

Process Engineer, Gas Upgrading – Burnham RNG

Burnham RNG (<http://www.burnhamrng.com>) Burnham is a wastewater to RNG provider that helps businesses and municipalities profitably reduce treatment & disposal costs, improve environmental outcomes and re-use energy, water, and nutrients. The company is focused on efforts to turn waste into valuable resources. Burnham manages and reuses organic waste and wastewater by transforming it into renewable natural gas, clean water, and high-value soil additives that enhance sustainability and profitability.

Burnham is a portfolio company of Ares Management Corporation.

The company builds/acquires, owns, and operates renewable natural gas (RNG) producing facilities with the mission to build tomorrow's resource recovery infrastructure today.

By marketing and selling RNG and capturing associated tax benefits, the company can significantly reduce the cost of wastewater treatment and disposal for communities while improving environmental outcomes.

To accomplish our mission, we are looking to build and grow a cohesive team in an execution-oriented culture. We have created the following cultural markers and strive to hire like-minded people to help fuel our growth.

We are HUMBLE...we take pride in the quality of our work, but recognize it can always be improved with the input of others.

We are DISCIPLINED...we strive for systemic, disciplined, consistent execution in everything we do.

We are ANALYTICAL... we need team members who come to conclusions using logic, data and math.

We are ENTHUSIASTIC...we care deeply about the outcomes of our work.

We are PROBLEM SOLVERS...we don't have all the answers. We need team members to take the initiative to figure it out.

We are FUN...we love what we do and love coming to work each day.

We are seeking a **Process Engineer, Gas Upgrading**. This position requires an individual who has overlapping core values with those at Burnham, a detail-oriented, systematic technical contributor and leader; willingness to relentlessly charge forward and solve problems. We seek someone who can develop effective and collaborative working relationships with a wide range of entities and people, including: Burnham internal teams (Operations, Engineering, Project Management, Finance and Origination); with Solution providers of Gas Upgrading and Process Units; EPC Contractors; Regulatory agencies and local authorities; Suppliers of equipment, tools, and materials; Labs, research organizations and universities.

This position is based in our Raleigh, NC office. If needed, relocation support is available.

In this position, you will...

- Be the Subject Matter Expert (SME) for Gas Upgrading Technologies, and for Biogas and RNG (Biomethane) Process Units, including:
 - Biogas polishing, separation and compression, such as membrane separation, PSA, scrubbing technologies
 - Technologies for removal of moisture, impurities and contaminants such as nitrogen, oxygen, H₂S, siloxanes.
 - Natural Gas Pipeline specifications for Natural Gas and RNG.
 - RNG Interconnection systems – design, operation, maintenance
 - Flare systems and emission management
 - Utilization of off-gas stream (such as CO₂) – liquefaction, upgrading, delivery
- Develop and maintain close relationships with the Engineering teams at the Natural Gas Pipelines and Utilities.
- Provide immediate and effective support to Burnham's Operations teams in improving Gas Upgraders performance, in trouble shooting, outages, start-ups etc.
- Work closely with Burnham's technology suppliers and solution providers for biogas upgrading technologies AND, As part of that, continuously strive to improve the design, operability and availability of the Upgrading Units – both existing units as well as newly developed units.
- Become the focal point for biogas and RNG sampling, testing and analysis – in Burnham's operating facilities and also in new projects under development.
- Prepare, coordinate, and review designs, studies, reports, and proposals related to Gas Upgrading Units.
- Collaborate with the Engineering and Project Management team to develop the conceptual and detailed design of new units and, as part of that, support the Project Management team in the detailed design activities.
- Prepare and oversee preparation of:
 - Process simulation of the Gas Upgrading Unit and associated systems - Develops and/or checks overall plant and unit simulations using standard process simulation programs;
 - Process Flow Diagrams (PFDs) and Heat/Mass Balance
 - Materials Selection Diagrams (MSD) or Material Selection Tables;
 - Process Instrumentation Diagrams (P&ID's);
 - Equipment sizing, selection and specification
- Lead major design and risk review sessions, e.g. HAZOP, PDR, CDR, 3D Model Review.
- Prepare specifications & datasheets for control valves, instrumentation, piping systems, PSV, Pressure regulators, flare system
- Prepare/oversee authoring of Control philosophy, control narrative. Develops alarm and trip setpoint and process safety time calculations.
- Identify issues (problems, value improvement opportunities) and support resolving issues identified by other teams
- Assumes the responsibility to lead technical discussions with third parties (contractors, partners, solution providers, regulators, suppliers).
- Understand multi-disciplinary technical issues and able to provide adequate technical solutions to resolve issues.

