

Instrument Mechanic (3843)

Task List- 2020

Inspections and Testing

1. Inspects and tests instruments and equipment such as meters, gauges, recorders, timers, analyzers, transmitters, and Programmable Logic Controllers (PLC's) in order to determine its condition or need for repair, and by operating the instrument or equipment through its entire range and comparing its performance to accepted standards.
2. Inspects and analyzes issues such as instrument and control system malfunctions in order to determine necessary maintenance or repair by using prints, schematics, and plant diagrams and documentation.

Maintenance and Repairs

3. Provides routine preventive maintenance to equipment such as electrical, electronic, mechanical, pneumatic, and hydraulic instruments and controllers in order to repair, clean, adjust, and calibrate.
4. Removes instruments such as meters, valves, transmitters, gauges, and PLC's in need of major repairs or overhaul in order to install new or repaired instruments by mechanically attaching wiring, bending, and connecting tubing, and potentially using rigging and scaffolding.
5. Disables, restores, and replaces worn or damaged parts, and reassembles equipment such as electrical, electronic, mechanical, pneumatic, and hydraulic instruments and controllers in order to repair.
6. Calibrates equipment such as electrical, electronic, mechanical, pneumatic, and hydraulic instruments, analyzers, and controllers by using electrical test equipment, mechanical test equipment, specifically required manufacturer's test equipment and standards in order to obtain optimal operating results and evaluate performance of new and existing equipment and systems.
7. Uses hand and power tools and high precision measuring instruments from engineering plans or sketches using metal, plastic, and other materials in order to install instrumentation devices such as meters, gauges, recorders, timers, analyzers, transmitters, and PLC's.

Instrument Mechanic (3843)

Task List- 2020

Record Keeping

8. Prepares and maintains records of work performed and enters instrument readings such as calibration certificates, work order records, and Preventative and Corrective Maintenance Records on appropriate logs in order to comply with regulations and maintain equipment history.
9. Generates and maintains records and data bases such as Continuous Emissions Monitoring System (CEMS) in order to maintain regulatory compliance and reporting to regulatory agencies.

Computer Systems

10. Operates computers to obtain and analyze information such as alarm history, data trends, and control logic in order to maintain and integrate service instrumentation and control systems.
11. Performs mathematical computations such as unit conversion, scaling, and equipment efficiency and calibration calculations in order to configure, calibrate, and maintain instruments and determine operating efficiencies.
12. Troubleshoots, replaces modules/components, and makes adjustments in order to repair and maintain systems such as analog, digital, and microprocessor electronic systems and devices.
13. Configures, programs, and integrates digital system controllers, such as Distributed Control Systems (DCSs), Field Processing Units, Programmable Logic Controllers (PLCs), Human Machine Interfaces (HMIs) and related equipment in order to add, replace, or repair control systems.

Safety and Regulatory

Instrument Mechanic (3843)

Task List- 2020

14. Tests, repairs, and maintains fire life safety systems such as fire control panel equipment at Los Angeles World Airports and Department of Water and Power in order to ensure personnel and equipment safety.
15. Tests, repairs, and maintains regulatory equipment such as Continuous Emissions Monitoring Systems (CEMS) to regulatory standards in order to meet regulatory requirements.
16. Obtains work permits and verifies proper equipment isolation such as using lock out/tag out procedures in order to safely service instrumentation and control systems.