

U.S. Department of Transportation
Research and Special Programs Administration
400 Seventh St., S.W.
Washington, D.C. 20590

MAY 17, 2002

Mr. Robert F. Smallcomb, Jr.
Director, Pipeline Engineering and Safety Division
Massachusetts Department of Telecommunications & Energy
One South Station
Boston, MA 02110

Dear Mr. Smallcomb:

We have considered your letter of March 20, 2002, notifying us that the Massachusetts Department of Telecommunications & Energy has granted Middleborough Gas and Electric company a waiver from compliance with 49 CFR 192.321(a) for plastic pipe across the Nemasket Street bridge in Middleborough. The waiver will permit the installation of about 80 feet of 6- inch plastic pipe above ground inside a 10-inch coated and welded steel casing across the bridge. The steel-encased plastic pipe will be protected against mechanical damage and ultraviolet radiation, and meet all stress limits applicable to plastic pipe.

We have no objection to the waiver. The circumstances are comparable to those of previous waivers we have approved permitting the installation of plastic pipe above ground on bridges.

Sincerely,
Stacey L. Gerard
Associate Administrator for Pipeline Safety

Commonwealth of Massachusetts
Office of Consumer Affairs and Business Regulation
Department of Telecommunications & Energy
One South Station Boston, MA 02110

Ms. Stacey Gerard
Associate Administrator for Pipeline Safety (DPS-1)
Research and Special Programs Administration
Department of Transportation
400 Seventh Street, SW.
Washington, D.C. 20590

RE: Waiver of Pipeline Safety Regulations

Dear Ms. Gerard:

Being a certified agent under section 60105, Public Law 103-272, the Massachusetts Department of Telecommunications and Energy has approved a waiver to Middleborough Gas and Electric Department from the requirements of Title 49 C.F.R: Part 192, § 192.321(a). The waiver allows Middleborough Gas and Electric Department to install a six-inch nominal diameter, SDR 11, PE 3408 plastic carrier pipe into a new 10-inch nominal diameter, coated, welded steel casing. Approximately 80 feet of the plastic piping will not meet the burial requirements of § 192.321(a). The installation site is in Middleborough, Massachusetts.

As required by section 60118(d), Public law 103-272, I am forwarding a copy of the waiver to your office with the understanding that the waiver will be effective within 60 days of notification unless the Secretary objects to the waiver in writing before the effective date. Thank you for your support in this matter.

Very truly yours,
Robert F. Smallcomb, Jr.
Director, Pipe Engineering and Safety Division

Middleborough Gas and Electric Department
2 Vine Street
Middleborough, MA 02346

Thursday, February 07, 2002

Massachusetts Department of Telecommunications and Energy
1 South Station
Boston, MA 02110

Attention: Mr. Christopher Bourne
Public Utilities Engineer

Re: Proposed Permanent Natural Gas Pipeline Bridge Crossing,
Nemasket St. over the Nemasket River, Middleborough, MA.

Dear Mr. Bourne:

Middleborough Gas and Electric of Middleborough, Massachusetts is requesting a waiver from the requirements of 49 CFR 192.321(a) in order to install plastic pipe on a bridge structure per CHI Engineering Drawing Nos. MGE0109-05 thru MGE0109-C8 and MGE0109-S3, for the design of a permanent 6" PE natural gas distribution main on the Nemasket St. Bridge over the Nemasket River in Middleborough, Massachusetts.

The bridge is being reconditioned. The permanent gas main will be installed during reconstruction, replacing the existing natural gas main. The new gas main support spans will be 7'-10", while the casing support spans will be 9.8 FT. The natural gas main material shall be PE-3408 supported by plastic casing insulators in the casing. The pipe casing material shall be API 5L, Grade B, uncoated, u-bolted to cross members under the casing. The gas main outer diameter shall be 6.625" and the wall thickness shall be 0.602" (SDR 11). The casing outer diameter shall be 10.75" and the wall thickness shall be 0.365" (sch 40). The MAOP of the pipeline shall be 60 psig. Existing valves located near each end of the bridge will be used to isolate the pipe in case of an emergency.

If there is any question about the design please call Mike Dattilio at CHI Engineering, (603) 433-5654.

Otherwise, please call me at (508) 947-1535. Thank you

Very truly yours,
Robert S. Reardon
Gas Division Engineer

CHI ENGINEERING SERVICES, INC.

Monday, February 04, 2002

Massachusetts Department of Telecommunications and Energy
1 South Station Boston, MA 02110

Attention: Mr. Christopher Bourne
Public Utilities Engineer

Re: Proposed Permanent Natural Gas Pipeline Bridge Crossing,
Nemasket St over the Nemasket River, Middleborough, MA.

Dear Mr. Bourne:

Attached please find CHI Drawing Nos. MGE0109-05 thru MGE0109-C8 and MGE0109-S3 all Rev 0, for the design of a permanent 6" natural gas distribution main on the Nemasket St. Bridge over the Nemasket River in Middleborough, Massachusetts.

The bridge is being reconditioned, first by removing the center pier and replacing with a new concrete pier. Second, excavating the bridging material from within the bridge. Third, rebuilding the structural interior of the bridge. Finally, restoring the bridge to previous aesthetics.

A 4" steel bypass will be installed before the bridge reconditioning. The permanent gas main will be installed during reconstruction, replacing the existing natural gas main. The new gas main support spans will be 7'-10", while the casing support spans will be 9.8 FT. The natural gas main material shall be PE-3408 supported by plastic casing insulators in the casing. The pipe casing material shall be API 5L, Grade B, uncoated, u-bolted to cross members under the casing. The gas main outer diameter shall be 6.625" and the wall thickness shall be 0.602" (SDR 11). The casing outer diameter shall be 10.75" and the we thickness shall be 0.365" (sch 40) The MAOP of the pipeline shall be 60 psig. Existing valves located near each end of the bridge will be used to isolate the pipe in case of an emergency.

