been met:

- o The owner or operator has obtained the federal, state, and local approvals or permits necessary to begin physical construction.
- o A continuous on-site physical construction program has begun.
- o The owner or operator has entered into contractual obligations, which cannot be canceled or modified without substantial loss, for physical construction of the facility to be completed within a reasonable time.

Facility refers to all contiguous land and structures, other appurtenances, and improvements on the land used for treating, storing, or disposing of hazardous waste. A facility may consist of several treatment, storage, or disposal operational units (such as one or more landfills, or surface impoundments, or combinations of them).

Manifest refers to the shipping document, EPA Form 8700-22 and, if necessary, EPA Form 8700-22A, originated and signed by the generator in accordance with the instructions included in the Appendix 40 to CFR 262.

Container refers to any portable device in which a material is stored, transported, treated, disposed of, or otherwise handled.

Tank refers to stationary device, designed to contain an accumulation of hazardous waste, that is constructed primarily of nonearthen material (such as wood, concrete, steel, or plastic), that provides structural support.

Surface impoundment or impoundment refers to a facility or part of a facility that is a natural topographic depression, manmade excavation, or diked area, formed primarily of earthen materials (although it may be lined with manmade materials), that is designed to hold an accumulation of liquid wastes or wastes containing free liquids and is not an injection well. Examples of surface impoundments are holding, storage, settling, and aeration pits, ponds, and lagoons.

Disposal facility refers to a facility or part of a facility where hazardous waste is intentionally placed into or on any land or water, and at which waste will remain after closure.

Wastewater treatment unit refers to a device that does the following:

- o Acts as part of a wastewater treatment facility subject to regulation under Section 402 or 307(b) of the Clean Water Act
- o Receives and treats or stores an influent wastewater that is a hazardous waste as defined in 261.3 that generates and accumulates a wastewater treatment sludge that is a hazardous waste as defined in 40 CFR 261.3 or that treats or stores a wastewater treatment sludge that is a hazardous waste as defined in 40 CFR 261.3
- o Meets the definition of tank in 40 CFR 260.10

Land disposal refers to placement in or on the land and includes, but is not limited to, placement in a landfill, surface impoundment, waste pile, injection well, land treatment facility, salt dome formation, salt bed formation, or underground mine or cave, or placement in a concrete vault or bunker intended for disposal purposes.

Leak-detection system refers to a system that can detect the failure of either the primary or secondary containment structure or the presence of a release of hazardous waste or accumulated liquid in the secondary containment structure. Such a system must use operational controls (for example, daily visual inspections for releases into the secondary containment system or aboveground tanks) or consist of an interstitial monitoring device designed to detect continuously and automatically the failure of the primary or secondary containment structure or the presence of a release of hazardous waste into the secondary containment structure.

Liner refers to continuous layer of natural or manmade materials, beneath or on the sides of a surface impoundment, landfill, or landfill cell, that restricts the downward or lateral escape of hazardous waste, hazardous waste constituents, or leachate.

Totally enclosed treatment facility refers to a hazardous waste treatment facility that is directly connected to an industrial production process and that is constructed and operated in a manner that prevents the release of any hazardous waste or any constituent thereof into the environment during treatment. An example is a pipe in which waste acid is neutralized.

Partial closure means the closure of a hazardous waste management unit in accordance with the applicable closure requirements of 40 CFR 264 and 265 at a facility that contains other active hazardous waste management units. For example, partial closure may include the closure of a tank (including its associated piping and underlying containment systems), landfill cell, surface impoundment, waste pile, or other hazardous waste management unit, while other units of the same facility continue to operate.

Final closure means the closure of hazardous waste management units at the facility in accordance with all applicable closure requirements so that hazardous waste management activities under 40 CFR 264 and 265 are no longer conducted at the facility unless subject to the provisions in 262.34.

Additional relevant definitions can be found at 40 CFR 260.10, 268.2 and 270.2.

1.5.3 Underground Storage Tanks

Regulated substances include the following:

- o Any substance defined in Section 101(14) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (but not including any substance regulated as a hazardous waste under Subtitle C of RCRA, as amended).
- o Petroleum, including crude oil or any fraction thereof, that is liquid at standard conditions of temperature and pressure (60 degree symbol and 14.7 lb/sq in.

Release refers to any spilling, leaking, emitting, discharging, escaping, leaching, or disposing from an UST into ground water, surface water, or subsurface soils.

Underground storage tank refers to any one tank or combination of tanks (including underground pipes connected thereto) used to contain an accumulation of regulated substances and the volume of which (including the volume of the underground pipes connected thereto) is 10 percent or more beneath the surface of the ground. This term does not include the following:

- o Farm or residential tank of 1,100 gallons or less capacity used for storing motor fuel for noncommercial purposes
- o Tank used for storing heating oil for consumptive use on the premises where stored
- o Septic tank
- o Pipeline facility (including gathering lines)
 - Regulated under the Natural Gas Pipeline Safety Act of 1968 (49 U.S.C. App. 1671, et seq.),
 - Regulated under the Hazardous Liquid Pipeline Safety Act of 1979 (49 U.S.C. App. 2001, et seq.), or
 - Considered an intrastate pipeline facility regulated under state laws comparable to the provisions of law referred to in paragraphs of this definition.
- o Surface impoundment, pit, pond, or lagoon
- o Storm water or wastewater collection system
- o Flow-through process tank
- o Liquid trap or associated gathering lines directly related to oil or gas production and gathering operations

- o Storage tank situated in an underground area (such as a basement, cellar, mine working, drift, shaft, or tunnel) if the storage tank is situated upon or above the surface of the undesignated floor
- o Any pipes connected to any tank described in the above paragraphs of this definition.

1.6 RECENT REGULATORY CHANGES

Since June 1, there have been several significant changes in the RCRA regulatory scheme. Those changes are listed in List of Significant RCRA Regulatory Changes, which follows the List of Checklists at the end of this introductory narrative.

2.0 CORRECTIVE ACTION GUIDANCE

This section is based on a draft of a proposed regulation. The final regulation will be a new "Subpart S: Corrective Action for Solid Waste Management Unit," 40 Code of Federal Regulations (CFR) 264.500 through 264.560. Before beginning an audit, check to see if this draft has been superseded by a proposed regulation published in the Federal Register or by the final regulation. This section reflects current procedures and nomenclature, but these are subject to change.

This guidance is designed to assist the auditor in using checklist R-HP-CS, Permit Compliance Schedules. The first section discusses the situations in which the Corrective Action Process may be invoked. The second discusses the process itself. The third section gives guidance on evaluating a site's status.

2.0 CORRECTIVE ACTION AUTHORITY

The Hazardous and Solid Waste Amendments of 1984 greatly expanded the U.S. Environmental Protection Agency's (EPA's) authority to require a facility with a permit for a treatment, storage, or disposal unit to undertake corrective action to remediate any releases of hazardous wastes or hazardous constituents from any solid waste management unit (SWMU) at the site. Specifically, all permits issued after November 8, 1984, must address corrective action and must include a compliance schedule if the action is not completed by the time the permit is issued. Furthermore, these actions may be required beyond the site boundary if the waste has spread that far. Finally, EPA may require corrective action at an interim status facility (operating under 40 CFR 265) even before the facility receives a full (40 CFR 264) permit.

The most common corrective action is a remedial investigation (formerly called a RCRA (Resource Conservation and Recovery Act) facility investigation, or RFI). If appropriate, the corrective action activities will continue into later stages, as discussed below. Note particularly that this investigation applies to the entire U.S. Department of Energy (DOE) site, not just the SWMU, which is the EPA-regulated facility. In addition, this process may begin before the final permit is applied for, usually under a federal facility compliance agreement. Closed sites will normally be regulated under the practically similar Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) process, but EPA may also invoke CERCLA at an operating site.

To minimize confusion, this document uses the term "facility" to mean a permitted treatment/storage/disposal SWMU and the term "site" to mean the entire contiguous DOE-owned or-operated property, which includes the facility. For example, the site "Oak Ridge" includes Oak Ridge National Laboratory, the K-25 (Gaseous Diffusion Plant) area, the Y-12 area, and all other contiguous DOE-owned property. Bear Creek Industrial Park is not part of the site because it is not DOE-owned; however, it may be included in a corrective action if Oak Ridge contamination has migrated off-site into it. The EPA regulations generally use the term "facility" in both senses.

2.1 THE CORRECTIVE ACTION PROCESS

This section discusses the complete corrective action process. If the initial remedial investigation finds no release of hazardous waste or hazardous constituents that may pose a threat to human health or the environment, EPA will allow the facility to omit further actions. Conversely, large, complex sites such as Hanford and Oak Ridge may be divided into convenient units and a separate, independent corrective action process may be carried out for each unit. The full corrective action process for a single unit consists of the following stages:

- o Remedial investigation (RI)
- o Decision
- o Corrective measures study (CMS)
- o Remedy selection
- o Remedy design and implementation
- o Completion of remedy
- o Optional measures

These stages will be discussed in the following sections.

2.1.1 Remedial Investigation

The corrective action process begins with an RI (formerly called an RFI), detailed in 40 CFR 264.510 through 264.513. The RCRA facility permit will contain specific requirements for the RI. These requirements will typically include a list of the SWMUs and environmental media (such as soil and groundwater) to be studied and the type of studies to be done, as well as "action levels" for specific constituents of the media. The site will develop and implement a plan to determine whether those action levels have been exceeded by any constituent in any medium. Specific subjects for the RI will typically include the following:

- o Environmental setting of the site, including hydrogeology, climatology, soil characteristics, surface-water and sediment characteristics, and air-quality characteristics
- o Characterization of SWMUs
- o Descriptions of potential human and environmental receptors
- o Information to assist the EPA in assessing risks posed by releases from SWMUs
- o Estimation of future movement, degradation, and fate of contaminants
- o Laboratory, bench-scale, or pilot-plant studies of treatment technologies
- o Statistical analyses of data

In most cases, EPA will require the site to submit its work plan for review before the work begins. In many cases, periodic reports of results will be required, especially for phased studies. In all cases, a final report will be required. The permit will include the compliance schedule and other appropriate details for meeting these requirements.

2.1.2 Decision

Under 40 CFR 264.514, the site may request that EPA terminate the compliance schedule because the site has demonstrated that there are no releases of hazardous waste or hazardous constituents from SWMUs that may pose a threat to human health or the environment. If EPA agrees, the permit will be modified to delete all further corrective actions. However, if future releases are likely, the EPA may still require continuous or periodic monitoring. In addition, if new information implies that a significant risk has occurred, the corrective action process will be restarted.

2.1.3 Corrective Measures Study

The EPA will specify a CMS, which corresponds to a CERCLA feasibility study (FS), under 40 CFR 264.520 through 264.524, if any "action levels" have been exceeded. These action levels are health- and environmental-based concentrations EPA uses as indicators. They will usually be incorporated in the permit. Action levels are not absolute limits; a CMS may be required if a lesser concentration poses a threat or omitted if a greater concentration does not pose a threat. Furthermore, these action levels are always technically controversial and subject to change.

EPA will specify the scope of the CMS. In many cases, the CMS will be simpler than a CERCLA FS because the problem is simpler, or the remedial options are fewer, or for similar reasons. However, complex problems such as contamination from a mixture of different chemical species posing different biological risks and requiring different treatments (for instance, alpha-emitters, radioactive heavy metals, solvents, and volatile organic chemicals), will require an extensive CMS. Typical portions of a CMS include the following:

- o Evaluation of a treatment, including performance, reliability, ease of implementation, and potential effects, such as safety during use, residual contamination, and cross-media transfer (such as volatilization of soil-bound organic chemicals)
- o Assessment of the effectiveness of a remedy (one or more treatments) in controlling a source and cleaning up a release
- o Estimation of the time and dollars required to implement a remedy
- o Assessment of institutional requirements, such as State or local permit requirements

The EPA may specify a particular remedy or remedies to be considered. It may require approval of the CMS plan before work begins and may require periodic progress reports. The contents of these reports may justify modifications of the specific requirements and schedule for the CMS. The site will submit a final CMS report.

2.1.4 Remedy Selection

After the CMS report is submitted, EPA will select the remedy to be used at the site and will modify the permit to specify that remedy, following the procedures in 40 CFR 264.525 and 264.526. This step corresponds to the CERCLA record of decision (ROD). This modification will include a compliance schedule, reporting requirements, cleanup standards for each relevant medium, and special

requirements for handling wastes under the newly added regulations of this subpart (40 CFR 264.550 through 264.559). These waste requirements are based on the ordinary RCRA procedures but allow exceptions for temporary units.

2.1.5 Remedy Design and Implementation

After remedy selection, the site will design and administer the prescribed remedy under the provisions of 40 CFR 264.527 through 264.529 and the conditions of the permit modification.

2.1.6 Completion of Remedy

Once the site has finished the corrective action, it will send EPA a certification of completion and a request that the compliance schedule be terminated. If EPA agrees that the corrective action is complete as defined in 40 CFR 264.530, it will modify the permit appropriately. Complex sites will usually be corrected in separate phases, which will be handled separately.

2.1.7 Optional Measures

The corrective action regulations and the accompanying preamble contain a number of optional measures to be used in special circumstances. The preamble states: **"In managing the corrective action program, the Agency will place its highest priority at the most environmentally significant facilities and on the most significant problems at specific facilities"** (EPA's emphasis). Some DOE sites may therefore become major targets of regulatory attention. To further expedite cleanup, EPA is encouraging the owner to carry out what it calls "voluntary corrective action," that is, to begin the process before being required to by EPA under the permit issuance procedures. This is especially the case for sites with low-priority (to EPA) contamination problems. If the proposed voluntary remedy involves substantial modification of a permitted facility, the site must request permit modification; however, EPA intends to expedite this sort of modification. If no such modifications are needed, the site should notify EPA and the State of its plans. EPA reserves the right to check the results of any voluntary activities and to determine whether any additional corrective actions are required.

Sometimes a site may find that it is not technically practicable to comply with a permit requirement. The site will report the problem to EPA under 40 CFR 264.531. EPA will consider the problem and modify the permit schedule of compliance as necessary to meet the overall objectives (eliminate risk).

At times, EPA may conclude that the regular corrective action process is too slow or that targets (nearby population, drinking water supplies, sensitive ecosystems, and so on) are already being exposed to the contamination, there is a risk of fire or explosion, containers pose a threat of release, or other similar problems exist. Under 40 CFR 264.540, EPA may then include in the permit "interim measures" to abate, minimize, stabilize, mitigate, or eliminate the release or threat of release. These interim measures will be implemented as soon as practicable, following the included compliance schedule. The final cleanup will then follow the regular process. This option is similar to the "removal actions" carried out under CERCLA.

There are also new provisions in 40 CFR 264.560 for notification of releases. If the site finds that hazardous constituents in groundwater exceed the prescribed action levels (referred to in 2.1 and 2.3 above) at any location beyond the site boundary, the site must notify EPA and affected land owners and residents in writing within 15 days of discovery. Similar provisions apply to air releases. If soil contamination will remain after the permit expires, EPA may require the site to put an appropriate notice in the deed. A proposed addition to 40 CFR 270.30(l) requires the site to inform EPA of newly

discovered SWMUs and releases of hazardous wastes within 30 days (SWMUs) or 20 days (releases) of discovery. This information will be used to start (or modify) the corrective action process.

2.2 EVALUATION PROCEDURES

This section is a brief summary of suggested procedures for evaluating a site's adherence to its compliance schedule for corrective actions. Before beginning examination of a site, the auditor should become familiar with the corrective action process, as outlined above.

The first step is to determine what compliance schedule is required by EPA in the permit. As discussed above, this schedule will generally consist of a series of deliverables (reports and completion certifications) with accompanying dates.

Next, examine the site's files for correspondence and reports on the corrective actions taken. Key items include the following:

- o Variations in requirements allowed by EPA in advance of a formal permit modification
- o Timely submission of deliverables
- o Adequacy of deliverables, determined by EPA's reaction to receipt of the deliverables

Also look for related nonrequired actions, such as searches for possible additional SWMUs and old releases. Some such actions are required under DOE policy; see the applicable checklist (Environmental Management). Look for evidence that the site is planning for compliance with future deadlines by appropriate budget requests; acquisition of necessary skills and equipment by contract, hire, or purchase; and other appropriate measures.

Finally, rate the site's performance. To be satisfactory ("S"), a site must submit all deliverables in acceptable condition by the required date and must have made adequate provision for meeting deadlines not yet reached. Any exceptions merit an unsatisfactory ("U"), but the degree of noncompliance can vary widely. If the site has chronic problems meeting the compliance schedules, a further investigation of underlying causes should be done, under the Environmental Management checklist. If a site is well beyond the requirements, especially if it carries out voluntary corrective actions that result in complete cleanup of a SWMU or spill (that is, no further remediation is necessary), consider giving the site a commendation.

LISTING OF SIGNIFICANT RCRA REGULATORY CHANGES

This list summarizes recent final RCRA regulations promulgated by EPA since June 1, 1989.

<u>DATE</u>	<u>FEDERAL REGISTER NOTICE</u>	<u>DESCRIPTION</u>
6-14-89	54 FR 25416	RCRA Land Disposal Restrictions Program-Injection Wells (Part 148)
6-23-89	54 FR 26594	RCRA Land Disposal Restrictions Program-Second Third (Part 268)
6-27-89	54 FR 27114	RCRA Delisting Procedures-Analysis of hazardous constituents in mixtures (260.22)
8-14-89	54 FR 33376	RCRA Closure Standards-Delay of Closure for surface impoundments and landfills (Parts 264, 265, & 270)
9-01-89	54 FR 36592	RCRA Exclusions from Definition of Hazardous Waste-Clarifications (261.4 (b) (7))
9-06-89	54 FR 36962	RCRA Land Disposal Restrictions Program-Technical Corrections to First Third Final Rule (8-19-88)
9-29-89	54 FR 40260	RCRA Test Methods for Solid and Hazardous Waste-New test methods introduced into SW-846
10-6-89	54 FR 41402	RCRA Hazardous Wastes-New listings (K 131 & K 132) (261.32)
12-11-89	54 FR 50968	RCRA Hazardous Wastes-New listings (F024 & F025) (261.31)

LIST OF RESOURCE CONSERVATION AND RECOVERY ACT (RCRA) CHECKLISTS

<u>Performance Checklist</u>	<u>Revision No.</u>	<u>Date</u>	<u>Checklist Title</u>
R-APP-1	0	12/29/89	Applicability Checklist
R-H-CSQ	0	12/29/89	Conditionally Exempt Small Quantity Generator
R-H-SQG	0	12/29/89	Small Quantity Generator Requirements
R-H-GEN/ON	0	12/29/89	Generator Standards for On-Site TSDF
R-H-GEN/OFF	0	12/29/89	Generator Standards for Off-Site TSDF
R-H-TR	0	12/29/89	Transporter Requirements
R-H-PE	0	12/29/89	Permits
R-H-B	0	12/29/89	General Facility Standards
R-H-BPT	0	12/29/89	Personnel Training Requirements
R-H-C	0	12/29/89	Preparedness and Prevention
R-H-D	0	12/29/89	Contingency Plan and Emergency Procedures
R-H-E	0	12/29/89	Manifest System, Recordkeeping and Reporting Requirements
R-H-F	0	12/29/89	Groundwater Monitoring Requirements
R-H-G	0	12/29/89	Closure and Post-Closure Plan
R-H-I	0	12/29/89	Use and Management of Containers
R-H-J	0	12/29/89	Tank Systems
R-H-K	0	12/29/89	Surface Impoundments
R-H-L	0	12/29/89	Waste Piles
R-H-M	0	12/29/89	Land Treatment
R-H-N	0	12/29/89	Landfills
R-H-O	0	12/29/89	Incinerators
R-H-P	0	12/29/89	Thermal Treatment Units
R-H-Q	0	12/29/89	Chemical, Physical, and Biological Treatment Units

LIST OF RESOURCE CONSERVATION AND RECOVERY ACT (RCRA) CHECKLIST (Continued)

Performance Checklist	Revision No.	Date	Checklist Title
R-H-R	0	12/29/89	Underground Injection
R-H-LDR	0	12/29/89	Land Disposal Restriction Requirement
R-H-MIN	0	12/29/89	Waste Minimization Activities
R-H-RC	0	12/29/89	Recyclable Materials Used in a Manner Constituting Disposal
R-H-RD	0	12/29/89	Hazardous Waste Burned for Energy Recovery
R-H-RE	0	12/29/89	Used Oil Burned for Energy Recovery
R-S-SC	0	12/29/89	Storage and Collection of Solid Waste
R-S-T	0	12/29/89	Thermal Processing of solid Waste
R-S-LD	0	12/29/89	Land Disposal of Solid Waste
R-S-R	0	12/29/89	Resource Recovery
R-S-F	0	12/29/89	Classification of Special Solid Waste Disposal Facilities
R-UST	0	12/29/89	Underground Storage Tank Stands
R-HP-B	0	12/29/89	General Facility Standards
R-HP-BPT	0	12/29/89	Personnel Training Requirements
R-HP-C	0	12/29/89	Preparedness and Prevention
R-HP-D	0	12/29/89	Contingency Plan and Emergency Procedures
R-HP-E	0	12/29/89	Manifest Systems, Recordkeeping, and Reporting Requirements
R-HP-F	0	12/29/89	Release from Solid Waste Management Units
R-HP-G	0	12/29/89	Closure and Post-Closure Plan
R-HP-I	0	12/29/89	Use and Management of Containers
R-HP-J	0	12/29/89	Tank Systems

LIST OF RESOURCE CONSERVATION AND RECOVERY ACT (RCRA) CHECKLIST (Continued)

Performance Checklist	Revision No.	Date	Checklist Title
R-HP-K	0	12/29/89	Surface Impoundments
R-HP-L	0	12/29/89	Waste Piles
R-HP-M	0	12/29/89	Land Treatment
R-HP-N	0	12/29/89	Landfills
R-HP-O	0	12/29/89	Incinerators
R-HP-X	0	12/29/89	Miscellaneous Units
R-HP-SC	0	12/29/89	Special Conditions
R-HP-CS	0	12/29/89	Compliance Schedules
R-HP-S	0	12/29/89	Corrective Action

Auditor: _____ Contact: _____
ESO(s): _____ All _____

APPLICABILITY OF RESOURCE CONSERVATION AND
RECOVERY ACT REGULATIONS

Figure 1: Definition of Solid Waste

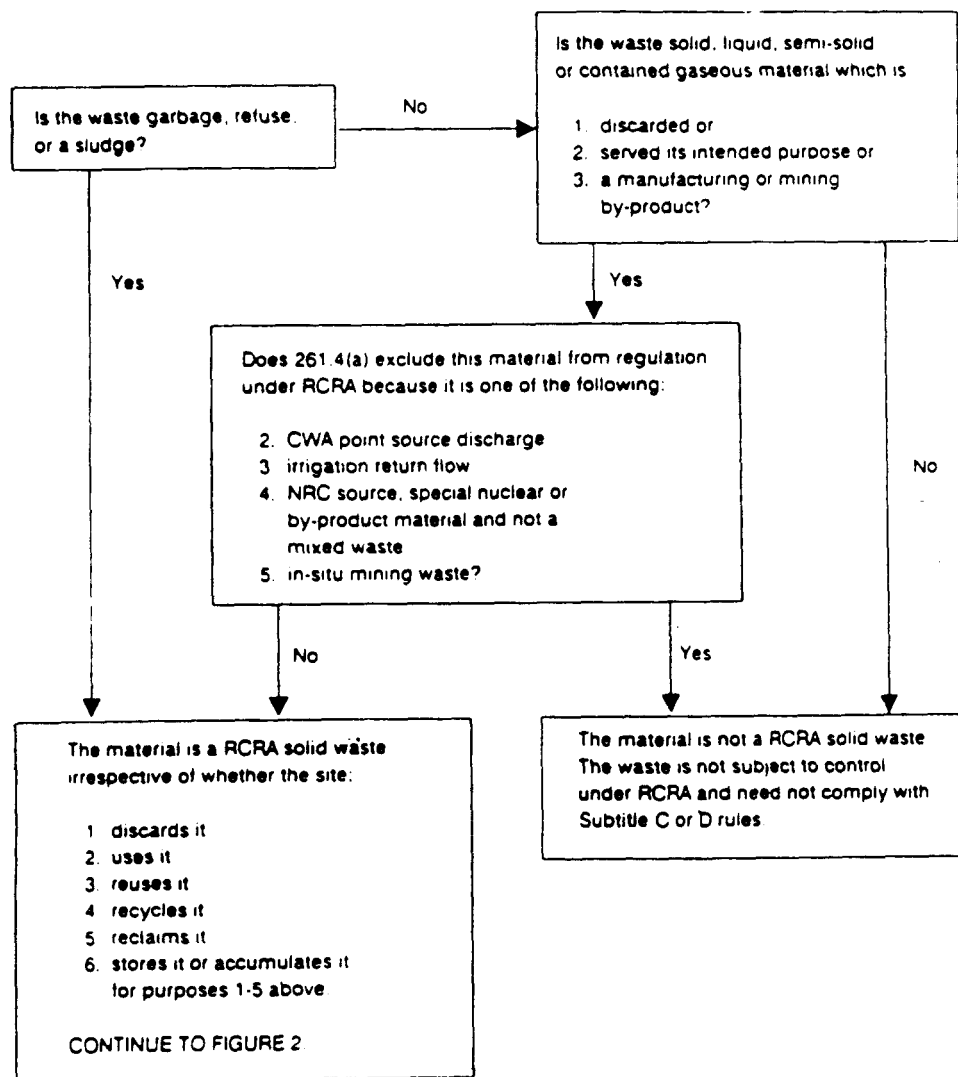


Figure 2: Definition of Hazardous Waste

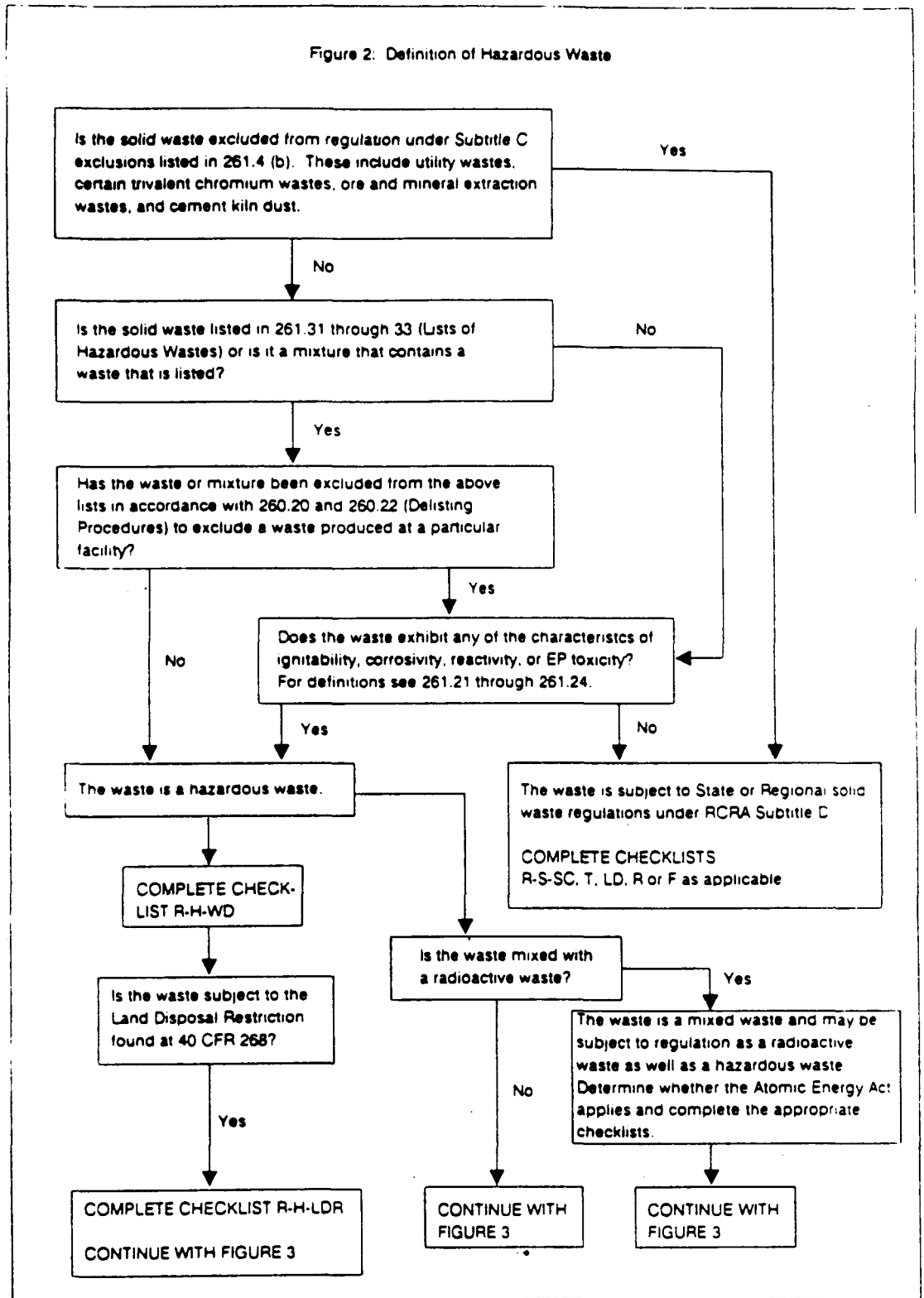
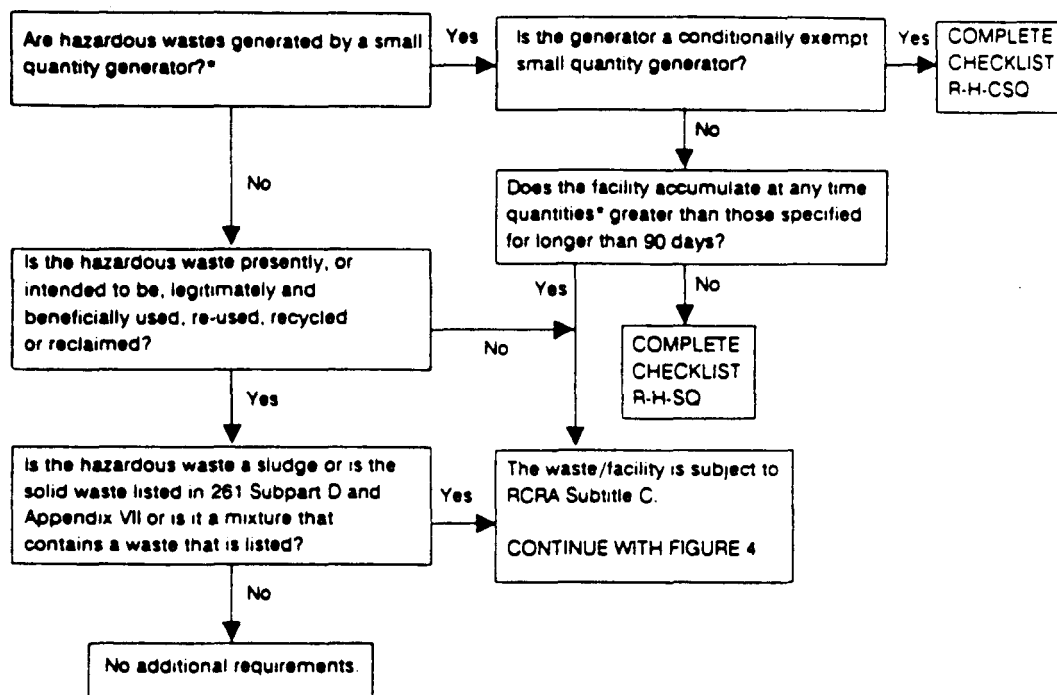


Figure 3: Special Provisions for Certain Wastes



- * A generator is a small quantity generator if he generates in every calendar month greater than 100 kilograms and less than 1000 kilograms of hazardous waste, less than 1 kg of acutely hazardous waste (as listed in 261.33(e)) and less than 100 kg of soil, water or other debris resulting from spills of acutely hazardous wastes. Quantities may vary from state to state. A conditionally exempt small quantity generator generates less than 100 kilograms per month.

Figure 4: Hazardous Waste Management

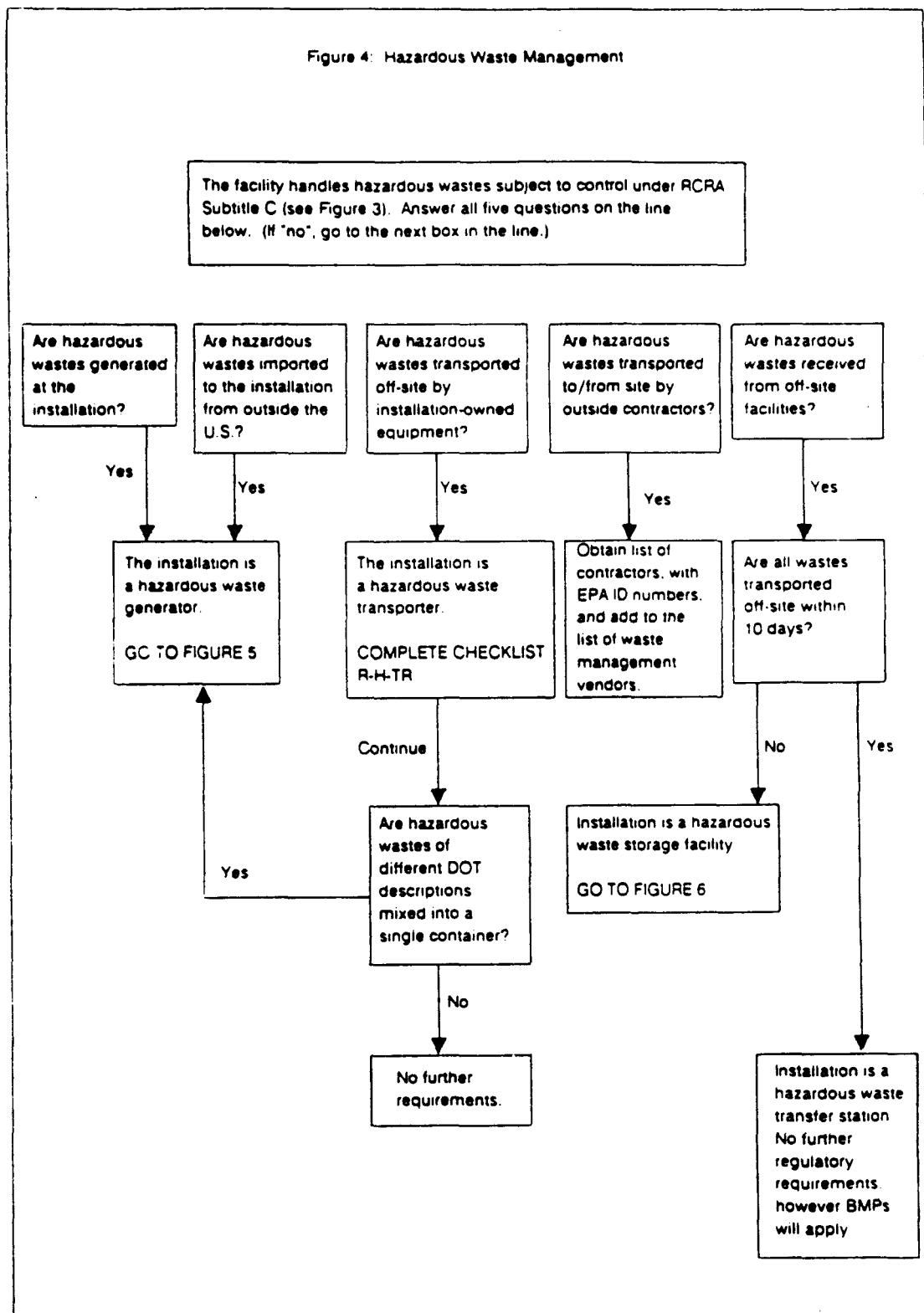
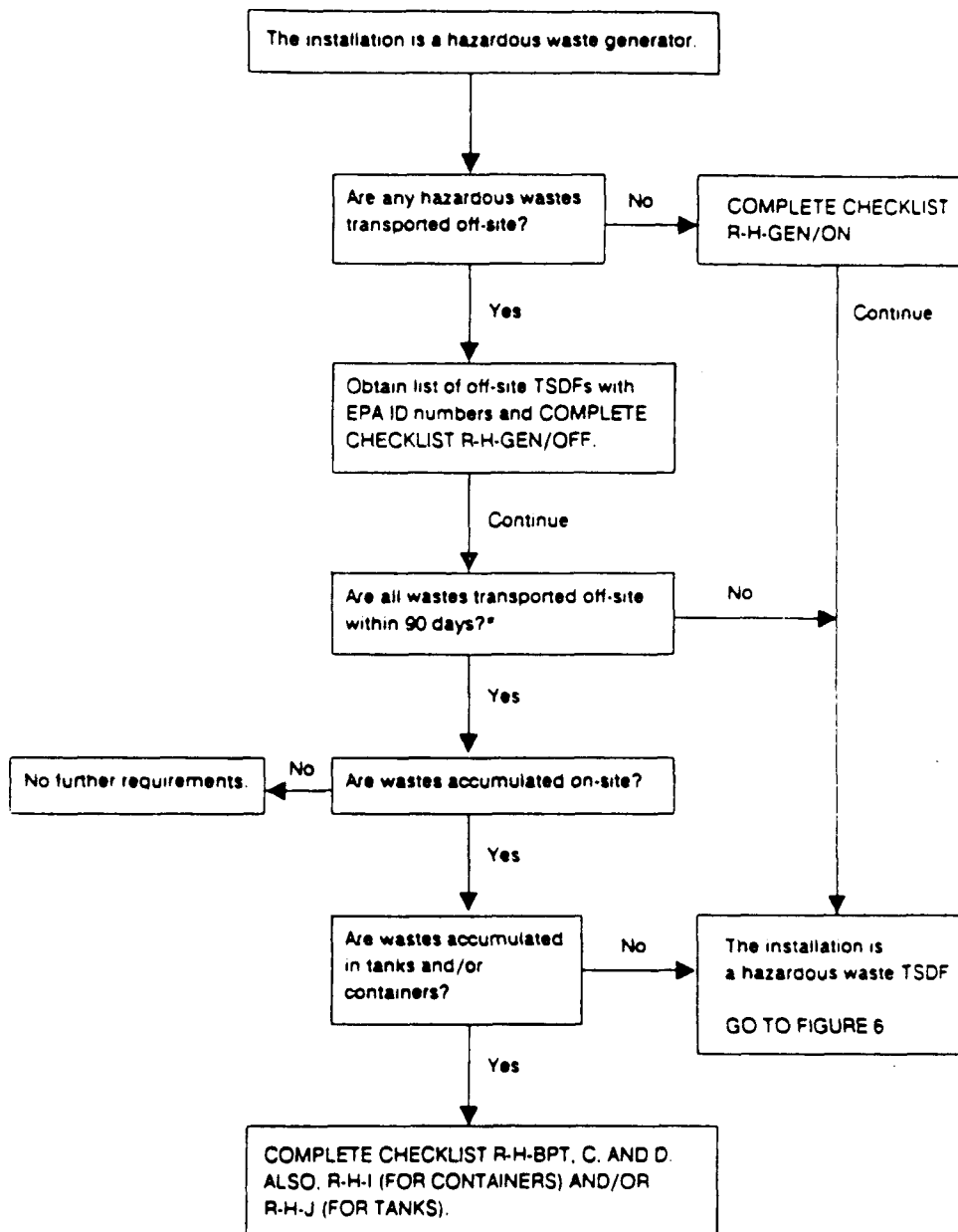


Figure 5. Hazardous Waste Generation



* 180 days if the generation rate is greater than 100 kg and less than 1000 kg of hazardous waste per month

Figure 6: Hazardous Waste Treatment, Storage, and Disposal (T/S/D)

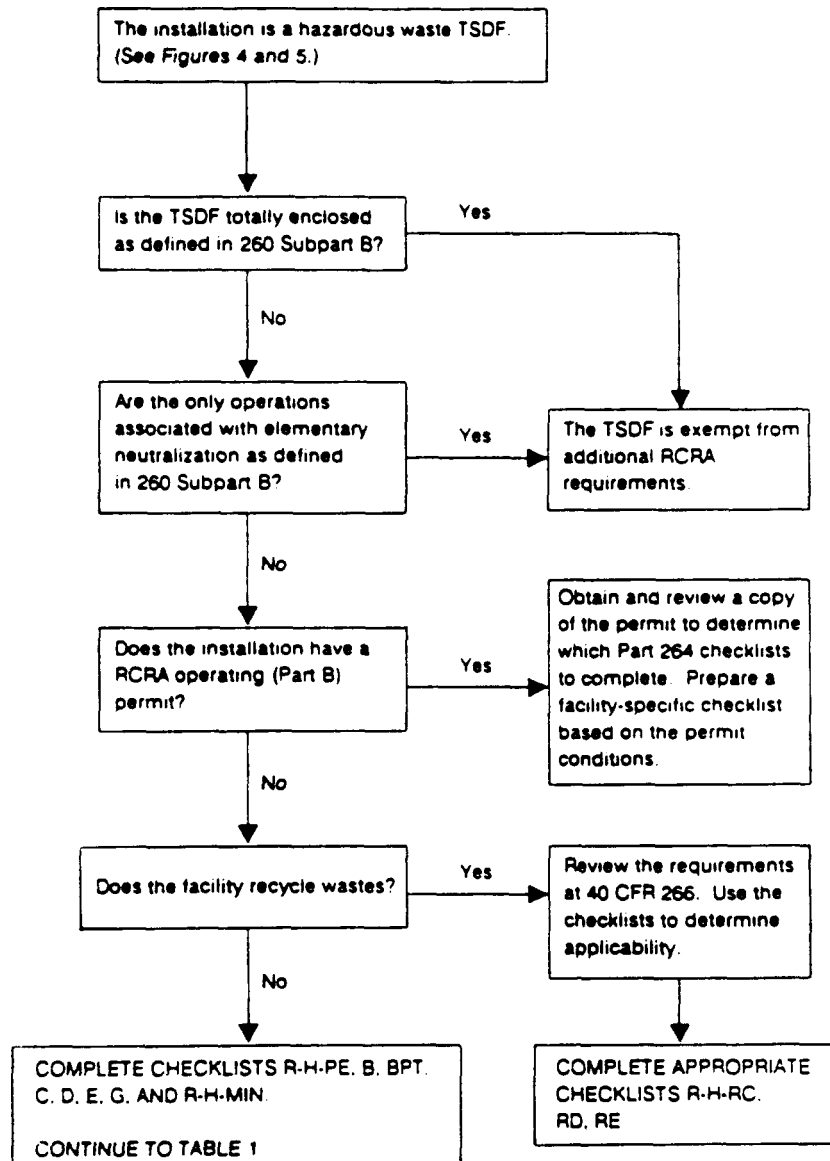


TABLE 1: HAZARDOUS WASTE TSD OPERATIONS

<u>Does the Facility Operate the Following Regulated Units</u>	<u>If Yes, Circle and Complete Checklist</u>	<u>List the Regulated AU(s)</u>
Containers (including on-site accumulation areas)? (1)	R-H-I	
Tanks (including on-site accumulation areas)? (1)	R-H-J	
Surface Impoundments (lagoons)?	R-H-K and F	
Waste Piles?	R-H-L and F	
Land Treatment?	R-H-M and F	
Landfills?	R-H-N and F	
Incinerators?	R-H-O	
Thermal Treatment Processes?	R-H-P	
Chemical, Physical or Biological Treatment Processes? (2)	R-H-Q	
Underground Injection Wells? (3)	R-H-R	
Recycle/Reclamation Facility?	R-H-RC, RD and RE	

Notes:

- (1) Accumulation areas are on-site areas where wastes are stored for less than 90 days. For containers, this includes full drums only. For tanks, the 90 days is based upon a quantity of waste, i.e., if 500 gallons go into the tank, 500 gallons must be removed within 90 days.
- (2) This relates to such treatment in something other than a tank, surface impoundment or land treatment facility.
- (3) Check UIC permit under SDWA and complete the appropriate Checklists for underground injection wells found in the SDWA section of the audit manual; Checklist R-H-G is not required if this is only regulated unit.

TABLE 2: SOLID WASTE OPERATIONS

<u>Does the Facility Operate the Following Regulated Units</u>	<u>If Yes, Circle and Complete Checklist:</u>	<u>List the Regulated AU(s)</u>
Solid waste collection?	R-S-MG	
Incinerators?	R-S-T	
Landfills?	R-S-LD	
Resource recovery?	R-S-R	

AUDITOR(S): _____

BLDG/AREA/UNIT(S): _____

DATE: ____/____/____

ESO NO.: _____

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 261.5: Special Requirements for Hazardous Waste Generated by Conditionally Exempt Small Quantity Generators			
1. Are wastes treated or disposed on-site? List the on-site facilities involved.	Y N		
2. Are wastes delivered to an off-site treatment/storage/disposal (TSD) facility? List the off-site facilities involved.	Y N		
3. Do the TSD facilities (on- and off-site) meet the following conditions:			
a. Permitted under 40 CFR 270?	Y N		
b. Have interim status under 40 CFR 270 and 265?	Y N		
c. Authorized to manage hazardous waste by a state with a hazardous waste management program approved under 40 CFR 271?	Y N		
d. Permitted, licensed, or registered by a state to manage municipal or industrial solid waste?	Y N		
e. A facility that beneficially uses or reuses, or legitimately recycles or reclaims the waste?	Y N		
f. A facility that treats the waste prior to beneficial use, reuse, or legitimate recycling or reclamation?	Y N		
- If YES to any of Questions 3 a - f, ENTER STATUS "S".	☐		
- If NO to Questions 3 a - f, ENTER STATUS "U".			
Identify which of the TSD facilities used for management of waste do not meet any of the requirements in 3 a - f.			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
4. Have off-site facilities been selected after consultation with EPA or the state to clarify the status of the facility (DOE policy)? - If YES, ENTER STATUS "S". - If NO, ENTER STATUS "U".	Y N ☐		
5. Are hazardous wastes mixed with nonhazardous wastes? - If YES, proceed with Question 6. - If NO, proceed with Question 7.	Y N		
6. Is the resultant mixture hazardous according to characteristics described in 40 CFR 261 Subpart C?	Y N		
7. Do hazardous wastes currently accumulated on-site exceed 1,000 kg?	Y N		
8. Does the facility generate over 100 kg of hazardous waste per month? - If YES to Question 7 or 8, complete checklist R-H-SQG. - If NO to Questions 7 and 8, ENTER STATUS "NA".	Y N ☐		
This checklist is complete.			

AUDITOR(S): _____

BLDG/AREA/UNIT(S): _____

DATE: ____/____/____

ESO NO.: _____

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
NOTE: This checklist applies only to facilities generating 100 to 1000 kg of hazardous waste/month and less than 1 kg of acute hazardous waste/month. It supplements checklist R-H-CSQ with additional requirements for these facilities.			
40 CFR 262.20(e): Manifest Exemption			
1. Does the owner/operator of the facility send hazardous waste off-site for reclamation?			
- If YES, proceed with checklist.	☐		
- If NO, ENTER STATUS "NA" and proceed with Question 4.			
2. Does the off-site reclamation:			
a. Take place under a contract which specifies type and frequency of shipments?	Y N		
b. Involve transportation from site to reclamation (recycling) facility and back only by vehicles owned by reclamation facility?	Y N		
3. Does the owner/operator of the facility keep a copy of the reclamation contract in their files at least 3 years after it expires or is terminated?	Y N		
- If YES to Questions 2 and 3, ENTER STATUS "NA".	☐		
- If NO to Question 2 or 3, complete the "Manifest" portion of checklist R-H-GEN/OFF.			
40 CFR 262.34: Accumulation Time			
4. Does the facility accumulate hazardous waste on-site for more than 90 days?			
- If YES, proceed with checklist.			
- If NO, ENTER STATUS "NA" and proceed with Question 7.			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
5. Does the facility have an interim or final U.S. EPA permit as a storage facility?	Y N		
- If YES, ENTER STATUS "NA" and proceed to Question 7 on this checklist. - If NO, proceed with checklist.			
6. Does the facility meet the following requirements:	Y N		
a. Quantity of hazardous waste accumulated on-site never exceeds 6000 kg?	Y N		
b. Holding time of any hazardous waste never exceeds: 1) 180 days, or 2) 270 days and the waste must be transported 200 miles or more for off-site treatment, storage, or disposal?	Y N		
c. Facility complies with requirements for hazardous waste containers. (Complete Checklist R-H-I)? Note: Facility may have ignitable or reactive waste within 15 m (50 feet) of the property line.	Y N		
d. Facility complies with special requirements for hazardous waste tanks in 40 CFR 265.20)? Note: Check carefully requirements for freeboard/containment and inspections.	Y N		
e. All containers are clearly marked with the initial date of accumulation of hazardous waste?	Y N		
f. All containers and tanks are clearly marked "Hazardous Waste"?	Y N		
g. The facility meets all the requirements for Preparedness and Prevention (Complete Checklist R-H-C)?	Y N		
h. At all times, the facility has an emergency coordinator on premises or on call?	Y N		
i. All employees are familiar with proper waste handling and emergency procedures?	Y N		

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AUDITOR(S) _____

BLDG./AREA/UNIT(S) _____

DATE: ____/____/____

ESO NO.: _____

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 262.12: EPA Identification Number			
1. Does the site have an EPA identification number?	Y N		
- If YES, ENTER STATUS "S" and record the number.			
- If NO, ENTER STATUS "U".			
40 CFR 262.34: Accumulation Time			
2. Is waste accumulated on-site that is not in tanks or containers and is not in a regulated storage area?	Y N		
- If YES, additional checklists are required. Review the applicability flow chart to identify additional checklists.			
3. Is waste accumulated on-site in tanks or containers?	Y N		
- If NO, ENTER STATUS "NA" and proceed with Question 4.			
- If YES, proceed with checklist.			
a. Is each container clearly marked with the starting date of accumulation?	Y N		
b. Is each tank and container clearly marked with the words "Hazardous Waste"?	Y N		
c. Is each container marked with a description of the waste to ensure proper waste segregation and contingency response?	Y N		
d. Is waste stored for less than 90 days?	Y N		
Note: Verify during inspection.			
- If YES to Questions 3 a - d, ENTER STATUS "S"			
- If NO to any of Questions 3 a - d, ENTER STATUS "U" and describe problems.			
- If NO to Question 3 the site is a storage facility; complete relevant checklists.			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 262 Subpart D: Recordkeeping and Reporting			
4. Are biennial reports (EPA Form 8700-13A) submitted by March 1 of each even-numbered year? Note: States may have other report forms or more frequent reporting requirements.	Y N		
5. Obtain copy of most recent report. Does it include the following: a. The EPA identification number, name, and address of the generator? b. The calendar years covered by the report? c. A description and EPA hazardous waste number (from 40 CFR Part 261, Subpart C or D) of each waste produced? d. The certification signed by the generator or his authorized representative?	Y N Y N Y N Y N		
6. Does the site keep the following reports for three years: a. Annual and biennial reports (from due date of report)? b. Test results, waste analyses, and other hazardous waste determinations (from date waste was last sent to a TSDF)? Note: The periods of retention are extended automatically during any unresolved enforcement action or as requested by EPA.	Y N Y N		
7. If additional reports are required by EPA or state agency regarding the quantity and disposition of hazardous wastes, obtain copies of the reporting requirements (often part of a permit) and recent reports. Are these additional reporting requirements met?	Y N		
- If YES to Questions 4 - 7, ENTER STATUS "S". - If NO to any of Questions 4 - 7, ENTER STATUS "U".	☐		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 262.60: Waste Import			
8. Has the site received any hazardous waste from a foreign source?	Y N		
- If NO, ENTER STATUS "NA" and checklist is complete.	☐		
- If YES, proceed with checklist.			
9. Does the manifest for the imported wastes:			
a. Bear the name and address of the foreign generator and the name, address, and EPA identification number of the importer?	Y N		
b. Bear the dated signature of the importer or his agent on the certification statement?	Y N		
c. Bear the signature of the initial transporter?	Y N		
d. Otherwise meet the usual manifest requirements?	Y N		
- If YES to Questions 9 a - d, ENTER STATUS "S".	☐		
- If NO to any of Questions 9 a - d, ENTER STATUS "U".			
This checklist is complete.			

