



INSTRUCTIONS FOR APPLICATION FOR INSTALLATION (PLAN REVIEW) OF COMPRESSED NATURAL GAS (CNG) FUELING FACILITIES

A plan review must be completed on a dispensing station or an addition to a dispensing station, including a residential fueling facility or vehicle-fueling appliance with storage.

The Department of Environmental Quality, Storage Tank Unit, has adopted the 1992 Edition of NFPA 52, *Standard for Compressed Natural Gas Vehicular Fuel Systems*, with Michigan amendments.

A request for plan review must include information on the attached EQP3860 Form, and must include a plot map showing the following information:

1. The location of buildings, public streets, highways, roads, sidewalks, railroad main tracks and electric power lines.
2. The proposed location of CNG equipment, vessels, ESD buttons, dispensers and fire extinguishers.
3. The location of property line and description of what is located on adjacent property.
4. The location of existing aboveground and underground tanks storing flammable or combustible liquids.
5. The location of the protective bollards, K-rails, etc. Parking configuration, traffic patterns (use direction arrows).
6. The location of the point of transfer in relation to the container(s), buildings, public sidewalks, highways, streets, roads, main line railroad tracks, the line of adjoining property that can be built upon, aboveground and underground tanks storing flammable or combustible liquids.

A plan review fee of \$203.00, per 18,500 SCF of storage, must be received with the EQP3860 Form and a plot map. A plan review will not be completed without the plan review fee. **THIS FACILITY CANNOT BE OPERATED WITHOUT APPROVAL FROM THIS DIVISION.**

Submit the attached application with required attachments and a check or money order made payable to the “**State of Michigan**” to cover the \$203, per 18,500 SCF, registration fee. Mail the application form, attachments and check to:

DEQ OFFICE OF FINANCIAL MANAGEMENT
REVENUE CONTROL UNIT
PO BOX 30657
LANSING, MI 48909
Phone 517-335-2690
Fax: 517-335-2245

If you have any additional questions concerning this matter, please contact the Unit, at 517-335-2690.



APPLICATION FOR INSTALLATION (PLAN REVIEW) OF COMPRESSED NATURAL GAS (CNG) FUELING FACILITIES

This information is required under Act 207 of the Public Acts of 1941, as amended, being Section 29.5c of the Michigan Compiled Laws Annotated. Any owner who knowingly fails to notify or submits false information shall be subject to a misdemeanor and/or civil penalties not to exceed \$5000 per day for each tank for which notification is not given or for which false information is submitted.

NOTE: THIS FORM IS TO BE USED AS A GUIDELINE. IT IS NOT INTENDED TO LIST ALL OF THE REQUIREMENTS THAT MAY BE APPLICABLE. EXISTING INSTALLATIONS THAT WERE IN COMPLIANCE WITH PREVIOUS RULES DO NOT HAVE TO ALTER EQUIPMENT UNDER THESE RULES UNLESS SPECIFICALLY REQUIRED TO DO SO. **A PLAN REVIEW FEE OF \$203, PER 18,500 SCF, MUST BE INCLUDED WITH THIS APPLICATION.** PLEASE DIRECT ANY QUESTIONS TO THE TECHNICAL REVIEW UNIT AT 517-335-2690.

FACILITY NAME	NEW ASSIGNED TANK NUMBER(S)	FACILITY ID NUMBER
FACILITY STREET ADDRESS (PO BOX NOT ACCEPTABLE)	CONTACT PERSON (AT LOCATION)	
CITY	STATE	COUNTY
		ZIP CODE
SUBMITTER'S NAME	STREET ADDRESS	
		AREA CODE & TELEPHONE NUMBER
CITY	STATE	ZIP CODE

Number of compressors:	Total SCFM:	Number of storage cylinders:	Total SCF capacity:
------------------------	-------------	------------------------------	---------------------

Prefabricated Package - Components assembled and delivered to the site for final installation; may be delivered separately to the installation site. The packager must list these components as being part of the package in the certification letter.

Field Fabricated - System components not identified as part of a prefabricated package.

Cut Sheet - Included if an item is used that is not contained in a certification letter identifying it as meeting all NFPA 52, 1992 Edition (with Michigan amendments), and the National Electrical Codes, 1999 Edition.

