NTPC Telangana Power Project
Telangana, India

Q-SEP Model: Q-SEP® 6008
Total Q-SEP Membranes: 50 (25 x 2 trains)
Permeate Flow: 75m3/hr x 2
Application: Water Treatment Plant – Pre-treatment to RO

Project Background

NTPC, a Maharatan company since 2010, is India's largest energy conglomerate and since inception has established itself as the dominant power major with presence in the entire value chain of the power generation business.

NTPC had a requirement of a water treatment system to treat raw water for use in their process. Ultrafiltration was selected as the pretreatment of choice to the Reverse Osmosis (RO) plant. UF was required in the tertiary treatment to provide consistent product water with low silt density index (SDI) to safeguard the downstream RO unit from colloidal fouling.

QUA Solution

The OEM chose QUA's Q-SEP® hollow fiber UF membranes as the ultrafiltration solution for the project because of its higher flow per membrane compared to other UF membrane suppliers.

Q-SEP modules successfully met the plant's requirements due to their low fouling characteristics, uniform pore size distribution and large surface area which provided high operating efficiency and reliable operation. Due to its patented cloud point precipitation technology, which ensures higher flux rates, QUA was able to offer lesser number of modules compared to other manufacturers.

Prior to accepting QUA's membranes, NTPC did a thorough and stringent quality check on QUA membranes and QUA's manufacturing facility. And even though QUA was currently not on their approved vendor list for UF membranes, NTPC approved QUA because of the superior membrane quality, and because QUA is the only multinational with a manufacturing facility in India, providing excellent pre-sales engineering and post-sales service support.

The Q-SEP system at NTPC comprises two trains of 25 modules each. The system is designed to operate in the dead-end mode.

About QUA

QUA is an innovator of advanced membrane technologies that manufactures and provides filtration products to address the most demanding water challenges.

Q-SEP® Hollow Fiber Membranes

Q-SEP® hollow fiber UF modules contain membranes manufactured with QUA's innovative patented "Cloud Point Precipitation" method. This process ensures a high pore density along the length of the fiber and uniform pore size distribution in the membrane; 95% of the pores are of the size 0.02 micron. Q-SEP modules deliver superior performance characteristics and product water quality that surpass the quality from conventional UF modules. The uniform pore size distribution allows the membrane to produce water with a low silt density index (SDI), which leads to less frequent and easier cleaning of downstream RO membranes. In addition, the Q-SEP membranes provide an excellent rejection of bacteria and viruses.

Q-SEP UF membranes are made of a modified hydrophilic polyether sulfone (PES) material that offers high fiber strength and excellent low fouling characteristics, resulting in higher membrane productivity. These hollow fiber membranes operate under a low trans-membrane pressure in an inside-out flow configuration for superior performance. Applications of Q-SEP UF include pretreatment to RO systems (brackish and seawater applications), purification of surface and well water for potable applications, filtration of industrial water, and wastewater recycle and reuse.