AUDITOR(S) _____

BLDG./AREA/UNIT(S): _____

DATE ____/____/____

ESO NO.: _____

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 262.12: EPA Identification Number			
1. Does the waste have an EPA identification number?	Y N		
- If YES, ENTER STATUS "S" and record the number.			
- If NO, ENTER STATUS "U".			
40 CFR 262.20: General Requirements			
2. Are manifests (EPA Form 8700-22) completed for all hazardous waste transported off-site?	Y N		
3. Do the manifests include the following information?			
a. Manifest document No.?	Y N		
b. Site name, mailing address, telephone number, EPA I.D. No.?	Y N		
c. Transporter(s) name and EPA I.D. No.?	Y N		
d. Receiving facility name, address, and EPA I.D. No.?	Y N		
e. Instructions to return to facility if undeliverable? (optional)	Y N		
f. Waste information required by DOT including shipping name, quantity (weight or volume), containers, (type and number), hazard class, I.D. No.?	Y N		
Note: This is to certify that the above named materials are properly classified, described, packaged, marked and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation and the EPA.			
4. Does the site retain one copy of the manifest signed by the installation and transporter?	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
5. Do returned copies of manifests include facility owner/operator signature and date of acceptance? - If YES to Questions 1 - 5, ENTER STATUS "S". - If NO to any of Questions 1 - 5, ENTER STATUS "U" and explain. 40 CFR 262.30: Packaging 6. Prior to shipment off-site, does the owner/operator do the following? a. Package waste in accordance with 49 CFR 173, 178, and 179? Note: Observe storage and loading areas during field inspection. b. Does the facility have procedures and materials to insure that leaking or corroding shipping containers are repacked before dispatch? Note: Check for evidence of heat generation from incompatible wastes in the containers during field inspection. - If YES to Questions 6 a <u>and</u> b, ENTER STATUS "S". - If NO to Question 6 a <u>or</u> b, ENTER STATUS "U". 40 CFR 262.31: Labeling 7. Prior to shipment, does the owner/operator use DOT labeling requirements in accordance with 49 CFR 172? - If YES, ENTER STATUS "S". - If NO, ENTER STATUS "U".	Y N ☐ Y N Y N ☐ Y N ☐		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 262.32: Marking			
8. Prior to shipment, does the owner/operator:			
a. Mark each package in accordance with 49 CFR 172?	Y N		
b. Mark each container of 110 gallons or less with the following label?	Y N		
HAZARDOUS WASTE - Federal law prohibits improper disposal. If found, contact the nearest police or public safety authority or the U.S. Environmental Protection Agency.			
Generator/s Name and Address _____			

Manifest Document Number _____			
- If YES to Questions 8a and b, ENTER STATUS "S".	☐		
- If NO to Question 8 a or b, ENTER STATUS "U".			
40 CFR 262.33: Placarding			
9. Prior to transporting hazardous waste off-site or offering for transportation off-site, does the owner/operator placard or offer appropriate placards according to DOT requirements found at 40 CFR Part 172, Subpart F?	Y N		
- If YES, ENTER STATUS "S".	☐		
- If NO, ENTER STATUS "U".			
40 CFR 262.34: Accumulation Time			
10. Is waste accumulated on-site in tanks or containers (at areas other than regulated storage areas)?	Y N		
- If NO, ENTER STATUS "NA" and proceed with Question 11.	☐		
- If YES, proceed with checklist.			
a. Is each container clearly marked with the starting date of accumulation?	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
b. Is each container and tank clearly marked with the words "Hazardous Waste"?	Y N		
c. Is each container marked with a description of the waste to ensure proper waste segregation and contingency response?	Y N		
d. Is the waste stored for less than 90 days?	Y N		
Note: Spot check items a, b, c, and d in field.			
- If YES to Questions 10 a - d, ENTER STATUS "S".	☐		
- If NO to any of Questions 10 a - d, ENTER STATUS "U".			
40 CFR 262.40 - 262.43: Recordkeeping and Reporting			
11. Are biennial reports (EPA Form 8700-13A) submitted by March 1 of each even numbered year?	Y N		
Note: States may have other report forms or more frequent reporting requirements.			
12. Does the latest biennial report include all of the following:			
a. The EPA identification number, name, and address of the generator?	Y N		
b. The calendar years covered by the report?	Y N		
c. The EPA identification number, name, and address for each off-site treatment, storage, or disposal facility to which waste was shipped during the year? (For exported shipments, the report must give the name and address of the foreign facility.)	Y N		
d. The name and EPA identification number of each transporter used during the reporting year?	Y N		
e. A description, EPA hazardous waste number (from 40 CFR Part 261, Subparts C or D), DOT hazard class, and quantity of each hazardous waste shipped off-site?	Y N		
Note: This information must be listed by EPA identification number of each off-site facility to which waste was shipped.			
f. The certification signed by the generator or his authorized representative?	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
13. Are transporters contacted if a copy of the manifest signed by the owner/operator of the off-site TSDF is not received within 35 days?	Y N		
14. Are exception reports filed with EPA if signed manifests are not received within 45 days? (Obtain and review copy of typical report)	Y N		
15. Do exception reports include the following:			
a. A copy of the manifest for which the generator does not have confirmation of delivery?	Y N		
b. A letter explaining the efforts taken to locate the hazardous waste and the results of those efforts?	Y N		
16. Does the site keep the following reports for three years:			
a. Manifests and signed copies from designated facilities (from date of acceptance by initial transporter)?	Y N		
b. Annual and biennial reports (from due date of report)?	Y N		
c. Exception reports, if any (from due date)?	Y N		
d. Test results, waste analyses, and other hazardous waste determinations (from last date waste was sent for on- or off-site TSDF)?	Y N		
Note: The periods of retention referred to in this section are extended automatically during the course of any unresolved enforcement action regarding the regulated activity or as requested by the Administrator.			
- If YES to Questions 11 - 16 d, ENTER STATUS "S".			
- If NO to any of Questions 11 - 16 d, ENTER STATUS "U".			
17. Are additional reports required by EPA or state agency regarding the quantity and disposition of hazardous waste? Describe how additional reporting requirements are being satisfied.	Y N		
<u>40 CFR 262.50: Applicability</u>			
18. Has the site exported any hazardous waste?	Y N		
- If YES, ENTER STATUS "S".			
- If NO, ENTER STATUS "NA" and proceed with Question 24.			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 262.50: General Requirements			
19. Has the exporter notified the EPA of his intention to export at least 60 days before the initial shipment leaves the site?	Y N		
a. For repeated shipments, has a new notification been made at least every 12 months?	Y N		
b. Does the notification include all the information required by 40 CFR 262.53(a)?	Y N		
c. Has the receiving country and (if appropriate) any transit country consented to the shipment, as evidenced by an EPA Acknowledgement of Consent sent to the site?	Y N		
40 CFR 262.54: Special Manifest Requirements			
20. Has the manifest for each shipment been modified as required?	Y N		
Specific items include:			
a. Point of departure from U.S. listed in "Special Handling Instructions"?	Y N		
b. The first sentence of the certification (Item 16) has these words added: "and conforms to the terms of the attached EPA Acknowledgement of Consent"?	Y N		
21. If shipments have been completed, has the consignee confirmed in writing the arrival of the waste and any discrepancies?	Y N		
22. Has the exporter filed by March 1 of each year, the report summarizing all waste exports in the previous calendar year, following the format specified in 40 CFR 262.56?	Y N		
40 CFR 262.57: Recordkeeping			
23. Has the exporter kept all records and reports relevant to exports for at least 3 years, following the conditions and exceptions of Question 13 above?	Y N		
- If YES or NOT APPLICABLE to Questions 19 - 23, ENTER STATUS "S".			
- If NO to any of Questions 19 - 23, ENTER STATUS "U" and explain.			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 262 60: Imports of Hazardous Waste			
24. Has the site received any hazardous waste from a foreign source?	Y N		
- If NO, ENTER STATUS "NA".	☐		
- If YES, proceed with checklist.			
25. Does the manifest for the imported waste:			
a. Bear the name and address of the foreign generator and the name, address, and EPA identification number of the importer?	Y N		
b. Bear the dated signature of the importer or his agent on the certification statement?	Y N		
c. Bear the signature of the initial transporter?	Y N		
d. Otherwise meet the usual manifest requirements?	Y N		
- If YES to Questions 25 a - d, ENTER STATUS "S".	☐		
- If NO to any of Questions 25 a - d, ENTER STATUS "U".			
DOE Policy: Off-Site Treatment, Storage, and Disposal of Nonradioactive Hazardous Waste			
26. Does the owner/operator consult with EPA and the State to determine the status of proposed off-site vendor facilities?	Y N		
27. Does the owner/operator only ship wastes to off-site vendors that are considered acceptable to EPA for disposal of Superfund cleanup wastes?	Y N		
- If YES to Questions 26 and 27, ENTER STATUS "S".	☐		
- If NO to Question 26 or 27, ENTER STATUS "U".			
This checklist is complete.			

AUDITOR(S): _____

BLDG./AREA/UNIT(S): _____

DATE: _____

ESO NO.: _____

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 263.11: Notification			
1. Has the owner/operator notified EPA or the state that it is a transporter of hazardous waste?	Y N		
2. Has the facility received an ID number and any required state licenses or certifications?	Y N		
- If YES to Questions 1 and 2, ENTER STATUS "S".			
- If NO to Question 1 or 2, ENTER STATUS "U".			
40 CFR 263.12: Transfer Facility Requirements			
3. Does the transporter store manifested hazardous waste for more than 10 days without a storage permit or interim status?	Y N		
- If YES, ENTER STATUS "U".			
- If NO, ENTER STATUS "S".			
Explain the basis for the answer.			
40 CFR 263.20: The Manifest System			
4. Are all shipments of hazardous waste accompanied by a manifest? (Review manifest and shipping records.)	Y N		
5. Does all required information appear on the manifest?	Y N		
- If YES to Questions 4 and 5, ENTER STATUS "S".			
- If NO to Question 4 or 5, ENTER STATUS "U".			
6. Is hazardous waste delivered by water transporters (bulk shipments)?	Y N		
- If NO, ENTER STATUS "NA" for Question 7 and proceed with Question 8.			
- If YES, proceed with Question 7.			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
7. Do the shipping papers contain all of the required information, including dates of delivery and signatures as required in 40 CFR 263.20(e)? - If NO, ENTER STATUS "U". - If YES, ENTER STATUS "S".	Y N ☐		
8. Are shipments of hazardous waste transported by rail? - If NO, ENTER STATUS "NA" and proceed with Question 10. - If YES, proceed with checklist.	Y N 		
9. Do the shipping papers and records indicate that all of the requirements in 40 CFR 263.20(f) are being met? Describe. - If NO, ENTER STATUS "U". - If YES, ENTER STATUS "S".	Y N ☐		
10. Are shipments of hazardous waste transported out of the United States? - If NO, ENTER STATUS "NA" and proceed with Question 12. - If YES, proceed with checklist.	Y N 		
11. Do the manifests indicate the date the hazardous waste left the United States? - If NO, ENTER STATUS "U". - If YES, ENTER STATUS "S".	Y N ☐		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 263.21: Compliance with the Manifest			
12. Has the transporter always delivered the entire quantity of hazardous waste accepted from the generator to one of the following:	Y N		
a. The designated facility?	Y N		
b. The alternate designated facility?	Y N		
c. The next designated transporter?	Y N		
- If YES to Questions 12 a - c, ENTER STATUS "S" and "NA" for Question 13 and proceed with Question 14.	☐		
- If NO to any of Questions 12 a - c, and proceed with checklist.			
13. Did the transporter contact the generator for additional instructions and revise the manifest accordingly?	Y N		
- If YES, ENTER STATUS "S".	☐		
- If NO, ENTER STATUS "U".			
40 CFR 263.22: Recordkeeping			
14. Are copies of signed manifests kept for three years after acceptance of the waste by the transporter?	Y N		
- If NO, ENTER STATUS "U".	☐		
- If YES, ENTER STATUS "S".			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR Subpart C. Hazardous Waste Discharges			
15. Has waste ever been discharged during transit? - If NO, ENTER STATUS "NA" for Question 20 and checklist is complete. - If YES, describe circumstances.	Y N		
16. Was immediate action taken to protect human health and the environment? Note: Typical actions include calling the local fire department and damming liquid spills.	Y N		
17. Was the National Response Center notified (800/424-8802 or 202/426-2675) if required by 49 CFR 171.15?	Y N		
18. Was a written report submitted to the U.S. DOT as required by 49 CFR 171.16?	Y N		
19. For water transport incidents, was notice given as required by 33 CFR 153.203 for oil and hazardous substances spills?	Y N		
20. Has the transporter either:			
a. Cleaned up the entire discharge?	Y N		
b. Treated the discharge so appropriate federal, state, or local officials have accepted it as no longer presenting a hazard to human health or the environment?	Y N		
- If YES to Questions 16 - 20 b, ENTER STATUS "S".			
- If NO to any of Questions 16 - 20 b, ENTER STATUS "U".			
This checklist is complete.			

AUDITOR(S) _____

BLDG/AREA/UNIT(S): _____

DATE: ____/____/____

ESO NO.: _____

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR Subpart G: Interim Status			
1. Has the owner/operator provided notification of hazardous waste activity?	Y N		
2. Has the owner/operator submitted a Part A permit application?	Y N		
- If NO to Question 1 or 2, ENTER STATUS "U".			
- If YES to Questions 1 and 2, ENTER STATUS "S".			
3. Does the Part A permit application include all of the hazardous waste management units found at the facility?	Y N		
4. Are the volumes of waste managed at each unit less than or equal to the volumes contained in the Part A permit application?	Y N		
5. Does the facility manage on-site only those waste types included in the Part A permit application?	Y N		
- If NO to any of Questions 3 - 5, ENTER STATUS "U".			
- If YES to Questions 3 - 5, ENTER STATUS "S".			
Review the Part A permit application to make sure that the proper signatures were provided and that the Part A contains the waste types volumes and management practices employed at the facilities.			
40 CFR Subpart C: Permit Conditions			
6. Has the facility been issued a final RCRA permit?	Y N		
- If NO, ENTER STATUS "NA" and checklist is complete.			
- If YES, proceed with checklist.			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 270.30: Conditions Applicable to All Permits			
7. If there have been any physical alterations or additions to the permitted facility, has the Permittee notified the Regional Administrator?	Y N NA		
8. If the facility has implemented treatment, storage, or disposal of hazardous waste at a new or modified portion of the facility, or has begun corrective action of contaminated ground water, has the Regional Administrator been notified in writing, and has a registered professional engineer certified that facility construction or modification is in compliance with the permit?	Y N NA		
- If YES or NOT APPLICABLE to Questions 7 and 8, ENTER STATUS "S".			
- If NO to Question 7 or 8, ENTER STATUS "U".			
9. Has an inspection of the modified or newly constructed facility by the Regional Administrator indicated that it is in compliance with the conditions of the permit?	Y N		
- If YES or NOT APPLICABLE, ENTER STATUS "S" for Question 11. Proceed with Question 12.	Y N NA		
- If NO, proceed with checklist.			
10. Has the Regional Administrator waived the inspection, or not notified the Permittee within 15 days of his or her intent to inspect?	Y N		
- If YES, ENTER STATUS "S" for Question 11 and proceed with Question 12.			
- If NO, proceed with checklist.			
11. Has the owner/operator treated, stored, or disposed of hazardous waste in the new or modified portion of the facility?	Y N		
- If YES, ENTER STATUS "U".			
- If NO, ENTER STATUS "S".			
12. If the owner/operator has planned any changes to the facility that may result in noncompliance with permit requirements, has the Regional Administrator been notified?	Y N NA		
- If YES or NOT APPLICABLE, ENTER STATUS "S".			
- If NO, ENTER STATUS "U".			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
13. If the Regional Administrator or Director has requested any information regarding the operation of the waste management facilities or the status of compliance with any permit requirements, has the owner/operator provided complete and thorough information in a timely fashion?	Y N NA		
14. Has the owner/operator reported to the Regional Administrator or Director in a timely fashion any actual or anticipated instances of noncompliance?	Y N NA		
15. Upon becoming aware of any relevant information that may have been omitted from the permit application, did the owner/operator promptly provide such information to the Regional Administrator or Director?	Y N NA		
- If YES or NOT APPLICABLE to Questions 13, 14, and 15, ENTER STATUS "S".			
- If No to Question 13, 14, or 15, ENTER STATUS "U".			
16. Has the owner/operator ever denied entry by authorized representatives of the U.S. EPA or the state for purposes of inspecting the facility's records, operations, equipment, and/or collecting samples or monitoring performance to determine compliance with the RCRA permit?	Y N		
- If NO, ENTER STATUS "S".			
- If YES, ENTER STATUS "U" and describe in detail the situation.			
40 CFR 270.33 Schedules of Compliance			
17. Does the permit contain compliance schedules?	Y N		
- If NO, ENTER STATUS "NA" for Question 19 and proceed with Question 20.			
- If YES, proceed with checklist.			
18. Is the owner/operator meeting the compliance schedules contained in the permit?	Y N		
19. Is the owner/operator providing compliance status reports within 14 days of any interim or final dates in the compliance schedule?	Y N		
- If YES to Questions 18 and 19, ENTER STATUS "S".			
- If NO to Question 18 or 19, ENTER STATUS "U".			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 270.51: Continuation of Expiring Permits 20. If the permit is nearing expiration (less than 2 years before expiration) has the owner/operator: a. Programmed costs for renewing the permit? (BMP) b. Initiated activities to prepare the application? (BMP) Note: Document what activities, if any, have been initiated to prepare for the expiration of the permit whether they include closure or a reapplication. This checklist is complete.	Y N NA Y N NA		

AUDITOR(S) _____

BLDG/AREA/UNIT(S) _____

DATE: ____/____/____

ESO NO: _____

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 265.11: Notification			
1. Has the owner/operator submitted to EPA a Notification of Hazardous Waste Activity form and obtained an EPA ID number? ID No. _____ - If YES, ENTER STATUS "S". - If NO, ENTER STATUS "U".	Y N ☐		
40 CFR 265.12: Required Notices			
2. Are hazardous wastes received from a foreign source? - If YES, proceed with checklist. - If NO, ENTER STATUS "NA" for Question 3 and proceed with Question 4.	Y N ☐		
3. Have notices been submitted to EPA at least four weeks prior to expected date of arrival? (Examine notices and manifests to verify) - If YES, ENTER STATUS "S" - If NO, ENTER STATUS "U"	Y N ☐		
4. Has the facility had a change in ownership or operator? - If NO, ENTER STATUS "NA" for Question 4 a and proceed with Question 5. a. Was EPA notified of the change in ownership or operator with a revised Part A permit application? - If YES, ENTER STATUS "S". - If NO, ENTER STATUS "U".	Y N Y N ☐		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 265.13: General Waste Analysis			
5. Has the owner/operator obtained a detailed chemical and physical analysis of a representative sample of the wastes managed by the facility?	Y N		
Note: At a minimum, this analysis must contain all the information which must be known to treat, store, or dispose of the waste in accordance with the requirements of 40 CFR 265. The analysis may include data from existing published or documented data on the waste or on waste generated from a similar process.			
6. Is the analysis repeated when the owner or operator believes that the process or operation generating the waste has changed?	Y N		
- If YES to Questions 5 and 6, ENTER STATUS "S".			
- If NO to Question 5 or 6, ENTER STATUS "U".			
40 CFR 265.13b: Waste Analysis Plan			
7. Does the facility maintain a copy of the waste analysis plan at the facility?	Y N		
8. Does the waste analysis plan identify:			
a. Parameters for which waste will be analyzed? (List the parameters)	Y N		
b. Test methods used to test for these parameters?	Y N		
Note: The test methods should be referenced in Test Methods for the Evaluation of Solid Waste, SW-846 or equivalent (ASTM, Standard Methods)			
c. An appropriate sampling method used to obtain samples?	Y N		
Note: The sampling method should be as described in Appendix I of 40 CFR 264 or an equivalent method.			
d. Frequency with which the initial analysis will be reviewed or repeated to ensure the analysis is up to date and accurate?	Y N		
- If YES to Questions 7 - 8 a, ENTER STATUS "S".			
- If NO to any of Questions 7 - 8 a, ENTER STATUS "U"			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
9. Does the facility receive waste from off-site? - If NO, ENTER STATUS "NA" for Question 14 and proceed with Question 15. - If YES, proceed with checklist.	Y N		
10. Does the waste analysis plan contain the waste analysis data that generators have agreed to supply?	Y N		
11. Does the waste analysis plan describe procedures to inspect each movement of hazardous waste from off-site?	Y N		
12. Does the plan describe a sampling method referenced in Appendix I of 40 CFR 261 or its equivalent?	Y N		
13. Does the plan identify parameters that will be used to inspect the movement?	Y N		
14. Does the plan describe when a full analysis of the waste movement will be performed when the waste received does not match the waste described on the manifest or shipping papers? - If YES to Questions 10 - 14, ENTER STATUS "S". - If NO to any of Questions 10 - 14, ENTER STATUS "U".	Y N 		
40 CFR 265.200: Waste Analysis and Trial Tests for Tanks			
15. Does the facility manage hazardous wastes in tanks? - If NO, ENTER STATUS "NA" for Question 17 and proceed with Question 18.	Y N		
16. Does the facility use the tank system to store or treat a hazardous waste that is substantially different from waste previously stored or treated? - If YES, proceed with checklist. - If NO, ENTER STATUS "NA" for Question 17 and proceed with Question 18.	Y N		
17. Does the waste analysis plan contain the following procedures to be used prior to placing or treating a new waste in the tank system that meet the requirements of 40 CFR 265.194(a): a. Conducting waste analysis and trial treatment or storage tests?	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
b. Obtaining written, documented information on similar waste under similar conditions? Note: This information is required to be kept in the operating record. - If YES to Questions 17 a <u>and</u> b, ENTER STATUS "S". - If NO to Question 17 a <u>or</u> b, ENTER STATUS "U".	Y N ☐		
40 CFR 265.13(f) and 265.225: Waste Analysis - Surface Impoundments			
18. Does the facility have a surface impoundment? - If NO, ENTER STATUS "NA" for Questions 20 <u>and</u> 22 and proceed with Question 23. - If YES, proceed with checklist.	Y N		
19. Does the facility use the surface impoundment to store or treat a hazardous waste that is substantially different from waste previously stored or treated? - If NO, ENTER STATUS "NA" for Question 20 and proceed with Question 21. - If YES, proceed with checklist.	Y N		
20. Does the waste analysis plan contain the following procedures to be used prior to placing or treating a new waste in the surface impoundments to meet the requirements of 40 CFR 265.17(b): a. Conducting a waste analysis and trial treatment tests? b. Obtaining written documented information on similar wastes under similar conditions? Note: This information is required to be kept in the operating record? - If YES to Questions 20 a <u>and</u> b, ENTER STATUS "S". - If NO to Question 20 a <u>or</u> b, ENTER STATUS "U".	Y N Y N ☐		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
21. Is the surface impoundment exempted from land disposal restrictions under 263.4(a)? - If NO, ENTER STATUS "NA" for Question 22 and proceed with Question 23. - If YES, proceed with checklist.	Y N		
22. Does the waste analysis plan contain the procedures and schedule for: a. Sampling the impoundment contents? b. Analyzing the test data? c. Annual removal of residues that are not delisted and do not exhibit a characteristic of hazardous waste and do not meet the 40 CFR 268 Subpart D treatment standards or prohibition levels in 40 CFR 268 Subpart C? - If YES to Questions 22 a - c, ENTER STATUS "S". - If NO to any of Questions 22 a - c, ENTER STATUS "U".	Y N Y N Y N ☐		
40 CFR 265.252: Waste Analysis - Waste Piles			
23. Does the facility manage hazardous wastes in waste piles? - If YES, proceed with checklist. - If NO, ENTER STATUS "NA" for Question 24 and proceed with Question 25.	Y N		
24. Does the waste analysis plan contain the following procedures to be used prior to placing or treating a new waste in the waste pile to meet the requirements of 40 CFR 265.17(b): a. Analyze a representative sample of the incoming waste? b. Obtain written documented information on similar wastes under similar conditions? Note: This information is required to be kept in the operation record. - If YES to Questions 24 a and b, ENTER STATUS "S". - If NO to Question 24 a or b, ENTER STATUS "U".	Y N Y N ☐		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 265.273: Waste Analysis - Land Treatment			
25. Does the facility manage hazardous waste in or on a land treatment facility?	Y N		
- If YES, proceed with checklist. - If NO, ENTER STATUS "NA" for Question 26 and proceed with Question 27.			
26. Does the waste analysis plan describe procedures to determine the following prior to placing in or on the land treatment facility:			
a. For wastes that exhibit the characteristics of EP Toxicity, the concentrations of the substances that caused it to exceed the limits (Table I of 261.24)?	Y N		
b. For listed wastes, the concentration of constituents that caused the waste to be listed (261 Appendix VII)?	Y N		
c. If food chain crops are grown, the concentration of arsenic, cadmium, lead, or mercury unless it is documented that these constituents are not in waste?	Y N		
- If YES to Questions 26 a - c, ENTER STATUS "S". - If NO to any of Questions 26 a - c, ENTER STATUS "U".			
40 CFR 265.314: Special Requirements for Bulk and Containerized Liquids (Waste Analysis - Landfills)			
28. Does the facility manage hazardous wastes in landfills?	Y N		
- If YES, proceed with checklist. - If NO, ENTER STATUS "NA" for Question 29 and proceed with Question 30.			
29. Does the waste analysis plan describe procedures to test wastes prior to landfilling to demonstrate the absence or presence of free liquids?	Y N		
Note: Procedure should be Method 9095 (Paint Filter Liquids Test) in SW-846).			
- If YES, ENTER STATUS "S". - If NO, ENTER STATUS "U".			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 265.341: Waste Analysis - Incinerator			
30. Does the facility manage hazardous waste in an incinerator?	Y N		
- If YES, proceed with checklist.			
- If NO, ENTER STATUS "NA" for Question 31 and proceed with Question 32.			
31. Does the waste analysis plan identify analytical methods for determining the following, concerning waste to be incinerated:			
a. Heating value?	Y N		
b. Halogen content?	Y N		
c. Sulfur content?	Y N		
d. Concentrations of lead and mercury?	Y N		
(Not required if constituents not in the waste materials)			
- If YES to Questions 31 a - d, ENTER STATUS "S".	☐		
- If NO to any of Questions 31 a - d, ENTER STATUS "U".			
40 CFR 265.375: Waste Analysis - Thermal Treatment			
32. Does the facility manage hazardous waste through thermal treatment?	Y N		
- If YES, proceed with checklist.			
- If NO, ENTER STATUS "NA" for Question 33 and proceed with Question 34.			
33. Does the waste analysis plan identify analytical methods for determining the following, concerning waste to be thermally treated:			
a. Heating value?	Y N		
b. Halogen content?	Y N		
c. Sulfur content?	Y N		
d. Concentrations of lead and mercury? (Not required if constituents not in the waste materials)	Y N		
- If YES to Questions 33 a - d, ENTER STATUS "S".	☐		
- If NO to any of Questions 33 a - d, ENTER STATUS "U".			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 265.402: Waste Analysis and Trial Test - Chemical, Physical and Biological Treatment			
34. Does the facility manage hazardous wastes by chemical, physical, or biological treatment in other than tanks, surface impoundments, and land treatment facilities?	Y N		
- If YES, proceed with checklist. - If NO, ENTER STATUS "NA" for Question 35 and proceed with Question 36.			
35. Does the waste analysis plan contain the following procedures to be used prior to placing or treating a new waste in a treatment process to meet the requirements of 265.401(a) and (b):			
a. Conduct a waste analysis and trial treatment tests?	Y N		
b. Obtain written documented information on similar wastes under similar conditions?	Y N		
Note: This information is required to be kept in the operating record.			
- If YES to Questions 35 a <u>and</u> b, ENTER STATUS "S". - If NO to Question 35 a <u>or</u> b, ENTER STATUS "U".			
36. Does the facility generate waste that is subject to land disposal restrictions as defined in 40 CFR 268?	Y N		
- If YES, proceed to Checklist R-H-LDR for waste analysis requirements. - If NO, proceed with checklist.			
40 CFR 265.14: Security			
37. Will physical contact with the waste, structures, or equipment within the active portion of the facility cause injury via unknowing or unauthorized entry?	Y N		
38. Will disturbance of the waste or equipment by unknowing or unauthorized entry cause a violation of the RCRA regulations?	Y N		
- If YES, proceed with checklist. - If NO to Questions 37 <u>and</u> 38, ENTER STATUS "NA" for Questions 39 <u>and</u> 40 and proceed with Question 41.			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
39 Does the facility provide adequate security to prevent unknowing entry or minimize unauthorized entry through: a. A 24-hour surveillance system for the active portion of the facility? b. Artificial or natural barrier around the active portion of the facility (e.g., fence and cliff) and means to control entry through entrances (e.g., attendant, television monitors, locked entrance, controlled roadway access)? - If YES to Questions 39 a and b, ENTER STATUS "S". - If NO to Question 39 a or b, ENTER STATUS "U".	Y N Y N ☐		
40. Is a danger sign posted at each entrance to each regulated area that: a. Can be viewed from any approach and legible from 25 feet with the words "Danger - Unauthorized Personnel Keep Out" or similar warning? b. Is in English and any foreign language common to the area? (Check for security items during site inspection.) - If YES to Questions 40 a and b, ENTER STATUS "S". - If NO to Question 40 a or b, ENTER STATUS "U".	Y N Y N ☐		
40 CFR 265.15: General Inspection Requirements			
41. Does the owner/operator maintain a written inspection schedule at the facility? - If NO, ENTER STATUS "U" and "NA" for Question 42 and proceed with Question 43. - If YES, ENTER STATUS "S".	Y N ☐		
42. Does the schedule identify the following items for inspection: a. Monitoring equipment? b. Safety and emergency equipment? c. Security device?	Y N Y N Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
d. Operating and structural equipment important to preventing, detecting, or responding to hazards?	Y N		
e. Types of problems or equipment (e.g., malfunction, operator error, discharges)?	Y N		
- If YES to Questions 41 - 42 e, ENTER STATUS "S".			
- If NO to any of Questions 41 - 42 e, ENTER STATUS "U".			
40 CFR 265.174: Inspections - Containers			
43. Does the facility manage hazardous waste in containers?	Y N		
- If YES, proceed with checklist.			
- If NO, ENTER STATUS "NA" for Question 44 and proceed with Question 45.			
44. Does the schedule state that areas where containers are stored will be inspected at least weekly for leaks and deterioration?	Y N		
- If YES, ENTER STATUS "S".			
- If NO, ENTER STATUS "U".			
40 CFR 265.193 and 195: Inspections - Tanks			
45. Does the facility manage hazardous wastes in tanks?	Y N		
- If YES, proceed with checklist.			
- If NO, ENTER STATUS "NA" for Question 46 and proceed with Question 47.			
46. Does the schedule state that at least each operating day, the following, if present, will be inspected:			
a. Overfill/spill control equipment?	Y N		
b. Aboveground portion of tank?	Y N		
c. Data from monitoring and leak detection equipment?	Y N		
d. Secondary contaminant devices and surrounding area for leaks or releases?	Y N		
- If YES to Questions 46 a - d, ENTER STATUS "S".			
- If NO to any of Questions 46 a - d, ENTER STATUS "U".			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
47. Do the tanks have cathodic protection? - If YES, proceed with checklist. - If NO, ENTER STATUS "NA" for Question 48 and proceed with Question 49.	Y N		
48. Does the schedule state that: a. The cathodic protection system is inspected every six months? b. Sources of impressed current are inspected and/or tested every two months? - If YES to Questions 48 a <u>and</u> b, ENTER STATUS "S". - If NO to Question 48 a <u>or</u> b, ENTER STATUS "U".	Y N Y N ☐		
<u>40 CFR 265.226: Inspections - Surface Impoundments</u>			
49. Does the facility manage hazardous wastes in surface impoundments? - If YES, proceed with checklist. - If NO, ENTER STATUS "NA" for Question 50 and proceed with Question 51.	Y N		
50. Does the schedule state that: a. Freeboard level will be inspected each operating day? b. Surface impoundment will be inspected weekly for leaks, deterioration, or failures? - If YES to Questions 50 a <u>and</u> b, ENTER STATUS "S". - If NO to Question 50 a <u>or</u> b, ENTER STATUS "U".	Y N Y N ☐		
<u>40 CFR 265.347(b): Inspections - Incinerator</u>			
51. Does the facility manage hazardous wastes in an incinerator? - If YES, proceed with checklist. - If NO, ENTER STATUS "NA" for Question 52 and proceed with Question 53.	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
52. Does the inspection schedule state that following are inspected daily:			
a. Complete incinerator?	Y N		
b. Associated equipment (pumps, valves, pipes, and others)?	Y N		
c. Emergency shutdown controls?	Y N		
d. System alarms?	Y N		
- If YES to Questions 52 a - d, ENTER STATUS "S".			
- If NO to any of Questions 52 a - d, ENTER STATUS "U".			
<u>40 CFR 265.377a(3): Inspections - Thermal Treatment</u>			
53. Does the facility manage hazardous waste in a thermal treatment unit?	Y N		
- If YES, proceed with checklist.			
- If NO, ENTER STATUS "NA" for Question 54 and proceed with Question 55.			
54. Does the inspection schedule state that the following are inspected daily:			
a. Complete thermal treatment process?	Y N		
b. Associated equipment (pumps, valves, pipes, and others)?	Y N		
c. Emergency shutdown controls?	Y N		
d. System alarms?	Y N		
- If YES to Questions 54 a - d, ENTER STATUS "S".			
- If NO to any of Questions 54 a - d, ENTER STATUS "U".			
<u>40 CFR 265.403: Inspection - Chemical, Physical, and Biological Treatment</u>			
55. Does the facility manage hazardous wastes by chemical, physical, and biological treatment in other than tanks, surface impoundments, or land treatment facilities?	Y N		
- If YES, proceed with checklist.			
- If NO, ENTER STATUS "NA" for Questions 56 and 60 and proceed with Question 61.			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
56. Does the inspection schedule state the following:			
a. Discharge control and safety equipment will be inspected daily?	Y N		
b. Treatment structures will be inspected weekly?	Y N		
c. Area surrounding the treatment facility will be inspected weekly for releases and deterioration?	Y N		
- If YES to Questions 56 a - c, ENTER STATUS "S".			
- If NO to any of Questions 56 a - c, ENTER STATUS "U".			
57. Does the owner/operator maintain an inspection log?	Y N		
58. Is the log kept for three years from the inspection date?	Y N		
59. Does the log include:			
a. Date and time of inspection?	Y N		
b. Name of inspector?	Y N		
c. Notation of observation?	Y N		
d. Date and nature of repairs or remedial action?	Y N		
60. Have all malfunctions or other deficiencies identified during inspections been corrected?	Y N		
- If YES to Questions 57 - 59 d, ENTER STATUS "S".			
- If NO to any of Questions 57 - 59 d, ENTER STATUS "U".			
<u>40 CFR 265.17: Special Requirements for Ignitable, Reactive, and Incompatible Wastes</u>			
61. Does the installation handle ignitable or reactive wastes?	Y N		
- If YES, proceed with checklist.			
- If NO, ENTER STATUS "NA" for Question 63 and checklist is complete.			
Note: In addition to the characteristic of ignitable and reactive, ignitable and reactive wastes are also designated in 40 CFR 261 Subpart D lists. Check for these wastes on installation list of hazardous wastes.			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
62. Are the following precautions taken:			
a. Is waste separated and confined from sources of ignition or reaction (open flames, smoking, cutting and welding, hot surfaces, frictional heat), sparks (static, electrical, or mechanical), spontaneous ignition (e.g., from heat producing chemical reactions) and radiant heat? (Describe in comment section)	Y N		
b. Are smoking and open flame confined to specifically designated locations?	Y N		
c. Are "No Smoking" signs posted in hazardous areas?	Y N		
63. Is the treatment, storage, or disposal of ignitable or reactive wastes and the mixture or co-mingling of incompatible wastes and materials conducted so that it does not:			
a. Generate extreme heat or pressure, fire or explosion, or violent reaction?	Y N		
b. Produce uncontrolled toxic mists, fumes, dusts, or gases in sufficient quantities to threaten human health?	Y N		
c. Produce uncontrolled flammable fumes or gases in sufficient quantities to threaten human health?	Y N		
d. Damage the structural integrity of the device or facility containing the waste?	Y N		
e. Through other like means, threaten human health or the environment?	Y N		
- If YES to Questions 62 a - 63 e, ENTER STATUS "S".			
- If NO to any Questions 62 a - 63 e, ENTER STATUS "U".			
 This checklist is complete.			

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AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 265.16: Personnel Training			
1. Does the facility maintain the following RCRA personnel training records:			
a. Records of training on current employees?	Y N		
b. Records of training on former employees for at least 3 years after end of employment?	Y N		
- If YES to Questions 1 a and b, ENTER STATUS "S".			
- If NO to Question 1 a or b, ENTER STATUS "U".			
- If NO to Questions 1 a and b, ENTER STATUS "NA" for Question 2 and proceed with Question 3.			
2. Do these records include the following:			
a. Job titles relating to hazardous waste management?	Y N		
b. Job descriptions, as it pertains to their hazardous waste activities?	Y N		
c. Description of training required for each job description?	Y N		
d. Indication that personnel have taken part in the required training and an annual review of initial training?	Y N		
- If YES to Questions 2 a, b, c, and d, ENTER STATUS "S".			
- If NO to Question 2 a, b, c, or d, ENTER STATUS "U".			
3. Did facility personnel receive training by 5/19/81, or for new personnel, within six months of employment?	Y N		
- If YES, ENTER STATUS "S".			
- If NO, ENTER STATUS "U".			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
4. Does the training program include instruction on the following, where applicable: a. Waste management procedures? b. Contingency plan? c. Procedures for using, inspecting, repairing, and replacing facility emergency and monitoring equipment? d. Key parameters for automatic waste feed cut-off systems? e. Communications or alarm systems? f. Response to fires or explosions? g. Response to ground-water contamination incidents? h. Shutdown of operations? - If YES to Questions 4 a - h, ENTER STATUS "S" - If NO to any of Questions 4 a - h, ENTER STATUS "U" (Explain if an item is determined to not be applicable.) 5. Does each employee take part in an annual review of the training program? - If YES, ENTER STATUS "S". - If NO, ENTER STATUS "U". (Interview a number of employees and document the interviews.) This checklist is complete.	Y N Y N Y N Y N Y N Y N Y N Y N ☐ ☐		

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AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 265.31: Maintenance and Operation of Facility			
1. Is the installation maintained and operated to minimize the possibility of a fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water which could threaten human health or the environment? Note in the comments section any evidence of fire, explosion, or release of hazardous waste or hazardous waste constituents found during the site investigation. - If YES, ENTER STATUS "S" and describe how the installation is maintained and operated to minimize fires, explosions, and releases. - If NO, ENTER STATUS "U" and describe the deficiencies.	Y N		
40 CFR 265.32: Required Equipment			
2. Does the installation require any of the following equipment based on the hazards posed by the waste(s) it handles: a. Internal communication or alarm system to alert personnel of a spill or other accident? b. Telephone or two-way radio to call emergency response personnel? c. Portable fire extinguishers (Type ABC) or fire control equipment? d. Spill control equipment? e. Decontamination equipment? f. Emergency water supply of adequate volume for hoses, sprinklers, or water spray system? - If YES to any of Questions 2 a - f, proceed with checklist. - If NO to Questions 2 a - f, ENTER STATUS "NA" for Questions 3 and 4 and proceed with Question 5. - If NO to Question 2 a or b, ENTER STATUS "NA" for Question 6 and proceed with Question 7.	Y N Y N Y N Y N Y N Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
3. Does the installation have the required equipment listed in Question 2? - If YES, ENTER STATUS "S" and note in the comments section the presence and accessibility of equipment during the site investigation. Equipment should be compatible with types of wastes potentially spilled. - If NO, ENTER STATUS "U" and note in the comments section which required equipment is not provided at the installation.	Y N ☐		
40 CFR 265.33: Testing and Maintenance of Equipment			
4. Is the required equipment (see Question 2) tested and maintained to assure proper operation? - If YES, ENTER STATUS "S" and note the testing and maintenance procedures in the comments section. - If NO, ENTER STATUS "U" and note the deficiencies.	Y N ☐		
40 CFR 265.34: Access to Communications/Alarm Systems			
5. Do all personnel have immediate (direct or indirect) access to an internal alarm or emergency communication system during hazardous waste operations? Note: Indirect access includes visual or voice contact with another employee.	Y N		
6. If even just one employee is on the premises during hazardous waste operations, does (s)he have immediate access to external emergency assistance by phone or hand-held two-way radio? - If YES to Questions 5 and 6, ENTER STATUS "S". - If NO to Question 5 or 6, ENTER STATUS "U" and note the deficiencies in the comments section.	Y N ☐		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 265.35: Required Aisle Space			
7. Is aisle space used for the movement of personnel, fire protection equipment, spill control equipment, or decontamination equipment to any area of the installation in an emergency?	Y N		
- If NO, ENTER STATUS "NA" for Question 8 and proceed with Question 9.			
- If YES, proceed with checklist.			
8. Is there sufficient aisle space for unobstructed movement of personnel and emergency equipment?	Y N		
- If YES, ENTER STATUS "S".	☐		
- If NO, ENTER STATUS "U".			
40 CFR 265.37: Arrangements with Local Authorities			
9. Would any of the following local authorities be potentially needed during an emergency at the installation: police department, fire department, or other emergency response personnel?	Y N		
- If NO to all authorities, ENTER STATUS "NA" for Question 14 and describe in the comments section the basis for this determination. This checklist is complete.			
- If YES, proceed with checklist.			
10. Has the installation made arrangements with the local authorities (police, fire, emergency response) to familiarize them with characteristics of the installation?	Y N		
Note: Characteristics include lay-out of installation properties of hazardous waste handled and associated hazards, places where facility personnel would normally be working, entrances to roads inside installation, possible evacuation routes.			
- If YES, note in the comments section where these arrangements are documented.			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
11. Could more than one police and fire department respond to an emergency at the installation? - If NO, proceed with Question 12. - If YES, proceed with checklist. a. Has a primary emergency authority been designated? b. Have agreements been made with other responding local authorities to provide support to the primary emergency authority? - If YES, note in the comments section where the installation has documented these agreements.	Y N		
12. Does the installation have agreements with state emergency response teams, emergency response contractors and equipment suppliers? - If YES, note in the comments section where these agreements are documented.	Y N		
13. Has the installation arranged to familiarize local hospitals with the properties of hazardous waste handled and types of injuries or illnesses that could result from fires, explosions, or releases at the installation. - If YES to Questions 10 - 13, ENTER STATUS "S" for Question 14 and note in the comments section where these arrangements are documented. This checklist is complete. - If NO to any of Questions 10 - 13, proceed with checklist.	Y N		
14. Has the installation documented its attempts to make such arrangements? - If YES, ENTER STATUS "S" and note in the comments section where these attempts are documented and when they were made. - If NO, ENTER STATUS "U". This checklist is complete.	Y N ☐		

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AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 265.51: Purpose and Implementation			
1. Has a contingency plan been designed for the installation?	Y N		
- If YES, ENTER STATUS "S".	☐		
- If NO, ENTER STATUS "U" and "NA" for the remaining sections of this checklist.			
40 CFR 265.52: Content of Contingency Plan			
2. Was the contingency plan prepared by amending an existing Spill Prevention, Control and Countermeasure (SPCC) Plan?	Y N		
3. Does the contingency plan:			
a. Cover actions which facility personnel must take in response to fires, explosions, sudden and non-sudden releases of hazardous wastes or hazardous waste constituents to air, soil, or surface water at the installation?	Y N		
b. Describe arrangements agreed to or document efforts to obtain agreement if no agreements are reached by local police departments, fire departments, hospitals, contractors, and state and local emergency response teams to coordinate emergency services? (If YES, indicate which approach was used, in comments)	Y N		
c. List names, addresses and phone numbers of all personnel qualified to act as emergency coordinators?	Y N		
1) Is the list kept up to date?	Y N		
2) If more than one person is listed, is one named as primary emergency coordinator and the others listed in the order in which they will assume responsibility as alternates?	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
d. List all required emergency and decontamination equipment at the installation and its location along with a description of each item and its capability?	Y N		
1) Is this list up to date?	Y N		
e. Have an evacuation plan for facility personnel which includes signals, routes and alternate evacuation routes?	Y N		
- If YES to Question 3 a - e, ENTER STATUS "S".	☐		
- If NO to any of Questions 3 a - e, ENTER STATUS "U".			
40 CFR 265.53: Copies of Contingency Plan			
4. Is a copy of the plan (including all revisions) maintained at the installation?	Y N		
5. Have copies of the plan been submitted to all local police departments, fire departments, hospitals, and state and local emergency response teams that <u>may</u> be called upon to provide emergency services?	Y N		
- If YES to Questions 4 <u>and</u> 5, ENTER STATUS "S".	☐		
- If NO to Question 4 <u>or</u> 5, ENTER STATUS "U".			
40 CFR 265.54: Amendment of Contingency Plan			
6. Is the contingency plan reviewed and amended if necessary?	Y N		
Note: This should occur whenever applicable regulations are revised; the plan fails in an emergency; the installation changes (design, construction, operation, maintenance, etc.); the list of emergency coordinators changes; or the list of emergency equipment changes.			
- If YES, ENTER STATUS "S".	☐		
- If NO, ENTER STATUS "U".			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 265.55 Emergency Coordinator			
7. Is there an emergency coordinator on-site or on-call at all times?	Y N		
8. Is each emergency coordinator thoroughly familiar with all aspects of the facility's contingency plan, all operations and activities at the facility, the location and characteristics of waste handled, the location of all records within the facility, and the facility layout?	Y N		
9. Does each emergency coordinator have the authority to commit the resources needed to carry out the contingency plan?	Y N		
Note: Interview at least one emergency coordinator regarding plan, if practical.			
- If YES to Questions 7 - 9 ENTER STATUS "S".	☐		
- If NO to any Questions 7 - 9, ENTER STATUS "U".			
40 CFR 265.56 Emergency Procedures			
10. Has there ever been an imminent or actual emergency at the installation?	Y N		
- If NO ENTER STATUS "NA" for Question 11 and proceed with Question 12.			
- If YES, proceed with checklist.			
11. Has the emergency coordinator or his designee immediately:			
a) Activated internal facility alarms or communication systems, as applicable, to notify all facility personnel?	Y N		
b) Notified appropriate emergency response state or local authorities if their help was needed?	Y N		
- If YES to Questions 11 a and b, ENTER STATUS "S".	☐		
- If NO to Question 11a or 11b, ENTER STATUS "U".			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
12. Has there ever been a release, fire, or explosion at the installation? - If NO, ENTER STATUS "NA", for Question 13 and checklist is complete. - If YES, note in the comments Section <u>when</u> the incident(s) occurred and <u>where</u> the installation has this documented and proceed with checklist.	Y N		
13. Did the emergency coordinator: a. Identify the character, exact source, amount, and area extent of the released materials? Note: This may be done by observation or review of facility records or manifests, or chemical analysis. b. Assess possible hazards to human health or the environment that may result from the release, fire, or explosion? c. Consider during the assessment both direct and indirect effects of the release, fire, or explosion? (For example, the effects of toxic, asphyxiating, or irritating gases that are generated, or the effects of hazardous surface water runoff from chemical agents used to control the release, fire, or explosion.) d. Determine whether or not that the release, fire, or explosion could threaten human health, or the environment, outside the facility? e. Determine whether or not evacuation of local areas was advisable and notify appropriate local authorities? f. Immediately notify the designated on-scene coordinator or the National Response Center? - If NO, proceed with Question 13 h. - If YES, proceed with Question 13 g.	Y N Y N Y N Y N Y N Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
g Did the report contain all of the following 1) Name and telephone number of reporter? 2) Name and address of facility? 3) Time and type of incident? 4) Name and quantity of material involved? 5) Extent of injuries? 6) Possible hazards to human health or the environment, outside the facility? - If NO to any of these, indicate what was not included. h. Take all reasonable measures necessary to ensure that fires, explosions, and releases do not occur, recur, or spread to other hazardous waste at the facility? i. Stop operations in response to the fire, explosion, or release? j. Monitor for leaks, pressure buildup, gas generation, or ruptures in valves, pipes, or other equipment, as appropriate? k. Immediately after the emergency, provide for treating, storing, or disposing of recovered waste, contaminated soil or surface water, or any other material that resulted from the incident? Note: Unless the installation shows, in accordance with 40 CFR 261.3 (c) or (d), that the recovered material is not a hazardous waste, the installation becomes a generator of hazardous waste and must manage it in accordance with 40 CFR Parts 262, 263, and 265.	Y N Y N Y N Y N Y N Y N Y N Y N Y N Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
l. Ensure that, in the affected areas of the installation:			
1) No waste incompatible with the released material was treated, stored, or disposed of until cleanup procedures were completed?	Y N		
2) All emergency equipment listed in the contingency plan was cleaned and fit for its intended use before operations were resumed?	Y N		
m. Notify the Regional Administration, and appropriate state and local authorities, that the facility is in compliance before operations were resumed in the affected areas of the installation?	Y N		
n. Does the installation's operating record note the time, date, and details of the incident?	Y N		
o. Was a written report submitted to the Regional Administrator within 15 days after the incident that included all of the following:			
1) Name, address, and telephone number of the installation?	Y N		
2) Name, address, and telephone number of the installation?	Y N		
3) Date, time, and type of incident (for example, fire, explosion)?	Y N		
4) Name and quantity of material(s) involved?	Y N		
5) The extent of injuries, if any?	Y N		
6) An assessment of actual or potential hazards to human health or the environment, as applicable?	Y N		
7) Estimated quantity and disposition of recovered material that resulted from the incident?	Y N		
• If YES to Question 13 a - o, ENTER STATUS "S".			
• If NO to any of Questions 13 a - o, ENTER STATUS "U".			
This checklist is complete.			

