

Procedure:

- Elements undergo a physical inspection to identify signs of external damage, telescoping, and visible foulants on the feed spacer.
- Each element is wet tested at standard conditions to compare permeate flow, differential pressure, and salt rejection against the membrane manufacturers specifications.
- If the pre-test data shows the element performance will not be enhanced with cleaning or may be damaged, the customer is notified. If the procedure stops here, the customer is charged only a nominal testing fee.
- Each element is cleaned in the OSCAR skid using a combination of RoClean and/or AvistaClean formulations.
- Membrane is post tested and the data normalized to confirm the performance improvement.
- A preservative can be added at the customers request if the elements are not being immediately re-installed into the system.
- Elements are sealed in a poly bag and packaged in a new box for transport. A copy of the pre and post test report is returned with the membranes.

OSCAR (Off-Site Cleaning and Restoration) is an intensive cleaning procedure developed by Avista Technologies. Special techniques, ideal cleaning conditions, and proprietary cleaners are used to restore spiral wound element flow and rejection properties.

Many plant operators find themselves unable to effectively clean membranes on-site for a variety of reasons. Problems include inadequate clean-in-place (CIP) equipment, lack of personnel, or restrictions related to cleaning discharge solutions. For those plants, OSCAR is the ideal solution to maximize the productive life of membranes.

Avista's high rate of success is primarily due to the use of customized equipment specifically designed to provide ideal flow rates, water temperature, and cleaning pressures. OSCAR pressure vessels accommodate a maximum of three standard 40" membranes. This means that the applied pressure necessary to obtain an optimum flow rate is significantly lower than that required to clean the six or seven membranes typically housed in on-site vessels.

Every element received for OSCAR is pretested, cleaned, and post tested to confirm the cleaning results. A pre and post test report is returned with every order so that operators can not only see the results of the clean, but also select specific membranes for re-install based on specific performance parameters. Elements are returned in sealed poly bags and new boxes for transport and storage.

OSCAR is available for both 4" and 8" elements and Avista's cleaning chemistry is compatible with all of the membranes supplied by the major manufacturers.

