Overview	This work procedure describes responsibilities and work activities for the safe and efficient bulk delivery of gas odorant.
Governing Document	Pacific Gas and Electric Company (The Company's) governing document is Utility Standard S4350, "Odorization of Natural Gas," – *Expected publication 2008*
Safety	Perform all gas maintenance, operations, and associated work safely and in accordance with all applicable safety rules, the *Code of Safe Practices*, and Utility Standard Practice (USP) 22, "Safety and Health Program."

Bulk Odorant Deliveries, Maintenance, and Operating Procedures

1. General Information

A. Odorant Purchases

The district superintendent determines the amount and blend of odorant to purchase in accordance with the system-wide odorization program described in the Utility Standard S4350, "Odorization of Natural Gas." Consult with the Gas Transmission and Distribution (GT&D) Gas Engineering Department for the most current version of standards regarding approved odorant blends used in Company gas gathering, transmission, and distribution systems.

The district superintendent coordinates all odorant purchases and delivery schedules with the odorant supplier, local environmental consultant, and Materials and Fleet department.

The Materials and Fleet department conducts competitive bidding to provide a multi-year contract to the lowest evaluated odorant supplier bidder. The evaluation criteria are agreed upon by a cross-functional bid team before opening the bids. Criteria considered may include price, delivery, safety, quality of service, supplier diversity, etc. The Materials and Fleet bid team representative evaluates the commercial terms of the bid and obtains assistance from the Gas Transmission and Distribution (GT&D) Gas Engineering Department and appropriate district superintendents for the technical aspects of the bid. Jointly, the team develops a procurement recommendation for management approval.

In estimating the volume needed, each odorant storage tank is filled to only 85% or less of its capacity to allow for thermal expansion.

Before issuing a purchase contract, the Materials and Fleet Department obtains a copy of odorant specifications and transportation and safety procedures (and any subsequent revisions) from the odorant suppliers. Materials and Fleet coordinates the review and approval of these documents by appropriate Company departments. Materials and Fleet keeps a copy of these procedures on file as part of the contract files with the selected odorant suppliers.

B. Transportation

The Materials and Fleet department distributes copies of the supplier transportation and safety procedures to appropriate Company departments before awarding the contract.

The district superintendent coordinates the review and approval of the odorant supplier's transportation and safety procedures in conjunction with the Company's environmental and safety standards and facilities equipment compatibility and advises the Materials and Fleet department when they are approved. Important items to consider include:

- Type of truck and equipment (e.g., hoses, connections) to be used.
- Vapor recovery equipment to be used.
- Number of personnel used to deliver odorant.
- Odorant handling and general safety/environmental training each vendor delivery technician receives.
- Spill response and emergency notification procedures.
- Odorant delivery route (for multiple locations).

2. Requirements

A. Facilities-Related Requirements (To Be Completed Before Odorant Delivery/Off-Loading)

The responsible district superintendent and local environmental consultant review the Spill Prevention Control and Countermeasure (SPCC) and business plans of all stations to receive odorant to ensure that emergency contact names and phone numbers are correct.

At the same time, the responsible district superintendent and local environmental consultant reviews the SPCC and business plan emergency response procedures relating to the odorant with the Company field personnel involved in the off-loading procedures.

The designated district environmental monitor arranges for the proper emergency and spill response equipment to be on site to address any potential release of odorant.

The district environmental monitor keeps the Material Safety Data Sheets (MSDSs) available on site for the odorant blend delivered and for other emergency chemicals (e.g., deodorizer, spill neutralizer) that may be used during off-loading operations.

The district superintendent notifies Gas Control of the planned odorant delivery schedule and facility locations so that if the deliveries result in increased customer leak complaints, Gas Control can coordinate communication with the affected divisions. The local environmental consultant notifies the local agencies (local air quality management district, local fire department, etc.) of the plan to deliver odorant. The plan includes the specific times, dates, and locations of each delivery.

The district superintendent arranges for an inventory of the types and sizes of tank connections required to properly fill/vent the various station odorant storage tanks. The district superintendent communicates this inventory to the odorant supplier and makes arrangements to have these tank connections checked to ensure that they are in satisfactory working condition.

The district superintendent completes and maintains a "List of Emergency Contacts for Bulk Odorant Delivery" (Attachment 1) and distributes the original and revised lists to all odorant delivery team members.

The district superintendent provides the odorant supplier with an information packet, which includes the following:

- A detailed map and set of directions to each facility.
- The order in which the sites will be visited and the approximate time.
- The approximate volume and blend to be delivered to each site.
- A list of "Bulk Odorant Delivery Emergency Contacts" (Attachment 1).
- An inventory of odorant storage tank connection sizes and types to receive the odorant.