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AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 265.71: Use of Manifest System			
1. Are wastes received from off-site generators? - If NO, ENTER STATUS "NA" for Questions 2, 4, 6, and 8. Proceed with Question 9. - If YES, proceed with checklist.	Y N		
2. Does the owner/operator: a. Retain copies of manifests at the facility for three years from delivery date? (Obtain and review samples of manifests.) b. Assure manifests are signed and dated? c. Returned a signed and dated copy to the generator within 30 days? d. Return copies of manifests to the transporter at time of delivery? Note: Wastes from conditionally exempt small quantity generators are exempt from manifest requirements. - If YES to Questions 2 a - d, ENTER STATUS "S". - If NO to any of Questions 2 a - d, ENTER STATUS "U".	Y N Y N Y N Y N 		
3. Are any wastes received from a rail or water (bulk shipment transporter)? - If YES, proceed with checklist. - If NO, ENTER STATUS "NA" for Question 4 and proceed with Question 5.	Y N		
4. Does the owner/operator: a. Retain copies of shipping papers at the installation for three years from delivery date? b. Assure papers are signed and dated? c. Returned a signed and dated copy of shipping paper or manifest to the generator within 30 days?	Y N Y N Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
d. Return copies of shipping papers to the transporter at time of delivery? - If YES to Questions 4 a - d, ENTER STATUS "S". - If NO to any of Questions 4 a - d, ENTER STATUS "U". 40 CFR 265.72: Manifest Discrepancies 5. Have any waste shipments been received which were significantly inconsistent with the manifest in quantity or type (manifest discrepancies)? - If NO, ENTER STATUS "NA" to Question 6 and proceed with Question 7. - If YES, briefly describe nature and time of each occurrence, and proceed with checklist. Note: Significant discrepancies in quantity are: (1) for bulk waste, variations greater than 10 percent in weight, and (2) for batch waste, any variation in piece count, such as a discrepancy of one drum in a truckload. Significant discrepancies in type are obvious differences which can be discovered by inspection or waste analysis, such as waste solvent substituted for waste acid, or toxic constituents not reported on the manifest or shipping paper. 6. Did the owner/operator assure that: a. Each discrepancy was marked on the manifest or shipping paper upon receipt of the waste? (40 CFR 265.71) b. Each discrepancy was resolved with the waste generator or transporter? - If YES, determine status for Question 6 and proceed with Question 7. - If NO, proceed with checklist. c. An attempt was made to reconcile differences with the transporter and/or generator? If yes, please describe each attempt. d. If the discrepancy was not reconciled, that EPA was notified in writing? If yes, please identify to whom and when. e. The notification was submitted within 15 days of receipt of the waste?	Y N ☐ Y N Y N Y N Y N Y N Y N Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 265.76: Unmanifested Waste Report			
- If YES to Questions 6 a - e, ENTER STATUS "S".	☐		
- If NO to any of Questions 6 a - e, ENTER STATUS "U".			
7. Has the facility received any waste (that does not come under the small generator exclusion) not accompanied by a manifest?	Y N		
- If NO, ENTER STATUS "NA" for Question 8 and proceed with Question 9.			
- If YES, proceed with checklist.			
8. Did the owner/operator submit an unmanifested waste report to EPA within 15 days which included all of the following:			
a. The EPA identification number, name, and address of the facility?	Y N		
b. The date the facility received the waste?	Y N		
c. The EPA identification number, name, and address of the generator and the transporter, if available?	Y N		
d. A description and the quantity of each unmanifested hazardous waste the facility received?	Y N		
e. The method of treatment, storage, or disposal for each hazardous waste?	Y N		
f. The certification signed by the owner or operator of the facility or his authorized representative?	Y N		
g. A brief explanation of why the waste was unmanifested, if known?	Y N		
Note: Hazardous waste generated by conditionally exempt small quantity generators are excluded from regulation and do not require a manifest. Where a facility receives unmanifested hazardous wastes, EPA suggests that the owner or operator obtain from each generator a certification that the waste qualifies for exclusion. Otherwise, the agency suggests that the owner or operator file an unmanifested waste report for the hazardous waste movement.			
- If NO to any Questions 8 a - g, ENTER STATUS "U" and describe the deficiencies.	☐		
- If YES to Questions 8 a - g, ENTER STATUS "S".			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 265.73: Operating Record			
9. Does the installation keep a written record at the facility?	Y N		
Note: Records must be kept until closure.			
- If NO, ENTER STATUS "U" for Question 10 and proceed with Question 11.			
- If YES, proceed with checklist.			
10. Does the operating record include:			
a. Description and quantity of each hazardous waste received?	Y N		
b. Methods and dates of treatment, storage, or disposal?	Y N		
c. Location and quantity of each hazardous waste at each location and cross-references to specific manifest?	Y N		
Note: For disposal facilities, this information must be recorded on a map or diagram of each cell or disposal area.			
d. Records and results of waste analyses and trial tests?	Y N		
e. Report of incidents involving implementation of the contingency plan, if applicable?	Y N		
f. Records and results of required inspections?	Y N		
g. Monitoring, testing, or analytical data, where required?	Y N		
Required data may include 1) ground-water monitoring data or exemption certification, 2) food chain crops uptake of contaminants, 3) unsaturated zone monitoring, 4) soil-core monitoring, 5) incinerator monitoring results, and 6) thermal treatment results.			
h. Closure and post-closure cost estimates?	Y N		
i. Records of the quantities and date of placement for each shipment of waste in land disposal units?	Y N		
j. Appropriate waste analysis information (refer to Checklist R-H-B)?	Y N		
- If YES to Questions 10 a - j, ENTER STATUS "S".	☐		
- If NO to any of Questions 10 a - j, ENTER STATUS "U".			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 265.74: Availability, Retention and Disposition of Records			
11. Has the facility closed its hazardous waste management units?	Y N		
- If NO, ENTER STATUS "NA" for Question 12.			
- If YES, proceed with checklist.			
12. Has the facility provided a copy of records of waste disposal locations and volumes to the regional administrator and local land authority?	Y N		
- If YES, ENTER STATUS "S".			
- If NO, ENTER STATUS "U".			
40 CFR 265.75: Biennial Report			
13. Has the owner/operator submitted biennial reports (EPA Form 8700-138) by March 1 of each even numbered year? (Obtain copy of latest report)	Y N		
Note: States may use other report forms or have more frequent reporting requirements.			
- If NO, ENTER STATUS "U".			
- If YES, proceed with checklist.			
14. Does the report include:			
a. The EPA identification number, name, and address of the facility?	Y N		
b. The calendar year covered by the report?	Y N		
c. For off-site facilities, the EPA identification number of each hazardous waste generator from which the facility received a hazardous waste during the year?	Y N		
Note: For imported shipments, the report must give the name and address of the foreign generator.			
d. A description and the quantity of each hazardous waste the facility received during the year?	Y N		
Note: For off-site facilities, this information must be listed by EPA identification number of each generator			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
e. The method of treatment, storage, or disposal for each hazardous waste?	Y N		
f. The certification signed by the owner or operator of the facility or his authorized representative?	Y N		
g. Ground-water monitoring data, if applicable?	Y N		
h. Recent closure and post-closure cost estimate?	Y N		
i. Efforts to reduce the volume and toxicity of waste generated?	Y N		
j. Annual changes in volume and toxicity achieved?	Y N		
- If YES to Questions 15 a - j, ENTER STATUS "S".			
- If NO to any of Questions 15 a - j, ENTER STATUS "U".			
This checklist is complete.			

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AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 265.90: General			
1. Has the owner/operator prepared a waiver demonstration which is maintained at the facility? Note: The waiver does not need to be submitted to EPA for approval. However, EPA may review the waiver at any time and find it to be adequate or inadequate. If inadequate, the facility is not satisfying the groundwater monitoring requirements. The waiver should be reviewed to assure it meets the requirements of 40 CFR 265.90. If <u>all</u> requirements have been waived, this checklist is complete. - If YES, ENTER STATUS "S" for Question 3 and proceed with Question 5. - If NO, proceed with Question 5.	Y N		
2. Is the facility's only regulated land disposal unit an impoundment which is used to neutralize wastes that are hazardous solely because they are corrosive? - If NO to Questions 1 and 2, ENTER STATUS "NA" for Questions 3 and 4 and proceed with Question 5. - If YES to Question 1 or 2, proceed with checklist.	Y N		
3. Has the facility demonstrated, in writing certified by a qualified professional, that there is no potential for the migration of hazardous wastes from the unit? - If YES, ENTER STATUS "S". - If NO, ENTER STATUS "U".	Y N		
4. Review the documents and inspect the system. Does it appear to provide adequate protection from any potential for migration of hazardous wastes to any human or environmental target? - If YES, ENTER STATUS "S". - If NO, ENTER STATUS "U" and investigate the facility's response to this failure under the "Environmental Management" checklist. This checklist is complete	Y N		

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AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 265.92: Sampling and Analysis			
8. Is a groundwater sampling and analysis plan maintained at the facility?	Y N		
- If NO, ENTER STATUS "U" for Question 9 and proceed with Question 10.			
- If YES, proceed with checklist.			
9. Does it include adequate procedures for:			
a. Sample collection?	Y N		
b. Sample preservation and shipment?	Y N		
c. Analytical procedures for parameters listed in 40 CFR 265.92(b)?	Y N		
d. Chain-of-custody control?	Y N		
- If YES to Questions 9 a - d, ENTER STATUS "S".			
- If NO to any of Questions 9 a - d, ENTER STATUS "U".			
10. For all wells, were samples analyzed to establish initial background concentration or values for parameters specified in 40 CFR 265.92 (b)?	Y N		
Note: Quarterly analyses are required over first year to establish background			
11. After the first year, were samples collected and measurements performed:			
a. At least annually to establish groundwater quality?	Y N		
b. At least semi-annually to indicate groundwater contamination?	Y N		
c. At each sampling to determine the groundwater surface at each well?	Y N		
- If YES to Questions 10 - 11 c, ENTER STATUS "S".			
- If NO to any of Questions 10 - 11 c, ENTER STATUS "U".			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
<u>40 CFR 265.93: Preparation, Evaluation and Response</u>			
12. Has the facility prepared an outline of a groundwater assessment program capable of determining:			
a. Whether hazardous waste or hazardous waste constituents have entered the groundwater?	Y N		
b. The rate and extent of migration of hazardous waste or hazardous waste constituents in groundwater?	Y N		
c. The concentration of hazardous waste constituents in the groundwater?	Y N		
- If YES to Questions 12 a - c, ENTER STATUS "S".			
- If NO to any of Questions 12 a - c, ENTER STATUS "U".			
13. Are statistical analyses, as described in 265.93(b), performed on groundwater monitoring data?	Y N		
- If NO ENTER STATUS "U".			
- If YES, ENTER STATUS "S".			
14. Have significant increases in specific conductance, total organic carbon, and total organic halogen (or pH decreases), been confirmed at any time for downgradient wells?	Y N		
- If NO, ENTER STATUS "NA" for Question 16 and proceed to Question 17.			
- If YES, proceed with checklist.			
15. Did the owner/operator notify EPA within 7 days of confirmation?	Y N		
16. Did the owner/operator:			
a. Develop a ground-water assessment plan based on the outline (See Question 12)?	Y N		
b. Submit the plan to EPA within 15 days of notification?	Y N		
c. Provide a plan that was certified by a qualified geologist or geotechnical engineer?	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
d. Include in the plan all of the following: 1) Number, location and depth of wells? 2) Sampling and analysis methods? 3) Data evaluation procedures? 4) Schedule of implementation? - If YES to Questions 15 - 16 d 4, ENTER STATUS "S". - If NO to any of Questions 15 - 16 d 4, ENTER STATUS "U".	Y N ☐		
17. Are results of the groundwater assessment program sent to the EPA or the state annually (by March 1) which include calculated rate of hazardous waste migration? - If YES, ENTER STATUS "S". - If NO, ENTER STATUS "U".	☐		
40 CFR 265.94: Recordkeeping and Reporting			
18. Are records of analyses maintained at the facility throughout its active life, and for disposal facilities, through the post-closure period?	Y N		
19. Are annual reports submitted no later than March 1 of each year?	Y N		
20. Do the reports include:			
a. Concentrations or values of parameters for each well?	Y N		
b. Results of statistical analysis?	Y N		
c. Identification of significant differences from initial background found in upgradient wells?	Y N		
- If YES to Questions 18 - 20 c, ENTER STATUS "S".	☐		
- If NO to any of Questions 18 - 20 c, ENTER STATUS "U".			
This checklist is complete.			

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AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
<u>40 CFR 265.111: Closure Performance Standard</u>			
1. Has any regulated unit been closed?	Y N		
- If YES, complete the applicable checklist for the regulated unit closed. Be sure to review the approved closure plan.			
<u>40 CFR 275.112: Closure Plan; Amendment of Plan</u>			
2. Does the facility have a written closure plan?	Y N		
- If NO, ENTER STATUS "U". This checklist is complete.			
- If YES, ENTER STATUS "S", obtain a copy of the plan for review.			
3. Does the plan identify the steps necessary to completely or partially close the facility at any point during its intended operating life and to completely close the facility at the end of its intended operating life?	Y N		
- If YES, ENTER STATUS "S", and describe in the Comments column how the plan identifies the steps.			
- If NO, ENTER STATUS "U" and describe the deficiencies.			
4. Does the plan include the following items:			
a. A description of how each unit will be closed in accordance with 40 CFR 265.111 to minimize the need for further maintenance?	Y N		
b. A description of how the final closure of the facility will be conducted in accordance with 40 CFR 265.111?	Y N		
c. An identification of the maximum extent of the operation which will remain active over the life of the facility?	Y N		
d. An estimate of the maximum inventory of hazardous waste ever on site over the active life of the facility?	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
e. A detailed description of the methods to be used during partial and final closure to manage the waste?	Y N		
- If YES, describe methods in the Comments.			
f. A detailed description of the steps needed to remove or decontaminate all hazardous waste residues, equipment, structures, and soils (including determining the extent of contamination)?	Y N		
g. A detailed description of other activities necessary to ensure the closure performance standards are met?	Y N		
h. A schedule for closure of each unit which includes the performance of interim steps and activities so that progress can be tracked?	Y N		
i. An estimate of the expected year of final closure if the facility does not have an approved plan?	Y N		
- If YES, to all of the Questions 4 a - i, ENTER STATUS "S".			
- If NO to any of Questions 4 a - i, ENTER STATUS "U".			
5. Have any of the following circumstances occurred?			
o A change in operating plans or facility design.	Y N		
o A change in the expected year of closure, if applicable.	Y N		
o Unexpected events while conducting partial or final closure.	Y N		
- If YES, describe the circumstances and proceed to Question 6.			
- If NO, ENTER STATUS "NA" for Question 6 and proceed with Question 7.			
6. Was the plan revised to reflect the changed conditions and submitted to the Regional Administrator or the State within the timeframes specified in 40 CFR 265.112(c)(2-4)?	Y N		
- If YES, ENTER STATUS "S".			
- If NO, ENTER STATUS "U".			
7. Does the facility manage hazardous waste in tanks?	Y N		
- If NO, ENTER STATUS "NA" for Question 8 and proceed with Question 9.			
- If YES, proceed with checklist.			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
8 Does the closure plan include the following provisions from 40 CFR 265 SUBPART J:			
a. A plan for ensuring that all equipment, waste residues, contaminated system components, structures, and soils are managed as hazardous waste?	Y N		
b. A contingent plan in the event that not all contaminated soils can be removed so that the area can be closed as a landfill? (See landfill closure requirements.)	Y N		
c. Cost estimates which reflect the more costly of the two closure options, removal or closure as a landfill?	Y N		
- If NO to Question 8 a, b or c, ENTER STATUS "U"			
- If YES to Questions 8 a, b and c, ENTER STATUS "S"			
9. Does the facility manage hazardous waste in surface impoundments?	Y N		
- If NO, ENTER STATUS "NA" for Question 10 and proceed with Question 11.			
- If YES, proceed with checklist.			
10. Does the closure plan include the following provisions for 40 CFR 265 SUBPART K?			
a. A plan to remove or decontaminate all contaminated subsoils, structures, waste residues, liners, and leachate and manage them as hazardous waste?	Y N		
b. A plan to close the impoundment in place as a landfill and provide post-closure care? (See landfill closure requirements.)	Y N		
c. Provisions to maintain and operate groundwater monitoring systems, final covers, and run-on and run-off control systems during the post-closure care period?	Y N		
- If NO to Questions 10 a, b and c, ENTER STATUS "U".			
- If YES to Question 10 a or YES to Questions 10 b, and c, ENTER STATUS "S"			
11. Does the facility manage hazardous waste in waste piles?	Y N		
- If NO, ENTER STATUS "NA" for Question 12 and proceed with Question 13.			
- If YES, proceed with checklist.			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
12. Does the closure plan include the following provisions from 40 CFR 265 Subpart L?			
a. A plan to remove or decontaminate all waste residues, contaminated containment system components (liners, etc.), contaminated subsoils, and structures and equipment contaminated with waste and leachate, and manage them as hazardous waste?	Y N		
b. A plan to close the pile in accordance with the landfill closure and post-closure care requirements found at 40 CFR 265.310 if all of the contaminated subsoils cannot or will not be removed?	Y N		
- If YES to Questions 12 a and b, ENTER STATUS "S".			
- If NO to Questions 12 a or b, ENTER STATUS "U".			
13. Does the facility manage hazardous waste by land treatment?	Y N		
- If NO, ENTER STATUS "NA" for Question 15 and proceed with Question 16.			
- If YES, proceed with checklist.			
14. Does the closure plan include provisions from 40 CFR 265 Subpart M for:			
a. Controlling the migration of hazardous waste and waste constituents from the treated area to groundwater, surface water, and to the air?	Y N		
b. Ensuring the requirements for the growth of food-chain crops will be met?	Y N		
15. Does the closure plan consider the following factors:			
a. Type and amount of hazardous waste applied to the land?	Y N		
b. Mobility and expected migration rates of the hazardous waste and constituents?	Y N		
c. Site location, topography, and surrounding land use?	Y N		
d. Climate?	Y N		
e. Geological and soil profiles?	Y N		
f. Unsaturated zone monitoring information?	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
g Actual concentration and migration of hazardous waste or constituents as compared to background levels? - If YES to Questions 14 a - 15 g, ENTER STATUS "S". - If NO to any of Questions 14 a - 15 g, ENTER STATUS "U". (Describe what methods the facility has considered in developing a closure and post-closure care plan to meet the closure performance standards)	Y N ☐		
16. Does the facility dispose of hazardous waste in on-site landfills? - If NO, ENTER STATUS "NA" for Question 17 and proceed with Question 18. - If YES, proceed with checklist.	Y N		
17. Does the closure plan include provisions for: a. A final cover design that meets the requirements of 40 CFR 265.310? b. Post-closure care? - If NO to Question 17 a <u>or</u> b, ENTER STATUS "U". - If YES, to Question 17 a <u>and</u> b, ENTER STATUS "S".	Y N Y N ☐		
18. Does the facility manage wastes in incineration units? - If NO, ENTER STATUS "NA" for Question 19 and proceed with Question 20. - If YES, proceed with checklist.	Y N		
19. Does the closure plan contain provisions for removing all hazardous waste, residues, ash, scrubber waters, and sludges from the incinerator? - If NO, ENTER STATUS "U". - If YES, ENTER STATUS "S".	Y N ☐		
20. Does the facility thermally treat hazardous waste in other than an incinerator? - If NO, ENTER STATUS "NA" for Question 21 and proceed with Question 22. - If YES, proceed with checklist.	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
21. Does the closure plan contain provisions for removing all hazardous waste, residues, and ash from the thermal treatment area and equipment? - If NO, ENTER STATUS "U". - If YES, ENTER STATUS "S".	Y N ☐		
22. Does the facility chemically, physically, or biologically treat hazardous waste with methods other than in tanks, impoundments, or by land treatment? - If NO, ENTER STATUS "NA" for Question 23 and proceed with Question 24. - If YES, proceed with checklist.	Y N		
23. Does the closure plan include provisions for removing all hazardous waste and residues from the treatment processes, equipment, and discharge control and confinement structures? - If NO, ENTER STATUS "U". - If YES, ENTER STATUS "S".	Y N ☐		
24. Has the facility undergone or is the facility undergoing partial or final closure? - If NO, ENTER STATUS "NA" for Question 26 and proceed with Question 27. - If YES, proceed with checklist.	Y N		
25. Was notice of the closure provided to the Regional Administrator or the State Director sufficiently in advance of the expected closure? (Review the appropriate notices and determine if they met the required timeframes.)	Y N		
26. Was the closure plan approved by the Regional Administrator or the State Director? - If NO to Question 25 or 26, ENTER STATUS "U". - If YES to Questions 25 and 26, ENTER STATUS "S". (Review procedures for providing advance notice to the Regional Administrator or State)	Y N ☐		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 265.113: Closure-Time Allowed for Closure			
27. Has the facility stopped accepting hazardous waste?	Y N		
- If NO, ENTER STATUS "NA" and proceed with Question 29.			
- If YES, proceed with checklist.			
28. Has the facility closed its hazardous waste management activities within the required time frame after the closure plan being approved?	Y N		
- If YES, ENTER STATUS "S".	☐		
- If NO, ENTER STATUS "U".			
Note that the Regional Administrator and State Director may extend the time frame for completing closure.			
40 CFR 265.114: Disposal or Decontamination of Equipment, Structures and Soils			
The facility may have become a generator of hazardous waste while performing closure activities. Document how generator requirements were satisfied.			
40 CFR 265.115: Certification of Closure			
29. Has certification of closure in accordance with the approved closure plan been provided to EPA or the State?	Y N		
(The plan must be signed by a registered professional engineer.)			
- If NO, and closure has not occurred, ENTER STATUS "NA". If closure has occurred, ENTER STATUS "U".	☐		
- If YES, ENTER STATUS "S".			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
<u>40 CFR 265.116: Survey Plat</u>			
30. Have survey plats been prepared for each hazardous waste disposal unit closed, and have they been provided to the local land use authority as well as the Regional Administrator or State Director?	Y N		
- If NO, and closure has not occurred, ENTER STATUS "NA". If closure has occurred, ENTER STATUS "U".			
- If YES, ENTER STATUS "S".			
<u>40 CFR 265.117: Post-Closure Care and Use of Property</u>			
31. Does the facility manage hazardous waste in:			
a. Landfill units?	Y N		
b. Other units which, when closed will leave hazardous wastes in place (in some surface impoundments, waste piles)?	Y N		
- If NO to Questions 31 a and b, ENTER STATUS "NA" for Question 32.			
- If YES to Questions 31 a - b, proceed with checklist.			
32. Does the facility have a post-closure care plan?	Y N		
- If NO, ENTER STATUS "U" and checklist is complete.			
- If YES, ENTER STATUS "S".			
<u>40 CFR 265.118: Post-Closure Plan-Amendment of Plan</u>			
33. Does the post-closure care plan include:			
a. A description of the planned monitoring activities including ground water monitoring?	Y N		
b. A description of the planned maintenance activities that will be performed to ensure the integrity of the cap and final cover and other containment systems?	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
c. A description of the maintenance activities that will be performed to ensure that the monitoring equipment will function?	Y N		
d. The name, address, and phone number of the office to contact during the post-closure care period?	Y N		
- If NO to Question 33 a, b, c, or d, ENTER STATUS "U".			
- If YES to Questions 33 a, b, c and d, ENTER STATUS "S".			
34. Has the closure plan been modified?	Y N		
- If NO, ENTER STATUS "NA" for Question 35.			
- If YES, proceed with checklist.			
35. Has the post-closure plan been modified accordingly?	Y N		
- If NO, ENTER STATUS "U".			
- If YES, ENTER STATUS "S".			
Note: The post-closure plan is subject to many of the same time frame requirements for submittal and modification as is the closure plan. Make sure that <u>both</u> plans are modified or submitted as required.			
<u>40 CFR 265.119: Post-Closure Notices</u>			
36. Have provisions been made to provide for the required notice of past hazardous waste activity to local authorities and the Regional Administrator?	Y N		
- If NO, ENTER STATUS "U".			
- If YES, ENTER STATUS "S".			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 265.120: Certification of Completion of Post-Closure Care			
37. If the post-closure care period has ended, did the owner/operator provide appropriate certification to the Regional Administrator or Director within 60 days?	Y N NA		
- If YES or NOT APPLICABLE, ENTER STATUS "S".	☐		
- If NO, ENTER STATUS "U".			
Note: The Superfund Amendments and Reauthorization Act requires that Federal facilities provide notice of hazardous waste activity prior to transfer of property. Section 120(h) of SARA.			
This checklist is complete.			

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_____BLDG/AREA/UNIT(S): _____

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AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 265.171: Conditions of Containers			
Note: Verify during inspection.			
1. Are containers in good condition?	Y N		
2. Are wastes transferred from leaky or poor containers to good containers?	Y N		
- If YES to Questions 1 and 2, ENTER STATUS "S".			
- If NO to Question 1 or 2, ENTER STATUS "U" and describe.			
40 CFR 265.172: Compatibility of Waste with Container			
3. Are containers compatible with the wastes contained in them?	Y N		
4. Are corrosive or reactive wastes stored in containers?	Y N		
- If NO to Questions 3 and 4, ENTER STATUS "NA" and proceed with Question 6.			
- If YES to Questions 3 or 4, proceed with checklist.			
5. Are container types (materials) specified for particular corrosive or reactive wastes in the operating plan?	Y N		
- If YES, ENTER STATUS "S".			
- If NO, ENTER STATUS "U".			
Review procedures for storing incompatible wastes.			
40 CFR 265.173: Management of Containers			
6. Are containers closed when in storage?	Y N		
7. Are containers managed to prevent ruptures or leaks?	Y N		
- If YES to Questions 6 and 7, ENTER STATUS "S".			
- If NO to Question 6 or 7, ENTER STATUS "U".			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
<u>40 CFR 265.174: Inspections</u>			
8. Is the container storage area inspected at least weekly for leaks and defects?	Y N		
Note: Check inspection plan and inspection log.			
- If YES, ENTER STATUS "S".			
- If NO, ENTER STATUS "U".			
<u>40 CFR 265.176: Special Requirements for Ignitable or Reactive Waste</u>			
9. Are ignitable or reactive wastes stored in containers?	Y N		
- If NO, ENTER STATUS "NA" for Question 12 and proceed with Question 13.			
- If YES, proceed with checklist.			
10. Are containers holding ignitable or reactive wastes located at least 15 meters (50 feet) from the site's property line?	Y N		
11. Are water-reactive wastes protected from rainfall and sprinkler systems?	Y N		
12. Is ventilation adequate?	Y N		
- If YES to Questions 10 - 12, ENTER STATUS "S".			
- If NO to any of Questions 10 - 12, ENTER STATUS "U" and describe deficiencies.			
<u>40 CFR 265.177: Special Requirements for Incompatible Wastes</u>			
13. Are wastes placed: (1) in containers with incompatible wastes or (2) in containers which previously held incompatible wastes?	Y N		
Note: See 40 CFR 265 Appendix V for Examples of Incompatible Wastes.			
- If YES, proceed with checklist.			
- If NO, ENTER STATUS "NA" for Question 14 and proceed with Question 15.			

This checklist is complete.

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AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 265.191: Assessment of Existing Tank System's Integrity			
1. Was an assessment conducted to determine whether tanks are leaking or unfit for use? - If YES, proceed with checklist. - If NO, ENTER STATUS "U" for Question 4 and proceed with Question 5.	Y N		
2. Does the assessment consider: a. Design standard for actual construction? b. Waste characteristics? c. Corrosion protection? d. Estimated or actual age of the tank system? e. Results of a leak test, internal inspection, or other tank integrity examination?	Y N Y N Y N Y N Y N		
3. Was the assessment reviewed and certified in accordance with 40 CFR 270.11(d) by an independent, qualified, registered, professional engineer?	Y N		
4. Was the certified written assessment on file at the facility? - If YES to Questions 2 a - 4, ENTER STATUS "S". - If NO to any of Questions 2 a - 4, ENTER STATUS "U".	Y N ☐		
265.192: Design and Installation of New Tank Systems or Components			
5. Was a written assessment completed to certify that the tank system has sufficient structural integrity and is acceptable for the storing and treating of hazardous waste? - If NO, ENTER STATUS "U" for Question 7 and proceed with Question 8. - If YES, proceed with checklist.	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
6. Was this assessment reviewed and certified by an independent qualified and registered professional engineer? - If NO, ENTER STATUS "U" for Question 7 and proceed with Question 8. - If YES, proceed with checklist.	Y N		
7. Does the assessment include: a. Design standards? b. Waste characteristics? c. Design considerations including foundation, anchoring, etc.? d. Corrosion factors and type and degree of external corrosion protection determined by a corrosion expert, if there is contact between soil or water with the external metal component (shell) of the tank? - If NO to Question 7 a - d (if applicable), ENTER STATUS "U". - If YES, to Questions 7 a - d, ENTER STATUS "S".	Y N Y N Y N Y N ☐		
8. Prior to use, has an independent and qualified installation inspector or an independent, qualified registered professional engineer inspected the system for weld breaks, punctures, scrapes of protective coatings, cracks, corrosion, structural damage, inadequate installation, or construction or completion of any required remedies?	Y N		
9. Has the tank system been tested for tightness?	Y N		
10. Was the required corrosion protection system been installed? - If NO, proceed with Question 12. - If YES, proceed with checklist.	Y N		
11. Was the installation of the corrosion protection system supervised by an independent corrosion expert?	Y N		
12. Is all ancillary equipment properly supported and protected against physical damage and excessive stress? - If the tank system is aboveground proceed to Question 15.	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
13. Is the backfill material a noncorrosive, porous, and homogeneous materials?	Y N		
14. Is the backfill material completely surrounding the tank and compacted properly to provide full and uniform support to the tank and piping?	Y N		
15. Is the certified written statement on the proper design, repair, and installation of the tank system on file at the facility?	Y N		
16. Is the certification statement the same as required in Section 270.11(d)?	Y N		
- If NO to Question 8 - 16, ENTER STATUS "U".	☐		
- If YES to Questions 8 - 16, ENTER STATUS "S".			
<u>40 CFR 265.193: Containment and Detection of Releases</u>			
17. Does the tank system contain free liquids? Please list the testing method (265.190(a))	Y N		
18. Are the tanks located inside a building and on an impermeable floor (265.190(a))?	Y N		
- If NO to Questions 17 and YES to Question 18, ENTER STATUS "S" for Question 28 and proceed with Question 29.			
- If YES, proceed with checklist.			
19. Are the tanks (sumps) a part of the secondary containment system (265.190(b))?	Y N		
- If YES, ENTER STATUS "S" for Question 28 and proceed with Question 29.			
- If NO, proceed with checklist.			
20. Is the tank system used to treat or store EPA hazardous waste Nos. F020, F021, F022, F023, F026, and F027?	Y N		
21. Has any tank reached 15 years of age?	Y N		
- If NO to Question 20 and 21, proceed with Question 29.			
- If YES to Question 20 or 21, proceed with checklist.			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
22. Has a variance from the requirements of secondary containment been granted by the Regional Administrator? - If YES, ENTER STATUS "S" for Question 28 and proceed with Question 29. - If NO, proceed with checklist.	Y N		
23. Is the tank system equipped with a secondary containment system? - If NO, ENTER STATUS "U" for Question 28 and proceed with Question 29. - If YES, proceed with checklist.	Y N		
24. Is the secondary containment: a. Constructed of or lined with materials that are compatible with the wastes being stored or treated as specified in Section 265.193(c)(1)? b. Placed on a foundation or base that meets the requirements stated in Section 265.193(c)(2)? c. Provided with a leak detection system as specified in Section 265.193(c)(3)? d. Sloped or designed to drain and remove all spillage, drainage, or precipitation within 24 hours of occurrence?	Y N Y N Y N Y N		
25. Does the secondary containment include an external liner system that is: a. Able to contain 100 percent capacity of the largest tank within its boundary? b. Able to prevent or contain run-on or infiltration of precipitation (25 years/24 hour rainfall event)? c. Free of cracks or gaps? d. Installed to completely surround the tanks and cover the surrounding earth that is likely to come into contact with the waste?	Y N Y N Y N Y N		
26. Does the secondary containment include a vault that is: a. Able to contain 100 percent capacity of the largest tank within its boundary?	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
b. Able to prevent or contain run-on or infiltration of precipitation (25 year/24 hour rainfall event)?	Y N		
c. Constructed with chemical resistant water stops at all joints?	Y N		
d. Provided with impermeable interior coating or lining?	Y N		
e. Equipped with a means to protect against the formation of and ignition of vapors within the vault if the stored waste is a reactive or ignitable waste?	Y N		
27. Does the secondary containment system include a double-walled tank that is:			
a. Provided with a built-in continuous leak detection system able to detect a release within 24 hours?	Y N		
Note: If the site condition does not allow detection within 24 hours and the Regional Administrator concurs, answer YES and document in comments.			
b. Designed as an integral structure?	Y N		
c. Provided with corrosion protection of constructed of metal?	Y N		
- If YES to all parts of Question 24 <u>and</u> all parts of either Question 25, 26, <u>or</u> 27, ENTER STATUS "S".			
- If NO to any of Questions 24 a - d and to one or more parts in each of Questions 25 - 27, ENTER STATUS "U"			
28. Are all ancillary equipment (except those that can be visually inspected daily) provided with secondary containment?	Y N		
- If NO, ENTER STATUS "U".			
- If YES, ENTER STATUS "S".			
<u>265.194 General Operating Requirements</u>			
29. Did the content in the tanks cause the tanks, their ancillary equipment, or the secondary containment system to rupture, leak, corrode, or fail?	Y N		
- If YES, ENTER STATUS "U".			
- If NO, ENTER STATUS "S".			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
30. Is the tank system equipped with the following spill and overflow control and practices: a. Spill prevention controls? b. Overfill prevention controls? c. Sufficient freeboard unless covered? - If YES to Questions 30 a - c, ENTER STATUS "S". - If NO to Question 30 a - c, ENTER STATUS "U".	Y N Y N Y N		
<u>265.195: Inspections</u>			
31. Does the facility inspect the following items daily: a. Overfill or spill control equipment to ensure good operating order? b. Aboveground portions of the tank system to detect corrosion or release of waste? c. Leak detection and monitoring equipment? d. Surrounding area of the tank system to detect erosion or signs of releases? - If NO to any part of Question 31, ENTER STATUS "U". - If YES to Question 31 a - d, ENTER STATUS "S".	Y N Y N Y N Y N		
32. Is there a cathodic protection system for the tank system? - If NO, ENTER STATUS "NA" for Question 35 and proceed with Question 36. - If YES, proceed with checklist.	Y N		
33. Did the facility confirm the proper operation of the cathodic protection system within six months of installation?	Y N		
34. Does the facility inspect the cathodic protection system annually after the initial confirmation of proper operation?	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
35. Does the facility test the impressed current every other month?	Y N		
- If NO to any of Question 33 - 35, ENTER STATUS "U".			
- If YES to Questions 33 - 35, ENTER STATUS "S".			
36. Does the facility document all their inspections in the operating record?	Y N		
- If NO, ENTER STATUS "U".			
- If YES, ENTER STATUS "S".			
<u>40 CFR 265.196: Response to Leaks or Spills and Disposition of Leaking or Unfit-For-Use Tank Systems</u>			
37. Has there been a leak from the tank system or secondary containment system or has one of the systems been determined to be unfit for use?	Y N		
- If NO, ENTER STATUS "NA" for Questions 51 and 54 and proceed with Question 55.			
- If YES, proceed with checklist.			
38. Was the tank system (secondary containment system) removed from service immediately?	Y N		
39. Was the flow of wastes to the tank stopped?	Y N		
40. Was the system inspected to determine the cause of the release?	Y N		
41. Was the spillage removed within 24 hours after detection of the leak or as soon as possible to minimize damage to human health and the environment?	Y N		
42. Did the facility initiate steps to minimize the migration of the leak or spill to the soil or surface water?	Y N		
(If YES, briefly describe the procedures.)			
43. Did the facility remove and dispose of the visible contamination of the soil or surface water?	Y N		
(If YES, briefly describe the disposal method.)			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
44. Was the spillage or leakage:			
a. Less than or equal to one pound?	Y N		
b. Immediately contained and cleaned up?	Y N		
- If YES to Questions 44 a <u>and</u> b and proceed with Question 52.			
- If NO to Question 44 a <u>or</u> b, proceed with checklist.			
45. Was the Regional Administrator notified within 24 hours of detection of leakage?	Y N		
46. Was the report submitted to the Regional Administrator within 30 days of the detection of leakage (spillage)?	Y N		
47. Did the report include:			
a. Likely route of migration of the release?	Y N		
b. Characteristics of the surrounding soil?	Y N		
c. Results of any investigative monitoring or sampling?	Y N		
d. Proximity to down-gradient drinking water, surface water, and population areas?	Y N		
e. Description of response actions taken or planned?	Y N		
48. Was the tank closed (removed from active service)?	Y N		
- If YES, proceed with Question 52.			
- If NO, proceed with checklist.			
49. Was the repair of the tank system or the secondary containment system conducted in accordance with 265.196 (e) prior to returning the tank to service?	Y N		
50. Prior to returning to service, after a major repair (such as installation of internal liner repair of a ruptured primary containment) did the owner/operator obtain a certification from an independent, qualified, registered professional engineer that the repaired system is capable of handling hazardous wastes without release for the intended life of the system?	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
51. Was the certification submitted to the U.S. EPA Regional Administration within seven days after returning the tank system to use? - If YES to all of Questions 38 - 43 or 45 - 48 or 49 - 51, ENTER STATUS "S". - If NO to any part of Questions 38 - 43, or 45 - 48, or 49 - 51, ENTER STATUS "U".	Y N ☐		
52. Was a variance from secondary containment granted to the facility?	Y N		
53. Did the facility reapply for the variance? - If YES, proceed with Question 55. - If NO, proceed with checklist.	Y N		
54. Did the facility install a secondary containment system? - If YES, ENTER STATUS "S". - If NO, ENTER STATUS "U".	Y N ☐		
40 CFR 265.197: Closure and Post-Closure Care			
55. Did the facility close a tank system? - If YES, proceed with checklist. - If NO, ENTER STATUS NA for Question 58 and proceed with Question 59.	Y N		
56. During closure, did the facility remove or decontaminate all waste residues and the contaminated tank's components, soil, and structure?	Y N		
57. Were these wastes managed as hazardous wastes?	Y N		
58. If all of the contaminated soils could not be removed, was the area closed as a landfill in accordance with 40 CFR 265.310? - If NO to Question 56, 57, or 58, ENTER STATUS "U". - If YES to Questions 56 - 58, ENTER STATUS "S".	Y N ☐		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
<u>40 CFR 265.198: Special Requirements for Ignitable or Reactive Wastes</u>			
59. Are tanks used to treat or store ignitable or reactive wastes for other than emergencies? - If NO, ENTER STATUS "NA" for Question 63 and proceed with Question 64. - If YES, proceed with checklist.	Y N		
60. Have the wastes or mixture of wastes been rendered non-ignitable or non-reactive?	Y N		
61. Do the wastes or mixture of wastes comply with Section 265.17(b)? - If YES to Questions 60 and 61, ENTER STATUS "S" in Question 63, and proceed with Question 64. - If NO, proceed with checklist.	Y N		
62. Are the wastes protected from any material or conditions to prevent ignition or reaction?	Y N		
63. Are proper protective distances maintained between the waste management area and any public ways, streets, alleys, or an adjoining property? - If NO to Question 61, 62, or 63, ENTER STATUS "U". - If YES to Questions 61 - 63, ENTER STATUS "S".	Y N 		
<u>40 CFR 265.199: Special Requirements for Incompatible Wastes</u>			
64. Are incompatible wastes placed in the same tank? - If YES, proceed with checklist. - If NO, proceed to Question 66.	Y N		
65. Are wastes combined in accordance with 40 CFR 265.17(b)?	Y N		
66. Are wastes placed in tanks that previously held an incompatible waste? - If YES, proceed with checklist. - If NO, ENTER STATUS "NA" for Question 68 and proceed with Question 69.	Y N		
67. Was the tank decontaminated?	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
68. Was 40 CFR 265.17(b) complied with: - If YES to Questions 65, 67, and 68, ENTER STATUS "S". - If NO to Question 65, 67, or 68, ENTER STATUS "U".	Y N ☐		
<u>40 CFR 265.200: Waste Analysis and Trial Tests</u>			
69. Are wastes substantially different from wastes previously treated or stored in the tank system, placed or treated in the system? - If NO, ENTER STATUS "NA" for Question 71. This checklist is complete. - If YES, proceed with checklist.	Y N		
70. Were waste analyses and trial treatment or storage tests conducted? - If YES, ENTER STATUS "S" for Question 71. This checklist is complete. - If NO, proceed with checklist.	Y N		
71. Did the facility obtain written documents that the waste would not cause the tank system to rupture, leak, corrode, or fail? - If NO to Questions 70 and 71, ENTER STATUS "U". - If YES, ENTER STATUS "S". This checklist is complete.	Y N ☐		

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AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 265.221 Design Requirements			
1. Do the surface impoundment(s) have two or more liners and leachate collection systems in accordance with 40 CFR 265.221(c)? - If YES, ENTER STATUS "S" for Question 2 and proceed with Question 3. - If NO, proceed with checklist.	Y N		
2. Does the facility have a waiver from EPA as described in Section 3005(j) of the Solid Waste Disposal Act (Hazardous and Solid Waste Amendment Act, Section 215) or 40 CFR 216.22(d) for the liner requirements. - If YES, ENTER STATUS "S". - If NO, ENTER STATUS "U".	Y N ☐		
40 CFR 265.22 General Operating Requirements			
3. Does the impoundment maintain at least 60 cm (2 feet) of freeboard? (Check during site inspection.) - If YES, ENTER STATUS "S" for Question 4 and proceed with Question 5. - If NO, proceed with checklist.	Y N		
4. Does the facility maintain a certification by a qualified engineer that alternate design features or operating plans will prevent overtopping if the freeboard is less than 60 cm? - If YES, ENTER STATUS "S". - If NO, ENTER STATUS "U".	Y N ☐		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
<u>40 CFR 265.223 Containment System</u>			
5. Do earthen dikes have protective covers (e.g., grass, shale, rock) to minimize wind and water erosion? (Note during site inspection.) - # YES, ENTER STATUS "S". - # NO, ENTER STATUS "U".	Y N 		
<u>40 CFR 265.224 (Reserved)</u>			
<u>40 CFR 265.225 Waste Analysis and Trial Tests</u>			
6. Are lagoons used to store or chemically treat different types of wastes? - # YES, proceed with checklist. - # NO, ENTER STATUS "NA" for Question 8 and proceed with Question 9.	Y N 		
7. Are waste analyses and trial tests performed or is written, documented information on similar conditions obtained to ensure the integrity of the impoundment?	Y N		
8. Are results or information maintained in the operating record? - # YES to Questions 7 and 8, ENTER STATUS "S". - # NO to Question 7 or 8, ENTER STATUS "U".	Y N 		
<u>40 CFR 265.226 Inspection</u>			
9. Is the impoundment inspected each operating day to check freeboard level?	Y N		
10. Are the impoundment, dikes, and vegetation surrounding the dike inspected weekly to detect leaks, deterioration, or failures? - # YES to Questions 9 and 10, ENTER STATUS "S". - # NO to Question 9 or 10, ENTER STATUS "U".	Y N 		

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AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
<u>40 CFR 265.227 (Reserved)</u>			
<u>40 CFR 265.228 Closure and Post-Closure Care</u>			
11. Does the facility maintain a copy of the closure and post-closure plans?	Y N		
12. Has the closure plan or post-closure plan been implemented?	Y N		
- If NO, ENTER STATUS "NA" for Question 15, and proceed with Question 16. Review R-H-G Closure Plan Checklist.			
13. At closure, did the facility remove or decontaminate all waste residues, liners, contaminated subsoils, and structures and equipment?	Y N		
- If YES, no post-closure care is required, ENTER STATUS "NA" for Question 15 and proceed with Question 16.			
- If NO, proceed with checklist.			
14. Did the facility close the surface impoundment as a landfill?	Y N		
- If NO, ENTER STATUS "U".	☐		
- If YES, ENTER STATUS "S".			
15. Did the owner/operator:			
a. Eliminate free liquids?	Y N		
b. Stabilize remaining wastes?	Y N		
c. Provide an adequate cover?	Y N		
16. During post-closure care, did the owner/operator:			
a. Maintain the integrity and effectiveness of the final cover?	Y N		
b. Maintain and monitor the groundwater monitoring system in accordance with the requirements of 40 CFR 265 Subpart F?	Y N		
c. Prevent run-on and run-off from eroding or damaging the final cover?	Y N		
- If YES to Questions 15 and 16, ENTER STATUS "S".	☐		
- If NO to Question 15 or 16, ENTER STATUS "U".			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
<u>40 CFR 265.229 Ignitable or Reactive Wastes</u>			
17. Are ignitable or reactive wastes placed in the impoundment?	Y N		
- If NO, ENTER STATUS "NA" for Question 19 and proceed with Question 20.			
- If YES, proceed with checklist.			
18. Are wastes treated, rendered, or mixed in accordance with 40 CFR 265.17 (b) before or immediately after placement in the impoundment so that they no longer meets the definition of ignitable or reactive?	Y N		
19. Is the impoundment used solely for emergencies?	Y N		
- If YES to Questions 18 <u>or</u> 19, ENTER STATUS "S".			
- If NO to Question 18 <u>and</u> 19, ENTER STATUS "U".			
<u>40 CFR 265.230 Incompatible Wastes</u>			
20. Are incompatible waste materials placed in the impoundment? (See 40 CFR 265, Appendix V, Examples of Potentially Incompatible Wastes.)	Y N		
- If NO, ENTER STATUS "NA" for Question 21 and this checklist is complete.			
- If YES, proceed with checklist.			
21. Are wastes combined in accordance with 40 CFR 265.17 (b)?	Y N		
- If YES, ENTER STATUS "S".			
- If NO, ENTER STATUS "U".			
This checklist is complete.			

