1.0 PURPOSE
TO PROVIDE FLEET SERVICES FACILITY EMPLOYEES WITH THE POLICY AND PROCEDURE TO ENSURE PROPER TRAINING IN REGARDS TO OPERATION, MAINTENANCE AND REPAIR OF THE UNDERGROUND STORAGE TANKS AND THEIR ASSOCIATED TANK MONITORING SYSTEM.

2.0 REFERENCES
2.1 California Code of Regulations, Title 23, Division 3, Chapter 16 Underground Tank Regulations
2.2 California Health and Safety Code, Chapter 6.7 Underground Storage of Hazardous Substances
2.3 Environmental Protection Agency, EPA 510-B-00-008 Operating and Maintaining Underground Storage Tank Systems
2.4 INCON (Intelligent Controls) TS-1001 Tank Sentinel - Automatic Tank Gauge and Leak Detection System Manual

3.0 GENERAL
3.1 Facility Employee - An individual who is employed on-site at a UST (Underground Storage Tank) facility, and who may be called upon to respond to spills, overfills, or other problems associated with the operation of the UST system.
3.2 Designated UST Operator - Facility employee who shall possess a current certificate issued by the International Code Council (ICC) indicating he or she has passed the California UST System Operator exam. The Designated UST operator must pass this exam every 24 months. The Designated UST Operator is the contact person for any emergency dealing with the underground storage tanks or the monitoring systems. For UCDMC Central Plant and Fleet Services the Designated UST Operator is currently:
   Tom Kavanaugh - Central Plant Superintendent of Operations
   Office # (916) 734-5548
   Cell # (916) 548-6005
3.3 Monthly Inspections - The Designated UST Operator shall perform monthly visual inspections of all underground storage tank systems. The monthly visual inspections shall include the following:
a) Reviewing the alarm history report or log for the previous month, and checking that each alarm condition was documented and responded to appropriately.
b) Inspecting for the presence of hazardous substance, water, or debris in spill containers.

c) Inspecting for the presence of hazardous substance, water, or debris in under-dispenser containment areas, and checking that the monitoring equipment in these areas is located in the proper position to detect a leak at the earliest possible opportunity.

d) Inspecting for the presence of hazardous substance, water, or debris in containment sumps that, in the past month, have had an alarm for which there is no record of a service visit, and checking that the monitoring equipment in these containment sumps is located in the proper position to detect a leak at the earliest possible opportunity.

e) Checking that all required testing and maintenance for the underground storage tank system have been completed, and documenting the dates these activities occurred.

3.4 Training Requirements - The Designated UST Operator shall train facility employees in the proper operation and maintenance of the underground storage tank system. Initial training for new facility employees shall be conducted within 30 days of the date of hire. The training for facility employees must include:

a) The operation of the underground storage tank system in a manner consistent with the facility’s best management practices.

b) The facility employee’s role with regard to the monitoring equipment as specified in the facility’s monitoring plan.

c) The facility employee’s role with regard to spills and overfills as specified in the facility’s response plan.

d) The name of the contact person(s) for emergencies and monitoring equipment alarms.

e) Emergency response duties and responsibilities.

3.5 Installation/Maintenance/Repair - Any individual installing or performing maintenance/repair work on underground storage tank system components shall possess a valid California UST Installer Certificate or a California UST Service Technician Certificate, issued by the International Code Council. These certificates are issued upon passing the appropriate exam every 24 months. These individuals must also possess a current contractor’s license and have a certificate of training for the underground storage tank system components from the manufacturer. Manufacturer’s refresher training shall be conducted at the time interval recommended by the manufacturer, or every 36 months, whichever is shorter.
UCDMC FLEET SERVICES                      POLICY & PROCEDURE #900-04
UNDERGROUND STORAGE TANKS                          EFFECTIVE DATE: 4/12/07
FACILITY EMPLOYEE TRAINING
LAST REVISED:  4/12/07 (Rev #0)
LAST REVIEWED:  7/8/15                         APPROVALS:

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H:\Fleet Services\P&P900-04.doc Page 3

UCDMC is currently using BZ Service Station Maintenance technicians as our certified California UST Service Technicians. Their address and phone number is:

630 Houston St., West Sacramento, CA 95691          (916) 371-2380

4.0 SYSTEM KNOWLEDGE
What every good facility employee needs to know:
4.1 General System Structure
4.2 Alarm & Monitoring System
4.3 How to fill the tanks
4.4 Emergency Shut Off

5.0 TANK BASICS & GENERAL SYSTEM STRUCTURE
5.1 Number of UST’s - There are three underground storage tanks located in visitors parking lot #20, located just to the north of the Fleet Services Building.
a) Unleaded Gasoline Tank #1 (east tank) - 10,000 gallon capacity
b) Unleaded Gasoline Tank #2 (center tank) - 10,000 gallon capacity
c) Diesel Fuel Tank #3 (west tank) - 10,000 gallon capacity

5.2 Tank Construction
a) Each UST is constructed of carbon steel with a secondary containment of fiberglass reinforced polyester resin (FRP).
b) Each tank has a 36” diameter watertight manhole and a 12” monitoring manhole.
c) Each tank also has a 48” diameter by 48” high piping containment sump, with a 32” diameter removable lid, located below a 36” diameter manhole.
d) Each tank is fitted with a 4” diameter fill pipe with cap and locking mechanism.
e) A 15 gallon spill containment bucket around the fill pipe, with a lever operated pull valve to drain any liquid accumulated in the spill bucket, into the tank.
f) A two inch diameter tank vent with vent valve.
g) See appendix #1 for a typical diagram of a UST system.

5.3 General System Structure
a) Unleaded Gas System - Consists of suction piping from the two tanks to the fuel dispensers. Tank #1 supplies dispensers #1 and #4. Tank #2 supplies dispenser #3. Each unleaded fuel dispenser is also fitted with a vapor recovery system.
6.0 TANK MONITORING SYSTEM

6.1 All new underground storage tanks must have enhanced leak detection systems. Our tanks are fitted with an INCON TS-1001 Tank Sentinel Automatic Tank Gauge and Leak Detection System. This system is designed for continuous tank monitoring/inventory control and leak detection, for up to four tanks. It is capable of monitoring deliveries, inventory levels, thefts, and other conditions such as: high water levels, low product levels, reorder product levels, and full and over-full product levels. This unit provides audio / visual annunciation when an alarm or warning condition exists. The system uses TSP-LL2 series level probes to monitor product level in the tanks. These probes consist of two floats. One float monitors the fuel oil level and the other monitors water level in the bottom of the tank. The leak detection system consists of TSP-ULS universal liquid sensors located in each tank piping sump and in each under dispenser containment pan. These sensors can detect liquid to within 3/8” of the bottom of the piping sump or dispenser containment pan. The interstitial space of each tank is monitored for leaks with a TSP-EIS electro-optic interstitial (“Brine”) sensor.

6.2 The Fleet Services manager reviews the monitoring system for alarm notification Monday through Friday upon opening the Fleet Services office. In the event the manager is out of the office upon opening, the Shop Supervisor will review the monitoring system for alarm notification.

7.0 ALARMS

The following alarms are set up on each of the three tanks. The alarms will be activated at the INCON Tank Sentinel unit.

7.1 Overfill (High-High) Alarm

The overfill alarm activates when the tanks reach 90% capacity. This overfill alarm also activates a horn and strobe unit mounted on the exterior north wall of the building, outside the administrative office. The strobe flashes once per second and the horn is continuous at 85 dB. The horn and strobe alarm is installed to alert the delivery driver of a tank overfill condition. **Notify the delivery driver to immediately stop filling the fuel tank.** There is an overfill protection device fitted on each tank. It is an automatic shutoff valve (flapper valve) located in the 4” fill riser pipe, which reduces flow by 90% when the tank level reaches 92% tank capacity and shuts down the gravity flow at 95% capacity. Notify the Fleet
7.2 Sensor Alarm - Failure of Primary Tank

Sensor #2 - Unleaded Tank #1 interstitial space
Sensor #4 - Unleaded Tank #2 interstitial space
Sensor #6 - Diesel Tank #3 interstitial space

