## REF Key Functions & Tasks (Maintenance/Instrumentation Technician)

### 1. Work in compliance with EH&S.
- **1.a** Wear appropriate personal protective equipment
- **1.b** Participate in emergency drills and emergency response teams
- **1.c** Identify unsafe conditions and take corrective action
- **1.d** Appropriately and safely access production equipment
- **1.e** Handle, label, and dispose of hazardous / biohazard materials
- **1.f** Access and utilize MSDS
- **1.g** Comply with all permitting requirements (LOTO, hot work, line breaking, CSE)
- **1.h** Carries out operations with attention to OSHA and EPA regulations, and any other applicable state and federal regulations
- **1.i** Carries out operations with attention to OSHA and EPA regulations, and other applicable state and federal regulations.
- **1.j** Participate in all company safety training and audits as required
- **1.k** Assists with waste treatment operations

### 2. Work in compliance with cGMPs.
- **2.a** Follow SOPs for all operations
- **2.b** Prepare required documentation for recording and notification of events and changes related to equipment, including: as-found/as-left data, maintenance logs, calibration certificates and instrument labels, deviations, OOT reports, and installation reports.
- **2.c** Maintain equipment logbooks
- **2.d** Control and receive parts and materials.
- **2.e** Maintain training documentation
- **2.f** Maintain equipment and process utilities in a validated state.
- **2.g** Follow appropriate gowning procedures and behaviors for work in controlled/classified areas.
- **2.h** Ensure appropriate flow of personnel, equipment, and materials
- **2.i** Follow change control procedures for process, equipment, and documentation.
- **2.j** Update status of equipment and materials
- **2.k** Identify and report exception events and CAPA.

### 3. Monitor, maintain, and repair process or laboratory equipment.
- **3.a** Monitor, maintain and repair process vessels and fluid handling systems including pumps, pipes and valves.
- **3.b** Monitor, maintain and repair heat transfer equipment (heat exchangers, condensers, evaporators).
- **3.c** Monitor, maintain and repair process support equipment (autoclaves, ovens, dryers, washers).
- **3.d** Monitor, maintain and repair refrigeration equipment (freezers, lyophilizers).
- **3.e** Monitor, maintain and repair laboratory equipment (scales, hot plates, HPLC).
- **3.f** Monitor, maintain and repair fill/finish equipment including automated equipment (filling machines, cap/inspect machines, packaging).
- **3.g** Respond to alarms per procedure.

### 4. Monitor, maintain, and repair plant utility systems.
- **4.a** Monitor, maintain and repair utility systems including instrument air, process gases (CDA, nitrogen, argon, CO2).
- **4.b** Monitor, maintain and repair utility systems including steam, process water types (DI, WFI, USP) and cooling/heating fluids (glycol, liquid nitrogen).
- **4.c** Monitor, maintain and repair utility systems including HVAC, electrical, hydraulic.
- **4.d** Monitor, maintain and repair waste treatment systems (waste neutralization, inactivation, scrubbers).
- **4.e** Monitor, maintain and repair site safety systems (fire suppression, eye wash, safety showers, etc.)
- **4.f** Monitor, maintain and repair security system including controlled personnel access.
- **4.g** Monitor building management systems (BAS).
- **4.h** Respond to alarms per procedure.
- **4.i** Perform testing of plant utilities.
<table>
<thead>
<tr>
<th>REF</th>
<th>Key Functions &amp; Tasks (Maintenance/Instrumentation Technician)</th>
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<tbody>
<tr>
<td>5</td>
<td>Calibrate Control System Components.</td>
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<tr>
<td>5.a</td>
<td>Calibrate pressure, temperature, flow, weight, pH, DO, and other critical measurement devices and transmitters.</td>
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<td>5.b</td>
<td>Calibrate control valves, actuators, positioners, and process switching devices.</td>
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<td>5.c</td>
<td>Investigate, correct and document calibration failures (identify OOS results and report in CAPA).</td>
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<td>5.d</td>
<td>Use calibration reference standards and other specialized equipment.</td>
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<td>6</td>
<td>Maintain control systems, equipment and instrumentation.</td>
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<td>6.a</td>
<td>Program and/or replace microprocessors, PC, PLC, and DCS controllers and devices.</td>
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<tr>
<td>6.b</td>
<td>Maintain and repair on-off actuators, diaphragms, electrical and pneumatic and hydraulic industrial control circuits and equipment.</td>
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<tr>
<td>7</td>
<td>General Engineering Technology and Maintenance Skills</td>
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<tr>
<td>7.a</td>
<td>Solve system/equipment problems using P&amp;IDs, manuals, and other drawings as needed.</td>
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<td>7.b</td>
<td>Participate in root cause analysis and verification, identification of solutions, and development of solution implementation work plans.</td>
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<td>7.c</td>
<td>Assist in installation, modification, commissioning, and validation of equipment.</td>
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<td>7.d</td>
<td>Communicate with all applicable departments about scheduling, service needs and priorities, problems, status of equipment and repair jobs, and status of utility systems.</td>
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<td>7.e</td>
<td>Maintain spare parts inventory.</td>
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<td>7.f</td>
<td>Communicate with vendors and service suppliers to coordinate and schedule external calibration and maintenance activities.</td>
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<td>7.g</td>
<td>Use Computerized Maintenance Management System (CMMS) to schedule and track work orders for corrective and preventive maintenance (PMs) (Maximo, Atlas, Blue Mountain).</td>
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