Management Standards for RCRA Generators of Hazardous Waste

1.0 Purpose / Background

The US Environmental Protection Agency has, under the Resource Conservation and Recovery Act, promulgated a set of standards for the collection, accumulation, transport, storage, treatment, and disposal of hazardous wastes.

2.0 Scope

Organizations that generate solid waste that is hazardous waste by definition are considered to be a hazardous waste generator that is subject to all or part of the federal and state hazardous waste management standards. Generators include:

- Large quantity generators - Hazardous waste generators that generates 1000 kg (2,204.62 lbs.) or more of hazardous waste or 1.0 kg (2.20 lbs.)or more of certain "P-listed wastes" in a calendar month. The Occupational Environmental & Safety Office is the Large Quantity Generator of record for the Duke campus, including the Medical Center complex.

- Small quantity generators – Hazardous waste generators that generate between 100 kg (220.46 lbs.) and 1,000 kg (2,204.62 lbs.) of hazardous waste or less than 1.0 kg (2.20 lbs.) of acutely hazardous waste in a calendar month.

- Very Small quantity generators – Hazardous waste generators that generate no more than 100 kg (220.62 lbs.) of hazardous waste or 1 kg (2.20 lbs.) of acutely hazardous P-listed waste in a calendar month.

3.0 Procedures

3.1. Hazardous Waste Determination - A person who generates as solid waste must determine if that waste is a hazardous waste using the following method:

3.1.1. Determine if the waste is excluded from regulation.
3.1.2. Determine if the waste is listed as a hazardous waste in 40 CFR 261 Subpart D.
3.1.3. If the waste is not listed in Subpart D, the generator must then determine if the waste is a "characteristic waste" listed in 40 CFR 261 Part D by either testing the waste or applying knowledge of the hazard characteristic of the waste.
3.1.4. If the waste is determined to be hazardous, the generator must receive an EPA identification number before treating, storing, transporting or offering for transport such waste.

3.2. Use of a Manifest –

3.2.1. A generator who transports, or offers for transportation, for offsite treatment, storage, or disposal must prepare a manifest.

3.2.2. A generator must designate on the manifest a facility which is permitted to handle the waste described on the manifest and may also designate one alternative facility which is permitted to handle the waste in the event an emergency prevents delivery of the waste to the primary designated facility.

3.2.3. The manifest must consist of at least the number of copies needed to provide the generator, each transporter, and the owner or operator of the designated facility with one copy each for their records and another copy to be returned to the generator.

3.2.4. The generator must sign the manifest certification by hand; obtain the handwritten signature of the initial transporter and date of acceptance; and retain one copy of the manifest.

3.3. Pre-Transport Requirements –

3.3.1. Packaging – Before transporting or offering hazardous waste for transportation off site, a generator must package the waste in accordance with the applicable Department of Transportation regulations on packaging listed in 49 CFR Parts 173, 178, and 179.

3.3.2. Labeling – Each package must be labeled in accordance with the applicable Department of Transportation regulations on hazardous materials listed in 49 CFR Part 172.

3.3.3. Marking - A generator must attach a label to each container or package of hazardous waste with the following information displayed in accordance with the requirements listed in 49 CFR 172.304:

HAZARDOUS WASTE – *The Federal Government Prohibits Improper Disposal. If found, contact the nearest police or public safety authority or the US Environmental Protection Agency.*

Generator's Name and Address _____

Manifest Document Number _____

Placarding – A generator must placard or offer the initial transporter appropriate placards according to DOT regulations for hazardous materials in 49 CFR Part 172, Subpart F.

1.1.1. Hazardous Waste Accumulation – A generator may accumulate hazardous waste on site without a permit, provided that:

3.3.5.1 The date upon which each period of accumulation begins is clearly marked and visible on each container.

3.3.5.2 Each container is labeled or marked with the words "Hazardous Waste".

3.3.5.3 The generator complies with paragraphs 3.5, 3.6, and 5.0 of this practice.

3.3.5.4 Accumulation Time –

- A *large quantity generator* can accumulate hazardous waste on-site for no more than 90 days.
- A *small quantity generator* cannot accumulate hazardous waste on-site for more than 180 days unless the waste is to be transported more than 200 miles to a treatment, storage, or disposal facility. If the hazardous waste must be transported more than 200 miles, the small quantity generator can accumulate for up to 270 days. A small quantity generator cannot, at any time, accumulate more than 6000 kg (13,227.73 lbs.).
- A *very small quantity generator* may not accumulate on-site more than 1000 kg (2,204.62 lbs.) at any one time.

1.1. Use and Management of Containers - Large quantity generators that store containers of hazardous waste must comply with the following:

3.4.1 Condition of Containers – If a container holding hazardous waste is not in good condition or if it begins to leak, the hazardous waste in that container must be transferred to a container that is in good condition.

