

Authored By: Monica Gibbs	<b>Blanchard Refining Company LLC Galveston Bay Refinery</b>	Doc No.: REW-000022-GB Rev No: 0
Doc Custodian: Environmental Supervisor		Refinery Safe Work Procedure
Approved By: Eric Kaysen	<b>ENV-42 Spent Catalyst Management</b>	
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## 1.0 Purpose

The purpose of this procedure is to define the requirements for spent catalyst management throughout the site, including operating units, office buildings, laboratories, dock areas, maintenance and infrastructure areas. The Resource Conservation and Recovery Act (RCRA) provides specific requirements for the management of discarded materials and hazardous wastes, including spent materials. The Texas Commission on Environmental Quality (TCEQ) administers and enforces the RCRA regulations in Texas. The Department of Transportation (DOT) regulates and enforces the transportation of hazardous materials, including hazardous wastes. The Occupational Safety and Health Administration (OSHA) regulates and enforces communication standards for all chemicals and materials that may impose a hazard to employers and employees, including hazardous materials, hazardous substances, and hazardous wastes.

## 2.0 Scope

This procedure applies to all Refinery (E/W Plants, Bay Plant, South Houston Green Power), docks, laboratory, storage, maintenance and contractor facilities.

## 3.0 Procedure

### 3.1 Roles and Responsibilities

- 3.1.1 The GBR employees and contractors involved in the removal of spent catalyst within the Refinery are responsible for properly containerizing the catalyst as it is removed, labeling the containers properly, and working with the Environmental Department to transfer containerized catalyst to proper waste storage areas according to the requirements of this procedure.
- 3.1.2 The GBR responsible person arranging for the removal of the spent catalyst shall work with the Environmental Department to make a waste classification prior to the catalyst being removed from the process vessel. An Environmental representative shall be involved in the planning process as early as possible to assist in the generating unit in the catalyst classification and disposal process.
- 3.1.3 The Environmental Department is responsible for working with GBR employees and contractors to ensure spent catalyst storage containers are properly labeled with the correct information. The Environmental Department shall coordinate the transportation and disposal of all spent catalyst waste to offsite disposal or reclamation facilities.
- 3.1.4 The GBR Catalyst Coordinator, located at the GBR East/West Main Warehouse (409) 945-1074, is responsible for working with the generating unit and the Environmental Department to coordinate the sale and shipment of catalyst being sold, regenerated, or reclaimed for metal value. The GBR Catalyst Coordinator is responsible for ordering specialized catalyst bins as recommended by the generating unit and GBR responsible person.
- 3.1.5 The unit Technical Services engineer is responsible for providing the Environmental Department and the GBR Catalyst Coordinator an accurate inventory control sheet of the spent catalyst removed.

### 3.2 Labeling Requirements

- 3.2.1 Drums of spent catalyst shall be labeled on the side of the drum before waste is collected in the drum with a non-hazardous or hazardous waste label depending on the classification of the spent catalyst. Contact the Environmental Department at (409) 771-2256 if unsure of the spent catalyst classification.
- 3.2.2 Bulk containers and Catalyst Bins of spent catalyst shall be labeled on the front of the

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container before waste is collected in the container with a non-hazardous or hazardous waste label depending on the classification of the spent catalyst. Contact the Environmental Department at (409) 771-2256 if unsure of the spent catalyst classification.

- 3.2.3 The labels shall contain information on the unit of origin, the reactor vessel equipment number the spent catalyst was removed from, and a description of the catalyst (i.e. CFHU catalyst, FCCU 1 catalyst, etc.). Labels shall also include the date spent catalyst material was placed in the container.

### 3.3 General Management Requirements for Spent Catalyst

- 3.3.1 Spent catalyst is generated from the removal of catalyst from reactor vessels. Some types of spent catalyst are RCRA listed hazardous wastes and must be handled with care. All spent catalysts must be containerized immediately. Fifty-five gallon steel drums, catalyst bins, or industrial waste roll-off containers (Metal-Lid) can be used for storage depending on the quantity of spent catalyst being generated.

3.3.1.1 Spent catalyst meeting the definition of a hazardous waste shall be removed from the unit within 3 days of filling the individual container and sent off-site for regeneration, metals reclamation, or disposal within 90 days of the date it was removed from the process vessel. If the spent catalyst contains any of the precious metals listed in 40 CFR 266.70, the storage time on-site can be up to one year with the maintenance and retention of applicable inventory records.

- 3.3.2 Some catalysts are pyrophoric upon removal from the reactor. Catalyst with sulfur compound contamination/coatings and metal catalyst in a reduced oxidation state may be pyrophoric. These catalysts shall be containerized in specially designed catalyst bins and rendered inert with dry ice, nitrogen, or other approved material to prevent the catalyst from reacting with air.

- 3.3.3 When filling catalyst bins an inventory control sheet must be filled out during the process. The inventory control sheet will record the bin serial number, gross/tare/net weights, top/bottom seal tag number, unit of generation, reactor number, and individual bin count number. Inventory control sheets will be provided by and returned to the unit technical services engineer. The unit technical services engineer will provide a copy of the inventory control sheet to the Environmental Department.

- 3.3.4 Containers shall be in good condition and free of cracks, gaps and excessive corrosion.

- 3.3.5 Containers shall be kept closed when not actively being filled or used. When the catalyst bin or drum is considered full it must be adequately secured by a gasketed lid, ring, and bolt. Industrial waste container roll-off boxes must be tightly closed at the hatch, doors, and gasketed flanged openings.

- 3.3.6 Spent catalyst must not be mixed with plant trash, oily trash or put into other trash drums/FELs/roll-off boxes. Spent catalyst must not be mixed with any other waste streams. Never place any drums inside of industrial waste container roll-off boxes.

- 3.3.7 Prior to removal from the unit, the GBR responsible person or designated contractor shall visually inspect the filled containers to insure they are properly labeled, closed, and in good condition. Once the inspection is complete, the GBR responsible person shall immediately notify the Environmental Department at (409) 771-2256 to schedule the pickup and transfer of containers to the designated < 90-day central accumulation waste storage area.

### 3.4 Spill Clean Up and Response

- 3.4.1 In the event of a spill, contact the Security Operation Center (SOC) immediately at extension x1762 or x1765. Call (409) 945-1762 or (409) 945-1765 if outside the plant.

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The SOC will notify the Environmental Department.

**4.0 Definitions**

- 4.1 **Pyrophoric** – liable to ignite spontaneously on exposure to air, or liable to emit sparks when scratched or struck.
- 4.2 **Spent Material** – any material that has been used and as a result of contamination can no longer serve the purpose for which it was produced without further processing [per RCRA 261.1(c)].

**5.0 References**

None

**6.0 Attachments**

None

**7.0 Revision History**

Revision Number	Description of Change	Written by	Approved by	Revision Date	Effective Date
0	Original Issue. New integrated site procedure replaces GBR-HESS-ENV-42 under MOC 93391.	M. L. Gibbs	E. R. Kaysen	7/26/2021	8/20/2021