

CTRL Systems, Inc. Best Practices Flanges

Industry

Petroleum Refinery

Application

Pre-Start Leak Detection

System

Piping System

Component

Flanges and Couplings

Current Procedures

While piping is under 35-75 psig nitrogen pressure before pre-start, technicians spray each flange with soapy water looking for bubbles coming from flanged piping connections to ensure tightness and no leakage around seals. Flanges are located at ground level and as high as 75' (feet) from catwalks. Depending on the size of the facility there can be more than 1300 flanges that require leak checking.

CTRL's Sound Solution.

1. After a short training lesson of familiarization and application of CTRL's UL101, with Powerbeam 300 attachment the maintenance technician selects the UL101 receiver, headset, and concentrator and Powerbeam 300 attachment from kit.
2. Verify operation of UL101 and Powerbeam 300 in accordance with the operator's manual.
3. Ensure piping system is pressurized to at least 15psig for leak checking while flange spray shields are in place.
4. Begin at one end of the piping system or suspect area and point the UL101 with Powerbeam attachment in the direction of valves, fittings, lines and flanges under pressure and walk along while scanning with the UL101.
5. An air leak is indicated by a jump in the meter and a loud rushing sound through the headset.
6. Once a leak is detected, pinpoint by adjusting the potentiometer down to locate the exact source of the leak.
7. Indicate the leak location and issue a work order for repair. Verify repairs with UL101.

Benefit

Checking flanged piping systems using the current procedure above can take several days to find leaks and repair leaks.

Use of the UL101 with power beam attachment will find more leaks that can be properly identified for repair, decreasing man hours required to spray each flange with soapy water. Not to mention the time required to manipulate man lifts and climbing harness to access flanges. Monitoring with the UL101 provides instantaneous real-time information.

With a pressurized piping system the UL101 is much faster and more effective at locating air leaks, even during peak operation and in all types of weather conditions. Leak location and identification is not impeded by ambient noise therefore, less guess work is involved.

