

**Guidelines to Establish the Chief Engineer's Responsibility
N.J.A.C. 12:90 Boiler, Pressure Vessel and Refrigeration Rules
Specifically N.J.A.C. 12:90-3.9 (a)**

NOTE: PROPER USE OF THIS DOCUMENT WILL ASSURE UNIFORMITY OF OPERATION FOR THE INDUSTRIES THAT FALL UNDER THE JURISDICTION OF THE BUREAU OF BOILER AND PRESSURE VESSEL COMPLIANCE (BB&PVC). THE DESIGNATED CHIEF ENGINEER (CHE) MUST ASSURE COMPLIANCE WITH THE BB&PVC REGULATIONS. PROPER IMPLEMENTATION OF THIS GUIDELINE ENHANCES EXISTING MANAGEMENT POLICY, CONTRACTS, OR AGREEMENTS AND IT PROVIDES REASONABLE MEASURES FOR PLANT OPERATION UNDER THE CONTROL OF A QUALIFIED CHE.

JULY 10, 2013

INTRODUCTION

The Boiler, Pressure Vessel and Refrigeration Rules, New Jersey Administrative Code (N.J.A.C.) 12:90 are promulgated under the Boiler, Pressure Vessel and Refrigeration Act of the New Jersey Statutes Annotated (N.J.S.A.) 34:7.1-20, 34:1-47, 34:1A-3, and 34:7-18.

Under the regulatory provisions of N.J.A.C. 12:90-3.9 the Chief Engineer (CHE) is the person who supervises or takes the lead over one or more licensed operators of high-pressure boilers built to the American Society of Mechanical Engineers (ASME) Code Section 1 for Power Boilers or Section VIII. This equipment and the balance-of-plant (BOP) equipment is utilized in a facility that is commonly called a power plant, cogeneration plant, physical plant, boiler plant, steam plant, heating plant or merely the boiler room. This document is not specific to any plant or equipment and cannot cover all possible aspects and levels of complexity necessary to operate the various types of plants found in operation today, however it will provide the core requirements that must be adhered to by the CHE.

A CHE is also required for high-pressure refrigeration plants when the refrigerant is of a class identified in the Bureau of Boiler and Pressure Vessel Compliance (BB&PVC) Refrigeration Advisory¹. The CHE must be a full-time employee whether a direct hire or under contract with a company. Full-time control means the CHE is present and is accountable to management and maintains the level of responsibility encompassed by the term Chief identified and outlined in the BB&PVC regulations. Management may designate this position and in some cases appoint a highly qualified individual that may already be working as a Lead Person, as a Shift Engineer or Boiler Operator.

Under the provisions of N.J.A.C. 12:90-3.9 (a) to "establish responsibility for operations" the designated CHE and equipment owner should utilize this guideline to identify and stipulate the duties and responsibilities of the individual holding this key position. The appropriately licensed CHE is designated and appointed by the owner and shall take all reasonable measures to ensure the safety of personnel and the safe operation of the plant, for which overall responsibility is assigned. In addition, the CHE must assure conformance to the Boiler, Pressure Vessel and Refrigeration Rules and accepted engineering safety practices that include the consensus Codes and Standards adopted by the BB&PVC. The designation of the CHE shall be on the owner's letterhead and be kept on file with a copy sent to the BB&PVC. When any management or organization change takes place, the BB&PVC must receive an updated CHE designation letter. The CHE reports to the owner of the equipment who has the ultimate responsibility to ensure compliance with the BB&PVC regulations.

The following guideline describes for the owner various activities which the designated CHE must be able to perform. The role of the CHE will vary significantly from plant to plant and is dependent upon the actual plant size, type of plant, the complexity of the plant, and in some cases limited by the certifications, knowledge, education, training, and skill of the individual designated.

The competency and the technical ability of the designated CHE must be sufficient for the plant operation. To ensure the safety of personnel and safe plant operation, the equipment owner must secure appropriately skilled engineering, mechanical, and electrical personnel to support the CHE and facility operation.

The specific duty and responsibility given a Chief Engineer includes, but is not limited to, the following details:

1. The CHE shall ensure the mechanical integrity of the equipment in the plant and that the overall operation of the plant is in accordance with the regulations, original equipment manufacturers' (OEM) specifications and industry accepted engineering safety practices.
2. The CHE must be fully capable of directing and taking the appropriate and necessary corrective action to protect personnel and safeguard property to prevent a hazardous or potential catastrophic event whenever possible.
3. The CHE must be fully capable of communicating orally and in writing and able to communicate with the licensed operators and equipment owners on a daily basis. The CHE must recognize unsafe conditions or anomalies in the plant and be fully capable of providing the necessary corrective action.
4. The CHE must ensure that the plant is operated by a sufficient number of Stationary Engineers and Boiler Operators that hold the appropriate license as required by the Regulations, who have been trained and are proficient and competent in operating the plant.
 - a. Any employee that is newly hired, promoted or is working on a temporary basis as a Stationary Engineer and Boiler Operators shall have documented evidence of training signed by the CHE prior to working on shift as the Attending Licensed Operator (ALO).
 - b. The CHE must ensure proficiency training and develop a checklist that details items essential to the proper functioning of the equipment, plant operations and maintenance needs. The training must include any connected or integral systems that could directly or indirectly impact plant safety and operation.
 - c. A written policy and procedures on plant operations shall be readily available for viewing by all employees.
 - d. The CHE must ensure that all training conducted in the boiler room is recorded in the logbook as required by N.J.A.C. 12:90 and that the company maintains a permanent record of the training.
5. The CHE, along with management support, must provide essential remedial training of operators in the interest of safety. All such remedial and proficiency training must be documented and maintained on file by the company.
6. The CHE must ensure adequate shift coverage and that all licensed operators communicate shift change issues so as not to compromise safety and the mechanical integrity of the plant.

