

Power Engineer Apprenticeship Program

Apprentice Logbook
June 2009

If this logbook is found, contact the Apprenticeship Training and Skill Development division immediately.

Apprenticeship Training and Skill Development division
Department of Labour and Workforce Development
P.O. Box 578, 2021 Brunswick Street
Halifax, N.S. B3J 2S9
(902) 424-5651 - telephone
1-800-494-5651 - toll free telephone

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1.0 Introduction

This logbook is the property of the apprentice and is a permanent record of the apprentice's progress through the Apprenticeship Program. The apprentice is responsible to ensure that this document is kept current and the required information is recorded properly.

Note: It is a punishable offence under the Apprenticeship and Trades Qualifications Act to falsify information in this document.

1.1 Apprentice Registration Details

Name: _____

Client Identification Number: _____

Effective Registration Date: _____ Anticipated Completion Date: _____

It is the responsibility of the apprentice to immediately report the following:

- change of apprentice's home address and telephone number
- change of employer or employer's address and telephone number
- periods of extended unemployment

1.2 Contact Information

The Power Engineer trade is a shared responsibility between the Apprenticeship Training and Skill Development division and the Power Engineers section of the Building, Fire and Technical Safety division.

For questions concerning the Apprenticeship Program or this document, the apprentice must contact the Industrial Training and Certification Officer (Training Officer) assigned to his/her file or:

Apprenticeship Training and Skill Development division
Department of Labour and Workforce Development
P.O. Box 578, 2021 Brunswick Street
Halifax, N.S. B3J 2S9
(902) 424-5651 - telephone
1-800-494-5651 – toll free telephone
www.nsapprenticeship.ca – website address

For questions concerning the examination or certification of provincial power engineers, contact:

Power Engineers section
Building, Fire and Technical Safety division
Department of Labour and Workforce Development
P.O. Box 697, 5151 Terminal Road
Halifax, N.S. B3J 2T8
(902) 424-5721 – telephone
1-800-559-3473 – toll free telephone
www.gov.ns.ca/lwd/equipmentsafety/engineer.asp - website address

1.3 Apprenticeship Program

Apprenticeship Explained

Apprenticeship is a model of learning in which trade experts (certified journeypersons) pass on knowledge and skills to learners (apprentices). Apprenticeship begins with an agreement between an apprentice and an employer. The apprentice agrees to work for the employer in exchange for supervised, on-the-job training and experience, and the opportunity to attend technical training necessary to complete the program.

In the workplace, apprentices are supervised by a certified power engineer, tracking both hours and competence in practical skills. Technical training is offered online and/or in the classroom and is administered and arranged by the Apprenticeship Training and Skill Development division.

Legislation

- *Apprenticeship and Trades Qualifications Act and General Regulations* – Apprenticeship Training and Skill Development (ATSD) division.
- *Power Engineers Act and Regulations* – Power Engineers section, Building, Fire and Technical Safety division.

Progression Schedule

The power engineering skill levels are referred to as classes, with Fourth Class being the entry skill level and Second Class being the highest level of achievement within the Apprenticeship Program. A combination of technical training and on-the-job work experience, followed by successful completion of certification examinations, allows a Power Engineer to progress from one class to another.

Register as Apprentice	Requirements for Progression	Progress To
Fourth Class	<ul style="list-style-type: none">- Complete 12 months (minimum of 2000 hours) of work experience in a registered steam boiler plant- Complete technical training- Demonstrate competence in mandatory practical skills- Successfully pass certification examinations- Proof of fourth class certificate or equivalent as determined by Power Engineers section	Third Class
Third Class	<ul style="list-style-type: none">- Complete 12 months (minimum of 2000 hours) of work experience in a registered steam boiler plant- Complete technical training- Demonstrate competence in mandatory practical skills- Successfully pass certification examinations- Proof of third class certificate or equivalent as determined by Power Engineers section	Second Class
Second Class	<ul style="list-style-type: none">- Complete 24 months (minimum of 4000 hours) of work experience in a registered steam boiler plant- Complete technical training- Demonstrate competence in mandatory practical skills- Successfully pass certification examinations	N/A

1.4 Roles and Responsibilities of Apprenticeship Stakeholders

Apprentice:

- ensure that the hours worked in the occupation, and the practical skills/tasks learned or completed, are accurately documented
- make this document available to your employer, technical training instructor and representatives of the Apprenticeship Training and Skill Development (ATSD) division and the Power Engineers section of the Department of Labour and Workforce Development
- remit tuition and other fees when required
- notify the ATSD division in writing within 15 days of changes to name or address
- notify the ATSD division in writing within 15 days if suspended by the employer, if employment ends, or if the employer does not provide you with practical experience or the opportunity to attend technical training

Supervising Power Engineer (Chief Power Engineer or delegated Shift Engineer):

- teach the apprentice the skills of the trade to the best of his/her ability
- evaluate the performance of the apprentice with the employer
- review, update and sign this document on a regular basis, particularly prior to the apprentice attending technical training

Employer:

- provide direct supervision for the apprentice by a certified power engineer
- remunerate apprentice as set out in the Trade Regulations or Collective Agreements
- evaluate the performance of the apprentice with the supervising power engineer on a regular basis
- accurately document the hours worked in the occupation and verify the practical skills/tasks completed by the apprentice
- allow the apprentice to participate in the required technical training, take examinations, and re-employ the apprentice upon completion of training
- ensure the daily hours of practical experiences do not begin or end later than the daily working hours of the supervising power engineer.
- ensure the working conditions of the apprentice are the same as the conditions of the supervising power engineer in the workplace where the apprentice is employed
- notify the ATSD division in writing within 15 days if the apprentice is suspended from the workplace, if the apprentice ceases to be employed, or if unable to provide the apprentice with practical experience or allow the apprentice to participate in technical training

Technical Training Institution:

- provide a quality learning environment and the necessary student support services to enhance apprentices' ability to be successful
- participate with other stakeholders in the continuous updating of technical training
- refer apprentices to the Apprenticeship Training and Skill Development division to address questions regarding the Apprenticeship Program.
- refer apprentices to the Power Engineers section to address questions regarding certification and examinations.
- ensure that apprentices' technical training experiences are accurately documented

Apprenticeship Training and Skill Development division:

- ensure that both the apprentice and employer are informed of their respective responsibilities in the program before the apprentice and the employer enter into an apprenticeship agreement
- ensure that all apprentices are appropriately registered and records are maintained
- schedule all necessary technical training for apprentices to complete requirements for certification
- maintain regular contact with the apprentice and employer throughout the term of the apprenticeship agreement to ensure successful completion of the apprenticeship program
- administer and enforce the Apprenticeship and Trades Qualifications Act and General Regulations

Power Engineers section, Building, Fire and Technical Safety division:

- schedule all necessary examinations for apprentices to complete requirements for certification
- administer and enforce the certification of provincial power engineers
- administer and enforce the Power Engineers Act and Regulations

3.0 Technical Training

This section provides a record of the technical training currently required to successfully complete the Apprenticeship Program. The apprenticeship technical training courses cover the material outlined in the Standardization of Power Engineer Examinations Committee (SOPEEC) syllabus for each classification.

Upon successful completion of all apprenticeship technical training requirements within their classification, the apprentice will be awarded a pre-established credit of hours. For more information on pre-established credit of hours, refer to section 4.0.

3.1 How to Register for Technical Training

- Apprentice

Step 1: Review the current training schedule. If you do not have a copy, contact the Apprenticeship Training and Skill Development division to have one mailed, or obtain a copy from the website at www.nsapprenticeship.ca.

Step 2: Discuss your registration into technical training with your employer and obtain employer's agreement to register.

Step 3: Complete a Technical Training Enrolment Form. Submit the form with the tuition deposit to the Apprenticeship Training and Skill Development division before the enrolment deadline. It is important to register for technical training as soon as possible as seats are assigned on a first-come basis.

3.2 Who is Eligible to Record the Completion of Technical Training?

- Apprenticeship Training and Skill Development division – A representative of the Division may record initial credit of technical training and completion of technical training.
- Technical Training Institutions – An approved instructor may record the completion of technical training.

3.3 How is the Completion of Technical Training Recorded?

- Apprenticeship Training and Skill Development division:

Initial Credit of Technical Training - In sections 4.4 and 4.5, record initial hours credited. In section 3.4, validate applicable apprenticeship technical training courses with "credit" stamp.

Completion of Technical Training – If an instructor has recorded all apprenticeship technical training courses within a classification as being successfully completed, the apprentice will be awarded a pre-established credit of hours. For more information on pre-established credit of hours, refer to section 4.0.

If an instructor has not recorded all successfully completed apprenticeship technical training courses, a representative of the ATSD division may sign off the training in section 3.4.