Packager Certification Letter - Letter identifying and listing components as meeting NFPA 52 and NEC requirements (if applicable) if cut sheet is not provided.

ITEM	DESCRIPTION	MANUFACTURER AND PART NUMBER	
		PART OF PREFABRICATED PACKAGE	FIELD FABRICATED
1.	CONTAINER DESIGN: Section 2-3 & 2-4: Transportation regulations (DOT or TC). Rated service pressure of not less than 2,400 psig at 70 degrees F. ASME, Section VIII (Division 1) or Section X. U1-A required for ASME vessel.	<input type="checkbox"/> DOT/TC <input type="checkbox"/> ASME Please check appropriate box: <input type="checkbox"/> 2,400 psig <input type="checkbox"/> 3,000 psig <input type="checkbox"/> 3,600 psig <input type="checkbox"/> 4,500 psig <input type="checkbox"/> other _____ psig	<input type="checkbox"/> DOT/TC <input type="checkbox"/> ASME Please check appropriate box: <input type="checkbox"/> 2,400 psig <input type="checkbox"/> 3,000 psig <input type="checkbox"/> 3,600 psig <input type="checkbox"/> 4,500 psig <input type="checkbox"/> other _____ psig
2.	MANUALLY OPERATED CONTAINER/SHUTOFF VALVE: Section 2-3.1: Shall be listed or approved. Section 4-11.1: Shall be provided for each container.		
3.	BACKFLOW CHECK VALVE (See MI amendment): Section 4-11.2: Fill line to storage container shall be equipped with a backflow check valve located between the compressor and the storage container.		
4.	MANUAL SHUTOFF VALVE: Section 2-3.1 & 4-11.3: Shall be listed or approved. Manually operated and installed in a manifold as close to a container or group of containers as practical. Shall be downstream of the backflow check valve referred to in Section 4-11.2.		

APPLICATION FOR INSTALLATION OF COMPRESSED NATURAL GAS FUELING FACILITIES

(Continued from Page 1)

ITEM	DESCRIPTION	MANUFACTURER AND PART NUMBER	
		PART OF PREFABRICATED PACKAGE	FIELD FABRICATED
5.	<p>PRESSURE RELIEF DEVICES - DOT CYLINDERS: Section 2-3, 2-5, 4-6: Shall be listed or approved. Arranged to discharge to a safe area so escaping gas will not impinge upon buildings, other equipment and areas occupied by the public.</p> <p>PRESSURE RELIEF DEVICES - ASME CONTAINERS: Section 2-3, 2-5, 4-6: Shall be listed or approved. Provided with one or more spring-loaded pressure relief valves set to open in accordance with ASME code. Installed so any discharge will be in a vertical position and fitted with suitable raincaps.</p>		
6.	<p>CLOSING VALVE: Section 2-3.1: Shall be listed or approved. Section 4-11.10: Each line between the gas storage and dispenser shall have a valve that will close when the power supply to the dispenser is cut off, or any Emergency Shutdown Device (ESD) is activated.</p>	<input type="checkbox"/> Solenoid Valve	<input type="checkbox"/> Pneumatic Valve
7.	<p>CONTAINER INSTALLATION: Section 4-5.1, 4-5.2 & 4-5.3: Installed aboveground on stable, non-combustible foundations or in vaults. In flooding areas, anchored to prevent floating. Protected to inhibit corrosion (painted). Protected from the flow or accumulation of flammable or combustible liquids under containers.</p>		
8.	<p>COMPRESSOR: Section 4-3.6: Designed for use with CNG. Section 4-3.7: When operated unattended, CNG compression equipment shall be equipped with a high discharge and low suction pressure automatic shutdown control. Section 4-3.9: Shall incorporate an automatic condensate system.</p>		
9.	<p>PRESSURE REGULATORS: Section 2-3.1: Shall be listed and approved. Section 2-7: Inlet and each chamber shall be designed for its maximum service pressure with a pressure safety factor of at least four. Section 4-7: Designed, installed or protected so operation will not be affected by the elements.</p>		
10.	<p>PRESSURE RELIEF DEVICES - COMPRESSOR: Section 2-3 & 4-3.6: Shall be listed or approved. Shall limit each stage pressure to the maximum allowable service pressure for the compression cylinder and piping.</p> <p>PRESSURE RELIEF DEVICES - DRYER: Section 2-3.1: Shall be listed or approved.</p>		
11.	<p>PRESSURE GAUGES: Section 2-3: Shall be listed or approved. Section 2-6: If provided, shall be capable of reading at least 1.2 times the system design pressure. Section 4-8: Installed to indicate compression discharge pressure, storage pressure and fuel supply container fill pressure.</p>		
12.	<p>SELF-CLOSING VALVE: Section 2-3.1: Shall be listed or approved. Section 4-11.12: Shall be provided on the inlet of the compressor that will shut down the gas supply.</p>	<input type="checkbox"/> Solenoid Valve	<input type="checkbox"/> Pneumatic Valve

