March 14, 2022

The University of British Columbia

Standard Job Description: Power Engineer EWS

JOB SUMMARY

UBC Energy and Water Services oversees the overall management of energy and water at the UBC Vancouver Campus, working within a mandate of fiscal efficiency, operational excellence, environmental sustainability and innovative demonstrations. EWS thermal plants are comprised of multiple thermal energy systems, ranging from conventional gas-and-oil-fired thermal boilers to biomass thermal boilers involving wood gasification technology and conventional wood-burning thermal boilers.

Under the direction of the People and Process Manager – Thermal Plants (Chief Engineer), the Assistant Chief Engineer (ACE), and/or the Shift Team Leader, the EWS Thermal Plant Power Engineer assists with the safe and efficient operation, maintenance, service, and repair of equipment and process systems within the UBC's Bioenergy Research Demonstration Facility (BRDF) and the UBC Campus Energy Centre (CEC). The BRDF and CEC are considered Energy and Water Service's (EWS) Thermal Energy Plants. Additional Thermal Energy Plants may come into existence in the future.

An EWS Thermal Plant Power Engineer will assist the Shift Team Leader with the operation of EWS Thermal Energy Plants in the capacity of assistant shift or assistant engineer as defined by the Power Engineers, Boiler, Pressure Vessel and Refrigeration Safety Regulation.

The EWS Thermal Plant Power Engineer shall adhere to the directives, rules, and regulations set by relevant provincial regulations and UBC policies and procedures. This includes thermal Plant Operating Instruction and Guidelines and thermal plant operating procedures.

EWS Thermal Energy Plants are comprised of multiple thermal energy systems, ranging from conventional gas-and-oil-fired thermal boilers to biomass thermal boilers involving wood gasification technology and conventional wood-burning thermal energy boilers.

Equipment within their operational expertise and responsibility include fuel material handling systems, boilers systems, and related auxiliary systems, combustion and process controls, power generation through internal combustion engines and power synchronization systems, ash handling and disposal systems, compressed gas systems, hydraulic systems, water treatment systems, flue gas conditioning systems and emission control systems.

When manning a Thermal Energy Plant, under direction from People and Process Manager – Thermal Plants (Chief Engineer), the Assistant Chief Engineer, and/or the STL, the EWS Thermal Plant Power Engineer, on behalf of the Shift Team Leader, assumes delegated responsibility for the safe and efficient operation of the thermal energy plant equipment, or a section of the plant. They are responsible for the safety of UBC and contractor personnel working in the areas they are responsible for.

ORGANIZATIONAL STATUS

The EWS Thermal Plant Power Engineer receives supervision from the People and Process Manager – Thermal Plants (Chief Engineer), the Assistant Chief Engineer, and/or the Shift Team Leader.

When manning an EWS thermal energy plant, the EWS Thermal Plant Power Engineer may assume delegated responsibility for the safe and efficient operation of all plant equipment in the plant or a section of the plant. They may be delegated responsibility for the safety of UBC and contractor personnel working in the thermal plant process areas under their responsibility. There will be no change in pay.

If an EWS Thermal Plant Power Engineer holds a third-class power engineering certification and has completed all the training and pre-requisites for the STL position, they may be appointed to the role of temporary Shift Team Leader in an emergency for a shift (or part of a shift) only if no regular Shift Team Leader is available, if no Relief Shift Team Leader is available, and if the Assistant Chief Engineer is not available. There will be a temporary increase in pay for the hours the EWS Thermal Plant Power Engineer performs the duties of a Shift Team Leader.

WORK PERFORMED

1. Performs routine inspections, operation and maintenance of all systems and equipment related to the safe, reliable, and efficient operation of equipment in EWS Thermal Energy Plants, under the supervision of the Shift Team Leader.

2. Under the supervision of the Shift Team Leader, the Power Engineer is responsible for the safe start-up, shutdown, and lockout of equipment in the Thermal Energy Plants as well as maintenance or repair related to the operation and maintenance of that equipment.

3. Record operating, maintenance and safety conditions in log sheets and log book and communicate carryover conditions to the Shift Team Leader and the relieving EWS Thermal Plant Power Engineer.

