August 07, 2007

Mr. Ivan A. Huntoon **via: Certified US Mail**
Director, Central Office
Pipeline and Hazardous Materials Safety Administration
U.S. Department of Transportation
901 Locust Street, Ste. 462
Kansas City, MO 64106-2641

RE: CPF 3-2007-5012M

Dear Mr. Huntoon:

Enclosed are the changes made to Center Terminal Company – Toledo's procedures for emergency response, operation and maintenance and commentary in response to the Notice of Amendment, dated March 12, 2007. The changes in the affected procedures are shaded.

Please advise on the adequacy of the revised procedures and when the enforcement action is closed.

Sincerely,

Robert J White
Manager Terminal Operations /
Regulatory Compliance

Enclosure

cc: G. Baumann, PHMSA (electronic copy only)
T. Ward, CTC-T

Commentary
Operations, Maintenance Emergency Response Manual

In response to the Notice of Amendment, dated March 12, 2007, reference #CPF 3-2007-5012M, Center Terminal Company - Toledo has amended its procedures for Operations, Maintenance and Emergencies to correct the inadequacies as identified in the referenced Notice.

Item (3a) §195.310(b)(10) Records – Pipeline Maintenance Manual Section 653.5(b): Procedures are updated for temperature measurement during hydrotest operations.

Item (3b) §195.402(c)(14) – Pipeline Maintenance Manual Section 603.2(b): Procedures have to been updated for Safety Monitor responsibilities. Rescue harness and line are added to the safety equipment list.

Item (3c) §195.402(d)(5) – Regulatory citation refers to effectiveness to the evaluation of personnel for abnormal operations. The manual section 513.3(b) addresses these requirements. Upon review, the regulatory citation should have been §195.402(c)(13) for normal operations review. Manual section 500.1(c) is added to include the requirements for review of personnel for effectiveness of operation procedures and appropriate correction.

Item (3d) §195.426 Scraper and Sphere Facilities - Pipeline Maintenance Manual Section 514(a): New section is added for pressure indicating devices and pressure interlock devices and launcher and receiver.

Item (3e) §195.432(b) – Pipeline Maintenance Manual Section 505.6: Section is revised for breakout tank monthly and annual inspections.

Item (3f) §195.440 Public Awareness – Pipeline Maintenance Manual Section 209(a): The revised section references the Public Awareness Plan. The plan has been filed.

Item (3g) §195.565 How do I install cathodic protection on breakout tanks? — Pipeline Maintenance Manual Section 403.8(b): New subsection is added. Justification is provided why compliance with API 651 tank cathodic protection requirements is not necessary for the safety of the tank.

Item (3h) §195.567 Which pipelines must have test leads and what must I do to install and maintain the leads? – Pipeline Maintenance Manual Section 403.6(a): The section is revised for the allowable time period for test lead replacement or repair.

Item (3i) §195.571 What criteria must I use to determine the adequacy of cathodic protection? - Pipeline Maintenance Manual Section 401: Although it was noted

previously that the manual already addressed potential voltage drop measurement error in another section, section 401 is revised for clarification. The appropriate sections of NACE RP 0169 are referenced and a subsection (b) is added.

Item (3j) §195.573 What must I do to monitor external corrosion control? Pipeline Maintenance Manual Section 403.10(a): The section is revised for allowable time period for correction or remediation of CP system deficiencies.

Item (3k) §195.577 What must I do to alleviate interference currents? - Pipeline Maintenance Manual Section 402.5(a): The section is revised to include liaison with other operator corrosion personnel. Membership has been applied for with the Ohio Corrosion Committee.

Item (3l) §195.583 What must I do to monitor atmospheric corrosion? Pipeline Maintenance Manual Section 403.7: The section is revised for atmospheric corrosion inspection requirements and allowable time period for correction

207 SECURITY OF FACILITIES

(a) The TM is responsible for insuring security is provided for the facilities for which they are responsible.

(b) Each facility, including pumping stations, tank farms, block valves, must be secured from unauthorized entry. Where required, these sites are to be fenced and locked. Block valves may be chained and locked in certain areas.

208 SMOKING/OPEN FLAMES

(a) Smoking will be confined to areas marked as smoking areas. Discarding matches, cigarettes, cigars, etc. from any vehicle is prohibited.

208.1 Hot work permits

(a) Refer to the Operations & Maintenance Manual

209 PUBLIC AWARENESS

(a) Refer to the written Public Awareness Plan.

