Campus Services and Stewardship

Controls Engineer
Position Description

Job Title: Senior Engineer	**Position Title:** Controls Engineer
Reports to: CUP Maintenance Manager	**% Effort or Wkly Hrs:** 100%
Department: Campus Services and Stewardship, Central Utilities Plant	**Date:** July 2026

Campus Services and Stewardship Overview

Campus Services and Stewardship (CSS) stewards MIT's built environment, from design and construction to maintenance, operations, and sustainability. With more than 750 employees, CSS ensures that MIT's 205 buildings, including 20 residence halls and 13.9 million square feet of space, operate efficiently, safely, and sustainably in support of the Institute's education and research mission.

CSS manages MIT's district energy system and supports a multi-billion-dollar capital renewal program guiding long-term campus investment. CSS operates in a high-volume, decentralized financial environment supported by a complex ecosystem of enterprise, commercial, and custom systems with significant integration dependencies across finance, operations, and asset management.

The Central Utilities Plant Team manages the operation and maintenance of the Central Utility Plant (CUP), a cogeneration facility that anchors the district energy system supporting MIT's campus. The team's work includes improving plant efficiency, reliability, and performance with a focus on safety and the environment. By providing the necessary power, cooling, and heating to campus buildings, the CUP is the cornerstone of campus resiliency and sustainability, ensuring that utilities continue without interruption to protect campus research and occupant comfort.

Position Overview

Under general direction from the Maintenance Manager the CUP Controls Engineer is responsible for ensuring the safe, reliable, and efficient operation of the Central Utilities Plant's automation, instrumentation, and control systems. This position serves as the technical lead for plant control technologies, including Distributed Control Systems (DCS), Programmable Logic Controllers (PLC), industrial networks, and field instrumentation that support utility generation and distribution operations.

Working closely with operations, maintenance, and engineering teams, the Controls Engineer maintains, troubleshoots, and optimizes control systems to maximize plant reliability, performance, and regulatory compliance. The position leads control-system upgrades, supports capital improvement projects, manages industrial cybersecurity initiatives, and provides technical expertise for commissioning, process improvements, and operational problem-solving. Through the application of advanced automation and process control principles, the Controls Engineer helps ensure continuous, efficient delivery of steam, chilled water, electrical power, and other critical utilities while supporting the organization's safety, sustainability, and reliability objectives.

Principal Duties and Responsibilities (Essential Functions)

- Program, configure, maintain, and optimize Distributed Control Systems (DCS), Programmable Logic Controllers (PLC), Human-Machine Interfaces (HMI), and related automation technologies supporting Central Utilities Plant operations.
- Provide technical leadership for troubleshooting and resolving control system, instrumentation, and process automation issues to ensure safe, reliable, and efficient plant performance.
- Develop, modify, test, and document control strategies, logic, alarm management systems, operator interfaces, and process automation solutions.
- Lead and support commissioning, startup, and acceptance testing activities for new equipment, control systems, and plant infrastructure projects.
- Develop and maintain control system documentation, including control narratives, loop diagrams and network architecture drawings.
- Collaborate on controls-related capital projects, including project scoping, engineering design, contractor coordination, budgeting support, and project implementation.
- Manage CUP control system cybersecurity programs and ensure CUP compliance with applicable cybersecurity standards and best practices.
- Collaborate with operations, maintenance, engineering, and external vendors to support daily plant operations, outage activities, and continuous improvement efforts.
- Participate in root cause analyses of control system failures, process disruptions, and equipment performance issues, and implement corrective and preventive actions.
- Support preventive, predictive, and reliability-centered maintenance programs for control systems and instrumentation assets.
- Provide controls support for Continuous Emissions Monitoring Systems (CEMS).
- Participate in safety programs, hazard assessments, incident investigations, and risk mitigation activities to promote a safe working environment.
- Provide technical guidance, training, and mentorship to plant operators, maintenance personnel, and other stakeholders on control systems and automation technologies.
- Support emergency response efforts and provide on-call technical assistance for critical control system and plant operational issues as required.
- Stay current with emerging technologies, industry best practices, and regulatory requirements related to process control, automation, industrial cybersecurity, and utility plant operations.
- Perform other related duties and responsibilities as assigned to support the mission and operational objectives of the Central Utilities Plant.

Supervision Received

Supervision is received from the Central Utilities Plant Maintenance Manager.

Supervision Exercised

None.

Qualifications & Skills

Required

- Bachelor's degree in Electrical Engineering, Controls Engineering, Automation Engineering, Mechanical Engineering, Computer Engineering, or a related technical field.
- 10 years supporting critical infrastructure and progressively responsible experience in industrial controls, process automation, power generation, utilities, manufacturing, or related process industries.
- Demonstrated experience troubleshooting and maintaining complex control systems and instrumentation.
- Experience leading automation projects, system upgrades, and commissioning activities.
- Ability to move objects weighing 20 to 100 lbs.

- Ability to traverse long distances or moving from site to site.
- Ability to use arms and/or legs to push, pull and lift objects.

Preferred

- Experience performing PLC and DCS programming.

Additional Requirements

The Central Utilities Plant staff may be subject to extreme variations in noise levels, temperatures/spaces or be exposed to outside environmental conditions with temperatures below 32 or above 100 degrees for more than one hour. Staff may be subject to hazards including proximity to mechanical parts, electrical current, or exposure to high heat or chemicals.

This role is expected to be primarily on-site to effectively support operations and staff.