- Lead major Engineering studies and resolutions at the time and scope defined by Burnham Management
- Support the development of plants' procedures and standards, including Operating Procedures, Emergency Action Plans (EAP) and Standard Maintenance Procedures (SMP)
- Support commissioning of process equipment and training of customer personnel
- Engage in other duties as assigned by leadership.
- Travel as required by Burnham to plants, customers/partners, for in person meetings, trouble shooting, field tests.

In this position, you will gain...

- Opportunity to join a fast-paced, high-growth start up and be a key member of a team growing and building a business.
- Opportunity to be a part of a company culture that is disciplined and execution-oriented, but also fun; we take time to celebrate our wins.
- The chance to support team members locally and across the U.S. who are helping deliver sustainable solutions that support renewable energy and lessen environmental impact.

This position is well-suited for you if you:

- Have prior experience in executing Process Engineering works in EPC projects as well as supporting operating process plants.
- Have prior experience in design, manufacturing, construction of gas processing/upgrading technologies such as compression, membranes, PSA, amine scrubbing.
- Demonstrate knowledge and understanding of Natural Gas specifications, testing, gas compression, liquefaction, delivery.
- Exhibit excellent knowledge of technical theory, engineering principles, good engineering practices and how to apply them in design execution
- Display thorough understanding of engineering principles of heat transfer, mass transfer and thermodynamics, and their general application to process design.
- Are familiar with major regulations and industry codes and standards affecting standard design, quality or processes.
- Show excellent written and oral communication abilities along with effective presentation skills.

In this position, we will need you to have....

- MSc or BSc Degree in Chemical or Mechanical Engineering from an accredited university or college (or international equivalent)
- A minimum of 7 years of relevant experience, including at least 3 years in a process engineering role.
- At least 5 years' experience in design, construction and operation of gas processing/upgrading facilities. Involvement in all stages of the project, including operation – significant advantage
- Willingness and ability to travel 30-50% of the time, for up to 2 weeks in each trip.
- Experience in development or review of Natural Gas Pipeline specifications and design criteria

- Experience in developing/checking overall plant and unit simulations using standard process simulation programs (e.g. WinSim, Aspen-HYSYS) .
- Experience in developing/checking PFDs & UFDs (Utility Flow Diagrams).
- Experience in process design of equipment, including vessels, columns, heat exchangers, chillers, compressors, pumps, membranes and package process specifications for equipment and control valves. In particular: experience in calculation development and sizing of process equipment, e.g., pumps, compressors, control valves, heat exchangers, and line sizing including complex configurations.
- Experience in developing/checking control narratives and philosophy, and alarm/trip setpoints.
- Experience in Technical Lists development: scoping documents such as equipment lists, Instrumentation and Control Valve list, PSV list, Specialty Items (SP) list.
- Experience in Design Pressure and Temperature Diagrams (DPDTs) development – analyzing and determining piping systems design conditions.
- Experience in supporting design reviews and closure of associated actions: PFDs, P&IDs, HAZOP action items, FMEA, 3D model reviews.
- Experience working in, or coordination with other disciplines (e.g., Mechanical, Control)

Interested applicants should submit a resume to: christina@burnhamrng.com.

Burnham is dedicated to the principles of equal employment opportunity (EEO) in any term, condition or privilege of employment. Burnham does not discriminate against applicants or employees on the basis of race, color, creed, religion, sex, national origin, age, physical or mental disability, ancestry, marital status, sexual orientation, gender identity or expression, veteran status, uniform service member, genetic information or any other status protected by law. Burnham complies with applicable state and local laws governing nondiscrimination in employment in every location in which we operate.