210 COMPLIANCE REQUIREMENTS AND RECORDS

(a) Refer to the Operations & Maintenance Manual

211 CALIBRATION OF ELECTRONIC SAFETY EQUIPMENT

(a) Electronic safety equipment consists of such items as combustible gas indicators and equipment used to determine the concentration of toxic substances.

(b) The calibration of this equipment will be performed in accordance with the manufacturer's instructions and records of all calibration and maintenance shall be maintained for the life of the test equipment.

212 CONVERSION TO SERVICE

(a) A steel pipeline which has been previously used in a service not subject to Part 195 may be qualified under Part 195 provided the operator prepares and follows a written procedure in accordance with ¶ 195.5 – Conversion to Service. Records of the investigations, tests, repairs, replacements, and alterations made under the requirements of ¶ 195.5 (a) must be maintained for the life of the pipeline. The CTC-T Group will be responsible for the preparation of plans and procedures for conversions under this section.

400 CORROSION CONTROL

400.1 General

(a) This section sets out the corrosion control procedures and program used by the CTC-T to implement an effective corrosion control program and to comply with 49 CFR Part 195 "Transportation of Hazardous Liquids by Pipeline".

(b) See Appendix 400A for forms to be used for corrosion records. Refer to § 200 for record retention time and records location.

(c) The program is administered under the supervision of the TM and is implemented by the Corrosion Protection Technicians (CPT) and TM. The CPT will assist the TM as required. The CPT shall be qualified by NACE approved training and education courses, on the job training, and experience before being assigned to corrosion work.

(d) This program is based on the procedures contained in this section and the requirements of 49 CFR Part 195 "Transportation of Hazardous Liquids by Pipeline" and prescribe the minimum requirements for the control of external and internal corrosion control and are applicable to new and existing installations.

(e) Impressed current systems, galvanic anodes, and external coating systems are the primary means of providing external corrosion protection to the pipe lines.

(f) Pipe line systems which transport hazardous liquids are equipped with corrosion coupons or corrosion rate measuring probes to monitor the internal corrosion rate for the system.

401 CRITERIA FOR CATHODIC PROTECTION

(a) Any of the below listed criteria in accordance with paragraphs 6.2 and 6.3 of NACE Standard RP 0169 when complied with separately or collectively, will indicate adequate cathodic protection has been achieved for steel pipe.

i) A negative voltage of not less than 0.85 volts measured between the structure surface, with protective current applied, and a saturated copper-copper sulfate reference electrode which is in contact with earth electrolyte. Note: Other reference electrodes may be used; however the reference potential will be different depending upon the type of electrode chosen.

ii) A net protective current from the electrolyte into the structure surface as measured by an earth current technique applied to predetermined current discharge (anodic) points of the structure.

iii) A minimum negative (cathodic) polarization voltage shift of 100 millivolts measured between the structure surface and a stable reference electrode contacting the electrolyte. This polarization voltage shift may be determined by interrupting the protective current and measuring the polarization decay. When the current is initially interrupted, an immediate voltage shift will occur. The voltage reading after the immediate shift shall be used as the base reading from which to measure polarization decay.

(b) When pipe-to-soil potential is measured with the electrode on the soil surface, the reading will be in error if there is an IR drop measurement error in the soil between the electrode and the structure. On poorly coated lines, IR drop may be significant. Where IR drop may be a problem, the electrode may be located nearer to the structure by boring a hole to place the electrode near the structure. If the structure is under the protection of a rectifier, the rectifier output may be interrupted and the polarized potential measured immediately after the rectifier is turned off. This will eliminate IR drop caused by the impressed current flow but it will not eliminate the drop caused by galvanic cells or stray currents. IR drop may be compensated for by maintaining the pipe-to-soil potential high enough to compensate for IR drop. Another method is to use a current interrupted close interval survey. The use of matched electrodes on either side of the pipe may also be used.

(c) The cathodic protection criteria to be used for a segment of pipeline should be established and once established, not changed except for technical reasons. The TM will make this determination. If the criteria for cathodic protection are changed, the reasons for the change must be documented.

402 EXTERNAL CORROSION CONTROL

402.1 General

(a) External corrosion control is achieved by the collective or singular use of protective coatings, galvanic anodes, or impressed current systems. The type of system chosen for buried structures will need to provide sufficient protective current to meet at least one of the criteria listed in § 401 for achieving cathodic protection; provide an economic design life commensurate with the life of the structure being protected; and, minimize interference to adjacent structures.

(b) There are many factors which need to be considered in the selection and design of a cathodic protection system such as:

i) Type of coating and condition.
ii) Current requirements.
iii) Operating experience with similar systems.
iv) Availability of power.
v) Economics of impressed current versus galvanic anode system.
vi) Proximity of foreign structures and physical space available for installing the system.

