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REFERENCE SYLLABUS

For

Steam Boiler Operator (2nd Class)



STEAM BOILER OPERATOR (2ND CLASS)

SYLLABUS

Introduction

This Syllabus is intended to assist candidates studying for the Steam Boiler Operator (2nd Class) Examination.

Recommended Study Program:

It is recommended that, before undertaking this examination, the candidate completes Power Engineering Course of study, offered through a recognized and approved technical institute or training provider which addresses the Syllabus Outline.



STEAM BOILER OPERATOR (2ND CLASS)

SYLLABUS

Reference Syllabus for Steam Boiler Operator (2nd Class) Examination Candidates

Major Topic: **Safety**

Topic 1 The Cost and Effects of Workplace Injuries

Topic 2 Personal Protective Equipment

Topic 3 Isolation of Mechanical and Electrical Equipment

Topic 4 Confined Space Entry

Major Topic: **High Pressure Boiler Design**

Topic 5 Introduction to Boilers

Topic 6 Firetube Boilers

Topic 7 Watertube Boilers

Topic 8 Electric Boilers

Topic 9 Basic Boiler Construction

Major Topic: **Draft, Combustion and High Pressure Boiler Fittings**

Topic 10 Boiler Draft Equipment

Topic 11 Introduction to Boiler Combustion

Topic 12 Fluidized Bed Combustion

Topic 13 Safety and Relief Valves

Topic 14 Water Columns and Gage Glasses

Topic 15 Drum Internals

Major Topic: **Piping**

Topic 16 Sootblowers

Topic 17 Continuous and Intermittent Blowdown

Topic 18 Boiler Preparation, Start-up and Shutdown

Topic 19 Routine and Emergency Boiler Operation

Major Topic: **Electricity**

Topic 20 Basic Electricity

Topic 21 Magnetism and Electromagnetism

Topic 22 Electrical Metering Devices



STEAM BOILER OPERATOR (2ND CLASS)

SYLLABUS

Topic 23 Motors and Generators

Topic 24 Transformers

Topic 25 Electrical Distribution Circuits

Major Topic: **Controls and Instrumentation**

Topic 26 Introduction to Instrumentation

Topic 27 Introduction to Process Measurement

Topic 28 Basic Control Loop Components

Topic 29 Boiler Water Level and Combustion Controls

Topic 30 Boiler Programming Controls

Topic 31 Introduction to Process Computer Applications

Major Topic: **Heating Boilers**

Topic 32 Cast Iron Sectional and Modular Boilers

Topic 33 Oil Burners for Heating Boilers

Topic 34 Gas Burners for Heating Boilers

Topic 35 Basic Fittings for Low Pressure Steam Boilers

Topic 36 Basic Fittings for Hot Water Boilers

Topic 37 Hot Water and Steam Heating Boiler Operation

Major Topic: **Heating Boiler and Heating System Controls**

Topic 38 Heating Boiler Feedwater Controls

Topic 39 Heating Boiler Operating Controls

Topic 40 Heating Boiler Combustion Controls

Major Topic: **Boiler Maintenance**

Topic 41 Powerhouse Maintenance I

Topic 42 Powerhouse Maintenance II

Topic 43 Powerhouse Maintenance III

Topic 44 Boiler Maintenance

Topic 45 Boiler Cleaning