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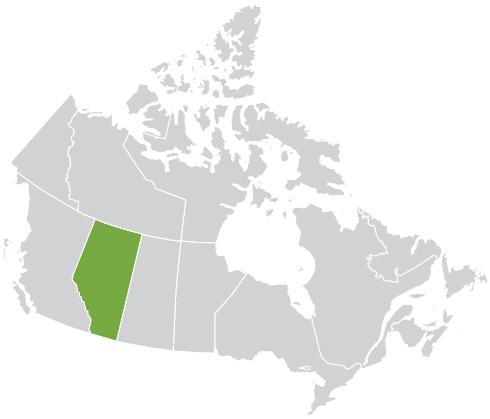
HOW TO GET A CNG REFUELING STATION APPROVED

ALBERTA

What You Need to Know

Congratulations on making the decision to switch your fleet to compressed natural gas (CNG). Whether you decide to work with an experienced engineering firm or you enter into a contract for a turnkey station, there are steps to be aware of to get a CNG station approved. At the beginning of the planning process, start by contacting your local natural gas utility to confirm natural gas supply and available pressure.



The CNG Station Approval Checklist on the next page outlines the steps involved in getting a station approved in Alberta. The Reference Table on the last two pages provides extra detail on process, review, inspection, and other requirements.

The primary code that applies is the CSA B108 – Natural Gas Fueling Stations Installation Code. This Code applies to public and private CNG stations including fast fill and time fill stations.

Public stations can refuel to a settled pressure of 3,000 psi. Private stations can refuel to a settled pressure of 3,600 psi. Work is underway to allow all Canadian stations to refuel to a settled pressure of 3,600 psi.

CNG station installation in Alberta is regulated by Alberta Municipal Affairs, the Alberta Boiler Safety Association (ABSA), and by local municipalities. Alberta Municipal Affairs oversees gas safety. ABSA is responsible for pressure vessels. Municipalities check for compliance with local bylaws. No federal approval is required.

Knowledgeable experts and equipment suppliers can help with station options, approvals, and permits.

The total timeline to build a new CNG station will vary, but you should plan for a minimum of six to nine months based on equipment lead time as well as time for review and approval.

This product is made possible by a financial contribution from Natural Resources Canada.

CNG STATION APPROVAL CHECKLIST

1. Review process & secure permits

- ☐ Meet with the local municipality to inform them of the proposed project and to review the approval and permitting process.
- ☐ Acquire municipal development permit for station construction.
- ☐ Acquire necessary permits (building, gas, electrical, etc.) from the Authority Having Jurisdiction (AHJ) for CNG station construction.

Note: The regulation of: (a) fuels; and (b) pressure vessels are administered by Alberta Municipal Affairs and ABSA, respectively.

The AHJ should be contacted regarding site specific concerns. Always contact the local AHJ prior to any construction activity.

AHJ contact information may be accessed online at: http://goo.gl/yUhBkn

If you have trouble determining who the AHJ is, please call Alberta Municipal Affairs at 1.866.421.6929 and they will assist you.

2. Submit documents & get approvals

- ☐ Contact equipment manufacturers (e.g. CNG dryer, CNG compressor package, CNG dispensing equipment, other pressure retaining equipment) to provide:
  - P&IDs with all pipe sizes and pressure ratings shown as well as detailed Bills of Material indicating all component specifications and provincial CRNs OR third-party certification for the equipment
  - CRNs for CNG storage vessels

Note: This information may be requested by the AHJ and ABSA or it may be the responsibility of you, your agent or the equipment manufacturer to submit without being requested. This information will be reviewed by the AHJ and by ABSA.

- ☐ Submit the following documentation to the AHJ:
  - Site plans indicating setbacks and separations consistent with CSA B108 and any additional provincial regulations
  - Narrative description of the station size, equipment to be installed and operation equipment
  - Installation Piping and Instrumentation Diagrams (P&ID) with all pipe sizes and pressure ratings shown as well as with detailed Bills of Material provided that indicate all component specifications and provincial CRNs. Check Section 204 of the Reference Table on page 3 for any exemptions that may apply.
  - Hazardous locations diagram
  - Single line electrical schematics
- ☐ Ensure each piece of major equipment is certified by a third-party inspection body recognized by the Standards Council of Canada for the electrical discipline.

3. Construct station & plan for inspections

- ☐ Begin site consruction once equipment and station design are approved. The AHJ will have specified certain hold and inspection points, such as pressure testing of underground pipe with the trenches open.
- ☐ Once construction is complete, obtain approval from the AHJ to energize the equipment and introduce natural gas to the station. The AHJ may also ask that you provide proof of electrical approval and pressure vessel CRNs at this stage.
- ☐ Once all equipment has been commissioned and tested, submit a request for a final site inspection to the AHJ. This site inspection may include testing of safety equipment, such as emergency shut down (ESD) systems.

4. Get operating permit & plan for re-certification

- ☐ Upon completion of the final inspection, the AHJ will issue an occupancy permit.
- ☐ Review and understand the requirements for station re-certification as detailed in local regulations.

