



U.S. Department
of Transportation

Pipeline and Hazardous
Materials Safety
Administration

Mersey Avenue, SE
D.C. 20590

APR 21 2009

Mr. John J. Clementson, II
Assistant Chief Engineer
Public Service Commission of Maryland
William Donald Schaefer Tower - 19th Floor
6 Saint Paul Street
Baltimore, MD 21202-6806

Dear Mr. Clementson:

The Pipeline and Hazardous Materials Safety Administration (PHMSA) received your letter of February 2, 2009, notifying us that the Public Service Commission of Maryland ("Commission") issued an order granting Baltimore Gas and Electric (BGE) a waiver of compliance from the plastic pipe design requirements in 49 CFR 192.121. This regulation was adopted by Maryland pursuant to sections 20.55 and 20.56 of the Code of Maryland Regulations. Section 192.121 currently calls for the use of a 0.32 design factor. The waiver allows the use of a 0.40 design factor (DF) in association with determining a pressure rating for a specific application of ¾-inch and 1 ¼-inch iron pipe side (IPS) prefabricated risers for high density polyethylene (PE) services using PE 3408/4710 material. The Commission conditioned its grant of the waiver on BGE's compliance with certain specific requirements.

Based on these conditions, PHMSA does not object to this grant of waiver. However, PHMSA recommends that the Commission consider imposing the following additional conditions which are consistent with recent Increased Design Factor (IDF) waivers for pipe and appurtenances:

- The Commission should require BGE's program to be consistent with current published findings of the Joint Industry IDF Steering Committee and the Commission should be made aware of any updated findings and how they may affect this waiver. It should be noted that the July 16, 2007 report does not explicitly recommend findings for nominal pipe sizes and fittings below 2-inch, namely for ¾ and 1 ¼ - inch sizes as defined in this waiver. As such, special consideration and discussion with the IDF Steering Committee may be necessary for diameters relevant to this waiver.
- If an increase in design pressure above the 99 psig stated in the waiver is considered in the future, design pressure should not exceed 125 psig (862 kPa) as specified in § 192.123(e) and the July 16, 2007 IDF Report.
- The Commission should reserve the right to require BGE to continue to document locations where the service risers are installed; document the annual special leakage surveys on 10% of all new installations in a given year beyond five years; and extend the monitoring at the training facility past five years. If BGE does not comply or if otherwise deemed necessary to address safety

Public Service Commission of Maryland

concerns, the Commission should require BGE to revert back to 0.32 design factor for the IDF area (i.e., must reduce MAOP, replace pipe, or cease operation in the IDF area).

- Although the waiver properly calls out materials (such as PE 3408/4710) and other considerations as specified in ASTM D-2513 and relevant sections in Part 192, for clarity future communications should specify the version of ASTM D2513 currently incorporated by reference in § 192.7, which is ASTM D2513-99 as of the date of this letter. Any deviation from the version currently incorporated by reference should be explicitly called out for consideration (for example, PE 4710 is not present in ASTM 2513-99, but is acceptable for this application).
- BGE should be required to inform the Commission of any additional changes to the installation plan, including additional diameters and SDR values being considered. SDR limits should be as prescribed per the latest IDF publication.
- Any related documentation on riser location, leak surveys or test facility monitoring data should be made available to the Commission for review upon request.
- Further detailed discussion should take place between the Commission, PHMSA, and BGE (and ideally within the Joint Industry IDF Steering Committee as well) on the appropriate testing that should take place if the testing and monitoring called out in the waiver is found to be insufficient for any reason or no longer suitable in the future. PHMSA is particularly interested in cyclic fatigue and other long-term tests.

Although polyamide-12 (PA-12) material is not being used in this application, PHMSA believes conditions relevant to IDF PA-12 applications should be considered in the interest of pipeline safety with any change in material and/or design factor, especially when used with actual service conditions involving customers and the public. Accordingly, consistent with other recent waivers, PHMSA recommends that the Commission consider adding the following IDF PA-12 conditions:

- The Commission should require BGE to perform a leak survey:
 - a) Within one month of operating the pipeline;
 - b) Within one month of adding additional appurtenances;
 - c) Within one month of making repairs to the pipeline; and
 - d) Additional leak surveys consistent with current procedures.
- The Commission must be notified of any leaks found in areas covered by the waiver within two hours of discovery.

