

JUL 5 1996

Mr. Robert F. Smallcomb
Director, Pipeline Engineering and Safety Division
Massachusetts Department of Public Utilities
100 Cambridge St. Boston MA 02202

Dear Mr. Smallcomb:

We have considered your letter of May 13, 1996, advising us that the Massachusetts Department of Public Utilities has granted the Bay State Gas Company a waiver of compliance with the 100 psig design pressure limitation for plastic pipe under 49 CFR 192.123(a). The waiver allows the gas company to temporarily operate particular plastic pipe at 105 psig.

As you pointed out, we have previously considered the safety of exceeding 100 psig in our approval of two New York waivers involving the operation of plastic pipe as high as 124 psig. Since the present waiver involves similar safety considerations, we have no objection to the waiver.

Sincerely,
Richard B. Felder
Associate Administrator for Pipeline Safety

Commonwealth of Massachusetts
Department of Public Utilities
Levertt Saltonstall Building, Government Center
100 Cambridge Street, Boston 02202

May 13, 1996

Richard B. Felder
Associate Administrator for Pipeline Safety
Research and Special Programs Administration
Department of Transportation
400 Seventh Street, S.W.
Washington, D.C. 20590

RE: Waiver of Pipeline Safety Regulations

Dear Mr. Felder:

Being a certified agent under section 60105, Public Law 103-272, the Massachusetts Department of Public Utilities has approved a waiver to Bay :haw Ga., Company ("Bay State") from the requirements of Title 49 C.F.R. Part 192, § 192.123(a). The waiver allows Bay State to temporarily operate a distribution system containing high-density plastic piping at a pressure of 105 PSIG with the intent of establishing a design pressure of 99 PSIG.

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 the notification unless the Secretary objects to the waiver in writing before the effective date.

The background of the request had been discussed with Richard Hurieux of the Office of Technology and Standards on May 9, 1996. He encouraged the waiver process as a means of legitimizing Bay State's proposal. The reasoning to support this agency's approval of the waiver is listed on page 2 of my May 13 letter to Bay State.

Thank you for your support in this matter.

Very truly yours,
Robert F Smallcomb Director
Pipeline Engineering and Safety Division

Commonwealth of Massachusetts
Department of Public Utilities
Levertt Saltonstall Building, Government Center
100 Cambridge Street, Boston 02202

May 13, 1996

Mr. Edward Wencis
Engineering Manager
Bay State Gas Company
P.O. Box 869
Lawrence, MA 01841-2312

RE: Waiver of Part 192, § 192.123(a)

Dear Mr. Wencis:

I have reviewed your April 30, 1996 request to uprate the intermediate pressure distribution system in Bay State Gas Company's ("Bay State") Lawrence Division to a maximum allowable operating pressure ("MAOP") of 99 PSIG.

Attendant to the uprate, Bay State would be enhancing its distribution system by replacing all uncoated steel service lines and all mechanical lead seal service tees within the area impacted by the uprate. Bay State has also conducted a study of its system to verify that all steel material and associated fittings are rated to at least 125 PSIG.

Bay State has presented one hurdle which must be overcome before elevating its line pressure to 99 PSIG over the entire range of each segment of the distribution system during the uprate. That hurdle is a regulatory constraint, namely Part 192, § 192.123(a) which states:

"The design pressure may not exceed a gauge pressure of 689 kPa (100 PSIG) for plastic pipe used in:

- (1) Distribution systems; or
- (2) Classes 3 and 4 locations."

The segment of the Lawrence distribution system designated for uprating consists of cathodically protected steel, bare steel and high density polyethylene ("plastic"). Part 192, § 192.123(a) limits the design pressure of plastic pipe to 100 PSIG. Given the nature of the uprating procedure and the fact that the uprating will be performed on a pipeline system in service, Bay State will have to exceed the pressure limitations set forth in § 192.123(a) on the supply end of the uprated system for a short period of time to offset the pressure drop at the terminus of the system. Due to the integrated nature of the system, it is expected that some of the plastic components may be subjected to pressures in the vicinity of 105 PSIG for the last increment of the uprating.