APPLICATION FOR INSTALLATION OF COMPRESSED NATURAL GAS FUELING FACILITIES

(Continued from Page 2)

ITEM	DESCRIPTION	MANUFACTURER AND PART NUMBER										
		PART OF PREFABRICATED PACKAGE	FIELD FABRICATED									
13.	<p>PIPING FABRICATION: Section 2-8.3: Fabricated and tested in accordance with ANSI/ASME B31.3. Section 2-8.4: Plastic pipe, tubing and fittings; galvanized pipe and fittings; aluminum pipe, tubing and fittings; pipe nipples for initial connection to a container; and copper alloy with copper content exceeding 70% shall not be allowed.</p> <p>PIPING INSTALLATION: Section 4-9.1: Shall be run directly as practical with provisions for expansion, contraction, jarring, vibration and settling. Aboveground piping shall be supported and protected against mechanical damage and corrosion. Underground piping shall be buried not less than 18 inches below the surface of the ground and protected against corrosion. Threaded pipe and fittings not allowed underground. Section 4-9.1.1: Manifolds connecting fuel containers shall be fabricated to minimize vibration and protected/shielded from unsecured objects. Section 4-9.1.2: Male pipe threads shall have a jointing material impervious to the action of natural gas applied prior to assembly. Section 4-9.3: Hose shall be limited to a vehicle fueling hose and an inlet connection to compression equipment.</p>	<p>Provide mill test report when applicable:</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 33%;"></td> <td style="width: 33%; text-align: center;">Carbon Steel</td> <td style="width: 33%; text-align: center;">Stainless Steel</td> </tr> <tr> <td style="text-align: center;">Aboveground</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td style="text-align: center;">Underground</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> </table>			Carbon Steel	Stainless Steel	Aboveground	<input type="checkbox"/>	<input type="checkbox"/>	Underground	<input type="checkbox"/>	<input type="checkbox"/>
	Carbon Steel	Stainless Steel										
Aboveground	<input type="checkbox"/>	<input type="checkbox"/>										
Underground	<input type="checkbox"/>	<input type="checkbox"/>										
14.	<p>VENT PIPE/STACK: Section 4-9.2: Vented to a safe point of discharge.</p>											
15.	<p>FLEXIBLE CONNECTOR (See MI Amendment): Section 4-9.3(c): To provide flexibility where necessary in a pipeline, metallic hose not more than 36 inches in length, installed according to manufacturer's recommendations. The manufacturer's identification shall be retained in each section.</p>											
16.	<p>EXCESS-FLOW CHECK VALVES: Section 2-3.1: Shall be listed or approved. Section 4-11.4: Where used, the closing flow shall be less than the flow rating of the piping system that would result from a pipeline rupture.</p>											
17.	<p>EMERGENCY SHUTDOWN DEVICES (ESD) (See MI Amendment): Section 4-11.6: Located at the dispensing area and at a location which is not less than ten feet away from the dispensing area and which is along the means of egress. When activated, shall shut off the power supply and gas supply at a point before the compressor and at a point in the fixed piping between the storage container and the dispensing equipment. Devices shall be easily accessible and distinctly marked for easy recognition with a permanently affixed legible sign with letters not less than three inches high.</p>											
18.	<p>CONTROL CIRCUITS: Section 4-11.9: In the event of a power failure or activation of an ESD, manual setting of system shall be required.</p>											
19.	<p>TEMPERATURE-CORRECTED FILL PRESSURE: Section 4-14.2: CNG dispensing systems shall be equipped to automatically stop fuel flow when a fuel supply container reaches the temperature-corrected fill pressure (see Section 4-6.3).</p>											
20.	<p>HOSES/HOSE CONNECTIONS: Section 2-3.1: Shall be listed or approved. Section 2-10: Hose and metallic hose shall be distinctly marked by the manufacturer, indicating the manufacturer's name or trademark, applicable service identified and design pressure.</p>											
21.	<p>VEHICLE FUELING CONNECTION: Section 2-11.5: Connection complying with ANSI/AGA NGV1, Requirements for Natural Gas Vehicles (NGV) Refueling Connection Devices, requirement 1-90, shall be provided.</p>											