- Technical Training Institutions:

Completion of Technical Training - In section 2.0, complete supervising power engineer information. In section 3.4, record successfully completed technical training.

Example:

Apprenticeship Courses	Covers Content of SOPEEC Recommended Study Units	Successful Completion (Signature / Date)	Prepares for SOPEEC Examination Papers
PESC-1801 – Industrial Legislation	ASME Code Calculations	<i>Richard Hammer</i> Nov 19, 2007	Paper A
	Industrial Administration		

3.4 Record of Technical Training Courses

This section of the logbook is to be completed by a representative of the Apprenticeship Training and Skill Development division or by an approved instructor at the appropriate technical training institution upon successful completion of technical training.

Apprenticeship Courses	Covers Content of SOPEEC Recommended Study Units	Successful Completion (Signature/Date)	Prepares for SOPEEC Examination Papers
Fourth Class Power Engineer			
PEFC-1813 – Math, Mechanics and Thermodynamics	Applied Mathematics		Paper A
	Elementary Mechanics and Dynamics		
	Elementary Thermodynamics		
PEFC-1814 – Safety	Workplace Hazardous Materials		
	Plant Safety		
	Plant Fire Protection		
PEFC-1815 – Administration, Environment and Piping	Mechanical Drawing, Administration		
	Industrial Legislation		
	Environment		
	Material and Welding		
	Piping and Valves		
PEFC-1816 – High Pressure Boilers	High Pressure Boiler Design		
	High Pressure Boiler Parts and Fittings		
	High Pressure Boiler Operation		
	Feedwater Treatment		

Apprenticeship Courses	Covers Content of SOPEEC Recommended Study Units	Successful Completion (Signature/Date)	Prepares for SOPEEC Examination Papers
PEFC-1817 – Prime Movers, Lubrication and Maintenance	Prime Movers and Engines		Paper B
	Pumps and Compressors		
	Lubrication		
	Boiler Maintenance		
PEFC-1818 – Electricity, Instrumentation and Plants	Electricity		
	Controls, Instrumentation and Computers		
	Types of Plants		
PEFC-1819 – Heating Boilers and Systems	Heating Boilers		
	Heating Systems		
	Heating Boiler and Heating System Controls		
	Auxiliary Building Systems		
PEFC-1820 – Refrigeration and Air Conditioning	Vapour Compression Refrigeration		
	Absorption Refrigeration		
	Air Conditioning		
	Air Conditioning Systems		
Third Class Power Engineer			
PETC-1821 – Applied Math and Mechanics	Applied Mathematics		Paper A1
	Applied Mechanics		
PETC-1822 – Thermodynamics and Applied Science	Thermodynamics		
	Applied Science		

Apprenticeship Courses	Covers Content of SOPEEC Recommended Study Units	Successful Completion (Signature/Date)	Prepares for SOPEEC Examination Papers
PETC-1823 – Codes, Safety, Combustion and Piping	Industrial Legislation and Codes		Paper A2
	Code Calculations, ASME Section 1		
	Industrial Safety and Fire Protection		
	Fuels and Combustion		
	Piping		
PETC-1824 – Electricity and Instrumentation	Electrotechnology		
	Electrical Calculations		
	Control Instrumentation		
PETC-1825 – Boiler Design, Fittings and Auxiliary Equipment	<i>Boilers (covers boiler design, construction, fittings and auxiliary equipment)</i>		
PETC-1826 – Boiler Operation, Water Treatment, Pumps and Welding	<i>Boilers (covers boiler operation)</i>		Paper B1
	Boiler Control Systems		
	Feedwater Treatment		
	Pumps		
	Welding Procedures and Inspection		
	Pressure Vessels		
PETC-1827 – Prime Movers	Prime Movers		
	Cogeneration		
PETC-1828 – Air Compression, Refrigeration and Auxiliary Systems	Compressors		Paper B2
	Refrigeration		
	Plant Maintenance and Administration		
	Special Industrial Equipment		
	Wastewater Treatment		

Second Class Power Engineer			
Apprenticeship Courses	Covers Content of SOPEEC Recommended Study Units	Successful Completion (Signature/Date)	Prepares for SOPEEC Examination Papers
PESC-1801 – Industrial Legislation	ASME Code Calculations		Paper A1
	Industrial Administration		
PESC-1802 – Applied Mechanics	Applied Mechanics		
PESC-1803 – Thermodynamics	Thermodynamics		Paper A2
PESC-1804 – Metallurgy	Metallurgy		
	Testing of Materials		
PESC-1805 – Boilers	Boilers		Paper A3
PESC-1806 – Pumps and Water Treatment	Pumps		
	Water Treatment		
PESC-1807 – Heat Engines and Prime Movers	Heat Engines and Prime Movers		
PESC-1808 – Lubrication, Piping and Mechanical Drawing	Lubrication		Paper B1
	Piping		
	Mechanical Drawing		

