

ILLINOIS DEPARTMENT OF CENTRAL MANAGEMENT SERVICES  
CLASS SPECIFICATION

BOILER SAFETY SPECIALIST

POSITION CODE: 04910  
Effective: 4-1-16

DISTINGUISHING FEATURES OF WORK:

Under general direction, performs complex technical duties of an inspectional and consultative nature in the administration and enforcement of the Boiler and Pressure Vessel Safety Act of Illinois. Performs technical inspections to ascertain safe operating condition of boilers, pressure vessels, flame safeguard equipment and other ancillary equipment. Schedules and travels within a designated region of the state to perform inspections.

ILLUSTRATIVE EXAMPLES OF WORK:

1. Schedules and inspects boilers, pressure vessels and flame safeguard equipment in a designated area of the State to ascertain safe construction, installation and operating condition; performs and/or supervises hydrostatic testing of boilers and pressure vessels; utilizing mathematical formulae calculates allowable working pressure in relation to amount of metal deterioration; tests boiler safety appliances and appurtenances such as safety relief valves, blow-off valves, fit water controls, low water fuel cut-offs, emergency shut-down equipment, pressure vessel temperature controls and combustion controls relating to flame safeguard equipment; certifies boilers for operation and condemns boilers found to be in an unsafe condition. Schedules inspections and travels as necessary within an assigned region to meet the operational needs of the agency.
2. Conducts inspection of boiler and pressure vessel manufacturing facilities and inspects boilers and pressure vessels in the process of manufacture; assures compliance with specifications for construction and fabrication as set forth by the Code of the American Society of Mechanical Engineers (ASME), the Inspection Code of the National Board of Boiler and Pressure Vessel Inspectors and the Illinois Boiler and Pressure Vessel Safety Act; reviews manufacturer's quality control program and reviews and approves manufacturer's welding procedures and the welder's qualification test. Investigates accidents, explosions, events or incidents that render a boiler or pressure vessel inoperative.
3. Consults with owners, users, operators, manufacturers, installers, and repair firms of boilers and pressure vessels to assist them with interpretation and implementation of all applicable laws and codes. Provides advice and consultation related to plans for installation and modification of boilers and related equipment.
4. Performs first time inspections of newly installed equipment.

## BOILER SAFETY SPECIALIST (continued)

5. Prepares regular reports of inspections, condition of units inspected and other activities. Maintains records of boilers and pressure vessels in assigned area, and enters all required inspection related data into computer.
6. Performs other duties as required or assigned which are reasonably within the scope of the duties enumerated above.

### DESIRABLE REQUIREMENTS:

#### Education and Experience

Requires knowledge, skill and mental development equivalent to completion of four years of high school.

Requires five years of practical experience in the construction, maintenance, repair or operation of high pressure boilers as a mechanical engineer, operating engineer, or boilermaker. A mechanical engineering degree from a recognized college of engineering may be substituted for two years of experience.

Within the first six months of employment, an employee must qualify and pass the examinations given by the National Board of Boiler and Pressure Vessel Inspectors to become a National Board Inservice Commissioned Inspector. Failure to successfully pass these exams in the required time will result in termination of employment. An employee must thereafter maintain a current Inservice Commission by the National Board of Boiler and Pressure Vessel Inspectors. The possessor of this Commission may also be identified as a National Board Inservice Commissioned Inspector.

Must have attained the age of 25 years.

#### Knowledges, Skills and Abilities

Requires thorough knowledge of the Illinois Boiler & Pressure Safety Act.

Requires thorough knowledge of the strength and stress potential of metals used in the fabrication of boilers and pressure vessels.

Requires thorough knowledge of all American Society of Mechanical Engineers current code specifications concerning power boilers, material specifications, heating boilers and nondestructive examination, recommended rules for care and operation of heating boilers, recommended rules for care of power boilers, pressure vessels, welding and brazing qualifications and fiberglass reinforced plastic pressure vessels.

Requires extensive knowledge of the safety factors involved in the design, construction, installation and operation of high pressure boilers, space heating boilers and pressure vessels.

Requires extensive knowledge of steam engineering, operating engineering, boilermaking, steamfitting and fluid transmission systems.

Requires extensive knowledge of flame safeguard equipment, of nondestructive examination methods including liquid penetrant examination, radiography, ultra-sonic examination, and magnetic particle examination.

BOILER SAFETY SPECIALIST (continued)

Requires working knowledge of routine practices of mechanical engineering.

Requires ability to determine quality of materials, metals and equipment and degree of conformity with plans and specifications.

Requires ability to create and maintain satisfactory working relationships with the general public.

Requires ability to prepare clear, concise and factual complex reports.

Requires ability to apply seasoned judgment in arriving at difficult technical decisions.

Requires ability to visually inspect and perceive causes of malfunctioning in high and low pressure steam systems and pressure vessels.

Requires ability to analyze complex facts and draw conclusions for proper recommendations from these facts.

Requires skill and ability to input above information in provided computer systems.

Requires skill and ability to physically climb ladders and stairs, crawl, walk, egress through manways and small openings, and wear personal protective equipment as necessary.

Requires a current Illinois driver's license and the skill and ability to drive a vehicle and navigate to remote locations.