402.2 Pipe Coating

(a) All pipe used for new installations and for replacement purposes shall be protected by an external protective coating applied in accordance with CTC-T's specification, or CTC-T approved coating system, for the protective coating system chosen. Joints, fittings, tie-ins and field joints will be coated with material which is compatible with the pipe coating and in accordance with the NAPCA, API and NACE recommended procedure for the coating system used. Upon completion of the field joints, the pipe coating will be inspected with an electric holiday detector before the pipe is lowered in place. The voltage setting on the detector will be in accordance with that recommended for the coating system being used.

(b) If pipe is installed by boring, driving, or other similar methods, steps must be taken to prevent

damage to the pipe protective coating during installation. Protection may be provided by concrete coating, extra coating thickness or other similar means.

402.3 Test Stations

(a) Test stations for determining the adequacy of cathodic protection shall be installed at suitable intervals. Test stations will also be installed at all cased crossings and foreign pipeline crossings. See Appendix 400A - Corrosion Standards and Forms for test station installation details. The test lead wires shall be attached to the pipe using the Thermoweld or Cadweld process (maximum charge - 15 gm cartridge) in a manner that will prevent stress concentration on the pipe. Test stations for underwater applications may be installed using a mechanical clamp. Pipe coating removed for the installation of test leads shall be repaired with a material that is compatible with the existing pipe coating and the insulation on the test lead. Spliced test leads will not be permitted.

402.4 Insulating Devices

(a) Insulating devices, such as insulating flanges and unions and casing spacers, will be used to isolate parts of the system for cathodic protection purposes. Typical locations for the installation of insulating devices include but are not limited to:

i) Points where system ownership changes.
ii) Junction of main line piping and station piping.
iii) Where pipe passes through reinforced concrete.
iv) Points where electrical conduit is connected to a device attached to the pipeline.
v) Pipe supports.
vi) Where more than one type of cathodic protection system is used.
vii) Where it may help in controlling stray earth currents.
viii) Cased crossings (casing spacers).
ix) Risers on offshore platforms

(b) Insulating devices shall be installed and maintained in accordance with NACE Standard R P-02-86.

402.5 Stray Current Interference

(a) Other operator cathodic protection systems may adversely affect CTC-T's corrosion protection system. CTC-T has established liaison with other pipeline corrosion personnel and has submitted an application to become a member of the Ohio Corrosion Committee, the local corrosion coordinating council. For new construction, the system designer will take this into consideration so as to minimize cathodic protection interference. Rectifier ground bed placement near a foreign structure may be harmful and this needs to be carefully considered when selecting the ground bed location. Interference also occurs at locations where two or more pipelines cross; where they are parallel to each other; near HVDC transmission systems; near locations where D.C. welding operations are taking place.

(b) Right-of-way inspections and the annual pipe-to-soil survey will be utilized to determine possible sources of interference current on existing systems. During the conduct of the inspection, personnel should be aware of electrical or physical conditions which could indicate

(c) Results of the five year surveys shall be recorded on a form similar to the one contained in Appendix 400A - Corrosion Standards and Forms. The completed record will be forwarded to the CTC-T file room as soon as practicable after the survey has been completed. A file is maintained for the five-year bare line survey data. When supplemental galvanic anodes are needed, the CPT will prepare plans and recommendations for remedial action.

403.6 Test Leads

(a) During the annual survey, test lead stations shall be inspected to be sure the test leads are adequately protected from damage and are working properly. If test lead ends are installed inside a box, check the cover and gasket to be sure both are serviceable, all screws are in place and that leads are not shorted to each other. If the test leads are terminated on a terminal strip, be sure screws are tight. Coat the connections with a light coating of silicone lubricant. Leads connected to casing at road crossings must be isolated from the carrier pipe test lead. Damaged test leads will be replaced or repaired prior to the next inspection cycle subject to ROW considerations and site conditions.

403.7 Above Ground Piping

(a) All above ground piping shall be inspected at least once every 3 calendar years, but with intervals not exceeding 39 months. During the inspection, special attention should be given to pipe:

i) at air-to-soil interface, including pipe located within vaults;
ii) under thermal insulation;
iii) under disbonded coating;
iv) at pipe supports;
v) in splash zones;
vi) and at deck penetrations.