Apprenticeship Courses	Covers Content of SOPEEC Recommended Study Units	Successful Completion (Signature/Date)	Prepares for SOPEEC Examination Papers
PESC-1809 – Plant Systems and Instrumentation	Power Plant Systems		Paper B2
	Control Instrumentation		
PESC-1810 – Fuels and Combustion and Environmental Protection	Fuels and Combustion		
	Environmental Protection		
PESC-1811 – Electrotechnology	Electrotechnology		Paper B3
PESC-1812 – Compression and Refrigeration	Principles of Air and Gas Compression		
	Industrial/Commercial Refrigeration		

4.0 Time in Occupation

This section provides a record of the hours accumulated towards the completion of the Apprenticeship Program. Hours in the occupation consist of:

- initial hours credited
- hours of on-the-job training supervised by a certified power engineer
- hours of technical training

4.1 What are the Hourly Requirements for Apprenticeship?

- Fourth Class Power Engineer – 12 months (minimum of 2000 hours). On-the-job practical hours must be acquired in a fourth class, or higher, registered steam boiler plant.
- Third Class Power Engineer – In addition to holding a fourth class certificate, the apprentice must acquire an additional 12 months (minimum of 2000 hours). On-the-job practical hours must be acquired in a third class, or higher, registered steam boiler plant.
- Second Class Power Engineer – In addition to holding a third class certificate, the apprentice must acquire an additional 24 months (minimum of 4000 hours). On-the-job practical hours must be acquired in a second class, or higher, registered steam boiler plant.

Note: Only hours identified as eligible will be credited towards the Apprenticeship Program. Eligible hours are detailed in Section 42 of the Power Engineers Regulations.

Questions regarding eligible hours should be directed to:

Power Engineers section
Building, Fire and Technical Safety division
Department of Labour and Workforce Development
P.O. Box 697, 5151 Terminal Road
Halifax, NS B3J 2T8
(902) 424-5721 – telephone
1-800-559-3473 – toll free telephone
www.gov.ns.ca/lwd/equipmentsafety/engineer.asp - website address

4.2 Who is Eligible to Record Hours Accumulated in the Occupation?

- Apprenticeship Training and Skill Development division – A representative of the division may record initial credit of hours and the pre-established credit of hours upon successful completion of apprenticeship technical training.
- Employer or Designate – A chief power engineer or delegated shift engineer may record the hours worked on-the-job by the apprentice.

4.3 How are the Hours Recorded?

- Apprenticeship Training and Skill Development division:

Initial Credit of Hours - In sections 4.4 and 4.5, record initial hours credited. If applicable, validate appropriate technical training courses with initial "credit" stamp" in section 3.4.

Completion of Technical Training - Upon successful completion of all apprenticeship technical training courses within classification, the apprentice will be awarded a pre-established credit of hours.

Note: A listing of pre-established credit of hours for apprenticeship technical training and other approved programs endorsed by the Power Engineers section can be found under "approved programs" on the Power Engineers section website at www.gov.ns.ca/lwd/equipmentsafety/engineer.asp.

If there is no pre-established credit of hours endorsed by the Power Engineers section, or if the apprentice does not successfully complete all apprenticeship courses within their classification, the apprentice will be awarded a credit of 45 hours for each successfully completed apprenticeship course.

- Employer or Designate:

On-the-job Practical Hours - In section 2.0, complete supervising journeyman information. In section 4.5, record the hours worked on-the-job by the apprentice. See ABC Power example below.

Note: The hours acquired on-the-job should be recorded in this document on a regular basis, particularly before the apprentice attends technical training or meets with a representative of the ATSD division or the Power Engineers section.

