

CITY OF DETROIT  
**BUILDINGS, SAFETY ENGINEERING & ENVIRONMENTAL DEPARTMENT**  
COLEMAN A. YOUNG MUNICIPAL CENTER  
2 WOODWARD AVE., EXAMINATION SECTION-ROOM 404  
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May 2013

**MEMORANDUM**

**Subject:** Subject matter that an applicant should be familiar with when applying for a Third Class Stationary Engineer's License.

The City of Detroit Ordinance No. 706-G requires that an applicant for a Third Class Stationary /engineer's License possess a High Pressure Boiler Operator's License and have one year of experience as such operator or otherwise qualify per Article VI, Section 6.8.

Bring a properly filled out application, proof of employment, and proper I.D. for the written examination. The exam is conducted on every second and fourth Monday of each month. Fee \$81.00. Applicant(s) will be interviewed at 8:00 a.m., the examination beginning at 8:30 a.m., punctuality being a very important part of the exam. You will be notified within 30 days of your score by mail. If the written examination is passed, an appointment will be made for the oral examination, Fee \$186.00.

The subject matter of the examination will be 100 multiple choice statements in the following categories below. There will also be required drawings pertaining to these categories.

**Boiler and Accessories:** Types of boilers: Safety devices-their function and testing; Water Walls, Columns, and Headers; other boiler appurtenances; Low water and over pressure procedures.

**Boiler Plant Auxiliaries:** Pumps, Injectors; Regulators; Valves; Traps; Separators

**Water and Steam:** Describe steam cycle; Blow downs; Basic water treatment principles; Scale prevention; Reactions under temperature and pressure; Boiler water circulation.

**Fuels and Combustion:** Forced and induced draft fans; Combustion control equipment and regulation for various fuels; Smoke control; Fundamentals of operations of Gas, Oil and Coal feeding equipment.

**Steam Engines:** Turbines and Accessories: Types of engines and turbines; Discuss operating fundamentals; starting, stopping and governing of small heat engines; Valves settings for reciprocating engines; Lubrication.

**Electricity:** Fundamental concepts of AC & DC-Ohms, volts, amperes, watts; starting and stopping motors; Proper use of fuses; Safety precautions with electricity,

**Plant Operation:** Foaming, priming, carry-over and remedies; Cutting in boilers; Water hammer; Reducing stations; Expansion joints

**General Knowledge:** Preparing boiler for inspection; Scale removal; Blow-off tanks; Packing and Gasket uses; Lubricating oils and contaminants, oil preheaters, etc.

CONSTRUCTION DIVISION



Glenn A. Davis, Chief

