

DOCUMENT MANAGEMENT SYSTEM

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Doc# NSCS-M-P-7091-22
 Title: Polymer System
 Issue Dt: 04/20/2001
 Revision Dt: 07/23/2018 Review Interval: 12
 Cat: Quality Doc Type: SOP
 Auth:
 Desc: Polymer System
 Loc: Midwest - Utilities-Midwest - Plant Maintenance-Midwest-Gary Works

STEPS

Process Overview

System

Making Polymer Aging Tanks

Pumping Polymer

Switching Pump

Switching Day Tanks

PROCEDURES

The Polymer System is also known as coagulant aid, "CA". More accurately the chemical used is a flocculant. The system is made up of a bulk storage tank with mixer, two aging tanks with mixers, two feed pumps with a draw down cylinder, and a carrier water system.

The following is the basic system overview:

- The feed rate for these pumps will be a [REDACTED] setting on the pump micrometer as a guideline.
- The service water is added to the CA to aid in its delivery to the plant.
- The capacity of each aging tank is [REDACTED] gallons.

1. Close the tank feed valve leading to the suction piping of the pumps. You may have to use a ladder or step stool to access this.
2. Add approximately [REDACTED] of service water to the aging tank.
3. The aging tank has [REDACTED] per inch along the sidewall. Using this number, a level of approximately [REDACTED] above the discharge line is needed to add four hundred gallons of water. This also translates to filling the tank to just [REDACTED] top of the tank.
4. Turn the mixer on for the tank.
5. Manually measure [REDACTED] liters of CA from the bulk tank.
6. Slowly add the polymer to the water.
7. Let the solution mix for approximately ½ hour, then shut off the mixer.

1. Determine which pump will be used to deliver the CA to the system.
2. Determine which tank the polymer is to be pumped from.
3. Verify valving from tank to the pump and from the pump to the system. Verify all appropriate valves are either open or closed as required.
4. Turn the water on the system. Verify flow rate by opening or closing the inlet valve to the meter as required.
5. Turn the metering pump on.

To switch polymer pumps, turn off the pump in service. Switch all needed valves on pumps and aging tanks. Start desired pump. Verify with the draw down cylinder that the pump is feeding properly. Then switch back to the desired aging tank by opening the valve to the polymer aging tank, then closing the valve to the draw down cylinder.

To switch aging tanks, turn off the pump in service. Switch all needed valves and restart pump. Verify with the draw down cylinder that the pump is feeding properly. Then switch back to the desired aging tank by

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opening the valve to the polymer aging tank, then closing the valve to the draw down cylinder.

Corrective Actions

Notify the Manager if neither of the feed pumps will work. Polymer can be fed to the system by filling a five gallon bucket with diluted polymer from the aging tank, and feeding it directly into the mixing tank.