# **CLEAR BROMINE IOM GUIDELINES**

# \*\*\*WARNING\*\*\*

- Consult the chemical manufacturer's MSDS sheet for safe handling of BCDMH product.
- 2. Never inhale fumes or dust from the feeder or chemicals.
- 3. Wear protective clothing, safety eye wear and gloves when handling chemicals or servicing the feeder.
- 4. All feeders are hydrostatically pressure tested prior to shipment.
- 5. Never operate the feeder without pressure relief valve. Consult Neptune for more information.
- 6. To prevent unsafe build-up of gas or pressure in the feeder, make sure relief valve and feeder outlet is unrestricted and not blocked by valves of any kind. Make sure relief valve outlet is routed to a safe area.
- 7. Never add automated control valves downstream of the feeder.
- 8. Routinely clean the feeder and piping system components to assure they are free of fouling or anything that could prevent safe trouble-free operation.

# **Clear Bromine Feeder Installation Guidelines:**

These guidelines are recommended to achieve reliable long life of the feeder and the system in general. They in no way imply the elimination of all possible installation or other related system problems. The system designer should follow acceptable manufacturer recommendations and industry practices.

- Never use piping smaller than the outlet connection size of pressure relief valves and air relief valves. The outlets
  of these valves and the outlet piping can never have any device which can block, restrict, or shutoff the free flow
  of liquid and gas.
- The biggest single cause of failure in PVC threaded fittings and pipe is over-tightening. A standard practice that seems to work best is to use Teflon tape on the threads (2 to 5 wraps is sufficient). Tighten the fitting or piping "finger tight" and then turn another 1 to 2 turns. Tightening more than 2 turns past "finger tight" can introduce stresses that exceed the design strength of the fitting or pipe.
- Support and block the piping and fittings, especially at the inlet and discharge of the feeder to eliminate excessive stress as introduced from weight of components and system pressure.
- Minimize water hammer in the piping by removing entrapped air in the piping system especially at high points.
  Pressure surges can be generated by pump operation. Another source of pressure surges comes from
  instantaneous control valve closure. It is advisable to limit surge pressures by keeping flow velocity changes to 5
  fps or lower. Installing continuous air relief valves, pressure relief valves, pressure regulating valves (to help
  maintain constant system pressure regardless of flow rate), and surge tanks are ways the designer can keep
  water hammer to acceptable levels.
- Avoid mechanical stresses by incorporate expansion loops allowing the piping to expand and contract with changes in temperature.
- Minimize transmission of pump vibration to the piping system by use of suitable flex connections or couplings.

# **Clear Bromine Feeder Maintenance Guidelines:**

Opening the feeder:

- Turn off any pumps.
- Relieve system pressure so the gauge pressure inside the feeder is 0 psig.
- Close appropriate valves to keep system from filling the feeder.
- Open the feeder drain. Drain all the water and disconnect piping.
- Unscrew the feeder cover using the cover handles. Do <u>not</u> use a hammer. This will damage the feeder. Clean out feeder.

#### Closing the feeder:

- Close the feeder drain valve. Reconnect all piping. Fill with new Bromine tablets to the bottom of the tall strainer. Do not cover the strainer.
- Inspect the condition of the feeder and cover threads to assure cover turns easily. Clean threads if necessary.
- Inspect condition of the cover o-ring and replace if necessary.
- Inspect the condition of the o-ring mating surfaces making sure they are free of all debris. Clean and lubricate the o-ring and mating surface with silicon based lube (do <u>not</u> use anything but a silicon based lube).
- Thread cover onto the feeder and seal tightly (do <u>not</u> use a hammer).



