



U.S. Department
of Transportation

Pipeline and Hazardous
Materials Safety
Administration

1200 New Jersey Avenue, SE
Washington, D.C. 20590

DEC 15 2010

Mr. Larry K. Borum, Chief
Gas Pipeline Safety Division
Tennessee Regulatory Authority
460 James Robertson Parkway
Nashville, Tennessee 37243-0505

Dear Mr. Borum:

Pursuant to 49 USC 60118 (a), the Pipeline and Hazardous Materials Safety Administration (PHMSA) reviewed your letter of August 19, 2010, notifying us that the Tennessee Regulatory Authority (TRA) issued an approval order to Memphis Light Gas and Water (MLGW). This order from TRA to MLGW is for the continued use in its operations of polyethylene pipe that has an unprotected storage period in excess of two years prior to installation.

PHMSA does not object to the order of 49 CFR 192.7 as specified in the TRA submission. PHMSA, however, recommends that the following three conditions are upheld.

1. The operator must remove and discard a minimum of two times the diameter in length of all Polyethylene (PE) pipe ends that have been stored outdoors at any time without properly fastened end-caps. This is due to UV exposure at these ends, which may be greater than the exposure at other points in the pipe.
2. The 80 degree C (80°C) test (ASTM D2513-09a) must be performed for samples of the 4-inch, 6-inch, and 8-inch pipe which have been most exposed to UV. To confirm the performance of the PE pipe materials in question, follow 5.6.2 (Procedure II) of ASTM D2837-08 (or most current version referenced through ASTM D2513-09a). The test conditions are to be taken from Table 3 of D2837-08, or for a PE material with an HDB of 1600 psi, a test hoop stress of 825 psi and a test temperature of 176°F (80°C). The linear extrapolation of the stress regression curve to 438,000 hours (50 years) is substantiated when the log average failure time of the test specimens at 176°F (80°C) surpasses 6000 hours.
3. All pipe must be inspected for surface damage including cuts, gouges, scratches, and similar imperfections. Any pipe segments with surface damage penetrating greater than 10 percent (10%) of the wall thickness must be removed.

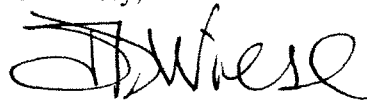
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Mr. Larry K. Borum

Tennessee Regulatory Authority for Memphis Light Gas and Water

If you wish to discuss this or any other pipeline safety matter related to this request, my staff would be pleased to assist you. Please call John Gale, Director of Standards and Rulemaking Division (202-366-0434) for regulatory matters or Jeffery Gilliam, Director of Engineering and Research Division (202-603-1550), for technical matters specific to this request.

Sincerely,

A handwritten signature in black ink, appearing to read "J. Wiese". The signature is fluid and cursive, with a large initial "J" and "W".

Jeffrey D. Wiese

Associate Administrator for Pipeline Safety

TENNESSEE REGULATORY AUTHORITY



AUG 26 2010

460 James Robertson Parkway
Nashville, Tennessee 37243-0505

August 19, 2010

Mr. Jeff Wiese, Assistant Administrator/Chief Safety Officer
U.S. Department of Transportation
Pipeline and Hazardous Materials Safety Administration
East Building, 2nd Floor, Mail Stop: E24-455
1200 New Jersey Ave., SE
Washington, DC 20590

RE: Request for Waiver of Sections 192.7 of Part 192 of U.S.C. Title 49, Appendix B and ASTM D 2513 by Memphis Light Gas and Water a Division of the City of Memphis ("MLGW"). TRA Docket Number 08-00124.

Dear Mr. Wiese:

Please find enclosed the order of the Tennessee Regulatory Authority (TRA) relative to the above referenced matter. We are submitting the order and petition of Memphis Light Gas and Water (MLGW) for review and action in accordance with 49 USC 60118(a). MLGW requests action on this matter to continue the use in its operations of polyethylene pipe that has an unprotected storage period in excess of two years prior to installation.

In accordance with the requirements of the Guidelines for States Participating in the Pipeline Safety Program, information is provided as follows:

1. Name, address and telephone number of the applicant-

Charlotte Knight Griffin
Acting General Counsel
220 South Main Street
Memphis, TN. 38103
Telephone: (901) 528-4721

2. The safety regulation involved-

MGLW has requested a waiver from the requirements of section 192.7, Appendix B and American Society of Testing Materials ("ASTM") D 2513 to allow for continued use of plastic pipe, which is in service and had a storage period in excess of two years prior to installation.

