Job Class Profile:

Boiler and Pressure Vessel Inspector II

Pay Level:

CG-35

Pay Band:

766-789

						Accountability		Development	Environmental	
		Interpersonal				& Decision		and	Working	Total
Factor	Knowledge	Skills	Physical Effort	Concentration	Complexity	Making	Impact	Leadership	Conditions	Points
Rating	5	5	4	6	4	5	5	1	5	
Points	233	83	25	29	120	108	103	21	54	776

JOB SUMMARY

The Boiler and Pressure Vessel Inspector II enforces legislation where high pressure boilers, pressure vessels, and refrigeration systems are used. Ensures compliance with the Boiler, Pressure Vessel Compressed Gas Regulations under the Public Safety Act through advanced large scale inspections and liaison with various stakeholders/owners and users. Interprets applicable codes and standards through the American Society of Mechanical Engineers (ASME) and the Canadian Standards Association (CSA), and ensures compliance to those codes and standards. Ensures that correct information, advice and technical direction are provided to stakeholders. Conducts a wide range of specialized, complex and in-depth inspections and audits; and investigates mishaps and accidents. Also responsible for the maintenance and inspection of medical gas systems/critical life safety systems such as oxygen, medical air, nitrous oxide and medical vacuum in health care facilities.

Key and Periodic Activities

- Performs inspections of high pressure, high temperature, compressed gasses, lethal substance pressure systems and equipment.
- Inspection and maintenance of medical gas systems/critical life safety systems such as oxygen, medical air, nitrous oxide and medical vacuum in health care facilities.
- Performs ASME (American Society of Mechanical Engineers) and National Board Fabrication Shop inspections and quality control program audits. Registered pressure plant operational reviews.
- Accident/incident investigations.
- Assesses department records and reports to review inspection activity for compliance with issued directives, update pressure equipment, etc.
- Prepares and inputs daily re-inspection data.
- Completes audits of ASME/CSI B51 code shop manufacturers and fabricators of boilers, pressure vessels and pressure piping.
- Prepares invoices/reports for special inspections for owners/contractors.
- Supervises and evaluates welder and brazer qualifications tests required as per ASME construction codes.
- Maintains daily log and time/activity records including travel time on a monthly basis.

SKILL

Knowledge

General and Specific Knowledge:

- Power engineering field, operating and maintaining high pressure steam plants and other pressure systems.
- Applicable codes, acts and standards
- American Society of Mechanical Engineers (ASME)
- Canadian Standards Association (CSA)
- National Board of Boiler Inspector codes
- Canada Safety Standards Act.
- Occupation Health and Safety Act

Formal Education and/or Certification(s):

 Minimum: Second Class Power Engineer Certificate. Requirement to complete training and obtain National Board of Boiler and Pressure Vessel Inspectors Commission within two years of commencement of employment.

Years of Experience:

— Minimum: 5 years experience.

Competencies:

- Develop and implement safety practices and procedures for correct inspection methods and practices.
- Conduct analysis or assessments.
- Communicate complicated or conceptual ideas where clarity and precision of language is critical.
- Good communication, organizational, analytical and interpersonal skills.
- Exercise sound judgment with attention to detail.

Interpersonal Skills

- A range of interpersonal skills are used including listening and providing advice to stakeholders regarding boilers and pressure systems; asking questions concerning the same; communicating with various groups regarding interpretation of codes and standards, and dealing with upset/anxious people regarding non-compliance of regulations and/or the Public Safety Act.
- Communications occur with employees, supervisors/managers within the immediate work area and department and outside the organization including suppliers, contractors and customers/clients/general public. Communications also with municipal, provincial or federal government representatives.
- The most significant contacts are with the immediate supervisor/manager to discuss issues concerning directives or inspections; clients/general public regarding access to property to conduct inspections and contractors to ensure compliance with codes and standards for new installations or repairs to existing boilers and pressure systems.

EFFORT

Physical Effort

- The demands of the job occasionally result in considerable fatigue, requiring periods of rest.
- Required to occasionally lift objects weighing less than 10 lbs.
- Work regularly requires use of gross motor skills, standing, walking, climbing, driving and working in awkward or cramped spaces requiring bending and kneeling to perform large-scale inspections. Also requires the use of hand tools requiring steadiness and accurate control and machinery requiring controlled movement.
- Fine finger/precision work is required to enter inspection related data and prepare related reports.