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AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 265.251 : Protection from Wind			
1. Is the waste pile protected from the wind or otherwise managed to protect against wind dispersal?	Y N		
- If YES, ENTER STATUS "S" and describe how the waste pile is protected.			
- If NO, ENTER STATUS "U" and describe the deficiencies.			
40 CFR 265.252 : Waste Analysis			
2. Can the owner/operator demonstrate the compatibility of wastes that are added to the pile:			
a. By knowledge of process?	Y N		
b. By representative sampling and analysis of waste from each incoming shipment, including a visual comparison of color and texture?	Y N		
- If YES to Question 2 a or b, ENTER STATUS "S".			
- If NO to Questions 2 a and b, ENTER STATUS "U" and make sure that the status of 40 CFR 265.13 is "U".			
40 CFR 265.253 : Containment			
3. Is the leachate or runoff from the pile considered a hazardous waste?	Y N		
- Describe the procedures used for determining if the leachate is hazardous and reevaluate the status of 40 CFR 265.13, if necessary.			
- If YES, proceed with checklist.			
- If NO, ENTER STATUS "NA" to Question 5 and proceed with Question 6.			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
4. Is the pile managed with the following: a. An impermeable base compatible with the waste? b. A run-on diversion system capable of preventing flow onto the waste pile from a 25-year storm? c. A run-off and leachate management system capable of collecting the flow from a 25-year, 24-hour storm? - If YES to Questions 4 a, b and c, ENTER STATUS "S" for Question 5 and proceed with Question 6. - If NO to Question 4 a, b, or c, Note: Discharges of leachate or runoff through a point source are subject to Section 402 requirements under the CWA.	Y N Y N Y N		
5. Is the pile managed with the following: a. A structure or cover to protect against precipitation or run-on? - If YES, describe. b. A prohibition against adding liquids or waste with liquids to the waste pile? - If YES to Questions 5 a and b, ENTER STATUS "S". - If NO to Question 5 a or b, ENTER STATUS "U".	Y N Y N ☐		
<u>40 CFR 265.254: Design Requirements</u>			
6. Within the area identified in the Part A permit application have: a. New units been added? b. Existing units been replaced or laterally expanded? c. Wastes been added to the pile on or after May 8, 1985? - If YES to Questions 6 a, b, or c, proceed with checklist. - If NO to Questions 6 a, b and c, ENTER STATUS "NA" for Question 7 and proceed with Question 8.	Y N Y N Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
7. Does the facility have either: a. The required liner and leachate collection systems? b. Equivalent protection provided in CFR 264.251? - If YES to Question 7 a or b, ENTER STATUS "S". - If NO to Questions 7 a and b, ENTER STATUS "U".	Y N Y N ☐		
40 CFR 265.255 [Reserved]			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
<u>40 CFR 265.256 : Special Requirements for Ignitable or Reactive Wastes</u>			
8. Are ignitable or reactive wastes placed in the pile? - If YES, proceed with checklist. - If NO, ENTER STATUS "NA" for Question 11 and proceed to Question 12.	Y N		
9. Does the addition of the waste result in the waste or mixture no longer meeting the definition of ignitable or reactive (40 CFR 261.21 or 261.23)?	Y N		
10. Is the waste managed in accordance with 40 CFR 265.17(b)?	Y N		
11. Is the waste protected against conditions which may cause it to ignite or react? - If YES to Questions 9, 10, <u>and</u> 11, ENTER STATUS "S" and describe procedures. - If NO to Question 9, 10, <u>or</u> 11, ENTER STATUS "U".	Y N 		
<u>40 CFR 265.257 : Incompatible Wastes</u>			
12. Are incompatible wastes or incompatible wastes and materials placed in the same pile? - If YES, proceed with checklist. - If NO, ENTER STATUS "NA" for Question 13 and proceed with Question 14.	Y N		
13. Are wastes managed in compliance with 40 CFR 265? - If YES, ENTER STATUS "S". - If NO, ENTER STATUS "U".	Y N 		
14. Is a pile of hazardous waste placed in close proximity to incompatible wastes or materials? - If YES, proceed with checklist. - If NO, ENTER STATUS "NA" for Question 15 and proceed with Question 16.	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
15. Are piles of waste separated from incompatible wastes or materials stored in other areas (e.g., drum, tank, other piles) by means of a dike, berm, wall, or other device? - If YES, ENTER STATUS "S". - If NO, ENTER STATUS "U".	Y N ☐		
16. Is hazardous waste piled on the same area where incompatible wastes were previously placed? - If YES, proceed with checklist. - If NO, ENTER STATUS "NA" for Question 17 and proceed with Question 18	Y N		
17. Is the area being sufficiently decontaminated to ensure that the waste management will comply with 40 CFR 265? - If YES, ENTER STATUS "S". - If NO, ENTER STATUS "U".	Y N ☐		
<u>40 CFR 265.258 : Closure and Post-Closure Care</u>			
18. Has the waste pile been closed? - If YES, review closure plan to ensure that the closure was performed in accordance with the approved plan. - If NO, ENTER STATUS "NA" for Questions 19 and 20. This checklist is complete.	Y N		
19. At closure, were all waste residues, contaminated system components, contaminated subsoils, and contaminated structures and equipment removed or decontaminated? - If NO, proceed with checklist. - If YES, ENTER STATUS "S" and describe how the wastes were managed. This checklist is complete.	Y N ☐		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
20. Was the waste pile unit closed as a landfill in accordance with an approved closure plan that meets the requirements at 40 CFR 265.310? Complete Checklist R-H-N, closure and post-closure requirements. - If YES, ENTER STATUS "S" and describe how the pile was closed. - If NO, ENTER STATUS "U" and describe how the pile was managed. This checklist is complete.	Y N		

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AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 265.272: General Operating Requirements			
1. Can the hazardous waste to be treated be made less hazardous or nonhazardous through degradation, transformation, or immobilization in the land treatment facility?	Y N		
2. Is the land treatment facility designed, constructed, operated, and maintained to control:			
a. Run-on during the peak period of a 25-year storm onto the active portion of the facility?	Y N		
b. Run-off during a 24-hour period of a 25-year storm?	Y N		
c. Wind dispersal of contaminated materials (if applicable)? (Note during site inspection.)	Y N		
3. Are collection and holding facilities for run-on and run-off control systems emptied or otherwise managed expeditiously to maintain the system's design capacity?	Y N		
- If YES to Questions 1 - 3, ENTER STATUS "S".	☐		
- If NO to any of Questions 1 - 3, ENTER STATUS "U".			
40 CFR 265.273: Waste Analysis			
4. Are wastes analyzed for EP toxicity? (Check waste analysis plan and results.)	Y N		
5. For listed hazardous wastes, have analyses been performed to determine the concentrations of those constituents which caused the waste to be listed?	Y N		
- If YES to Questions 4 and 5, ENTER STATUS "S".	☐		
- If NO to Question 4 or 5, ENTER STATUS "U".			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
6. Does the owner/operator grow food chain crops on the land treatment area? - If YES, proceed with checklist. - If NO, ENTER STATUS "NA" for Questions 8, 12, and 15, and proceed with Question 16.	Y N		
7. Have analyses been performed to determine the concentrations in the use of the following constituents: arsenic, cadmium, lead, and mercury? - If YES, check the waste analysis plan and note the results. - If NO, proceed with checklist.	Y N		
8. Does the installation's owner or operator have documented data that show the non-monitored constituents are not present? - If YES to Questions 7 and 8, ENTER STATUS "S". - If NO to Question 7 or 8, ENTER STATUS "U".	Y N		
<u>40 CFR 265.274 - 265.275 (Reserved)</u>			
<u>40 CFR 265.276: Food Chain Crops</u>			
9. Has the EPA Regional Administrator been notified that food crops are grown on the land treatment area?	Y N		
10. Can it be demonstrated that hazardous constituents: a. Will not be transferred to the food portion of the crops? b. Will not occur in the food crop in greater concentration than under similar conditions in untreated soils in the region?	Y N Y N		
11. Is the information necessary for the demonstration of Question 10 a or b at the installation?	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
12. Does the information include: a. Tests for the specific wastes and application rates being used at the facility? b. Crop characteristics? c. Soil characteristics? d. Sample selection criteria? e. Sample size determination? f. Analytical methods used? g. Statistical procedures? - If YES to Questions 9 - 12, ENTER STATUS "S". - If NO, identify which information is not available. - If NO to Question 9, 10 (both parts), 11, <u>or</u> 12 (all parts), ENTER STATUS "U".	Y N Y N Y N Y N Y N Y N Y N ☐		
13. Does the installation's land treatment facility treat waste containing cadmium? - If YES, proceed with checklist. - If NO, ENTER STATUS "NA" for Question 15 and proceed with Question 16.	Y N		
14. Are the following requirements met: a. The pH of the waste and soil mixture is 6.5 or greater at the time of each waste application, except for waste containing cadmium at concentrations of 2 mg/kg (ppm, dry weight) or less? b. The annual application of cadmium from waste does not exceed 0.5 kilograms per hectare (kg/ha)? c. For soils with a background soil pH less than 6.5, the annual application of cadmium from waste does not exceed 5 kg/ha? Note: Either condition of Question 14 d or e.	Y N Y N Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
d. For soils with a background soil pH greater than 6.5, the cumulative application of cadmium from waste does not exceed:			
1) 5 kg/ha for a soil cation exchange capacity of less than 5?	Y N		
2) 10 kg/ha for a soil cation exchange capacity of 5 to 15?	Y N		
3) 20 kg/ha for a soil cation exchange capacity greater than 15?	Y N		
e. For soils with a background pH less than 6.5, the cumulative cadmium application rate does not exceed the levels in condition d., provided that the pH of the waste and soil mixture is adjusted to and maintained at 6.5 or greater whenever food chain crops are grown?	Y N		
- If YES, ENTER STATUS "S" for Question 15 and proceed with Question 16.			
- If NO, proceed with checklist.			
15. Are the following alternate requirements met:			
a. Only animal feed is produced?	Y N		
b. The pH of the waste and soil mixture is 6.5 or greater when the waste is applied or the crop planted, whichever occurs later, and the pH level is maintained at 6.5 or greater whenever food chain crops are grown?	Y N		
c. The installation has an operating plan that demonstrates how the animal feed will be distributed to prevent ingestion by humans?	Y N		
d. The installation notifies future property owners in the land record or property deed that the property received waste at high cadmium application rates and that food chain crops must not be grown, except in compliance with 40 CFR 265.276(c)(2).	Y N		
- If YES, ENTER STATUS "S".	☐		
- If NO, ENTER STATUS "U".			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 265.278: Unsaturated Zone Monitoring			
16. Does the facility have a written unsaturated zone (zone of aeration) monitoring plan? (Obtain and review the plan.)	Y N		
- If YES, proceed with checklist.			
- If NO, ENTER STATUS "U" for Question 18.			
17. Does the plan include:			
a. Soil monitoring?	Y N		
b. Soil pore water monitoring?	Y N		
c. Sample depths below waste incorporation?	Y N		
d. Number of samples to be taken?	Y N		
e. Frequency and time of sampling?	Y N		
f. Analysis of samples for hazardous waste constituents found during waste analysis under Section 265.273?	Y N		
18. Are monitoring results part of the operating records?	Y N		
- If YES to Questions 17 a - 18, ENTER STATUS "S".	☐		
- If NO to any part of Question 17 a - 18, ENTER STATUS "U".			
40 CFR 265.279: Recordkeeping			
19. Are records kept at the facility of:			
a. Application dates?	Y N		
b. Application rates?	Y N		
c. Description of waste type(s) and quantities?	Y N		
d. Waste application areas (located on a map or sketch)	Y N		
e. Records and results of waste analyses required by Section 245.273?	Y N		
- If YES to Questions 19 a - e, ENTER STATUS "S".	☐		
- If NO to any of Questions 19 a - e, ENTER STATUS "U".			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
<u>40 CFR 265.260: Closure and Post-Closure</u>			
20. Is the land treatment facility undergoing or has it undergone closure?	Y N		
- If YES, review the closure plan to ensure that the unit was closed in accordance with the approved plan. - If NO, ENTER STATUS "NA" for Question 24 and proceed with Question 26.			
21. Did the closure activities include:			
a. Control of the migration or release of hazardous waste or hazardous waste constituents from the facility into groundwater, surface water, and air?	Y N		
b. Compliance with Section 265.276 concerning the growth of food chain crops?	Y N		
22. Were the following methods considered in addressing closure/post-closure care:			
a. Removal of contaminated soil?	Y N		
b. Placement of final cover?	Y N		
c. Groundwater monitoring?	Y N		
23. Is the owner/operator:			
a. Conducting unsaturated zone monitoring as specified in the closure plan?	Y N		
b. Maintaining the run-on control system required under Section 265.272(b)?	Y N		
c. Maintaining the run-off management system required under Section 265.272(c)?	Y N		
d. Controlling wind dispersal of particulate matter?	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
24. Has the owner/operator submitted to the EPA Regional Administrator a certification by either an independent soil scientist <u>or</u> an independent registered professional engineer that the facility was closed as specified in the approved closure plan?	Y N		
- If YES to Questions 21 - 24, ENTER STATUS "S".			
- If NO to any of Questions 21 - 24, ENTER STATUS "U".			
25. During post-closure care, is the installation:			
a. Conducting soil care monitoring as specified in the post-closure plan?	Y N		
b. Restricting access to the land treatment facility?	Y N		
c. Ensuring that growth of food chain crops complies with Section 265.276?	Y N		
d. Controlling wind disposal of particulate matter?	Y N		
- If YES to Questions 25 a - d, ENTER STATUS "S".			
- If NO to any of Questions 25 a - d, ENTER STATUS "U".			
40 CFR 265.281: Special Requirements for Ignitable or Reactive Wastes			
26. Are ignitable or reactive wastes placed in the facility?	Y N		
- If YES, proceed with checklist.			
- If NO, ENTER STATUS "NA" for Question 28 and proceed with Question 29.			
27. Are wastes immediately incorporated into the soil so that the mixture is no longer reactive or ignitable?	Y N		
28. Is 264.17 (b) complied with or are wastes protected from sources of reaction or ignition?	Y N		
- If YES to Questions 27 <u>and</u> 28, ENTER STATUS "S".			
- If NO to Question 27 <u>or</u> 28, ENTER STATUS "U".			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 265.282: Incompatible Wastes			
29. Are incompatible wastes placed in the same land treatment area (see 40 CFR 265, Appendix V; Examples of Potentially Incompatible Wastes)?	Y N		
- If YES, proceed with checklist.			
- If NO, ENTER STATUS "NA" for Question 30 and checklist is complete.			
30. Are wastes managed in compliance with 265.17 (b)?	Y N		
- If YES, ENTER STATUS "S".	☐		
- If NO, ENTER STATUS "U".			
This checklist is complete.			

AUDITOR(S): _____
_____BLDG/AREA/UNIT(S): _____

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ESO NO _____

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 265.301: Design Requirements			
1. Within the area identified in the Part A permit application, have:			
a. New units been added?	Y N		
b. Existing units been replaced or laterally expanded?	Y N		
c. Wastes been received to the landfill on or after May 8, 1985?	Y N		
- If YES to Question 1 a, b, or c, proceed with checklist.			
- If NO to Questions 1 a, b, and c, ENTER STATUS "NA" for Question 3 and proceed with Question 8.			
2. Does the facility have the required double liner and double leachate collection systems in accordance with CFR 264.301(c)?	Y N		
- If YES, ENTER STATUS "S" for Question 3			
- If NO, proceed with checklist.			
3. Has the facility received from the Regional Administrator a waiver from providing the double liners and leachate collection systems?	Y N		
- If YES, ENTER STATUS "S".			
- If NO, ENTER STATUS "U".			
4. Does the facility have a monofill?	Y N		
- If YES, proceed with checklist.			
- If NO, ENTER STATUS NA for Question 6 and proceed with Question 7.			
5. Does the facility have the required liner and leachate collection system?	Y N		
- If YES, ENTER STATUS "S" for Question 6.			
- If NO, proceed with checklist.			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
6. Has the facility received from the Regional Administrator a waiver from providing the double liners? - If YES, ENTER STATUS "S". - If NO, ENTER STATUS "U".	Y N ☐		
7. Has the facility submitted to the Regional Administrator a notice at least 60 days prior to receiving waste in a unit listed in Question 1? - If YES, ENTER STATUS "S". - If NO, ENTER STATUS "U".	Y N ☐		
<u>40 CFR 265.302: General Operating Requirements</u>			
8. Is the landfill designed, constructed, operated, and maintained: a. To prevent flow of run-on during the peak period of a 25-year storm onto the active portion of the landfill? b. To collect and control run-off during a 24-hour period of 25-year storm? c. To prevent wind dispersal of waste by daily cover or other means? (Note during site inspection.) d. To maintain design capacity of collection and holding facilities (tanks, basins) associated with run-on and run-off control systems? - If YES to Questions 8 a, b, c, and d, ENTER STATUS "S" and describe run-on and run-off control systems. - If NO to Question 8 a, b, c, or d, ENTER STATUS "U" and describe deficiencies.	Y N Y N Y N Y N ☐		
<u>40 CFR 265.303 - 265.308: (Reserved)</u>			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 265.309: Surveying and Recordkeeping			
9. Does the operating record require and include:			
a. A map showing the exact location, dimensions, and depth of each cell with respect to permanently established benchmarks?	Y N		
b. The contents of each cell?	Y N		
c. The approximate location of each hazardous waste type within each cell?	Y N		
- If YES to Questions 9 a, b, and c, ENTER STATUS "S".	☐		
- If NO to Question 9 a, b, or c, ENTER STATUS "U" and review checklist R-H-E.			
40 CFR 265.310: Closure and Post-Closure Care			
10. Has the landfill or any cell been closed:	Y N		
- If YES, review closure and post closure plans to ensure that closure and post-closure were performed in accordance with the approved plans.			
- If NO, ENTER STATUS "NA" for Questions 11 and 12 and proceed with Question 13.			
11. At closure, is final cover designed and constructed to:			
a. Minimize liquid migration?	Y N		
b. Function with minimum maintenance?	Y N		
c. Promote drainage and minimize erosion or abrasion?	Y N		
d. Accommodate settling and subsidence so that the cover's integrity is maintained?	Y N		
e. Have a permeability less than or equal to the permeability of any bottom liner system or natural subsoils present?	Y N		
- If YES to Questions 11 a, b, c, d, and e, ENTER STATUS "S" and describe how the final cover was designed and constructed.	☐		
- If NO to Question 11 a, b, c, d, or e, ENTER STATUS "U" and describe deficiencies.			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
12. After final closure, does the owner/operator:			
a. Maintain the integrity and effectiveness of the final cover? (Check cover for signs of settling, subsidence, erosion, and other problems.)	Y N		
b. Maintain and monitor the groundwater monitoring system in accordance with requirements of Subpart F?	Y N		
c. Prevent run-on and run-off from eroding or damaging the final cover?	Y N		
d. Protect and maintain surveyed benchmarks?	Y N		
- If YES to Questions 12 a, b, c, <u>and</u> d, ENTER STATUS "S".	☐		
- If NO to Question 12 a, b, c, <u>or</u> d, ENTER STATUS "U".			
40 CFR 265.311: (Reserved)			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 265.312: Ignitable or Reactive Waste			
13. Are bulk or non-containerized reactive or ignitable wastes placed in the landfill? - If YES, proceed with checklist. - If NO, ENTER STATUS "NA" for Question 15 and proceed with Question 16.	Y N		
14. Are they treated, rendered, or mixed before or immediately after placement in a landfill so that they are no longer reactive or ignitable pursuant to 261.21 and 261.23, respectively?	Y N		
15. Are the wastes managed so that the requirements of 265.17(b) are met? - If YES to Questions 14 <u>and</u> 15, ENTER STATUS "S". - If NO to Question 14 <u>or</u> 15, ENTER STATUS "U".	☐		
16. Are containerized reactive or ignitable wastes placed in the landfill? - If YES, proceed with checklist. - If NO, ENTER STATUS "NA" for Question 20 and proceed with Question 21.	Y N		
17. Are wastes in non-leaking containers?	Y N		
18. Are containers covered daily?	Y N		
19. Are containers carefully handled to avoid sparks, rupture, etc.?	Y N		
20. Are these wastes segregated, within the landfill, from areas in which heat generating waste is or may be placed? Note: Check location map and operating plan. - If YES to Questions 17 - 20, ENTER STATUS "S". - If NO to any of Questions 17 - 20, ENTER STATUS "U".	☐		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 265.313: Incompatible Wastes			
21. Are incompatible wastes or incompatible wastes and materials placed in the same landfill cell?	Y N		
Note: See 40 CFR 265, Appendix V; Example of Potentially Incompatible Wastes - If YES, proceed with checklist. - If NO, ENTER STATUS "NA" for Question 22 and proceed with Question 23.			
22. Are wastes managed in compliance with 40 CFR 265.17(b)?	Y N		
- If YES, ENTER STATUS "S". 			
- If NO, ENTER STATUS "U".			
40 CFR 265.314: Liquid Wastes			
23. Were bulk or non-containerized liquid wastes, or waste containing free liquids, placed in the landfill before May 8, 1985?	Y N		
- If YES, proceed with checklist. - If NO, ENTER STATUS "NA" for Question 25 and proceed with Question 26.			
24. Did the landfill have a chemically and physically resistant liner and a functioning leachate collection and removal system that met the requirements of 264.30(a)?	Y N		
25. Was the liquid waste treated chemically or physically so that free liquids were no longer present?	Y N		
- If YES to Question 24 <u>or</u> 25, ENTER STATUS "S". 			
- If NO to Questions 24 <u>and</u> 25, ENTER STATUS "U".			
26. Have bulk or non-containerized liquid wastes, or wastes containing free liquids, been placed in the landfill on or after May 8, 1985?	Y N		
- If YES, ENTER STATUS "U". - If NO, ENTER STATUS "S".			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
27. Have containers holding free liquids been placed in the landfill? - If YES, proceed with checklist. - If NO, ENTER STATUS "NA" for Question 28 and proceed with Question 29.	Y N		
28. Has the owner/operator ensured that one of the following was true: a. Liquids were decanted, absorbed, or solidified prior to disposal? b. The containers were very small (e.g., ampules)? c. The containers were designed to hold free liquids for use other than storage (e.g., battery, capacitor)? d. The containers were packed and disposed of in accordance with 40 CFR 265.316? - If YES to any of Questions 28 a - d, ENTER STATUS "S". - If NO to Questions 28 a - d, ENTER STATUS "U".	Y N		
29. Does the facility use a paint filter liquids test (Method 9095) to demonstrate the absence or presence of liquid waste in either containerized or bulk waste? (Check the waste analysis plan) - If YES, ENTER STATUS "S". - If NO, ENTER STATUS "U". The waste analysis plan may be deficient.	Y N		
30. Have nonhazardous liquid wastes been placed in the landfill since November 8, 1985? - If YES, proceed with checklist. - If NO, ENTER STATUS "NA" for Question 31 and proceed with Question 32.	Y N		
31. Has the facility received the approval from the Regional Administrator for placement of liquids into the landfill? - If YES, ENTER STATUS "S". - If NO, ENTER STATUS "U".	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
<u>40 CFR 265.315: Containers</u>			
32. Are containers placed in the landfill? - If YES, proceed with checklist. - If NO, ENTER STATUS "NA" for Question 34 and proceed with Question 35.	Y N		
33. Are containers at least 90 percent full? - If YES, ENTER STATUS "S" for Question 34 and proceed with Question 35. - If NO, proceed with checklist.	Y N		
34. Are containers reduced in volume to the maximum extent practicable before burial in the landfill (e.g., shredded, crushed)? - If YES, ENTER STATUS "S". - If NO, ENTER STATUS "U"	Y N 		
<u>40 CFR 265.316: Lab Packs</u>			
35. Are small containers of hazardous waste in overpacked drums (lab packs) placed in the landfill? - If YES, proceed with checklist. - If NO, ENTER STATUS "NA" for Question 40 and checklist is complete.	Y N		
36. Are inside containers non-leaking and in compliance with DOT regulations (49 CFR 173, 178, and 179)?	Y N		
37. Are lab packs metal, open head type, and have a capacity less than 416 liters (110 gallons)?	Y N		
38. Is the absorbent material used to surround the inside containers non-reactive with wastes and capable of absorbing the entire volume of liquid within the lab pack?	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
39. Have incompatible wastes been placed in the same lab pack?	Y N		
40. Are reactive wastes, other than cyanide- or sulfide-bearing wastes, rendered non-reactive prior to placement in the lab pack?	Y N		
- If YES to Questions 36, 37, 38 <u>and</u> 40 <u>and</u> NO to Question 39, ENTER STATUS "S".	☐		
- If NO to any of Questions 36, 37, 38, <u>and</u> 40, <u>or</u> If YES to Question 39, ENTER STATUS "U".			
This checklist is complete.			

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AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 265.340: Applicability			
1. Does the hazardous waste being incinerated contain the hazardous constituents listed in 40 CFR Part 261, Appendix VIII?	Y N		
- If YES, ENTER STATUS "NA" for Question 2 and proceed with Question 3.	☐		
- If NO, proceed with checklist.			
2. Is the written documentation for the characteristics of the hazardous waste being incinerated kept at the site?	Y N		
- If YES, ENTER STATUS "S".	☐		
- If NO, ENTER STATUS "U".			
40 CFR 265.341: Waste Analysis			
3. Does the owner/operator sufficiently analyze any waste which he has not previously burned in his incinerator in order to establish steady state operating conditions?	Y N		
4. Does the waste analysis determine at a minimum:			
a. Heating value?	Y N		
b. Halogen content?	Y N		
c. Sulfur content?	Y N		
d. Concentration of lead or in the alternative, documentation that the element is not present?	Y N		
e. Concentration of mercury or in the alternative, documentation that the element is not present?	Y N		
(Review the waste analysis plan)			
- If YES to Questions 3 - 4 e, ENTER STATUS "S".	☐		
- If NO to any of Questions 3 - 4 e, ENTER STATUS "U".			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
<u>40 CFR 265.342 - 265.344 (Reserved)</u>			
<u>40 CFR 265.345: General Operating Requirements (Incinerators)</u>			
5. Is the incinerator operated at steady-state conditions (temperature and air flow) before adding hazardous waste?	Y N		
- If YES, ENTER STATUS "S".			
- If NO, ENTER STATUS "U".			
<u>40 CFR 265.347: Monitoring and Inspection</u>			
6. During operations, are the following instruments relating to combustion and emission control checked at least every 15 minutes?			
a. Waste feed?	Y N		
b. Auxillary fuel feed?	Y N		
c. Air flow?	Y N		
d. Incinerator temperature?	Y N		
e. Scrubber flow?	Y N		
f. Scrubber pH?	Y N		
g. Relevant level controls?	Y N		
Note differences between operating record and design conditions.			
- If YES to Questions 6 a - g, ENTER STATUS "S".			
- If NO to any of Question 6 a - g, ENTER STATUS "U".			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
7. During operation, are the following incinerator and associated equipment checked at least daily: a. Pumps, valves, conveyors, pipes for leaks, spills, and fugitive emissions? b. Emergency shutdown controls? c. Systems alarms? - If YES to Questions 7 a - c, ENTER STATUS "S". - If NO to any of Questions 7 a - c, ENTER STATUS "U".	Y N Y N Y N ☐		
<u>40 CFR 265.351: Closure</u>			
8. Has the facility undergone closure or is the facility closing this unit? - If YES, review Closure Plan. - If NO, ENTER STATUS "NA" for Question 10.	Y N ☐		
9. Was closure performed in accordance with the approved plan?	Y N		
10. At closure, were all hazardous wastes and waste residues removed including ash, scrubber water, and sludges removed from the incinerator? - If YES to Questions 9 <u>and</u> 10, ENTER STATUS "S". - If NO to Question 9 <u>or</u> 10, ENTER STATUS "U".	Y N ☐		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 265.352: Interim Status Incinerators Burning Particular Hazardous Wastes			
11. Does the owner/operator burn EPA hazardous wastes: F020, F021, F022, F023, F026, or F027?	Y N		
- If YES, proceed with checklist.	☐		
- If NO, ENTER STATUS "NA" for Question 12 and checklist is complete.			
12. Has the owner/operator received a certification from the Assistant Administrator for Solid Waste and Emergency Response?	Y N		
- If YES, ENTER STATUS "S".	☐		
- If NO, ENTER STATUS "U".			
This checklist is complete.			

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AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 265.371 - 265.372 (Reserved)			
40 CFR 265.373: General Operating Requirements			
1. Does this thermal treatment system involve a fully enclosed device using controlled flame combustion? - If YES, the system is an incinerator; use checklist R-H-O. - If NO, proceed with checklist.	Y N		
2. Is this thermal treatment system a batch (non-continuous) process which requires a complete thermal cycle to treat a discrete quantity of hazardous waste? - If YES, ENTER STATUS "NA" for Question 3 and proceed with Question 4. - If NO, proceed with checklist.	Y N		
3. Is the process brought to steady-state (normal) conditions with auxiliary fuel or by other means before the hazardous waste is treated? - If YES, ENTER STATUS "S". - If NO, ENTER STATUS "U".	Y N ☐		
40 CFR 265.374 (Reserved)			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 265.375: Waste Analysis			
Note: These analyses are required only once for each type of waste; in some cases, such as open detonation of explosives, they are not required.			
4. Does the waste analysis performed by the owner/operator determine at a minimum:			
a. Heating value?	Y N		
b. Halogen content?	Y N		
c. Sulfur content?	Y N		
d. Lead concentration or, in the alternative, documentation that the element is not present?	Y N		
e. Mercury concentration or, in the alternative, documentation that the element is not present?	Y N		
Note: Questions 4 d and e are not required if site has documentation that the elements are absent.			
5. Do the waste analyses contain enough information for the operator to establish proper operating conditions and to determine the types of pollutants that may be emitted?	Y N		
- If YES to Questions 4 a - 5, ENTER STATUS "S".	☐		
- If NO to any of Questions 4 a - 5, ENTER STATUS "U".			
40 CFR 265.376 (Reserved)			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
<u>40 CFR 265.377: Monitoring and Inspections</u>			
6. Do the operating plan and procedures include the following monitoring and inspection items, as applicable?			
a. Installed instruments related to temperature and emission control are monitored at least every 15 minutes; corrections are made as needed to maintain proper operating conditions?	Y N		
b. The stack plume (emissions) is monitored at least hourly for normal color and opacity; corrections are made as needed to maintain normal appearance?	Y N		
c. The entire thermal treatment system, including auxiliary equipment, is inspected at least once each day of use for leaks, spills, and fugitive emissions; during this inspection, all installed system alarms and emergency shutdown controls are checked for proper operation?	Y N		
Note: Describe installed instruments, controls, and alarms.			
- If YES to Questions 6 a - c, ENTER STATUS "S".	☐		
- If NO to any of Questions 6 a - c, ENTER STATUS "U".			
<u>40 CFR 265.378 - 265.380 (Reserved)</u>			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 265.381: Closure			
7. Has the thermal treatment unit undergone closure? - If YES, review the closure plan. - If NO, ENTER STATUS "NA" for Question 8 and proceed with Question 10.	Y N ☐		
8. Did the closure activities follow the approved closure plan? (Describe how closure occurred.)	Y N		
9. Were all hazardous waste, and hazardous waste residue including ash, removed from the treatment process or equipment? - If YES, ENTER STATUS "S". - If NO, ENTER STATUS "U".	Y N ☐		
40 CFR 265.382: Open Burning			
10. Has the facility performed open burning of any hazardous waste other than waste explosives? - If YES, ENTER STATUS "U" and describe; air regulations probably apply. - If NO, ENTER STATUS "NA".	Y N ☐		
11. Is there any open burning or open detonation of waste explosives, including bulk propellants? - If YES, proceed with checklist. - If NO, ENTER STATUS "NA" for Question 12 and checklist is complete.	Y N		

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AUDIT QUESTIONS AND PROCEDURES

RESPONSE

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COMMENTS

40 CFR 265.401: General Operating Requirements

1. Does the waste treatment comply with 40 CFR 265.17(b)?
2. Is the equipment managed to prevent ruptures, leaks, corrosion, or failure due to the waste treatment?
- Note: Review for evidence of leaks or failures.
3. If the process is a continuous feed system, is it equipped with a means to stop waste inflow (e.g., waste feed cut-off system or bypass)?
- If YES to Questions 1, 2 and YES or NOT APPLICABLE to Question 3, ENTER STATUS "S".
- If NO to Question 1, 2 or 3, ENTER STATUS "U".

Y N

Y N

Y N
NA40 CFR 265.402: Waste Analysis and Test Tests

4. Is waste analysis information maintained in the operating record?
- If YES, ENTER STATUS "S".
- If NO, ENTER STATUS "U" here and review checklist R-H-E.
5. Are hazardous wastes received which are substantially different from any hazardous waste previously treated at the facility?

Y N

Y N

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
6. Are hazardous wastes chemically treated with a substantially different process than any previously used at the facility? - If YES to Question 5 <u>or</u> 6, proceed with checklist. - If NO to Questions 5 <u>and</u> 6, ENTER STATUS "NA" for Question 6 b, and proceed with Question 7. a. Are waste analyses and trial treatment tests performed (e.g., bench scale)? b. Is written documented information on similar treatment or similar waste obtained and recorded? - If YES to Question 6 a <u>or</u> b, ENTER STATUS "S". - If NO to Questions 6 a <u>and</u> b, ENTER STATUS "U".	Y N Y N Y N ☐		
40 CFR 265.403: Inspections			
7. Does the owner/operator inspect the following, where present? (Check inspection plan and operating record.) a. Discharge control and safety equipment (e.g., waste feed cut-off, bypass, drainage, or pressure relief system) at least daily? b. Data gathered from monitoring equipment (e.g., pressure, temperature, pH) at least daily? c. Construction materials of treatment process or equipment to detect erosion or obvious signs of leakage at least weekly? d. Construction materials of discharge confinement structures (e.g., dike) and the area immediately surrounding the structures to detect erosion or leakage (e.g., wet spots, dead vegetation) at least weekly? - If YES to Questions 7 a, b, c <u>and</u> d, where applicable, ENTER STATUS "S". - If NO to Questions 7 a, b, c <u>and</u> d, where applicable, ENTER STATUS "U". - If any of Question 7 a, b, c and d is not applicable, indicate this in Comments.	Y N Y N Y N Y N ☐		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
<u>40 CFR 265.404: Closure</u>			
8. Has the treatment facility been closed? - If NO, ENTER STATUS "NA" for Question 9, and proceed with Question 10. - If YES, review closure plan to ensure that closure was performed in accordance with the approved plan.	Y N		
9. At closure, were all hazardous waste and hazardous waste residues from treatment and discharge control equipment removed? - If YES, ENTER STATUS "S" and describe how the wastes were managed. - If NO, ENTER STATUS "U".	Y N 		
<u>40 CFR 265.405: Ignitable or Reactive Wastes</u>			
10. Are ignitable or reactive wastes placed in the treatment process? - If YES, proceed with checklist. - If NO, ENTER STATUS "NA" for Question 12, and proceed with Question 13.	Y N		
11. Is the waste treated, rendered, or mixed in accordance with 40 CFR 265.17 (b) before or immediately after being placed in the treatment process so that it no longer meets the definition of ignitable or reactive?	Y N		
12. Is the waste treated in such a way as to protect against ignition or reaction? - If YES to Question 11 <u>or</u> 12, ENTER STATUS "S". - If NO to Questions 11 <u>and</u> 12, ENTER STATUS "U".	Y N 		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 265.406: Incompatible Wastes			
13. Are incompatible wastes treated together or are wastes treated in unwashed units that previously contained an incompatible waste?	Y N		
- If YES, proceed with checklist.			
- If NO, ENTER STATUS "NA" and this checklist is complete.			
a. Is 40 CFR 265.17(b) complied with?	Y N		
- If YES, ENTER STATUS "S".	☐		
- If NO, ENTER STATUS "U".			
Note: See 40 CFR 265, Appendix V; Examples of Potentially Incompatible Wastes.			
This checklist is complete.			

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AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
1. Does the facility dispose of hazardous waste by underground injection? - If YES, proceed to CWA Checklists (40 CFR 144) and Checklists R-H-B, B/PT, C, D, and E. - If NO, ENTER STATUS "NA".	Y N ☐		
2. Does the facility store the waste in tanks, containers, or surface impoundments prior to underground injection? - If YES, complete the appropriate checklists. - If NO, ENTER STATUS "NA". Note: 40 CFR 265 Subpart G does not apply. This checklist is complete.	Y N ☐		

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AUDIT QUESTIONS AND PROCEDURES

RESPONSE

REFERENCE

COMMENTS

40 CFR 268.1; 268.30 Applicability and Specific Prohibitions

Contaminated soils resulting from CERCLA or RCRA Corrective Action cleanups have different effective dates and restrictions. Therefore, it is necessary to clearly understand the nature and the source of the restricted waste. Additional wastes will become subject to the land disposal restrictions over time. The schedule for the additional restrictions for Second-Third wastes.

1. Does the facility handle the following wastes?

- a. F001 through F005 spent solvents (and F001 - F005 wastes which are contaminated soil or debris resulting from a response action under CERCLA or a corrective action under RCRA/HSWA). (See 40 CFR 261.31 for detail listing of F-solvents)

Y N

- b. Dioxin-containing wastes (F020 - F023 and F026 - F028) and dioxin contaminated soil and debris resulting from a response action under CERCLA or a corrective action under RCRA/HSWA (See 40 CFR 261.31 for detail listing of dioxin wastes).

Y N

- c. "California List" wastes (and California-list contaminated soil or debris resulting from a response action under CERCLA or a corrective action under RCRA/HSWA) (see 40 CFR 268.32 for detail listing of California list wastes).

Y N

- d. "First-Third" wastes, (K048, K049, K050, K051, K052, and K061 (containing 15% zinc or greater), K071, and First-Third wastes which have a treatment standard based on incineration and which are contaminated soil and debris (See 40 CFR 268.10 for listing of First-Third wastes).

Y N

- If YES to Question 1 a, b, c or d, list the waste and its management in Comments.

- If NO to Questions 1 a, b, c and d, ENTER STATUS "NA", checklist is complete.

2. Does the facility handle the following wastes?

- a. F001 - F005 wastes which are contaminated soil or debris resulting from a response action under CERCLA or a corrective action under RCRA/HSWA?

Y N

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
b. Dioxin-contaminated soil and debris resulting from a response action under CERCLA or a corrective action under RCRA/HSWA?	Y N		
c. California-list-contaminated soil or debris resulting from a response action under CERCLA or a corrective action under RCRA/HSWA?	Y N		
- If YES to Question 2 a, b, or c, list the waste and describe how it is managed.			
- If NO to Questions 2 a, b, and c, ENTER STATUS "NA" for Question 4 and proceed with Question 5.			
3. Between now and November 8, 1990, has the facility disposed of the wastes in a landfill or surface impoundment?	Y N		
- If YES, proceed with checklist.			
- If NO, specify the disposal methods in the comment section, ENTER STATUS "NA" for Question 4 and proceed with Question 5.			
4. Did the unit meet the minimum technology requirements (double liner, leachate collection system and groundwater monitoring)?			
- If YES, ENTER STATUS "S" and specify the TSD.	☐		
- If NO, ENTER STATUS "U" and describe the deficiencies.			
5. Does the facility handle the following wastes? K048, K049, K050, K051, K052, K061 (containing 15% zinc or greater), or K076, or First-Third wastes which have a treatment standard based on incineration and which are contaminated soil and debris.	Y N		
- If YES, list the waste and its management.			
- If NO, ENTER STATUS "NA" at Question 7 and proceed with Question 8.			
6. Between now and August 8, 1990 (as applicable), has the facility disposed the wastes in a landfill or surface impoundment?	Y N		
- If YES, proceed with checklist.			
- If NO, specify the disposal methods in the Comments section, ENTER STATUS "NA" for Question 7 and proceed with Question 8.			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
7. Did the unit meet the minimum technology requirements (double liner and leachate collection system and ground water monitoring)? - If YES, ENTER STATUS "S" and specify the TSD. - If NO, ENTER STATUS "U" and describe the deficiencies.	☐		
8. Has the facility been granted a case-by-case extension or a petition by the Regional Administrator? - If YES, specify the waste and the effective date and document any extension or petition.	Y N		
<u>40 CFR 268.40 Applicability of Treatment Standards</u>			
9. Does the facility generate F-solvent wastes, dioxin wastes, or their treatment residues? - If NO, ENTER STATUS "NA" for Question 10 and proceed with Question 11.	Y N		
10. Has the owner/operator correctly determined the appropriate treatment standards? Note: See 40 CFR 268.41 Table CCWE (Constituent Concentration in Waste Extract for F-solvent and dioxin-containing wastes treatment standards). - If YES, ENTER STATUS "S". - If NO, ENTER STATUS "U".	Y N ☐		
11. Does the facility generate liquid hazardous waste containing PCBs? - If NO, ENTER STATUS "NA" for Question 12 and 13 and proceed with Question 14.	Y N		
12. Has the owner/operator correctly determined the appropriate treatment technologies for liquid hazardous waste containing PCBs at concentrations greater than or equal to 50 but less 500 ppm? (Must be incinerated or burned in high efficiency boilers.) - If YES, ENTER STATUS "S", and specify the method in Comments. - If NO, ENTER STATUS "U".	Y N ☐		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
13. Has the owner/operator correctly determined the appropriate treatment technologies for liquid hazardous waste containing PCBs at concentrations greater than or equal to 500 ppm? (Must be incinerated.) - If YES, ENTER STATUS "S" and specify the method in Comments. - If NO, ENTER STATUS "U".	Y N ☐		
14. Does the facility generate hazardous waste containing halogenated organic compounds? (HOCs) greater or equal to 1,000 mg/Kg or 1,000 mg/L? - If YES, proceed with checklist. - If NO, ENTER STATUS "NA" for Question 15 and proceed with Question 16.	Y N ☐		
15. Has the owner/operator correctly determined the appropriate treatment technologies for hazardous waste containing HOCs? (Must be incinerated or burned in boilers or industrial furnaces.) - If YES, ENTER STATUS "S" and specify the method in Comments. - If NO, ENTER STATUS "U".	Y N ☐		
16. Does the facility generate First-Third wastes or their treatment residue? - If YES, proceed with checklist. - If NO, ENTER STATUS "NA" for Question 17 and proceed with Question 18.	Y N ☐		
17. Has the owner/operator correctly determined the applicable treatment standards? Note: See 40 CFR 268.41, Table CCWE, and 268.43, Table CCW (Constituent Concentration in Waste). - If YES, ENTER STATUS "S" and specify the treatment standards or whether there are no treatment standards. - If NO, ENTER STATUS "U".	Y N ☐		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 268.41: Treatment Standards Expressed as Concentration in Waste Extract			
18. Has the owner/operator determined whether the F-solvent wastes and applicable First-Third wastes exceed applicable treatment standards upon generation by:			
a. Knowledge of waste generation?	Y N		
b. Toxicity characteristic leachate procedure (TCLP)?	Y N		
- If YES to Question 18 a <u>or</u> b, ENTER STATUS "S" and describe the method in Comments.	☐		
- If NO to Questions 18 a <u>and</u> b, ENTER STATUS "U".			
40 CFR 268.43: Treatment Standards Expressed as Waste Concentrations			
19. Has the owner/operator determined whether the applicable F-solvent wastewaters and First-Third wastes exceed applicable treatment standards upon generation by:			
a. Knowledge of waste generation?	Y N		
b. Total constituent analysis?	Y N		
- If YES to Question 19 a <u>or</u> b, ENTER STATUS "S" and describe the method in Comments.	☐		
- If NO to Questions 19 a <u>and</u> b, ENTER STATUS "U".			
40 CFR 268.3: Dilution Prohibited as a Substitute for Treatment			
20. Does the facility dilute the restricted waste as a substitute for adequate treatment?	Y N		
- If YES, ENTER STATUS "U", and specify the dilutant in Comments.	☐		
- If NO, ENTER STATUS "S".			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 268.7: Waste Analysis			
21. Does the generator ship any waste that exceeds the treatment standards to an off-site storage or treatment facility? - If YES, proceed with checklist. - If NO, ENTER STATUS "NA" for Question 23 and proceed with Question 24.	Y N		
22. Does the generator provide notification to the storage or treatment facility? - If YES, proceed with checklist. - If NO, ENTER STATUS "U" for Question 23 and proceed with Question 24.	Y N		
23. Does notification contain the following information? a. EPA Hazardous waste numbers? b. Applicable treatment standards? c. Manifest number? d. Waste analysis data, if available? - If YES to Questions 23 a, b and c, ENTER STATUS "S" and identify off-site storage or treatment facilities in Comments. - If NO to Question 23 a, b or c, ENTER STATUS "U".	Y N Y N Y N Y N ☐		
24. Does the generator ship any waste that meets the treatment standards to an off-site disposal facility? - If YES, proceed with checklist. - If NO, ENTER STATUS "NA" for Question 26 and proceed with Question 27.	Y N		
25. Does the generator provide notification and certification to the disposal facility? - If YES, proceed with checklist. - If NO, ENTER STATUS "U" for Question 26 and proceed with Question 27.	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
26. Does notification contain the following information?			
a. EPA Hazardous waste numbers?	Y N		
b. Applicable treatment standards?	Y N		
c. Manifest number?	Y N		
d. Certification that the waste meets treatment standards?	Y N		
e. Waste analysis data, if available?	Y N		
- If YES to Questions 26 a, b, c and d, ENTER STATUS "S" and identify off-site disposal facilities in Comments and review the waste analysis results.			
- If NO to Question 26 a, b, c or d, ENTER STATUS "U".			
27. Is the waste subject to a nationwide variance, case-by-case extension, or petition?	Y N		
- If YES, proceed with checklist.			
- If NO, ENTER STATUS "NA" for Question 29 and proceed with Question 30.			
28. Does the generator provide notification to the off-site receiving facility that the waste is not prohibited from land disposal?	Y N		
- If YES, proceed with checklist.			
- If NO, ENTER STATUS "U" for Question 29 and proceed with Question 30.			
29. Does notification contain the following information?			
a. EPA Hazardous waste numbers?	Y N		
b. The corresponding treatment standards and all applicable prohibitions?	Y N		
c. Manifest number?	Y N		
d. Date the waste is subject to the prohibition?	Y N		
e. Waste analysis data, if available?	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
- If YES to Questions 29 a, b, c and d, ENTER STATUS "S" and identify off-site disposal facilities in Comments and obtain the necessary documents. - If NO to Question 29 a, b, c or d, ENTER STATUS "U".	☐		
40 CFR 268.6: Landfill and Surface Impoundment Disposal Restriction			
30. Does the facility generate the "soft hammer" waste?	Y N		
- If YES, proceed with checklist. - If NO, ENTER STATUS "NA" for Questions 32, 33, 36, 37, 39, and 42 and proceed with Question 43.			
31. Is any practical treatment available for the soft hammer waste?	Y N		
- If YES, proceed with checklist. - If NO, ENTER STATUS "NA" for Question 32 and proceed with Question 38. Document how this was determined.			
32. Has the generator attempted to locate and contract with treatment and recovery facilities that provide treatment that yields the greatest environmental benefit?	Y N		
- If YES, ENTER STATUS "S". - If NO, ENTER STATUS "U" and for Question 33 and proceed with Question 34.	☐		
33. Has the generator submitted to the Regional Administrator a demonstration and certification containing the following information?			
a. A list of facilities and facility officials contacted?	Y N		
b. Addresses?	Y N		
c. Telephone numbers?	Y N		
d. Contact dates?	Y N		
- If YES to Questions 33 a, b, c and d, ENTER STATUS "S", and attach a copy of the demonstration and certification. - If NO to Question 33 a, b, c or d, ENTER STATUS "U".	☐		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
34. Does the generator ship his waste off-site for treatment? - If YES, proceed with checklist. - If NO, ENTER STATUS "NA" for Question 36 and proceed with Question 37.	Y N		
35. Did the generator send a copy of its demonstration and certification to the receiving facility with the first shipment of waste?	Y N		
36. Does the generator provide certification with each subsequent shipment of wastes? - If YES to Questions 35 and 36, ENTER STATUS "S". - If NO to Question 35 or 36, ENTER STATUS "U".	Y N 		
37. If there is no practical available treatment for the soft hammer waste, has the generator submitted documentation to EPA demonstrating why it was not able to obtain treatment or recovery for the waste? - If YES or NOT APPLICABLE, ENTER STATUS "S". Obtain a copy of any written documentation. - If NO, ENTER STATUS "U".	Y N NA 		
38. Is the soft hammer waste disposed of in a surface impoundment or a landfill? - If YES, proceed with checklist. - If NO, specify the disposal methods in the Comments section, ENTER STATUS "NA" for Question 39 and proceed with Question 40.	Y N		
39. Did the unit meet the minimum technology requirements (double liner, leachate collection system, and groundwater monitoring)? - If YES, ENTER STATUS "S" and specify the disposal facility. - If NO, ENTER STATUS "U".			
40. Did the generator send a copy of its demonstration and certification to the receiving facility with the first shipment of waste?	Y N		
41. Does the generator provide certification with each subsequent shipment of wastes?	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
42. Does the generator retain copies of all notices, demonstrations, and certifications for a period of 5 years? - If YES to Questions 40, 41 and 42, ENTER STATUS "S". - If NO to Question 40, 41 or 42, ENTER STATUS "U".	Y N ☐		
43. Does the generator store, treat, or dispose of restricted waste on-site? - If YES, proceed with checklist. - If NO, checklist is complete.	Y N		
<u>40 CFR 268.7 Waste Analysis</u>			
44. Does the waste analysis plan cover Part 268 requirements for restricted wastes (264.13 or 265.13)? - If YES, ENTER STATUS "S". - If NO, ENTER STATUS "U". The waste analysis plan is deficient.	Y N ☐		
45. Does the facility obtain representative chemical and physical analyses of wastes and residues? - If YES, ENTER STATUS "S" and identify the laboratory. - If NO, ENTER STATUS "U".	Y N ☐		
46. Is correct analysis conducted for the applicable restricted waste? - If YES, ENTER STATUS "S" and specify the test method for the applicable restricted waste. - If NO, ENTER STATUS "U".	Y N ☐		
47. Do the operating records include analyses and quantities? (Parts 264.73 and 265.73)? - If YES, ENTER STATUS "S". - If NO, ENTER STATUS "U" and check the operating record.	Y N ☐		

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AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 268.50: Prohibitions on Storage of Restricted Wastes			
48. Are restricted wastes stored on-site? - If YES, specify the storage device, such as tank or container in Comments. - If NO, ENTER STATUS "NA" for Questions 53, 55 and 59 proceed with Question 60.	Y N		
49. Is the waste subject to a case-by-case extension, a petition, or a valid certification? - If YES, ENTER STATUS "NA" for Questions 53, 55 and 59 and proceed with Question 60. - If NO, proceed with checklist.	Y N		
50. Is the restricted waste stored in containers? - If YES, proceed with checklist. - If NO, ENTER STATUS "NA" for Questions 53 and 55 and proceed with Question 56.	Y N		
51. Are all containers clearly marked to identify the contents and date(s) entering storage? - If YES, specify the earliest date observed in Comments:	Y N		
52. Do operating records track the location, quantity of the wastes, and dates that the wastes enter and leave storage?	Y N		
53. Do operating records agree with container labeling? - If YES to Questions 51, 52 and 53, ENTER STATUS "S". - If NO to Question 51, 52 or 53, ENTER STATUS "U".	Y N ☐		
54. Have wastes been stored for more than 1 year since the applicable LDR regulations went into effect? - If YES, proceed with checklist. - If NO, ENTER STATUS "NA" for Question 55 and proceed with Question 56.	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
55. Can the facility show that such accumulation is necessary to facilitate proper recovery, treatment, or disposal? - # YES, ENTER STATUS "S" and state how in Comments. - # NO, ENTER STATUS "U".	Y N ☐		
56. Is the restricted waste stored in tanks? - # NO, ENTER STATUS "NA" for Question 59 and proceed with Question 60.	Y N		
57. Have tanks been emptied at least once per year since the applicable LDR regulations went into effect? - # YES, proceed with checklist. - # NO, ENTER STATUS "U" for Question 59 and proceed with Question 60.	Y N		
58. Do the operating records show that the volume of waste removed from tanks annually equals or is more than the tank volume?	Y N		
59. Are all tanks clearly marked with a description of the contents, the quantity of wastes received, and dates entering storage, or is such information recorded and maintained in the operating record? - # YES to Questions 58 and 59, ENTER STATUS "S". - # NO to Question 58 or 59, ENTER STATUS "U".	Y N ☐		
60. Does the facility treat restricted wastes other than in surface impoundments? - # YES, specify the treatment process in Comments. - # NO, ENTER STATUS "NA" for Question 63 and proceed with Question 64.	Y N		
61. Does the facility, in accordance with an acceptable waste analysis plan, determine whether the residue or residue extra from all treatment processes is less than treatment standards?	Y N		
62. Is dilution used as a substitute for treatment?	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
63. Are notifications, certifications, and demonstrations prepared by the generators kept in the facility's operating record?	Y N		
- If YES to Questions 61 and 63 and NO to Question 62, ENTER STATUS "S".			
- If NO to Questions 61 or 63 and YES to Question 62, ENTER STATUS "U".			
64. Does the facility ship any waste or treatment residue that meets the treatment standards to an off-site disposal facility?	Y N		
- If NO, ENTER STATUS "NA" for Questions 65 and 66 and proceed with Question 67.			
65. Does the owner/operator of the facility provide notification and certification to the disposal facility?	Y N		
- If YES, ENTER STATUS "S".			
- If NO, ENTER STATUS "U" here and "NA" for Question 66 and proceed with Question 67.			
66. Does notification contain the following?			
a. EPA Hazardous waste numbers?	Y N		
b. Applicable treatment standards?	Y N		
c. Manifest number?	Y N		
d. Certification that the waste meets the treatment standards?	Y N		
e. Waste analysis data, if available?	Y N		
- If YES to Questions 66 a, b, c and d, ENTER STATUS "S" and identify off-site disposal facilities in Comments and obtain the necessary documents.			
- If NO to Question 66 a, b, c or d, ENTER STATUS "U".			
67. Does the owner/operator ship any soft hammer waste to an off-site disposal facility?	Y N		
- If NO, ENTER STATUS "NA" for Question 68 and proceed with Question 69.			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
68. Does the treatment facility send a copy of the generator's demonstration (if applicable) and certification to the disposal facility? - # YES, ENTER STATUS "S". - # NO, ENTER STATUS "U".	Y N ☐		
<u>40 CFR 268.4: Treatment Surface Impoundment Exemption</u>			
69. Are restricted wastes placed in surface impoundments for treatment? - # YES, proceed with checklist. - # NO, ENTER STATUS "NA" for Questions 70 through 77 and proceed with Question 78.	Y N ☐		
70. Did the owner/operator submit to the Agency the waste analysis plan and certification of compliance with minimum technology and groundwater monitoring requirements? - # YES, ENTER STATUS "S". - # NO, ENTER STATUS "U".	Y N ☐		
71. If the minimum technology requirements have not been met, has a waiver been granted for that unit? - # YES, ENTER STATUS "S". - # NO, ENTER STATUS "U".	Y N ☐		
72. Are representative samples of the sludge and supernatant from the surface impoundment tested separately, acceptably, and in accordance with the sampling frequency and analysis specified in the waste analysis plan? - # YES, ENTER STATUS "S" and attach test results. - # NO, ENTER STATUS "U".	Y N ☐		
73. Do the hazardous waste residues (sludges or liquids) exceed the treatment standards specified in 268.41 and 268.43? - # YES, proceed with checklist. - # NO, ENTER STATUS "NA" for Question 74 and proceed to Question 75.	Y N ☐		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
74. Are the hazardous waste residues that exceed the applicable treatment standards removed adequately and on an annual basis?	Y N		
- # YES, ENTER STATUS "S".			
- # NO, ENTER STATUS "U".			
75. Are adequate precautions taken to protect liners, and do records indicate that liner integrity is inspected?	Y N		
- # YES, ENTER STATUS "S".			
- # NO, ENTER STATUS "U".			
76. Are residues subsequently managed in another surface impoundment?	Y N		
- # YES, ENTER STATUS "U".			
- # NO, ENTER STATUS "S".			
77. Are residues treated prior to disposal?	Y N		
- # YES, ENTER STATUS "S" and indicate the treatment process.			
- # NO, ENTER STATUS "U".			
40 CFR 268.7 Waste Analysis			
78. Are restricted wastes placed in land disposal units such as landfills, surface impoundments, waste piles, wells, land treatment units, salt domes/beds, mines/caves, or a concrete vault or bunker?	Y N		
79. Are restricted wastes that meet treatment standards placed in a land disposal unit?	Y N		
- # YES to Question 78 <u>or</u> 79, proceed with checklist.			
- # NO to Questions 78 <u>and</u> 79, ENTER STATUS "NA" for Question 81 and proceed with Question 82.			
80. Does the facility operating record have notifications, demonstrations, and certifications from generators/storers/treaters?	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
81. Does the facility obtain waste analysis data or test the wastes according to the waste analysis plan to determine that the wastes comply with the applicable treatment standards? - If YES to Questions 80 and 81, ENTER STATUS "S". - If NO to Question 80 or 81, ENTER STATUS "U".	Y N ☐		
<u>40 CFR 268.5 Case-by-Case Extension.</u>			
<u>40 CFR 268.6 Petitions to Allow Land Disposal</u>			
82. Does the facility dispose of restricted wastes that: a. Have a national capacity variance? b. Have been granted a case-by-case capacity extension? c. Are subject to a no-migration petition? - If YES, proceed with checklist. - If NO to Questions 82 a, b and c ENTER STATUS "NA" for Question 83 and checklist is complete.	Y N Y N Y N		
83. Does the facility have notifications and records of disposal for disposed wastes that are subject to a national capacity variance, case-by-case extensions, or no-migration petitions? - If YES, ENTER STATUS "S". - If NO, ENTER STATUS "U".	Y N ☐		
This checklist is complete.			