Although a previous edition of ASTM D 2513 is referenced in section 192.7, ASTM D 2513 has been revised since the request for this waiver. The revision includes new UV ray exposure limits for the classification of polyethylene pipe for which this waiver is requested. Due to the absorptive properties of the carbon black, Code C material containing 2 to 3 percent well dispersed carbon black is protected against deterioration from UV exposure for at least 10 years.

3. A description of the pipeline facilities involved-

MLGW has installed 29,094 feet of pipe at numerous locations throughout the distribution system with more than two years of exposure to UV rays. According to MLGW all installations of the pipe in question were accomplished following appropriate qualifications and using consistently good construction practices in accordance with the manufacturer's recommended procedures.

4. The justification for approving the waiver, including the reasons why the regulations are not appropriate and why the waiver is consistent with pipeline safety-

The pipe in question is high density polyethylene pipe (HDPE) manufactured with a minimum of two (2) percent finely dispersed carbon black to provide the highest degree of protection possible from ultraviolet exposure.

MLGW submitted three pipe samples to Performance Pipe for testing to confirm performance to ASTM D 2513: 4- inch diameter SDR 11 stored outside for nine years and not installed; 1-1/4-inch diameter SDR 11 stored outside for five years and installed for three years; 6-inch diameter SDR 11 stored outside for eight years and installed for four years. The results confirmed that all pipe samples tested conformed to ASTM D 2513 specifications.

The 6-inch diameter SDR 11 black HDPE exposed to UV radiation for eight years and in service for four years was tested by Performance Pipe at the ASTM D 2513 test conditions and it survived over 200 hours at 80° C/670 psi. The 6-inch diameter HDPE meets the ASTM D 2513 requirements for elevated temperature sustained pressure testing. This pipe is used in the MLGW natural gas distribution system at 99 psig.

MLGW performs various activities that provide long term monitoring of all pipe installed in the MLGW system. Patrolling and leak surveying, in accordance with 49 C.F.R. §§ 192.511, 192.513, 192.721 and 192.723, respectively are performed as long term monitoring and no incidence of pipe fatigue or failure has been recorded.

Although not included in the edition listed in §192.7, the 2009 revision to ASTM D 2513 indicates that due to the absorptive properties of the carbon black, Code C material containing 2 to 3 percent well dispersed carbon black is protected against deterioration from UV exposure for at least 10 years. The HDPE pipe in question is

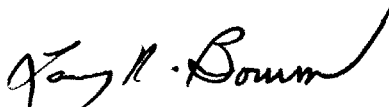
Code C and contains a minimum of 2 percent well dispersed carbon black with less than 10 years of exposure to UV radiation.

MGLW will notify the TRA Gas Pipeline Safety Division of any leaks identified on any of the pipe in use that was exposed to UV radiation for more than two (2) years and the heat fusion melt pattern test suggested by MLGW'S consultant will be required for the installation of all currently stored pipe that was exposed to UV radiation for more than two (2) years but less than ten years.

Considering the above factors, the waiver request is consistent with pipeline safety. Therefore, approval of this waiver would be consistent with pipeline safety efforts.

We understand that the TRA's order will be effective upon approval or if the TRA does not receive a response from the Federal Office of Pipeline Safety within sixty days of receipt of the order. If you have any questions regarding this matter, please contact Richard Collier, General Counsel, at 1-800-342-8359 extension 170 or me at extension 185. Your prompt response to this request is appreciated.

Sincerely,



Larry K. Borum, Chief
Gas Pipeline Safety Division

Enclosures: Petition (CD) and Order (attached)

c: Richard Collier
Wayne Lemoi, OPS-Southern Region
Charlotte Knight Griffin
TRA Docket File No. 08-00124

BEFORE THE TENNESSEE REGULATORY AUTHORITY

NASHVILLE, TENNESSEE

August 3, 2010

IN RE:

**APPLICATION OF MEMPHIS LIGHT GAS AND
WATER A DIVISION OF THE CITY OF MEMPHIS
FOR A WAIVER WITH RESPECT TO 49 CFR PART
192.7, APPENDIX B AND ASTM D 2513**

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)
) **DOCKET NO.**
) **08-00124**
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ORDER APPROVING REQUEST FOR WAIVER

This matter came before Chairman Sara Kyle, Director Kenneth C. Hill and Director Mary W. Freeman of the Tennessee Regulatory Authority (the "Authority" or "TRA"), the voting panel assigned to this docket, at a Hearing held on May 24, 2010. At the Hearing, the panel considered the Application filed on July 21, 2008 by Memphis Light Gas and Water, a Division of the City of Memphis ("MLGW"), requesting waiver from certain Minimum Federal Safety Standards ("MFSS") to permit MLGW to continue the use, in its operations, of polyethylene pipe that has an unprotected storage period in excess of two years prior to installation.

