House
Legislative
Analysis
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BOILER OPERATOR REGISTRATION

House Bill 4326 with committee amendment
First Analysis (12-2-98)

Sponsor: Rep. Edward LaForge
Committee: Regulatory Affairs

THE APPARENT PROBLEM:

A boiler is a closed vessel, usually cylindrical, in which water is heated under pressure to produce steam. The water can be heated by combustible fuels, electricity, or nuclear energy. Boilers can be a source of heat and energy for industry, schools, and homes, although they are primarily used by industry and schools as heating plants. They are also used somewhat by utilities as a steam source to generate electricity in generating plants. A unit does not present any real danger until it is actually fired up, but then it can be very lethal due to very high operating pressures and water and steam temperatures exceeding 250 degrees Fahrenheit. While boiler inspectors, installers, and boiler repairers must be licensed under the current Boiler Act, there is nothing in the act regarding boiler operators and stationary engineers. There have been several well documented cases of loss of life and property due to untrained or poorly trained boiler operators. Figures from the National Board Incident Report show that over 2,000 accidents involving boilers occurred in each of the years 1993 through 1995. At least eight states and all Canadian provinces and territories require licensing for boiler operators and engineers. Reportedly, Detroit's requirement that Metro-area boiler operators be licensed has had a definite impact on increasing safety for the profession. A number of professional groups from the boiler industry have requested legislation to improve the preparation and continued training state-wide for boiler operators and stationary engineers.

THE CONTENT OF THE BILL:

Currently under the Boiler Act, boiler inspectors, installers, and repairers must be licensed. (The act exempts cities with a population of one million or more. The bill would lower the threshold to 750,000.) The bill would allow for the registration, in addition, of boiler operators and stationary engineers (that is, people who operate boilers and necessary related equipment). Under the bill, an individual or business would not be allowed to use the terms certified boiler operator, certified stationary engineer, low pressure certified boiler operator, high pressure certified boiler operator, third class certified stationary engineer, second class stationary engineer, first class stationary engineer, or any other title that would imply that an individual or an employee of a business was registered under the act unless the individual had been issued a registration under the act, or the individual was exempt under other provisions of the act. An individual participating in an approved apprenticeship program, a qualified technical training program, or a qualified training program could use the title apprentice certified boiler operator or apprentice certified stationary engineer. A person registered under the act would be allowed to use only one of the titles described by the bill or the abbreviation "C.B.O." or "C.S.E.".

Additionally, the bill would require the Board of Boiler Rules to establish, within 180 days of the effective date of the bill, the course content of a qualified technical education program for high pressure boiler operators, which would consist of a minimum of 350 hours of classroom hands-on training, field training, or supervised plant visits. The board could establish lesser standards for education programs for low pressure operator training or other entry level training positions.

The bill would also allow for:

Reciprocity with other states. The bill would allow the board to register, without examination and upon payment of a $30 fee, the use of a title to applicants licensed or registered in other states, municipalities, or countries if the licensure requirements were substantially the same as those established by the bill and if the other jurisdiction recognized Michigan registrations.

"Grandfather" provisions. For one year after the effective date of this bill, the board would be required

to recommend for registering, without examination, applicants who had submitted evidence that satisfied the board that they met one or more of the following requirements:

* at least five years of experience in the appropriate class of registration;

* a license as a boiler operator or stationary engineer from Detroit or Dearborn in the appropriate class; or

* successful completion of an approved four-year apprenticeship program, a qualified technical education program, or a four-year training program.

Examinations. The board would administer, for a testing fee of $10, examinations for boiler operators and stationary engineers, as it currently administers examinations for boiler inspectors. The examination for boiler operators could be either written or oral, while that for stationary engineers would have to be both written and oral.

Certification requirements. Applicants for a certification would have to be at least 18 years old, have the physical and mental capacity to be able to perform their duties competently, and the experience and training, education, or apprenticeship experience required for the particular classification (the bill details these requirements for each classification). The registration fee would be at least $20 annually.

Penalties. A person or business using one of the certified titles that would be created by the bill without being registered or without being exempt from registration would be guilty of a misdemeanor punishable by imprisonment for up to 60 days, a fine of up to $500, or both.

Boiler Classification Levels. Certified boiler operator and certified stationary engineer registrations would have different levels of classification, and each level would be limited according to operating authorization, as follows:

• a "low pressure certified boiler operator" could operate a low pressure boiler plant of up to 4,000 square feet of boiler heating surface (BHS);

• a "high pressure certified boiler operator" could operate a boiler plant of up to 4,000 square feet of BHS, or not more than 10 steam engine-turbine horsepower;

• a "third-class certified stationary engineer" could operate a boiler plant of up to 7,500 square feet of BHS, or not more than 100 steam engine-turbine horsepower;

• a "second-class certified stationary engineer" could operate a boiler plant of up to 20,000 square feet of BHS, or not more than 200 steam engine-turbine horsepower; and

• a "first-class certified stationary engineer" could operate a boiler plant of any size.

To obtain a registration for a title at one of the classification levels, an applicant would have to meet specific minimum requirements, depending on the operator classification level applied for, as follows:

• for a low pressure certified boiler operator, an applicant would have to have at least one year experience operating or maintaining low or high pressure boilers, steam prime movers, or their auxiliaries;

• for a high pressure certified boiler operator, an applicant would have to have one or more of the following:

a) two or more years experience as a high pressure boiler operator;

b) a low pressure certified boiler operator's registration and not less than one year experience as a low pressure boiler operator;

c) not less than one year of either a qualified training program, a qualified technical education program, or an approved apprenticeship program.

