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1.0 Purpose

This practice applies to stationary and portable engines as defined below regardless of whether they are leased or owned by MPC. These engines include internal combustion (IC) engines which burn fuel inside the engine. These devices include, but are not limited to, diesel engines and diesel engine "generators", diesel air compressors, engines used to pump-out sumps, knock-lab test engines, start-up engines, and emergency engines for equipment such as fire water pumps and other generators.

Fuel combustion in engines is a source of air pollution. Growing concerns about both nitrogen oxides and particulate emissions has led to tighter regulations and increasing control requirements for these sources. Galveston Bay Refinery is located in the Houston-Galveston-Brazoria Ozone non-attainment area, which requires the monitoring of equipment at any stationary source of nitrogen oxides (NOx) that is not a major source of NOx.

This practice is designed to ensure proper management of all stationary and portable engines at the site in accordance with State and Federal environmental regulations.

2.0 Scope

This practice applies to all Galveston Bay Refinery operating and supporting facilities.

3.0 Procedure

3.1 Roles and Responsibilities

3.1.1 Procurement

The procurement specialist who is responsible for purchase or rental of portable/stationary diesel driven equipment shall be:

3.1.1.1 Owner of all equipment contracts.

3.1.1.2 Responsible for setting-up a reporting system with vendor to provide adequate equipment information.

3.1.2 Rented Equipment Group

The Rented Equipment group is responsible maintaining a listing of all portable and stationary diesel driven equipment brought into or maintained in the facility. This listing should contain the following information:

3.1.2.1 Name of requestor

3.1.2.2 Unit

3.1.2.3 Description of equipment

3.1.2.4 Equipment Number

3.1.2.5 Projected time on site

3.1.2.6 Actual rent date

3.1.2.7 Actual time on site

3.1.2.8 Inform the Environmental HES Professional of replacement engines and incidents of engine maintenance that may reasonably be expected to increase emissions, oxygen sensor replacement, catalyst cleaning or catalyst replacement.

3.1.2.9 Preventive Maintenance activities are to be submitted annually to the HES Professional. Change of oil and filter, inspect air cleaner and inspect all hoses and replace as necessary.

3.1.3 Stack Testing Contractor

The stack testing contractor is responsible for ensuring that the following information is collected and transmitted to Environmental HES Professional.

3.1.3.1 Conduct CO/NOx operation check emissions measurements quarterly on all stationary non-exempt in accordance with 30 TAC 117.8140 (b).

3.1.3.2 Conduct CO/NOx operation check emissions measurements within 2 weeks after major maintenance or operations become aware that emissions may have changed in accordance with 30 TAC 117.8140(b).

3.1.3.3 Conduct CO/NOx compliance stack testing in accordance with 30 TAC 117.8140 (a) biennially or within 15,000 hours of the previous stack test. The HES Professional will provide dates by which compliance stack testing must be conducted.

3.1.3.4 Conduct semiannual and or annual formaldehyde emissions measurements on all applicable engines >500 horsepower in accordance with 40 CFR 63.6600(b) Table 2a, section 3b.

3.1.3.5 Forward information for each engine tested to the Environmental HES Professional.

3.1.4 Owner

The “owner”, which is defined as operations or project personnel (the end user of the engine), is responsible for ensuring that the following procedure is performed, and information is collected and transmitted to the Environmental HES Professional as follows:

3.1.4.1 A management of change or procedural management of change (MOC/PMOC) shall be performed prior to an engine being brought onsite. This will ensure that all parties involved including the HES Professional are aware of any engine installation or use before being commissioned.

3.1.4.2 No person shall start or operate any stationary engine for maintenance or testing between the hours of 6:00 a.m. and noon.

3.1.4.3 Any stationary engine shall not exceed 30 minutes of idle time upon starting.

3.1.4.4 Record the date and start/stop time for each emergency engine operating.

3.1.4.5 Record the monthly log of run time for each engine.

3.1.4.6 Emergency stationary engines may be operated for up to 50 hours in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing

3.1.4.7 Preventive Maintenance activities are to be submitted annually to the HES Professional. Change of oil and filter, inspect air cleaner and inspect all hoses and replace as necessary.