Public Service Commission of Maryland

- If PHMSA amends its regulations allowing IDF, BGE must comply with such regulations in lieu of any waiver condition that is inconsistent with such a regulatory provision (BGE may also petition the Commission for the termination of the condition).
- BGE documentation and procedures involving operator qualification should be consistent with existing procedures involving risers. Where necessary, such procedures should be updated to explicitly call out the newer materials being used.
- BGE records retention practices concerning all joints involving pipe and appurtenances covered in this special permit should be consistent with existing practices and, if needed, updated to ensure adequate retention of all relevant information from all manufacturers on the newer materials being used.
- If during the special permit period the pipe or appurtenances are found to be deficient, pose a risk to the public, or fail, BGE must replace the pipe and/or appurtenances with materials currently approved by 49 CFR Part 192.
- The Commission should reserve the right to impose additional safety requirements if the Commission determines alternate safety measures are necessary to ensure the safe operation of BGE's pipe and appurtenances in the special permit area.

If you wish to discuss this waiver or any other pipeline safety matter, my staff would be pleased to assist you. Please call John Gale, Director of Regulations at 202-366-0434 for regulatory matters, or Alan Mayberry, Director of Engineering and Emergency Support at 202-366-5124 for technical matters.

Sincerely,

William H. Gale
JH2

Jeffrey D. Wiese
Associate Administrator for Pipeline Safety

STATE OF MARYLAND



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PUBLIC SERVICE COMMISSION

FEB 18 2009

February 2, 2009

CERTIFIED MAIL – RETURN RECEIPT REQUESTED

Jeffery Wiese, Associate Administrator for Pipeline Safety
U.S. department of Transportation
Pipeline and Hazardous Materials Safety Administration
1200 New Jersey Ave., SE
Second Floor, East Building
Washington, D.C. 20590

Dear Mr. Weise:

On December 5, 2008 Baltimore Gas and Electric (BGE) filed a request for waiver of 49 CFR 192.121 to allow the use of a 0.40 design factor in association with determining a pressure rating for a specific application of ¾" and 1 ¼" iron pipe size (IPS) prefabricated risers for high density (PE3408/4710) services. A copy of BGE's request for the waiver and the Commission's comments are attached for your convenience.

The Public Service Commission of Maryland (PSC) evaluated this request to determine its impact on public safety. Factors influencing the PSC's evaluation include the intent of the code requirements and whether the issuance of the waiver would negatively impact public safety.

The regulation involved, 49 CFR 192.121, is intended to establish the maximum design pressure for plastic pipe. Currently BGE operates its high pressure distribution system with a maximum allowable operating pressure (MAOP) of 99 psig. In order for BGE to install ¾" and 1 ¼" service risers that meet their MAOP and the design pressure, with the current design factor of 0.32, they must install a riser with a Standard Dimension Ratio (SDR) of 7. By having to install service risers with a SDR of 7, BGE is now required to use special transition fittings that couple their ¾" and 1 ¼" pipes to their ¾" and 1 ¼" service risers. By permitting the use of a design factor of 0.40, BGE would be allowed to use ¾" and 1 ¼" service risers with an SDR of 9.33 eliminating the need for transition fittings between the pipe and risers. This waiver would also provide uniformity in the couplings BGE uses and maintains in its inventory. Ultimately, BGE would no longer have to make additional couplings and therefore reducing the chance for a leak.

WILLIAM DONALD SCHAEFER TOWER • 6 ST. PAUL STREET • BALTIMORE, MARYLAND 21202-6806
410-767-8000 • Toll Free: 1-800-492-0474 • FAX: 410-333-6495

MDRS: 1-800-735-2258 (TTY/Voice) • Website: www.psc.state.md.us/psc/

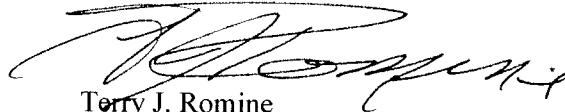


The PSC believes that by granting Baltimore Gas & Electric's request for waiver that it will not impact public safety. The PSC in granting BGE's request would allow BGE to use a standard manufactured pipe size with a standard dimension ratio and also allow for the opportunity to obtain data on in-service experience with polyethylene piping using a design factor of 0.40.

