

## Process Engineer | Lyophilization Technology Expert | Equipment Maintenance

- Diligent and process-driven professional with extensive experience in installing and maintaining, as well as repairing and troubleshooting refrigeration equipment; complemented by extensive knowledge of cGMP regulations.
- Renowned for enhancing existing processes and ensuring seamless workflow, while leading and training cross-functional teams on equipment operational guidelines.
- Skilled in maintaining proper documentation and records for maintenance of production systems.
- Honorably discharged Veteran of U.S. Army National Guard; expertise in interpreting schematics, identifying machinery problems, and taking corrective action plan accordingly.
- Articulate communicator with proficiency in Facility Maintenance Planning.

## Areas of Expertise

- |                                  |                               |                                |
|----------------------------------|-------------------------------|--------------------------------|
| • Lyophilization Technology      | • Technical Training          | • Preventive Maintenance       |
| • Continuous Process Improvement | • Equipment Programming       | • Risk Assessment & Mitigation |
| • Quality Assurance & Testing    | • Instrumentation Controls    | • PCB Prototype                |
| • Python/C++/Arduino Debugging   | • IndySoft (CMMS)             | • Andover Continuum            |
| • Facilities Management          | • Calibration & Qualification | • Requirements Gathering       |

## Professional Experience

### Ambiopharm Inc., North Augusta, SC

2007 – 2022

#### Senior Manager; Process Technologies (2019 – 2022)

Executed assigned tasks and duties, along with maintenance of production scale equipment. Troubleshot equipment and ensured seamless workflow by conducting regular testing. Delivered individualized and specialized training to facilities and manufacturing teams on operational management and regular maintenance of process equipment.

- Reviewed data and provided feedback on multiple systems, such as Cleanroom HVAC, Lyophilization, and Cold storage.
- Served as the company's traveling auditor for new process equipment purchases.
- Aided with integration solutions for the engineering, maintenance, and metrology teams.
- Provided individual technical training for employees chosen by the company's Rising Star program.

#### Senior Production & Facility Manager (2010 – 2019)

Promoted from within the organization to supervise an 11-member team with key responsibility for the maintenance, troubleshooting, diagnosis, qualification, and correction of process equipment that includes preparative and analytical scale HPLC, lyophilizers, process freezers, cleanroom HVAC, and building automation systems. Collaborated across the organization with manufacturing, production, quality assurance, and laboratory operations to schedule manufacturing equipment maintenance with precise attention to potential impact on operations.

- Served as organizational instrumentation controls expert and routinely diagnose problems with analytical sample carousels and detectors.
- Reviewed process recipes to prevent irreversible damage to machines and products, repair process temperature and pressure sensors, and provide training and professional advice to manufacturing department personnel to prevent future damage.
- Corrected intermittent flow control valve failure in facility's chilled water system by reprogramming the sequence of operation, and identified a flaw in the automation of a lyophilizer that caused incorrect process data to be displayed and recorded.
- Spearheaded the integration of new field controllers onto the existing building and automation system, identified and corrected errors in programming and sequence of operations, and identified errors in the installer's programming that caused the instrument to return negative temperature values.
- Increased efficiency and response through the design, build, and implementation of a facility-wide remote alarm system to notify maintenance and operational staff of equipment failures during non-business hours.

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# Russell Gray

- Drafted design requirements for control systems of three new production areas inclusive of nine cleanrooms, nine preparative HPLC skids, and eight lyophilizers.

## Purification Chemist & Supervisor (2007 – 2010)

Brought on board as company's first Purification Chemist, independently mastered multiple facility control systems, and served as subject matter expert for all controls. Managed peptide purification using HPLC in a GMP facility, supervised a 30-member team, and trained new employees on cGMP for peptide purification. Gained expertise in cleanroom setup, operation, and maintenance.

- Routinely called upon to troubleshoot equipment malfunctions that included loss of signal, intermittent signal, erratic flow rate or complete loss of eluent flow, high HPLC column back pressure, and loss of communication between control components such as HMI, PLC, VFD, transducers, relays, actuators, and process sensors.
- Diagnosed a PLC failure caused by a solvent that had leaked into the electrical cabinet via the interior wire insulation of a pressure sensor on the PLC input.
- Identified an erratic flow rate problem caused by excess pressure drop of a flow processor control valve and drafted the specifications for a needed upgrade.
- In the absence of a company Facility Department, independently took initiative for troubleshooting process equipment malfunctions, leading to promotion to Facility Manager.

## United States Army National Guard, Edgefield, SC Wheeled Vehicle Mechanic

1997 – 2011

Maintained unit equipment that included generators, heavy vehicles, and construction equipment. Trained new team members in equipment maintenance and repair.

- Diagnosed, maintained, and repaired hydraulic and pneumatic control systems, as well as electrical malfunctions in heavy equipment.
- Served in 14-month deployment to Al Asad, Iraq, to provide security for convoys and the perimeter of Al Asad and to ensure mechanical mobility for the 122nd Engineering Battalion.
- Deployed for two short-term missions: a federal disaster flood relief mission in Virginia in 2001 and a humanitarian mission to build structures for two schools and a clinic in the Honduras in 1999.

## Additional Experience

### Calibrations Manager (2023)

Nephron Inc, West Columbia, SC

### Manager & Foreman (2002)

Laurelwood Landscaping Inc, North Augusta, SC

## Education

### Bachelor of Science in Chemistry

University of South Carolina Aiken, Aiken, SC

## Professional Training

Circuits and Electronics, edX MITX: 6.002x

Freeze Drying Technology, Biopharma Technology Ltd

Introduction to Computer Science, edX Microsoft