3.1.4.8 Inform the Environmental HES Professional of replacement engines and incidents of engine maintenance that may reasonably be expected to increase emissions, oxygen sensor replacement, catalyst cleaning or catalyst replacement.

3.1.5 Environmental HES Professional

The Environmental HES Professional is responsible for:

3.1.5.1 Ensuring all engine emissions are collected and reported as part of periodic emissions reporting to the state and federal agencies. Provide stack test emission factors to Environmental personnel preparing EI and MECT reports.

3.1.5.2 Ensuring the stack testing contractor is contacted, to conduct appropriate emissions measurements when a stationary engine meets one of the emissions monitoring requirements. Ensure compliance stack testing is scheduled and completed biennially or within 15,000 hours for MECT engines.

3.1.5.3 Schedule and record quarterly and biennial monitoring of non-exempt engines.

3.1.5.4 Ensure that monthly engine run times are properly recorded and documented via PRIDE route .

3.1.5.5 Review site wide inventory of all engine powered equipment to ensure all equipment is accounted for.

3.1.5.6 Conducting periodic audits of this Stationary Portable Engine practice.

3.1.5.7 Ensuring proper permit authorization has been obtained and in place for applicable engine powered equipment.

3.1.5.8 Filing the appropriate reports with the appropriate state and federal agencies to demonstrate compliance.

3.2 General Requirements

3.2.1 Stationary Engine Authorization Requirements

Stationary engines require “authorization” (e.g., permit, permit by rule) unless otherwise exempted. Environmental will determine the type of authorization necessary depending on the size, type, and use of the engine.

When an engine qualifies as a stationary source a permit authorization must be obtained. Engines on-site for **9 months** will initiate the permitting process. This 3-month window should give enough time to validate the continued use of the engine and document the new status of a stationary source.

3.2.2 Control of Nitrogen Oxides (NOx) and Carbon Monoxide (CO) from Engines

The Texas Commission on Environmental Quality (TCEQ) regulates the amount of nitrogen oxides (NOx) and carbon monoxide (CO) from engines by setting emission limits based on the grams of NOx and CO per horsepower hour. Purchasers of this equipment are responsible to ensure that equipment meets the regulatory emission specifications. The Galveston Bay Refinery site is subject to a mass cap and trade program for NOx; this program includes NOx emissions from most stationary engines and the heaters/furnaces at the site.

The TCEQ rules relating to NOx controls for the Houston-Galveston-Brazoria non-attainment area requires specific data collection/recordkeeping requirements. In addition, these rules place certain operating limitations on maintenance and test runs.

3.2.2.1 **Emission Monitoring for Stationary Internal Combustion Engines (30 TAC 117.2030/30 TAC 117.8140)**

3.2.2.1.1 Periodic testing

3.2.2.1.1.1 Stack testing on a biennial calendar basis; or

3.2.2.1.1.2 Stack testing within 15,000 hours of engine operation after the previous emission test.

3.2.2.1.1.3 Engines used exclusively in emergency situations are not required to conduct stack testing, if they meet the emission standard for non-road engines listed in 40 CFR 89.112(a) Table 1 (see Attachment A).

3.2.2.1.2 Proper operation

3.2.2.1.2.1 Engines shall be checked for proper operation by recorded measurements of engine NOx and CO emissions at least quarterly and as soon practicable within 2 weeks after each occurrence of engine maintenance that may reasonably be expected to increase emissions, oxygen sensor replacement, or catalyst cleaning or catalyst replacement.

3.2.2.1.2.2 Quarterly emission testing is not required for those engines whose monthly run time does not exceed 10 hours.

3.2.2.1.3 All stationary diesel engines (e.g., fire water pumps, emergency generators, etc.) may not be run for routine maintenance (e.g., after oil change, replacing air filter, etc.) or testing between 6am and 12 noon, 30 TAC 117.2030(c) except

3.2.2.1.3.1 For a specific manufacturer's recommendation of a test longer than 18 hours.

3.2.2.1.3.2 To verify reliability of emergency equipment after unforeseen repairs are done.

3.2.2.1.3.3 Firewater pumps for emergency response training conducted in the months April through October.

3.2.2.2 **Monitoring Requirements for Stationary Internal Combustion Engines (30 TAC 117.2035)**

3.2.2.2.1 Totalizing fuel flow meters; or

3.2.2.2.2 Diesel engines operating with run time meters may meet the fuel flow monitoring requirements through monthly fuel use records.

