
POLICY: Diesel Storage Tank – Operational Guidelines

Issued: March 28, 2011

PURPOSE

To establish guidelines for responsibility delegation, operations, inspection and preventative maintenance of the Diesel Storage Tank Facility.

The Diesel Storage Tank Facility was installed as a part of Emergency Preparedness Plan for the university campus. Four (4) diesel tanks, each with the capacity of 12,000 gallons are installed near the General Services Building (GSB) at 4211 Elgin. Management of this facility is a joint responsibility of multiple groups at University of Houston as outlined in these guidelines.

GENERAL MAINTENANCE GUIDELINES

In order to maintain and assess the integrity of the campus's Diesel Storage Tank Facility, routine inspections and preventative maintenance will be performed as outlined below. For contact information please see Appendix E. The vendor information is just a proposal and the University guidelines must be followed for vendor purchases/contracts.

Responsibilities:

Environmental, Health and Safety (EHS) is responsible for performing the following:

- Visual inspection of the Diesel Storage Tank will be performed weekly in accordance with Campus wide Spill Prevention Control and Countermeasures (SPCC) plan requirements (please see Appendix D) and repairs or concerns reported to Central Facilities Services. Spill/Emergency Response Training will be conducted at the Diesel Storage Tank every 6 months, preferably during the months of May and November. The recipients of the training will be personnel from each area who will be using the facility.
- Assist with any spill responses and address any required regulatory agency concerns.

Fire Marshal's Office is responsible for performing the following:

- Fire extinguisher maintenance to be performed as per the campus fire extinguisher maintenance program.

Plumbing Group is responsible for performing the following:

- Inspect Diesel Storage Tank plumbing for leaks and corrosion. To be performed quarterly, during the months of December, March, May and September.
- Repair any leaks as needed or arrange for repairs through contractor and stores.
- Report the repair to Central Facilities Services (CFS) and Electrical Supervisor.

Electrical is responsible for performing the following:

- Electrical controls and panel board inspection and preventive maintenance. To be performed bi-annually during the month of November and May.
- Head end equipment inspection and cleaning - to be performed monthly.
- Outside lighting inspection and preventative maintenance. To be performed monthly or as needed.
- Inspect flexible connector electrical components for corrosion and clean as needed. To be performed quarterly.
- Get a quote and call vendor to remove water and dirt from the fuel storage tanks.
- Get quotes and call outside company for any repairs outside UH capability or time constraints. Authorize payments for these repairs.

- Provide recommendations for improving maintenance.
- Arrange for 5 year centrifuge cleaning through vendor and University Stores.
- Arrange for adding stabilizer additives every December or as needed.
- Monthly testing of truck and tanks to ensure these systems work properly.
- Top off the generator tanks quarterly and in preparation for hurricane or emergency event.
- Maintain records of fuel used in each generator that is filled and submit it to CFS and Plant Operations Business Services.
- Perform weekly, monthly and other periodic inspections per checklist in Appendix B.
- Maintain a 1500 watt minimum uninterruptible power supply (UPS) and surge protector for the computer at the diesel storage tank area.
- Determine and schedule generator fill up will be filled using small pick-up mounted tank.

Mechanical and Electrical is responsible for performing the following:

- Pump inspection and preventative maintenance to be performed bi-annually, first week of May and first week of December.
- Repair pumps as needed or arrange for repair through contractor.
- Report repair to CFS and Electrical supervisor.
- Report vehicle repairs to CFS or Fleet coordinator.

Mechanical is responsible for performing the following:

- Exercising mechanical valves and verifying operations to be performed bi-annually, first week of May and first week of December.
- Fueling swing arms lubrication to insure free movement to be performed quarterly, in October, January, April, and July.

Central Facilities Services is responsible for performing the following:

- S.T.A.R. Plus Sample Testing-Bottom Sediment and Water Microbiological Test be performed six months, during the months of January and July.
- Arrange through University stores to call vendor to add stabilizer additives every year in September or as needed.
- Buy truck and filling equipment as needed and maintain vehicles.

Vendor is responsible for performing the following:

- S.T.A.R. Plus Sample Testing-Bottom Sediment and Water Microbiological Test. To be performed every six months, in May and in November.
- Add additives in December or as needed.

COMPUTER EQUIPMENT MAINTENANCE GUIDELINES

The Facilities Information **Technology Group** will provide the following services and equipment as required by the facilities technical requirements for on-going operation:

- Maintenance of the systems related to the computer interface, email notifications, and auto dialer functions.
- Maintain documentation and instructions for computer setup and operations.
- Produce a complete backup of the computer system, to be performed quarterly.

FUEL STORAGE AND DISTRIBUTION

The four (4) storage tanks contain re-circulated diesel fuel treated with an aviation grade biocide.