The piping shall be cleaned, coated or jacketed with material suitable for the prevention of atmospheric corrosion. If the piping is painted or coated, the condition of the coating/ paint will be noted. If the coating is deteriorated, wire brush pipe surface and paint/coat as needed. If atmospheric corrosion is detected, it will be reported to the TM. If the pits are sufficiently deep enough to reduce the strength of the pipe for the normal operating pressure, the pipe will either be sleeved, replaced, or the operating pressure will be reduced commensurate with the remaining pipe wall thickness. Refer to Appendix 200A for Safety-Related Condition reporting requirements. Remediation shall be completed by the next inspection cycle.

403.8 Station and Tank Farm Piping and Tanks

(a) Buried piping at pump stations and tank farms as well as tankage will be electrically inspected following the procedure listed for Sections 403.4 (for coated piping) and 403.5 (for bare piping) in this manual. Supplementary cathodic protection shall be installed based on the results of the annual survey and inspection. Tanks equipped with non-steel bottoms or tanks sitting on well drained concrete pads will not need to be electrically inspected. A record of each inspection shall be made and forwarded to the TM as soon as practicable after completion of the inspection.

(b) The breakout tank 30-3 is inspected according to an ongoing aboveground tank bottom inspection program. The breakout tank was retrofitted with a dual-bottom (with leak detection) and tank bottom cathodic protection prior to October 2, 2000. Tell-tale valves in the interstitial space are checked on at least on a monthly basis. The tank bottom cathodic protection system has failed to operate as intended since its installation. Since tank inspection measures are in place, compliance with API 651 is not necessary for the safety of the tank.

403.9 Bonds

(a) Critical bonds installed to mitigate interference shall be tested six times each calendar year at intervals not to exceed 2.5 months. A critical bond is defined as a bond in which one ampere or more of cathodic protection current flows. Non-critical bonds will be inspected at least once each calendar year not to exceed 15 months.

(b) A record of each interference bond shall be made at the time the bond is installed.

(c) Bonds shall be checked by measuring the current flowing to/from each pipeline. The current readings will be compared to the current readings recorded at the time of the bond installation taking into account soil conditions, i.e., dryness. Corrective action, if needed, should be completed before the next inspection.

(d) A record of each bond inspection shall be made and forwarded to the TM as soon as practicable after completion of the inspection. See Appendix 400A for the form to be used for bond inspections.

403.10 CP System Remediation

(a) Cathodic protection system deficiencies shall be remediated by the next inspection interval, but not before 3 months elapsed between inspections, subject to ROW considerations, site conditions, and § 403.8(b).

404 INSPECTION OF BURIED PIPE FOR CORROSION

(a) When buried piping is exposed, it shall be inspected for any evidence of external corrosion. Do not remove pipe coating for purposes of this inspection if the coating is in good condition and bonded to the pipe. If active corrosion pitting is found, excavation shall continue to determine the extent and limits of the corrosion. Determine if the corrosion is localized or general (See Sections 628 and 629 of this manual). Complete a CTC-T and forward to the TM. See Figure 404 - 1 for record handling procedures.

(b) The extent of corrosion pitting shall be sketched to indicate the pattern size and pit depths. Before measurements are made, the pipe shall be cleaned to bare metal. See Figure 5-1 in § 500 in this manual for a typical drawing.

EXERCISE CAUTION IF THE CORROSION IS EXTENSIVE AND THE LINE IS PRESSURIZED.

(c) If severe corrosion pitting is located, immediate steps will be taken by the supervisor in charge

500 SYSTEM OPERATIONS

500.1 General

(a) This manual covers the operation of CTC-Toledo's Pipeline System.

(b) This section of the manual describes normal operating procedures, procedures for dealing with abnormal operations, planned start-ups and shutdowns, and system surveillance.

(c) The TM will review the responses of personnel to determine the effectiveness of the operation procedures. If any deficiencies are found in the procedures for handling normal operations, the System Operations Manual must be revised. The TM is responsible for ensuring that the System Operations Manual is revised.

501 MAXIMUM OPERATING PRESSURES

501.1 Toledo 6" Pipeline

(a) The MOP is 344 psig based on the minimum hydrostatic test pressure of 430 psig.

502 SYSTEM SURVEILLANCE

502.1 Toledo Pipeline

(a) Line checks with Buckeye Pipeline and Sunoco Logistics are made every two hours. Other surveillance includes visual inspections by operations personnel.

503 SCHEDULING

(a) The Terminal Superintendent is responsible for scheduling the operation of this pipeline.

504 CONTROLLING

(a) The Gauger monitors the operation of this system including making line checks and starting the pumping units.

