

Vancouver Energy
Operations Facility Oil Handling Manual
EFSEC Application for Site Certification No. 2013-01
Docket No. EF131590



Appendix H
General Inspection, Maintenance,
and Product Control Procedures



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General Inspection, Maintenance, and Product Control Procedures

Daily Inspections and Product Inventory Control Documentation

1. Gauge tanks and record temperature and meter readings on all tanks. While performing gauging duties, visually inspect tanks, product lines, pumps, valves, and other equipment. Complete Daily Gauging and Terminal Inspection Sheet.
2. Input gauge, temperature, and meter data into the computer control system.
3. Input receipts or deliveries into the computer.
4. Distribute bills of lading to the appropriate offices.
5. Generate daily delivery and inventory report. Compare computer calculations with manual totals on delivery sheet.
6. Monitor schedule for pending receipts.
7. Input meter readings into the computer system, generate meter report. Distribute appropriate copies. Record copy to terminal file.
8. Compare movement and inventory data with daily delivery information to verify that inventories are accurate.
9. Send daily reports to appropriate offices and file one report locally.

Weekly Procedures

1. Back up computer system on disk and put into a secured storage.
2. Inspect any Dangerous (Hazardous) Waste accumulation drum(s), record inspection results on posted inspection form.

Monthly Procedures

1. Take physical inventory by hand gauging all tanks.
2. Inspect tank roofs and rooftop equipment while doing hand gauging.
3. Check all valve packing for leaks. Correct per Manufacturer's Service Manual. Stroke each valve five turns to assure operational readiness.
4. Check all flanges and fittings for leaks and repair/replace as necessary.
5. Complete wharfage report. Send copy to Port of Vancouver.
6. Complete terminal exchange reports and balance with movement and inventory report.
7. Monitor cathodic protection readings and record in log.
8. Hold safety meeting.
9. Conduct SPCC Monthly Inspection of area and record in log.

Quarterly Procedures and Preventative Maintenance

1. Conduct safety inspection and record in log.
2. Perform MVCU maintenance and adjustments (contract maintenance).
3. Pump and motor inspection and maintenance (see following guidelines).

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Annual Procedures

1. Test foam fire protection system(s) (contract maintenance and inspection).
2. Test back flow preventor valve (contract maintenance and inspection).
3. Test fire extinguishers (contract maintenance and inspection).
4. Pressure test dock hose, shoreline and all underground product lines for leaks per Coast Guard pressure requirements. Stencil latest hydrotest date on hose and pipes.
5. Coast Guard dock inspection (scheduled by Coast Guard).
6. Port of Vancouver facility environmental inspection (scheduled by Port of Vancouver).

Quarterly Pump and Motor Inspection and Maintenance Checks

1. Inspect Pumps and Motors for Leaks and Proper Lube Oil Level.
 - a. Mechanical Seals: If seal is leaking, replace per manufacturers recommendations.
 - b. Bolted Joints: Inspect case, seal flush lines, and suction and discharge connections for leakage. Tighten bolts or replace gaskets as required.
 - c. Lube Oil Leaks: Inspect motor and pump bearings for oil leaks and proper oil level.
2. Pump and Motor Noise and Vibration Checks
 - a. Roller Bearings: Damaged bearings may emit a high-pitched squealing or a lower pitched growling noise. Bearing housings may get warm or even hot to touch. Roller bearings with these indications are either worn or damaged and should be replaced.
 - b. Cavitation: Cavitation may sound like rocks in the pump and will produce erratic discharge pressure. Prolonged cavitation will result in damage to the impeller and possible bearing damage. Throttling the discharge of the pump or increasing pressure to the suction can reduce cavitation. A plugged suction screen will also cause cavitation.
 - c. High Overall Vibration: Excessive vibration may be caused by cavitation, bearing damage, misalignment, bent shafts, looseness, or out of balance. Pumps and motors must not be run with excessive vibrations. If vibration is occurring, check each of the above possible causes and correct.
3. High Temperature at Pumps and Motors
 - a. Pump Casing High Temperature: High temperature of the pump case may be caused by low flow through the pump. Check for blocked or throttled discharge and signs of cavitation. High temperatures may be evident by seal or gasket failure and/or a vapor lock.
 - b. Pump and Motor Bearing High Temperature: High temperature in pumps or motor bearings usually is caused by loss of cooling (no product in line) or damaged bearings. Check for both if pump or motors are running hot.
 - c. Motor Frame: High temperatures can be caused by overload on the motor. If this is suspected, contact electrician and check amperage draw against nameplate ratings.
4. Fittings and Mount Looseness at Pumps and Motors
 - a. Normal operating conditions can loosen fittings with time. Check all guards, motor and pump base plates, mounting bolts, and all appurtenances for bolt tightness. Replace bolts, washers, nuts, etc. as appropriate.
5. External Corrosion at Pumps and Motors
 - a. Exposed pumps and motors, valves and flanges, and pipe work can corrode. Check exposed metal in base plates as well as equipment for signs of corrosion. Paint, re-enforce or replace as needed.

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