RCRA HW WASTE MINIMIZATION ACTIVITIES

(R-H-MIN, 1/2)

SITE ID: _____

AUDITOR(S) _____

BLDG/AREA/UNIT(S): _____

DATE: ____/____/____

ESO NO.: _____

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
DOE Order 5400.1: General Environmental Protection Program			
1. Has the facility identified all of its sources of waste generation?	Y N		
2. Has the facility developed a program to minimize the generation of hazardous, radioactive, and mixed waste which includes:			
a. Specific numeric goals for reducing the volume of waste generated?	Y N		
b. Specific numeric goals for reducing the toxicity of the waste generated?	Y N		
c. A tracking and accounting method to compare annual changes in waste volume and toxicity?	Y N		
- If NO to Questions 1 - 2 c, ENTER STATUS "U".	☐		
- If YES to any of Questions 1 - 2 c, ENTER STATUS "S".			
Note: The program must be in place by May, 1990.			
Describe the facility's efforts to minimize waste generation.			
40 CFR 262.20: General Requirements			
3. Has the owner/operator certified on the manifest form that a program is in place to reduce the volume and toxicity of generated hazardous waste?	Y N		
- If YES, ENTER STATUS "S".	☐		
- If NO, ENTER STATUS "U".			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 262.41: Biennial Report 4. Has the owner/operator included in the biennial report a description of the waste minimization efforts undertaken during the year? • If YES, ENTER STATUS "S". • If NO, ENTER STATUS "U". Note: Review checklist R-H-GEN/OFF. This checklist is complete.	Y N ☐		

AUDITOR(S): _____

BLDG/AREA/UNIT(S): _____

DATE: / /

ESO NO.: _____

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 266.20: Applicability			
1. Are the recyclable materials applied to or placed on the land? Note: Products that contain recyclable materials and were produced for the general public's use are not considered as recyclable materials. - If YES, proceed with checklist. - If NO, ENTER STATUS "NA" for Question 5 and proceed with Checklist R-H-RD.	Y N		
40 CFR 266.21: Standards Applicable to Generators and Transporters of Materials Used in a Manner that Constitutes Disposal			
2. Does the facility generate and transport these recyclable materials? - If YES, complete the checklist for Parts 262 and 263 and attach to this checklist. - If NO, proceed with checklist.	Y N		
40 CFR 266.22: Standards Applicable to Stors of Materials that are to be Used in a Manner that Constitutes Disposal Who are Not the Ultimate Users			
3. Does the facility store these recyclable materials? - If NO, proceed with Question 5. - If YES, proceed with checklist.	Y N		
4. Is the facility the ultimate user of the materials? - If YES, complete the applicable checklist for Subparts B through L of Part 265 and Part 270.	Y N		

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AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 266.23: Standards Applicable to Users of Materials that are Used in a Manner that Constitutes Disposal 5. Does the facility use recyclable materials in a manner that constitutes disposal? - If YES, complete the applicable checklist for Subparts B through N of Part 264, Part 265, and Part 270. Attach the complete checklist to this form. - If NO to Questions 2, 3, 4, and 5, ENTER STATUS "S". Otherwise review the attached appropriate checklist for status determination. This checklist is complete.	Y N		

AUDITOR(S): _____

BLDG/AREA/UNIT(S): _____

DATE: ____/____/____

ESO NO.: _____

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 266.30: Applicability			
1. Are hazardous wastes burned for energy recovery in an industrial furnace or a boiler? - If NO, ENTER STATUS "NA" for Question 2 and proceed with Checklist R-H-RE. - If YES, proceed with checklist.	Y N		
2. Are these hazardous wastes: a. Gas recovered from hazardous waste management activities? b. Used oil exhibiting characteristics of hazardous waste (Subpart C of Part 261)? c. Exempted from 261.4 and 261.6(a)(3)(v) through (ix)? d. Subject to special requirements for small quantity generators (261.5)? - If YES to Question 2 a - d, ENTER STATUS "NA" and proceed with Checklist R-H-RE and this checklist is complete. - If NO to all Questions 2 a - d, proceed with checklist.	Y N Y N Y N Y N ☐ ☐		
40 CFR 266.32: Standards Applicable to Generators of Hazardous Waste Fuel			
3. Does the facility generate hazardous waste that is used as a fuel or used to produce a fuel? - If NO, ENTER STATUS "NA" and proceed with checklist. - If YES, ensure that Checklist R-H-G/Off will be completed during the audit; then proceed with Question 4.	Y N ☐		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 266.33: Standards Applicable to Transporters of Hazardous Waste Fuel			
4. Does the facility transport the hazardous waste fuel to other facilities?	Y N		
- If NO, ENTER STATUS "NA" and proceed with Question 5.			
- If YES, ensure that Checklist R-H-T will be completed during the audit; then proceed with Question 5.			
40 CFR 266.34: Standards Applicable to Marketers of Hazardous Waste Fuel			
5. Does the facility market hazardous waste fuel?	Y N		
- If NO, ENTER STATUS "NA" for Question 14 and proceed with Question 15.			
- If YES, proceed with checklist.			
6. Did the owner/operator notify U.S. EPA of its hazardous waste marketing activities?	Y N		
7. Have the potential recipients of these hazardous waste fuels notified U.S. EPA of their respective hazardous waste fuel activities and has each been assigned a U.S. EPA identification number?	Y N		
8. Did the owner/operator receive a written and signed notice of such information from the potential hazardous waste fuel recipients?	Y N		
9. Do some of the potential recipients burn the hazardous waste fuel?	Y N		
- If NO, proceed with Question 12.			
- If YES, proceed with checklist.			
10. Do they burn the waste in:			
a. Industrial furnaces as defined in 260.10?	Y N		
b. Industrial boilers as defined in 260.10 and located in a manufacturing facility?	Y N		
c. Utility boilers as defined in 260.10 and produce electric power, steam, or heated or cooled air or other gases or fluids for sale?	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
d. A cement kiln located outside the boundaries of any incorporated municipality with a population greater than 500,000 and in compliance with the regulations under 40 CFR for incinerators?	Y N		
11. Did the owner/operator receive from these potential burners of hazardous waste a written and signed notice certifying that only the devices identified in 266.31(b) will be used to burn hazardous waste?	Y N		
12. Did the facility receive any hazardous waste fuel from another market?	Y N		
- If YES, proceed with checklist.			
- If NO, proceed to Question 14.			
13. Did the owner/operator provide a written and signed certification stating its hazardous waste fuel activities and has EPA been notified?	Y N		
14. Did the owner/operator keep a copy of each certification received or sent for 3 years from the date of last hazardous fuel marketing transaction?	Y N		
- If NO to any of Questions 6 - 14, ENTER STATUS "U".			
- If YES to Questions 6 - 14, ENTER STATUS "S".			
<u>40 CFR 266.35: Standards Applicable to Burners of Hazardous Waste Fuel</u>			
15. Does the facility burn hazardous waste fuel?	Y N		
- If NO, ENTER STATUS "NA" for Question 19 and proceed with Checklist R-H-RE - Used Oil Burned for Energy Recovery.			
- If YES, proceed with checklist.			
16. Did the owner/operator notify U.S. EPA of its hazardous waste fuel burning activities?	Y N		
17. Does the facility burn the waste fuel in:			
a. Industrial furnaces as defined in 260.10?	Y N		
b. Industrial boilers as defined in 260.10 and located in a manufacturing facility?	Y N		
c. Utility boilers as defined in 260.10 and produce electric power, steam, or heated or cooled air or other gases or fluids for sale?	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
d. A cement kiln located outside the boundaries of any incorporated municipality with a population greater than 500,000 and in compliance with the regulations under 40 CFR for incinerators?	Y N		
18. Did the owner/operator send to the marketer of the hazardous waste fuel a written and signed notice certifying that the facility has notified U.S. EPA, has identified its wastes-as-fuel activities, and will burn the fuel only in the devices described in 17(a) to 17(d)?	Y N		
19. Did the owner/operator keep a copy of each certification notice sent to a marketer for 3 years from the date of last receipt from that marketer?	Y N		
- If NO to any of Questions 16 - 19, ENTER STATUS "U".	☐		
- If YES to Questions 16 - 19, ENTER STATUS "S".			
This checklist is complete.			

AUDITOR(S): _____

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AUDIT QUESTIONS AND PROCEDURES

RESPONSE

REFERENCE

COMMENTS

40 CFR 266.40: Applicability

1. Does the facility market or burn "used oil" for energy recovery in any boiler or industrial furnace that is not regulated under Subpart O of Part 265?

Y N

- If NO, ENTER STATUS "NA" for Question 7. This checklist is complete.

- If YES, proceed with checklist.

2. Was the used oil mixed with hazardous waste?

Y N

- If YES, ENTER STATUS "NA" for Question 7 and complete Checklist R-H-RD. This checklist is complete.

- If NO, proceed with checklist.

3. Does the used oil contain more than 1,000 ppm of total halogen?

Y N

- If NO, proceed with Question 5.

- If YES, proceed with checklist.

4. Did the facility successfully demonstrate to U.S. EPA that the used oil does not contain hazardous waste?

Y N

- If NO, ENTER STATUS "NA" for Question 7 and insure the completion of Checklist R-H-RD. This checklist is complete.

- If YES, proceed with checklist.

5. Does the used oil come from refining of crude oil and contaminate with physical or chemical impurities through its usage?

Y N

6. Is the used oil considered a hazardous waste solely because it exhibits the ignitability characteristic of hazardous waste identified in Subpart C of Part 261?

Y N

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
7. Is the used oil contaminated only with hazardous waste generated by a small quantity generator?	Y N		
<u>40 CFR 266.43: Standards Applicable to Marketers of Used Oil Burned for Energy Recovery</u>			
8. Did the facility analyze the used oil?	Y N		
9. Based on the analysis or other information, does the used oil exceed the following levels?	Y N		
- o Arsenic 5 ppm - o Cadmium 2 ppm - o Chromium 10 ppm - o Lead 100 ppm - o Flash Point 100° F - o Total Halogens 4,000 ppm			
- If YES, indicate which levels were exceeded and proceed with Question 13.			
10. Is the facility the first to claim the used oil is meeting the specification (on-specification)?	Y N		
- If NO, ENTER STATUS "NA" for Question 12 and proceed with Question 28.			
- If YES, proceed with checklist.			
11. Did the facility maintain copies of the analysis or other supporting information of the on-specification used oil for three years?	Y N		
12. Did the facility keep the following information on each shipment of on-specification used oil fuel in the operating log?			
a. Name and address of the facility receiving the shipment?	Y N		
b. Quantity of used oil fuel delivered?	Y N		
c. Date of shipment or delivery?	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
d. Cross references to used oil analysis record?	Y N		
- If NO to Question 11 <u>or</u> 12 (any part), ENTER STATUS "U".	☐		
- If YES to Questions 11 <u>and</u> 12, ENTER STATUS "S".			
13. Does the facility:			
a. Market off-spec used oil directly to burners that are not incidental burners?	Y N		
Note: Incidental burner is the one that burns some used oil fuel for purposes of processing or other treatment to produce used oil fuel.			
b. Receive off-spec used oil from off-site sources and then produce, process, or blend used oil fuel from these imported used oil?	Y N		
c. Distribute off-spec used oil fuel?	Y N		
- If NO to Questions 13 a, b <u>and</u> c, ENTER STATUS "NA" for Question 17 and proceed with Question 28.			
- If YES, proceed with checklist.			
14. Did the facility notify U.S. EPA of its used oil management activities?	Y N		
15. Have the potential recipients of the off-specification used oil notified EPA of their respective used oil management activities including locations of such activities and each has been assigned an U.S. EPA identification number?	Y N		
16. Did the facility receive the written and signed notices of such information from the potential recipients of the off-specification used oil?	Y N		
17. Did the facility maintain this notice for three years from the date of the last transaction with the recipients?	Y N		
- If YES to Questions 14, 15, 16, <u>and</u> 17, ENTER STATUS "S"	☐		
- If NO to Questions 14 - 17, ENTER STATUS "U".			
18. Do any of the potential recipients of the off-spec used oil burn off-spec used oil for energy recovery?	Y N		
- If NO, ENTER STATUS "NA" for Question 27 and proceed with Question 28.			
- If YES, proceed with checklist.			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
19. Do they burn the off-spec used oil in:			
a. Industrial furnaces as defined in 260.10?	Y N		
b. Industrial boilers as defined in 260.10 and located in a manufacturing facility?	Y N		
c. Utility boilers as defined in 260.10 and produce electric power, steam, heated/cooled air, other gases or fluids for sale?	Y N		
d. Space heaters of not more than 0.5 million BTU/hour, owned by the used oil generator, vented the combustion gas to ambient air, and received used oil from do-it-yourself oil changers (as household waste)?	Y N		
20. Prior to the first shipment of used oil, did the facility receive from the recipient a written and signed notice certifying that the off-spec used oil will be burned in the above tested furnace or boiler?	Y N		
21. Did the facility maintain this notice for three years from the date of the last transaction with the recipient?	Y N		
22. Did the facility receive any off-spec used oil from another marketer?	Y N		
- If NO, proceed with Question 25.			
- If YES, proceed with checklist.			
23. Did the facility provide a written and signed certification stating that U.S. EPA has been notified of its used oil management activities and locations of such activities?	Y N		
24. Did the facility maintain a copy of this certification for 3 years from the date of last off-spec used oil transaction with the marketer?	Y N		
25. For each shipment of off-spec used oil, did the facility transmit an invoice to the recipient of the oil?	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
26. Does the invoice include all of the following: a. An invoice number b. Marketer's EPA ID number c. Recipient's EPA ID number d. Marketer's name and addresses e. Recipient's EPA ID number f. Quantity of off-spec used oil shipped g. Date(s) of shipment and delivery h. The statement "This used oil is subject to EPA regulation under 40 CFR Part 266" - If NO, indicate which items are not included.	Y N		
27. Did the facility retain the invoices for three years from the date of the last transaction with the recipient? - If NO to Question 19 a through d, 20, 23, 24, 25, 26, or 27, ENTER STATUS "U". - If YES to these questions, ENTER STATUS "S".			
40 CFR 266.44: Standards Applicable to Burners of Used Oil Burned for Energy Recovery			
28. Does the facility burn used oil? - If NO, ENTER STATUS "NA" for Question 32. This checklist is complete.	Y N		
29. Does the facility burn off-specification used oil?	Y N		
30. Is the facility the first to claim the used oil being burned at the facility meets the specifications? - If YES to Question 29 or 30, ENTER STATUS "NA" for Question 32 and proceed with Question 33. - If NO to Questions 29 - 30, proceed with checklist.	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
31. Did the facility obtain analyses or other information documenting that the used oil meets the specification?	Y N		
32. Did the facility keep the record of these analyses on-site for three years?	Y N		
- If YES to Questions 31 and 32, ENTER STATUS "S".			
- If NO to Question 31 or 32, ENTER STATUS "U".			
33. Does the facility own and operate used oil-fired space heaters as specified in 266.42(b)(2)?	Y N		
- If YES, ENTER STATUS "NA" for Question 34 and proceed with Question 35.			
- If NO, proceed with checklist.			
34. Did the facility notify U.S. EPA of its used oil management activities including the location of such activities?	Y N		
- If YES, ENTER STATUS "S".			
- If NO, ENTER STATUS "U".			
35. Does the facility burn the used oil fuel in:			
a. Industrial furnaces as defined in 260.10?	Y N		
b. Industrial boilers as defined in 260.10 and located in a manufacturing facility?	Y N		
c. Utility boilers as defined in 260.10 and produce electric power, steam, or heated or cooled air or other gases or fluids for sale?	Y N		
d. Space heaters of not more than 0.5 million Btu/hour, owned by the used oil generator, vented the combustion gas to ambient air, and received used oil from do-it-yourself oil changers (as household waste)?	Y N		
36. Prior to receiving the shipment of off-spec used oil, did the facility provide the marketer a written and signed notice certifying that EPA has been notified of its used oil management activities and the used oil will be burned in the industrial furnace or boiler as stated in Question 35?	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
37. Did the facility maintain a copy of this certification for three years from the last transaction date with that marketer?	Y N		
38. Did the facility maintain a copy of each invoice for three years from the date the invoice is received?	Y N		
- If NO to Questions 35 a - d, <u>and</u> either 36, 37, <u>or</u> 38, ENTER STATUS "U".			
- Otherwise, ENTER STATUS "S".			
This checklist is complete.			

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_____BLDG/AREA/UNIT(S): _____

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AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 243: Guidelines for the Storage and Collection of Institutional Solid Waste			
1. Does the facility exercise direct management control over the solid waste collection system through operation of the system or by contracting for collection services?	Y N		
- If NO, ENTER STATUS "NA". This checklist is not required. - If YES, proceed with checklist.	☐		
40 CFR 243.200 Storage			
2. Are all solid wastes (or materials which have been separated for the purpose of recycling) stored in such a manner that they do not constitute a fire, health, or safety hazard or provide food or harborage for vectors?	Y N		
3. Are all solid wastes containing food wastes securely stored in covered or closed containers which are nonabsorbent, leakproof, durable, easily cleanable (if reusable), and designed for safe handling?	Y N		
4. Are containers of adequate size and in sufficient numbers to contain all food wastes, rubbish, and ashes that a residence or other establishment generates in the period of time between collections?	Y N		
5. Are containers maintained in a clean condition so that they do not constitute a nuisance, and to retard the harborage, feeding, and breeding of vectors?	Y N		
6. Are storage containers emptied of all solid waste when serviced?	Y N		
7. Are all doors removed from large appliances and other bulky wastes during storage?	Y N		
8. Are large appliances and other bulky wastes covered during storage to reduce the problems of an attractive nuisance and the accumulation of solid waste and water in and around the bulky items?	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
9. Are reusable waste containers which are emptied manually not in excess of 75 lbs (34.05 kg) when filled, and capable of being serviced without the collector coming into physical contact with the solid waste?	Y N		
10. Are there provisions for storage which will accommodate the volume of solid waste anticipated, which may be easily cleaned and maintained, and which allows for efficient, safe collection? - If YES to Questions 2 - 10, ENTER STATUS "S". - If NO to any of Questions 2 - 10, ENTER STATUS "U".	Y N 		
11. Are reusable containers constructed of corrosion resistant metal or other material which will not absorb water, grease, or oil? (BMP)	Y N		
12. Are reusable containers leakproof (including sides, seams, and bottoms) and durable enough to withstand anticipated usage without rusting, cracking, or deforming in a manner that would impair serviceability? (BMP)	Y N		
13. Are the interiors of reusable containers smooth without interior projections or rough seams which would make it difficult to clean or interfere with emptying? (BMP)	Y N		
14. Are the exteriors of reusable containers safe for handling with no cracks, holes, or jagged edges? (BMP)	Y N		
15. Are reusable containers stored on a firm, level, well-drained surface which is large enough to accommodate all of the containers and which is maintained in a clean, spillage-free condition? (BMP)	Y N		
16. Do reusable containers that are emptied manually have a capacity of no more than 35 gallons in volume (unless they are mounted on casters and can be serviced and tilted for emptying)? (BMP)	Y N		
17. Are reusable containers constructed with rounded edges and tapered sides with the large diameter at the top of the container to facilitate discharge? (BMP)	Y N		
18. Do containers have two handles or belts located directly opposite one another on the sides of the container? (BMP)	Y N		
19. Do the containers have covers which are tight-fitting to resist the intrusion of water and vectors, and equipped with a suitable handle? (BMP)	Y N		
20. Are containers designed so that they cannot be tipped over easily? (BMP)	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
21. Are reusable containers that are emptied mechanically			
a. Designed or equipped to prevent spillage or leakage during on-site storage, collection, or transport? (BMP)	Y N		
b. Easily cleanable and designed to allow easy access for depositing the waste and removing it? (BMP)	Y N		
c. Easily accessible to the collection vehicle in an area which can safely accommodate the dimensions and weight of the vehicle? (BMP)	Y N		
22. Do single use plastic and paper bags meet the National Sanitation Foundation Standard No. 31 for polyethylene refuse bags or Standard No. 32 for paper bags? (BMP)	Y N		
23. Are single-use bags containing food wastes stored within the confines of a building or container between collection periods? (BMP)	Y N		
40 CFR 243.201: Safety			
24. Are collection systems operated in a manner to protect the health and safety of personnel associated with the operation?	Y N		
- # YES, ENTER STATUS "S".			
- # NO, ENTER STATUS "U".			
25. Do all solid waste collection personnel receive instructions and training in safe container and waste handling techniques and in the proper operation of collection equipment? (BMP)	Y N		
26. Is personal protective equipment such as gloves, safety glasses, respirators, and footwear used by collection employees? (BMP)	Y N		
27. Does personal protective equipment meet the applicable provisions of the Occupational Safety and Health Administration Standards for Subpart I - Personal Protective Equipment (29 CFR 1910.132 - 1910.137)? (BMP)	Y N		
28. Is scavenging prohibited at all times to avoid injury and to prevent interference with collection operations? (BMP)	Y N		
29. Is a leakproof and puncture-proof carrying container used to minimize the potential for physical contact between the collector and the solid waste or liquids during carryout collection? (BMP)	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 243.202: Collection Equipment			
30. Do all vehicles used for the collection and transportation of solid waste (or materials which have been separated for the purpose of recycling) which are considered to be operating in interstate or foreign commerce meet all applicable standards established by the Federal Government including, but not limited to, Motor Carrier Safety Standards (49 CFR Parts 390 through 396) and Noise Emission Standards for Motor Carriers Engaged in Interstate Commerce (40 CFR Part 202)?	Y N		
31. Are Federally owned collection vehicles operated in compliance with Federal Motor Vehicle Safety Standards (49 CFR Parts 500 through 580)?	Y N		
32. Are all vehicles used for the collection and transportation of solid waste (or materials which have been separated for the purpose of recycling) enclosed or are made for suitable cover, so that while in transit there can be no spillage?	Y N		
33. Is the equipment used in the compaction, collection, and transportation of solid waste (or materials which have been separated for the purpose of recycling) constructed, operated, and maintained in such a manner as to minimize health and safety hazards to solid waste management personnel and the public?	Y N		
34. Is this equipment maintained in good condition and kept clean to prevent the propagation or attraction of vectors and the creation of nuisances?	Y N		
35. Do the following types of equipment used for the collection, storage, and transportation of solid waste (or materials which have been separated for the purpose of recycling) meet the standards established by the American National Standards Institute (ANSI Z245.1, Safety Standards for Refuse Collection Equipment) as of the effective dates established in ANSI Z245.1? - o Rear-loading compaction equipment - o Side-loading compaction equipment - o Front-loading compaction equipment - o Tilt-frame equipment - o Hoist-type equipment - o Satellite vehicles	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
- o Special collection compaction equipment - o Stationary compaction equipment - If YES, ENTER STATUS "S". - If NO, ENTER STATUS "U" and indicate which types of equipment do not meet the standards.			
36. Are enclosed, metal, leak-resistant compactor vehicles used for the collection of solid wastes? (BMP)	Y N		
37. Are the following safety devices provided on all collection vehicles?			
a. Exterior rear-view mirrors	Y N		
b. Back-up lights	Y N		
c. Four-way emergency flashers	Y N		
d. Easily accessible first aid equipment	Y N		
e. Easily accessible fire extinguisher	Y N		
f. Audible reverse warning device (BMP)	Y N		
38. Is the collection vehicle equipped with hand holds and platforms big enough to safeguard against slipping (if crew members ride outside of the cab of the collection vehicle for short trips)? (BMP)	Y N		
39. Does vehicle size take into consideration: Local weight and height limits for all roads over which the vehicle will travel; turning radius; and loading height in the unloading position to ensure overhead clearance in transfer stations, service buildings, incinerators, or other facilities? (BMP)	Y N		
40. Are engines which conserve fuel and minimize pollution used in collection vehicles to reduce fuel consumption and air pollution? (BMP)	Y N		
41. Are collection vehicles maintained and serviced according to manufacturers' recommendations, and provided with periodic vehicle safety checks, including, inspection of brakes, windshield wipers, tail-lights, backup lights, audible reverse warning devices, tires, and hydraulic systems? (BMP)	Y N		
42. Are irregularities repaired before vehicles are used? (BMP)	Y N		
43. Are collection vehicles thoroughly cleaned at least once a week? (BMP)	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
44. Is solid waste prohibited from remaining in collection vehicles over 21 hours? (BMP)	Y N		
45. Is solid waste left in a collection vehicle overnight only when it does not constitute a fire, health, or safety hazard? (BMP)	Y N		
<u>40 CFR 243.203: Collection Frequency</u>			
46. Are solid wastes (or materials which have been separated for the purpose of recycling) collected with frequency sufficient to inhibit the propagation or attraction of vectors and the creation of nuisances?	Y N		
47. Are solid wastes which contain food wastes collected at a minimum of once during each week?	Y N		
48. Are bulky wastes collected at a minimum of once every 3 months?	Y N		
- If YES to Questions 46 - 48, ENTER STATUS "S".			
- If NO to any of Questions 46 - 48, ENTER STATUS "U".			
49. Does collection frequency consider: (BMP)			
a. Collection cost minimization?	Y N		
b. Fuel consumption minimization?	Y N		
c. Generation rates?	Y N		
d. Waste composition?	Y N		
e. Storage capacity?	Y N		
50. Is a collection frequency designated for each waste category when solid wastes are separated at the point of storage for the purpose of resource recovery? (BMP)	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 242.204: Collection Management			
51. Is the collection of solid wastes (or materials which have been separated for the purpose of recycling) conducted in a safe, efficient manner, strictly obeying all applicable traffic and other laws?	Y N		
52. Is the collection vehicle operator responsible for immediately cleaning up all spillage caused by his operations, for protecting private and public property from damage resulting from his operations, and for creating no undue disturbance of the peace and quiet in residential areas in and through which he operates?	Y N		
53. Are records maintained detailing all costs (capital, operating, and maintenance) associated with the collection system?	Y N		
- If YES to Questions 51, 52, and 53, ENTER STATUS "S".			
- If NO to any of Questions 51 - 53, ENTER STATUS "U".			
54. Are the above records used for scheduling maintenance and replacement, for budgeting, and for system evaluation and comparison? (BMP)	Y N		
55. Is the collection system reviewed on a regular schedule to ensure that environmentally adequate, economical, and efficient service is maintained? (BMP)	Y N		
56. Are solid waste collection systems operated in a manner designed to minimize fuel consumption, including the following procedures: (BMP)			
a. Collection vehicle routes should be designed to minimize driving distances and delays?	Y N		
b. Collection vehicles should receive regular tuneups, tires should be maintained at recommended pressures, and compaction equipment should be serviced regularly to achieve the most efficient compaction?	Y N		
c. Compactor trucks should be used to reduce the number of trips to the disposal site?	Y N		
d. When the distance or travel time from collection routes to disposal sites is great, transfer stations should be used when cost-effective?	Y N		
e. Residential solid waste containers which are serviced manually should be placed at the curb or alley for collection?	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
1. For commercial wastes which do not contain food wastes, storage capacity should be increased in lieu of more frequent collection? This checklist is complete.	Y N		

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_____BLDG/AREA/UNIT(S): _____

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AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 240.100: Applicability			
1. Does the facility exercise direct management control over the processing and disposal operations of solid wastes? (If the facility uses local community solid waste processing and disposal facilities and processing and disposal is not within the management control of the Federal Agency then answer NO) - If NO, ENTER STATUS "NA". This checklist is complete. - If YES, proceed with checklist.	Y N		
2. Does the facility exercise direct control over disposal operations designed to process or actually process 2 or more tons/day? - If NO, ENTER STATUS "NA". Continue the checklist; the regulations are recommendations, embodying preferred practices. - If YES, ENTER STATUS "A". The following are potential requirements.	Y N ☐		
40 CFR 204.200: Solid Wastes Accepted			
3. Does the facility accept only wastes for which the facility has been specifically designed or approved by the State or EPA? - If YES, ENTER STATUS "S". - If NO, ENTER STATUS "U".	Y N ☐		
4. Are appropriate storage areas provided for any special wastes (wastes requiring special handling) that the facility processes? (<u>Special wastes</u> may include certain bulk wastes (e.g. combustible demolition and construction wastes, tree stumps, large timbers, furniture, and major appliances, designed and dewatered sludges, from wastewater treatment facilities, raw sewage sludges and septic tank pumpings) (BMP))	Y N		
5. Are storage areas for special wastes clearly marked? (BMP)	Y N		
6. Are facility personnel thoroughly trained in any unusual handling required by acceptance of special wastes? (BMP)	Y N		

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AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
7. Has the owner/operator determined which specific wastes (such as hazardous wastes, radioactive wastes in excess of specified activities, and other wastes which cannot be properly treated) are to be excluded from thermal processing? - # YES, ENTER STATUS "S". - # NO, ENTER STATUS "U".	Y N ☐		
8. Does the facility have provisions for storing, handling, and removing hazardous or excluded wastes inadvertently left at the facility? (BMP)	Y N		
9. Are regular users of the facility given a list of excluded materials? (BMP)	Y N		
10. Does the operating plan specify the procedures and precautions to be taken if unacceptable wastes are delivered to the facility and are improperly left there and are operating personnel thoroughly trained in such procedures? (BMP)	Y N		
40 CFR 240.202: Site Selection			
11. Is site selection consistent with public health and welfare, and air and water quality standards, and adaptable to appropriate land-use plans? Document how site selection is determined. - # YES, ENTER STATUS "S". - # NO, ENTER STATUS "U".	Y N ☐		
12. Is the thermal processing facility located in an area zoned for industrial use and is the site accessible by permanent roads leading from the public road system? (BMP)	Y N		
40 CFR 240.203: General Design			
13. Has a plan for the design of any new facilities or modifications to existing facilities been prepared or approved by a professional engineer?	Y N		
14. Does the facility prepare a list of major design considerations and the rationale for the decision on each consideration? - # YES, ENTER STATUS "S". - # NO, ENTER STATUS "U".	Y N ☐		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
15. Did the facility determine the types, amounts (by weight and volume), and characteristics of all solid wastes expected to be processed? (BMP)	Y N		
16. Was the gross calorific value of the solid wastes to be processed determined to serve as the basis for design? (BMP)	Y N		
17. Does the facility employ resource recovery in the form of heat utilization or direct recovery? (BMP)	Y N		
18. Are employee convenience facilities and adequate lighting provided throughout the facility? (BMP)	Y N		
19. Are the corrosive and erosive action of once-through and recirculated process waters controlled either by treating them or by using materials capable of withstanding the effects of the waters? (BMP)	Y N		
20. Does the facility design capacity reflect consideration of such items as waste quantity and characteristics, variations in waste generation, equipment downtime, and availability of alternate storage, processing, or disposal capability? (BMP)	Y N		
21. Are the facility systems and subsystems designed to ensure standby capability in the event of breakdown, including provisions for standby water and power? (BMP)	Y N		
22. Is instrumentation provided to determine:			
a. The weight of incoming and outgoing materials?	Y N		
b. Total combustion airflow rates?	Y N		
c. Underfire and overfire airflows and the quantitative distribution of each?	Y N		
d. Selected temperatures and pressures in the furnace, along gas passages, in the particulate collection device, and in the stack?	Y N		
e. Electrical power and water consumption of critical units?	Y N		
f. The rate of operation?	Y N		
g. The Ph of effluent waters?	Y N		
(Continuously recording instrumentation should be used as much as possible) (BMP)			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
23. Are personnel aware of audible signals to alert operating personnel of critical operating unit malfunctions? (BMP)	Y N		
24. Is sampling capability designed into the facility so that each process stream can be sampled and are the utilities required to sample close at hand? (BMP)	Y N		
25. Can personnel sample safely without interfering with normal plant operations? (BMP)	Y N		
<u>40 CFR 240.204: Water Quality</u>			
26. Are all waters discharged from the facility sufficiently treated to meet the stringent of applicable water quality standards, established in accordance with the Federal Water Pollution Control Act? See CWA Checklists.	Y N		
- If YES, ENTER STATUS "S".	☐		
- If NO, ENTER STATUS "U".			
27. Does the facility provide on-site treatment of process and waste waters before discharge? (BMP)	Y N		
28. Does the facility recirculate process waters? (BMP)	Y N		
29. Are appropriate adjustments made to lower the concentrations to acceptable levels if monitoring instrumentation indicates excessive discharge contamination? (BMP)	Y N		
Discharges of wastewater that do not meet effluent limits should be fully evaluated and documented in CWA Checklists.			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 240.205: Air Quality			
30. Has the facility always kept its emissions within applicable emission standards established by the Clean Air Act, as amended, or State or local standards effective under the Clean Air Act? See CAA Checklists.	Y N		
- # YES, ENTER STATUS "S".			
- # NO, ENTER STATUS "U".			
31. Does the facility meet emission standards by using appropriate air pollution control technology? (BMP)	Y N		
32. Are appropriate adjustments made to lower the concentrations to acceptable levels, if air monitoring instrumentation indicates excessive discharge contamination? (BMP)	Y N		
Air emissions that do not meet emissions standards should be fully evaluated and documented in CAA Checklists.			
40 CFR 240.206: Vectors			
33. Are considerations maintained that are unfavorable for the harboring, feeding, and breeding of vectors?	Y N		
- # YES, ENTER STATUS "S".			
- # NO, ENTER STATUS "U".			
34. Is the thermal processing facility designed for easy cleaning? (BMP)	Y N		
35. Is a housekeeping schedule maintained? Does the schedule include:	Y N		
a. Cleaning the tipping and residue areas as spillages occur?	Y N		
b. Emptying the solid waste storage area at least weekly?	Y N		
c. Routinely cleaning the remainder of the facility? (BMP)	Y N		
36. Does solid waste never accumulate at the facility for more than one week? (BMP)	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 240.207: Aesthetics			
37. Is the incinerator facility designed and operated at all times in an aesthetically acceptable manner?	Y N		
- If YES, ENTER STATUS "S".			
- If NO, ENTER STATUS "U".			
38. Is the facility designed so that it is physically attractive? Specifically:	Y N		
a. Are the tipping, residue discharge, and waste salvage areas screened from public view?	Y N		
b. Are the grounds landscaped? (BMP)	Y N		
39. Is a routine housekeeping and litter removal schedule established and implemented so that the facility regularly presents a neat and clean appearance? (BMP)	Y N		
40. Are solid wastes that cannot be processed by the facility removed from the facility at least weekly? (BMP)	Y N		
41. Is open burning or open dumping of this material prohibited? (BMP)	Y N		
40 CFR 240.208: Residue			
42. Are residue and other solid waste products resulting from the thermal process disposed of in an environmentally acceptable manner? (Where land disposal is employed, practices must conform with the U.S. Environmental Protection Agency's Guidelines for the Land Disposal of Solid Wastes.)	Y N		
- If YES, ENTER STATUS "S".			
- If NO, ENTER STATUS "U".			
43. Is the thermal processing facility designed to allow removal from the site of residue or other solids in a manner that protects the environment? (BMP)	Y N		
44. Does the furnace operator visually observe the quality of the bottom ash at least twice per shift and record in the operating log the estimated percentage of unburned combustibles? (BMP)	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
45. Is residue or fly ash drained free of moisture if it is collected in a wet condition? (BMP)	Y N		
46. Is transportation of residue or fly ash by means that prevent the loads from shifting, falling, leaking, or blowing from the containers? (BMP)	Y N		
<u>40 CFR 240.209: Safety</u>			
47. Is the incinerator designed, operated, and maintained in a manner to protect the health and safety of personnel associated with the operation of the facility? (Pertinent provisions of the Occupational Safety and Health Act of 1970 (Pub L. 91-596) and regulations promulgated thereunder apply.)	Y N		
- # YES, ENTER STATUS "S".	☐		
- # NO, ENTER STATUS "U".			
48. Is attention given to the safety of operators and vehicles through the provision of safety devices? (BMP)	Y N		
49. Is fire control equipment provided? (BMP)	Y N		
50. Are methods and/or equipment for removal of an injured person from the storage pit available? (BMP)	Y N		
51. Are detailed procedures developed for operation during such emergency situations as power failure, air or water supply failure, equipment breakdowns, and fire? (BMP)	Y N		
52. Are the above procedures posted in prominent locations, implemented by the staff as required, and upgraded and revised periodically? (BMP)	Y N		
53. Are approved respirators or self-contained breathing apparatus available at convenient locations? (BMP)	Y N		
54. Is the use of respirators or self-contained breathing apparatus reviewed periodically with facility personnel? (BMP)	Y N		
55. Is training in first aid practices and emergency procedures given to all personnel? (BMP)	Y N		
56. Are personal safety devices such as hard hats, gloves, safety glasses, and footwear provided for facility employees? (BMP)	Y N		
57. Is a regular user or employee who persistently poses a safety hazard barred from the facility and reported to the responsible agency? (BMP)	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 210: General Operations			
58. Is the thermal processing facility operated and maintained in a manner that ensures it will meet the design requirements?	Y N		
59. Is an operators manual that describes the various tasks to be performed, operating procedures, and safety precautions for various areas of the facility readily available for reference by plant personnel?	Y N		
• If YES to Questions 58 and 59, ENTER STATUS "S". • If NO to either Question 58 or 59, ENTER STATUS "U".	☐		
60. Is the facility supervisor experienced in the operation of the type of facility designed, or in the case of an innovative design, is the supervision adequately trained by responsible personnel in the operation of the facility? (BMP)	Y N		
61. Are alternate and standby disposal and operating procedures established for implementation during emergencies, air pollution episodes, and shutdown periods? (BMP)	Y N		
62. Have all staff been instructed in proper operation and maintenance procedures? (BMP)	Y N		
63. Is a routine maintenance schedule established and followed? (BMP)	Y N		
64. Are as-built engineering drawings of the facility available and updated to show modifications as changes are made? (BMP)	Y N		
65. Is a schematic showing the relationships of various subsystems available? (BMP)	Y N		
66. Are key operational procedures prominently posted at the site of use? (BMP)	Y N		
67. Are equipment manuals, catalogs, spare parts lists, and spare parts readily available at the facility? (BMP)	Y N		
68. Are training opportunities provided for facility operating personnel? (BMP)	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 240.211: Records			
69. Are records and monitoring data maintained as required by "the responsible agency" (the one regulating the facility)?	Y N		
- # YES, ENTER STATUS "S".			
- # NO, ENTER STATUS "U".			
70. Is continuously recording instrumentation used as much as possible? (BMP) Where not used, document why in the comments.	Y N		
71. Is extensive monitoring and recordkeeping practiced during the first 12-18 months of operation of a new or renovated facility, during periods of high air pollution, and during periods of upset conditions at the facility? (BMP)	Y N		
72. Are operating records kept in a daily log? (BMP)	Y N		
73. Do the operating records include at a minimum:			
a. The total weight and volume (truck capacities may be used for volume determination) of solid waste received during each shift, including all of the following:	Y N		
1) The number of loads received?			
2) The ownership or specific identity of delivery vehicles?			
3) The source and nature of solid wastes accepted?			
b. Furnace and combustion chamber temperatures recorded at least every 60 minutes and as changes are made, including explanations for prolonged abnormally high and low temperatures?	Y N		
c. Rate of operation, such as grate speed?	Y N		
d. Overfire and underfire air volumes and pressure and distribution recorded at least every 60 minutes and as changes are made?	Y N		
e. Weights of bottom ash, grate siftings, and fly ash, combined, recorded at intervals appropriate to normal facility operation?	Y N		
f. Estimated percentages of unburned material in the bottom ash?	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
g. Water used on each shift for bottom ash quenching and scrubber operation? (Representative samples of process waters should be collected and analyzed as recommended by the responsible agency.) h. Power produced and utilized each shift. If steam is produced, quality, production totals, and consumption rates should be recorded? i. Auxiliary fuel used each shift? j. Gross calorific value of daily representative samples of bottom ash, grate siftings, and fly ash? (Sampling time should be varied so that all shifts are monitored on a weekly basis.) k. Emission measurements and laboratory analyses required by the responsible agency? l. Complete records of monitoring instruments? m. Problems encountered and methods of solution? (BMP)	Y N Y N Y N Y N Y N Y N		
74. Is an annual report prepared that includes at least the following: a. Minimum, average, and maximum daily volume and weight of waste received and processed, summarized on a monthly basis? b. A summary of the laboratory analyses including at least monthly averages? c. Number and qualifications of personnel in each job category; total manhours per week; number of State certified or licensed personnel; staffing deficiencies; and serious injuries, their cause, and preventive measures instituted? d. An identification and brief discussion of major operational problems and solutions? e. Adequacy of operation and performance with regard to environmental requirements, the general level of housekeeping and maintenance, testing and reporting proficiency, and recommendations for corrective actions? f. A copy of all significant correspondence, reports, inspection reports, and any other communications from regulatory agencies? (BMP)	Y N Y N Y N Y N Y N Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
75. Is a methodology for evaluating the facility's performance developed? (BMP)	Y N		
76. Are evaluation procedures recommended by the U.S. EPA used whenever possible? (BMP)	Y N		
This checklist is complete.			