3.4.2 Compatibility of Waste with Containers – Hazardous waste must be stored in a container made of or lined with materials which will not react with, and is otherwise compatible with the waste to be stored.

3.4.3 Management of Containers – A container holding hazardous waste must always be closed during storage, except when it is necessary to add or remove waste.

3.4.4 Inspections – Areas where containers holding hazardous waste are stored must be inspected at least weekly for container deterioration caused by corrosion or other factors.

3.4.5 Ignitable or Reactive Waste – Containers holding ignitable or reactive waste must be located at least 15 meters (50 feet) from the facility's property line.

3.4.6 Incompatible Wastes – Incompatible wastes and materials must not be placed in the same container nor placed in an unwashed container that held an incompatible waste or material.

1.2. Preparedness and Prevention

3.5.1 Large Quantity Generators

3.5.1.1 Maintenance and Operation – Facilities must be maintained and operated to minimize the possibility of 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.

3.5.1.2 Required Equipment – Facilities used to store, treat, or otherwise manage hazardous waste must be equipped with the following unless none of the hazards at the facility could require a particular kind of equipment specified below:

1. an internal communications or alarm system capable of providing immediate emergency instruction (voice or signal) to facility personnel.

2. A device, such as a telephone immediately available at the scene of operations or a hand-held two-way radio capable of summoning emergency assistance from local police departments, fire departments, or State or local emergency response teams.

3. Portable fire extinguishers, fire control equipment (including special extinguishing equipment such as that using foam, inert gas, or dry chemicals), spill control equipment, and decontamination equipment and water at adequate volume and pressure to supply water hose systems, or foam producing equipment, or automatic sprinklers, or water spray systems.

3.5.1.3 Testing and Maintenance of Equipment – All communication or alarm systems, fire protection equipment, spill control equipment, and decontamination equipment must be tested and maintained to assure it proper operation in time of emergency.

3.5.1.4 Access to Communication or Alarm Systems –

- Whenever hazardous waste is being poured, mixed, spread, or otherwise handled, all personnel involved in the operation must have immediate access to an internal alarm or emergency communications device, either directly or through visual or voice contact with another employee.

- Whenever there is just one employee on the premises, he must have immediate access to a device, such as a telephone or a hand-held two-way radio capable of summoning external emergency assistance.

3.5.1.5 Required Aisle Space – Aisle space to allow the unobstructed movement of personnel, fire protection equipment, spill control equipment, and decontamination equipment must be maintained.

3.5.1.6 Arrangements with Local Authorities – A large quantity generator must attempt to make the following arrangements:

1. Arrangements to familiarize police, fire departments, and emergency response teams with the layout of the facility, properties of hazardous waste handled at the facility and associated hazards, places where employees would normally be working, entrances to roads and possible evacuation routes.

2. Where more than one police or fire department might respond to an emergency, agreements designating primary emergency authority and agreements with any others to provide support to the primary emergency authority.

3. Agreements with State emergency response teams, emergency response contractors, and equipment suppliers.

4. Arrangements to familiarize local hospitals with the properties of hazardous waste handled at the facility and the types of injuries or illnesses that could result from fires, explosions, or releases at the facility.

5. Where State or local authorities decline to enter into such arrangements, the generator must document such refusal.

3.5.2 Small Quantity Generators – A small quantity generator must at all times:

1. Have at least one employee (a designated emergency coordinator) either at the premises or on call with the responsibility for coordinating all emergency response measures specified in (4) below.

2. Post the following information next to the telephone:

   i. The names and number of the emergency coordinator.

   ii. The location of fire extinguishers and spill control material and, if present, fire alarms.

   iii. The telephone number of the fire department unless the facility has a direct alarm.

1. Ensure that all employees are thoroughly familiar with proper waste handling and emergency procedures, relevant to their responsibilities during normal operations and emergency,

1. The owner or operator must attempt to make the following arrangements, as appropriate for the type of waste handled at his facility and potential need for the services of the organizations:

   i. Arrangements to familiarize police, fire departments, and emergency response teams with the layout of the facility, properties of hazardous waste handled at the facility and associated hazards, places were facility personnel and would normally be working, entrances to roads inside the facility, and possible evacuation routes;

   ii. Where more than one police and fire department might respond to an emergency, arrangement designating primary emergency authority to a specific police and a specific fire department, and agreements with any others to provide support to the primary emergency authority;

   iii. Agreements with State emergency response teams, emergency response contractors, and equipment suppliers; and,

iv. Arrangements to familiarize local hospitals with the properties of hazardous waste handled at the facility and the types of injuries or illnesses which result from fires, explosions, or releases at the facility.

