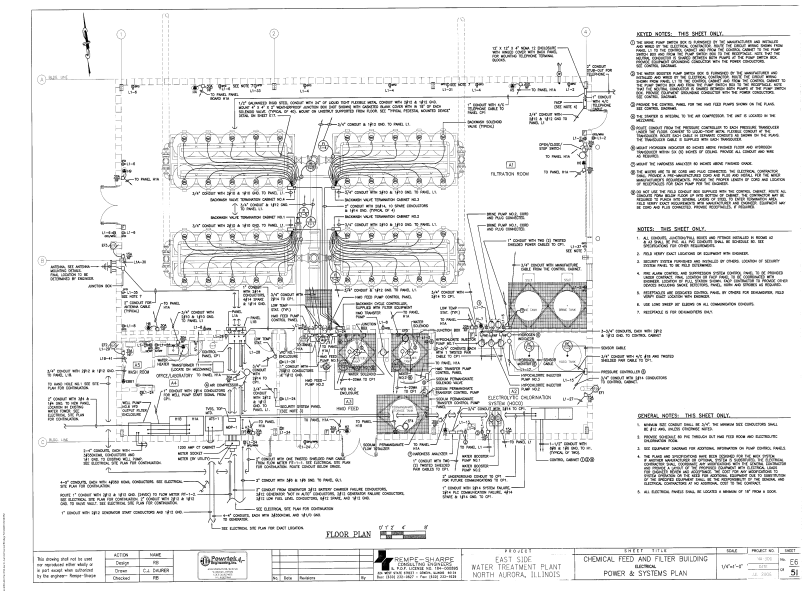
EAST WATER TREATMENT PLANT—NORTH AURORA



Water Treatment Plant for Radium Removal

Hydrous Magnesium Oxide Filters

Client: Village of North Aurora

The Village of North Aurora was required to provide Radium treatment of its water supply at both of its treatment plant sites. To reduce disruptions in the treatment facility and reduce pressure spikes during well start-up and shut-down, the Village required the installation of variable frequency drives for the well pumps.

Rempe-Sharpe:

- Researched and developed the ability of the existing submersible well pumps to be controlled by a variable frequency drive.
- Prepared model of water distribution system consisting of pipe lengths, pipe diameter, nodes (junctions of pipes), friction factors of pipes, elevations of nodes, and known inflows into system.
- Determined current Minimum, Average, and Maximum Daily Water Demands and calculated demand outflow at nodes.
- Determined normal operating water levels in the tanks .
- Ran model and compared results with known fire flow data and calibrated mode under various conditions .
- Prepared Distribution System Head Curves and pump curves for the various pumping rates and demand conditions.
- Determined the expected extreme conditions and selected the pumping equipment and “rpm” range required to meet conditions.
- Designed the drive to ramp the revolutions per minute from the minimum flow required by the pump manufacturer up to the rpm’s (flow rate) set by the operator.
- Prepared design drawings and specifications reflecting the most appropriate piping and equipment layout.
- Provided shop drawing reviews and construction related services.

The variable speed drive controller is located in the operating room of the treatment plant and provided the operator flexibility during the start-up of the plant to fine tune the treatment units and reduced the impact of water hammer on the treatment units and distribution system.

Construction Cost: $3,857,500

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