AUDITOR(S) _____

BLDG/AREA/UNIT(S): _____

DATE: ____/____/____

ESO NO.: _____

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 241: Guidelines for Disposal of Solid Waste			
1. Does DOE have management control over the processing and disposal of solid wastes generated at the site?	Y N		
Note: The processing and disposal of solid waste need not occur on Federal property for DOE to have management control.)			
- If NO, ENTER STATUS "NA". This checklist is complete.	☐		
- If YES, proceed with checklist.			
40 CFR 241.200: Solid Waste Accepted			
2. Is there evidence that DOE consulted with the owner/operator of the waste processing and/or disposal facility to ensure that the facility is designed to satisfactorily manage the wastes being accepted?	Y N		
- If YES, ENTER STATUS "S".	☐		
- If NO, ENTER STATUS "U".			
3. Are plans available that specify procedures to be employed for wastes requiring special handling? (BMP)	Y N		
- If there are no wastes that require special handling, indicate this fact in the comments section.			
4. For solid waste landfill:			
a. Are wastes spread, compacted, and covered with cover material at the end of each operating day? (BMP)	Y N		
b. Are bulky wastes (e.g. automobile bodies, appliances, furniture, etc.) salvaged? (BMP)	Y N		
- If NO, proceed with Question 4 d.			
- If YES, proceed with checklist.			
c. Are bulky wastes salvaged at a point other than the working face? (BMP)	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
d. Are any crushable bulky items (e.g. refrigerators, car bodies, furniture) crushed on solid ground and pushed into the working face near the bottom of the cell? (BMP)	Y N		
e. Are any non-crushable bulky items (e.g., tree stumps, construction debris, and large timbers) pushed into the working face near the bottom of the cell? (BMP)	Y N		
f. Are animal carcasses (if they are accepted at the landfill) disposed in accordance with applicable State requirements? (BMP)	Y N		
g. In the absence of any State law, are large animal carcasses (if they are accepted at the landfill) placed in a pit and provided with a cover material that encourages run-off of precipitation? (BMP)	Y N		
h. Does the landfill owner/operator ensure that any large quantities of nonresidential and noncommercial wastes (e.g. water treatment plant sludges, air pollution control residues, and industrial treatment plant sludges) that are accepted at the landfill do not contain free moisture? (BMP) If yes, describe how.	Y N		
40 CFR 241.201: Solid Wastes Excluded			
5. Has DOE obtained specific information from all waste generators/owners and jointly determined with the owner/operator of the disposal site whether any specific wastes should be excluded from the disposal site?	Y N		
- If NO, ENTER STATUS "U" at Question 7 and proceed with Question 13.			
- If YES, proceed with checklist.			
6. Were excluded wastes identified in any plans?	Y N		
7. Have the exclusions been observed?	Y N		
- If YES to Questions 5, 6, and 7, ENTER STATUS "S".	☐		
- If NO to any of Questions 5 - 7, ENTER STATUS "U".			
8. Did DOE consult with the generator/owner of the excluded waste and determine an alternate method of disposal? (BMP)	Y N		
9. Did the criteria used in considering whether a waste is unacceptable include the site hydrogeology, chemical and biological characteristics of the wastes, available alternative disposal methods, potential health effects, and personnel safety? (BMP)	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
10. Have all users of the land disposal site received a list of excluded materials? (BMP)	Y N		
11. Is a list of all excluded materials displayed prominently at the site? (BMP)	Y N		
12. Does the disposal site owner/operator have a policy that regular users who persist in delivering excluded materials will be barred from the site? (BMP)	Y N		
40 CFR 241.202: Site Selection			
13. Has DOE confirmed, through contacts with State and local officials as appropriate that the location, operation, and closure plan of the land disposal site are consistent with public health and welfare, air and water quality standards, and appropriate land use plans?	Y N		
- # YES, ENTER STATUS "S".	☐		
- # NO, ENTER STATUS "U".			
14. Has the hydrology of the site been evaluated for the purpose of minimizing impacts on groundwater? (BMP)	Y N		
15. If alterations of hydrogeologic conditions were needed to render the site acceptable, were these alterations detailed in any plans? (BMP)	Y N		
16. Were site soils evaluated with respect to their effects on site operations (e.g. vehicle maneuverability and use as cover material)? (BMP)	Y N		
17. Is the site accessible to vehicles for which it was designed to serve under all weather conditions? (BMP)	Y N		
18. Are temporary roads provided as needed to deliver wastes to the working place? (BMP)	Y N		
19. Is the site located at a safe distance from airports where birds may pose a hazard to low-flying aircraft? (BMP)	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 241.203: Design			
20. Were plans for design, construction, and operation of new sites or modifications of existing sites prepared or approved by a professional engineer?	Y N		
21. Were plans for design, construction, and operation of new sites, or modifications of existing sites, submitted to the responsible agency?	Y N		
• If YES to Questions 20 and 21, ENTER STATUS "S". • If NO to Question 20 or 21, ENTER STATUS "U".			
22. For new land disposal sites or modifications to existing sites:			
a. Are the types and quantities of all solid wastes expected to be disposed being identified to form a basis for design? (BMP)	Y N		
b. Are site development plans being prepared or approved by a professional engineer? (BMP)	Y N		
c. Do site development plans include all of the following: (BMP)	Y N		
1) Initial and final topographies at contour intervals of 5 feet or less?			
2) Land use and zoning within one quarter mile of the site including locations of residents, buildings, wells, water courses, arrays, rock outcroppings, roads, and soil and rock borings?			
3) All airports within the vicinity of the site (40 CFR 241.203-2)?			
4) Location of all utilities within 500 feet of the site?			
5) Employee convenience and equipment maintenance facilities?			
6) Narrative descriptions with associated drawings indicating site development and operation procedures?			
7) Descriptions of the projected use of the site after closure?			
8) Descriptions, where necessary, of maintenance programs for monitoring and controlling decomposition gases and leachate?			
9) Descriptions of how the integrity of the final cap will be protected?			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 241.204: Water Quality			
23. Are all discharges to surface waters (if there are any present at the land disposal facility) permitted under the Federal Water Pollution Control Act, as amended?	Y N		
Note: Such permits are issued by EPA or an authorized State under the National (or State) Pollution Discharge Elimination System) (Point source discharges may occur from discrete leachate seepage points or from sediment ponds on a continuous or intermittent basis. See CWA Checklists.			
24. Is rainfall runoff from the uncovered (active) portions of the site prevented from discharging to surface waters?	Y N		
- If YES to Questions 23 and 24, ENTER STATUS "S".	☐		
- If NO to Question 23 or 24, ENTER STATUS "U".			
25. Do plans for the site include:			
a. Current and projected use of water resources in the potential zone of influence of the site? (BMP)	Y N		
b. Groundwater elevation and movement and separation between the lowest point of the lowest cell and the predicted maximum water table elevation? (BMP)	Y N		
c. Potential interrelationship of the land disposal site local aquifers and surface waters based on historical records or other information? (BMP)	Y N		
d. Description of soil and other geologic material to a depth adequate to allow evaluation of the water quality protection provided by the soil and other geologic material? (BMP)	Y N		
e. Provision for surface water runoff control to minimize infiltration and erosion of cover material? (BMP)	Y N		
f. Potential of leachate generation and proposed control systems, where necessary, for the protection of ground and surface water resources? (BMP)	Y N		
26. Is the site located in a flood plain?	Y N		
- If NO, proceed with Question 28.			
- If YES, proceed with checklist.			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
27. Is the site protected against at least the 50-year-design flood to prevent floodwaters from contacting municipal solid waste? (BMP)	Y N		
28. Are surface water courses and runoff diverted from the land disposal site (especially from the working face) by means such as trenches, conduits, and proper grading? (BMP)	Y N		
29. Is the land disposal site constructed and graded so as to promote rapid surface water runoff without excessive erosion? (BMP)	Y N		
30. Is regrading done as required during construction and after completion to avoid ponding of precipitation and to maintain cover material integrity? (BMP)	Y N		
31. Are siltation or retention basins or other approved methods of retarding runoff used where necessary to avoid stream siltation or flooding problems due to excessive runoff? (BMP)	Y N		
32. Are leachate collection and treatment systems used where necessary to protect ground and surface water resources? (BMP)	Y N		
33. Are municipal solid wastes and leachate prevented from contacting ground or surface water so as to impair the water's use? (BMP)	Y N		
40 CFR 257.205: Air Quality			
34. Does the design, construction, and operation of the land disposal site conform to applicable ambient air quality standards and source control regulations established under the authority of the Clean Air Act, as amended, or State or local standards effective under that Act, if the latter are more stringent? See CAA Checklists.	Y N		
- If YES, ENTER STATUS "S".	☐		
- If NO, ENTER STATUS "U".			
35. Do the plans include an effective dust control program? (BMP)	Y N		
36. Is open burning of municipal solid waste prohibited? (BMP)	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
<u>40 CFR 241.206: Gas Control</u>			
37. If decomposition gases are generated within the land disposal site, are they controlled on-site, as necessary, to avoid posing a hazard to occupants of adjacent property?	Y N		
- If YES, ENTER STATUS "S".	☐		
- If NO, ENTER STATUS "U".			
38. Do the plans assess the need for gas control and indicate the location and design of any vents, barriers, or other control measures to be provided? (BMP)	Y N		
<u>40 CFR 241.207: Vectors</u>			
39. Is the facility maintained so that conditions are unfavorable for the harboring, feeding, and breeding of vectors?	Y N		
40. Do the plans include contingency programs for vector control, and is the operator prepared at all times to implement those procedures?	Y N		
- If YES to Questions 39 and 40, ENTER STATUS "S"	☐		
- If NO to Question 39 or 40, ENTER STATUS "U"			
<u>40 CFR 241.208: Aesthetics</u>			
41. Do the plans include an effective litter control program? (BMP)	Y N		
42. Are portable litter fences or other devices used in the immediate vicinity of the working face and at other appropriate locations to control blowing litter? (BMP)	Y N		
43. Is litter removed from the fences and incorporated into the cell being used at the end of each operating day or more often as required, or is the litter containerized for disposal on the next operating day? (BMP)	Y N		
44. Are wastes that are easily moved by wind covered, as necessary, to prevent their becoming airborne and scattered? (BMP)	Y N		
45. Is on-site vegetation cleared only as necessary? (BMP)	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
46. Are buffer strips planted and/or berms constructed as necessary to screen the working face from nearby residences or major roadways? (BMP)	Y N		
47. Is salvaged material removed from the land disposal site frequently enough to maintain aesthetic acceptability? (BMP)	Y N		
<u>40 CFR 241.209: Cover Material</u>			
48. Are cover materials applied as necessary to minimize fire hazards, infiltration of precipitation, odors, and blowing litter; control gas venting and vectors; discourage scavenging; and provide a pleasing appearance?	Y N		
- # YES, ENTER STATUS "S".			
- # NO, ENTER STATUS "U".			
49. Do the operating plans specify:			
a. Cover material sources and soil classifications (United Soil Classification System or U.S. Department of Agriculture Classification System)? (BMP)	Y N		
b. Surface grades and side slopes needed to promote maximum runoff, without excessive erosion, to minimize infiltration? (BMP)	Y N		
c. Procedures to promote vegetative growth as promptly as possible to combat erosion and improve appearance of idle and completed areas? (BMP)	Y N		
d. Procedures to maintain cover material integrity, e.g., regrading and recovering? (BMP)	Y N		
50. Is daily cover applied regardless of weather? (BMP)	Y N		
51. Is the thickness of the compacted daily cover more than 6 inches? (BMP)	Y N		
52. Is intermediate cover applied on areas where additional cells are not to be constructed for extended periods of time, normally 1 week to 1 year? (BMP)	Y N		
53. Is the thickness of the compacted intermediate cover more than 1 foot?	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
54. Is final cover applied on each area as it is completed or if the area is to remain idle for over 1 year? (BMP)	Y N		
55. Is the thickness of the compacted final cover more than 2 feet? (BMP)	Y N		
<u>40 CFR 241.210: Compaction</u>			
56. Is municipal solid waste and cover material compacted to the smallest practicable volume?	Y N		
- If YES, ENTER STATUS "S". - If NO, ENTER STATUS "U".	☐		
57. Have arrangements been made and indicated in the plans whereby substitute equipment will be available to provide uninterrupted service during routine equipment maintenance periods or equipment breakdowns? (BMP)	Y N		
58. Is an equipment maintenance facility provided on-site, or have appropriate contract arrangements been made to receive such service? (BMP)	Y N		
59. Have equipment manuals, catalogs, and spare parts lists been compiled and are they readily available on-site? (BMP)	Y N		
60. Is the municipal solid waste handling equipment, on any operating day, capable of performing the following functions:			
a. Spreading the solid waste accepted in layers no more than 2 feet thick while confining it to the smallest practicable area?	Y N		
b. Compacting the spread solid wastes to the smallest practicable volume (several such compacted layers will form a cell)?	Y N		
c. Placing, spreading, and compacting the cover material over the cell at least by the end of each day's operation? (BMP)	Y N		
61. Is a preventive maintenance program employed to maintain equipment in operating order? (BMP)	Y N		
62. Is an operating manual describing the various tasks that must be performed during a typical shift available to employees for reference? (BMP)	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 241.211: Safety			
63. Is the land disposal site in compliance with pertinent provisions of the Occupational Safety and Health Act of 1970 (Pub. L. 91-596) and regulations promulgated thereunder?	Y N		
- # YES, ENTER STATUS "S".	☐		
- # NO, ENTER STATUS "U".			
64. Has a manual describing safety precautions and procedures been developed? (BMP)	Y N		
65. Have employees been instructed in the application of safety procedures? (BMP)	Y N		
66. Are personal safety devices such as hardhats, gloves, safety glasses, and footwear provided to facility employees? (BMP)	Y N		
67. Are safety devices, including but not limited to such items as rollover protective structures, seatbelts, audible reverse warning devices, and fire extinguishers provided on all equipment used to spread and compact solid wastes or cover material at the facility? (BMP)	Y N		
68. Have provisions been made to extinguish any fires in wastes being delivered to the site or which occur at the working face or within equipment or personnel facilities? (BMP)	Y N		
69. Is communications equipment available on-site for emergency situations? (BMP)	Y N		
70. Is scavenging prohibited at all times to avoid injury and to prevent interference with site operations? (BMP)	Y N		
71. Is access to the site controlled through established roadways? (BMP)	Y N		
72. Is the site accessible only when operating personnel are on duty? (BMP)	Y N		
73. Are traffic signs or markers provided to promote an orderly traffic pattern to and from the discharge area, maintain efficient operating conditions, and, if necessary, restrict access to hazardous areas? (BMP)	Y N		
74. Are there rules to prevent vehicles from being left unattended at the working place or along traffic routes? (BMP)	Y N		
75. If regular users persistently pose a safety hazard, are they barred from the site and reported to the responsible agency? (BMP)	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 241.212: Records			
76. Does the owner/operator maintain records and monitoring data to be provided, as required, to the responsible agency?	Y N		
- # YES, ENTER STATUS "S".			
- # NO, ENTER STATUS "U".			
77. Has information on recording and monitoring requirements been obtained from the responsible agency and are these requirements being followed? (BMP)	Y N		
78. Do the site records cover at least the following: (BMP)			
a. Major operational problems, complaints, or difficulties?	Y N		
b. Qualitative and quantitative evaluation of the environmental impact of the land disposal site, with regard to the effectiveness of gas and leachate control, including results of: (i) leachate sampling and analysis; (ii) gas sampling and analyses; (iii) ground and surface water quality sampling and analyses upstream and downstream of the site?	Y N		
c. Vector control efforts?	Y N		
d. Dust and litter control efforts?	Y N		
e. Quantitative measurements of the solid wastes handled? This should be accomplished through routine or periodic utilization of scales and topographic surveys of the site.	Y N		
f. Description of solid waste materials received, identified by source of materials?	Y N		
79. For completed sites, is a detailed description, including a plat, recorded with the area's land recording authority? (BMP)	Y N		
80. Does the description include general types and locations of wastes, depth of fill, and other information of interest to potential landowners? (BMP)	Y N		
This checklist is complete.			

AUDITOR(S): _____

BLDG/AREA/UNIT(S): _____

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AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 245.200: Establishment or Utilization of Resource Recovery Facilities			
1. Is the facility involved in residential, commercial, or industrial solid waste disposal activities either in-house or by contract in amounts of 100 tons or more per day (equivalent to 26,000 tons or more annually) after implementation of other Federal guidelines for waste reduction and source separation? - If NO, ENTER STATUS "NA" for Question 2 and proceed with Question 3. - If YES, proceed with checklist.	Y N		
2. Has the facility established or utilized recovery facilities to separate and recover materials or energy or both from resource solid waste? - If YES, ENTER STATUS "S". - If NO, ENTER STATUS "U" and proceed with Question 9.	Y N	☐	
3. Is the facility within a Standard Metropolitan Statistical Area (SMSA)? - If NO, ENTER STATUS "NA" for Question 8 and proceed with Question 9. - If YES, proceed with checklist.			
4. Is any Federal agency in the SMSA involved in residential, commercial, or institutional solid waste disposal activities, either in-house or by contract in amounts of 50 tons or more per day (equivalent to 13,000 tons or more annually) after implementation of other Federal guidelines for waste reduction and separation?	Y N		
5. Is the combined total of solid wastes for all Federal agencies within the SMSA equal to or more than 100 tons per day (equivalent to 26,000 tons or more annually) after implementation of other Federal guidelines for waste reduction and source separation? - If YES to both Questions 4 and 5, proceed with Question 6. - If NO to Question 4 or 5, ENTER STATUS "NA" to Question 8 and proceed with Question 9.	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
6. Does the facility have jurisdiction over the disposal of the largest quantity of solid wastes in the SMSA? - # NO, proceed with Question 8. - # YES, proceed with checklist.	Y N		
7. Is the facility responsible for planning, organizing, and managing the joint resource recovery activities of the agencies in the SMSA and reporting the compliance of the agencies in the SMSA?	Y N		
8. Has the agency established or utilized one or more resource recovery facilities to separate and recover materials or energy or both from solid waste; and does the agency assist in planning resource recovery activities in the SMSA? - # NO to Question 7 or 8, ENTER STATUS "U" here and "NA" for Question 11. - # YES to Questions 7 and 8, ENTER STATUS "S" and this checklist is complete.	Y N ☐		
9. Did the facility consult with appropriate State and local agencies and with concerned local citizens and environmental groups prior to design and construction of resource recovery facilities?	Y N		
10. Are the resource recovery facilities designed with a capacity sufficient to process at least equal to all of the solid wastes disposed after implementation of their Federal guidelines for waste reduction and source separation?	Y N		
11. Are the resource recovery facilities designed to process at least 65 percent by wet weight of the input solid waste into recycled material, fuel, or energy (the weight of the unmarketable residue should be no more than 35 percent by wet weight of the input solid waste). - # YES to Questions 9 - 11, ENTER STATUS "S". - # NO to any of Questions 9 - 11, ENTER STATUS "U".	Y N ☐		
12. Has the facility entered into joint resource recovery ventures with other agencies and nearby communities? (BMP)	Y N		
13. Has the facility participated in the financing, construction, or operation of a community resource recovery facility? (BMP) This checklist is complete.	Y N		

AUDITOR(S): _____

BLDG/AREA/UNIT(S): _____

DATE: ____/____/____

ESO NO.: _____

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 257.1: Scope and Purpose			
1. Does DOE have management control over a solid waste disposal facility or management practices?	Y N		
• If YES, proceed with checklist. • If NO, ENTER STATUS "NA". This checklist is complete.	☐		
40 CFR 257.3-1: Flood Plains			
2. Is a solid waste disposal facility located in a flood plain?	Y N		
• If YES, ENTER STATUS "NA" for Question 3 and proceed with Question 4.			
3. Does the facility or practices restrict the flow of the base flood, reduce the temporary water storage capacity of the flood plain, or result in washout of solid waste (40 CFR 257.3-1; see definitions for base flood, flood plain, and washout)?	Y N		
• If YES, ENTER STATUS "U" and explain problems at the site. • If NO, ENTER STATUS "S".	☐		
40 CFR 257.3-2: Endangered Species			
4. Does the facility or practice cause or contribute to the taking of any endangered or threatened species, or the destruction or adverse modification of the critical habitat of same as identified in 50 CFR Part 17. (40 CFR 257.3-2; see definitions for "endangered/threatened species", "destruction or adverse modification", and "taking".)?	Y N		
• If YES, ENTER STATUS "U" and explain problems at the site. • If NO, ENTER STATUS "S".	☐		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 257.3-3: Surface Water:			
5. Does the facility cause a discharge of pollutants into waters of the United States that is in violation of the requirements of the National Pollutant Discharge Elimination System (NPDES) under section 402 of the Clean Water Act, as amended?	Y	N	
6. Does the facility cause a discharge of dredged material or fill material to waters of the United States that is in violation of the requirements under section 404 of the Clean Water Act, as amended?	Y	N	
Does the facility or practice cause non-point source pollution of waters of the United States that violates applicable legal requirements implementing an area-wide or Statewide water quality management plan that has been approved by the Administrator under section 208 of the Clean Water Act as amended?	Y	N	
Note: Definitions of the terms "Discharge of dredged material", "Point source", "Pollutant", "Waters of the United States", and "wetlands" can be found in the Clean Water Act, as amended, 33 U.S.C. 1251 et seq., and implementing regulations, specifically 33 CFR Part 323 (42 FR 37122, July 19, 1977).	Y	N	
- If YES to any of Questions 5 - 7, ENTER STATUS "U".	☐		
- If NO to Questions 5 through 7, ENTER STATUS "S".			
40 CFR 257.3-4: Ground Water			
8. Does the facility or practice contaminate an underground drinking water source beyond the solid waste boundary or beyond an alternative boundary specified by a court (40 CFR 257.3-4; see definitions for "contaminate", "underground drinking water source", and "solid waste boundary")?	Y	N	
- If YES, ENTER STATUS "U".	☐		
- If NO, ENTER STATUS "S".			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS														
40 CFR 257.3-5: Application of Solid Wastes to the Land																	
9. Does the facility or practice apply solid waste to within 1 meter (3 feet) of the surface of land used for the production of food chain crops? - If NO, ENTER STATUS "NA" for Questions 17 and 21 and proceed with Question 23. - If YES, proceed with checklist.	Y N																
10. Are the only food chain crops produced to be used only for animal feed? - If YES, ENTER STATUS "NA" for Question 17 and proceed with Question 18. - If NO, proceed with checklist.	Y N																
11. Does the solid waste contain cadmium? - If YES, proceed with checklist. - If NO, ENTER STATUS "NA" for Question 16 and proceed with Question 20.	Y N																
12. Has the pH of the solid waste and soil mixture been measured at the time of each application?	Y N																
13. Are cadmium concentrations in the waste measured?	Y N																
14. Is the pH of the solid waste and soil mixture greater than 6.5 at each application <u>or</u> did the solid waste contain less than 2 mg/kg (dry weight) cadmium?	Y N																
15. Is the annual rate of cadmium application from solid waste no more than 0.5 kg/hectare?	Y N																
16. Is the cumulative cadmium application from solid waste no more than the amounts in this table:	Y N																
<table border="1"> <thead> <tr> <th rowspan="2">Soil cation Exchange Capacity (meg/100 g)</th> <th colspan="2">Cumulative Cadmium</th> </tr> <tr> <th>Background soil pH < 6.5</th> <th>Background soil pH > 6.5</th> </tr> </thead> <tbody> <tr> <td>less than 5</td> <td>5</td> <td>5</td> </tr> <tr> <td>5 to 15</td> <td>5</td> <td>10</td> </tr> <tr> <td>More than 15</td> <td>5</td> <td>20</td> </tr> </tbody> </table>	Soil cation Exchange Capacity (meg/100 g)	Cumulative Cadmium		Background soil pH < 6.5	Background soil pH > 6.5	less than 5	5	5	5 to 15	5	10	More than 15	5	20			
Soil cation Exchange Capacity (meg/100 g)		Cumulative Cadmium															
	Background soil pH < 6.5	Background soil pH > 6.5															
less than 5	5	5															
5 to 15	5	10															
More than 15	5	20															
- If YES to Questions 13 through 16, ENTER STATUS "S". - If NO to any of Questions 13 - 16, ENTER STATUS "U".																	

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
17. Is the pH of the solid waste and soil mixture 6.5 or greater at the time of solid waste application or at the time the crop is planted, whichever occurs later, and is this pH level maintained whenever food-chain crops are grown?	Y N		
18. Is there a facility operating plan which demonstrates how the animal feed will be distributed to preclude ingestion by humans and describes the measures to be taken to safeguard against possible health hazards from cadmium entering the food chain, which may result from alternative land uses?	Y N		
19. Have future property owners been notified by a stipulation in the land record or property deed which states that the property has received solid waste at high cadmium application rates and that food-chain crops should not be grown, due to a possible health hazard?	Y N		
- If YES to Questions 17 - 19, ENTER STATUS "S".	☐		
- If NO to any of Questions 17 - 19, ENTER STATUS "U".			
20. Does the solid waste applied as land contain concentrations of PCBs equal to or greater than 10 mg/kg (dry weight)?	Y N		
- If YES, proceed with checklist.			
- If NO, ENTER STATUS "NA" for Question 21 and proceed with Question 22.			
21. Are these wastes incorporated into the soil when applied to land used for producing animal feed, including pasture crops for animals raised for milk? (Incorporation of the solid waste into the soil is not required if it is ensured that the PCB content is less than 0.2 mg/kg (actual weight) in animal feed or less than 1.5 mg/kg (fat basis) in milk.)	Y N		
- If YES, ENTER STATUS "S".	☐		
- If NO, ENTER STATUS "U".			
40 CFR 257.3-6: Disease			
22. Are on-site populations of disease vectors minimized through the periodic application of cover material or other techniques as appropriate so as to protect public health?	Y N		
- If YES, ENTER STATUS "S".	☐		
- If NO, ENTER STATUS "U".			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
23. Does the facility dispose of sewage sludge or septic tank pumpings? - If YES, proceed with checklist. - If NO, ENTER STATUS "NA" for Questions 26, 27, and 28 and proceed with Question 29.	Y N		
24. Is all the sewage sludge and septic tank pumpings disposed in a burial or trenching operation? - If YES, ENTER STATUS "NA" for Questions 26, 27, and 28, and proceed with Question 29. - If NO, proceed with checklist.	Y N		
25. Are crops for direct human consumption to be grown within 18 months subsequent to application or incorporation? - If YES, ENTER STATUS "NA" for Questions 26 and 27, and proceed with Question 28. - If NO, proceed with checklist.	Y N		
26. Is sewage sludge that is applied to the land surface or incorporated into the soil treated by a Process to Significantly Reduce Pathogens prior to application or incorporation and is public access to the facility controlled for at least 12 months, and is grazing by animals whose products are consumed by humans prevented for at least one month? (See Appendix II of 40 CFR 257 for processes to Significantly Reduce Pathogens.) - If YES, ENTER STATUS "S". - If NO, ENTER STATUS "U".	Y N		
27. Are septic tank pumpings that are applied to the land surface or incorporated into the soil treated by a Process to Significantly Reduce Pathogens (as listed in Appendix II, Section A of 40 CFR 257) prior to application or incorporation, or is public access to the facility controlled for at least 12 months and grazing by animals whose products are consumed by humans prevented for at least one month? - If YES, ENTER STATUS "S". - If NO, ENTER STATUS "U" here and "NA" for Question 28, and proceed with Question 29.	Y N		

ADDITIONAL QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
28. Is sewage sludge or septic tank pumpings that are applied to the land surface or incorporated into the soil treated by a Process to Further Reduce Pathogens (as listed in Appendix II, Section B of 40 CFR 257) prior to application or incorporation? - If NO, ENTER STATUS "U". - If YES, ENTER STATUS "S".	☐		
40 CFR 257.3-7: Air			
29. Does the facility or practice engage in open burning of residential, commercial, institutional or industrial solid waste? This requirement does not apply to infrequent burning of agricultural wastes in the field, silvicultural wastes for forest management purposes, land-clearing debris, diseased trees, debris from emergency clean-up operations, and ordinance, or to open burning/open detonation of explosives.	Y N		
30. Does the facility conform to applicable requirements developed under a State Implementation Plan (SIP) approved or promulgated by the Administrator pursuant to section 110 of the Clean Air Act, as amended, relevant to open burning?			
40 CFR 257.3-8: Safety			
31. Has the concentration of explosive gases been measured in facility structures and at the property boundary? - If YES to Questions 29 - 31, ENTER STATUS "S". - If NO to any of Questions 29 - 31, ENTER STATUS "U".	Y N		
32. Does the concentration of explosive gases generated by the facility or practice stay below: a) Twenty-five percent (25%) of the lower explosive limit for the gases in facility structures (excluding gas control or recover system components); and b) The lower explosive limit for the gases at the property boundary?	☐		
33. Does the facility or practice not pose a hazard to the safety of persons or property from fires? - If YES Questions 32 and 33, ENTER STATUS "S". - If NO to Question 32 or 33, ENTER STATUS "U".	Y N		
☐	☐		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
34. Is the site located more than 10,000 feet (3,048 meters) from any airport runway used by turbojet aircraft and 5,000 feet (1,524 meters) from any airport runway used by only piston-type aircraft? • If YES, ENTER STATUS "NA" for Question 35 and proceed with Question 36. • If NO, proceed with checklist.	Y N		
35. Has an assessment been made to ensure that the facility does not pose a hazard to aircraft? • If YES, ENTER STATUS "S". • If NO, ENTER STATUS "U".	Y N ☐		
36. Does the facility allow uncontrolled public access so as to expose the public to potential health and safety hazards at the disposal site? • If YES, ENTER STATUS "U". • If NO, ENTER STATUS "S".	Y N ☐		
This checklist is complete.			

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AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 280.20: Performance Standards for New UST System:			
1. Does the site have any underground storage tanks (USTs) and associated piping whose installation commenced after December 22, 1988?	Y N		
- If NO, ENTER STATUS "NA" for Question 7 and proceed with Question 8. - If YES, proceed with checklist.			
2. Is the new tank:			
a. Used for holding hazardous waste?	Y N		
b. Part of a wastewater treatment facility regulated under the Clean Water Act?	Y N		
c. Have a capacity of 110 gallons or less?	Y N		
- If YES to Questions 2 a, b, and c, ENTER STATUS "NA" for Question 7 and proceed with Question 8. - If NO to Question 2 a, b, or c, proceed with checklist.			
3. Are the tanks properly designed and constructed in accordance with a code of practice developed by a nationally recognized association (such as ASTM or the Steel Tank Institute) or an independent testing laboratory (such as Underwriter's Laboratories)?	Y N		
Indicate how the tanks are designed and constructed to meet this requirement.			
4. Is the piping that is in contact with the ground designed, constructed, and protected from corrosion in accordance with a code of practice developed by a nationally recognized association or independent testing laboratory?	Y N		
Indicate how the piping is designed and constructed to meet this requirement.			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
5. Do the new tanks have:			
a. Equipment (such as a catch basin) to prevent release of liquid to the environment when a hose is detached from the piping?	Y N		
b. Overflow prevention equipment (automatic shut-off or alarm)?	Y N		
6. Was the new tank installed in accordance with a code of practice developed by the American Petroleum Institute, ANSI, or a similar organization?	Y N		
7. Did the owner/operator certify that the tank was properly installed and include the certification in the UST notification form?	Y N		
- If YES to Questions 3 - 7, ENTER STATUS "S".	☐		
- If NO to any of Questions 3 - 7, ENTER STATUS "U".			
40 CFR 280.21: Upgrading of Existing UST Systems			
8. Does the facility have any USTs that were in operation before December 22, 1987?	Y N		
- If NO, ENTER STATUS "NA" for Question 10 and proceed with Question 13.			
- If YES, proceed with checklist.			
9. Have these old tanks been:			
a. Upgraded to new UST standards (see Questions 3 through 7)?	Y N		
b. Upgraded with a properly installed internal liner, or cathodic protection, or both?	Y N		
c. Closed?	Y N		
- If YES to Question 9 a, b, or c, ENTER STATUS "S".	☐		
- If NO to Questions 9 a - c, ENTER STATUS "U".			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 260.1 and 260.22: Notification			
10. Did the owner notify the State or local agency of all operating USTs, if any, on or before May 8, 1986?	Y N NA		
11. Did the owner notify the State or local agency of all tanks closed, if any, after January 1, 1984 (except those totally removed from the ground) on or before May 8, 1986?	Y N NA		
12. Did the owner notify the State or local agency of all USTs brought into operation after May 8, 1986, if any, within 30 days?	Y N NA		
- If YES or NA to Questions 10, 11, and 12, ENTER STATUS "S".			
- If NO to any of Questions 10 - 12, ENTER STATUS "U".			
40 CFR 280.30: Spill and Overfill Control			
13. Does the UST have adequate equipment and procedures (see 40 CFR 280.30 for some alternatives) to prevent spills and overfills? Verify by inspection.	Y N		
- If YES, ENTER STATUS "S".			
- If NO, ENTER STATUS "U".			
40 CFR 280.31: Operation and Maintenance of Corrosion Protection			
14. Is the cathodic protection system regularly inspected? Describe schedule and criteria.	Y N		
- If YES, ENTER STATUS "S".			
- If NO, ENTER STATUS "U".			
40 CFR 280.32: Compatibility			
15. Are UST liners, if used, compatible with the products they hold?	Y N NA		
- If YES, ENTER STATUS "S".			
- If NO, ENTER STATUS "U".			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 280.33: Repairs Allowed			
16. If any repairs (included scheduled repairs) have been made, were they done in accordance with a nationally recognized coded practice?	Y N		
- If YES, ENTER STATUS "S".			
- If NO, ENTER STATUS "U".			
40 CFR 280.34: Reporting and Recordkeeping			
17. Does the owner/operator have records of:			
a. Notification (see Question 11 through 13) of all UST systems?	Y N		
b. Suspected or actual releases?	Y N		
c. Planned or taken corrective actions?	Y N		
d. Corrosion potential analyses, if applicable?	Y N		
e. Operational requirements for corrosion protection?	Y N		
f. Repairs to the UST system?	Y N		
g. Performance records for leak detectors?	Y N		
h. Site investigation for any closed UST systems?	Y N		
- If YES to Question 17 a - h, ENTER STATUS "S".			
- If NO to any of Questions 17 a - h, ENTER STATUS "U".			
40 CFR 280.40: General Requirements for all UST Systems			
18. Has a release detection method been provided or programmed before the deadline?	Y N		
- If YES, ENTER STATUS "S" for Question 19 and proceed with Question 20.			
- If NO, proceed with checklist.			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
19. Has the facility implemented a closure plan?	Y N		
- If YES, ENTER STATUS "S".			
- If NO, ENTER STATUS "U".			
20. Does the UST contain petroleum products?	Y N		
- If NO, ENTER STATUS "NA" for Question 22 and proceed with Question 23.			
- If YES, proceed with checklist.			
21. Do all tanks greater than 550 gallons have a release detection means (such as inventory control) or tank tightness testing?	Y N		
22. Do all lines have release detection such as an automatic line leak detector or a line fitness test?	Y N		
- If YES to Questions 21 and 22, ENTER STATUS "S".			
- If NO to Question 21 or 22, ENTER STATUS "U".			
23. Does the UST contain hazardous substances?	Y N		
- If NO, ENTER STATUS "NA" for Question 25 and proceed with Question 26.			
- If YES, proceed with checklist.			
24. Does the existing system meet the new leak detection requirements of 40 CFR 280.417?	Y N		
- If YES, ENTER STATUS "S" for Question 25 and proceed with Question 26.			
- If NO, proceed with checklist.			
25. Has an adequate leak detection system been programmed for completion by November 22, 1988?	Y N		
- If YES, ENTER STATUS "S".			
- If NO, ENTER STATUS "U".			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 280.50: Reporting of Releases			
26. Have UST system spills and other releases been reported within 24 hours?	Y N NA		
Note: If the spill exceeds the reportable quantity in 40 CFR 302.6, the National Response Center and DOE Emergency Operations Center, as well as the State and local agencies, must be notified.			
27. Did the owner/operator investigate the spill by system test or site check within 7 days of discovery of a spill?	Y N NA		
28. If the State or local agency tells the owner/operator of an off-site release, did the owner/operator promptly investigate the UST system?	Y N NA		
- If YES or NOT APPLICABLE to Questions 26, 27, and 28, ENTER STATUS "S".			
- If NO to any Questions 26 - 28, ENTER STATUS "U".			
40 CFR 280.60: General (Release Response)			
29. When investigation (Questions 27 and 28) confirmed a release, did the owner/operator promptly begin immediate cleanup and identify and mitigate fire, explosion, and vapor hazards?	Y N NA		
30. Did the owner/operator perform and report an initial site characterization (40 CFR 280.63)?	Y N NA		
31. If needed, did the owner/operator perform a site investigation?	Y N NA		
32. Was the site investigation used to derive an appropriate corrective action plan?	Y N NA		
33. Was the plan submitted to the State or local agency, approved, and implemented?	Y N NA		
- If YES or NOT APPLICABLE to Questions 29 - 33, ENTER STATUS "S".			
- If NO to any of Questions 29 - 33, ENTER STATUS "U".			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 280.70: Temporary Closure			
34. Has a UST system been closed? - If YES, proceed with checklist. - If NO, ENTER STATUS "NA" for Questions 37, 39, 42 and 43. - This checklist is complete.	Y N		
35. Did the closed UST system meet the new UST system performance standards or the upgrading requirements (40 CFR 280.2 and 280.21)? - If NO, ENTER STATUS "NA" for Question 37 and proceed with Question 38. - If YES, proceed with checklist.	Y N		
36. Was the UST system temporarily closed? - If NO, ENTER STATUS "NA" for Question 37 and proceed with Question 38. - If YES, proceed with checklist.	Y N		
37. Did the owner/operator continue corrosion protection and, if the system was not emptied (less than 1" of residue or 0.3 percent of capacity remains), release detection in accordance with Subpart D? - If YES, ENTER STATUS "S" here and NA for Questions 39, 42, and 43. - If NO, ENTER STATUS "U" here and NA for Questions 39, 42, and 43, and this checklist is complete.	Y N ☐		
38. Was the UST system closed for less than 12 months? - If NO, ENTER STATUS "NA" for Question 39 and proceed with Question 40. - If YES, proceed with checklist.	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
39. Did the owner/operator continue corrosion protection and, if the system was not emptied, release detection? - If YES, ENTER STATUS "S". - If NO, ENTER STATUS "U".	Y N ☐		
40. Was the UST system closed for greater than 12 months? - If NO, ENTER STATUS "NA" for Question 42 and 43 and this checklist is complete. - If YES, proceed with checklist.	Y N		
41. Does the UST system meet the new UST standards (40 CFR 280.20) or the upgrade requirements? (40 CFR 280.21) - If YES, ENTER STATUS "S" for Question 42. This checklist is complete. - If NO, proceed with checklist.	Y N		
42. Was the system permanently closed? - If NO, ENTER STATUS "U". - If YES, proceed with checklist.	Y N ☐		
43. At permanent closure did the owner/operator a. Notify the State or local agency of its intent to close at least 30 days before work began? b. Empty and clean the tank? c. Measure for the presence of releases? d. Do appropriate corrective action for any discovered releases? - If YES, to Questions 43 a, b, c and d, ENTER STATUS "S". - If NO to any of Questions 43 a - d, ENTER STATUS "U". This checklist is complete.	Y N Y N Y N Y N ☐		

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AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 264.12: Required Notices			
1. Are hazardous wastes received from a foreign source? - If YES, proceed with checklist. - If NO, ENTER STATUS "NA" for Question 2 and proceed with Question 3.	Y N		
2. Have notices been submitted to EPA at least four weeks prior to expected date of arrival? (Examine notices and manifests to verify.) - If YES, ENTER STATUS "S". - If NO, ENTER STATUS "U".	Y N ☐		
3. Does the facility receive hazardous wastes from off-site sources? - If YES, proceed with checklist. - If NO, ENTER STATUS "NA" for Question 5 and proceed with Question 6.	Y N		
4. Does the owner/operator provide written notice to the off-site generator that the facility has the appropriate permits for the waste to be transported?	Y N		
5. Does the owner/operator keep copies of the written notices in the operating record? - If YES to Questions 4 and 5, ENTER STATUS "S". - If NO to Question 4 or 5, ENTER STATUS "U".	Y N ☐		
6. Has the facility had a change in ownership or operator? - If YES, proceed with checklist. - If NO, ENTER STATUS "NA" here and proceed with Question 7.	Y N		
a. Was EPA notified of the change in ownership or operator with a revised Part A permit application? - If YES, ENTER STATUS "S". - If NO, ENTER STATUS "U".	Y N ☐		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 264.13: General Waste Analysis			
7. Has the owner/operator obtained a detailed chemical and physical analysis of a representative sample of the wastes managed by the facility?	Y N		
Note: At a minimum, this analysis must contain all the information which must be known to treat, store, or dispose of the waste in accordance with the requirements of 40 CFR 264. The analysis may include data from existing published or documented data on the waste or on waste generated from a similar process.			
8. Is the analysis repeated at least when the owner or operator believes that the process or operation generating the waste has changed?	Y N		
- If YES to Questions 7 and 8, ENTER STATUS "S". - If NO to Question 7 or 8, ENTER STATUS "U".			
40 CFR 264.13b: Waste Analysis Plan			
9. Does the owner/operator maintain a copy of the waste analysis plan at the facility?	Y N		
10. Does the waste analysis plan identify:			
a. Parameters for which waste will be analyzed? (List the parameters)	Y N		
b. Test methods used to test for these parameters?	Y N		
Note: The test methods should be referenced in Test Methods for the Evaluation of Solid Waste, SW-846 or equivalent (ASTM, Standard Methods).			
c. An appropriate sampling method used to obtain samples?	Y N		
Note: The sampling method should be as described in Appendix I of 40 CFR 261 or an equivalent method.			
d. Frequency with which the initial analysis will be reviewed or repeated to ensure the analysis is up to date and accurate?	Y N		
- If YES to Questions 9 - 10 d, ENTER STATUS "S". - If NO to any Question 9 - 10 d, ENTER STATUS "U".			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
11. Is the owner/operator implementing the waste analysis plan regarding the:			
a. Parameters to be tested	Y N		
b. Test methods	Y N		
c. Sampling methods	Y N		
d. Frequency of analysis	Y N		
- If YES to Questions 11.a, b, c and d, ENTER STATUS "S".			
- If NO to any part of Question 11, ENTER STATUS "U".			
12. Does the facility receive waste from off-site?	Y N		
- If YES, proceed with checklist.			
- If NO, ENTER STATUS "NA" for Question 21 and proceed with Question 22.			
13. Does the waste analysis plan contain the waste analysis data that generators have agreed to supply?	Y N		
14. Does the waste analysis plan describe procedures to inspect each movement of hazardous waste from off-site?	Y N		
15. Does the owner/operator follow the inspection procedures contained in the waste analysis plan?	Y N		
16. Does the plan describe a sampling method referenced in Appendix I of 40 CFR 261 or its equivalent?	Y N		
17. Does the owner/operator follow the referenced sampling method?	Y N		
18. Does the plan identify parameters that will be used to inspect the movement?	Y N		
19. Does the owner/operator use those parameters to inspect the waste movement?	Y N		
20. Does the plan describe when a full analysis of the waste movement will be performed when the waste received does not match the waste described on the manifest or shipping papers?	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
21. Does the owner/operator perform a full analysis of the waste movement when the waste received does not match the waste described on the manifest or shipping papers? - If YES to <u>all</u> Questions 13 - 21, ENTER STATUS "S". - If NO to <u>any</u> Question 13 through 21, ENTER STATUS "U".	Y N ☐		
22. Has the facility altered or modified its processes or wastestreams? - If YES, proceed with checklist. - If NO, ENTER STATUS "NA" for Question 23 and proceed with Question 24.	Y N		
23. Has the waste analysis plan been modified accordingly? - If YES, ENTER STATUS "S" and review checklist R-H-PE. - If NO, ENTER STATUS "U".	Y N ☐		
<u>40 CFR 264.13(7): Waste Analysis - Surface Impoundments</u>			
24. Does the facility have a surface impoundment? - If YES, proceed with checklist. - If NO, ENTER STATUS "NA" for Question 27, and proceed with Question 28.	Y N		
25. Is the surface impoundment exempted from land disposal restrictions under 268.4(a)? - If YES, proceed with checklist. - If NO, ENTER STATUS "NA" for Question 27, and proceed with Question 28.	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
26. Does the waste analysis plan contain the procedures and schedule for:			
a. Sampling the impoundment contents?	Y N		
b. Analyzing the test data?	Y N		
c. Annual removal of residues that are not delisted and do not exhibit a characteristic of hazardous waste and do not meet the 40 CFR 268 Subpart D treatment standards or prohibition levels in 40 CFR 268 Subpart C?	Y N		
27. Does the owner/operator follow the procedures and schedules contained in the waste analysis plan?	Y N		
- If YES to Question 26 a, b, c and Question 27, ENTER STATUS "S".			
- If NO to any part of Questions 26 or 27, ENTER STATUS "U".			
40 CFR 264.314: Special Requirements for Bulk and Containerized Liquids (Waste Analysis - Landfills)			
28. Does the facility manage hazardous wastes in landfills?	Y N		
- If YES, proceed with checklist.			
- If NO, ENTER STATUS "NA" for Question 30, and proceed with Question 31.			
29. Does the waste analysis plan describe procedures to test wastes prior to landfilling to demonstrate the absence or presence of free liquids?	Y N		
Note: Procedure should be Method 9095 (Paint Filter Liquids Test) in SW-846.			
30. Does the owner/operator follow those procedures contained in the waste analysis plan?	Y N		
- If YES to Questions 29 and 30, ENTER STATUS "S".			
- If NO to Question 29 or 30, ENTER STATUS "U".			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 264.341: Waste Analysis - Incinerator			
31. Does the facility manage hazardous waste in an incinerator?	Y N		
- If YES, proceed with checklist. - If NO, ENTER STATUS "NA" for Question 33 and proceed with Question 34.			
32. Does the waste analysis plan identify analytical methods for verifying that waste delivered to the incinerator is within the physical and chemical composition limits specified in the permit?			
33. Does the owner/operator use the analytical methods contained in the waste analysis plan?	Y N		
- If YES to Questions 32 <u>and</u> 33, ENTER STATUS "S". - If NO to Question 32 <u>or</u> 33, ENTER STATUS "U".	☐		
40 CFR 264.600: Waste Analysis For Subpart X - Miscellaneous Units			
34. Does the facility manage hazardous waste in miscellaneous units?	Y N		
- If YES, proceed with checklist. - If NO, ENTER STATUS "NA" for Question 35 and proceed with Question 36.			
35. Does the facility adequately follow the procedures in the waste analysis plan to assure that the operation of the miscellaneous units meets the environmental performance standards (40 CFR 264.601)?	Y N		
- If YES, ENTER STATUS "S". - If NO, ENTER STATUS "U".	☐		
40 CFR 264.14: Security			
36. Has the owner/operator demonstrated to the Regional Administrator or Director that:			
a. Physical contact with the waste, structures, or equipment within the active portion of the facility will not cause injury via unknowing or unauthorized entry?	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
b. Disturbance of the waste or equipment by unknowing or unauthorized entry will not cause a violation of the RCRA regulations? - If YES to Questions 36 a and b, ENTER STATUS "NA" for Questions 37 and 38 and proceed with Question 39. - If NO to Question 36 a or b, proceed with checklist.	Y N		
37. Does the facility provide adequate security to prevent unknowing entry or minimize unauthorized entry through: a. A 24-hour surveillance system for the active portion of the facility? b. Artificial or natural barrier around the active portion of the facility (e.g., fence and cliff) and means to control entry through entrances (e.g., attendant, television monitors, locked entrance, controlled roadway access)? - If YES to Question 37 a or b, ENTER STATUS "S". - If NO to Questions 37 a and b, ENTER STATUS "U".	Y N Y N 		
38. Is a danger sign posted at each entrance to each regulated area that: a. Can be viewed from any approach and legible from 25 feet with the words "Danger - Unauthorized Personnel Keep Out" or similar warning? b. Is in English and any foreign language native to the area? (Check for security items during site inspection.) - If YES to Questions 38 a and b, ENTER STATUS "S". - If NO to Question 38 a or b, ENTER STATUS "U".	Y N Y N 		
40 CFR 264.15: General Inspection Requirements			
39. Does the owner/operator maintain a written inspection schedule at the facility? - If YES, ENTER STATUS "S". - If NO, ENTER STATUS "U" here and "NA" for Question 41 and proceed with Question 42.	Y N 		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40. Does the schedule identify the following items for inspection:			
a. Monitoring equipment?	Y N		
b. Safety and emergency equipment?	Y N		
c. Security device?	Y N		
d. Operating and structural equipment important to preventing, detecting, or responding to hazards?	Y N		
e. Types of problems or equipment (e.g., malfunction, operator error, discharges)?	Y N		
41. Does the owner/operator follow the schedule contained in the written inspection schedule?	Y N		
- If YES to Questions 39, 40 a, b, c, d, e and 41, ENTER STATUS "S".	☐		
- If NO to any part of Questions 39 - 41, ENTER STATUS "U".			
<u>40 CFR 264.174: Inspections - Containers</u>			
42. Does the facility manage hazardous waste in containers?	Y N		
- If YES, proceed with checklist.			
- If NO, ENTER STATUS "NA" for Question 43 and proceed with Question 44.			
43. Does the schedule state that areas where containers are stored will be inspected at least weekly for leaks and deterioration?	Y N		
- If YES, ENTER STATUS "S"	☐		
- If NO, ENTER STATUS "U".			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 264.193 and 195: Inspections - Tanks			
44. Does the facility manage hazardous wastes in tanks?	Y N		
- If YES, proceed with checklist.			
- If NO, ENTER STATUS "NA" for Question 45 and 47 and proceed with Question 48.			
45. Does the schedule state that at least each operating day the following items, if present, will be inspected:			
a. Overfill/spill control equipment?	Y N		
b. Aboveground portion of tank?	Y N		
c. Data from monitoring and leak detection equipment?	Y N		
d. Secondary contaminant devices and surrounding area for leaks or releases?	Y N		
- If YES to Question 45 a, b, c <u>and</u> d, ENTER STATUS "S".			
- If NO to Question 45 a, b, c <u>or</u> d, ENTER STATUS "U".			
46. Do the tanks have cathodic protection?	Y N		
- If YES, proceed with checklist.			
- If NO, ENTER STATUS "NA" for Question 47 and proceed with Question 48.			
47. Does the schedule state that:			
a. The cathodic protection system is inspected every six months?	Y N		
b. Sources of impressed current are inspected and/or tested every two months?	Y N		
- If YES to Question 47 a <u>and</u> b, ENTER STATUS "S".			
- If NO to Question 47 a <u>or</u> b, ENTER STATUS "U".			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 264.254: Monitoring and Inspections - Waste Piles			
48. Does the facility manage hazardous waste in waste piles?	Y N		
- If YES, proceed with checklist.			
- If NO, ENTER STATUS "NA" for Question 49 and proceed with Question 50.			
49. Does the schedule state that:			
a. During construction or installation, liners will be inspected for uniformity, damage, or imperfections?	Y N		
b. Immediately after construction or installation, liners and covers will be inspected to ensure tight seams and joints and the absence of tears, punctures, blisters, cracks, or other non-uniformities?	Y N		
c. During operation, the waste pile will be inspected weekly or after storms to detect evidence of malfunctions of run-on/run-off control systems, and wind dispersal and leachate collection systems were present?	Y N NA		
- If YES or NOT APPLICABLE to Questions 49 a, b and c, ENTER STATUS "S".			
- If NO to Question 49 a, b or c, ENTER STATUS "U".			
40 CFR 264.226: Inspections - Surface Impoundments			
50. Does the facility manage hazardous wastes in surface impoundments?	Y N		
- If YES, proceed with checklist.			
- If NO, ENTER STATUS "NA" for Question 51 and proceed with Question 52.			
51. Does the schedule state that:			
a. During construction or installation, liners will be inspected for uniformity, damage, or imperfections?	Y N		
b. Immediately after construction or installation, liners and covers will be inspected to ensure tight seams and joints and the absence of tears, punctures, blisters, cracks, or other non-uniformities?	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
c. During operation, the impoundment will be inspected weekly or after storms to detect evidence of malfunctions of overtopping control systems, sudden drops in liquid levels, and deterioration or erosion of dikes? - If YES to Questions 51 a, b <u>and</u> c, ENTER STATUS "S". - If NO to Question 51 a, b <u>or</u> c, ENTER STATUS "U".	Y N ☐		
40 CFR 264.303: Monitoring and Inspection - Landfills			
52. Does the facility dispose of wastes in a landfill? - If YES, proceed with checklist. - If NO, ENTER STATUS "NA" for Question 53 and proceed with Question 54.	Y N		
53. Does the schedule state that: a. During construction or installation, liners will be inspected for uniformity, damage, or imperfections? b. Immediately after construction or installation, liners and covers will be inspected to ensure tight seams and joints and the absence of tears, punctures, blisters, cracks, or other non-uniformities? c. During operation, the landfill will be inspected weekly or after storms to detect evidence of malfunctions of run-on/run-off, wind dispersal, and leachate control systems? - If YES to Questions 53 a, b <u>and</u> c, ENTER STATUS "S". - If NO to Question 53 a, b <u>or</u> c, ENTER STATUS "U".	Y N Y N Y N ☐		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 264.347(b): Inspections - Incinerator			
54. Does the facility manage hazardous wastes in an incinerator?	Y N		
- If YES, proceed with checklist.			
- If NO, ENTER STATUS "NA" for Question 55 and proceed with Question 56.			
55. Does the inspection schedule state that the following items are inspected daily:			
a. Complete incinerator?	Y N		
b. Associated equipment (pumps, valves, pipes, and others)?	Y N		
c. Emergency shutdown controls?	Y N		
d. System alarms?	Y N		
- If YES to Questions 55 a, b, c and d, ENTER STATUS "S".			
- If NO to Question 55 a, b, c or d, ENTER STATUS "U".			
40 CFR 264.602: Inspections - Miscellaneous Units			
56. Does the facility manage wastes in miscellaneous units?	Y N		
- If YES, proceed with checklist.			
- If NO, ENTER STATUS "NA" for Question 57 and proceed with Question 58.			
57. Does the inspection schedule identify the following items for inspection:			
a. Monitoring equipment	Y N		
b. Safety equipment	Y N		
c. Operational controls	Y N		
- If YES to Questions 57 a, b and c, ENTER STATUS "S".			
- If NO to Question 57 a, b or c, ENTER STATUS "U".			
58. Does the owner/operator maintain an inspection log?	Y N		
59. Is the log kept for three years from the inspection date?	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
60. Does the log include:			
a. Date and time of inspection?	Y N		
b. Name of inspector?	Y N		
c. Notation of observation?	Y N		
d. Date and nature of repairs or remedial action?	Y N		
61. Have all malfunctions or other deficiencies identified during inspections been corrected?	Y N		
- If YES to Questions 58, 59, 60 a, b, c, d and 61, ENTER STATUS "S".	☐		
- If NO to any of Questions 58 - 61, ENTER STATUS "U".			
40 CFR 264.17: Special Requirements for Ignitable, Reactive, and Incompatible Wastes			
62. Does the installation handle ignitable or reactive wastes?	Y N		
- If YES, proceed with checklist.			
- If NO, ENTER STATUS "NA" for Question 64 and proceed with Question 65.			
Note: In addition to the characteristic of ignitable and reactive, ignitable and reactive wastes are also designated in 40 CFR 261 Subpart D lists. Check for these wastes on installation list of hazardous wastes.			
63. Are the following precautions taken:			
a. Is waste separated and confined away from sources of ignition or reaction (open flames, smoking, cutting and welding, hot surfaces, frictional heat), sparks (static, electrical, or mechanical), spontaneous ignition (e.g., from heat-producing chemical reactions), and radiant heat? (Describe in comment section.)	Y N		
b. Are smoking and open flames confined to specifically designated locations?	Y N		
c. Are "No Smoking" signs posted in hazardous areas?	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
64. Is the treatment, storage, or disposal of ignitable or reactive wastes and the mixture or co-mingling of incompatible wastes and materials conducted so that it does not: a. Generate extreme heat or pressure, fire or explosion, or violent reaction? b. Produce uncontrolled toxic mists, fumes, dusts, or gases in sufficient quantities to threaten human health? c. Produce uncontrolled flammable fumes or gases in sufficient quantities to threaten human health? d. Damage the structural integrity of the device or facility containing the waste? e. Through other like means, threaten human health or the environment? - If YES to all parts of Questions 63 and 64, ENTER STATUS "S". - If NO to any part of Questions 63 - 64, ENTER STATUS "U".	Y N Y N Y N Y N Y N ☐		
40 CFR 264.16: Location Standards			
65. Is the facility located within a flood plain? - If YES, proceed with checklist. - If NO, ENTER STATUS "NA" for Question 63.	Y N		
66. Is the facility designed, constructed, operated, and maintained to prevent washout of any hazardous waste during a 100-year flood? - If YES, ENTER STATUS "S" for Question 67. - If NO, proceed with checklist.	Y N		
67. Does the facility have procedures approved by the Regional Administrator to remove waste safely? - If YES, ENTER STATUS "S". - If NO, ENTER STATUS "U".	Y N ☐		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
68. Does the owner/operator place noncontainerized or bulk liquid hazardous waste in any salt dome formation, salt bed formation, underground mine, or cave? - IF YES, ENTER STATUS "U". - IF NO, ENTER STATUS "S". Note: This prohibition does not apply to the DOE Waste Isolation Project in New Mexico. This checklist is complete.	Y N ☐		

