

RULE OF THUMB - LUBE CONSOLE TESTING

By Neal Wikert

The oil system needs to be run in a shop to test operation and to confirm sound levels and cleanliness. The oil used for testing must be compatible with the (intended) site oil.

Testing must include detailed cleanliness testing with recirculation and screen checking. The console must be run in a normal operating mode and be performance tested. Tests must be able to confirm design pressure and temperature levels and should also include the following:

1. Leakage test (repair and eliminate all leaks)
2. Proper operating at set point of all relief and pressure limiting valves.
3. Transfers of filters and coolers without the auxiliary pump starting due to low pressure.
4. Successful pump and system performance in both (auxiliary pump on/off) directions.
5. Successful operation at defined normal flow conditions with only one pump running.
6. Operating checks of all warning, protective and control devices.

7. Tests of plug leakage across transfer valves.

To conduct testing, screening is needed, as is a recirculation flow meter for measuring the oil flow rate. The (steam turbine) main pump driver needs to be replaced with an electric motor with a suitable motor control. The auxiliary pump driver also needs a suitable motor control, one that provides for automatic startup and shut down.

Provisions must be made to power up electronic transmitters, as there are few pressure gauges in the system.

Since the main valves are electronically driven by the control system, local controllers need to be purchased and programmed as substitutes for the more critical control system functions that will not exist at the test facility. The requirement for cooling water is unlikely to be needed since the system should not be picking up too much heat.

Most console shops are equipped to and experienced in conducting "normal" console testing, but substituting properly programmed controllers for the control system functions is beyond the "norm".

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