Each tank needs to be re-filled when normal capacity reaches 30% (3600 gallons per tank) or as required due to emergency response. During an emergency event, request for fueling should be made when fuel tank reaches 50% (6,000 gallons per tank) capacity. Tanks should not be filled more than 75% (max 9,000 gallons per tank) to allow for expansion, as per manufacturers recommendations.

CFS places an order with University stores to call the fuel vendor to fuel the tanks when A) it reaches below the recommended levels and B) during hurricane preparation period and C) during an emergency event.

Fueling records (hardcopy and electronic) are maintained by CFS office (CFS Manager) and at the Diesel Storage tank computer area.

The generator mechanic must record the amount of fuel used per generator and by Auxiliaries for billing purposes and reports be given to the Electrical supervisor, so that it we can charge that cost of service to the auxiliaries.

The finance group will support in creating cost centers for the auxiliaries for billing purpose.

See Appendix A for the truck fueling instructions.

CFS will make the decision as to when a tank is to be re-filled and will supervise the refueling.

INSPECTION and TESTING

EHS is responsible for weekly visual inspections. Sample Testing-Bottom Sediment and Water Microbiological Test will be done every six months in May and November. CFS will place an order to the vendor through University stores. The vendor will be responsible for performing S.T.A.R. Plus Sample Testing-Bottom Sediment and Water Microbiological Test.

PERVENTIVE MAINTENANCE & CLEANING

The generator mechanic reports any electrical issues to electrical supervisor. The maintenance check list is in Appendix B.

The electrical group is responsible for electrical preventive maintenance of the diesel facility.

The IT support will be provided by the Facilities IT group. This includes backing up the records every month and system every 4 months.

Tanks should be centrifuged cleaned every 5 years.

ACCESS

The Central Facilities Services will maintain the bypass electronic keys.

EMERGENCY

There are multiple emergency cutoff switches located in the Diesel Storage Tank Facility. Emergency cutoff procedures will be covered in the Spill\Emergency Response training. EHS maintains a large spill kit at the Diesel Storage Tank Facility for incidental spills and drips. Contact EHS at 713-743-5858 for assistance.

All spills to be reported to EHS and the Fire Marshall Office.

REFERENCE FORMS, RECORDS, SOPS

- Spill Prevention Control and Countermeasures Plan (SPCC) maintained by Environmental, Health and Safety Management.

Appendix – A

Bulk fuel terminal bobtail loading instructions

- 1) Pull bobtail to proper loading position
- 2) Set parking brake
- 3) Install (green) scully grounding/over fill Connection to bobtail – twist and lock
- 4) Verify that the system is properly grounded and the status lights are green and not red
- 5) Connect either loading arm #1 or #2 to bobtail
- 6) Preset gallon amount to be received on corresponding meter #1 or #2
- 7) Pull back meter preset valve on meter
- 8) Authorize loading system #1 or #2 thru card system
- 9) Begin loading
- 10) Once loading is complete disconnect loading arm first and place back in upright position
- 11) Then disconnect scully ground/overflow connection and hang it up
- 12) Pull away slowly from loading area
- 13) Look for any incidental spills of fuel and clean

APPENDIX B- Maintenance Checklist

Weekly Maintenance:

- 1. Check leak detector for indication of fluid in interstice. If checked with a stick, ensure the stick is clean and dry before insertion.
- 2. Check for leaks on the pumps, filters, hoses, nozzles, joints and fittings.
- 3. Check nipples, spill containment & manholes for paint or powder coating decay (required by warranty). Check piping and fittings for rust.
- 4. Check pump meter and reset button.
- 5. Check fuel gauge for proper operation. Check the clear cap for weathering or cracks.
- 6. Check spill containment for debris.
- 7. Check for small cracks in concrete.
- 8. Check readability of signs and decals.

Monthly Maintenance:

- 9. Check leak detector tube cap and lock for corrosion and proper operation. If a Kruger manual leak indicator is installed, remove the red ring and clear cap and check to see that the red indicator moves up and down about 1 inch freely. Also, check for weathering or cracks in the clear cap. If electronic leak detection is installed, check it by using the test button.
- 10. Check all nozzles, hoses and fittings for wear and tear.
- 11. Check trigger mechanism on nozzle for metal fatigue or mechanical failure.
- 12. Check pump motor for signs of over-heating or excessive wear.
- 13. Check body of tank for cleanness, need of paint, or rusting where applicable. Check slab and supports of unit for structural soundness.
- 14. Check grounding wires to see that they are properly attached to the tank terminals and grounding stake or grid.

