NexoSolutions

Technical Information

Filtration Troubleshooting for Short On-Line Life

We believe that root-cause analytics, expert interpretation and process evaluation are vital to troubleshooting filtration problems. Nexo Solutions offers expertise and experience in a wide range of filtration applications and utilizes advanced techniques in order to troubleshoot and resolve process filtration inefficiencies. Our solutions include:

- On-Site Evaluations & Testing
- Operational Improvements
- Technical Training
- Equipment Evaluations
- Specialized Sampling & Analytics
- Gas and Liquid Performance Testing
- Process Stabilization & Optimization
- Advanced Modeling & Simulation

Root-Causes Impacting Short Filter Life

Short on-line life in a filter for the removal of suspended solids can be triggered by many reasons, and in some cases it is neither easy nor obvious to establish the root-cause without a comprehensive engineering evaluation (in lab and on-site).

Some of the main reasons for short filter life in filter are listed below.

1) Excess suspended solids in the inlet caused by:
   - High solids in the feed from upstream (upstream separators not working properly)
   - High corrosion rates in the unit where filtration is installed
   - High activated carbon fragmentation (if activated carbon bed is upstream of the filter)
   - Pigging of the line upstream (considerable solids sent downstream)
   - Variation in feed contaminants (slugs of high solids contents at specific times)
   - Additives used upstream (affecting clays, asphaltenes and waxes)
   - New process or wells being commissioned with considerable solids sent downstream
2) High filter element flux (flow/filter area)
3) Filter material incompatibility (chemical, mechanical or thermal) or incorrect media efficiency
4) Plastic solids such as asphaltenes or waxes. These solids form a thin film over the filter material causing the differential pressure to increase rapidly.
5) “Shoe Polish” sludge (hydrocarbons + solids). This material saturates the filter media causing the differential pressure to increase rapidly.
6) Presence of “Damaging Particles”. There is a certain suspended solid particle size diameter that will occlude (plug) the filtration material pores. This also causes the differential pressure to increase rapidly (and life is shortened considerably).
7) Filter vessel design did not properly take into account high solids concentration at the inlet resulting in higher vessel maintenance and reduced filter media life.
8) Incorrect filter element design. The filter element media is not being designed or assembled correctly for maximum effective surface area (area exposed to the fluid).
9) High clean differential pressure (this reduces the life of a filter considerably)
10) Filters not operated to the recommended terminal differential pressure.

For additional information, please contact us at **Support@NexoSolutions.com**

Tel +1 (832) 510 8191
25003 PITKIN ROAD | SUITE A100 | THE WOODLANDS, TEXAS 77386 | USA NEXOSOLUTIONS.COM