The PSC, consistent with its authority under 49 USCS § 60118(d), consider this matter at its regularly scheduled and advertised Administrative Meeting of January 7, 2009. After considering the request and the comments of its Engineering Division, the PSC granted Baltimore Gas and Electric Company's requested waiver. Consistent with its authority under 49 USCS §60118(d), please notify the PSC, in writing, of any objection to this waiver within 60 days of receipt of this letter. The above requested waiver to become effective 60 days from receipt of this notification.

If you have any questions concerning this action, please contact John J. Clementson, II, Assistant Chief Engineer, at (410) 767-8111.

By Direction of the Commission



Terry J. Romine
Executive Secretary

TJR/jjc

Attachments

cc: Steven J. Troch, Baltimore Gas and Electric
E. Frank Bender, Chief Engineer, Public Service Commission

MARTIN O'MALLEY
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PUBLIC SERVICE COMMISSION

#4, 1/7/09 AM; ML#113928, E-1765

January 9, 2009

RECEIVED
ENGINEERING DIVISION

JAN 16 2009

PUBLIC SERVICE COMMISSION
OF MARYLAND

Mr. Steven J. Troch, Principal Engineer
Gas Engineering & Standards
Baltimore Gas and Electric Company
P. O. Box 1475
Baltimore, Maryland 21230-1475

RECEIVED

JAN 12 2009

Dear Mr. Troch:

The Public Service Commission ("Commission") has reviewed the request for a Special Permit under 49 CFR §190.341 filed on December 5, 2008 ("Request") by Baltimore Gas and Electric Company ("BGE" or "Company"). The Commission's Technical Staff reviewed the Request and submitted written comments on the matter on December 29, 2008, in which Staff evaluated and analyzed the Request. Staff's evaluation included the intent of the code requirements and whether the issuance of the waiver requested would negatively impact public safety. In its written comments, Staff recommended the Commission grant the Request for a period of five (5) years or pending a final decision regarding 49 CFR §192 and ASTM 2513 code changes, whichever occurs first.


The Commission considered the matter at its January 7, 2009 Administrative Meeting.¹ During the hearing, Staff reiterated its written recommendations. The Commission asked Staff to explain, in layman terms to the extent possible, the purpose of the waiver and why Staff believed that the waiver was appropriate. Staff provided the Commission an explanation as requested. The Commission inquired whether Staff had any safety concerns in the event that the Request was granted. Staff explained that it supported the waiver because use of the revised design factor would decrease the opportunity for leakage by reducing the number of interface joints currently required by BGE. Staff also noted in its Comments the successful use of PE 100 material in Europe for 15 years. Based on these factors, Staff believes that use of the design factor as requested is safe for risers as well as for in-ground piping where it is already allowed. Representatives from the Company also appeared before the Commission at the Meeting, and responded to inquiries of the Commission.

¹ The final Agenda for the Commission's Administrative Meeting, held each Wednesday of the month, is posted on the Commission's website, www.psc.state.md.us, the Thursday prior to the Wednesday meeting.

STATE OF MARYLAND
PUBLIC SERVICE COMMISSION

Number E-1765
Date December 29, 2008
Mail Log No. 113928

TO: Douglas R.M. Nazarian, Chairman
Harold D. Williams, Commissioner
Allen M. Freifeld, Commissioner
Susanne Brogan, Commissioner
Lawrence Brenner, Commissioner

FROM: Anthony Myers, Assistant Executive Director 


RE: Baltimore Gas & Electric Request for Waiver


Summary of Filing:

On December 5, 2008, Baltimore Gas & Electric (BGE) filed a request for a waiver of 49 CFR 192.121 to allow the use of a 0.40 design factor in association with determining a pressure rating for a specific application of 3/4" and 1 1/4" iron pipe size (IPS) prefabricated risers for high density (PE3408/4710) services in advance of pending 49 CFR 192 and ASTM 2513 code changes.

Recommended Action:

Staff recommends that the Commission grant the requested waiver for BGE to be allowed to use the 0.40 design factor in association with determining a pressure rating for the 3/4" and 1 1/4" IPS prefabricated risers for high density plastic (PE3408/4710) services for a period of five years or pending the final 49 CFR 192 and ASTM 2513 code changes, whichever occurs first and direct the Engineering Division to request final approval of the waiver from Federal Office of Pipeline and Hazardous Material Safety Administration. This will serve to provide needed in-service experience related to the use of higher performance plastic pipe.


