

HOW TO GET A CNG REFUELLING STATION APPROVED

Ontario

What You Need to Know

So you are interested in switching your fleet to compressed natural gas (CNG)? As you start down this road, you will need to consider the process for approval early on. 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 in order 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 Ontario. The Reference Table on the last two pages provides extra detail on process, review, inspection, and other requirements.



CNG station installation in Ontario is regulated by the Technical Standards and Safety Authority (TSSA) and by local municipalities. The TSSA oversees fuel safety, pressure vessels and Operating Engineers, while municipalities check for compliance with local by-laws. No federal approval is required, unless you want to allow the general public to refuel at your station. If this is the case, Measurement Canada will need to be involved.



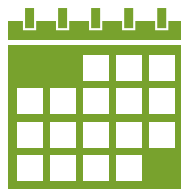
The primary code that applies is CSA B108 – Natural Gas Fueling Stations Installation. This Code applies to public and private CNG stations that offer fast fill capabilities, time fill capabilities, or both.



Public stations can refuel to a settled pressure of 3000 psig. Private stations can refuel to a settled pressure of 3600 psig. Work is underway to allow all Canadian stations to refuel to a settled pressure of 3600 psig.



Knowledgeable design firms, installation firms, and equipment suppliers can help with station options, approvals, and permits.



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

CNG STATION APPROVAL CHECKLIST

1. Provide notice and review process.

Gas Utility Level

- Contact your local natural gas utility to confirm natural gas supply and available pressure.

Municipal Level

- Meet with local municipal officials to inform them of the proposed project and to review the approval and permitting process.

Provincial Level

- Contact the Fuels Safety division of the TSSA at their Toronto headquarters to inform them of the proposed project and to review the approval and permitting process.
- Depending on the size of your station, it might also be necessary to contact the Operating Engineers division of the TSSA.
- For stations on which you wish to start construction prior to the approval of the entire station (i.e. all fittings and piping runs that should be submitted along with the schematics for your station), you will require a Variance from the TSSA. The application for a Variance can be found on the TSSA's website.

2. Submit supporting documentation and obtain approvals and permits for construction.

Municipal Level

- Refer to the Reference Table on the following page for a comprehensive list of municipal Authorities Having Jurisdiction (AHJ) that may be involved in approving your project.
- Obtain a letter of compliance from the appropriate municipal authority.
- The topics of interest to the local municipality will include some or all of the following:
 - Legal
 - Land use
 - Site services
 - Environmental
 - Other

Provincial Level

- It is recommended that this step be completed in parallel with Step 1, as the tasks listed are codependent.
- Refer to the Reference Table on the following page for a comprehensive list of provincial AHJs that may be involved in approving your project.

NOTE: The following describes the process required by the Fuels Safety division of the TSSA. Similar processes may be required by the other AHJs listed in the Reference Table.

- Prepare site plan drawings that identify suppliers, equipment, and details of equipment interconnections. These drawings will include:
 - Site P&ID with all pipe sizes and pressure ratings shown; and
 - Detailed Bills of Materials indicating all component specifications and ratings, provincial CRNs or certifications (e.g., CSA), material specifications (including ASTM standards), and any necessary third-party certification for the equipment (including CNG storage vessels).
- Contact equipment manufacturers (e.g., CNG dryer, CNG compressor package, CNG dispensing equipment, and other pressure retaining equipment) for supporting information, such as:
 - Equipment P&IDs with all pipe sizes and pressure ratings shown; and
 - Detailed Bills of Materials indicating all component specifications and ratings, provincial CRNs or certifications (e.g., CSA), material specifications (including ASTM standards), and any necessary third-party certification for the equipment (including CNG storage vessels).
- Regardless of whether you opt to submit a Standard or a Variance Application, the following documentation must be submitted to the Fuels Safety division of the TSSA:
 - Site plans indicating setbacks and separations consistent with CSA B108 and any additional provincial regulations;
 - Narrative describing station sizing, equipment, and operating conditions;
 - Site and equipment P&IDs with all pipe sizes and pressure ratings shown;
 - Detailed Bills of Materials indicating all component specifications and ratings, provincial CRNs and certifications (e.g., CSA), material specifications (including ASTM standards), and any necessary third-party certifications for the equipment;
 - Hazardous locations diagrams; and
 - Obtain approval from the Electrical Safety Authority (ESA) by submitting the following documentation:
 - Single line electrical schematics
 - Site inspection report

Federal Level

- If you will be offering refuelling capabilities to the general public, you will need to have your dispenser certified by Measurement Canada.

3. Construct station and develop a plan for inspections.

- Begin site construction once the station design has been approved.
- The appropriate AHJs will specify certain hold and inspection points. For example, the Fuels Safety division of the TSSA will require the pressure testing of underground pipe with the trenches open.
- Once construction is substantially complete, obtain approval from the necessary AHJs to energize the equipment and introduce gas to the station. The TSSA will also ask that you provide proof of electrical approval and pressure vessel CRNs at this stage.
- Conduct commissioning and invite the appropriate AHJs to attend.
- Once all equipment has been commissioned and tested, submit a request for a final site inspection to the TSSA and to any other necessary AHJs identified through this process.