BACKGROUND

MLGW seeks a waiver from the requirements of 49 C.F.R. § 192.7, Appendix B and American Society of Testing and Materials ("ASTM") D 2513 which established certain outdoor storage limitations and safeguards with respect to polyethylene pipe used in gas distribution systems. The federal safety standards have been adopted by the TRA and its predecessor agency, the Tennessee Public Service Commission, through Tenn. Code Ann. § 65-28-104, *et*

seq., and the TRA may waive compliance with applicable standards provided that the terms of the waiver are consistent with pipeline safety.¹

During the course of this docket, there have been multiple data requests, meetings and telephone conferences to enable the TRA to obtain as much information as necessary to consider this request. This process took place over a significant period of time and culminated in the Pre-Filed Testimony of MLGW witnesses, Brent E. Haywood and Dr. Gene Palermo, being filed on May 7, 2010. Larry Borum, Chief of the TRA's Gas Pipeline Safety Division, filed an affidavit on May 14, 2010.

THE APPLICATION AND PRE-FILED TESTIMONY OF MLGW WITNESSES

According to the Application, MLGW operates and maintains over 4,792.1 miles of distribution mains and 181.6 miles of gas transmission lines. MLGW seeks approval of the Authority for waiver of certain MFSS which would allow for the continued operation of plastic pipe which is in service and had an outside storage period in excess of two years prior to installation.²

In his Pre-Filed Testimony, Brent E. Haywood, MLGW Manager of Gas Engineering and Operations, stated that MLGW has installed 29,094 feet of pipe with more than two years of outdoor exposure. A leak survey of the identified pipe was completed on February 17, 2009, and no leaks were found. Further, Mr. Haywood testified that all installations of the pipe in question were accomplished following appropriate qualifications and using consistently good construction practices in accordance with the manufacturer's recommended procedures. According to Mr. Haywood's testimony, MLGW currently performs various activities that provide long-term

¹ The TRA has previously considered and approved requests for waiver from MFSS requirements in Docket No. 01-01133, *Petition of Nashville Gas, A Division of Piedmont Natural Gas, for Request of a Waiver of Certain Statutes*; and Docket No. 07-00251, *Petition of Atmos Energy Corporation for a Waiver to Permit the Limited Use of Polyethylene Piping*.

² Application, p. 1.

monitoring of all pipe installed in its system. No incidence of pipe fatigue or failure has been found, nor have there been any material failures or leaks found in the identified pipe.³

Mr. Haywood stated that all high density pipe purchased is manufactured with a minimum of 2% finely dispersed carbon black to provide the highest degree of protection possible from ultraviolet (“UV”) exposure. Further, the pipe manufacturer clearly supports that its black pipe can be stored outside for ten years and used for outdoor applications. According to Mr. Haywood, the Plastic Pipe Institute has published documents stating that black pipe with 2% carbon may be used for continuous outdoor service.⁴

Dr. Gene Palermo was retained as a consultant by MLGW and filed Pre-Filed Testimony in this docket. According to his testimony, the most important consideration for outdoor stored pipe is if the UV radiation has affected the long term performance of the pipe. The key test to assure long-term performance is the elevated temperature sustained pressure test. Such a test was performed on 6” installed pipe that had been stored outdoors for eight years. The test results were equivalent to over twenty-seven years of service at three times the maximum operating stress. In Dr. Palermo’s opinion, these test results required no additional testing to confirm the adequacy of the identified pipe for use in the MLGW system.⁵

As to the pipe that is in MLGW’s inventory that has been stored outdoors for over two years but less than ten years, Dr. Palermo proposes that MLGW conduct a heat fusion melt pattern test. He states that it is very unlikely that less than ten years of outdoor exposure would have affected the pipe. Finally, Dr. Palermo states that the proposed waiver would assure that current pipe stocks will be utilized to the fullest without sacrificing the safety or integrity of MLGW’s gas distribution system.⁶

³ Pre-filed Testimony of Brent E. Haywood, pp. 2, 3, 6 and 15 (May 7, 2010).