APPLICATION FOR INSTALLATION OF COMPRESSED NATURAL GAS FUELING FACILITIES

(Continued from Page 3)

ITEM	DESCRIPTION	MANUFACTURER AND PART NUMBER	
		PART OF PREFABRICATED PACKAGE	FIELD FABRICATED
22.	BREAKAWAY PROTECTION: Section 4-11.7 & 4-11.8: Installed at every dispensing point and arranged to separate using a force not greater than 44 lbs (20 kg.) When applied in any horizontal direction.		
23.	QUARTER TURN SHUTOFF VALVE: Section 2-3.1: Shall be listed or approved. Section 4-11.11: Fast closing, "quarter turn" manual shutoff valve required upstream of the breakaway device specified in Section 4-11.8, readily accessible to the person dispensing natural gas unless the self-closing valve referred in Section 4-11.10 is located immediately upstream of the dispenser, or the dispenser is equipped with a self-closing valve that closes each time the control arm is turned to the "OFF" position or ESD is activated.		

GENERAL INSTALLATION REQUIREMENTS

24.	COMPRESSION, STORAGE AND DISPENSING EQUIPMENT - LOCATED OUTDOORS (See MI Amendment): Section 4-4.2.3, 4-4.2.4 & 4-4.2.5: Distances to buildings, property lines, etc. Section 4-4.2.7: Shall be 20 feet from aboveground tanks containing flammable or combustible liquids and underground storage tank fill pipes.		
25.	COMPRESSION, STORAGE AND DISPENSING EQUIPMENT - LOCATED INDOORS (See MI Amendment): Section 4-4.3.1: Permitted inside of buildings reserved exclusively for these purposes or in rooms within or attached to buildings used for other purposes. Section 4-4.3.1.1: Storage shall be limited to 10,000 SCF. Section 4-4.3.2: Deflagration (explosion) venting shall be provided in an exterior wall or roof in accordance with NFPA 68, Guide for Venting of Deflagrations.		
26.	WARNING SIGNS (See MI Amendment): Section 4-14.9: A warning sign with the words "STOP MOTOR," "NO SMOKING," and "FLAMMABLE GAS" shall be posted at the dispensing station and compressor areas. Shall be visible and legible from each point of transfer. Letters shall not be less than three inches high.		
27.	FIRE EXTINGUISHER: Section 4-15: Minimum portable fire extinguisher having a rating of not less than 20 B:C at the dispensing area.		

IMPORTANT: Attach the following information to the white and canary copies of this "Application"

28. A plot map showing buildings, public streets, highways, roads, sidewalks, railroad main tracks, parking configuration, traffic patterns, and electric power lines.
29. Location of property lines, existing aboveground and underground tanks, protective bollards, K-rails, etc.,
30. A diagram of the CNG System indicating the location of point of transfer in relation to the container(s), buildings, public sidewalks, highways, streets, roads, main line railroad tracks, the line of adjoining property that can be built upon, above and below ground storage tanks.
31. Describe what is located on adjacent property.

PLEASE NOTE THAT THE MORE DETAILED THE INFORMATION YOU PROVIDE US, THE FASTER WILL OUR ENGINEERS BE ABLE TO COMPLETE THE PLAN REVIEW PROCESS FOR YOUR FACILITY.

Make check payable to the "STATE OF MICHIGAN". Submit the check along with the completed application and appropriate attachments.