John J. Clementson, II
Assistant Chief Engineer


Ronald A. Decker
Staff Counsel

RECEIVED
ENGINEERING DIVISION

DEC 31 2008

PUBLIC SERVICE COMMISSION
OF MARYLAND

Comments of the Engineering Division (E-1765)
Mail Log No. 113928
December 29, 2008
Page 3

Summary of Filing

On December 5, 2008, Baltimore Gas & Electric (BGE) filed a request for a waiver¹ of 49 CFR² 192.121 to allow the use of a 0.40 design factor in association with determining a pressure rating for a specific application of ¾" and 1 ¼" IPS prefabricated risers for high density (PE³3408/4710) services in advance of pending 49 CFR 192 and ASTM 2513 code changes. The applicable Federal code is:

49 CFR 192.121 – Design of Plastic Pipe

Subject to the limitations of §192.123, the design pressure for plastic pipe is determined in accordance with either of the following formulas:

$$P=2S/(D-t)0.32$$

$$P=(2S/(SDR-1))0.32$$

where:

P = Design pressure, gauge, kPa (psig).

S = for thermoplastic pipe, the HDB⁴ determined in accordance with the listed specification at a temperature equal to 73 °F (23°C), 100°F (38°C), 120°F (49°C), or 140°F (60°C). In the absence an HDB established at the specified temperature, the HDB of a higher temperature may be used in determining a design pressure rating at the specified temperature by arithmetic interpolation using the procedure in Part E of PPI TR-3/2000 entitled, Policy for Determining Long-Term Strength (LTHS) by Temperature Interpolation, as published in the technical Report TR-3/2000 "HDB/PDB/MRS Policies", (ibr, see §192.7). For reinforced thermosetting plastic pipe, 11,000 psig (75,842 kPa).

t = Specified wall thickness, mm (in).

¹ The Commission is authorized to waive compliance with a federal safety standard under the pipeline safety program if granting a waiver "is not inconsistent with pipeline safety." See 49 USCS § 60118(c) and (d) (2005). The Commission must state the reasons for granting a waiver request and provide the Secretary of the federal Department of Transportation written notice of the waiver at least 60 days before its effective date. *Id.* The Secretary may object to the Commission's decision and it may render a final decision on granting a waiver after a hearing. *Id.* at § 60118(d).

² Code of Federal Regulations

³ The term PE stands for polyethylene which is a type of plastic compound used to manufacture pipe

⁴ The term HDB (Hydrostatic Design Basis) refers to the categorized long-term hydrostatic strength (LTHS) in the circumferential or hoop direction, for a given set of end use conditions, as established by ASTM Test Method D 2837, "Standard Test Method for Obtaining Hydrostatic Design Basis for Thermoplastic Pipe Materials." Hydrostatic Design Basis (HDB)— one of a series of established stress values (specified in Test Method D 2837) for a plastic compound obtained by categorizing the longterm hydrostatic strength determined in accordance with ASTM Method D 2837.

Comments of the Engineering Division (E-1765)

Mail Log No. 113928

December 29, 2008

Page 5

survey, on an annual basis, on 10% of all the new installations for that year and that survey would be conducted over the entire population of the risers. This would allow BGE to track the reliability of both the newly installed risers, as well as those that have been in the system for a longer period of time. This would be done for a period of five years or until there is a regulatory change affecting the waiver. Finally, BGE proposes to install four test risers at its Pumphery training facility, which will also be monitored for five years or until there is a regulatory change affecting this waiver.

Analysis

The Engineering Division evaluated Baltimore Gas & Electric's request for a waiver to determine its impact on public safety. Factors influencing the Engineering Division's evaluation include the intent of the code requirements and whether the issuance of the waiver would negatively impact public safety.

49 CFR 192.121 is intended to establish a maximum design pressure for plastic pipe. Currently BGE operates its high-pressure distribution system with a maximum allowable operating pressure (MAOP) of 99 psig. In order for BGE to install ¾" and 1 ¼" IPS service risers that meet their MAOP and the design pressure, using the current design factor of 0.32, they must install a riser with an SDR of 7. By having to install service risers with an SDR of 7, BGE is now required to use special transition fittings to couple the risers to their ¾" and 1 ¼" pipes. If BGE were to be allowed to use the risers with an SDR 9.33 this would allow for uniformity in the couplings that it uses and maintains in its inventory. Therefore, they would no longer have to special-order the SDR 7 risers and transition fittings and it would also allow BGE to maintain its current MAOP of 99 psig and it would also reduce the number of joints at the interface of the pipe and the service riser thus reducing the opportunity for leaks.