Example:

Plant Name / Technical Training Institution	Chief Power Engineer / Shift Engineer		From (Y/M/D)	To (Y/M/D)	No. of Hours	Total Hours to Date	Apprenticeship Staff (Initial / Date)
	Print Name	Signature					
ABC Power	Nolan Clark	<i>Nolan Clark</i>	07/08/20	07/09/14	165	1125	

4.4 Initial Hours Credited

This section is to be completed, signed and dated by a representative of the Apprenticeship Training and Skill Development division

On-the-Job Work Experience:

Plant Name	Plant Registration No.	Plant Kilowatt Rating	Position Held (Assist Shift Eng. / Shift Eng. / Trainee)	Chief Power Engineer / Shift Engineer			Dates		Hours Credited
				(Print Name)	(Signature)	CQ #	Start Date	End Date	

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Technical Training:

Training Program	Technical Training Institution	Address	Graduation Date	* Hours Credited

*validate applicable technical training in section 3.4 with "credit" stamp

Initial Total Credit:

_____ (Enter initial total credit in section 4.5)

_____ (Signature – ATSD representative)

_____ (Date)

4.5 Record of Hours in the Occupation

This section of the document is to be completed by a chief power engineer or delegated shift engineer, or a representative of the Apprenticeship Training and Skill Development division.

Plant Name / Technical Training Institution	Plant Registration No.	Plant Kilowatt Rating	Chief Power Engineer / Shift Engineer			From (Y/M/D)	To (Y/M/D)	No. of Hours	Total Hours To Date	Apprenticeship Staff (Initial / Date)
			(Print Name)	(Signature)	(CQ #)					
Initial Total Hours Credited by ATSD division:										

4.5 Record of Hours in the Occupation

This section of the document is to be completed by a chief power engineer or delegated shift engineer, or a representative of the Apprenticeship Training and Skill Development division.

Plant Name / Technical Training Institution	Plant Registration No.	Plant Kilowatt Rating	Chief Power Engineer / Shift Engineer			From (Y/M/D)	To (Y/M/D)	No. of Hours	Total Hours To Date	Apprenticeship Staff (Initial / Date)
			(Print Name)	(Signature)	(CQ #)					

4.5 Record of Hours in the Occupation

This section of the document is to be completed by a chief power engineer or delegated shift engineer, or a representative of the Apprenticeship Training and Skill Development division.

Plant Name / Technical Training Institution	Plant Registration No.	Plant Kilowatt Rating	Chief Power Engineer / Shift Engineer			From (Y/M/D)	To (Y/M/D)	No. of Hours	Total Hours To Date	Apprenticeship Staff (Initial / Date)
			(Print Name)	(Signature)	(CQ #)					

4.5 Record of Hours in the Occupation

This section of the document is to be completed by a chief power engineer or delegated shift engineer, or a representative of the Apprenticeship Training and Skill Development division.

Plant Name / Technical Training Institution	Plant Registration No.	Plant Kilowatt Rating	Chief Power Engineer / Shift Engineer			From (Y/M/D)	To (Y/M/D)	No. of Hours	Total Hours To Date	Apprenticeship Staff (Initial / Date)
			(Print Name)	(Signature)	(CQ #)					

4.5 Record of Hours in the Occupation

This section of the document is to be completed by a chief power engineer or delegated shift engineer, or a representative of the Apprenticeship Training and Skill Development division.

Plant Name / Technical Training Institution	Plant Registration No.	Plant Kilowatt Rating	Chief Power Engineer / Shift Engineer			From (Y/M/D)	To (Y/M/D)	No. of Hours	Total Hours To Date	Apprenticeship Staff (Initial / Date)
			(Print Name)	(Signature)	(CQ #)					

4.5 Record of Hours in the Occupation

This section of the document is to be completed by a chief power engineer or delegated shift engineer, or a representative of the Apprenticeship Training and Skill Development division.

Plant Name / Technical Training Institution	Plant Registration No.	Plant Kilowatt Rating	Chief Power Engineer / Shift Engineer			From (Y/M/D)	To (Y/M/D)	No. of Hours	Total Hours To Date	Apprenticeship Staff (Initial / Date)
			(Print Name)	(Signature)	(CQ #)					

4.5 Record of Hours in the Occupation

This section of the document is to be completed by a chief power engineer or delegated shift engineer, or a representative of the Apprenticeship Training and Skill Development division.

Plant Name / Technical Training Institution	Plant Registration No.	Plant Kilowatt Rating	Chief Power Engineer / Shift Engineer			From (Y/M/D)	To (Y/M/D)	No. of Hours	Total Hours To Date	Apprenticeship Staff (Initial / Date)
			(Print Name)	(Signature)	(CQ #)					

4.5 Record of Hours in the Occupation

This section of the document is to be completed by a chief power engineer or delegated shift engineer, or a representative of the Apprenticeship Training and Skill Development division.

