

Instrumentation Inspection Checklist (Part 4 of 7 - LEVEL Instruments & Transmitters)

NOTE - THIS CHECKLIST APPLIES ONLY TO LEVEL INSTRUMENT SPECIFICS.

THIS CHECKLIST SHOULD BE USED IN CONJUNCTION WITH THE GENERAL CHECKLIST (Part 1) THAT APPLIES TO GENERIC CHECKS FOR ALL INSTRUMENTS.

BRIDLE-BASED LEVEL MEASUREMENTS

- ENSURE ISOLATION VALVES ARE OPEN (IN SOME CASES/PROCEDURES, THE VALVES MAY BE MANIPULATED SUCH THAT CLEAR FLOW-PATH THROUGH ISOLATION VALVES IS VERIFIED BY OPENING/DRAINING SOME AMOUNT OF LIQUID.

- IF MEASUREMENT PROBLEMS ARISE, IT MAY BE HELPFUL TO X-RAY THE BRIDLE TO ENSURE CENTERING TUBES OR TOP/BOTTOM MOUNTS ARE SECURE AND ROD IS NOT BENT OR KINKED.

- ENSURE PHYSICAL INDICATORS (MAG FLIPPERS, ETC.) ARE LEGIBLE AND FUNCTIONAL

MAGNETO-STRICTIVE LEVEL TRANSMITTERS:

- ENSURE FLOAT CAPSULE TRAVELS SMOOTHLY AND FREELY WITH MINIMAL HYSTERESIS OR DEADBAND (INDICATIVE OF CATCHING IN BRIDLE). A FAST HISTORY TREND CAN SHOW STICKY SPOTS AS STAIR-STEP CHANGES.

- PERIODICALLY CHECK PROBE/BRIDLE WITH GAUSS METER AND CLEAR UP ANY MAGNETIZED AREAS.

- CHECK FLOAT TO ENSURE NOT DAMAGED OR CRUSHED DUE TO POOR MAINTENANCE PRACTICES.

- ENSURE ROD IS NOT VIBRATING SINCE THIS WILL CAUSE ERRORS (UTILIZE DAMPENERS IF NEEDED).

ECHO-BASED (GWR, ULTRASONIC, ETC.)

- ENSURE CONFIG IS CORRECT AND PERFORM A 'LOGIC' CHECK OF THE SETUP. THIS IS AN EXTREMELY COMMON PROBLEM AREA WITH ECHO BASED LEVEL MEASUREMENTS.

DP BASED

- ENSURE THAT SG MATCHES SPEC AND THAT IT IS PROPERLY ACCOUNTED FOR IN CONFIGURATION.

- ENSURE THAT ANY CAPILLARY LINES ARE PROPERLY FACTORED IN (USE SG X HEAD HEIGHT OF CAPILLARY MATERIAL).

- ENSURE THAT ANY ELEVATION/SUPPRESSION BETWEEN TAPS AND TRANSMITTER IS FACTORED IN.

- VERIFY THAT URV/LRV CONFIG SEEMS LOGICAL. IT IS WISE TO DO THE MATH ON THIS PERIODICALLY TO ENSURE ANY ERRORS ARE CAUGHT (SINCE THERE ARE SOOO MANY MISTAKES ON THIS).

- VISUALLY INSPECT IMPULSE LINES / CAPILLARY LINES PER THE DP INSTRUMENT CHECKLIST ITEMS.