The Engineering Division believes that by granting Baltimore Gas & Electric its request for waiver that it would allow BGE to use a standard manufactured pipe size and SDR as well as allow PHMSA the opportunity to obtain much needed data on in-service experience with polyethylene piping using a design factor 0.40 and finally it would not provide an impact on public safety.

Any request for waiver must be approved by the State agency having jurisdiction over the gas operator. Baltimore Gas and Electric has appropriately requested the Commission's approval. PHMSA must also approve any waivers of Federal regulations by a State agency before they take effect.

Mail Log # 113928

E-Filed 12/5/08



December 5, 2008

Via Electronic Filing

Ms. Terry Romine
Executive Secretary
Maryland Public Service Commission
William Donald Schaefer Tower
6 St. Paul St.
Baltimore, MD 21202-6806

RECEIVED

DEC 5 2008

EXECUTIVE
DIRECTOR'S OFFICE

FILED

DEC 05 2008

PUBLIC SERVICE COMM.
OF MARYLAND

Re: Request for Special Permit under 49 CFR § 190.341

Dear Ms Romine:

Baltimore Gas and Electric Company (BGE or the Company) presently operates approximately 6,800 miles of gas distribution main and 511,000 gas services of which 308,000 are plastic. The Company safely operates our plastic pipe and tubing in accordance with the applicable requirements set forth in 49 CFR § 192, which the Commission has incorporated by reference into the Code of Maryland Regulations (COMAR).¹ All of the plastic gas pipe used in our distribution system, including gas services, is qualified for use at 99 PSIG based upon the calculations set forth in 49 CFR § 192.121. BGE presently operates a high pressure distribution system with a maximum allowable operating pressure of 99 PSIG and a system minimum of 25 PSIG.

Pursuant to the special permit procedures described in 49 CFR § 190.341, BGE herein requests a special permit of 49 CFR § 192.121 to allow the use of a 0.40 design factor instead of the 0.32 design factor utilized in § 192.121, in advance of pending changes within 49 CFR § 192 and to ASTM 2513. This special permit would only be applicable in the calculation of the design pressure for a specific application of ¾-inch iron pipe size (IPS) and 1¼-inch IPS prefabricated risers for high density plastic (PE 4710) services.

Within its high pressure distribution system BGE utilizes 1¼-inch IPS high density (PE 4710) plastic pipe manufactured by Performance Pipe (Driscopipe®8100) with a 9.33 SDR.² Under the calculations in § 192.121, this pipe has a design pressure of 123 PSIG for underground use.

¹ COMAR 20.55.02.02A(3).

² SDR=Standard dimension ratio, the ratio of the average specified outside diameter to the minimum specified wall thickness, corresponding to a value from a common numbering system that was derived from the American National Standards Institute preferred number series 10.

BGE installs approximately 500 new plastic gas services yearly using 1¼-inch IPS plastic pipe. The majority of these services utilize prefabricated risers to serve an outside meter-regulator assembly at the building wall. Presently, when this 1¼-inch IPS plastic pipe is used in an aboveground prefabricated riser, BGE specifies an SDR of 7 in order to achieve a pressure rating of 119 PSIG. The requested special permit would allow BGE to utilize a standard 9.33 SDR high density plastic pipe in our 1¼-inch IPS risers. Eliminating the occurrence of connecting dissimilar sizes will have a positive effect on the safety of the gas distribution system.

The plastic pipe utilized as a condition of the requested special permit will be Performance Pipe high density PE 8100 pipe which is also rated by the Plastics Pipe Institute (PPI) as a PE 100 material. With the increased material properties of Performance Pipe's PE 8100 pipe, [PE4710-PE100/(PE 3408)], a design pressure of 113 PSIG will be achieved using the 0.4 design factor as opposed to a design pressure of 91 PSIG using the current design factor or 0.32. This application condition is in accordance with Plastics Pipe Institute Policies TR-3/2004: "Policies and Procedures for Developing Hydrostatic Design Basis (HDB)... for Thermoplastic Piping Materials or Pipe," and TR-30/2000: "Investigation of Maximum Temperatures Attained by Plastic Fuel Gas Pipe Inside Service Risers."