Where State and local authorities decline to enter into such agreements, the owner or operator must document the refusal in the operating record.

2. Ensure that the emergency coordinator or his designee must respond to any emergencies that arise as follows:

i. In the event of a fire, call the fire department or attempt to extinguish it using a fire extinguisher;

ii. In the event of a spill, contain the flow of hazardous waste to the extent possible and, as soon as is practicable, clean up the hazardous waste and any contaminated materials or soil;

iii. In the event of a fire, explosion, or other release which could threaten human health outside the facility or when the generator has knowledge that a spill has reached surface water, the generator must immediately notify the National Response Center (800-424-8802. The report should include the following:

a) The name, address, and US EPA Identification Number of the generator;

b) Date, time and type of incident;

c) Quantity and type of hazardous waste involved in the incident;

d) Extent of injuries, and, if any;

e) Estimated quantity and disposition of recovered materials.

1.3. Contingency Planning and Emergency Procedures – A large quantity generator of hazardous waste must have a contingency plan designed to minimize hazards to human health or the environment from fires, explosions, or any unplanned

sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water.

3.6.1 Content of the Contingency Plan – The contingency plan must describe the actions personnel will take in response to fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or hazardous constituents to air, soil, or surface water at the facility. If a Spill Prevention, Control, and Countermeasures (SPCC) plan or some other emergency plan has already been prepared, it can be amended to incorporate hazardous waste spill contingency requirements into that plan. A contingency plan should include:

1. Arrangements with local police departments, fire departments, hospitals, contractors, and State or local emergency response teams to coordinate emergency services.

(2) An up to date list of all names, addresses, and phone numbers of all persons qualified to act as the emergency coordinator. When more than one person is listed, one must be named as the primary emergency coordinator.

(3) An up to date list of all emergency equipment at the facility (such as fire extinguishing systems, spill control equipment, communication and alarm systems, and decontamination equipment). The plan must include the location and physical description of each item on the list.

(4) An evacuation plan for facility personnel where there is a possibility that evacuation could be necessary. The plan must describe signals to be used to begin an evacuation, evacuation routes, and alternate routes.

3.6.2 Copies of the Contingency Plan – A copy of the contingency plan and all revisions must be:

(1) Maintained at the facility, and

(2) Submitted to all local police departments, hospitals, fire departments, and State and local emergency response teams that may be called to provide emergency services.

3.6.3 Amendments to the Contingency Plan – The plan must be reviewed, and amended whenever:

(1) Applicable regulations are revised,

(2) The plan fails in an emergency,

(3) The facility changes in a way that materially increases the potential for fire, explosions, or releases of hazardous waste or hazardous waste constituents, or changes the response necessary in an emergency,

(4)A list of emergency coordinators changes, or

(5) A list of emergency equipment changes.

3.6.4 Emergency Coordinator – Whenever there is an imminent or actual emergency situation, the emergency coordinator or his designee must:

(1) Activate internal alarms and communication systems to notify facility personnel,

(2) Notify appropriate State or local agencies with designated response roles if their help is needed.

(3) Immediately identify the character, exact source, amount, and a real extent of any releases.

(4) Assess possible hazards to human health or the environment that may result from the release, fire, or explosion, including both direct and indirect effects.

(5) If, in the opinion of the emergency coordinator, a release, fire, or explosion could threaten human health or the environment outside the facility, the Emergency Coordinator must report as follows –

(a). If an evacuation of local areas is advisable, the Emergency Coordinator must notify appropriate authorities and must be available to help decide whether local areas need to be evacuated, and

(b) Report the release to either an on-scene coordinator or the National Response Center including the name and telephone number of the reporter, the name and address of the facility, the time and type of incident, the name and quantity of materials involved, the extent of any injuries, and the possible

hazards to human health and the environment outside the facility.

(6) Take reasonable measures to ensure that fires, explosions, and releases do not occur, recur, or spread to other hazardous wastes in the facility. Measures may include stopping processes and operations, collecting and containing released waste, and removing or isolating containers.

(7) Monitor for leaks, pressure buildup, gas generation, or ruptures in valves, pipes, or other equipment, wherever appropriate.

(8) Following the emergency, treat, store, or dispose of recovered waste, contaminated soil or surface water, or other material that results from a release, fire, or explosion at the facility.

(9) Ensure that all emergency equipment is cleaned and fit for its intended use before operations resume.

(10) Notify the Regional EPA Administrator and appropriate State and local authorities that the facility is in compliance with paragraph 3.6.4(9) above.

(11) Within 15 days after the incident, submit a report to the US EPA Regional Administrator that includes –

(a) The name, address, and telephone number of the owner and facility

(b) The date, time and type of incident

(c) The name and quantity of materials involved

(d) The extent of any injuries

(e) An assessment of actual or potential hazards to human health or the environment, and

(f) The estimated quantity and disposition of recovered material that resulted from the incident.

