

CONTINGENCY PLAN
Township of Tay - QMS Operational Plan

Township of Tay Water Treatment & Distribution Systems

Element 8.9 – Risk Assessment Outcomes**Problem: Chemical Pump Breakdown Procedure**

- Always use the proper PPE when conducting the below maintenance.
- Periods of low distribution pressure (less than 20 psi) must be reported to the (M.O.E.C.C.) Ministry of the Environment and Climate Change.

Tay Area DWS Breakdown**Water Production Chemical System Failure**

- Cl₂ and coagulant pumps run on a lead/lag system. When lead pump faults, the lag pump starts. If both pumps fault, the low lift production will cease and an alarm will notify the on-call operator.
- Isolate the faulty pump by opening the chemical system screen and selecting the corresponding pump. Change pump control mode to manual and ensure pump is stopped; unplug pump if required.
- Notify ORO and/or Lead Hand.
- Close chemical inlet and outlet valves before working on the pump.
- When pump is repaired and ready for production, open chemical inlet and outlet and prime the system manually before switching the control mode to auto.

Maintenance Clean - Chemical System Failure

- Chemical pumps for CIP and EFM maintenance cleans are high volume and air driven.
- If pump malfunctions from the PALL main screen, select CHEM tab then select FAULTY PUMP and DISABLE.
- Notify ORO and/or Lead Hand.
- Close chemical inlet and outlet valves and unplug pump if necessary.
- Remove airline to pump from solenoid.
- Repair and test.
- When pump is repaired and ready for production, open chemical inlet and outlet valves, re-attach airline to solenoid and prime the system before switching control mode to auto.

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Treatment Plant Critical Failure

In the event that a mechanical portion of one of the package plants has failed, (examples include: pneumatic valve failure, solenoid valve failure, programmable controller failure, etc.) and is in need of major repair, place that particular plant in "MANUAL OFF". This will allow plant production to continue while the repair is conducted. Notify ORO and/or Lead Hand.

High Lift/Low Lift Pump Procedure

- Both high and low lift systems consist of 3 pumps with a duty 1, duty 2, duty 3 rotation.
- If a lift pump faults, the next duty pump inline will start automatically.
- Select faulted pump and change control from auto to manual.
- Open main disconnect for faulted pump and Lockout/Tagout.
- Notify ORO and/or Lead Hand.
- Once pump is repaired and tested, remove Lockout/Tagout and change pump control from Manual to Auto.

Rope DWS Breakdown**Hi-Lift/Low-Lift Pump Failure**

- Open disconnect for faulty pump and Lockout/Tagout.
- Place standby pump into service.
- Notify ORO and/or Lead Hand.

Coagulant Pump Failure

- Shut off corresponding train.
- Disconnect pump from power source and close chemical inlet/outlet valves.
- Repair pump and restore production, if possible.
- If pump cannot be repaired, advise ORO and/or Lead Hand and increase production of other train.

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Problem: Chemical Pump Breakdown Procedure

Booster Station Breakdown

Booster Pump Procedure

- Booster pump system consists of booster pumps with a duty rotation.
- If a lift pump faults, the next duty booster pump inline will start automatically.
- Select faulted pump and change control from auto to manual.
- Open main disconnect for faulted pump and Lockout/Tagout.
- Notify ORO and/or Lead Hand.
- Once pump is repaired and tested, remove Lockout/Tagout and change booster pump control from Manual to Auto.

Booster Stations and Rope DWS

Chemical System Failure (Surefeed System)

- If one of the two pumps fail, the Surefeed system will automatically switch to another pump.
- If both pumps fault, the Surefeed system will send out an alarm to the operator on-call.
- Disconnect faulted pump from power source.
- Close chemical inlet and outlet valves.
- Repair pump and restore production, if possible. If pump cannot be repaired, advise ORO and/or Lead Hand.