At this time, BGE is transitioning from ½-inch copper tube size (CTS) high density (PE 4710) plastic pipe to ¾-inch IPS high density (PE 4710) plastic pipe for our standard services in the future. This upgrade has become a necessity as capacity has become an issue for most new residential customers. As the market changes and appliances are being installed that require more gas, such as instantaneous water heaters, there is a need for a greater amount of gas to be supplied to the customer. Along with that, the recent requirement that Excess Flow Values be installed on all new services has restricted capacity, leading BGE to make the upgrade to ¾-inch IPS services. This transition will continue the effort to standardize our system as the ¾-inch plastic pipe will also have an SDR of 9.33. Our estimate for 2009 is approximately 4000 ¾-inch IPS prefabricated risers. As noted above for the 1¼-inch IPS risers, with the use of the design factor of 0.4, a design pressure of 113 PSIG will be achieved.

Currently, research and testing is being undertaken by the Gas Technology Institute (GTI) which is focused on the effects of pressure on the performance of thinner wall pipe utilizing the increased design factor in normal condition use. The conditions presented in this request do not involve an operating pressure which is above the currently allowable pressure in normal installations and is well below the 125 PSIG design pressure limit within 49 CFR §192.123. BGE's proposal involves the design factor effect on aboveground use associated with the elevated temperature and interpolated HDB. This request is in accordance with the endorsement of the Gas Piping Technology Committee of the American Gas Association (AGA) of an increase in the design factor from 0.32 to 0.40, and ongoing GTI, PPI, and AGA committee efforts in support of this change. Attached is a detailed summary which supports the proposed increased design factor entitled Technical Substantiation Summary for an Increase in the Design Factor for the PE Gas Distribution Piping Systems (July 16, 2007). Here is an excerpt from the section entitled "Historical Perspective and Technical Rationale for 0.40 Design Factor" giving historical evidence of the safety of the proposed increase in design factor:

“...There has been safe positive experience associated with the use of a 0.40 [DF] throughout the international community. Specifically, since 1996, the Canadian Standards Association (CSA Z-662) have permitted the use of a 0.40 design factor for gas applications without any limitation on the maximum design pressure... The United States remains the only remaining country which is still utilizing a “blanket” 0.32 design factor for all plastic piping systems in gas distribution applications.”

The specific plastic pipe applicable to this request (Performance Pipe 8100) carries an ASTM D2513 PE 4710 classification and is listed in PPI TR-4 as having a PE 100 rating. Since this material meets both requirements (and is dual marked), this special permit does not specifically address the use of the material as a PE 100 but the 8100 pipe will qualify for a 0.40 design factor when the PPI efforts to incorporate the PE 100 material in the ASTM standard is concluded. Attached is the physical properties data sheet for Performance Pipe 8100 (PE 4710). Also attached for reference is the current BGE material specifications for the riser application.

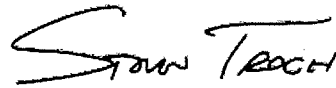
The requested special permit of 49 CFR § 192.121 under the conditions specified herein would allow BGE to use a standard manufactured pipe size and SDR, thus improving our customer satisfaction and better quality assurance through installation standardization, while continuing to provide safe and reliable gas distribution service. The requested special permit for specific aboveground service riser installations also allows for closer monitoring and observation while greatly reducing potential underground leak migration. Thus, public safety will not be affected by BGE's use of the higher design factor in this specific application. In the advent of increased plastic pipe performance as well as eventual incorporation of PE100 rating criteria, BGE's requested special permit will serve to provide needed in-service experience (on a limited basis) related to use of higher performance plastic pipe. This special permit does not preclude nor intend to establish any precedence in regard to the eventual (GTI) research and testing studies intended to support a uniform petition for an overall design factor change (within 192.121) to allow for use of 0.40 in place of the current 0.32.

To aid the Commission in its review of this request for a special permit, BGE is offering several additional items for consideration. First, the location of the installation of each of these risers will be documented. Also, a random survey based on 10% of all new installations for that year will be conducted over the entire population of these risers. This will allow BGE to track the reliability of both the newly installed risers, as well as those that have been in the system for a longer period of time. This will be done for a period of five years or until there is a regulatory change affecting this special permit. Second, four test risers will be installed at our Pumphrey training facility, which will also be monitored for five years or until there is a regulatory change affecting this special permit.