7. The CHE must ensure that a person with the appropriate class of license is designated to act as CHE when the CHE is absent from the plant for more than 96 hours. If a CHE with the appropriate license classification is not available, the BB&PVC may allow the appointment of an engineer holding a license one grade lower than what is required. See N.J.A.C. 12:90-3.9(e).
8. The CHE must ensure that the shift coverage meets the requirements specified by the BB&PVC regulations. The CHE and/or Management shall post the shift roster for proper plant operations and appoint an ALO for each shift.
9. The CHE must ensure the owner is aware of the statutory mandate regarding liability for failure to comply with the Licensing and Inspection Law under the provisions of N.J.S.A. 34:7.6 and N.J.S.A. 34:7.26 respectively.
10. The CHE must provide all necessary written instructions to the plant personnel (licensed operators). The CHE must also ensure the licensed operator's daily logbook indicates the designation of CHE and includes the date of the appointment.
11. The CHE must ensure the facility and owner maintain applicable sections of the Boiler, Pressure Vessel and Refrigeration Regulations, applicable Codes and Standards, instructions and standard operation and maintenance procedures.
12. The CHE must notify the plant owner and the BB&PVC immediately in the event of an accident involving pressure equipment under the jurisdiction of the BB&PVC and provide a signed written report of the incident to the BB&PVC.
13. The CHE must ensure that the operating experience being obtained by engineers and operators seeking to upgrade from one class of certificate to another is appropriate and that a record of time and experience accumulated is logged and that proof and a record of the experience is maintained on file.
14. For the purpose of validating operating experience for licensing, the CHE shall issue upon request, to a person who has obtained operating and other relevant experience, documentation verifying that experience.
15. As necessary, the CHE shall review daily logbook entries and when read, verify by signing and dating the logbook at the time of review. The CHE may maintain a separate personal handwritten or electronic task list or journal entry to assist them in the performance of their duties.
16. The CHE must post, in a conspicuous place on the premises, or in the plant office the Certificates of Inspection of the equipment and the Engineer and Operators licenses as required under the BB&PVC regulations.
17. The CHE must record plant operational, maintenance, service and repair incidents. For predictive and preventive purposes, document all relevant issues that could or will affect plant safety or the operational readiness of the plant.

18. The CHE must ensure contractors or in-house maintenance personnel provide notification to the CHE when they are required to enter the plant to perform work. The CHE must ensure entry into the operations area of the plant is controlled and restrictive for the protection of the contractor and facility operators. Written procedures shall indicate that the contractor must report to the Stationary Engineer or Operator on duty when the work scope involves any systems that directly or indirectly affect plant integrity or operation.
19. The CHE must meet all pertinent industry specific safety practices to isolate and secure equipment.
20. The CHE must document and maintain all staff training and ensure licensed operators are qualified on the specific equipment found at the facility. The CHE must also provide and maintain written procedures for start-up, shutdown, normal, and emergency operating conditions.
21. The CHE must review and when necessary revise all written policies and procedures annually and communicate changes by written notification and confirmation to facility personnel.
22. The CHE must ensure that the safety inspection checks and observations include, but are not limited to the following:
 - a. Visible indications of discoloration on metal or insulation due to excessive heat;
 - b. Visible distortion of any part of the pressure retaining item;
 - c. Obvious leakage from any pressure-containing boundary on the vessel;
 - d. Visible or suspected indications of internal corrosion or erosion or external corrosion due to environmental conditions;
 - e. Visual observations and reports shall include but not be limited to all components, systems, accessories, pumps, piping, compressors, controls, valves and processes in the plant.
23. The CHE must ensure installation, repair, service and maintenance of boiler, pressure vessel and refrigeration systems are in accordance with the rules, regulations and the Codes and Standards adopted by reference. The CHE must work directly with and assist the Maintenance Manager or similar position for all work activity performed on the plant systems, Balance of Plant (BOP), piping and other integral components under CHE control and area of responsibility.
24. The CHE must ensure all controls, devices, components or systems are properly calibrated, serviced, repaired and replaced and that all function properly in accordance with the OEM specifications and the codes and standards adopted by reference.
25. The CHE must ensure compliance of the controls and safety devices to the specifications and testing established by the manufacturer of the device and in the ASME Controls and Safety Devices (CSD)-1 for boilers up to 12,499,000 Btu/Hr fuel input and the National Fire Protection Association (NFPA) 85 for boilers 12,500,000 Btu/Hr fuel input and higher.
26. The CHE must ensure that appropriately licensed and qualified personnel maintain the electrical switchgear, relays and components in accordance with accepted engineering and safety practices. The CHE must also properly document and maintain all diagnostic, service and calibration records and ensure accessibility for review by regulatory inspectors.

To Contact the Bureau of Boiler and Pressure Vessel Compliance

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¹BB&PVC Bulletins, Alerts and General Information: <http://lwd.dol.state.nj.us/labor/lse/content/bbpvc.html>
N.J.S.A. 34 and N.J.A.C. 12:90 website link: http://lwd.dol.state.nj.us/labor/lse/laws/boiler_law.html