4. Troubleshoot and maintain all equipment within the scope of a Power Engineer 4th Class.

5. Completes log-book, log-sheet, round sheet, lock-outs of equipment, digital checklists, and Work Orders as required. These can be in a variety of formats, including digital and written.

6. Responsible for operation and maintenance of water treatment system which includes daily water testing, logging data, adjusting chemical feed and adjusting blow-downs, etc. under the supervision of the Shift Team Leader.

7. Report plant operational deficiencies to the Shift Team Leader, the People and Process Manager – Thermal Plants (Chief Engineer), the Assistant Chief Engineer, and the relieving EWS Thermal Plant Power Engineer.

8. Physically maintain the process flow of the plant, which may include inspections and unplugging conveyors, transfer point and ash handling systems and syngas conditioning, flue gas treatment, and liquid and gas fuel systems.

9. Confined space entry, and related duties, as required. Attend all training sessions as required.

10. Maintain up-to-date certification and practice skills provided by the courses and training identified in the Energy and Water Services training matrix.

11. Operates forklifts and other specialized vehicles as required.

12. Records and maintains daily, monthly and annual plant data which includes (but not limited to); fuel consumption, energy production, power production\consumption, water consumption, fuel inventory levels, plant efficiency, and greenhouse gas emissions.

13. Maintains a safe work environment in respect to items such as chemical\fuel spills and to maintain a reasonable level of cleanliness within the Thermal Energy Plants.

14. Performs the appropriate action to minimize problems associated with emergencies.

15. Assists with Maintaining appropriate pressures and temperatures within the DES system by ensuring adequate pumps and boilers are in operation.

16. May be required to conduct routine inspections of the CEC and other Thermal Plants, and or operate local plant equipment at the CEC and other Thermal Plants, when required by the Shift Team Leader, the Assistant Chief Engineer, and/or the People and Process Manager – Thermal Plants (Chief Engineer).

17. May be required to perform additional duties related to the qualifications and requirements of the classification and abilities of a Power Engineer.

CONSEQUENCE OF ERROR

Relative to duties described above failure to utilize due diligence and follow proper procedures while on shift could have serious effects to campus heating system, cause death or dismemberment to UBC Staff, Faculty and Students, and\or cause catastrophic damage to EWS Thermal Energy Assets.

SUPERVISION RECIVED

Supervision and mentorship are given to the EWS Thermal Plant Power Engineer by the Shift Team Leaders, the Assistant Chief Engineer, and/or the People and Process Manager – Thermal Plants (Chief Engineer).

SUPERVISION GIVEN

The EWS Thermal Plant Power Engineer assists the Shift Team Leaders in executing responsibility and control of the processes and equipment in UBC Energy and Water Services Thermal Plants while in operation.

The EWS Thermal Plant Power Engineer will be expected to exercise supervision and responsibility of equipment or areas of UBC E&WS thermal energy plants as requested or assigned by the Shift Team Leaders, Assistant Chief Engineer, and/or the People and Process Manager – Thermal Plants (Chief Engineer).

QUALIFICATIONS

- An Interprovincial Fourth-Class Power Engineer Certification of Qualification issued by Technical Safety BC (TSBC). Candidates must submit a digital copy of this certification with their application. The authenticity of this certification will be confirmed with TSBC.
- Candidates who are recent graduates of an accredited and recognized Power Engineering Technology program are welcome to apply.
- Ideal qualifications include experience in operating in a high-pressure power generating steam plant with an industrial process or equivalent experience. Experience desired in solid fuel handling systems, electrical power generation and distributed control systems (DCS).
- A demonstrated ability in mechanical and instrumentation skills related to plant maintenance.
- A BC Class 5 or 7 Drivers License in good standing.
- The ability to maintain certification and training in the operation of UBC Fleet Vehicles, forklifts, lifts, and other vehicles as required. UBC to provide specialized training.

- Ability to use computers and associated software.
- Ability to operate, or learn how to operate, smart phones and tablet computers.
- Using communication devices (radios, cell phones, etc.) as required.
- A demonstrated ability to work both independently and as a team.
- A demonstrated initiative and attitude to improve the plant and the general workplace.
- Effective written and oral communication skills in English.
- The dedication and commitment to self-improvement and remaining current in the Power Engineering craft. This may include continuing education requirements and upgrade courses required by TSBC in the future.