Ms. Terry Romine,
December 5, 2008
Page 4

Your earliest review and approval of this request for a special permit waiver is appreciated. Please contact me at 410-291-4540 if additional information or discussion would be of assistance.

Sincerely,

A handwritten signature in black ink that reads "STEVEN TROCH". The letters are stylized and connected, with a prominent horizontal line above the "S" and "T".

Steven J. Troch, Principal Engineer
Gas Engineering & Standards

SJT:meg

Attachments

cc: John Clementson, PSC – Assistant Chief Engineer

I. Nomenclature

CTS sizes:

Riser, for ** inch nom. (**inch O.D.) x .090 inch wall P.E. tubing anodeless service. To consist of a casing of schedule 40, carbon steel pipe (Pipe to be domestic and meet API 5L grade A25 Class 1, or ASTM A53 grade B as per BGE Specification GS 316-2), or .**inch wall tubing (Tubing to be domestic, manufactured in accordance with ASTM A-513, grade 1015 with a minimum yield of 30,000 psi). Casing to be fusion bond epoxy coated with **inch rise leg and **inch base leg. Top of the riser to be coated to the threads with FBE or BGE approved urethane type primer. Other coatings can be used with approval from BGE Gas Standards and Engineering Unit. Riser to have a permanent gas seal manufactured in accordance with DOT 192.281. Top of riser to be ASTM A53 grade B or API 5L grade A25 carbon steel pipe with **inch MIPS threads. Pipe to be manufactured in accordance with BGE specification GS 316-2. Plastic pipe to be Phillips M8100 (PE 3408, ASTM D2513). **inch nom. (**"O.D.) x **inch wall. Riser to be completed with **inch (+3", -0") pigtail. Lower end of riser to be bent at 90 degree angle on minimum inside radius of 10 inches. Bottom of riser to have to have a water seal in order to keep water and debris from migrating into the steel casing. To be used for above ground service and rated for 100 psig at 120 F. Riser to be in compliance with DOT Pipeline Safety Regulations part 192.121 and 192.375

IPS sizes:

Riser, **inch IPS plastic anodeless service. To consist of a casing of schedule 40, carbon steel pipe (Pipe to be domestic and meet API 5L grade A25 Class 1, or ASTM A53 grade B as per BGE Specification GS 316-2), or .**inch wall tubing (Tubing to be domestic, manufactured in accordance with ASTM A-513 grade 1015, with a minimum yield of 30,000 psi). Casing to be fusion bond epoxy coated with **inch rise leg and **inch base leg. Top of riser to be ASTM A53 grade B or API 5L grade A25 carbon steel pipe with **inch MIPS threads. Pipe to be manufactured in accordance with BGE specifications GS 316-2. Top of the riser to be coated to the threads with FBE or BGE approved urethane type primer. Other coatings can be used with approval from BGE Gas Standards and Engineering Unit. Plastic pipe to be Phillips M8100 (PE 3408, ASTM D2513), **inch O.D. x SDR 7. Riser to be complete with a **inch (+3", -0") pigtail. Lower end of riser to be bent at a 90 angle on a minimum inside radius of **inches. Bottom of riser to have a water seal in order to keep water and debris from migrating into the steel casing to be used for above ground service and rated for 100 psig at 120 F. Riser to be in compliance with DOT Pipeline Safety Regulations part 192.121 and 192.375.



GAS MATERIAL SPECIFICATIONS
BALTIMORE GAS AND ELECTRIC COMPANY
GAS DISTRIBUTION DIVISION

SOURCE:
Gas System Engineering
and Design Section

APPROVAL:

DATE:

9-1-98

Flanged:

Riser, **inch IPS plastic anodeless service. To consist of a schedule 40 carbon steel pipe (Pipe to be domestic and meet API 5L grade A25 Class 1, or ASTM A53 grade B as per BGE Specification GS 316-2), or ***inch wall tubing (Tubing to be domestic, manufactured in accordance with ASTM A53 grade 1015, with a minimum yield of 30,000 psi). Casing to be fusion bond epoxy coated with **inch rise leg and **inch base leg. Top of riser to be ASTM A53 grade B or API 5L grade A25 carbon steel pipe with **inch ANSI class 150 flat faced weld neck flange manufactured in accordance with ANSI B 16.5. Flange to be in accordance with BGE specification GS 304-4. Flange to be sealed with a plastic cap plug. Top of the riser to be coated to the flange with FBE or approved urethere primer. Other coatings can be used with approval from BGE's Gas Standards & Engineering Unit. Plastic pipe to be Phillips M8100 (PE 3408, ASTM D2513), **inch O.D. x SDR 7. Riser to be completed with a **inch (+3", -0") pigtail. Lower end of riser to be bent at a 90 angle on a minimum inside radius of **inches. Bottom of riser to have a water seal in order to keep out water and debris from migrating into the steel casing. To be used for above ground service and rated for 100 psig at 120 F. Riser to be in compliance with DOT Pipeline Safety Regulations part 192.121 and 192.375.

II. Specifications

- A. Coating - to be Fusion Bond Epoxy as per BGE spec. GS 303-1 of other BGE approved coating. Coating must meet the requirements of the Pipe Line Safety Regulations, Part 192.461.
- B. Horizontal Termination - to be Phillips M8100 polyethylene pipe or tubing. Termination to be sealed with plastic cap.
- C. Vertical Termination - If threaded, riser to terminate with threads that meet ANSI/ASTM B1.20.1 - "Pipe Threads General Purpose". Threads to be protected with plastic cap.
- If flanged, riser to terminate with an ANSI class 150, flat faced weld neck flange. Flange to be manufactured in accordance with ANSI B16.5 and BGE spec. GS 306-4. Flanged to be received welded square and plumb to pipe and sealed with a protective plastic plug.
- D. Transition - Transition fitting must be such that the plastic pipe will resist pull-out to the point of pipe failure as specified by the "Pipeline Safety Regulations" part 192.283.
- E. Temperature and Pressure - Pressure/Temperature rating to equal 100 psig at -20 F to 120 F as specified by the "Pipeline Safety Regulations" part 192.105, 192.121, and 192.123.

	GAS MATERIAL SPECIFICATIONS	SOURCE:	APPROVAL:	DATE:
	BALTIMORE GAS AND ELECTRIC COMPANY GAS DISTRIBUTION DIVISION	Gas System Engineering and Design Section		9-1-98

- F. Testing - Risers to be leak tested in compliance with a formal testing program to 150 psig for 10 seconds after final assembly. Riser coating to be tested for holidays (1,000 Volts DC). These records must be auditable as required by BGE's Supplier Quality Program. Suppliers must also certify that all risers can be air tested at installation to 150 psi for 10 minutes.
- G. Plastic Pipe/Tubing - Pipe/Tubing to be Phillips Driscopipe Type 8100, PE 3408-ASTM D2513. Pipe sizes as specified in ordering description and table #1.
- H. Steel Casing - If casing is pipe it is to be domestic and manufactured in accordance with API-5L. See BCE spec. GS 316.2.
 With approval of BGE's Gas Standards and Engineering Unit, casing may be made of pipe or tubing manufactured to ASTM A53 or ASTM A 513.
 Pipe manufactured to ASTM A53 must be Domestic, min. Grade B material, with a minimum yield of 35,000 psi.
 Tubing manufactured to ASTM A 513 must be Domestic, min. Grade 1015 material, with a minimum yield of 30,000 psi.
- I. Threaded portion and/or any gas carrying steel pipe - Pipe must be a minimum ASTM A53 grade B or API 5L grade A25 as per BGE spec. GS 316-2.

III. Use

Part of the Gas Distribution System. Risers are used to transition from plastic service tubing or pipe to the steel service valve. Also serves as protection for plastic service tubing or pipe above ground and physical support for the regulator and/or meter set.

IV. Acceptable Manufacturers

Central Plastics
 Perfection Corp.
 R.W. Lyall

Table #1

Size	Material Number	Steel Pipe Sched.	Plastic Pipe Wall	Vertical Length	Horizontal Length	Pig Tail SDR
1/2" CTS	40-085	40	.090	36"	16"	.090
1" CTS	31-095	40	.090	36"	30"	.090
1-1/4" CTS	31-096	40	.090	36"	24"	.090
1-1/4" IPS	40-408	40	SDR 7	36"	30"	SDR 7
2" IPS	40-216 (threaded)	40	SDR 7	36"	36"	SDR 7
2" IPS	40-862 (flanged)	40	SDR 7	36"	36"	SDR 7