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AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 264.16: Personnel Training			
1. Does the facility maintain the following RCRA personnel training records?			
a. Records of training on current employees	Y N		
b. Records of training on former employees for at least three years after end of employment	Y N		
- If YES, to Questions 1 a and b, ENTER STATUS "S".			
- If NO to Question 1 a or b, ENTER STATUS "U".			
- If NO to Questions 1 a and b, ENTER STATUS "NA" for Question 2, and proceed with Question 3.			
2. Do these records include the following:			
a. Job titles relating to hazardous waste management?	Y N		
b. Job descriptions, as they pertain to their hazardous waste activities?	Y N		
c. Description of training required for each job description?	Y N		
d. Indication that personnel have taken part in the required training and in an annual review of initial training?	Y N		
- If YES to Questions 2 a, b, c and d, ENTER STATUS "S".			
- If NO to Question 2 a, b, c or d, ENTER STATUS "U".			
3. Did facility personnel receive training within 6 months of the issuance of the permit, or for new personnel, within 6 months of employment?	Y N		
- If YES, ENTER STATUS "S".			
- If NO, ENTER STATUS "U".			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
4. Does the training program include instruction on the following, where applicable:			
a. Waste management procedures?	Y N		
b. Contingency plan?	Y N		
c. Procedures for using, inspecting, repairing, and replacing facility emergency and monitoring equipment?	Y N		
d. Key parameters for automatic waste feed cut-off systems?	Y N		
e. Communications or alarm systems?	Y N		
f. Response to fires or explosions?	Y N		
g. Response to groundwater contamination incidents?	Y N		
h. Shutdown of operations?	Y N		
- If YES to Questions 4 a - h, where applicable, ENTER STATUS "S".			
- If NO to <u>any</u> of the above items, where applicable, ENTER STATUS "U".			
(Explain if an item is determined to be not applicable)			
5. Does each employee take part in an annual review of the training program?	Y N		
- If YES, ENTER STATUS "S".			
- If NO, ENTER STATUS "U".			
(Interview a number of employees and document the interviews)			
This checklist is complete.			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
3 Does the installation have the required equipment listed in Question 2? - If YES, ENTER STATUS "S" and note in the comments section the presence and accessibility of equipment during the site investigation. Equipment should be compatible with types of wastes potentially spilled. - If NO, ENTER STATUS "U" and note in the comments section which required equipment is not provided at the installation.	Y N ☐		
40 CFR 264.33: Testing and Maintenance of Equipment			
4. Is the required equipment (see Question 2) tested and maintained to ensure proper operation? - If YES, ENTER STATUS "S" and note the testing and maintenance procedures in the comments section. - If NO, ENTER STATUS "U" and note the deficiencies.	Y N ☐		
40 CFR 264.34: Access to Communications/Alarm Systems			
- If NO to Question 2 a or b, ENTER STATUS "NA" for Question 6 and proceed with Question 7. 5. Do all personnel have immediate (direct or indirect) access to an internal alarm or emergency communication system during hazardous waste operations? (Indirect access includes visual or voice contact with another employee.)	Y N		
6. If even just one employee is on the premises during hazardous waste operations, does he or she have immediate access to external emergency assistance by phone or hand-held two-way radio? - If YES to Questions 5 and 6, ENTER STATUS "S". - If NO to Question 5 or 6, ENTER STATUS "U" and note the deficiencies in the comments section.	Y N ☐		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 264.35: Required Aisle Space			
7. Is aisle space used for the movement of personnel, fire protection equipment, spill control equipment, or decontamination equipment to any area of the installation in an emergency?	Y N		
• If YES, proceed with checklist. • If NO, ENTER STATUS "NA" for Question 8 and proceed with Question 9.			
8. Is there sufficient aisle space for unobstructed movement of personnel and emergency equipment?	Y N		
• If YES, ENTER STATUS "S". • If NO, ENTER STATUS "U".			
40 CFR 264.37: Arrangements with Local Authorities			
9. Would any of the following local authorities be potentially needed during an emergency at the installation: police department, fire department, or other emergency response personnel?	Y N		
• If YES, proceed with checklist. • If NO, ENTER STATUS "NA" for Question 14 and describe in the comments section the basis for this determination. This checklist is complete.			
10. Has the installation made arrangements with the local authorities (police, fire, emergency response) to familiarize them with characteristics of the installation?	Y N		
(Characteristics include layout of installation, properties of hazardous waste handled and associated hazards, places where facility personnel would normally be working, entrances to roads inside installation, possible evacuation routes.) • If YES, note in the comments section where these arrangements are documented.			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
11. Could more than one police and fire department respond to an emergency at the installation? - If YES, proceed with checklist. - If NO, proceed with Question 12. a. Has a primary emergency authority been designated? b. Have agreements been made with other responding local authorities to provide support to the primary emergency authority? - If YES, note in the comments section where the installation has documented these agreements.	Y N		
12. Does the installation have agreements with State emergency response teams, emergency response contractors, and equipment suppliers? - If YES, note in the comments section where these agreements are documented.	Y N		
13. Has the installation arranged to familiarize local hospitals with the properties of hazardous waste handled and types of injuries or illnesses that could result from fires, explosions, or releases at the installation? - If YES, note in the comments section where these arrangements are documented and if YES to Questions 10, 11 a, b, 12 <u>and</u> 13, ENTER STATUS "S" for Question 14. This checklist is complete. - If NO to Question 10, 11 a, b, 12 <u>or</u> 13, proceed with checklist.	Y N		
14. Has the installation documented its attempts to make such arrangements? - If YES, ENTER STATUS "S" and note in the comments section where these attempts are documented and when they were made. - If NO to Question 14, ENTER STATUS "U". This checklist is complete.	Y N		

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AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 264.51: Purpose and Implementation			
1. Has a contingency plan been designed for the installation?	Y N		
- If YES, proceed with checklist.	☐		
- If NO, ENTER STATUS "U" and "NA" for the remaining sections.			
40 CFR 264.52: Content of Contingency Plan			
2. Was the contingency plan prepared by amending an existing Spill Prevention, Control and Countermeasure (SPCC) Plan?	Y N		
3. Does the contingency plan:			
a) Cover actions which facility personnel must take in response to fires, explosions, sudden and non-sudden releases of hazardous wastes or hazardous waste constituents to air, soil, or surface water at the installation?	Y N		
b) Describe arrangements agreed to or document efforts to obtain agreement if no agreements are reached with local police departments, fire departments, hospitals, contractors, and State and local emergency response teams to coordinate emergency services? (If YES, indicate in Comments which approach was used.)	Y N		
c) List names, addresses, and phone numbers of all personnel qualified to act as emergency coordinators?	Y N		
1) Is the list kept up to date?	Y N		
2) If more than one person is listed, is one named as primary emergency coordinator and the others listed in the order in which they will assume responsibility as alternates?	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
d) List all required emergency and decontamination equipment at the installation and its location along with a description of each item and its capability?	Y N		
1) Is this list up to date?	Y N		
a) Have an evacuation plan for facility personnel which includes signals, routes, and alternate evacuation routes?	Y N		
i) Specify procedures that facility personnel will follow in the event of a release or drop in liquids from a surface impoundment.	Y N NA		
- If YES or NOT APPLICABLE to Questions 3 a - i, ENTER STATUS "S".			
- If NO to any of Question 3 a - i, ENTER STATUS "U".			
40 CFR 264.53: Copies of Contingency Plan			
4. Is a copy of the plan (including all revisions) maintained at the installation?	Y N		
5. Have copies of the plan been submitted to all local police departments, fire departments, hospitals, and State and local emergency response teams that may be called upon to provide emergency services?	Y N		
- If YES to Questions 4 and 5, ENTER STATUS "S".			
- If NO to Question 4 or 5, ENTER STATUS "U".			
40 CFR 264.54: Amendment of Contingency Plan			
6. Is the contingency plan reviewed and amended if necessary?	Y N NA		
Note: This should occur whenever the permit or applicable regulations are revised, the plan fails in an emergency, the installation changes (design, construction, operation, maintenance, etc.), the list of emergency coordinators changes, or the list of emergency equipment changes.			
- If YES or NOT APPLICABLE, ENTER STATUS "S".			
- If NO, ENTER STATUS "U".			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 264.55: Emergency Coordinator			
7. Is there an emergency coordinator on-site or on-call at all times?	Y N		
8. Is each emergency coordinator thoroughly familiar with all aspects of the facility's contingency plan, all operations and activities at the facility, the location and characteristics of waste handled, the location of all records within the facility, and the facility layout?	Y N		
9. Does each emergency coordinator have the authority to commit the resources needed to carry out the contingency plan?	Y N		
Note: Interview at least one emergency coordinator regarding the plan, if practical. - If YES to Questions 7 - 9, ENTER STATUS "S". - If NO to any of Questions 7 - 9, ENTER STATUS "U".			
40 CFR 264.56 Emergency Procedures			
10. Has there ever been an imminent or actual emergency at the installation?	Y N		
- If YES, proceed with checklist. - If NO ENTER STATUS "NA" for Question 11 and proceed with Question 12.			
11. Has the emergency coordinator or his designee immediately:			
a) Activated internal facility alarms or communication systems, as applicable, to notify all facility personnel?	Y N		
b) Notified appropriate State or local emergency response authorities if their help was needed?	Y N		
- If NO to Question 11 a or b, ENTER STATUS "U". - If YES to Questions 11 a and b, ENTER STATUS "S".			

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AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
g. Did the report contain all of the following: 1) Name and telephone number of reporter? 2) Name and address of facility? 3) Time and type of incident? 4) Name and quantity of material involved? 5) Extent of injuries? 6) Possible hazards to human health or the environment, outside the facility? - If NO, indicate what was not included.	Y N		
h. Take all reasonable measures necessary to ensure that fires, explosions, and releases do not occur, recur, or spread to other hazardous waste at the facility?	Y N		
i. Stop operations in response to the fire, explosion, or release?	Y N		
j. Monitor for leaks, pressure buildup, gas generation, or ruptures in valves, pipes, or other equipment, as appropriate?	Y N		
k. Immediately after the emergency, provide for treating, storing, or disposing of recovered waste, contaminated soil, or surface water, or any other material that resulted from the incident? (Note: unless the installation shows, in accordance with 40 CFR 261.3 (c) or (d), that the recovered material is not a hazardous waste, the installation becomes a generator of hazardous waste and must manage it in accordance with 40 CFR Parts 262, 263, and 264.)	Y N		

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AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 264.71: Use of Manifest System			
1. Are wastes received from off-site generators? - If YES, proceed with checklist. - If NO, ENTER STATUS "NA" for Questions 2, 4, 6, and 8. Proceed with Question 9.	Y N		
2. Does the owner/operator: a. Retain copies of manifests at the facility for 3 years from delivery date? (Obtain and review samples of manifests.) b. Ensure manifests are signed and dated? c. Return a signed and dated copy to the generator within 30 days? d. Return copies of manifests to the transporter at time of delivery? Note: Wastes from conditionally exempt small quantity generators are exempt from manifest requirements. - If YES to Questions 2 a, b, c <u>and</u> d, ENTER STATUS "S". - If NO to Question 2 a, b, c <u>or</u> d, ENTER STATUS "U".	Y N Y N Y N Y N 		
3. Are any wastes received from a rail or water bulk shipment transporter? - If NO, ENTER STATUS "NA" for Question 4 and proceed with Question 5.	Y N		
4. Does the owner/operator: a. Retain copies of shipping papers at the installation for 3 years from delivery date? b. Ensure papers are signed and dated? c. Return a signed and dated copy of shipping paper or manifest to the generator within 30 days?	Y N Y N Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
d. Return copies of shipping papers to the transporter at time of delivery? - If YES to Questions 4 a - d, ENTER STATUS "S". - If NO to Question 4 a - d, ENTER STATUS "U".	Y N ☐		
40 CFR 264.72: Manifest Discrepancies			
5. Have any waste shipments been received which were significantly inconsistent with the manifest in quantity or type (manifest discrepancies)? - If YES, briefly describe nature and time of each occurrence. - If NO, ENTER STATUS "NA" to Question 6 and proceed with Question 7. Note: Significant discrepancies in quantity are: (1) for bulk waste, variations greater than 10 percent in weight, and (2) for batch waste, any variation in piece count, such as a discrepancy of one drum in a truckload. Significant discrepancies in type are obvious differences which can be discovered by inspection or waste analysis, such as waste solvent substituted for waste acid, or toxic constituents not reported on the manifest or shipping paper.	Y N		
6. Did the owner/operator ensure that: a. Each discrepancy was marked on the manifest or shipping paper upon receipt of the waste? (40 CFR 264.71) b. Each discrepancy was resolved with the waste generator or transporter? - If YES, determine status for Question 6 and proceed with Question 7. - If NO, proceed with checklist. c. An attempt was made to reconcile differences with the transporter and/or generator? If yes, please describe each attempt. d. If the discrepancy was not reconciled, that EPA was notified in writing? If yes, please identify to whom and when.	Y N Y N Y N Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
e. The notification was submitted within 15 days of receipt of the waste? - If YES to Questions 6 a, c, d <u>and</u> e, ENTER STATUS "S". - If NO to Question 6 a, c, d <u>or</u> e, ENTER STATUS "U".	Y N ☐		
40 CFR 264.76: Unmanifested Waste Report			
7. Has the facility received any waste that does not come under the small generator exclusion and that is not accompanied by a manifest? - If YES, proceed with checklist. - If NO, ENTER STATUS "NA" for Question 8 and proceed with Question 9.	Y N		
8. Did the owner/operator submit an unmanifested waste report to EPA within 15 days which included all of the following: a. The EPA identification number, name, and address of the facility? b. The date the facility received the waste? c. The EPA identification number, name, and address of the generator and the transporter, if available? d. A description and the quantity of each unmanifested hazardous waste the facility received? e. The method of treatment, storage, or disposal for each hazardous waste? f. The certification signed by the owner or operator of the facility or his authorized representative?	Y N		

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AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
g. Monitoring, testing, or analytical data, where required? Required data may include 1) groundwater monitoring data or exemption certification, 2) food chain crops uptake of contaminants, 3) unsaturated zone monitoring, 4) soil-core monitoring, 5) incinerator monitoring results, and 6) thermal treatment results.	Y N		
h. For facilities that receive wastes from off-site generators, copies of the notices required in 40 CFR 264.12(b)?	Y N NA		
i. Closure and post-closure cost estimates?	Y N		
j. An annual certification that the facility has a program to reduce the volume and toxicity of hazardous waste generated at the facility to the extent determined to be feasible by the owner/operator?	Y N		
k. Records of the quantities and date of placement for each shipment of waste in land disposal units?	Y N		
l. Appropriate waste analysis information (refer to Checklist R-H-B)?	Y N		
- # YES to Questions 10 a - I, ENTER STATUS "S".			
- # NO to any of Questions 10 a - I, ENTER STATUS "U".			
40 CFR 264.74: Availability, Retention and Disposition of Records			
11. Has the facility closed its hazardous waste management units?	Y N		
- # YES, proceed with checklist.			
- # NO, ENTER STATUS "NA" for Question 12.			
12. Has the facility provided a copy of records of waste disposal locations and volumes to the regional administrator and local land authority?	Y N		
- # YES, ENTER STATUS "S".			
- # NO, ENTER STATUS "U".			
40 CFR 264.75: Biennial Report			
14. Has the owner/operator submitted biennial reports (EPA Form 8700-138) by March 1 of each even-numbered year? (Obtain copy of latest report.)	Y N		
Note: States may use other report forms or have more frequent reporting requirements			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
• If YES, proceed with checklist. • If NO, ENTER STATUS "U".	☐		
15. Does the report include:			
a. The EPA identification number, name, and address of the facility?	Y N		
b. The calendar year covered by the report?	Y N		
c. For off-site facilities, the EPA identification number of each hazardous waste generator from which the facility received a hazardous waste during the year?	Y N		
Note: For imported shipments, the report must give the name and address of the foreign generator.			
d. A description and the quantity of each hazardous waste the facility received during the year?	Y N		
Note: For off-site facilities, this information must be listed by EPA identification number of each generator.			
e. The method of treatment, storage, or disposal for each hazardous waste?	Y N		
f. The certification signed by the owner or operator of the facility or his authorized representative?	Y N		
g. Ground-water monitoring data, if applicable?	Y N		
h. Recent closure and post-closure cost estimate?	Y N		
i. Efforts to reduce the volume and toxicity of waste generated?	Y N		
j. Annual changes in volume and toxicity achieved?	Y N		
• If YES to Questions 15 a - j, ENTER STATUS "S". • If NO to any of Questions 15 a - j, ENTER STATUS "U".	☐		
This checklist is complete.			

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AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
<u>40 CFR 264.90: Applicability</u>			
1. Does the facility have solid waste management units which may be releasing or have released hazardous wastes or hazardous constituents into the environment? - If YES, ENTER STATUS "A". - If NO, ENTER STATUS "NA" and proceed with Question 3.	Y N		
<u>40 CFR 264.101: Corrective Action for Solid Waste Management Units</u>			
2. Is the owner/operator performing the corrective action activities specified in the permit? (Review and complete Checklist R-HP-CS, Compliance Schedules) - If YES, ENTER STATUS "S". - If NO, ENTER STATUS "U".	Y N		
<u>40 CFR 264.90: Applicability</u>			
3. Does the facility manage wastes in regulated units? (Surface impoundments, waste piles, land treatment units, landfills, or miscellaneous units requiring groundwater monitoring.) - If YES, proceed with checklist. - If NO, ENTER STATUS "NA" for Question 4. This checklist is complete.	Y N		
4. Has the Regional Administrator or Director exempted the regulated units from Subpart F, through the permit? - If YES, ENTER STATUS "NA". This checklist is complete. - If NO, ENTER STATUS "A". Proceed with checklist.	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 264.91: Required Programs			
4. Has the owner/operator instituted a compliance monitoring program, a corrective action program, or a detection monitoring program as specified in the permit?	Y N		
- If YES, ENTER STATUS "S".			
- If NO, ENTER STATUS "U".			
40 CFR 264.97: General Groundwater Monitoring Requirements			
5. Does the facility's groundwater monitoring system consist of the number of wells specified in the permit?	Y N		
6. Are the wells installed at the locations and depths specified in the permit?	Y N		
7. Are the wells cased in a manner that maintains the integrity of the well base hole including sealing of the annular space to prevent sample contamination?	Y N		
- If YES to Questions 5, 6, and 7, ENTER STATUS "S".			
- If NO to Question 5, 6 or 7, ENTER STATUS "U".			
8. Is the groundwater sampling and analysis plan maintained at the facility?	Y N		
- If YES, proceed with checklist.			
- If NO, ENTER STATUS "U" for Question 8 and proceed with Question 10.			
9. Does the groundwater sampling and analysis plan include adequate procedures and techniques for:			
a. Sample collection?	Y N		
b. Sample preservation and shipment?	Y N		
c. Analytical procedures for the constituents established in the permit?	Y N		
d. Chain-of-custody control?	Y N		
- If YES to Questions 9 a, b, c and d, ENTER STATUS "S".			
- If NO to Questions 9 a, b, c or d, ENTER STATUS "U".			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
10. Does the owner/operator determine and record groundwater surface elevations each time groundwater is sampled? - If YES, ENTER STATUS "S". - If NO, ENTER STATUS "U".	Y N ☐		
40 CFR 264.98: Detection Monitoring Program			
11. Is the facility required by the permit to implement a detection monitoring program? - If YES, proceed with checklist. - If NO, ENTER STATUS "NA" for Questions 16, 20, and 22 and proceed with Question 23.	Y N		
12. Is the owner/operator monitoring the indicator parameters specified in the permit?	Y N		
13. Has the owner/operator established background levels for the monitoring parameters specified in the permit?	Y N		
14. Is the owner/operator determining water quality at least semiannually at each and every well at the compliance point?	Y N		
15. Is the owner/operator determining the groundwater flow rate and direction in the uppermost aquifer at least annually?	Y N		
16. Is the owner/operator performing the statistical analyses of groundwater monitoring data for each well and each parameter as specified in the permit? - If YES to Questions 11, 12, 13, 14, 15, and 16, ENTER STATUS "S". - If NO to Questions 11 - 16, ENTER STATUS "U".	Y N ☐		
17. Has the owner/operator determined whether or not there has been a statistically significant increase of any parameter at any well at the compliance point? - If YES, ENTER STATUS "S". - If NO, ENTER STATUS "U" here and NA for Questions 20 and 22 and proceed with Question 23.	Y N ☐		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
18. If the owner/operator determined that there was a statistically significant increase, did they:			
a. Notify the Regional Administrator or Director in writing, within 7 days, of the parameters or constituents showing the increases?	Y N NA		
b. Immediately sample all monitoring wells to determine whether constituents listed in 40 CFR 264 Appendix IX were present and at what concentration?	Y N NA		
c. Establish a background value for each Appendix IX constituent found in the monitoring wells? (If YES, review how these background values were actually established.)	Y N NA		
d. Within 90 days, submit an application to the Regional Administrator or Director for a permit modification to establish a compliance monitoring program?	Y N NA		
19. Did the owner/operator submit within 180 days to the Regional Administrator or Director:			
a. Data necessary for the establishment of alternate concentration limits (ACL)?	Y N NA		
b. An engineering feasibility plan for corrective action unless an ACL is being sought or the concentrations of all constituents are less than those listed in Table I of 40 CFR 264.94?	Y N NA		
- If YES or NA to all parts of Questions 18 and 19, ENTER STATUS "S" for Question 20 and proceed with Question 21.			
- If NO, proceed with checklist.			
20. Did the owner/operator:			
a. Notify the Regional Administrator or the Director within 7 days of their intent to demonstrate that the increase was caused by a source other than a regulated unit or a sampling error?	Y N		
b. Submit a written report within 90 days making the demonstration indicated in their notice letter?	Y N		
c. Submit an application for a permit modification within 90 days?	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
d. Continue to monitor in accordance with the approved detection groundwater monitoring program?	Y N		
- If YES to Questions 20 a, b, c and d, ENTER STATUS "S".	☐		
- If NO to any of Questions 20 a - d, ENTER STATUS "U".			
21. Has the owner/operator determined if the groundwater monitoring program no longer satisfies the requirements of the permit?	Y N		
- If YES, proceed with checklist.			
- If NO, ENTER STATUS "NA" for Question 22 and proceed with Question 23.			
22. Did the owner/operator submit an application for a permit modification within 90 days of making such a determination?	Y N		
- If YES, ENTER STATUS "S".	☐		
- If NO, ENTER STATUS "U".			
<u>40 CFR 264.99: Compliance Monitoring Program</u>			
23. Is the facility required by the permit to implement a compliance monitoring program?	Y N		
- If YES, proceed with checklist.			
- If NO, ENTER STATUS "NA" for Questions 27, 30, 31, 32, 33, and 35, proceed with Question 36.			
24. Is the owner/operator monitoring for the constituents or parameters specified in the permit?	Y N		
25. Has the owner/operator established background levels for the monitoring parameters specified in the permit?	Y N		
26. Is the owner/operator determining the concentration of the hazardous constituents in each monitoring well at the compliance point at least quarterly?	Y N		
27. Is the owner/operator determining the groundwater flow rate and direction in the uppermost aquifer at least annually?	Y N		
- If YES to Questions 23, 24, 25, 26, and 27, ENTER STATUS "S".	☐		
- If NO to any of Questions 23 - 27, ENTER STATUS "U".			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
28. Is the owner/operator sampling all monitoring wells at the compliance point at least annually and analyzing those samples for constituents listed in Appendix IX of 40 CFR 264? - If YES, ENTER STATUS "S". - If NO, ENTER STATUS "U" here and "NA" for Question 30 and proceed with Question 31.	Y N ☐		
29. Has the owner/operator found constituents in the groundwater other than those listed in the permit? - If YES, proceed with checklist. - If NO, ENTER STATUS "NA" for Question 30 and proceed with Question 31.	Y N		
30. Did the owner/operator submit a written report including the concentrations of those constituents found to the Regional Administrator or Director within 7 days after completion of the analysis? - If YES, ENTER STATUS "S". - If NO, ENTER STATUS "U".	Y N ☐		
31. Has the owner/operator determined whether there has been a statistically significant increase over the concentration limits in the permit? - If YES, ENTER STATUS "S". - If NO, ENTER STATUS "U" here and "NA" for Questions 32 and 33 and proceed with Question 34.	Y N ☐		
32. If the owner/operator determined that there was a statistically significant increase, did they: a. Notify the Regional Administrator or Director in writing within 7 days of the constituents showing the increase? b. Submit an application for a permit modification to establish a corrective action program within 180 days (90 days if an engineering feasibility study had previously been submitted) which included a description of the corrective actions to be taken and a plan for a groundwater monitoring program to monitor the effectiveness of the corrective action?	Y N NA Y N NA		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
- If YES or NA to Questions 32 a and b, ENTER STATUS "S" here and "NA" for Question 33. Proceed with Question 34. - If NO, proceed with checklist.	☐		
33. Did the owner/operator:			
a. Notify the Regional Administrator or Director within 7 days of their intent to demonstrate that the increase was caused by a source other than the regulated unit or a sampling error?	Y N		
b. Submit a written report within 90 days making the demonstration indicated in their notice letter?	Y N		
c. Submit an application for a permit modification within 90 days?	Y N		
d. Continue to monitor in accordance with the approved compliance monitoring program?	Y N		
- If YES to Questions 33 a, b, c and d, ENTER STATUS "S". - If NO to any of Questions 33 a - d, ENTER STATUS "U".	☐		
34. Has the owner/operator determined that the compliance monitoring program no longer satisfies the requirements of the permit?	Y N		
- If YES, proceed with checklist. - If NO, ENTER STATUS "NA" for Question 35 and proceed with Question 36.			
35. Did the owner/operator submit an application for a permit modification within 90 days of making such a determination?	Y N		
- If YES, ENTER STATUS "S". - If NO, ENTER STATUS "U".	☐		
40 CFR 264.100: Corrective Action Program			
36. Is the owner/operator required to implement a corrective action program?	Y N		
- If YES, proceed with checklist. - If NO, ENTER STATUS "NA" for Questions 37, 38, and 40. This checklist is complete.			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
37. Is the owner/operator performing the corrective action activities specified in the permit? (Review and complete Checklist R-HP-CS, Compliance Schedules) - # YES, ENTER STATUS "S". - # NO, ENTER STATUS "U".	Y N ☐		
38. Is the owner/operator submitting reports on the effectiveness of the corrective action program to the Regional Administration or Director semiannually? - # YES, ENTER STATUS "S". - # NO, ENTER STATUS "U".	Y N ☐		
39. Has the owner/operator determined that the corrective action program no longer satisfies the requirements of the permit? - # YES, proceed with checklist. - # NO, ENTER STATUS "NA" for Question 40. This checklist is complete.	Y N ☐		
40. Did the owner/operator submit an application for a permit modification within 90 days of making such a determination? - # YES, ENTER STATUS "S". - # NO, ENTER STATUS "U". This checklist is complete.	Y N ☐		

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AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 264.111: Closure Performance Standard			
1. Has any regulated unit been closed? - If YES, complete the applicable checklist for the regulated unit closed. - If NO, ENTER STATUS "NA" for Question 2 and proceed with Question 3. Be sure to review the approved closure plan.	Y N		
2. Was proper notice provided to the Regional Administrator or Director according to the nature of the unit closed? 40 CFR 264.112(d) - If YES, ENTER STATUS "S". - If NO, ENTER STATUS "U".	Y N ☐		
40 CFR 275.112: Closure Plan: Amendment of Plan			
3. Does the facility have a written closure plan? - If YES, ENTER STATUS "S". Obtain a copy of the plan for review. - If NO, ENTER STATUS "U". This checklist is complete.	Y N ☐		
4. Have any of the following circumstances occurred? a. A change in operating plans or facility design? b. A change in the expected year of closure, if applicable? c. Unexpected events while conducting partial or final closure? - If YES, describe the circumstances and answer Question 5. - If NO, ENTER STATUS "NA" for Question 5 and proceed with Question 6.	Y N Y N Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
5. Was the plan revised to reflect the changed conditions and submitted to the Regional Administrator or the State along with a request for a permit modification within the time frames specified in 40 CFR 264.112(c)(3)? - If YES, ENTER STATUS "S". - If NO, ENTER STATUS "U". <u>40 CFR 264.113: Closure: Time Allowed for Closure</u> 6. Has the facility stopped accepting hazardous waste? - If YES, proceed with checklist. - If NO, ENTER STATUS "NA" for Question 7 and proceed with Question 8. 7. Has the facility closed its hazardous waste management activities within 90 days of receiving the final volume of hazardous waste. - If YES, ENTER STATUS "S". - If NO, ENTER STATUS "U". Note that the Regional Administrator and State Director may extend the timeframe for completing closure. <u>40 CFR 264.114: Disposal or Decontamination of Equipment, Structures and Soils</u> The facility may have become a generator of hazardous waste while performing closure activities. Document how generator requirements were satisfied. <u>40 CFR 264.115: Certification of Closure</u> 8. Has certification of closure been provided to EPA or the State within 60 days of closure? (The certification must be signed by a registered professional engineer) - If YES, ENTER STATUS "S". - If NO, and closure has not occurred, ENTER STATUS "NA". If closure has occurred, ENTER STATUS "U".	Y N ☐ Y N Y N ☐ Y N ☐		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 264.116: Survey Plat			
9. Have survey plats been prepared for each hazardous waste disposal unit closed and have they been provided to the local land use authority as well as the Regional Administrator or State Director?	Y N		
- If YES, ENTER STATUS "S".			
- If NO, and closure has not occurred, ENTER STATUS "NA". If closure has occurred, ENTER STATUS "U".			
40 CFR 264.117: Post-Closure Care and Use of Property			
10. Does the facility manage hazardous waste in:			
a. Landfill units?	Y N		
b. Other units which, when closed will leave hazardous wastes in place (in some surface impoundments, waste piles)?	Y N		
- If YES, proceed with checklist.			
- If NO to Questions 10 a and b ENTER STATUS "NA" for Question 11. This checklist is complete.			
11. Does the facility have a post-closure care plan?	Y N		
- If YES, ENTER STATUS "S".			
- If NO, ENTER STATUS "U". This checklist is complete.			
12. Has the closure plan been modified?	Y N		
- If YES, proceed with checklist.			
- If NO, ENTER STATUS "NA" for Question 13 and proceed with Question 14.			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
13. Has the post-closure plan been modified accordingly? - # YES, ENTER STATUS "S". - # NO, ENTER STATUS "U". Note: The post-closure plan is subject to many of the same time frame requirements for submittal and modification as is the closure plan. Make sure that <u>both</u> plans are modified or submitted as required.	Y N ☐		
<u>40 CFR 264.119: Post-Closure Notices</u> 14. Have provisions been made to provide for the required notice of past hazardous waste activity to local authorities and the Regional Administrator? - # YES, ENTER STATUS "S". - # NO, ENTER STATUS "U". Note: The Superfund Amendments and Reauthorization Act requires that Federal facilities provide notice of hazardous waste activity prior to transfer of property. Section 120(h) of SARA.	Y N ☐		
<u>40 CFR 264.120: Certification of Completion of Post-Closure Care</u> 15. If the post-closure care period has ended, did the owner/operator provide appropriate certification to the Regional Administrator or Director within 60 days? - # YES or NOT APPLICABLE, ENTER STATUS "S". - # NO, ENTER STATUS "U". This checklist is complete.	Y N NA ☐		

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AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 264.171: Conditions of Containers			
Note: Verify during inspection			
1. Are containers in good condition?	Y N		
2. Are wastes transferred from leaky or poor containers to good containers?	Y N		
- If YES to Questions 1 and 2, ENTER STATUS "S".			
- If NO to Question 1 or 2, ENTER STATUS "U" and describe.			
40 CFR 264.172: Compatibility of Waste with Container			
3. Are containers incompatible with the wastes contained in them?	Y N		
4. Are corrosive or reactive wastes stored in containers?	Y N		
- If YES, proceed with checklist.			
- If NO, to Questions 3 and 4, ENTER STATUS "NA" here and proceed with Question 6.			
5. Are container types (materials) specified for particular corrosive or reactive wastes in the operating plan?	Y N		
- If YES, ENTER STATUS "S".			
- If NO, ENTER STATUS "U".			
Review procedures for storing incompatible wastes			
40 CFR 264.173: Management of Containers			
6. Are containers closed when in storage?	Y N		
7. Are containers managed to prevent ruptures or leaks?	Y N		
- If YES to Questions 6 and 7, ENTER STATUS "S".			
- If NO to Question 6 or 7, ENTER STATUS "U".			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 264.174: Inspections			
8. Is the container storage area inspected at least weekly for leaks and defects?	Y N		
Note: Check inspection plan and inspection log.			
- If YES, ENTER STATUS "S".	☐		
- If NO, ENTER STATUS "U".			
40 CFR 264.175: Containment			
9. Does the owner/operator store containers containing free liquids or the following wastes: F020, F021, F022, F023, F026, and F027?	Y N		
- If YES, proceed with checklist.			
- If NO, ENTER STATUS "NA" for Question 11 and proceed with Question 12.			
10. Does the container storage area have a containment system?	Y N		
- If YES, proceed with checklist.			
- If NO to Question 10, ENTER STATUS "U" for Question 11 and proceed with Question 12.			
11. Is the containment system designed, constructed, and operated:			
a. With an underlying base free of cracks or gaps and sufficiently impervious to contain leaks, spills, and accumulated precipitation?	Y N		
b. With a sloped base to drain leaks, spills, or precipitation away from the containers (if the containers are not elevated or otherwise protected from contact with accumulated liquids)?	Y N NA		
c. With sufficient capacity to contain 10% of the volume of the containers or the volume of the largest container, whichever is greater?	Y N		
d. To prevent run-on into the containment system unless there is sufficient excess capacity to contain the run-on?	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
e. To remove spilled or leaked waste or accumulated precipitation in a timely manner to prevent overflows? - If YES or NOT APPLICABLE to Questions 11 a, b, c, d and e, ENTER STATUS "S". - If NO to Question 11 a, b, c, d or e, ENTER STATUS "U". The container storage area may not have been constructed according to the permit requirements; see Checklist R-H-PE.	Y N ☐		
12. Is the storage area sloped or otherwise designed to drain and remove liquid resulting from precipitation? - If YES, ENTER STATUS "S" for Question 13, and proceed with Question 14. - If NO, proceed with checklist.	Y N		
13. Are the containers elevated or otherwise protected from contact with accumulated liquid? - If YES, ENTER STATUS "S". - If NO, ENTER STATUS "U".	Y N ☐		
40 CFR 264.176: Special Requirements for Ignitable or Reactive Waste			
14. Are ignitable or reactive wastes stored in containers? - If YES, proceed with checklist. - If NO, ENTER STATUS "NA" for Question 17 and proceed with Question 18.	Y N		
15. Are containers holding ignitable or reactive wastes located at least 15 meters (50 feet) from the site's property line?	Y N		
16. Are water-reactive wastes protected from rainfall and sprinkler systems?	Y N		
17. Is ventilation adequate? - If YES to Questions 15 - 17, ENTER STATUS "S". - If NO to any of Questions 15 - 17, ENTER STATUS "U" and describe deficiencies.	Y N ☐		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 264.177: Special Requirements for Incompatible Wastes			
18. Are wastes placed: (1) in containers with incompatible wastes or (2) in containers which previously held incompatible wastes? Note: See 40 CFR 265 Appendix V for Examples of Incompatible Wastes - If YES, proceed with checklist. - If NO, ENTER STATUS "NA" for Question 19 and proceed with Question 20.	Y N		
19. Are such incompatible wastes and containers combined or managed such that the requirements of 40 CFR 265.17(b) are met? - If YES, ENTER STATUS "S". - If NO, ENTER STATUS "U".	Y N ☐		
20. Are containers holding hazardous waste which is incompatible with other wastes or materials stored in areas near the areas where those other wastes or materials are stored? - If YES, proceed with checklist. - If NO, ENTER STATUS "NA" for Question 16. This checklist is complete.	Y N		
21. Are these areas protected by dikes, berms, walls, or other devices? (Describe the means of protection.) - If YES, ENTER STATUS "S". - If NO, ENTER STATUS "U".	Y N ☐		
40 CFR 264.178: Closure			
22. Has the facility undergone closure? - If YES, proceed with checklist. - If NO, ENTER STATUS "NA" for Question 24. This checklist is complete.	Y N		
23. Did the owner/operator remove all hazardous waste and hazardous waste residues from the containment system?	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
24. Did the owner/operator remove all remaining containers, liners, bases, and soils containing or contaminated with hazardous waste? - If YES or NOT APPLICABLE to Questions 23 <u>and</u> 24, ENTER STATUS "S". - If NO to Question 23 <u>or</u> 24, ENTER STATUS "U". This checklist is complete.	Y N NA		

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AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 264.191: Assessment of Existing Tank System's Integrity			
1. Was an assessment conducted to determine whether tanks are leaking or unfit for use?	Y N		
- If YES, proceed with checklist.			
- If NO, ENTER STATUS "U" for Question 4 and proceed with Question 5.			
2. Does the assessment consider:			
a. Design standard for actual construction?	Y N		
b. Waste characteristics?	Y N		
c. Corrosion protection?	Y N		
d. Estimated or actual age of the tank system?	Y N		
e. Results of a leak test, internal inspection, or other tank integrity examination?	Y N		
3. Was the assessment reviewed and certified in accordance with 40 CFR 270.11(d) by an independent qualified registered professional engineer?	Y N		
4. Was the certified written assessment on file at the facility?	Y N		
- If YES to <u>all</u> of Questions 2 - 4, ENTER STATUS "S".	☐		
- If NO to any one of the items for Questions 2, 3, <u>or</u> 4, ENTER STATUS "U".			
264.192: Design and Installation of New Tank Systems or Components			
5. Was a written assessment completed to certify that the tank system has sufficient structural integrity and is acceptable for the storing and treating of hazardous waste?	Y N		
- If YES, proceed with checklist.			
- If NO, ENTER STATUS "U" for Question 7 and proceed with Question 8.			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
6. Was this assessment reviewed and certified by an independent qualified registered professional engineer? - If YES, proceed with checklist. - If NO, ENTER STATUS "U" for Question 7 and proceed with Question 8.	Y N		
7. Does the assessment include: a. Design standards? b. Waste characteristics? c. Design considerations including foundation, anchoring, etc.? d. Corrosion factors and type and degree of external corrosion protection determined by a corrosion expert, if there is contact between soil or water with the external metal component (shell) of the tank? - If YES to <u>all</u> Questions 7 a - d, ENTER STATUS "S". - If NO to Question 7 a, b, c, <u>or</u> d (if applicable), ENTER STATUS "U".	Y N Y N Y N Y N NA 		
8. Prior to use, has an independent and qualified installation inspector or an independent qualified registered professional engineer inspected the system for weld breaks, punctures, scrapes of protective coatings, cracks, corrosion, structural damage, inadequate installation, or construction or completion of any required remedies?	Y N		
9. Has the tank system been tested for tightness?	Y N		
10. Was the required corrosion protection system been installed? - If YES, proceed with checklist. - If NO, proceed with Question 12.	Y N		
11. Was the installation of the corrosion protection system supervised by an independent corrosion expert?	Y N		
12. Is all ancillary equipment properly supported and protected against physical damage and excessive stress? - If the tank system is aboveground, proceed with Question 15.	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
13. Is the backfill material a noncorrosive, porous, and homogeneous material?	Y N		
14. Is the backfill material completely surrounding the tank and compacted properly to provide full and uniform support to the tank and piping?	Y N		
15. Is the certified written statement on the proper design, repair, and installation of the tank system on file at the facility?	Y N		
16. Is the certification statement the same as required in Section 270.11(d)?	Y N		
- If YES to <u>all</u> Questions 8 - 16, ENTER STATUS "S".	☐		
- If NO to Question 8, 9, 10, 11, 12, 13, 14, 15, <u>or</u> 16, ENTER STATUS "U".			
40 CFR 264.193: Containment and Detection of Releases			
17. Does the tank system contain free liquids? Please list the testing method (264.190(a)).	Y N		
18. Are the tanks located inside a building and on an impermeable floor (264.190(a))?	Y N		
- If YES, proceed with checklist.			
- If NO to Question 17 and YES to Question 18, ENTER STATUS "S" for Question 28 and proceed with Question 29.			
19. Are the tanks (sumps) a part of the secondary containment system (264.190(b))?	Y N		
- If YES, ENTER STATUS "S" for Question 28 and proceed with Question 29.			
- If NO, proceed with checklist.			
20. Is the tank system used to treat or store EPA hazardous wastes Nos. F020, F021, F022, F023, F026, and F027?	Y N		
21. Has any tank reached 15 years of age?	Y N		
- If YES, proceed with checklist.			
- If NO to Question 20 <u>and</u> 21, proceed with Question 29.			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
22. Has a variance from the requirements of secondary containment been granted by the Regional Administrator? - If YES, ENTER STATUS "S" for Question 28 and proceed with Question 29. - If NO, proceed with checklist.	Y N		
23. Is the tank system equipped with a secondary containment system? - If YES, proceed with checklist. - If NO, ENTER STATUS "U" for Question 28 and proceed with Question 29.	Y N		
24. Is the secondary containment: a. Constructed of or lined with materials that are compatible with the wastes being stored or treated as specified in Section 264.193(c)(1)? b. Placed on a foundation or base that meets the requirements stated in Section 264.193(c)(2)? c. Provided with a leak detection system as specified in Section 264.193(c)(3)? d. Sloped or designed to drain and remove all spillage, drainage, or precipitation within 24 hours of occurrence?	Y N Y N Y N Y N		
25. Does the secondary containment include an external liner system that is: a. Able to contain 100 percent capacity of the largest tank within its boundary? b. Able to prevent or contain run-on or infiltration of precipitation (25 years/24 hour rainfall event)? c. Free of cracks or gaps? d. Installed to completely surround the tanks and cover the surrounding earth that is likely to come into contact with the waste?	Y N Y N Y N Y N		
26. Does the secondary containment include a vault that is: a. Able to contain 100 percent capacity of the largest tank within its boundary?	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
b. Able to prevent or contain run-on or infiltration of precipitation (25 year/24 hour rainfall event)?	Y N		
c. Constructed with chemical-resistant water stops at all joints?	Y N		
d. Provided with impermeable interior coating or lining?	Y N		
e. Equipped with a means to protect against the formation of and ignition of vapors within the vault if the stored waste is a reactive or ignitable waste?	Y N		
27. Does the secondary containment system include a double-walled tank that is:			
a. Provided with a built-in continuous leak detection system able to detect a release within 24 hours?	Y N		
Note: If the site condition does not allow detection within 24 hours and the Regional Administrator concurs, answer YES and document in comments.			
b. Designed as an integral structure?	Y N		
c. Provided with corrosion protection or constructed of metal?	Y N		
- If YES to all parts of Question 24 and all parts of either Question 25, 26, or 27 are YES, ENTER STATUS "S".	☐		
- If NO to any part of Question 24 or at least one part from each of Questions 25, 26, and 27, ENTER STATUS "U".			
28. Is all ancillary equipment (except those that can be visually inspected daily) provided with secondary containment?	Y N		
- If YES, ENTER STATUS "S".	☐		
- If NO, ENTER STATUS "U".			
<u>264.194: General Operating Requirements</u>			
29. Did the content in the tanks cause the tanks, their ancillary equipment, or the secondary containment system to rupture, leak, corrode, or fail?	Y N		
- If YES, ENTER STATUS "U".	☐		
- If NO, ENTER STATUS "S".			
30. Is the tank system equipped with the following spill and overflow controls and practices:			
a. Spill prevention controls?	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
b. Overfill prevention controls?	Y N		
c. Sufficient freeboard unless covered?	Y N		
- If YES to all Questions 30 a - c, ENTER STATUS "S".			
- If NO to Question 30 a, b, <u>or</u> c, ENTER STATUS "U".			
264.195: Inspections	Y N		
31. Does the facility inspect the following items daily:			
a. Overfill or spill control equipment to ensure good operating order?	Y N		
b. Aboveground portions of the tank system to detect corrosion or release of waste?	Y N		
c. Leak detection and monitoring equipment?	Y N		
d. Surrounding area of the tank system to detect erosion or signs of releases?	Y N		
- If YES to all of Questions 31 a - d, ENTER STATUS "S".			
- If NO to any part of Question 31, ENTER STATUS "U".			
32. Is there a cathodic protection system for the tank system?	Y N		
- If YES, proceed with checklist.			
- If NO, ENTER STATUS "NA" for Question 35 and proceed with Question 36.			
33. Did the facility confirm the proper operation of the cathodic protection system within six months of installation?	Y N		
34. Does the facility inspect the cathodic protection system annually after the initial confirmation of proper operation?	Y N		
35. Does the facility test the impressed current every other month?	Y N		
- If YES to Questions 33, 34, <u>and</u> 35, ENTER STATUS "S".			
- If NO to Question 33, 34, <u>or</u> 35, ENTER STATUS "U".			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
36. Does the facility document all their inspections in the operating record? - If YES, ENTER STATUS "S". - If NO, ENTER STATUS "U".	Y N ☐		
40 CFR 264.196: Response to Leaks or Spills and Disposition of Leaking or Unfit-For-Use Tank Systems			
37. Has there been a leak from the tank system or secondary containment system or has one of the systems been determined to be unfit for use? - If YES, proceed with checklist. - If NO, ENTER STATUS "NA" for Questions 51 and 54 and proceed with Question 55.	Y N		
38. Was the tank system (secondary containment system) removed from service immediately?	Y N		
39. Was the flow of wastes to the tank stopped?	Y N		
40. Was the system inspected to determine the cause of the release?	Y N		
41. Was the spillage removed within 24 hours after detection of the leak or as soon as possible to minimize damage to human health and the environment?	Y N		
42. Did the facility initiate steps to minimize the migration of the leak or spill to the soil or surface water? (If YES, briefly describe the procedures.)	Y N		
43. Did the facility remove and dispose of the visible contamination of the soil or surface water? (If YES, briefly describe the disposal method.)	Y N		
44. Was the spillage or leakage: a. less than or equal to one pound? b. immediately contained and cleaned up? - If YES to Questions 44 a and b, proceed with Question 52. - If NO, proceed with checklist.	Y N Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
45. Was the Regional Administrator notified within 24 hours of detection of leakage?	Y N		
46. Was the report submitted to the Regional Administrator within 30 days of the detection of leakage (spillage)?	Y N		
47. Did the report include:			
a. Likely route of migration of the release?	Y N		
b. Characteristics of the surrounding soil?	Y N		
c. Results of any investigative monitoring or sampling?	Y N		
d. Proximity to down-gradient drinking water, surface water, and population areas?	Y N		
e. Description of response actions taken or planned?	Y N		
48. Was the tank closed (removed from active service)?	Y N		
- If YES, proceed with Question 52.			
- If NO, proceed with checklist.			
49. Was the repair of the tank system or the secondary containment system conducted in accordance with 264.196 (e) prior to returning the tank to service?	Y N		
50. Prior to returning to service, after a major repair (such as installation of internal liner, or repair of a ruptured primary containment) did the owner/operator obtain a certification from an independent qualified registered professional engineer that the repaired system is capable of handling hazardous wastes without release for the intended life of the system?	Y N		
51. Was the certification submitted to the U.S. EPA Regional Administration within seven days after returning the tank system to use?	Y N		
- If YES to all of Questions 38 - 43, 45 - 48, <u>and</u> 49 - 51, ENTER STATUS "S".			
- If NO to <u>any</u> part of Questions 38 - 43, 45 - 48, <u>or</u> 49 - 51, ENTER STATUS "U".			
52. Was a variance from secondary containment granted to the facility?	Y N		
53. Did the facility reapply for the variance?	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
- If YES, proceed with Question 55. - If NO, proceed with checklist.			
54. Did the facility install a secondary containment system?	Y N		
- If YES, ENTER STATUS "S". - If NO, ENTER STATUS "U".			
40 CFR 264.197: Closure and Post-Closure Care			
55. Did the facility close a tank system?	Y N		
- If YES, proceed with checklist. - If NO, ENTER STATUS NA for Question 58 and proceed with Question 59.			
56. During closure, did the facility remove or decontaminate all waste residues and contaminated tank's components, soil, and structure?	Y N		
57. Were these wastes managed as hazardous wastes?	Y N		
58. If all of the contaminated soils could not be removed, was the area closed as a landfill in accordance with 40 CFR 264.310?	Y N		
- If YES to all Questions 56 - 58, ENTER STATUS "S". - If NO to Question 56, 57, or 58, ENTER STATUS "U".			
40 CFR 264.198: Special Requirements for Ignitable or Reactive Wastes			
59. Are tanks used to treat or store ignitable or reactive wastes for other than emergencies?	Y N		
- If YES, proceed with checklist. - If NO, ENTER STATUS "NA" for Question 63 and proceed with Question 64.			
60. Have the wastes or mixture of wastes been rendered non-ignitable or non-reactive?	Y N		
61. Do the wastes or mixture of wastes comply with Section 264.17(b)?	Y N		
- If YES to Questions 60 and 61, ENTER STATUS "S" and proceed with Question 64. - If NO, to Question 60 or 61, ENTER STATUS "U".			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
62. Are the wastes protected from any material or conditions to prevent ignition or reaction?	Y N		
63. Are proper protective distances maintained between the waste management area and any public ways, streets, alleys, and adjoining property?	Y N		
- If YES to Questions 61, 62, and 63, ENTER STATUS "S".			
- If NO to Question 61, 62, or 63, ENTER STATUS "U".			
<u>40 CFR 264.199: Special Requirements for Incompatible Wastes</u>			
64. Are incompatible wastes placed in the same tank?	Y N		
- If YES, proceed with checklist.			
- If NO, proceed with Question 66.			
65. Are wastes combined in accordance with 40 CFR 264.17(b)?	Y N		
66. Are wastes placed in tanks that previously held an incompatible waste?	Y N		
- If YES, proceed with checklist.			
- If NO, ENTER STATUS "NA" for Question 68 and proceed with Question 69.			
67. Was the tank decontaminated?	Y N		
68. Was 40 CFR 264.17(b) complied with?	Y N		
- If YES to Questions 65, 67, and 68, ENTER STATUS "S".			
- If NO to Questions 65, 67, or 68, ENTER STATUS "U".			
This checklist is complete.			