⁴ *Id.* at 15.

⁵ Pre-Filed Testimony of Dr. Gene Palermo, PhD., pp. 5 and 8 (May 7, 2010).

⁶ *Id.* at 8-9.

MAY 24, 2010 HEARING

Public notice of the Hearing in this matter was issued by the Authority on March 3, 2010, and a subsequent Notice of Rescheduling Hearing was issued on April 23, 2010 in which the Hearing in this matter was set for the May 24, 2010 Authority Conference. On May 18, 2010, Brent E. Haywood filed an affidavit regarding the publication and posting of notice of the rescheduled Hearing. No person sought intervention prior to or during the Hearing. During the Hearing held on May 24, 2010, Brent E. Haywood, MLGW Manager of Gas Engineering Operations and Dr. Gene Palermo, MLGW Consultant, presented testimony and were subject to examination by the panel. The Pre-filed Testimony was entered into the record without objection. MLGW was represented by Fred Jones, Esq.

FINDINGS AND CONCLUSIONS

Tenn. Code Ann. § 65-28-106 (2004) extends jurisdiction and power to the TRA to implement and enforce certain federal safety standards set forth in Title 49 of the United States Code. Tenn. Code Ann. § 65-28-106(a) specifically provides:

- (a) The authority has the right, power and authority to provide and make certifications, reports and information to the secretary of the United States department of transportation; to enter into agreements with the secretary to carry out the purposes of §§ 65-28-104 – 65-28-111; to enforce safety standards in the state of Tennessee including enforcement of federal safety standards and permitted in the Natural Gas Pipeline Safety Act, 49 U.S.C. § 60101 et seq.; and to exercise regulatory jurisdiction over the safety of pipeline systems and transportation of gas in accordance with permission granted by the Natural Gas Pipeline Safety Act, 49 U.S.C. § 60101 et seq.

Tenn. Code Ann. § 65-28-105 mandates compliance by natural gas pipeline systems in the state with safety standards as follows:

All pipeline systems used in this state shall be constructed, operated and maintained in such a manner as to at all times be in compliance with the defined minimum safety standards and amendments thereto, as well as such additions and amendments as may be ordered by the authority from time to time.

In considering a request for waiver of the requirements in 49 CFR 192.7, the Authority must comply with certain requirements as set forth in 49 U.S.C. § 60118. The pertinent subsections (c) and (d) are quoted below:

Sec. 60118. Compliance and Waivers⁷

(c) Waivers by Secretary.

On application of a person owning or operating a pipeline facility, the Secretary by order may waive compliance with any part of an applicable standard prescribed under this chapter on terms the Secretary considers appropriate, if the waiver is not inconsistent with pipeline safety. The Secretary shall state the reasons for granting a waiver under this subsection. The Secretary may act on a waiver only after notice and an opportunity for a hearing.

(d) Waivers by State Authorities.

If a certification under section 60105 of this title or an agreement under section 60106 of this title is in effect, the State authority may waive compliance with a safety standard to which the certification or agreement applies in the same way and to the same extent the Secretary may waive compliance under subsection (c) of this section. 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. After notifying the authority of the objection, the Secretary shall provide a prompt opportunity for a hearing. The Secretary shall make the final decision on granting the waiver.

Subsections (c) and (d) of 49 U.S.C. § 60118 have been interpreted through the Pipeline and Hazardous Materials Safety Administration's *Guidelines for States Participating in the Pipeline Safety Program*. This publication by PHMSA provides specific criteria for state agencies to follow in considering a waiver of federal regulations involving intrastate pipelines. The PHMSA's criteria are found in Chapter 3 as follows:

3.2.1 Intrastate Pipelines

Upon application by an operator, a State agency may consider a waiver of pipeline safety requirements subject to PHMSA concurrence. A waiver may be granted when it is not practical for an operator to comply with a regulation of general applicability. The State agency is encouraged to consult with PHMSA on the appropriateness of granting a waiver before formal action is taken.

⁷ 49 U.S.C. Chapter 601 – Safety 01/06/03, Sec. 60118 Compliance and Waivers.