Based upon your request, I have decided that a waiver of the federal regulation set forth in § 192.123(a) would not pose any risk to pipeline safety for the following reasons:

- (1) The elevated pressure for each segment of the system will be approximately 105 PSIG which is well within the maximum test pressure allowed under § 192.513(c);
- (2) The duration of the elevated pressure will be for a period of hours;
- (3) Any recent installations of plastic have been tested to 150 PSIG; and
- (4) The Department of Transportation has previously approved state waivers to operate plastic pipe at pressures greater than 100 PSIG, namely:
 - (a) A 1985 waiver granted to Central Hudson Gas and Electric Corporation by the New York Public Service Commission allowing it to operate plastic pipe at 120 PSIG; and
 - (b) A 1995 waiver granted to Long Island Lighting Company by the New York Public Service

Commission allowing it to operate plastic pipe at 124 PSIG.

- (5) The temporary elevation of the line pressure to 105 PSIG is requested to establish a design pressure of 99 PSIG.

Having approved the waiver as authorized under § 60118(c) of Public Law 103-272, the effective date will be 60 days from the date of this approval in which time the Secretary of the Department of Transportation may issue a written objection to the waiver under § 60118(d) of the same title.

Very truly yours,

Robert F. Smallcomb

Director

Pipeline Engineering and Safety Division

Bay State Gas Company
55 Marston Street
P.O. Box 869
Lawrence, MA 01841-2312

April 30, 1995

Mr. Robert F. Smallcomb, Jr.
Director
Pipeline Engineering and Safety Division
The Commonwealth of Massachusetts
Department of Public Utilities
100 Cambridge Street
Boston, MA 02202

RE: Lawrence Uprate - Establishing MAOP

Dear Mr. Smallcomb:

This is a follow-up to our telephone conversation on Thursday, April 25, 1996. As you are aware, the Lawrence Division of Bay State Gas Company is planning to uprate its existing intermediate pressure distribution system from 60 PSIG to 99 PSIG. Ideally, through the uprate process, a MAOP of 99 PSIG will be established for that distribution system.

Through previous discussions with your staff, it was concluded that the Lawrence gas plant will be the location of record for establishing MAOP. The gas plant is the primary source of supply to the distribution system.

Our Engineering department performed an analysis of the distribution system by way of a computer model. Since, as part of the uprate, we plan to increase the pressure incrementally during the summer months, a study was conducted on the system at base load conditions. The Engineering department determined that at base load conditions, a maximum pressure drop of 4 PSIG would be experienced among the distribution system. Therefore, with the Lawrence plant set at 99 PSIG, it would be expected that the pressure at the tail end of the system will be 95 PSIG.

In order to document an MAOP of 99 PSIG throughout the distribution system, Bay State Gas requests that the D.P.U. allow the Lawrence division to set the supply regulator at 105 PSIG. The system would experience this pressure only during the fourth and final increment of each uprate segment. Bay State Gas believes this is a safe and prudent method for the following reasons:

- The Lawrence division has performed extensive research on the distribution system. Gas mains and services were determined to be either cathodically protected steel, bare steel or high density polyethylene. All of the steel materials, including associated fittings, were determined to be rated for at least 125 PSIG. The Lawrence division has committed to replace all bare steel services and all mechanical lead seal service tees within the limits of the uprate. Also, where necessary, gas mains will be replaced or rehabilitated to accommodate the increased pressure. In addition, every gas service has either a single service regulator with built in external relief, a single regulator with a separate external relief device or dual regulators, all of which conform to 192.197 (c), Control of the Pressure of Gas Delivered from High-Pressure Distribution Systems.
- This uprate process is following the requirements of 192.557, Upgrading.
- The only identified potential limitation to operate the supply regulator at 105 PSIG is 192.123 (a), Design Limitations for Plastic Pipe. This section states that the design pressure of plastic pipe may not exceed 100 PSIG. However, 192.513 (c), Test Requirements for Plastic Pipelines, states that plastic pipe must be tested to at least 150 percent of its maximum operating pressure and up to a maximum of three times its design pressure. If the design pressure was 100 PSIG, such as with high density plastic, then the pipe, according to this section of the code, could be pressure tested to 300 PSIG. The Lawrence division, anticipating the uprate, has recently been testing all 3408 plastic material within the area to 150 PSIG. In addition, the Federal D.O.T. has granted, in recent

years, waivers allowing several L.D.C.'s to operate high density plastic above 100 PSIG.

Because of these factors, Bay State Gas has a high comfort level in operating, for a brief period during the uprate, a certain portion of its high density plastic distribution system at 105 PSTG.

Please consider our intent when responding, at your convenience, to this issue. If you have any questions or concerns in the interim, please call.

Sincerely,
Edward Wencis Engineering Manager