505 FLOATING ROOF BREAKOUT TANKS

505.1 General

(a) The principal hazard associated with the storage of flammable liquids is the accidental release of the liquid, or its vapor, into the surrounding environment. Transfer operations are the most hazardous time for using a storage tank. Therefore, tank transfers require strict adherence to prescribed safety practices.

(b) Open top floating roof tanks and cone roof tanks with internal floating roofs are widely used for storing lighter, more volatile liquids because of vapor conservation and environmental

iii) In instances, such as when a tank is taken out of service, the creation of a vapor space is unavoidable. However, the hazards of refilling are minimized by incorporating the following precautions into the established operating procedures:

- Never fill the tank when there is severe thunderstorm activity in the area.
- Check the immediate vicinity of the tank for potential sources of ignition.
- Prohibit personnel access onto the tank until the vapors have had a reasonable chance to dissipate. Never allow personnel on a tank during receipt of product.
- Minimize vapor generation by filling the tank at a slow rate until the floating roof/internal pan is refloated.
- Monitor the atmosphere at ground level around the tank using an explosiometer. If the vapors reach 10% LEL (Lower Explosive Limit) at any time, stop filling the tank immediately.

505.4 Tank Roof Drains

(a) Refer to the system Operation Manual for tank roof drain operating procedures for a specific facility. It is the responsibility of the Terminal Operator to periodically inspect and monitor for product leakage during their daily activities at the facility.

(b) When a tank is removed from service for repairs, inspect and pressure test the tank roof drain hose.

(c) Check the tank roof drain valves and tank roof check valves for proper operation annually.

505.5 Tank Dike Drains

(a) It is the responsibility of the Tank Farm Gauger to periodically inspect and monitor for product leakage during daily activities at the facility.

(b) When a tank is removed form service for repairs, inspect and pressure test the tank roof drain hose.

(c) Check the tank roof drain and tank roof check valves for proper operation annually.

505.6 Tank Inspection

(a) In-service breakout tanks shall be visually inspected monthly. The inspections shall include, but not be limited to, the general conditions of:

i) Breather or vents on top of each tank
ii) The seal around the floating top
iii) Levees around each tank
iv) Outside shell
v) Stairway and man walks
vi) Gauge holes
vii) Hatches
viii) Tank roof

ix) Product in interstitial tank floor drain discharge

(b) In-service breakout tanks shall be inspected in accordance with Section 6 of API 653 at least once a calendar year at intervals not exceeding fifteen months.

(c) Tank inspection report shall be completed for § 505.6(b) and submitted to the TM. The TM will use this information to schedule any maintenance work indicated necessary by the inspection.

506 METER PROCEDURES

(a) These systems depend on tank gauge readings for volume determination.

507 STARTUP PROCEDURE

(a) Visually inspect the pump and driver to be sure that they are ready for operation.

(b) Coordinate pump switching with the Terminal Operator.

(c) Check all lubricating systems for proper oil levels.

(d) Check cabling system for proper line-up and circulation if it is provided.

(e) Check all safety devices.

(f) Check for removal of all blinds on the suction and discharge side of the pump selected for transfer operations.

(g) Check for proper lubrication of pump and driver. Fill seal oil pot with hydraulic oil if pump has a double seal.

(h) If provided, line up cooling water to pump.

(i) Open pump high point vent to begin venting air/vapor.

(j) Slightly open the suction valve and allow pump case to pressure slowly to remove air/vapor. Close high point vent after air/vapor has been purged.

(k) Open the case drain to determine if water is present and flow has started. It should only be slightly opened and closed immediately when all water is drained and flow is confirmed.

(l) Fully open suction valve.

(m) Check all safety devices to be sure they are armed (minimum flow shutdown and/or a minimum flow bypass).

(n) Close driver main breaker.

ACTION: If the Terminal Operator observes a control system failure, shut the station down. If the Terminal Operator observes pressure is above the allowable value and the unit is still operating, shut the unit down at once. Request the TM to have the control system repaired.

(e) **Unintended shutdown (system or station):** The pumping units are designed to fail safe; that is, shut down before the system design limits or 100% of MOP is exceeded.

ACTION: In case a unit or station unintentionally shuts down, notify the Terminal Operator to investigate and determine the reason for the shut down. DO not restart the station or system until the cause has been determined and corrected.

(f) **Loss of Communications:**

ACTION: At the first indication of loss of communications, notify the communications technician. Call out operations personnel to either attend the affected location(s) or shut them down until communications has been restored.

(g) **Malfunction of a Component:** Failure of certain components of personnel errors may result in a hazard to property or to personnel. Failure of some components may not pose an immediate hazard, but could lead to a hazardous condition should other components fail or malfunction.