4. Obtain operating permit and develop a plan for re-certification.

- Upon successful completion of all final inspections, ensure that all approvals, permits, certificates, and registrations (as applicable) are in order and in place. As a minimum, this will include a Licence to Operate a Fuelling Facility from the Fuels Safety division of the TSSA. Others may be required depending on station size and location.
- Review and understand the requirements for periodic renewals of the above listed document(s).

HOW TO GET A CNG REFUELING STATION APPROVED

CNG STATION APPROVAL REFERENCE TABLE

How to Use this Reference Table

The information given in this Reference Table is intended to provide extra detail to supplement the checklist on the previous page. Each step on the previous page is further broken down into gas utility, municipal, provincial, and federal level tasks. The relevant Authority Having Jurisdiction (AHJ), guiding document, required documentation, nature of approval, and the documents one receives upon obtaining approval is then provided for each task. Additional approvals beyond those outlined below may be required, depending on the circumstances.

Item		Authority	Guiding Document	Documents to Submit	Nature of Approval	Approval Documents
Step 1: Provide notice and review process.						
Gas Utility						
101	Contact your local natural gas utility to confirm natural gas supply and available pressure.	Local natural gas utility	N/A	Verbal/e-mail request.	N/A	Confirmation of receipt.
Municipal Level						
111	Inform the AHJ of the proposed project and review the approval and permitting process.	Local municipal officials	N/A	Letter.	N/A	Confirmation of receipt.
Provincial Level						
121	Inform the AHJ of the proposed project and review the approval and permitting process.	TSSA – Fuels Safety Division TSSA – Operating Engineers Division (if compression exceeds 50 hp)	N/A	Letter.	N/A	Confirmation of receipt.
Federal Level						
131	N/A					
Step 2: Submit supporting documentation and obtain approvals and permits for construction.						
Municipal Level						
211	Obtain a letter of compliance from the	Local municipal officials	Documents pertaining to the	As required by the TSSA.	By-law review.	Letter signed by the Chief Building Official or designate.

HOW TO GET A CNG REFUELING STATION APPROVED

	Item	Authority	Guiding Document	Documents to Submit	Nature of Approval	Approval Documents
	appropriate AHJ for submission to the TSSA.		following topics: legal and land use.			
212	Compile legal information, which may include none to all of the following: surveys, easements, and rights of way.	Local municipal officials	Any pertinent legal documents.	As required by the municipality.	By-law review.	Building permits and others, as required by the municipality.
213	Compile land use information, which may include none to all of the following: official plan, zoning by-laws (i.e., re-zoning or minor variance applications), site plan control, building permits, and sign permits.	Local municipal officials	Any pertinent land use documents.	As required by the municipality.	By-law review.	Building permits and others, as required by the municipality.
214	Compile site services information, which may include none to all of the following: water, storm water, sanitary sewer, and electrical services.	Local municipal officials	Any pertinent site services documents.	As required by the municipality.	By-law review.	Building permits and others, as required by the municipality.
215	Compile environmental information, which may include none to all of the following: conservation authority, natural environment designation, site assessment (Phase I, Phase II), and agricultural MDS.	Local municipal officials	Any pertinent environmental documents.	As required by the municipality.	By-law review.	Building permits and others, as required by the municipality.
216	Compile any other necessary information, which may include none	Local municipal officials	Any pertinent documents.	As required by the municipality.	By-law review.	Building permits and others, as required by the municipality.

HOW TO GET A CNG REFUELING STATION APPROVED

	Item	Authority	Guiding Document	Documents to Submit	Nature of Approval	Approval Documents
	to all of the following: Ontario Heritage designation, local cultural designation, archaeological site designation, railway rights of way, First Nations consultation, and mining claims.					
Provincial Level						
221	Prepare site plan drawings that identify suppliers, equipment, and details of equipment interconnections.	TSSA – Fuels Safety Division	Primary regulatory instruments include: O. Reg. 214/01, Ontario Code Adoption Document FS-212-14, and O. Reg. 212/01 (for inlet pipe at less than 125 psig). Applicable codes include: CSA B108, CSA B51, and CSA B149.1.	P&IDs and detailed Bills of Materials for the overall site that have been stamped by a P. Eng. (including CRNs as applicable, ratings, and material specifications), site plan drawings indicating setbacks, a narrative describing station sizing, equipment selection, and operating conditions, and hazardous locations diagrams.	Document review by TSSA. If you have not received a letter of approval from the TSSA and need to begin construction of the station, the TSSA must approve an Application for Variance.	Design approval if information provided is 100% complete, or a variance approval if information provided is incomplete.
222	Acquire detailed drawings for major pieces of equipment from manufacturers.	TSSA – Fuels Safety Division	Primary regulatory instruments include: O. Reg. 214/01, Ontario Code Adoption Document FS-212-14, and O. Reg. 212/01 (for inlet pipe at less than 125 psig).	P&IDs and detailed Bills of Materials for each major piece of equipment (including CRNs as applicable, ratings, and material specifications for individual components). These	Part of item 221 above.	Part of item 221 above.