A State agency must notify PHMSA in writing by registered or certified mail of each waiver granted by the state. The written notice and hearing requirements may be omitted if the State agency finds that notice is impracticable, unnecessary, or not in the public interest. A notice may be published by any method authorized by State law.

If a State agency finds that a waiver request is consistent with pipeline safety and is justified, it may issue written approval under such terms and conditions as are appropriate. Written approval should include a statement of reasons for granting the waiver.

If a State agency finds that a waiver request is not consistent with pipeline safety or is not otherwise justified, it must issue written denial of the request. Written denial should include a statement of reasons.

A State agency must notify PHMSA in writing by registered or certified mail of each waiver granted by the State. Each notice must provide the following information:

1. The name, address, and telephone number of the applicant
2. The safety regulation involved
3. A description of the pipeline facilities involved
4. The justification for approving the waiver, including the reasons why the regulations are not appropriate and why the waiver is consistent with pipeline safety
5. A copy of the State agency's order or letter to the applicant

PHMSA will acknowledge receipt of each notice and consider each in the order it was received. PHMSA may provide further opportunity for public comment.

If PHMSA does not object to the waiver, it will so notify the State agency. The waiver is effective upon approval by PHMSA or no action by PHMSA 60 days after the receipt of waiver from State agency. If, before a waiver is to become effective, PHMSA notifies the State agency that it objects to the waiver, the action granting the waiver will be stayed. PHMSA will then allow the State agency an opportunity to present its arguments with opportunity for a hearing. Thereafter, PHMSA will make the final determination whether the waiver may be granted and will notify the State agency of its decision.⁸

Based upon the evidentiary and administrative record as a whole, the panel made the following findings. The panel found that MLGW has met the criteria as set forth in 49 U.S.C., §

⁸ Pipeline and Hazardous Materials Safety Administration, *Guidelines for States Participating in the Pipeline Safety Program*, Chapter 3, Revised December 2007.

60118 to obtain a waiver of the requirements in 49 C.F.R. 192.7, Appendix B of the MFSS and ASTM D 2513, which establishes certain outdoor storage limitations and safeguards with respect to polyethylene pipe used in gas distribution systems. The panel also found that the waiver as requested by MLGW would permit MLGW to continue its operational use of this pipe that while in storage prior to installation was exposed to ultraviolet rays in excess of two years but less than ten years. The panel further found that MLGW's request for a waiver of requirements of § 192.7 of the MFSS is a practical solution that does not endanger the public's safety or the integrity of the pipeline. Finally, the panel found that the Authority and MLGW have taken appropriate actions pursuant to § 60118 to provide notice and the opportunity for the public to be heard concerning MLGW's request. Thereafter, based on these findings, the panel voted unanimously to approve MLGW's Application for waiver contingent upon the requirements (1) that MLGW will notify the TRA Gas Pipeline Safety Division of any leaks identified on any of the pipe in use that was exposed to ultraviolet rays for more than two years and (2) that the heat fusion melt pattern test suggested by MLGW's consultant be required for the installation of all currently stored piping that has been exposed to ultraviolet rays for more than two years but less than ten years prior to installation. The approved waiver is subject to review by the U.S. Department of Transportation ("DOT") and will become effective upon the approval of the DOT, or if no action is taken by the DOT, sixty days after the receipt by the DOT of the Authority's Order in this docket.

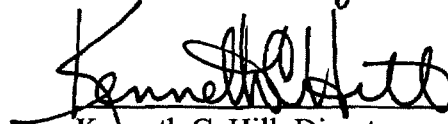
IT IS THEREFORE ORDERED THAT:

1. The Application by Memphis Light Gas and Water, a Division of the City of Memphis, for waiver of 49 C.F.R. §192.7, Appendix B and American Society of Testing and Materials ("ASTM") D 2513 of the Minimum Federal Safety Standards is approved, subject to the conditions set forth herein.

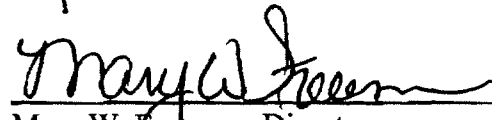
2. This Order will become effective upon the approval of the U.S. Department of Transportation, or if no action is taken by the U.S. Department of Transportation, sixty days after the receipt of this Order by the U.S. Department of Transportation.



Sara Kyle, Chairman



Kenneth C. Hill, Director



Mary W. Freeman, Director