ACTION: When such a failure is detected, notify the TM and shut the system down unless safe operations can be continues by monitoring or attending the locations where the component failure or personnel error occurred. The TM should be notified and concur with plans to continue to operate under such conditions until repairs can be made. In the case of personnel error, additional training for the person making the error may be needed.

(h) **Operation of any safety device:** Safety devices are instruments or controls that will shutdown equipment in case the safety device set point is exceeded. Safety devices may also be used to sound an alarm in case of non-operating conditions which could pose a hazard to property or personnel, such as fire or unauthorized entry.

ACTION: If an operating safety device operates and is designed to alarm only, the operator should take action based on the type of alarm and notify the TM. IF the safety device shuts down equipment, check and identify the cause for the shutdown before resuming operations and notify the TM. The TM will arrange to have system integrity checked as necessary before resuming operations.

513.1 Restart of system after abnormal operation

(a) After the cause of the abnormal operation has been identified and corrected and system integrity verified at sufficient key locations, the system will be restarted following established start-up procedures. The Terminal Operator will closely monitor all pressures, flow rates, and volumes into and out of the system until the pipeline is stabilized and again operating normally. The Terminal Operator will notify the TM who will call out other personnel as necessary to monitor the system and assure proper operation during initial start-up including an aerial patrol of the system.

513.2 Abnormal Operation Notification Procedure and Follow-up Action

(a) The TM is to be notified of all abnormal operating conditions. If further study into the cause of the correction of the condition which caused the abnormal operation is necessary, the TM will contact the ECM Group for assistance. If the abnormal operating condition has caused damage to the system, such as a leak; then the condition is reported following the procedures listed in the Regulatory Compliance manual.

513.3 Abnormal Operations Review

(a) The TM will review the responses of personnel to determine the effectiveness of the procedures controlling abnormal operations. The following guidelines will be used to perform this review:

i) Determine Response:
- Was the abnormal operation recognized promptly by the controllers or station operators?
- Was the condition analyzed; then proper and decisive action taken?

ii) Was the cause determined to be:
- Personnel error
- Equipment failure or malfunction
- Pipeline break
- Loss of communications
- Operation of a safety device or devices
- Other

iii) After normal operations were restored, was the system checked for integrity at sufficient key locations and safe operation?

iv) Was pressure and flow control equipment checked for any irregularities, and corrected if required?

v) Were all responsible personnel notified?

vi) If a safety-related condition report is required, has it been filed?

(b) If any deficiencies are found in the procedures for handling abnormal operations, the System Operations Manual must be updated. The TM is responsible for ensuring that the System Operations Manual is updated.

(c) If the operating pressure of the pipeline system exceeds the MOP of the pipeline plus build-up allowed for the operation of pressure limiting or control devices, a safety-related condition report may be required. The TM will make this determination and if a report is required, take action to file the report. See Appendix 300A of this manual for safety-related condition reporting requirements.

514 Scraper and Sphere Facilities

(a) Prior to use, the scraper or sphere facilities on each end of the system will be equipped with:

i) Pressure indicating devices to ensure pressure has been relieved prior to opening the barrel, and

ii) Barrels will be equipped with end closures that have pressure interlocks to prevent insertion or removal of scrapers or spheres if pressure has not been relieved in the barrel.

- Solids traveling at high velocity in a pipe.
- Overhead power lines.

iii) Heated Materials

- Glowing metals, cinders, and filaments.
- Electric lights.

iv) Materials that can ignite spontaneously in the presence of a gas-air mixture.

(f) Determine the full extent of the spill. If the spilled liquid is spreading to a waterway or an area which leads to a waterway, locate the head end of the liquid and construct an earthen dam. If spill is into a stream carrying water, use a flume.

(g) Set up road blocks/barricades and block streets, if necessary.

(h) Close block valves as needed. Review the pipeline elevation profile on the Condensed Gate and Profile Maps to determine the appropriate block valves to close. Coordinate this decision with the control center and advise which valves are closed and at what time closed. Where possible, use the pipeline elevation to drain liquid away from the leak site.

602.1 Initial Assessment Check List

(a) Use the Initial Assessment Check List shown in Figure 602 - 1 as an aid to prevent overlooking items that need to be handled during an emergency.