• for a third-class certified stationary engineer, an applicant would have to have one or more of the following:

a) a high pressure certified boiler operator registration and at least one year experience working as a high pressure boiler operator;

b) a low pressure certified boiler operator registration, with at least one year experience as a low pressure boiler operator, and at least one year maintenance experience on high pressure boilers and boiler auxiliary apparatus;

c) a high pressure certified boiler operator license with at least one year experience either in boiler maintenance or as an apprentice in an approved training program in a high pressure boiler plant with at least 4,000 square feet of BHS;

d) at least three years experience operating boilers in a high pressure boiler plant with at least 4,000 square feet of BHS;

e) at least one year experience operating boilers in a high pressure boiler plant with at least 4,000 square feet of BHS, as well as "sufficient" experience operating steam prime movers larger than ten horsepower, for a combined total of at least three years of experience; or

f) have an associates degree in energy technology or a related field with a power engineering option and at least 360 hours of employment or cooperative education experience as a power engineer, boiler operator, or stationary engineer in a steam electric generation plant or high pressure steam heating or process plant.

• for a second-class certified stationary engineer, an applicant would have to have one or more of the following;

a) a third-class certified stationary engineer registration and not less than one year experience under that registration;

b) a bachelor's degree in an approved program in engineering, heating/power technology, or energy technology from an accredited college or university and at least one year experience as an engineer in the engineering or research division of a steam electric power generating plant;

c) at least four years experience operating high pressure boilers in a boiler plant with at least 7,500 square feet of BHS;

d) at least one year experience operating high pressure boilers in a high pressure boiler plant with at least 7,500 square feet of BHS, along with "sufficient" experience operating steam prime movers larger than 100 horsepower, for a sum total of at least four years experience; or

e) at least one year experience operating boilers in a high pressure boiler plant with at least 7,500 square feet of BHS, along with "sufficient" experience operating boilers in a high pressure boiler plant with at least 4,000 square feet of BHS, for a sum total of at least 4 years of experience.

• for a first-class certified stationary engineer, an applicant would have to have one or more of the following:

a) a second-class certified stationary engineer registration and at least two years experience under that registration;

b) at least six years experience operating boilers in a high pressure boiler plant with at least 20,000 square feet of BHS;

c) at least two years experience operating boilers in a high pressure boiler plant with at least 20,000 square feet of BHS, along with "sufficient" experience operating steam prime movers larger than 200 horsepower, for a sum total of at least six years experience;

d) at least two years experience operating boilers in a high pressure boiler plant with at least 20,000 square feet of BHS, with "sufficient" experience operating high pressure boilers in a boiler plant with at least 7,500 square feet of BHS, for a sum total of at least six years of experience;

e) have completed a four-year approved apprenticeship program or a four-year qualified training program; or

f) have completed an approved bachelor's degree program in engineering, engineering technology, heating/power technology, or energy technology that includes a hands-on power option from a two-year community college program or equivalent, and at least one year of employment, internship, or cooperative education experience in a steam electric generation plant or high pressure steam heating process plant.

MCL 408.752 et al.

FISCAL IMPLICATIONS:

According to an analysis by the Department of Consumer and Industry Services dated 4-10-97, the department would incur costs to develop a voluntary registration system, develop and administer examinations, and promulgate administrative rules.

ARGUMENTS:

For:

There have been many documented cases of loss of life and property due to untrained or poorly trained boiler operators or stationary engineers, but these incidents may be just the tip of the iceberg. There are many reported occasions of boiler operators having received little or no formal boiler operator training. For example, in Wayland, Michigan a maintenance supervisor at an elementary school was injured while attempting to inspect the boiler to see why it wasn't working. The boiler exploded, injuring the worker and closing the school. In another tragic example, a Kentucky hospital employee was killed and another employee injured when the boiler they were trying to light exploded. Reportedly, none of the boiler operators had ever received any formal training from their employers.

Proponents of the bill believe that it is an important step in understanding the value of training. Experience has shown that proper training vastly reduces negative incidents. Some professional groups, such as the American Society of Mechanical Engineers, acknowledge the need for legislation of this type by stating in their rules "that safe and reliable operation is dependent upon the skill and attentiveness of the operator." And further, "operators should be thoroughly trained so they can maintain safe and continuous operation." Currently, an individual does not have to prove that he or she has the necessary training to operate boilers or auxiliary equipment. Under the bill's voluntary system of registration, an individual could offer documentation of training to prospective employers.

For:

The city of Detroit currently has its own system of licensing boiler operators and engineers and, with a population of one million as of the last census, is excluded from regulation under the Boiler Act. However, it is expected that the population count for the 2000 census may find Detroit dipping below the one million mark. Therefore, the bill would lower the population threshold for exemption from the act from one million to 750,000 to accommodate Detroit's shrinking population.

Against:

Opponents of the bill say it doesn't require anyone to do anything -- it is completely voluntary. Individuals who are currently untrained or poorly trained can continue to operate boilers, but just can't call themselves certified operators. Furthermore, there has been no demonstrated need for certification and registration. The Department of Consumer and Industry Services currently conducts regular inspections that provide adequate and substantial protections. The bill would expand the size of government and increase costs to schools and businesses unnecessarily. Business and schools and local units of government that employ union members will likely face increased costs in collective bargaining with unions representing certified boiler operators.

POSITIONS:

The Michigan Plumbing and Mechanical Contractors Association supports the bill. (12-2-98)

The International Union of Operating Engineers/Local 547 supports the bill. (12-2-98)

The National Association of Power Engineers supports the bill. (12-2-98)

The National Federation of Independent Business (NFIB)/Michigan Chapter has no position on the bill as long it remains a voluntary registration procedure. (12-2-98)

The Department of Consumer and Industry Services does not support the bill. (12-2-98)

Analyst: S. Stutzky

■This analysis was prepared by nonpartisan House staff for use by House members in their deliberations, and does not constitute an official statement of legislative intent.