HOW TO GET A CNG REFUELING STATION APPROVED

	Item	Authority	Guiding Document	Documents to Submit	Nature of Approval	Approval Documents
			Applicable codes include: CSA B108, CSA B51, and CSA B149.1.	must be submitted as part of the overall site approval, per the above.		
223	Determine Operating Engineer requirements.	TSSA – Operating Engineers Division	Primary regulatory instruments include: O. Reg. 219/01.	None at this time. However, site design must provide accommodation for equipment and personnel required by O. Reg. 219, if any.	N/A	N/A
224	Per the TSSA’s requirements, obtain electrical approval for the proposed design.	ESA	Applicable codes include: Canadian Electrical Code (CSA C22.1).	Single line electrical schematics and a site inspection report.	Document review.	Letter of compliance.
225	Complete Noise Screening Assessment and if necessary, obtain approval.	Ministry of the Environment and Climate Change (MOECC)	Primary regulatory instruments include: O. Reg. 419/05.	Noise screening report and Environmental Compliance Approval (ECA) application.	Document review.	Noise screening report on file or, if necessary, ECA certificate with terms and conditions.
226	Complete Pre-Start Health & Safety Review (PSR) and obtain approval.	Ministry of Labour	Primary regulatory instruments include: is O. Reg. 851.	PSR report.	Owner’s internal review.	Letter of compliance and Hazard Identification & Risk Assessment (HIRA).
Federal Level						
231	Dispenser must be certified if fuel retailing will be offered.	Measurement Canada	C.R.C., c.1605.	None at this time. However, a dispenser capable of meeting Measurement Canada requirements must be specified.	N/A	N/A
Step 3: Construct station and develop plan for inspections.						
Municipal Level						
311	Arrange for any interim and final building and	Local municipal officials/utilities	As required by the municipality.	As required by the municipality.	Field inspection.	Interim and final inspection reports/ approvals.

HOW TO GET A CNG REFUELING STATION APPROVED

	Item	Authority	Guiding Document	Documents to Submit	Nature of Approval	Approval Documents
	site inspections that might be required.					
Provincial Level						
321	Station Construction/ Modifier Contractor Certification	TSSA – Fuels Safety Division	Primary regulatory instruments include: O. Reg. 215/01.	RSI Certificate, if requested.	N/A	RSI Certificate.
322	Conduct interim inspections and obtain approval to energize equipment and to introduce gas to the system.	TSSA – Fuels Safety Division	Approval letter obtained in Step 2.	Field test report(s).	Field inspection.	Verbal approval.
323	Obtain electrical approval of the facility.	ESA	Primary regulatory instruments include: O. Reg. 164/99. Applicable codes include: Canadian Electrical Code (CSA C22.1) and the Ontario Electrical Safety Code.	Application for Inspection (also referred to as a permit by ESA).	Field inspection.	Certification sticker/ letter.
324	Conduct final inspection.	TSSA – Fuels Safety Division	TSSA inspection checklist.	N/A	Field inspection.	Letter of approval.
325	Conduct final inspection (NOTE: This secondary inspection is applicable if an Operating Engineer is required.).	TSSA – Operating Engineers Division	Primary regulatory instruments include: O. Reg. 219/01.	Application form.	Field inspection.	Plant registration.
Federal Level						
331	Have dispenser certified if fuel retailing will be offered.	Measurement Canada	C.R.C., c.1605.	Verbal/e-mail request.	Field inspection.	Certification sticker applied to dispenser.
Step 4: Obtain and maintain operating permits and licences.						
Municipal Level						
411	Final approval if building permit was required.	Local municipal officials	Building permit.	As required by building permit.	Field inspection.	Occupancy permit.

HOW TO GET A CNG REFUELING STATION APPROVED

Item		Authority	Guiding Document	Documents to Submit	Nature of Approval	Approval Documents
Provincial Level						
421	Station Construction Contractor Certification.	TSSA – Fuels Safety Division	Primary regulatory instruments include: O. Reg. 215/01.	RSI Certificate, upon request.	Field inspection.	RSI Certificate.
422	Station Maintenance Contractor Certification.	TSSA – Fuels Safety Division	Primary regulatory instruments include: O. Reg. 215/01.	RST Certificate, upon request.	Field inspection.	RSI or RST Certificate.
423	Station Operating Engineer Licensing.	TSSA – Operating Engineers Division	Primary regulatory instruments include: O. Reg. 219/01.	Certificate for required qualification.	Field inspection.	Plant registration renewal.
424	Obtain a Licence to Operate the facility.	TSSA – Fuels Safety Division	Primary regulatory instruments include: O. Reg. 214/01.	Application for Licence or Licence Renewal.	Document review by TSSA.	Licence certificate renewal.
Federal Level						
431	N/A					

NOTES:

1. Depending on the type of business, additional licences may be required.