603 PLANNING

603.1 General

(a) Pipeline repair and maintenance work shall be done safely. Careful planning, personnel training, and supervision is required throughout the conduct of the work. Every supervisor requires teamwork and cooperation from and with his subordinates. The use of inexperienced personnel for leak repairs will be avoided; however, if it is necessary to utilize inexperienced personnel, additional briefing will be provided to these personnel prior to beginning repairs. If the designated supervisor must be away from the job, an experienced responsible employee will be assigned to act as the temporary supervisor during the supervisor's absence. If it appears the repair time will be extensive, consideration needs to be given to scheduling crew rest. Whenever possible, schedules should be based on 12 hours on duty and 12 hours off duty.

603.2 Tasks to be Completed Prior to any Excavations or Repairs

(a) The Incident Commander will:

i) Identify the nearest available fire department and medical assistance and establish a means for communication, should their services be needed. If the leak is large or in an area of high public exposure, the Incident Commander may wish to consider having the local fire department respond to the site in a standby capacity.

ii) Assign a Safety Monitor for the leak location. See § 600.2 (d), 603.2 (b) and (c) for

responsibilities.

iii) With the assistance of the Safety Monitor, establish a command post upwind in a safe and secure location.

iv) See that a written or recorded event log is maintained (can be done by the Incident Commander or be assigned to someone else). Key items to be noted should include, but are not limited to:

- Time notified of leak;
- Arrival time at leak site;
- Evacuations;
- Fires;
- Injuries;
- System or segment shutdown;
- Valve closures;
- Purge timing, if applicable; and,
- Government agency, one call, and pipeline management notifications.

v) Establish communications with the TM and arrange for appropriate government agency notification. Additional support (toxicologists, wildlife experts, public affairs, etc.) is available and should be requested as needed.

vi) Contact the "one call" system prior to excavation at the leak location. If a "one call" system does not exist, or if contact with system officials cannot be made (weekends or after hours), notify any known utility or foreign pipeline owners so they can locate their lines. In areas where "one call" does exist but membership is not mandatory, additional notifications may be necessary. If the utility or foreign pipeline owner is not readily available to locate their cable or line and an emergency condition exists; proceed with any needed excavation using extreme caution.

vii) Discuss with the work crew prior to moving any personnel or equipment into the area immediately around the leak for excavation or repair purposes the following:

- Safety precautions pertaining to the planned work;
- Pertinent operating conditions such as pressure, isolation, type of product in the line, timing of displacement, etc.
- If there are any significant changes in operating conditions, procedures or plans, work will be halted and additional discussions held.

(b) The Safety Monitor is responsible to determine when the following items shall apply:

i) Individuals **directly** involved with the leak repair, including the backhoe operator, are wearing Nomex or equivalent fire resistant clothing. A supply of coveralls in various sizes should be carried in the spill response trailers or other vehicles that normally respond to emergencies so they are readily available at the leak location. The use of fire resistant clothing at a leak site takes priority over the use of chemical resistant clothing because fire presents the greater hazard. Polyester or nylon clothing should not be worn in the hazard zone as it may create a static charge.

ii) Appropriate personal protective equipment, such as, fresh air breathing apparatus, half mask respirators, goggles, welding hoods, and rescue harness and line are on site, and readily available as needed. Goggles or other appropriate eye protection, as well as hearing

protection, should also be readily available for use around air blowers, if necessary.

iii) Adequate lighting, approved for use in flammable atmospheres, is available as needed. Lighting should be placed outside the hazard zone whenever possible.

iv) First aid and burn kits are readily available.

v) Fire blankets for suppression of clothing fires are readily available.

vi) Only radios designed and approved for use in flammable atmospheres must be used in the hazard zone.

(c) The Safety Monitor will:

i) Establish a general "hazard zone" around the area of the leak using a gas detection instrument (any location exceeding 10% LFL).

ii) Install portable windsocks or streamers to assist in monitoring for possible changes in wind direction.

iii) Ensure that only those individuals directly involved with the leak repair are allowed to enter or be near the hazard zone. Those individuals must be wearing appropriate personal protective equipment described in § 603.2 (b).

iv) Place several fire extinguishers (20 lb ABC) upwind and around the boundary of the hazard zone. If sufficient manpower is at the scene, at least one extinguisher should be manned when employees are performing work within the hazard zone. For larger leaks, consideration should also be given to having a 150 lb. dry chemical extinguisher on site (mounted in a pickup bed) to provide an extra measure of safety.

v) Ensure subsurface soil conditions are examined **outside** the hazard zone where the backhoe will be placed for digging out the leak or for stripping the line back for a cutout. This can be done using a hand auger, probe or shovel. The backhoe bucket may also be used to probe subsurface soil conditions. This must be done with the boom stretched forward, potholing ahead of the area where the unit will be placed for final digging purposes. A gas detector will be used to determine if hydrocarbons are present since vapors and liquid may have migrated laterally underground, but not evident on the surface.