Should a failure occur in the primary tank then the liquid level in the interstitial space of the double walled tank will change. This will result in a "brine" alarm via a liquid level sensing probe located in the interstitial space of the tank. This alarm will need to be investigated to determine if there is an actual leak of the primary tank, or if it is a failure of the liquid sensing probe, or if the brine level has changed due to temperature change of the tank and product. Facility employees shall proceed as follows:

a) The facility employee responding to this alarm shall place hazard cones within 4' of interstitial space access manhole cover, to notify on-coming vehicles of workers in the area.
b) Remove the manhole cover to access the interstitial leak sensor wiring.
c) Adjust the brine level sensor wire up or down (down for low brine and up for high brine) no more than two inches to attempt to get the alarm to clear. A second facility employee must immediately notify the technician once the alarm clears.
d) Reinstall the interstitial space manhole cover.
f) If the alarm does not clear, notify the designated UST System Operator immediately, as this will involve further investigation and may result in tank integrity testing.

7.3 Sensor Alarm - Piping Sump (Failure of the Distribution Piping)

Sensor #1 - Piping Sump for Unleaded Tank #1
Sensor #3 - Piping Sump for Unleaded Tank #2
Sensor #5 - Piping Sump for Diesel Tank #3

The piping sump for each UST contains a liquid level sensing probe. The probe is located in the lowest part of the piping sump. Should there be a failure of the primary distribution piping, unleaded gasoline or diesel fuel will accumulate in the secondary containment piping. This piping is sloped such that any leak will drain back to the tank piping sump and be detected by the liquid sensing probe.
Note: In order for this to occur it is imperative that the rubber boots around the primary and secondary piping, in the piping sump, are loose and not connected to the secondary pipe. These boots are only used for integrity testing of the secondary piping, on a tri-annual basis.

This alarm will need to be investigated to determine if there is an actual leak in the primary piping, or if there is a failure of the liquid sensing probe, or if water (rain or washdown) has accumulated in the piping sump. If significant rain is expected then sand bags can be placed over the diesel tank piping sump manhole to prevent rain water intrusion. Proceed as follows upon alarm:

a) The facility employee responding to this alarm shall place hazard cones within 4' of piping sump manhole cover, to notify on-coming vehicles of workers in the area.
b) Remove the manhole cover to access the piping sump.
c) If the liquid in the piping sump appears to be rain or washdown water, the facility employee shall remove the water using shop towels or mop. Only use shop towels or mops that are cleaned by the industrial laundry service.
d) Verify that the alarm has cleared once the water is removed from the piping sump.
e) Reinstall the piping sump manhole cover.
g) If the liquid in the piping sump appears to be fuel then notify the Designated UST System Operator immediately.

7.4 Sensor Alarm - Under Dispenser Containment Pan Leak Sensor

Sensor #7 - Dispenser #1 & #4
Sensor #8 - Dispenser #3
Sensor #9 - Dispenser #2 & #5

The under dispenser containment pans for each Gasboy fuel dispenser contain a liquid level sensing probe. Should there be a failure of the dispenser pump, valves, piping, or fittings unleaded gasoline or diesel fuel will accumulate in the under dispenser containment pan. This alarm will need to be investigated to determine if there is a fuel leak in the dispenser unit, or if there is a failure of the liquid sensing probe, or if water (rain or washdown) has accumulated in the under dispenser containment pan. Proceed as follows:

a) Open the Gasboy fuel dispensing unit and inspect for leaks. If a leak is noted then shut off the gas/diesel dispensing unit by pulling the emergency shutoff. The emergency shutoff is located on the wall of Fleet Services (Building #69),
next to the fuel pumps.

b) Immediately notify the Designated UST System Operator, Fleet Services Manager and Shop Supervisor of the alarm.

c) Fleet Services Manager / Shop Supervisor shall immediately notify the Environmental Health and Safety Officer at 734-2740.


There are additional alarms on the INCON Tank Sentinel monitoring system, which are for operational purposes as opposed to leak detection. They are as follows:

7.5 **Probe Alarm** - This alarm occurs when communication is lost between the INCON monitor and the in-tank level probe. The tanks will indicated 0 gallons of inventory when this occurs.