Other Periodic Maintenance:

- 15. Replace the filter at least every six (6) months or as needed (mark the date replaced on the filter).
- 16. Have a qualified person periodically check all electrical wiring.
- 17. Check the emergency relief vent at least once a year by lifting the top cap and releasing it to ensure freedom of movement.
- 18. At least once a year, remove the leak detection device and check for proper operation.
- 19. At least once a year, check the calibration of the fuel gauge.
- 20. Follow the pump manufacturer's recommendation for frequency and procedures of maintenance.

APPENDIX C - CHECK FUEL FOR WATER & SAMPLE FOR MICROBES

Stick Paste Test
Sample Pulled

NEG POS
YES NO

CONTACT FUEL SUPPLIER

QUESTIONS:

1. Do you currently test for water? Yes No
Primary? Yes No
Secondary? Yes No
2. Have you ever removed water?
Primary? Yes No
Secondary? Yes No
3. Do you know working capacity? Yes No
4. Had Preventive Maintenance done? Yes No

COMMENTS: _____

APPENDIX – D

Attachment 3: SPCC Plan

Weekly Tanks and Containment Inspection Checklist

Building: Bulk Diesel Fuel Tank Farm (BFT-1, BFT-2, BFT-3, BFT-4)

Date: _____ **Inspector:** _____

Comments

(identify hose, pump, tank, secondary containment pallets and vaults, nature of observation, corrective actions taken)

Yes	No		
<input type="checkbox"/>	<input type="checkbox"/>	Leaks at valves/pumps	_____
<input type="checkbox"/>	<input type="checkbox"/>	Leaks from tanks	_____
<input type="checkbox"/>	<input type="checkbox"/>	Leaks from hoses/piping	_____
<input type="checkbox"/>	<input type="checkbox"/>	Corrosion in tanks/piping	_____
<input type="checkbox"/>	<input type="checkbox"/>	Cracks in containment slabs	_____
<input type="checkbox"/>	<input type="checkbox"/>	Oxidation cracking, scuffing or wear in rubber hoses	_____
<input type="checkbox"/>	<input type="checkbox"/>	Level indicator operational	_____
<input type="checkbox"/>	<input type="checkbox"/>	Secondary containment liquid free	_____
<input type="checkbox"/>	<input type="checkbox"/>	High level alarm operational	_____
<input type="checkbox"/>	<input type="checkbox"/>	Metering systems operational	_____
<input type="checkbox"/>	<input type="checkbox"/>	Loading/unloading area warning signs in good condition	_____
<input type="checkbox"/>	<input type="checkbox"/>	Drip pans available for driver use	_____
<input type="checkbox"/>	<input type="checkbox"/>	Absorbent materials available for spill response	_____
<input type="checkbox"/>	<input type="checkbox"/>	Fill ports locked	_____
<input type="checkbox"/>	<input type="checkbox"/>	Lighting adequate for leak detection	_____
<input type="checkbox"/>	<input type="checkbox"/>	Perimeter fencing/security systems operational	_____
<input type="checkbox"/>	<input type="checkbox"/>	Other	_____

Additional Comments (note any concerns by tank number):

Note: Report any discrepancies immediately to Emmett Sullivan, Manager – Chemical & Occupational Safety

Review: _____ Date _____

**This inspection report to be retained at the facility with the SPCC Plan for five years
 Send completed forms to EHS-1005**

APPENDIX – E

CONTACTS

Facilities Management- Technical Services	Sameer Kapileshwari (3-5797)/ Avinash R (3-2749)
Electrical	Karl Keilbach (3-5606) /Dale Tubb (3-5799)
Mechanical	Jesus Gonzalez (3-5798) Louis Madrigal (3-5691)
Generator Mechanic	Chris Mahaffey (3-5606)
Solid Waste & Recycling	Myrlin Brazil (832-496-3483) Johnnie King (3-5655)
Central Facilities Services	Neal Smith (3-5603) Carlos Villarreal (3-5688)
Fleet Coordinator	Tuan Tran (3-6891)
Skill Trades	Steve Wright (3-0971)
University Stores	Sharon Davis (3-5734)
Environmental Health and Safety	Emmett Sullivan (3-5869)
UHPD Fire Marshal’s Office	Bob Bowden (3-5866) Joe Tremont (3-5861) Rod Rodriguez (3-5864)
Facilities Information Technology	Sheree Pearce (3-5755)
Diesel Fuel Maintenance, Inc. (Vendor)	P. O. Box 759 La Porte, TX 77571 Voice: 281-842-8015 Fax: 281-842-8025
Business Services	Lisa Castro (3-5710)
Centrifuge fuel cleaning vendor OPS FUEL SERVICE INC. OIL PURIFICATION SPECIALIST	PO BOX 8513 The Woodlands TX- 77387 Phone: 936-273-5529 Fax: 936-273-6710