2.0 Roles & Responsibilities

2.1. **Key Personnel** – The waste operations manager in OESO Environmental Programs is directly responsible for maintaining compliance to this practice.

3.0 Training

3.1. **Personnel Training** – Large Quantity Generator -Personnel must successfully complete a program of classroom instruction or on-the-job training that teaches them to perform their duties in a way that ensures compliance with the following:

(1) Training must be directed by a person trained in hazardous waste management procedures and *must include instruction which teaches employees hazardous waste management procedures (including contingency plan implementation) relevant to the positions to which they are employed.*

(2) Personnel must successfully complete training within six months following the date of their employment or assignment.

(3) Personnel must take part in an annual review of the initial training.

3.2. **Emergency Response Training – Large Quantity Generator -** A training program must be designed to ensure that personnel are able to respond effectively to emergencies by familiarizing them with the site contingency plan, emergency procedures, emergency equipment, and emergency systems, including where applicable:

a. Procedures for using, inspecting, repairing, and replacing facility emergency and monitoring equipment,

b. Communication or alarm systems,

c. Response to fire or explosions,

d. Response to groundwater contamination incidents, and

e. Shutdown of operations.

3.3. **Small Quantity Generator** –The generator must ensure that all employees are thoroughly familiar with proper waste handling and emergency procedures,

relevant to their responsibilities during normal facility operations and emergencies.

4.0 Program Documentation

4.1. Recordkeeping – A large quantity or small quantity generator of hazardous waste must:

6.1.1 Keep a copy of each manifest for three years or until he receives a signed copy from the designated facility which received the waste. The signed copy must be retained as a record for at least three years from the date the waste was accepted by the initial transporter.

6.1.2 Keep a copy of each Biennial Report and Exception Report for a period of at least three years from the due date of the report.

6.1.3 Keep records of any test results, waste analyses, or other determinations made for at least three years from the date that the waste was last sent to on site or off site treatment, storage, or disposal.

6.1.4 Maintain the following documents and records:

(1) The job title for each position related to hazardous waste management;

(2) A written job description for each position related to hazardous waste management that must include the requisite skills, education, or other qualifications and duties of personnel assigned to each position;

(3) A written description of the type and amount of both introductory and continuing training that will be given to each person filling a position related to hazardous waste management; and,

(4) Records that document that the training or job experience required has been given to, and completed by, personnel.

(5). Training records on current employees must be kept until closure of the facility. Training records on former employees must be kept for at least three years from the date the employee last worked at the facility.

6.1.5 Maintain a copy of the site Contingency Plan

6.1.6 Maintain an up to date Waste Minimization Plan

4.2. Reports –

6.2.1 Biennial Reports – A large or small quantity generator who ships hazardous waste off-site to a treatment, storage, or disposal facility must prepare and submit a Biennial Report to the US EPA Regional Administrator or the Authorized State by March 1 of each even numbered year. The report must include the following:

(1). The EPA identification number, name, and address of the generator

(2) The calendar year covered by the report

(3) The EPA identification number, name, and address of each off site treatment, storage, or disposal facility to which waste was shipped during the year

(4) The EPA identification number of each transporter used during the year for shipments to a treatment, storage or disposal facility.

(5) The name and EPA identification number, DOT hazard class, and quantity of each hazardous waste shipped off-site.

(6) Efforts undertaken during the year to reduce the volume and toxicity of waste generated.

(7) A description of the changes in volume and toxicity of waste achieved during the year compared to previous years.

(8) Certification signed by the generator or authorized representative.

6.2.2 Exceptions Reporting – A large quantity generator who does not receive a copy of the manifest with the handwritten signature of the owner or operator of the designated facility within 45 days, or in the case of a small quantity, 60 days, of the date the waste was accepted by the initial transporter must contact the owner/operator of the designated facility to determine the status of the hazardous waste. If the generator has not received a copy of the manifest within 45 days, he must submit an Exception Report to the EPA Regional Administrator or authorized State which includes:

1. A legible copy of the manifest for which the generator does not have conformation of delivery,

2. A cover letter signed by the generator or his authorized representative explaining the efforts taken to locate the hazardous waste and the results of those efforts.

5.0References

5.1. Standards

1. 40 CFR Parts 260 – 263 – Hazardous Waste Management Standards for Generators.

2. "Chemical Waste Policy – Duke University/Medical Center", Occupational Environmental Safety Office.

5.2. Supplementary Documents

1. NC DEQ Hazardous Waste Section – https://deq.nc.gov/about/divisions/waste-management/hw

2. NC DEQ Waste Management Division homepage – https://deq.nc.gov/about/divisions/waste-management