vi) Direct placement of air blowers or ventilators, suitable for operation in a flammable atmosphere, near the backhoe to assist in the control and dispersion of vapors. Units not suitable for use in flammable atmospheres shall be placed outside the hazard zone and the air directed to the leak area through a flexible hose. Except for the immediate area directly around the source of the leak, the hazard zone should be controlled such that the vapor to air mixture remains well below that needed for ignition. At NO time will employees be allowed in the hazard zone when the atmosphere is at or greater than 50% of the LFL. Continuous monitoring must be performed since conditions can change quickly.

vii) Ensure all motorized and other equipment used for leak repair is placed upwind out of the hazard zone. Under NO circumstances shall any powered equipment (backhoes, generators, etc.) be operated inside the hazard zone except that the hydraulic arm and bucket of a backhoe may extend into a hazard zone for excavating or lifting. In no case shall the engine compartment, cab area or any other area or part containing any electrical contacts, wiring or other potential ignition sources, be permitted inside the hazard zone.

viii) Ensure exposure monitoring is performed as appropriate (See § 606) and ensure results are properly recorded in the event log.

ix) Ensure that excavated spoils that may contain hydrocarbon liquids or vapor are placed downwind, whenever possible, or handled in a manner that prohibits migration of the vapors back into the work area. Place spoils on plastic sheeting whenever possible to help prevent further migration of liquids to the ground.

635.2 Testing of Components

(a) Each hydrostatic test must test all pipe and attached fittings, including components, unless the component is the only item being replaced or added to the pipeline system need not be hydrostatically tested if the manufacturer certifies that either of the following occurred.

i) The component was hydrostatically tested at the factory; or
ii) The component was manufactured under a quality control system that ensures each component is at least equal in strength to a prototype that was hydrostatically tested at the factory.

635.3 Test Medium

(a) Except for the following, water must be used as the test medium.

i) Except for offshore pipelines, liquid petroleum that does not vaporize rapidly may be used as the test medium if:
ii) The entire pipeline section under test is outside of cities and other populated areas;
iii) Each building within 300 feet of the test section is unoccupied while the test pressure is equal to or greater than a pressure which produced a hoop stress of 50 percent of specified minimum yield strength;
iv) The test section is kept under surveillance by regular patrols during the test; and
v) Continuous communication is maintained along entire test section.

(b) In some locations, it may be necessary to obtain approval before disposing of test water. When dewatering a pipeline, exercise care to prevent soil erosion when onshore.

635.4 Testing of Tie-Ins

(a) Pipe associated with tie-ins must be hydrostatically tested, either with the section to be tied in or separately.

635.5 Records

(a) A written record must be made of each hydrostatic test required by this subpart, and the record of the latest test must be retained as long as the facility tested is in use.

(b) The record must include:

i) The pressure recording charts;
ii) Test instrument calibration data;
iii) The name of the operator, the name of the person responsible for making the test, and the name of the test company used; if any;
iv) The date and time of the test;
v) The minimum test pressure;
vi) The test medium used;
vii) A description of the facility tested and the test apparatus;
viii) An explanation of any pressure discontinuities, including test failures, that appear on the pressure recording charts; and

ix) Where elevation differences in the section under test exceed 100 feet, a profile of the pipeline that shows the elevation and test sites over the entire length of the test section.

x) Temperature of the test medium or pipe during the test period.

(c) Hydrostatic test records are maintained on file at the Terminal Office.

636 DISPOSAL OF HYDROSTATIC TEST WATER

(a) Refer to Distribution Environmental Group for instructions on test water disposal.

637 OVERPRESSURE PROTECTION

(a) High pressure shutdown switches and pressure control valves constitute the overpressure protection system. Refer to Appendix 400 B in each system's Operations & Maintenance Manual for high discharge pressure switch settings.

(b) Overpressure safety devices used on pipelines which transport HVL (LPG System) are to be inspected at least twice each calendar year at intervals not exceeding 7.5 months.

(c) The results of these inspections are recorded and maintained for at least two years or until the next inspection or test is performed, whichever is longer. A copy of the form used to record the results of the inspection is contained in the Regulatory Compliance Manual.

(d) Overpressure devices shall be tested by applying a known pressure to determine if the device is functioning properly. The device is to be adjusted as necessary so that it operates at the set point. If you are unable to adjust the device, or if it is otherwise defective or not in good mechanical condition, it must be replaced.

(e) Relief valves must either be capacity tested or calculations shall be completed to determine if the relief valve capacity is adequate for the system under protection.