Plant Name / Technical Training Institution	Plant Registration No.	Plant Kilowatt Rating	Chief Power Engineer / Shift Engineer			From (Y/M/D)	To (Y/M/D)	No. of Hours	Total Hours To Date	Apprenticeship Staff (Initial / Date)
			(Print Name)	(Signature)	(CQ #)					

4.5 Record of Hours in the Occupation

This section of the document is to be completed by a chief power engineer or delegated shift engineer, or a representative of the Apprenticeship Training and Skill Development division.

Plant Name / Technical Training Institution	Plant Registration No.	Plant Kilowatt Rating	Chief Power Engineer / Shift Engineer			From (Y/M/D)	To (Y/M/D)	No. of Hours	Total Hours To Date	Apprenticeship Staff (Initial / Date)
			(Print Name)	(Signature)	(CQ #)					

4.5 Record of Hours in the Occupation

This section of the document is to be completed by a chief power engineer or delegated shift engineer, or a representative of the Apprenticeship Training and Skill Development division.

Plant Name / Technical Training Institution	Plant Registration No.	Plant Kilowatt Rating	Chief Power Engineer / Shift Engineer			From (Y/M/D)	To (Y/M/D)	No. of Hours	Total Hours To Date	Apprenticeship Staff (Initial / Date)
			(Print Name)	(Signature)	(CQ #)					

4.5 Record of Hours in the Occupation

This section of the document is to be completed by a chief power engineer or delegated shift engineer, or a representative of the Apprenticeship Training and Skill Development division.

Plant Name / Technical Training Institution	Plant Registration No.	Plant Kilowatt Rating	Chief Power Engineer / Shift Engineer			From (Y/M/D)	To (Y/M/D)	No. of Hours	Total Hours To Date	Apprenticeship Staff (Initial / Date)
			(Print Name)	(Signature)	(CQ #)					

5.0 Practical Skills

This section identifies the practical skills the apprentice is required to master prior to the completion of his/her apprenticeship. The industry-developed skills are identified by classification and are grouped into areas of competency.

5.1 Who is Eligible to Record Completion of Practical Skills?

The practical skills are to be evaluated at the apprentice's place of employment. A supervising power engineer in the occupation (chief engineer or delegated shift engineer) may sign off the completion of skills.

5.2 How is the Completion of Practical Skills Recorded?

A skills sign off system identifies which tasks have been performed and whether industry standards have been met.

If the apprentice has demonstrated his/her ability to competently perform a practical skill without extensive supervision or assistance, complete the following instructions:

- Step 1: If clarification of the practical skill is required, detail the task or tasks performed in the column entitled "tasks performed to demonstrate skill".
- Step 2: Supervising power engineer must sign, date and provide their Certificate of Qualification number (CQ #) in the column entitled "meets industry standards".
- Step 3: Apprentice must initial and date the skill in the column entitled "meets industry standards".

Each practical skill is identified as being either mandatory (M) or optional (O). The apprentice must demonstrate his/her ability to perform all mandatory practical skills within their classification.

When an apprentice has mastered all mandatory skills in an area of competency, the chief engineer must sign in the signature block provided.

- Note: If a mandatory skill is found to be impractical in a registered steam boiler plant, the apprentice may contact the Training Officer assigned to his/her file to request an exemption.

The Training Officer will forward the request to the Inspector Examiner of the Power Engineers section, Building, Fire and Technical Safety division for review and approval.

5.3 Record of Practical Skills

Each practical skill is identified as being either mandatory (M) or optional (O). The apprentice must demonstrate his/her ability to competently perform all mandatory practical skills within their classification without extensive supervision or assistance.

Area of Competency A - Occupational Skills

M/O	SKILLS	Class	Tasks Performed to Demonstrate Skill	Meets Industry Standards		
				Apprentice	Supervising Power Engineer	
				Initial/Date	Signature/Date	CQ #
M	Demonstrates awareness of codes and regulations (e.g., Power Engineers Act & Regulations, OHS, CSA Standards).	4				
M	Demonstrates awareness of plant operating and safety procedures.	4				
M	Compiles with confined space entry procedures.	4				
M	Complies with standards and regulations in handling and storing of hazardous materials.	4				
M	Documents plant operating conditions and daily activities.	4				
M	Conducts routine safety inspection (e.g., checks fire protection systems, plant alarm systems, fire extinguishers, equipment and premises).	4				
M	Selects and wears personal protective clothing and equipment.	4				