3.2.2.3 **Recordkeeping and Reporting Requirements (30 TAC 117.2045)**

3.2.2.3.1 Written or electronic records of the following data shall be maintained for a period of at least 5 years:

3.2.2.3.1.1 Dates of operation.

3.2.2.3.1.2 Start and end times of operation.

3.2.2.3.1.3 Identification of the engine.

3.2.2.3.1.4 Total hours of operation for each month and for

the most recent 12 consecutive months.

3.2.2.3.1.5 Records of the results of initial certification testing, evaluations, calibrations, checks, adjustments, maintenance, and performance testing.

3.2.2.3.2 Records for Emission Monitoring (NOx /CO)

3.2.2.3.3 Records for exempt engines – written records must be maintained of the purpose of engine operation and, if operation was for an emergency situation, identification of the type of emergency situation and the start and end times and date(s) of the emergency situation (e.g., fire, spill, upset requiring cooling or electrical outage).

4.0 Definitions

4.1 ***Stationary Internal Combustion Engine or "stationary engine"*** – An engine that remains at the site for more than 12 months even if the engine is portable or transportable from one location to another. This includes a temporary substitute engine (e.g. exchange of portable engines due to maintenance, temporary replacement of a fixed, stationary engine, etc.).

4.2 ***Temporary Engine*** – An engine that remains at the site for **less than** 12 months. Temporary engines used at the site are typically "portable" (in specific, they can be relocated). If a temporary engine replaces stationary equipment, the temporary engine is also considered stationary. If engine is removed for some period of time up to several months and then returned to the same service, the "consecutive" time chain must be considered unbroken. Moving an engine just to avoid "twelve consecutive months" situation is not allowed.

4.3 ***Self-propelled Engine*** – An engine that is on another piece of equipment that is intended to be propelled as part of its function (such as cranes, fork-lifts, personnel lifts). Any engine that is self propelled is not considered stationary.

5.0 References

5.1 TCEQ Chapter 117

5.2 40 CFR 89.112 (a), Table 1

6.0 Attachments

6.1 Attachment A: 40 CFR 89.112 (a), Table 1

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-19 under MOC 93391.	J. Elizondo	E. R. Kaysen	7/26/2021	8/20/2021

Attachment A – 40 CFR 89.112 (a), Table 1

Table 1.—Emission Standards (g/kW-hr)

Rated Power (kW)	Tier	Model Year[1]	NOx	HC	NMHC + NOx	CO	PM
kW<8	Tier 1	2000	—	—	10.5	8.0	1.0
	Tier 2	2005	—	—	7.5	8.0	0.80
8≤kW<19	Tier 1	2000	—	—	9.5	6.6	0.80
	Tier 2	2005	—	—	7.5	6.6	0.80
19≤kW<37	Tier 1	1999	—	—	9.5	5.5	0.80
	Tier 2	2004	—	—	7.5	5.5	0.60
37≤kW<75	Tier 1	1998	9.2	—	—	—	—
	Tier 2	2004	—	—	7.5	5.0	0.40
	Tier 3	2008	—	—	4.7	5.0	
75≤kW<130	Tier 1	1997	9.2	—	—	—	—
	Tier 2	2003	—	—	6.6	5.0	0.30
	Tier 3	2007	—	—	4.0	5.0	
130≤kW<225	Tier 1	1996	9.2	1.3	—	11.4	0.54
	Tier 2	2003	—	—	6.6	3.5	0.20
	Tier 3	2006	—	—	4.0	3.5	
225≤kW<450	Tier 1	1996	9.2	1.3	—	11.4	0.54
	Tier 2	2001	—	—	6.4	3.5	0.20
	Tier 3	2006	—	—	4.0	3.5	
450≤kW≤560	Tier 1	1996	9.2	1.3	—	11.4	0.54
	Tier 2	2002	—	—	6.4	3.5	0.20
	Tier 3	2006	—	—	4.0	3.5	
kW>560	Tier 1	2000	9.2	1.3	—	11.4	0.54
	Tier 2	2006	—	—	6.4	3.5	0.20

[1] The model years listed indicate the model years for which the specified tier of standards take effect.