7.6 **Leak Alarm** - This alarm indicates that a tank has failed a leak test. There are no automatic leak tests performed on these tanks. The leak test will fail when the leak rate is 0.2 gal/hr or greater. A manual leak test takes approximately four hours, during which no product can be removed from the tank.

7.7 **Theft Alarm** - This alarm occurs if there is product withdrawal from the tank, equal to or more than a programmed amount, during a leak test.

7.8 **Low Alarm** - This alarm occurs when the product in the tank drops below a programmed level. This alarm is set at 10% of tank capacity. Notify Fleet Services manager of the alarm, or the Shop Supervisor in the managers absence. Record alarm response on the “Fuel System Alarm Report”. Place notification receipt in alarm envelope.

7.9 **High Alarm** - This alarm occurs when the product in the tank exceeds a programmed level. This alarm is set at 85% of tank capacity.

7.10 **High Water Alarm** - The tank level probe is fitted with two floats. The upper float measures product level. The lower float measures water level in the bottom of the tank. The high water alarm is currently set at 2”.

8.0 **FACILITY EMPLOYEE RESPONSE TO ALARMS**

8.1 The following alarms shall be reported to the designated UST System Operator immediately:

a) A piping sump alarm that appears to be caused by unleaded gasoline or diesel fuel in the piping sump.

b) A “brine” alarm (tank interstitial space leak sensor), that requires moving the
sensor up or down more than two inches.
c) A under dispenser pan leak sensor alarm, which is indicative of a leak at the
dispensing unit (Gasboy Pump & Dispenser).

8.2 All alarms should be documented by placing an entry in the Fuel System Alarm
Report Log, located at the INCON unit. The alarm report shall be printed out and
a copy sent over to the designated UST System Operator, noting and any action
taken to clear the alarm and whether it did in fact clear.

8.3 **Fleet Services facility employees are not certified or allowed to perform the**
repair/replacement of the monitoring system or its components because this
**work must be done by a certified UST Service Technician.**

8.4 Fleet Services is currently using BZ Service Station Maintenance, in West
Sacramento 916-371-2380, for our UST Service Technicians.

9.0 **FUEL DELIVERIES**

9.1 See Fleet Services Policy & Procedure #900-02 - Procedure For Filling Fuel
Tanks, Rev #1 Dated: 4/17/07

10.0 **EMERGENCIES**

Every facility employee needs to know how to deal with a release or spill. Follow the
procedures below:

10.1 **Stop the Release** - Immediate action required to stop additional flow:
   a) During tank filling - Ensure the delivery driver secures product transfer.
   b) Unleaded gas and diesel fuel piping leak - Secure the dispenser fuel pumps by
      pulling the emergency shutoff, located on the building wall adjacent to the
      fuel dispensing units.

10.2 **Contain the Release** - Before a fuel delivery begins, install the Drainblocker pad
over the storm drain in the parking lot, just to the southwest of the fuel tanks. This
should contain all but a major spill. Then follow procedures in Section 11 for
Spills and Overfills.

10.3 **Call for Help** - Call in additional help as needed. Sources of help are as follows:
   a) Designated UST Operator
   b) Fleet Services Manager or Shop Supervisor.
   c) PO&M Manager and other on duty PO&M personnel.
   d) Call 911 - report “Code White” request Sacramento County Hazardous
      Material Response Team. Identify the substance, quantity, location of the spill
      and if there are any injured personnel
   e) Ramos Environmental @ 800-456-7745 (24 hours)
10.4 Report the Release
   a) Notify Fleet Services Manager and the Designated UST System Operator.
   b) Notify UCDHS Health and Safety Officer - Robert Lawson at 734-3673 or 734-2740 (24 Hours), as he will need to report the spill per the UCDHS Spill Prevention, Control and Countermeasures Plan.

11.0 SPILLS & OVERFILLS
   11.1 See Fleet Services Policy & Procedure #900-03 - Procedure for Hazardous Material Spills and Clean-up.
   11.2 See UCDHS Hospital Policies & Procedures #1725 - Hazardous Substances: Response to Incidental Releases and Spills

END OF POLICY & PROCEDURE

Revisions:
Rev #0: Initial Procedure Dated: 4/12/07