Concentration

- Visual concentration and alertness is required to identify hazards that are encountered at inspection locations and detection of problems with boilers and pressure vessels.
- Auditory concentration or strain is required when detecting unusual noises/sounds from pressure systems/equipment or when wearing personal breathing apparatus during inspections which requires hearing concentration to understand instructions.
- Repetition requiring alertness is evident while driving and regarding the hazards associated with working in confined spaces and heights as well as daily inspections of highly volatile, hazardous, pressurized and lethal substances of pressure equipment.
- Alertness to ensure health and safety of others occurs during everyday inspections of systems and boilers and ensuring compliance to acts and legislation, as well as when working in hazardous environments.
- There is a need for detailed precision work to perform inspections. Work pace is determined and managed by the incumbents however there are time pressures to complete specific tasks (i.e. scheduled inspections, responding to incidents and accidents ensuring reports are accurate and concise).
- Exact results and precision is required when documenting inspection reports and writing a directive letter dealing with situations where a decision is required immediately relating to pressure equipment that may be required to be shut-down and sealed-out due to non-compliance and regulations and codes resulting in loss of production, plant closure and staff layoffs.

Complexity

- Work involves a series of tasks and activities that are different/unrelated and require the use of a broad range of skills and knowledge.
- Complexity of work varies but includes performing inspections and audits; enforcing legislation to ensure compliance with relevant Acts and regulations; provision of advice and technical direction to stakeholders and investigation of accidents/incidents.
- Typical challenges or problems relate to performing inspections and audits. Determining if boiler pressure vessel is fit for service due to inspection results revealing defects; issuing directives to determine extent of damage and determine possible return to service or complete necessary repairs to ensure compliance with respective codes and regulations. Another example would be performing a pressure plant audit and review to determine power engineering staffing requirements
- When addressing typical challenges/problems/issues, reference can generally be made to the Public Safety Act, Boiler Pressure Vessel regulations, American Society of Mechanical

Engineers (ASME) codes, National Board of Boiler Inspector codes, Canada Safety Standards Act, etc.

RESPONSIBILITY

Accountability and Decision-Making

- Work tasks are highly monitored and controlled through the adherence to or compliance with safety procedures, legislation and codes, and the requirement for entry permits and training for confined space entry into boilers and pressure vessels.
- Decisions are made with regards to issuing directives for boilers/pressure system equipment (i.e. when dealing with situations where a decision is required immediately relating to pressure equipment that may be required to be shut-down and sealed-out due to non-compliance and regulations and codes resulting in loss of production, plant closure and staff layoffs). Incumbents have authority to sign off for construction of pressure vessels and to write inspection reports for special inspections.
- Requires approval for directive letters, purchase of items related to job safety (i.e. clothing) and for travel outside the province or country.
- A high degree of discretion and judgment is required. Work involves responsibility to determine the seriousness of non-compliance with the operation of boiler and pressure systems and to decide if equipment can maintain current operating status, be repaired immediately, or if it must be shut-down.

Impact

- Work tasks and activities generally have impact on the immediate work area, department, and customer/clients/general public.
- Work tasks and activities impact directly on equipment, processes and systems, health and safety, information, finances, facilities, human resources, and corporate image.
- The most significant impacts are on the health and safety (potential loss of life or severe injury) to operating personnel or public/clients.
- Work could either negatively or positively impact the safe operation of boilers, pressure vessels, or medical gas systems, critical life safety systems. Errors may result in extreme impact to the health and safety of the inspector, operating personnel, patient and/or the public.
- Work must be in compliance with legislation, codes, and standards.
- Consequences and/or errors are normally identified and resolved within hours of identification.

Development and Leadership of Others

- Not responsible for the supervision of staff.
- Required to provide on-the-job advice and guidance to less senior inspectors and new employees.

WORKING CONDITIONS

Environmental Working Conditions

- Safety precautions/equipment required: all inspections require the use of Personal Protective Clothing (PPC) and require the inspector to be fully trained in all aspects of hazards and

dangers (i.e. confined space entry, gaseous environments, etc.).

- Moderate likelihood of minor cuts, bruises, abrasions or minor illnesses. There is no likelihood of factures or other injuries, or occupational illness resulting in partial or total disability.
- Exposure to a variety of environmental conditions during inspections including unusual/distracting noise, dirt/dust/filth/garbage, glare, fumes, limited ventilation and lighting, vibration, hazardous chemicals, odors, dangerous heights or depths, wet slippery surfaces, awkward or confining workspaces, temperature extremes (i.e. working in confined spaces in boilers/pressure vessels; noisy, dusty, dirty plants and equipment; rotating/moving equipment; driving a car; explosion hazards.