Area of Competency A – Occupation Skills (continued)

			Tasks Performed to Demonstrate Skill
M/O	SKILLS	Class	
M	Selects and safely uses hand and power tools.	4	

Meets Industry Standards		
Apprentice	Supervising Power Engineer	
Initial/Date	Signature/Date	CQ#

Signature of Chief Engineer

Area of Competency B - Boilers

			Tasks Performed to Demonstrate Skill
M/O	SKILLS	Class	
M	Starts up, operates and shuts down boiler.	2	
		3	
		4	
O	Prepares boiler for lay-up.	2	
		3	
		4	
M	Prepares boiler for maintenance.	2	
		3	
		4	

Meets Industry Standards		
Apprentice	Supervising Power Engineer	
Initial/Date	Signature/Date	CQ #

Area of Competency B - Boilers (continued)

			Tasks Performed to Demonstrate Skill	Meets Industry Standards		
M/O	SKILLS	Class		Apprentice	Supervising Power Engineer	
				Initial/Date	Signature/Date	CQ #
M	Performs routine checks and maintenance (e.g., clean burner, valve/pump packing, blow down, soot blowing)	2				
		3				
		4				
O	Performs hydrostatic test on boiler.	2				
		3				
		4				
M	Inspects and tests safety or relief valves.	2				
		3				
		4				
M	Demonstrates knowledge of safety devices (e.g., low water cutoff, flame failure)	2				
		3				
		4				

Area of Competency B - Boilers (continued)

			Tasks Performed to Demonstrate Skill
M/O	SKILLS	Class	
M	Operates and monitors control systems.	2	
		3	
		4	
M	Energizes and deenergizes steam distribution systems.	2	
		3	
		4	

Meets Industry Standards		
Apprentice	Supervising Power Engineer	
Initial/Date	Signature/Date	CQ #

Signature of Chief Engineer

Area of Competency D - Plant Auxiliary Systems

M/O	SKILLS	Class	Tasks Performed to Demonstrate Skill			Meets Industry Standards		
						Apprentice	Supervising Power Engineer	
			Initial/Date	Signature/Date	CQ #			
M	Operates and performs routine checks and maintenance of compressed air systems and components.	2						
		3						
		4						
M	Operates and performs routine checks and maintenance of plant pumps.	2						
		3						
		4						
M	Operates and performs routine checks and maintenance of fuel and ash handling systems and components.	2						
		3						
		4						
M	Operates and performs routine checks and maintenance of combustion air systems and components.	2						
		3						
		4						

Area of Competency D - Plant Auxiliary Systems (continued)

			Tasks Performed to Demonstrate Skill
M/O	SKILLS	Class	
M	Operates and performs routine checks and maintenance of cooling water systems and components.	2	
		3	
		4	

Meets Industry Standards		
Apprentice	Supervising Power Engineer	
Initial/Date	Signature/Date	CQ #

Signature of Chief Engineer

Area of Competency E - Electrical Systems

			Tasks Performed to Demonstrate Skill	Meets Industry Standards		
M/O	SKILLS	Class		Apprentice	Supervising Power Engineer	
				Initial/Date	Signature/Date	CQ #
M	Isolates high or low voltage systems.	2				
		3				
		4				
O	Operates and performs routine checks and maintenance of emergency back-up systems.	2				
		3				
		4				
O	Monitors transformers and substation.	2				
		3				
		4				

Signature of Chief Engineer

Area of Competency F - Refrigeration Systems

M/O	SKILLS	Class	Tasks Performed to Demonstrate Skill	
O	Operates and performs routine checks and maintenance of refrigeration systems and components.	2		
		3		
		4		
O	Inspects and tests refrigeration safety devices.	2		
		3		
		4		

Meets Industry Standards		
Apprentice	Supervising Power Engineer	
Initial/Date	Signature/Date	CQ #

Signature of Chief Engineer

Area of Competency G - Heating, Ventilation and Air Conditioning (HVAC) Systems

M/O	SKILLS	Class	Tasks Performed to Demonstrate Skill	
O	Operates and performs routine checks and maintenance of HVAC systems and components.	2		
		3		
		4		

Meets Industry Standards		
Apprentice	Supervising Power Engineer	
Initial/Date	Signature/Date	CQ #