HOW TO USE THIS REFERENCE TABLE

To learn about the requirements for station approval, start in the Description column for the area of interest and read across the row. The information in this Reference Table is intended to provide extra detail related to the process outlined in the Checklist on page 2. Please note that blanks mean there are no current requirements in this area. Note that additional approvals beyond those outlined in the Table may be required depending on the specific circumstances.

CNG STATION APPROVAL REFERENCE TABLE

Item	Description	Overall Station Design	Pressure Vessels and Piping	Electrical
General Code Requirements				
100	Authority Name	AHJ	ABSA	AHJ
110	Primary Review and Inspection Code(s)	CSA B108 and B149.1	CSA B51 (vessels) and CSA B51 Part 3 (piping)	Canadian Electrical Code
111	Secondary Inspection Code or Regulation	CSA Z662 - Utilities may be exempt from certain aspects of Municipal Affairs' jurisdiction	ASME PCC-2-2008 Repair of Pressure Equipment and Piping (for determination of stored energy for pneumatic testing)	
112	Secondary Inspection Code or Regulation	B149.3 may apply and/ or approval from the administrator may be required for equipment and materials	ABSA inspection required	
Canadian Registration Number (CRN) Requirements				
200	Required on Piping Systems:		Yes	
201	Required on Vessels: (Note that as per ASME Section VIII--Vessels are >15 psig, and >1.5 FT3 inside volume, and >6"inside diameter.)		All vessels including those smaller than ASME-sized vessels require CRNs from the jurisdiction of installation. Vessels from outside of Canada must have National Board registration	
202	Required on what components:		All piping and pressure containing devices	
203	Special CRN Requirements:		All materials must be ASME or ASTM materials or be approved under a variance from ABSA	
204	Exemptions:	Equipment that has a recognized 3rd party Certification	None	
Licensing Requirements				
300	Designer Licensing	AB PEng for CRNs	PEng for piping or as required by the Code of Construction	
301	Equipment Supplier Licensing	None	All contractors, vessel manufacturers and piping fabricators are required to have an ABSA registered Quality Control Program	
302	Station Developer	None		
303	Station Construction Contractor	AB Gas Fitter or equivalent	All contractors, vessel manufacturers and piping fabricators are required to have an ABSA registered Quality Control Program	
304	Station Maintenance Contractor		All contractors, vessel manufacturers and piping fabricators are required to have an ABSA registered Quality Control Program	
305	Station Operator			

Item	Description	Overall Station Design	Pressure Vessels and Piping	Electrical
Process Steps				
400	Project Inception	Informal meeting to discuss the nature, size and location of the project	Informal meeting to discuss the nature, size and location of the project	
401	Site Design	Submit site layout drawings demonstrating compliance with B108 on setbacks and other issues Submit a narrative describing the station size, configuration and operations Submit P&IDs with line sizes, pressures, temperatures, and a bill of material with all pressure retaining components listed	Submit a narrative describing the station size, configuration and operations Submit P&IDs with line sizes, pressures, temperatures, and a bill of material with all pressure retaining components listed with their AB CRNs Refer to ABSA website for piping registration guidelines	
402	Equipment Design	Submit P&IDs with line sizes, pressures, temperatures, and a bill of material with all pressure retaining components listed The Alberta Gas Code Regulation requires equipment related to gas systems to be tested and certified by a certification body accredited by the Standards Council of Canada	Submit a narrative describing the equipment size, configuration and operations. Submit P&IDs with line sizes, pressures, temperatures, and a bill of material with all pressure retaining components listed with their AB CRNs Refer to ABSA website for piping registration guidelines	
403	Equipment in Plant Inspections--In Province	All gas piping must be tested in accordance with the related Codes	Must be witnessed by ABSA Pneumatic testing to 120% or hydro testing to 150% of design pressure. If a pneumatic test is proposed, the contractor manufacturer must submit a stored energy calculation to determine the required setbacks from the test area. Proposed procedure is to be submitted to ABSA	2nd party electrical inspection by recognized agency (such as CSA or ETL)
404	Equipment in Plant Inspections--Out of Province	All gas piping must be tested in accordance with the related Codes	If in an adjacent province, ABSA recognizes the Quality Control program for that province, however a non-adjacent province or outside of Canada requires the tests must be witnessed by National Board Inspections Agency Pneumatic testing to 120% or hydro testing to 150% of design pressure	3rd party electrical inspection by recognized agency (such as CSA or ETL)
405	Site Testing	All gas piping must be tested in accordance with the related Codes	Must be witnessed by ABSA inspector Peumatic testing to 120% or hydro testing to 150% of design pressure. If a pneumatic test is proposed, the contractor manufacturer must submit a stored energy calculation to determine the required setbacks from the test area	
406	Site Inspection	AHJ	ABSA	Local AHJ
407	Final Operating Permit	The AHJ will advise the Municipality that all CNG station requirements have been met once the AHJ and ABSA have completed their inspections satisfactorily		