B. Odorant Delivery/Off-Loading

The district superintendent or a designated representative trained on company procedures and guidelines for the safe management of odorants must meet the odorant tanker truck and supplier's delivery technicians at the first facility at the designated time and accompany them to all subsequent sites until the route is complete.

A tailboard meeting must be held before the start of the first scheduled delivery at a location which is mutually agreeable to the district superintendent and the odorant supplier's delivery technicians and where the odorant tanker truck can be parked safely and securely.

Note: Give consideration to holding this tailboard meeting at designated truck stops or a convenient Company facility.

Take the following precautionary measures to ensure safe and efficient odorant delivery from the supplier's tanker truck into each Company facility odorant storage tank:

1) Ensure that each supplier's tanker truck is equipped with a vapor recovery system which prevents the release of any odoriferous vapors to the environment.

2) Use explosion-proof electrical equipment (including non-sparking tools) and be certain that the tanks are properly grounded.

3) Verify the connection points for the liquid and vapor hoses and that the supplier's connections are compatible and in satisfactory working condition.

4) If more than one type of odorant is delivered (by partitioned tanker trailer), check to make sure the appropriate odorant is off-loaded.

5) Carefully monitor the filling procedure (watch the sight glass) to ensure that the tank is not overfilled. **Do not fill the tank completely!**

   Allow for thermal expansion of the odorant, especially when filling on cold days. Do not exceed the **85%** capacity of the tank. (On horizontal cylindrical tanks this level corresponds to approximately **80%** of the height of the vessel.)

   To prevent overfilling, reduce the odorant transfer rate after the tank is 75% full.

6) Inspect the connections, hoses, and fittings for leaks. If leaks are detected, discontinue the filling procedure and take action as required by the SPCC and business plans.

7) Monitor for significant odors. If significant odors are detected, halt the filling operation and follow the instructions on Page 5 under "Significant Odor Release Response."

8) After the tank has been adequately filled, make sure the fill and vent valves are closed and capped.

9) Work with the supplier's delivery technicians to mask or eliminate odors from disconnecting the fill/vent hoses from the tank and from drips that may result. Neutralize the small amount of odorant present on and in the connections quickly. Use masking chemicals and spill neutralizers in accordance with the safety recommendations in the MSDSs. Follow the guidelines in the *Environmental Compliance Manual* for disposal of waste odorant and odorant contaminated debris.

Wear proper personal protective equipment (PPE) as stipulated in the MSDSs when handling odorant and odorant masking chemicals and spill neutralizers.

The district superintendent must witness the inspection of the odorant supplier tank trailer before leaving the station. If there is odorant in the truck after the last delivery, leave it with the supplier so that it returns to its origin.

C. Spill Response

In case of a spill in the station during an odorant delivery operation, the district superintendent and designated district environmental monitor proceed as directed by the station SPCC and business plans. Notify the local environmental consultant immediately for assistance in the required environmental agency notification. The district superintendent notifies Gas Control.

If the spill occurs while the odorant supplier's tanker truck is in route making deliveries, the driver notifies the district superintendent and ensures that the odorant supplier's spill response and safety procedures are followed. The district superintendent ensures that Gas Control is notified.

D. Significant Odor Release Response

The following are suggested corrective measures to take when significant odors are encountered during bulk odorant delivery operations:

1) Immediately halt the filling procedure.
2) Locate and attempt to eliminate the cause of the odor, if possible.
3) Once the source of the odor is addressed, contact the district superintendent and the local environmental consultant. Describe the extent of the release.
4) If necessary, the district superintendent or local environmental consultant contacts the local air quality management district, the Office of Emergency Services (OES), local fire department, Company/Gas Control, and nearby division call centers.

   If the incident attracts news media attention, contact the Company's GT&D, Gas System Integrity department for courtesy notification of the CPUC Utility Safety Branch.

E. Training

Arrange district gas personnel training on the Company's procedures and guidelines for the safe management of odorants through the GT&D facilities engineer.

Arrange training on odorant spill response procedures through the local environmental consultant.

Recision

This work procedure replaces Recommended Practice RP 4351.1, "Bulk Odorant Deliveries Maintenance and Operating Procedures."

Reference Documents

- *Code of Safe Practices*
- CPUC General Order 112-E, "State of California Rules Governing Design, Construction, Testing, Operation, and Maintenance of Gas Gathering, Transmission, and Distribution Piping Systems"
- Gas Supply's *Environmental Compliance Manual*
- Odorant Supplier Transportation Safety Plan

- Spill Prevention Control and Countermeasure (SPCC) plans and business plans for various gas facilities
- Utility Standard Practice (USP) 22, "Safety and Health Program."

Attachments Attachment 1, Bulk Odorant Delivery Emergency Contacts

Contact for More Information [redacted]

Date Issued February 2008

Approved by [redacted]

Revision History

Chg No.	Date	Description	By (LAN ID)
01	August 2007	Initial work procedure version	[redacted]