Signature of Chief Engineer

Area of Competency H - Environmental Protection Systems

M/O	SKILLS	Class	Tasks Performed to Demonstrate Skill
M	Operates and performs routine checks and maintenance of environmental protection systems and components.	2	
		3	
		4	
M	Monitors and disposes of wastes in accordance with appropriate legislation.	2	
		3	
		4	

Meets Industry Standards		
Apprentice	Supervising Power Engineer	
Initial/Date	Signature/Date	CQ #

Signature of Chief Engineer

Area of Competency I - Prime Movers

M/O	SKILLS	Class	Tasks Performed to Demonstrate Skill
O	Starts up, operates and shuts down steam turbines	2	
		3	
		4	

Meets Industry Standards		
Apprentice	Supervising Power Engineer	
Initial/Date	Signature/Date	CQ #

Area of Competency I - Prime Movers (continued)

M/O	SKILLS	Class	Tasks Performed to Demonstrate Skill	Meets Industry Standards		
				Apprentice Initial/Date	Supervising Power Engineer Signature/Date	CQ #
O	Performs routine checks and maintenance of steam turbines and associated equipment.	2				
		3				
		4				
O	Inspects and tests steam turbine safety devices.	2				
		3				
		4				
O	Operates and performs routine checks and maintenance of gas turbines and components	2				
		3				
		4				
O	Inspects and tests gas turbine safety devices	2				
		3				
		4				

Area of Competency I - Prime Movers (continued)

M/O	SKILLS	Class	Tasks Performed to Demonstrate Skill
O	Operates and performs routine checks and maintenance of internal combustion engines and components.	2	
		3	
		4	
O	Inspects and tests internal combustion engine safety devices.	2	
		3	
		4	

Meets Industry Standards		
Apprentice	Supervising Power Engineer	
Initial/Date	Signature/Date	CQ #

Signature of Chief Engineer

6.0 Certification Examinations

The examination of power engineers in the Province of Nova Scotia is the responsibility of the Power Engineers section of the Building, Fire and Technical Safety division.

The following certification examinations (referred to as interprovincial examinations) are required for each classification:

- Fourth Class Power Engineer (2 examinations: papers A and B)
- Third Class Power Engineer (4 examinations: papers A1, A2, B1 and B2)
- Second Class Power Engineer (6 examinations: papers A1, A2, A3, B1, B2 and B3)

A representative of the Power Engineers section will determine eligibility to write the certification examinations based on the following requirements:

- Fourth Class Power Engineers are required to accumulate all required hours and successfully complete all technical training courses within their classification before writing any of the examinations (papers).
- Third Class Power Engineers are required to accumulate all required hours and successfully complete all technical training courses within their classification before writing any of the examinations (papers).
- Second Class Power Engineers may be approved to write an examination (paper) once they have successfully completed the technical training course(s) that apply to that exam.

Note: Proof of apprenticeship technical training may include a copy of the signed courses in this logbook, a transcript of marks, etc.

Before writing the certification examinations, it is recommended that the apprentice review the examination syllabus, reference material and sample questions available on the Standardization of Power Engineer Examinations Committee (SOPEEC) website at www.sopeec.org.

Questions regarding certification examinations and eligibility requirements should be directed to:

Power Engineers section
Building, Fire and Technical Safety division
Department of Labour and Workforce Development
P.O. Box 697, 5151 Terminal Road
Halifax, NS B3J 2T8
(902) 424-5721 – telephone
1-800-559-3473 – toll free telephone
www.gov.ns.ca/lwd/equipmentsafety/engineer.asp - website address

7.0 Program Completion

Upon completion of all apprenticeship training requirements within appropriate classification (technical training, time in occupation and practical skills), the apprentice must contact the Training Officer assigned to his/her file to review and update this logbook and enter completion information into the apprenticeship database.

Upon confirmation of the accumulation of all required hours and the successful completion of all required certification examinations, the Power Engineers section of the Building, Fire and Technical Safety division will issue a Nova Scotia Certificate of Qualification with an Interprovincial Seal put on the certificate. With the Interprovincial Seal endorsement, the certified power engineer is able to legally work anywhere in Canada (upon registering with the new province or territory), without the need for further training or examination.

Upon confirmation from the Building, Fire and Technical Safety division that the apprentice has achieved certification, the Apprenticeship Training and Skill Development division will issue a Nova Scotia Certificate of Apprenticeship.

Note: Only apprentices who have completed all apprenticeship training requirements will be issued a Certificate of Apprenticeship.

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