CHI Engineering is requesting a waiver from the requirements of 49 CFR 192.321(a) in order to install plastic pipe on the bridge structure.

Please call me at 1-800-437-1995 if you have any questions. Thank you.

Very truly yours,
Michael D'attilio
Project Engineer

I. BACKGROUND

On February 7, 2002, Middleborough Gas and Electric Department ("M.G. & E.D."), a municipal intrastate natural gas distribution department that operates in Massachusetts, requested that the Department of Telecommunications and Energy ("Department") grant a waiver of the underground installation requirements for plastic pipe contained in 49 C.F.R. Part 192 ("Part 192"). M.G. E.&D. seeks to install 80 feet of plastic main inside a steel casing across a bridge located on Nemasket Street, Middleborough. The bridge spans the Nemasket River.

II. REGULATORY REQUIREMENTS

The minimum federal safety standards for transportation of natural gas by pipeline are contained in Part 192. Specifically, § 192.321(a) states: "Plastic pipe must be installed below ground level."

Any waiver of any of the provisions of Part 192 granted by the Department is subject to the approval of the Secretary of Transportation's Office of Pipeline Safety ("OPS"). The Massachusetts Pipeline Safety Code, 220 C.M.R. § 101, and Public Law 103-272, formerly the Natural Gas Pipeline Safety Act, require the Department to give OPS notice of any waiver at least 60 days before it becomes effective. The Department regulations at 220 C.M.R.

§ 101.02(2) state:

The [Department] may issue a waiver to a gas corporation or municipal gas department from the provisions of Part 192 in Title 49 of the Federal regulations providing that the waiver pertains to an intrastate facility and the [Department] gives notice to the Department of Transportation at least 60 days before the waiver becomes effective.

In addition, Public Law 103,272 states in § 60118; Compliance and Waivers:.

(d) Waivers by State Authorities. „If a certification, under section 60105 of this : title...is in effect, the state authority may waive compliance with a safety standard to which the certification_ applies in the same ways and to the same extent the 1' Secretary may waive compliance.... However, the authority must give the Secretary written notice of the waiver at least 60 days before its effective date. If the Secretary makes a written objection before the effective date of the waiver, the waiver-is stayed...:

III. ANALYSIS AND FINDINGS

The proposed six-inch nominal diameter plastic pipe is to be permanently installed in a 10-inch nominal diameter, coated, welded steel casing. The casing will be located in a utility bay underneath the bridge. The plastic pipe, sheathed within the casing, will not be exposed to ultraviolet radiation.

There are advantages to the use of encased plastic pipe at this bridge crossing. First, plastic pipe is not prone to corrosion, and therefore will require less maintenance than a steel pipeline. Second, a steel-encased plastic pipe is less susceptible to damage from vandalism, airborne objects and external loading.

In the expected ambient temperature range, the forces acting on the plastic pipe due to expansion and contraction are well within acceptable limits. The tensile stress due to temperature variation is 660 pounds per square inch gauge ("p.s.i.") which is well below the allowable limit of 2,412 p.s.i. (72 percent of the specified minimum yield strength which is 3,350 p.s.i.). The stresses due to pressure and bending, including the combined stresses, are also well below the allowable limits established in the American Society of Mechanical Engineers B31.8 Code, which is incorporated into Part 192 by reference.

Since 1979, many similar waivers have been granted by states and approved by OPS. OPS has approved dozens of similar waivers to operators in Massachusetts. All of these pipelines have operated satisfactorily. In addition, the

following factors support the M.G. E.&D application. Casing spacers will be placed on the plastic pipe at intervals no greater than eight feet. These will support the carrier pipe and allow for movement during expansion and contraction. The steel casing will continue approximately two feet past each of the abutments. The plastic pipe will be joined by butt fusion, requiring no fittings over the encased portion of the main. The pipe will be tested to 90 p.s.i. to establish a maximum allowable operating pressure of 60 p.s.i. Isolation valves will be installed on the approaches to each side of the bridge in accordance with 220 C.M.R. §101.06(10)(a)6.

IV. ORDER

Accordingly, after due consideration, it is:

ORDERED: Middleborough Gas and Electric Department is hereby exempted from the underground installation requirement in 49 C.F.R. Part 192 and authorized to install encased plastic pipe on the bridge on Nemasket Street over the Nemasket River in Middleborough.

The forgoing waiver is granted with an effective date of may 15, 2002, provided that the Secretary of Transportation or his designee does not object to the waiver prior to the effective date.

By Order of the Department
James Connelly, Chairman
W. Robert Keating, Commissioner
Paul B. Vasington, Commissioner
Eugene J. Sullivan, Jr., Commissioner
Deirdre K. Manning, Commissioner

Appeal, as to matters of law from any final decision, order or ruling of the Commission may be, taken to the Supreme Judicial Court by an aggrieved party in interest by the filing of a written petition praying ,that the Order of the Commission be modified or set aside in ,whole or in part.

Such petition for appeal shall be filed with the Secretary of the Commission within twenty days after the date of service of the decision, order or ruling of the Commission, or within such further time as the Commission may allow upon request filed prior to the expiration of twenty days after the date of service of said decision, order or ruling. Within ten days after such petition has been filed, the appealing party shall enter the appeal in the Supreme Judicial Court, sitting in Suffolk County by filing a copy thereof with the Clerk of said Court. (Sec. 5, Chapter 25, G.L. Ter. Ed., as most recently amended by Chapter 485 of the Acts of 1971).