Canadian Supplement

Training Checklist – CSA B51, CSA B52, and ASME Section IX

Version 0 – Revision 0

Inspector Trainee/Candidate Name: _____

Jurisdictional Authority: _____

Introduction:

This document is a task-based training workbook supplement designed to help Inservice Inspector candidates training in the NB-380, National Board Inservice Inspector Training Program, that are to be working in a jurisdiction within Canada. This document may also be used to help in the training of Canadian-based inspectors who are not in the NB-380 program or may already hold a National Board IS Commission. Completion of this supplement is not mandatory for finishing the NB-380 program, nor is it a prerequisite for enrollment in the National Board Inservice Inspector Commission Course. Rather it is a training tool to assist inspectors and inspector candidates in Canada that will be applying the CSA B51 and B52 codes rules and understanding the rules in ASME Section IX for the purposes of testing and licensing pressure welders and brazers and witnessing the development of welding/brazing procedures toward registration of these procedures in a Canadian jurisdiction.

This supplement contains three types of tasks. The first is Knowledge Checks, where inspector candidates are to verbally demonstrate satisfactory knowledge and understanding of a specific topic to a commissioned inspector. These checks can be completed in any setting. The second is Practical Applications, where inspector candidates will demonstrate their understanding of inspection methods in the field under the supervision of a commissioned inspector. Examples of Practical Applications include verifying code plate information, verifying or supervising the testing of a low-water cutout device, or assessing the internal condition of a boiler. The final type is Module Assessments, where inspector candidates are tested to ensure they are retaining the subject matter for each module. These assessments are to be given by the Chief Inspector or Inservice Inspector Supervisor either verbally or in writing.

This supplement will guide inspector candidates, to acquire knowledge and experience in aspects required in Canada that are in addition to what's provided in the main body of the NB-380 Workbook. Topics and tasks covered within this supplement are based on requirements found in CSA B51 Boiler, pressure vessel and pressure piping code; CSA B52 Mechanical refrigeration code; and ASME Section IX of the Boiler and Pressure Vessel Code for the qualification of welding, brazing and fusing procedures and performance. The contents of this supplement do not override or replace anything in the ASME Boiler and Pressure Vessel Code, the National Board Inspection Code Parts 1 and 2, nor the NB-331-I, National Board Body of Knowledge of Inservice Inspectors.

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Knowledge Checks:
CSA B51, CSA B52, and ASME Section IX

1.1	**CSA B51; Boiler, Pressure Vessel, and Pressure Piping Code**	Initials	Date
1.1.1	Registration of Design Requirements		
1.1.2	Canadian Registration Numbers (CRN)		
1.1.3	Registration of Welding and Brazing Procedures		
1.1.4	Quality Program Requirements (ASME Certificate Holders)		
1.1.5	Quality Program Requirements (Non-holders of an ASME Certificate)		
1.1.6	Fitting Categories		
1.1.7	Identification (nameplates, stamping, marking requirements)		
1.1.8	Boiler Installation Requirements		
1.1.9	Boiler Blowoff Systems and Device Requirements		
1.1.10	Boiler Blowdown Vessel Sizing Requirements		
1.1.11	Boiler Blowdown Vessel Design & Fabrication Requirements		
1.1.12	Pressure Vessel Installation Requirements		
1.1.13	Buried Pressure Vessel Requirements		
1.1.14	Pressure Vessels in Propane Service		
1.1.15	Pressure Vessels in Ammonia Service		
1.1.16	Cold Stretched Pressure Vessel Requirements		
1.1.17	Overpressure Protection Device Design, Certification & Installation Requirements		
1.1.18	Overpressure Protection Device Testing and Servicing Intervals		
1.1.19	Data Reports for Non-ASME Boilers and Pressure Vessels		
1.1.20	Piping System Requirements		
1.1.21	Compressed Natural Gas Piping System Requirements		

2.1	CSA B52; Mechanical Refrigeration Code	Initials	Date
2.1.1	System Selection and Application Requirements		
2.1.2	Occupancy Types		
2.1.3	Direct and Indirect Refrigeration Systems		
2.1.4	Refrigerant Grouping and Classifications		
2.1.5	Classification by Leakage Probability		
2.1.6	Minimum Design Pressures of Refrigerants		
2.1.7	Refrigeration Pressure Vessels, Piping and Component Requirements		
2.1.8	System Pressure Testing Requirements		
2.1.9	Marking, Labelling, and Signage Requirements		
2.1.10	Mechanical Room Requirements		
2.1.11	T Class Machinery Room Requirements		
2.1.12	Refrigerant Detecting and Ventilation Requirements		
2.1.13	Overpressure Protection Device Requirements		
2.1.14	Overpressure Protection Device Discharge Capacities and Requirements		
2.1.15	Maintenance, Charging and Withdrawing of Refrigerants		
2.1.16	Storage Requirements of Refrigerants		
2.1.17	Protective Equipment and Enclosed Spaces		
2.1.18	Carbon Dioxide Refrigeration System Hazards and Precautions		

3.1	Welder Performance Qualification (WPQ) Testing and Licensing	Initials	Date
3.1.1	Pressure Welder Regulatory Requirements and Prerequisites		
3.1.2	Welding Processes (OFW, SMAW, GTAW, GMAW, SAW, Torch Brazing)		
3.1.3	Welding Process Applications (Manual, Semi-Automatic, Machine, Automatic)		
3.1.4	Welding Power Sources and Welding Electrical Currents		
3.1.5	Mode of Metal Transfer for GMAW/FCAW		
3.1.6	ASME Section IX P Numbers for Welding and Brazing		
3.1.7	ASME Section IX F and A Numbers		
3.1.8	Awareness of Filler Metal SFA Specifications and AWS Classifications		
3.1.9	Welding Joint Types and Configurations		
3.1.10	Welding Positions		
3.1.11	Shielding and Purging Gases		
3.1.12	ASME Section IX Essential and Non-Essential Variables for WPQ		
3.1.13	ASME Section IX Range of Qualifications for WPQ		
3.1.14	Understanding Registered Welding Procedure Specifications		
3.1.15	NDE Basics and Acceptance Criteria (VT, RT, MP & LP)		
3.1.16	Mechanical Testing vs NDE		
3.1.17	ASME Section IX Guided Bend Specimens, Testing and Acceptance Criteria		
3.1.18	ASME Section IX Maro-Etch Specimens, Testing and Acceptance Criteria		
3.1.19	ASME Section IX Peel and Section Specimens, Testing and Acceptance Criteria		
3.1.20	WPQ Reports and QW/QB-484 Forms and QW-483 Forms		
3.1.21	Entering WPQ Test Data into Data System and Producing License		

Signature Page

Inspector Trainee / Candidate:

By signing this document, I affirm that I have completed the program requirements as outlined and detailed in this NB-380 Workbook Supplement. The dates and signatures in the training workbook accurately reflect the training I have received and knowledge I have demonstrated.

Inspector Candidate's Acknowledgement		
	Signature	Date

Chief Inspector or Inspector Supervisor:

By signing this document, I affirm that I have reviewed the workbook for accuracy and completeness. I affirm that the Inspector Candidate has completed the program requirements as outlined and detailed in this NB-380 Workbook Supplement. The dates and signatures written in this workbook accurately reflect the training given under my supervision.

Supervisor's Acknowledgement		
	Signature	Date