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AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 264.221 Design and Operating Requirements			
1. Do the surface impoundments have two or more liners and leachate collection systems in accordance with 40 CFR 264.221(c)?	Y N		
- If YES, ENTER STATUS "S" for Question 2 and proceed with Question 3.			
- If NO, proceed with checklist.			
2. Does the facility have a waiver from EPA as described in Section 3005(j) of the Solid Waste Disposal Act (Hazardous and Solid Waste Amendment Act, Section 215) or 40 CFR 264.22(d) for the liner requirements.	Y N		
- If YES, ENTER STATUS "S".	☐		
- If NO, ENTER STATUS "U".			
40 CFR 264.22 General Operating Requirements			
3. Is the surface impoundment designed, constructed, maintained, and operated to prevent overtopping?	Y N		
(Look for evidence of overtopping.)			
4. Are the dikes for the impoundment designed, constructed, and maintained with sufficient structural integrity to prevent failure?	Y N		
(Review the maintenance program.)			
5. Has the owner/operator met all of the design and operating practices specified in the permit?	Y N		
- If YES to Questions 3, 4, and 5, ENTER STATUS "S".	☐		
- If NO to Question 3, 4 or 5, ENTER STATUS "U".			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
<u>40 CFR 264.222 - 264.225 (Reserved)</u>			
<u>40 CFR 264.226: Monitoring and Inspection</u>			
6. Is the impoundment inspected in accordance with the inspection schedule contained in the permit?	Y N		
7. Are the impoundment, dikes, and vegetation surrounding the dikes inspected at least weekly and after storms to detect leaks, deterioration, or failures?	Y N		
- If YES to Questions 6 and 7, ENTER STATUS "S".	☐		
- If NO to Question 6 or 7, ENTER STATUS "U".			
8. Has the owner/operator obtained a certification from a qualified engineer as to the overall structural integrity of the impoundment's dikes prior to their use or after an extended period of time (greater than 6 months) of disuse?	Y N NA		
- If YES or NA, ENTER STATUS "S".	☐		
- If NO, ENTER STATUS "U".			
<u>40 CFR 264.277: Emergency Repairs - Contingency Plans</u>			
9. Has either of the following situations occurred:			
a. The level of the liquids in the impoundment suddenly dropped unexpectedly?	Y N		
b. The dike has leaked?	Y N		
- If NO, ENTER STATUS "NA" for Question 11 and proceed with Question 12.			
- If YES, proceed with checklist.			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
10. Was the surface impoundment removed from service? - If YES, proceed with checklist. - If NO, ENTER STATUS "U" for Question 11.	Y N		
11. Were the following steps taken: a. The flow to the impoundment was immediately stopped? b. Any surface leakage was contained? c. The leakage was immediately stopped or the impoundment was emptied and the Regional Administrator was notified in writing within 7 days? d. Any other steps as appropriate to stop or prevent a catastrophic failure? - If YES or NA to Questions 10, 11 a, b, c, <u>and</u> d, ENTER STATUS "S". - If NO to <u>any</u> of Questions 10 - 11 d, ENTER STATUS "U".	Y N Y N NA Y N Y N NA		
12. Has the surface impoundment been removed from service? - If YES, proceed with checklist. - If NO, ENTER STATUS "NA" for Question 14 and proceed with Question 15.	Y N		
13. Was the impoundment returned to service in accordance with 40 CFR 264.227(d)(1) or (2)? - If YES, ENTER STATUS "S" for Question 14 and proceed with Question 15. - If NO, proceed with checklist.	Y N		
14. Was the impoundment closed in accordance with the closure plan? - If YES, ENTER STATUS "S". - If NO, ENTER STATUS "U".	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 264.228 Closure and Post-Closure Care			
15. Does the facility maintain a copy of the closure and post-closure plans?	Y N		
16. Has the closure plan or post-closure plan been implemented?	Y N		
- If NO, ENTER STATUS "NA" for Question 18 and 20 and proceed with Question 21. Review R-HP-G Closure Plan Checklist.			
17. At closure, did the facility remove or decontaminate all waste residues, liners, contaminated subsoils, and structures and equipment?	Y N		
- If YES, no post-closure care is required; ENTER STATUS "NA" for Question 18 and 20 and proceed with Question 21.			
- If NO, proceed with checklist.			
18. Did the facility close the surface impoundment as a landfill?	Y N		
- If YES, proceed with checklist.			
- If NO, ENTER STATUS "U".			
19. Did the owner/operator:			
a. Eliminate free liquids?	Y N		
b. Stabilize remaining wastes?	Y N		
c. Provide an adequate cover?	Y N		
20. During post-closure care, did the owner/operator:			
a. Maintain the integrity and effectiveness of the final cover?	Y N		
b. Maintain and monitor the groundwater monitoring system in accordance with the requirements of the permit?	Y N		
c. Prevent run-on and run-off from eroding or damaging the final cover?	Y N		
- If YES to all parts of Questions 19 and 20, ENTER STATUS "S".			
- If NO to any part of Question 19 or 20, ENTER STATUS "U".			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 264.229 Ignitable or Reactive Wastes			
21. Are ignitable or reactive wastes placed in the impoundment?	Y N		
• If YES, proceed with checklist. • If NO, ENTER STATUS "NA" for Question 23 and proceed with Question 24.			
22. Are wastes treated, rendered, or mixed in accordance with 40 CFR 265.17 (b) before or immediately after placement in the impoundment so that they no longer meet the definition of ignitable or reactive?	Y N		
23. Is the impoundment used solely for emergencies?	Y N		
• If YES to Question 22 or 23, ENTER STATUS "S". • If NO to Questions 22 and 23, ENTER STATUS "U".	☐		
40 CFR 264.230 Incompatible Wastes			
24. Are incompatible wastes or materials placed in the impoundment? (See 40 CFR 265, Appendix V; Examples of Potentially Incompatible Wastes.)	Y N		
• If YES, proceed with checklist. • If NO, ENTER STATUS "NA" for Question 25 and proceed with Question 26.			
25. Are wastes combined in accordance with 40 CFR 264.17 (b)?	Y N		
• If YES, ENTER STATUS "S". • If NO, ENTER STATUS "U".	☐		
40 CFR 264.231: Special Requirements for Hazardous Wastes F020, F021, F022, F023, F026, and F027			
26. Does the owner/operator place hazardous wastes F020, F021, F022, F023, F026, or F027 into the surface impoundment(s)?	Y N		
• If YES, proceed with checklist. • If NO, ENTER STATUS "NA" for Question 27. This checklist is complete.			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
27.. Is the surface impoundment operated in accordance with a management plan approved by the Regional Administrator? • # YES, ENTER STATUS "S". • # NO, ENTER STATUS "U". Review the approved management plan, if available. The checklist is complete.	Y N ☐		

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AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 264.250: Applicability			
1. Is the waste pile located inside or under a structure that provides protection from precipitation?	Y N		
- If YES, proceed with checklist.			
- If NO, 40 CFR 264.251 applies. ENTER STATUS "A" for Question 2 and proceed with Question 3.			
2. Does the owner/operator ensure that <u>all</u> of the following conditions are met?	Y N		
a. Liquids or materials containing liquids are not placed in the pile?			
b. The pile is protected from surface water run-on?			
c. Wetting is not used to control wind dispersal?			
d. Leachate is not generated from the waste pile through decomposition or other reactions?			
- If YES, ENTER STATUS "NA" for Questions 2, 4, and 8 and proceed with Question 9.	☐		
- If NO, ENTER STATUS "A" (40 CFR 264.251 applies).			
40 CFR 264.251: Design and Operating Requirements			
3. Does the waste pile have:			
a. A liner that is designed, constructed, and installed in accordance with the permit?	Y N		
b. A leachate collection and removal system designed and operated in accordance with the permit?	Y N		
- If YES to Questions 3 a <u>and</u> b, ENTER STATUS "S" for Question 4 and proceed with Question 5.			
- If NO, proceed with checklist.			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
4. Has the Regional Administrator or Director approved an alternate system in the permit? - If YES, ENTER STATUS "S". - If NO, ENTER STATUS "U". (Review the permit for design, installation, and operation requirements.)	Y N ☐		
5. Has the owner/operator designed and constructed and is the owner operating and maintaining a run-off management system in accordance with the permit?	Y N		
6. Are collection systems associated with run-on and run-off control systems emptied expeditiously so as to maintain the design capacity?	Y N		
7. If the pile contains any particulate material, is the pile managed to control wind dispersal of particulate matter?	Y N NA		
8. If the permit requires any other controls or management systems, is the owner/operator performing these additional controls? - If YES or NA to Questions 5, 6, 7 <u>and</u> 8, ENTER STATUS "S". - If NO to <u>any</u> of Questions 5 - 8, ENTER STATUS "U".	Y N NA ☐		
40 CFR 264.252 - 264.253: [Reserved]			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
<u>40 CFR 264.254: Monitoring and Inspection</u>			
9. Is the waste pile inspected in accordance with the inspection schedule contained in the permit?	Y N		
10. Are the waste pile's run-on/run-off control systems, leachate collection systems, and wind dispersal control systems inspected at least weekly and after storms to detect malfunctions?	Y N NA		
- If YES or NA to Questions 9 <u>and</u> 10, ENTER STATUS "S".			
- If NO to Question 9 <u>or</u> 10, ENTER STATUS "U".			
<u>40 CFR 264.255: [Reserved]</u>			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 264.256: Special Requirements for Ignitable or Reactive Wastes			
11. Are ignitable or reactive wastes placed in the pile?	Y N		
- If YES, proceed with checklist.			
- If NO, ENTER STATUS "NA" for Question 14 and proceed with Question 15.			
12. Does the addition of the waste result in the waste or mixture no longer meeting the definition of ignitable or reactive (40 CFR 261.21 or 261.23)?	Y N		
13. Is the waste managed in accordance with 40 CFR 264.17(b)?	Y N		
14. Is the waste protected against conditions which may cause it to ignite or react?	Y N		
- If YES to Questions 12, 13, <u>and</u> 14, ENTER STATUS "S", and describe procedures.			
- If NO to Question 12, 13, <u>or</u> 14, ENTER STATUS "U".			
40 CFR 264.257: Incompatible Wastes			
15. Are incompatible wastes or incompatible wastes and materials placed in the same pile?	Y N		
- If YES, proceed with checklist.			
- If NO, ENTER STATUS "NA" for Question 16 and proceed with Question 17.			
16. Are wastes managed in compliance with 40 CFR 264.17(b)?	Y N		
- If YES, ENTER STATUS "S".			
- If NO, ENTER STATUS "U".			
17. Is a pile of hazardous waste placed in close proximity to incompatible wastes or materials?	Y N		
- If YES, proceed with checklist.			
- If NO, ENTER STATUS "NA" for Question 18 and proceed with Question 19.			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
18. Are piles of waste separated from incompatible wastes or materials stored in other areas (e.g., drum, tank, other piles) by means of a dike, berm, wall, or other device? - If YES, ENTER STATUS "S". - If NO, ENTER STATUS "U".	Y N ☐		
19. Is hazardous waste piled on the same area where incompatible wastes were previously placed? - If YES, proceed with checklist. - If NO, ENTER STATUS "NA" for Question 20 and proceed with Question 21.	Y N		
20. Is the area being sufficiently decontaminated to ensure that the waste management will comply with 40 CFR 264.177? - If YES, ENTER STATUS "S". - If NO, ENTER STATUS "U".	Y N ☐		
<u>40 CFR 264.258 : Closure and Post-Closure Care</u>			
21. Has the waste pile been closed? - If NO, ENTER STATUS "NA" for Questions 22 and 23. - If YES, review closure plan to ensure closure was performed in accordance with the approved plan.	Y N		
22. At closure, were all waste residues, contaminated system components, contaminated subsoils, and contaminated structures and equipment removed or decontaminated? - If YES, ENTER STATUS "S" and describe how the wastes were managed. This checklist is complete. - If NO, proceed with checklist.	Y N ☐		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
23. Was the waste pile unit closed as a landfill in accordance with an approved closure plan that meets the requirements at 40 CFR 264.310? Complete checklist R-HP-N/closure and post-closure requirement. - If YES, ENTER STATUS "S" and describe how the pile was closed. - If NO, ENTER STATUS "U" and describe how the pile was managed. <u>40 CFR 264.259: Special Requirements for Hazardous Wastes F020, F021, F022, F023, F026, and F027</u>	Y N ☐		
24. Does the owner/operator place hazardous wastes F020, F021, F022, F023, F026, F027, onto the waste pile? - If YES, proceed with checklist. - If NO, ENTER STATUS "NA" for Question 25. This checklist is complete.	Y N		
25. Is the waste pile managed in accordance with a management plan approved by the Regional Administrator or Director? - If YES, ENTER STATUS "S". - If NO, ENTER STATUS "U". Review the approved management plan, if available. This checklist is complete.	Y N ☐		

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AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 264.271: Treatment Program			
1. Is the owner/operator performing the elements of the treatment program contained in the permit including:			
a. Limiting wastes to those which can be treated in accordance with the demonstration?	Y N		
b. Design and operating practices?	Y N		
c. Unsaturated zone monitoring?	Y N		
2. Is the owner/operator appropriately treating the hazardous constituents specified in the permit?	Y N		
3. Are the vertical and horizontal treatment zone dimensions as specified in the permit?	Y N		
(The treatment zone should be no deeper than 5 feet, and more than 3 feet above the seasonal high water table.)			
- # YES to Questions 1, 2, and 3, ENTER STATUS "S".	☐		
- # NO to Question 1, 2 or 3, ENTER STATUS "U".			
40 CFR 264.272: Treatment Demonstration			
4. Has the owner/operator demonstrated, as required in the permit, that hazardous constituents will be completely degraded, transformed, or immobilized in the treatment zone <u>BEFORE</u> application of the waste?	Y N		
- # YES, ENTER STATUS "S".	☐		
- # NO, ENTER STATUS "U".			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 264.273: Design and Operating Requirements			
5. Has the owner/operator designed and constructed the land treatment unit in accordance with the permit?	Y N		
6. Is the owner/operator operating and maintaining the land treatment unit as specified in the permit for:			
a. The rate and method of waste application?	Y N		
b. Measures to control soil pH?	Y N		
c. Measures to enhance treatment reactions?	Y N		
d. Measures to control the moisture content of the treatment zone?	Y N		
7. Has the owner/operator constructed the land treatment unit according to the permit and is the owner/operator maintaining the following:			
a. A run-on control system?	Y N		
b. A run-off management and collection system?	Y N		
c. Collection and holding facilities?	Y N		
d. Wind dispersal management program if the treatment zone contains particulate matter?	Y N NA		
8. Is the treatment unit inspected at least weekly or after storms to detect evidence of:			
a. Deterioration, malfunction, or improper operation of the run-on and run-off control systems?	Y N		
b. Improper function of wind dispersal control measures, if required?	Y N NA		
- If YES or NOT APPLICABLE to Questions 5, 6, 7, and 8, ENTER STATUS "S".			
- If NO to any part of Question 5, 6, 7 or 8, ENTER STATUS "U".			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
<u>40 CFR 264.274 - 264.275: [Reserved]</u>			
<u>40 CFR 264.276: Food-Chain Crops</u>			
9. Is the owner/operator only growing those food-chain crops specified in the permit?	Y N NA		
- If YES or NOT APPLICABLE, ENTER STATUS "S".			
- If NO, ENTER STATUS "U".			
<u>40 CFR 264.277: [Reserved]</u>			

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AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 264.278: Unsaturated Zone Monitoring			
10. Has the owner/operator installed an unsaturated zone monitoring system in accordance with the permit?	Y N		
11. Does the unsaturated zone monitoring system include soil monitoring and soil-pore liquid monitoring?	Y N		
12. Is the owner/operator monitoring for the migration of the hazardous waste constituents specified in the permit?	Y N		
13. Is the owner/operator establishing background values for each of the hazardous constituents specified in the permit?	Y N		
14. Is the owner/operator conducting soil and soil-pore liquid monitoring immediately below the treatment zone in accordance with the frequency and timing established in the permit?	Y N		
15. Is the owner/operator performing statistical analysis of the monitoring data as specified in the permit?	Y N		
- If YES to Questions 10, 11, 12, 13, 14, <u>and</u> 15, ENTER STATUS "S".			
- If NO, to <u>any</u> of Questions 10 - 15, ENTER STATUS "U".			
16. Has the owner/operator determined that there has been a statistically significant increase in hazardous constituents below the treatment zone?	Y N		
- If YES, proceed with checklist.	☐		
- If NO, ENTER STATUS "NA" for Questions 17 and 19 and proceed with Question 20.			
17. Did the owner/operator notify the Regional Administrator or Director in writing within 7 days of discovering the increase of the constituents which have shown the increase?	Y N		
- If YES, ENTER STATUS "S".	☐		
- If NO, ENTER STATUS "U".			
18. Did the owner/operator submit a permit modification request to the Regional Administrator or Director to modify the operating practices within 90 days?	Y N		
- If YES, ENTER STATUS "S" for Question 19 and proceed with Question 20.			
- If NO, proceed with checklist.			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
19. Did the owner/operator make a successful demonstration to the Regional Administrator or Director that the cause of the significant increases resulted from some other source? - If YES, ENTER STATUS "S". - If NO, ENTER STATUS "U".	Y N ☐		
40 CFR 264.279: Recordkeeping			
20. Has the owner/operator recorded in the operating record the dates and rates of application of hazardous waste to the land treatment unit? (Review the operating record) - If YES, ENTER STATUS "S". - If NO, ENTER STATUS "U".	Y N ☐		
40 CFR 264.280: Closure and Post-Closure Care			
21. Has the owner/operator closed or is the owner/operator in the process of closing a land treatment unit? - If YES, proceed with checklist. - If NO, ENTER STATUS "NA" for Question 23 and proceed with Question 24.	Y N		
22. Did the owner/operator close in accordance with the closure plan?	Y N		
23. Did the owner/operator continue all operations of the land treatment unit required in the permit during closure and post-closure care? - If YES to Questions 22 and 23, ENTER STATUS "S". - If NO to Question 22 or 23, ENTER STATUS "U".	Y N ☐		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 264.281: Special Requirements for Ignitable or Reactive Wastes			
24. Are ignitable or reactive wastes placed in the facility? - If YES, proceed with checklist. - If NO, ENTER STATUS "NA" for Question 26 and proceed with Question 27.	Y N		
25. Are wastes immediately incorporated into the soil so that the mixture is no longer reactive or ignitable?	Y N		
26. Is 264.17(b) complied with or are wastes protected from sources of reaction or ignition? - If YES to Questions 25 and 26, ENTER STATUS "S". - If NO to Question 25 or 26, ENTER STATUS "U".	Y N ☐		
40 CFR 264.282: Incompatible Wastes			
27. Are incompatible wastes placed in the same land treatment area (see 40 CFR 265, Appendix V; Examples of Potentially Incompatible Wastes)? - If YES, proceed with checklist. - If NO, ENTER STATUS "NA" for Question 28.	Y N		
28. Are wastes managed in compliance with 264.17(b)? - If YES, ENTER STATUS "S". - If NO, ENTER STATUS "U".	Y N ☐		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
<u>40 CFR 264.283: Special Requirements for Hazardous Wastes F020, F021, F022, F023, F026, and F027</u>			
29. Does the owner/operator apply hazardous wastes F020, F021, F022, F023, F026, or F027 to the land treatment unit? - If YES, proceed with checklist. - If NO, ENTER STATUS "NA" for Question 30. This checklist is complete.	Y N		
30. Is the land treatment unit managed in accordance with a management plan approved by the Regional Administrator or Director? - If YES, ENTER STATUS "S". - If NO, ENTER STATUS "U". This checklist is complete.	Y N ☐		

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AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 264.301: Design and Operating Requirements			
1. Does the facility have the required double liner and double leachate collection systems in accordance with CFR 264.301(c)? - If YES, ENTER STATUS "S" for Question 2 and proceed with Question 3. - If NO, proceed with checklist.	Y N		
2. Has the facility received a waiver from the Regional Administrator from providing the double liners and leachate collection systems? - If YES, ENTER STATUS "S". - If NO, ENTER STATUS "U".	Y N ☐		
3. Does the facility have a monofill? - If YES, proceed with checklist. - If NO, ENTER STATUS "NA" for Question 6 and proceed with Question 7.	Y N		
4. Does the facility have the required liner and leachate collection system? - If YES, ENTER STATUS "S" for Question 5 and proceed with Question 6. - If NO, proceed with checklist.	Y N		
5. Has the facility received a waiver from the Regional Administrator from providing the double liners? - If YES, ENTER STATUS "S". - If NO, ENTER STATUS "U".	Y N ☐		
6. Is the landfill designed, constructed, operated, and maintained: a. To prevent flow of run-on during the peak period of a 25-year storm onto the active portion of the landfill? b. To collect and control run-off during a 24-hour period of a 25-year storm?	Y N Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
c. To prevent wind dispersal of waste by daily cover or other means? (Note during site inspection.)	Y N		
d. To maintain design capacity of collection and holding facilities (tanks, basins) associated with run-on and run-off control systems?	Y N		
- If YES to Questions 6 a, b, c and d, ENTER STATUS "S" and describe run-on and run-off control systems.	☐		
- If NO to Question 6 a, b, c or d, ENTER STATUS "U" and describe deficiencies.			
<u>40 CFR 264.302: (Reserved)</u>			
<u>40 CFR 264.303: Monitoring and Inspection</u>			
7. Has the owner/operator conducted inspections in accordance with the permitted inspection schedule?	Y N		
- If YES, ENTER STATUS "S".	☐		
- If NO, ENTER STATUS "U".			
<u>40 CFR 264.304 - 264.308: Reserved</u>			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 264.309: Surveying and Recordkeeping			
8. Does the operating record require and include:			
a. A map showing the exact location, dimensions, and depth of each cell with respect to permanently established benchmarks?	Y N		
b. The contents of each cell?	Y N		
c. The approximate location of each hazardous waste type within each cell?	Y N		
- If YES to Questions 8 a, b, and c, ENTER STATUS "S".			
- If NO to Question 8 a, b, or c, ENTER STATUS "U" here and review checklist R-HP-E.			
40 CFR 264.310: Closure and Post-Closure Care			
9. Has the landfill or any cell been closed:	Y N		
- If NO, ENTER STATUS "NA" for Questions 10 and 11 and proceed with Question 12.			
- If YES, review closure and post-closure plans in the permit to ensure closure and post-closure were performed in accordance with the approved plans.			
10. At closure, is final cover designed and constructed to:			
a. Minimize liquid migration?	Y N		
b. Function with minimum maintenance?	Y N		
c. Promote drainage and minimize erosion or abrasion?	Y N		
d. Accommodate settling and subsidence so that the cover's integrity is maintained?	Y N		
e. Have a permeability less than or equal to the permeability of any bottom liner system or natural subsolls present?	Y N		
- If YES to Questions 10 a, b, c, d and e, ENTER STATUS "S" and describe how the final cover was designed and constructed.			
- If NO to Question 10 a, b, c, d or e, ENTER STATUS "U" and describe deficiencies.			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
11. After final closure, does the owner/operator:			
a. Maintain the integrity and effectiveness of the final cover? (Check cover for signs of settling, subsidence, erosion, and other problems.)	Y N		
b. Maintain and monitor the groundwater monitoring system in accordance with requirements of Subpart F?	Y N		
c. Prevent run-on and run-off from eroding or damaging the final cover?	Y N		
d. Protect and maintain surveyed benchmarks?	Y N		
- If YES to Questions 11 a, b, c <u>and</u> d, ENTER STATUS "S".	☐		
- If NO to Question 11 a, b, c <u>or</u> d, ENTER STATUS "U".			
40 CFR 264.311: (Reserved)			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 264.312: Special Requirements for Ignitable or Reactive Waste			
12. Are bulk or non-containerized reactive or ignitable wastes placed in the landfill?	Y N		
- If YES, proceed with checklist.			
- If NO, ENTER STATUS "NA" for Question 14 and proceed with Question 15.			
13. Are they treated, rendered, or mixed before or immediately after placement in a landfill so that they are no longer reactive or ignitable pursuant to 261.21 and 261.23, respectively?	Y N		
14. Are the wastes managed so that the requirements of 264.17(b) are met?			
- If YES to Questions 13 <u>and</u> 14, ENTER STATUS "S".	☐		
- If NO to Question 13 <u>or</u> 14, ENTER STATUS "U".			
15. Are containerized reactive or ignitable wastes placed in the landfill?	Y N		
- If YES, proceed with checklist.			
- If NO, ENTER STATUS "NA" for Question 19, and proceed with Question 20.			
16. Are wastes in non-leaking containers?	Y N		
17. Are containers covered daily?	Y N		
18. Are containers carefully handled to avoid sparks, rupture, etc.?	Y N		
19. Are these wastes segregated, within the landfill, from areas in which heat-generating waste may be placed?	Y N		
Note: Check location map and operating plan.			
- If YES to Questions 16, 17, 18, <u>and</u> 19, ENTER STATUS "S".	☐		
- If NO to Question 16, 17, 18 <u>or</u> 19, ENTER STATUS "U".			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 264.313: Special Requirements for Incompatible Wastes			
20. Are incompatible wastes or incompatible wastes and materials placed in the same landfill cell? Note: See 40 CFR 265, Appendix V, Example of Potentially Incompatible Wastes - If YES, proceed with checklist. - If NO, ENTER STATUS "NA" for Question 21 and proceed with Question 22.	Y N		
21. Are wastes managed in compliance with 40 CFR 264.17(b)? - If YES, ENTER STATUS "S". - If NO, ENTER STATUS "U".	Y N ☐		
40 CFR 264.314: Special Requirements for Bulk and Containerized Liquids			
22. Were bulk or non-containerized liquid wastes or waste containing free liquids placed in the landfill before May 8, 1985? - If YES, proceed with checklist. - If NO, ENTER STATUS "NA" for Question 24 and proceed with Question 25.	Y N		
23. Did the landfill have a chemically and physically resistant liner and a functioning leachate collection and removal system that met the requirements of 264.301(a)?	Y N		
24. Was the liquid waste treated chemically or physically so that free liquids were no longer present? - If YES to Question 23 or 24, ENTER STATUS "S". - If NO to Questions 23 and 24, ENTER STATUS "U".	Y N ☐		
25. Were bulk or non-containerized liquid wastes or wastes containing free liquids been placed in the landfill on or after May 8, 1985? - If YES, ENTER STATUS "U". - If NO, ENTER STATUS "S".	Y N ☐		

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AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 264.315: Containers			
31. Are containers placed in the landfill?	Y N		
- If YES, proceed with checklist.			
- If NO, ENTER STATUS "NA" for Question 33 and proceed with Question 34.			
32. Are containers at least 90 percent full?	Y N		
- If YES, ENTER STATUS "S" for Question 33 and proceed with Question 34.			
- If NO, proceed with checklist.			
33. Are containers reduced in volume to the maximum extent practicable before burial in the landfill (e.g., shredded, crushed)?	Y N		
- If YES, ENTER STATUS "S".	☐		
- If NO, ENTER STATUS "U".			
40 CFR 264.316: Lab Packs			
34. Are small containers of hazardous waste in overpacked drums (lab packs) placed in the landfill?	Y N		
- If YES, proceed with checklist.			
- If NO, ENTER STATUS "NA" for Question 36.			
35. Are inside containers non-leaking and in compliance with DOT regulations (49 CFR 173, 178, and 179)?	Y N		
36. Are lab packs metal, open-head type, and have a capacity less than 416 liters (110 gallons)?	Y N		
37. Is the absorbent material used to surround the inside containers non-reactive with wastes and capable of absorbing the entire volume of liquid within the lab pack?	Y N		
38. Have incompatible wastes been placed in the same lab pack?	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
39. Are reactive wastes, other than cyanide- or sulfide-bearing wastes, rendered non-reactive prior to placement in the lab pack? - If YES to Questions 35, 36, 37 and 39 and NO to Question 38, ENTER STATUS "S". - If NO to any of Questions 35, 36, 37 and 39, or YES to Question 38, ENTER STATUS "U".	Y N ☐		
<u>40 CFR 264.317: Special Requirements for Hazardous Wastes F020, F021, F022, F023, F026, and F027</u>			
40. Does the owner/operator place hazardous wastes F020, F021, F022, F023, F026, or F027 into the landfill? - If YES, proceed with checklist. - If NO, ENTER STATUS "NA" for Question 41. This checklist is complete.	Y N ☐		
41. Is the landfill managed in accordance with a management plan approved by the Regional Administrator? - If YES, ENTER STATUS "S". - If NO, ENTER STATUS "U". This checklist is complete.	Y N ☐		

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AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 264.341: Waste Analysis			
1. Does the owner/operator conduct sufficient waste analysis during operation to verify that the waste feed is within the physical and chemical composition limits specified in the permit?	Y N		
- # YES, ENTER STATUS "S".			
- # NO, ENTER STATUS "U".			
40 CFR 264.342: Principal Organic Hazardous Constituents (POHCs)			
2. Does the facility monitor or analyze the extent of treatment of the POHCs to ensure they are within permit limits?	Y N		
- # YES, ENTER STATUS "S".			
- # NO, ENTER STATUS "U".			
40 CFR 264.343: Performance Standards			
3. Is the facility achieving a destruction and removal efficiency (DRE) of 99.99% for each POHC designated in the permit?	Y N		
4. Is the facility achieving a DRE of 99.999% if it treats hazardous wastes F020, F021, F022, F023, F026, or F027?	Y N NA		
5. Is the facility controlling HCl emissions as specified in the permit?	Y N NA		
6. Is the facility controlling particulate matter as specified in the permit?	Y N NA		
- # YES or NOT APPLICABLE to Questions 3, 4, 5 and 6, ENTER STATUS "S".			
- # NO to any of Questions 3, 4, 5, or 6, ENTER STATUS "U".			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 264.344: Hazardous Waste Incinerator Permit			
7. Does the facility burn hazardous wastes other than those specified in the permit?	Y N		
- IF YES, ENTER STATUS "U".	☐		
- IF NO, ENTER STATUS "S".			
40 CFR 264.345: Operating Requirements			
8. Does the owner/operator operate the incinerator in accordance with the operating conditions specified in the permit?	Y N		
9. Is the incinerator operated such that for <u>each</u> waste feed the specified operational limits in the permit for <u>all</u> of the following parameters are met:			
a. Carbon monoxide level in the stack exhaust gas?	Y N		
b. Waste feed rate?	Y N		
c. Combustion temperature?	Y N		
d. Combustion gas velocity?	Y N		
e. Other operating requirements specified in the permit?	Y N NA		
10. Does the owner/operator ensure that hazardous waste is not fed into the incinerator during start-up and shut-down unless the incinerator is operating within the specified permit operating conditions? (If YES, document how this is controlled.)	Y N		
11. Are fugitive emissions controlled by one of the following:	Y N		
a. Keeping the combustion zone sealed?	Y N		
b. Maintaining the combustion zone pressure lower than atmospheric pressure?	Y N		
c. An alternate means of control as specified in the permit? (Indicate how fugitive emissions are controlled.)	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
12. Is the incinerator operated with an automatic hazardous waste feed cut-off system? (Verify that the system is in good operating condition.)	Y N		
13. Does the owner/operator cease operations of the incinerator when changes in the waste feed, incinerator design or operating condition exceed limits designated in the permit? - If YES or NOT APPLICABLE to all parts of Questions 8, 9, 10, 11, 12, and 13, ENTER STATUS "S". - If NO to any part of Question 8, 9, 10, 11, 12, or 13, ENTER STATUS "U".	Y N 		
<u>40 CFR 264.346: [Reserved]</u>			
<u>40 CFR 264.347: Monitoring and Inspections</u>			
14. Does the owner/operator conduct, at a minimum, the following monitoring: a. Combustion temperature, waste feed rate, and the indicator of combustion gas velocity, continuously? b. Carbon monoxide continuously at a point downstream of the combustion zone? c. Any additional items as requested by the Regional Administrator or Director, or specified in the permit?	Y N Y N Y N NA		
15. Does the owner/operator perform the following inspections: a. Daily visual inspection of the incinerator and associated equipment? b. Weekly testing of waste feed cut-off systems and alarms?	Y N Y N		
16. Are all observations recorded in the operating record? - If YES or NOT APPLICABLE to Questions 14, 15, and 16, ENTER STATUS "S". - If NO to any part of Question 14, 15 or 16, ENTER STATUS "U".	Y N 		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
<u>40 CFR 264.346-264.350: (Reserved)</u> <u>40 CFR 264.351: Closure</u> 17. If the facility has undergone closure of the incinerator, has the owner/operator removed all hazardous waste and hazardous waste residues (including ash, scrubber waters, and scrubber sludges) from the incineration site? - If YES or NOT APPLICABLE, ENTER STATUS "S". - If NO, ENTER STATUS "U". This checklist is complete.	Y N NA ☐		

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AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 264.601: Environmental Performance Standards			
1. Does the owner/operator operate and maintain the miscellaneous units in accordance with the permit conditions so as to prevent releases of hazardous constituents:			
a. To the groundwater or subsurface environment?	Y N		
b. To surface water, wetlands, or soil surface?	Y N		
c. To the air?	Y N		
- If YES to Questions 1 a, b and c, ENTER STATUS "S".	☐		
- If NO to Question 1 a, b or c, ENTER STATUS "U".			
40 CFR 264.602: Monitoring, Analysis, Inspection, Response, Reporting, and Corrective Action			
2. Is the owner/operator conducting monitoring as required in the permit?	Y NA N		
3. Is the owner/operator conducting analyses as required in the permit?	Y NA N		
4. Is the owner/operator performing inspections in accordance with the inspection schedule in the permit?	Y NA N		
5. Is the owner/operator testing and maintaining equipment as required by the permit?	Y NA N		
6. Is the owner/operator providing reports and maintaining records as provided in the permit?	Y NA N		
- If YES or NOT APPLICABLE to Questions 2 - 6, ENTER STATUS "S".	☐		
- If NO to any of Questions 2 - 6, ENTER STATUS "U".			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 264.603: Post-Closure Care			
7. Is the miscellaneous unit managed as a disposal unit? - If YES, proceed with checklist. - If NO, ENTER STATUS "NA" for Question 9.	Y N		
8. Has the unit been closed? - If YES, proceed with checklist. - If NO, ENTER STATUS "NA" for Question 9.	Y N		
9. Is post-closure care being performed so as to prevent any releases to the groundwater, surface water, soils, or air? - If YES, ENTER STATUS "S". Document how post-closure care is being performed. - If NO, ENTER STATUS "U".	Y N 		
This checklist is complete.			

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AUDIT QUESTIONS AND PROCEDURES

RESPONSE

REFERENCE

COMMENTS

List any special permit conditions and complete the evaluation of the facility's performance against those conditions.

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AUDIT QUESTIONS AND PROCEDURES

RESPONSE

REFERENCE

COMMENTS

List any permit compliance schedules and complete the evaluation of the facility's performance in meeting those schedules.

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AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 264.500: Purpose and Applicability			
1. Is the facility required to take any corrective actions as a condition of permit, Federal Facilities Compliance Agreement, or similar order?	Y N		
2. Is the facility carrying out any voluntary (not yet required under a permit) corrective actions directed at releases of hazardous wastes or hazardous constituents from any solid waste management unit which may pose a threat to human health or the environment?	Y N		
- If NO to Questions 1 <u>and</u> 2, this checklist is inapplicable. - If YES to Question 1 <u>or</u> 2 or both, continue. Note: If independent corrective actions, whether required or voluntary, are underway, complete a separate checklist for each action. - If NO to Question 2, ENTER STATUS "NA" after Question 5 and proceed with Question 6.			
3. In its voluntary corrective action, did the facility need substantial modification of a permitted unit?	Y N		
4. If YES to Question 3, did the facility request permit modification by U.S. EPA or the State agency?	Y N NA		
5. If NO to Question 3, did the facility notify U.S. EPA and the State agency of its corrective action plans?	Y N NA		
- If NO to Question 4 <u>or</u> Question 5, ENTER STATUS "U" - If YES or NA to Questions 4 <u>and</u> 5, ENTER STATUS "S"			
40 CFR 264.511 - 513, Remedial Investigation			
6. Does the required scope of the remedial investigation include:			
a. Facility hydrogeological conditions?	Y N		
b. Facility climatological conditions?	Y N		
c. Soil characteristics?	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
d. Surface water and sediment characteristics?	Y N		
e. Air quality?	Y N		
f. Meteorological conditions?	Y N		
g. Characterization of solid waste management units from which releases have been or may be occurring, including unit and waste characteristics?	Y N		
h. Descriptions of humans and environmental systems which are, may have been, or may be exposed to releases?	Y N		
i. Information to help U.S. EPA assess risks posed by releases?	Y N		
j. Extrapolation of future movement, degradation, and fate of contaminants?	Y N		
k. Tests or studies of potential remediation technologies?	Y N		
l. Statistical analyses to aid data interpretation?	Y N		
m. Other information (specify in comments)?	Y N		
7. Has the facility prepared a plan, including necessary budget and other resources, for completing the remedial investigation within the compliance schedule?	Y N		
8. Has the facility implemented its compliance plan by requesting budget and so on?	Y N		
9. Has the facility submitted a required work plan for the remedial investigation no later than the required date?	Y NA N		
10. Has the facility received approval of the required work plan with no or trivial changes?	Y NA N		
11. Has the facility submitted required interim progress reports as required by the compliance schedule?	Y NA N		
12. Have the interim reports been accepted by U.S. EPA with no or trivial changes?	Y NA N		
13. Has the facility submitted its final remedial investigation report by the deadline in the compliance schedule?	Y NA N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
14. Was this final report accepted by U.S. EPA with none or trivial changes? - If YES or NA to Questions 7-14, ENTER STATUS "S". - If NO to any of Questions 7-14, ENTER STATUS "U". NOTE: If the facility has not completed the remedial investigation report, proceed with Question 37 and ENTER STATUS "NA" in all intervening status boxes. <u>40 CFR 264.514: Determination of No Further Action</u>	Y N NA ☐		
15. Did the results of the remedial investigation lead to a conclusion that there are no releases from the facility which may pose a threat to human health or the environment? - If NO, enter NA for Question 16 and proceed with Question 17.	Y N		
16. Did the facility ask the U.S. EPA to terminate the compliance schedule? - If YES to Question 16, ENTER STATUS "S". - If NO to Question 16, ENTER STATUS "U". <u>40 CFR 264.522-524: Corrective Measures Study</u>	Y N ☐		
17. Does the required scope of the corrective measures study include: a. One or more specific potential remedial technologies? b. Evaluation of the performance, reliability, and ease of implementation of the remedy? c. Potential impacts of the remedy, including safety impacts, cross-media impacts, and control of exposure to any residual contamination? d. Assessment of the effectiveness of potential remedies in attaining required cleanup goals? e. Assessment of time required to begin and complete the remedy? f. Estimates of the costs of implementing the remedy?	Y N Y N Y N Y N Y N Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
g. Estimates of institutional requirements, such as State or local permits, for the remedy?	Y N		
h. Other Information? (Specify in comments)	Y N		
18. Has the facility prepared a plan, including necessary budget and other resources, for completing the corrective measures study within the compliance schedule?	Y N		
19. Has the facility implemented its compliance plan by requesting budget and other necessary resources?	Y N		
20. Has the facility submitted a required work plan for the corrective measures study to U.S. EPA by the required date?	Y N NA		
21. Has the facility received approval of the required work plan with no or trivial changes?	Y N NA		
22. Has the facility submitted required interim reports on the corrective measures study to U.S. EPA by the required dates?	Y N NA		
23. Have the interim reports been accepted by U.S. EPA with no or trivial changes?	Y N NA		
24. Has the facility submitted its final corrective measures study report to U.S. EPA by the required date?	Y N NA		
25. Was this final report accepted by U.S. EPA with no or trivial changes?	Y N NA		
- If YES or NA to Questions 18 - 25, ENTER STATUS "S". - If NO to any of Questions 18 - 25, ENTER STATUS "U". If the facility has not completed the corrective measures report, proceed with Question 37 and ENTER STATUS "NA" in all intervening status boxes.	☐		
40 CFR 264.525-530: Implementation of Remedy			
26. Has the facility received from U.S. EPA a permit modification incorporating the selected remedy and required media cleanup standards?	Y N		
- If YES, continue the checklist. - If NO, proceed with Question 37 and ENTER STATUS "NA" in all intervening boxes.			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
27. Has the facility prepared a plan, including the necessary budget and other resources, for completing the remedy implementation within the compliance schedule?	Y N		
28. Has the facility implemented its compliance plan by requesting budget and other necessary resources?	Y N		
29. Has the facility submitted required detailed construction plans and specifications to U.S. EPA by the required date?	Y N NA		
30. Did U.S. EPA accept the plans and specifications with no or trivial changes?	Y N NA		
31. Has the facility submitted required progress reports to U.S. EPA by the required dates?	Y N NA		
32. Have these progress reports been accepted with no or trivial changes?	Y N NA		
33. Has the facility completed implementation of the remedy including necessary certification by the required date?	Y N NA		
34. Were the certification and accompanying documents accepted as final by U.S. EPA with no or trivial changes?	Y N NA		
- If YES or NA to Questions 27 - 34, ENTER STATUS "S".			
- If NO to any of Questions 27 - 34, ENTER STATUS "U".			
40 CFR 264.531: Determination of Technical Impracticability			
35. At any step in the implementation of the remedy, has the facility concluded that compliance with a requirement is not technically practicable?	Y N		
- If NO, ENTER STATUS "S" for Question 36 and proceed with Question 37.			
36. Did the facility request that U.S. EPA modify the compliance schedule to other means which would achieve the target levels of risk?	Y N		
- If YES to Question 36, ENTER STATUS "S".			
- If NO to Question 36, ENTER STATUS "U".			

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 264.540: Interim Measures			
37. Did U.S. EPA require the facility to take any interim measures to decrease a risk before completion of the usual corrective action program?	Y N		
• If YES, continue the checklist. • If NO, ENTER STATUS "NA" for Question 39 and proceed with Question 40.			
38. Did the facility implement the interim measure as soon as practicable?	Y N		
39. Were the facility's actions acceptable to U.S. EPA in both content and schedule?	Y N		
• If YES to Questions 38 and 39, ENTER STATUS "S". • If NO to either Question 38 or 39, ENTER STATUS "U".	☐		
Describe the interim measures.			
40 CFR 264.550-552: Management of Wastes			
40. In carrying out remedial actions, including interim measures, did the facility manage all solid wastes in a manner that is:			
a. Protective of human health and the environment?	Y N		
b. Complies with all applicable Federal, State, and local requirements?	Y N		
Note: If necessary, use appropriate RCRA checklists for the various waste-handling activities such as treatment and storage. Permit modifications or temporary (180 day) permits may be required. • If YES to Questions 40 a and b, ENTER STATUS "S". • Otherwise, ENTER STATUS "U".	☐		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
40 CFR 264.500: Required Notices			
41. During the corrective action activities, did the facility find any hazardous constituents at concentrations above the U.S. EPA-specified action levels in any off-facility well? - If NO, ENTER STATUS "NA" for Question 42 and proceed with Question 43.	Y N		
42. Did the facility provide written notice of the results within 15 days of discovery to (1) U.S. EPA and (2) owner of the land overlying the contaminated groundwater, and (3) resident of the land overlying the contaminated groundwater? - If YES, ENTER STATUS "S". - If NO, ENTER STATUS "U".	Y N ☐		
43. During the corrective action activities, did the facility find hazardous constituents above the U.S. EPA-specified action levels in air released from a solid waste management unit? - If NO, ENTER STATUS "NA" for Question 46 and proceed with Question 47.	Y N		
44. During the corrective action activities, did the facility find hazardous constituents above the U.S. EPA-specified action levels in air crossing the facility boundary which would affect residences or other off-facility locations with continuous long-term exposure? - If NO, ENTER STATUS "NA" for Question 46 and proceed with Question 47.	Y N		
45. Did the facility provide written notification to U.S. EPA within 15 days of discovery?	Y N		
46. Did the facility start action to notify all individuals who have or may have been subject to off-facility exposure within 15 days of discovery? - If YES or NA to Questions 45 and 46, ENTER STATUS "S". - If NO to either Question 45 or 46, ENTER STATUS "U".	Y N NA ☐		
47. Has U.S. EPA required a notice in the deed or a similar document retrieved in a title search detailing residual contamination? - If NO, ENTER STATUS NA for Question 48 and proceed with Question 49.	Y N		

AUDIT QUESTIONS AND PROCEDURES	RESPONSE	REFERENCE	COMMENTS
48. Has the facility filed the required notice? - If YES, ENTER STATUS "S". - If NO, ENTER STATUS "U".	Y N ☐		
49. Does the facility generally meet the compliance schedule with acceptable work products? Consider only the most recent years in answering this question.	Y N		
50. Does the facility generally plan ahead far enough and well enough that there is no last minute scramble to meet the compliance schedule? Consider only the most recent years in answering this question. - If YES for both Questions 49 and 50, ENTER STATUS "S". - If NO for either Question 49 or 50, ENTER STATUS "U" and investigate the problems in the Environmental Management checklist.	Y N ☐		
This checklist is complete.			