REQUEST NO. AG 18.01:

In reference to the Company's response to Staff Data Request ENG 10.02:

a. Is it the Company's position that it is no longer required to complete the Accelerated Main Replacement Program (AMRP) by 2030 as required by the Commission Order in Docket Numbers 09-0166/09-0167?
b. If yes, what is the Company's current projected completion date of AMRP?

RESPONSE:

a and b: It is Peoples Gas' intention, assuming it receives and continues to receive appropriate cost recovery, to complete the AMRP by 2030, *i.e.*, in 20 years from the 2011 inception. However, it is Peoples Gas' legal interpretation that the Commission linked its discussion of the timeline for completion of the accelerated main replacement program ("AMRP") with its approval of the cost recovery mechanism (Rider ICR). The Illinois Appellate Court reversed the Commission's approval of that cost recovery mechanism. Accordingly, it is Peoples Gas' position that the Commission language related to timing of completion of the AMRP is no longer applicable.

REQUEST NO. AG 18.03:

Please describe what criteria must be present in order for a main segment to be given the following MRI (Main Replacement Index) value:

a. 3.0 to 3.99
b. 4.0 to 4.99
c. 5.0 to 5.99
d. 6.0 and above

RESPONSE:

The same criteria can be a factor in any of the above categories. The numeric value is a result of summing the associated maintenance activities. Criteria taken into account include breaks (defined as a 100% circumferential separation of pipe), crack at taps (defined as having less than a 100% circumferential separation of pipe- cracks are usually located at service taps and on bell joint ends), pipe wall thickness based on pipe coupons, visual observation, and incidence of leak and other repairs. Each of these criteria is assigned a multiplication factor based on "Break Equivalents" which is then multiplied by the number of occurrences.

The sum of the aforementioned numerical value is then multiplied by a factor based on pipe material, operating pressure, diameter, street type and pavement cover. The result of this calculation is a value that is assigned to each segment known as the Main Ranking Index (MRI). The MRI value is rounded to the nearest quarter point, (i.e. The Uniform Main Rank Index (UMRI)) and sorted in descending order in order to identify those segments with the highest incidence of UMRI points per block.

As a simplified example: If Peoples Gas experienced a "break" on a medium pressure pipe it would be assigned a numeric value of 2.0. If Peoples Gas experienced a second "break" on that same line it would be assigned another numeric value of 2.0, bringing the total rating to 4.0.

For a complete explanation see document titled "Main Ranking System" attached to the response to Data Request AG18.08.

ICC Docket No. 12-0512
The Peoples Gas Light and Coke Company's Response to
Attorney General Data Requests AG 18.01-18.16
Dated: January 3, 2013

REQUEST NO. AG 18.05:

In reference to the Company's response to City of Chicago's Data Request 2.06:

a. Is it correct that five segments with an MRI greater than 6.0 were replaced in 2012?
b. If yes, on what dates were each of the segments replaced?
c. If no, has the 2013 replacement schedule been revised to include those segments?

RESPONSE:

a. No. The list is tracked on a monthly basis. Gas main segments will appear on the list as they hit the threshold and are removed from the list when they are replaced. The City of Chicago's Data Request 2.06 references Data Request AG 10.15. That data request asked for a "list of cast iron main segments and their locations that have an MRI rating greater than 6.0". The list is a snapshot of gas main segments that met the criteria at the time of the data request (October 2012).

b.

2201	W	18TH	ST	Scheduled 2013
2124	N	HAMLIN	AVE	Scheduled 2013
1420	N	MONTICELLO	AVE	Retired 12/17/12
6724	N	LEOTI	AVE	Retired 12/21/12
6614	N	OGALLAH	AVE	Scheduled 2013
6028	W	64TH	ST	Retired 12/21/12

c. Yes. Please see the response to subpart (b).

ICC Docket No. 12-0512
The Peoples Gas Light and Coke Company's Response to
Attorney General Data Requests AG 18.01-18.16
Dated: January 3, 2013

REQUEST NO. AG 18.06:

In reference to the Company's response to City of Chicago's Data Request 2.05, what is the average number of leak repairs required before the Company decides to replace a main segment? What are the "field conditions", technical criteria or other factors that a shop manager may consider in evaluating the situation?

RESPONSE:

The number of leak repairs before the Company decides to replace a main segment is dependent on the type of repair, the condition of the main, the operating pressure of the main and the geographic location of the main. (For a complete explanation see document titled "Main Ranking System" attached to Data Request AG18.8).

For an explanation of the "field conditions", technical criteria or other factors that a shop manager may consider in evaluating the situation, see the response to Data Request AG 18.04.

ICC Docket No. 12-0512
The Peoples Gas Light and Coke Company's Response to
Attorney General Data Requests AG 18.01-18.16
Dated: January 3, 2013

REQUEST NO. AG 18.08:

Please provide all documentation relating to or describing the Company's practices related to the use of MRI and DIMP.

RESPONSE:

See attachments:

1. Main Ranking System "PGL AG 18.08 Attach 01"
2. Distribution Integrity Management Plan "PGL AG 18.08 Attach 02"

Main Ranking System

Overview:

The Main Ranking System was developed to identify and prioritize gas main segments as candidates for replacement. Each individual segment is evaluated, based on its maintenance history. Criteria taken into account include breaks, crack at taps, pipe wall thickness based on pipe coupons, visual observation, incidence of leak and other repairs. Each of these criteria is assigned a multiplication factor based on "Break Equivalents" which is than multiplied by the number of occurrences.

The sum of the aforementioned numerical value is then multiplied by a factor based on pipe material, operating pressure, diameter, street type and pavement cover. The result of this calculation is a value that is assigned to each segment known as the Main Ranking Index (MRI). The MRI value is rounded to the nearest quarter point, (i.e. The Uniform Main Rank Index (UMRI)) and sorted in descending order in order to identify those segments with the highest incidence of UMRI points per block.

All segments that have accumulated a UMRI rating greater than 6.0 are placed on a schedule to be retired. Segments with a UMRI value greater than 3.0 are viewed as possible replacement candidates when performing work on adjacent segments and when evaluating the extent of Public & System Improvement projects.

Basis of Formula:

The formula used to compute the **Main Ranking Index (MRI)** per block for each main segment is as follows:

$$\mathbf{MRI = B + C + VPE + KU + RE}$$

Where:

B = Break equivalent based on breaks.

C = Break equivalent based on cracks at taps.

VPE = Break equivalent based on visual observations of the main.

KU = Break equivalent based on pipe coupon analysis on the segment.

RE = Break equivalent based on repairs done on the main.

(See Appendix "A" for detailed formula criteria)

Definitions:

Breaks	A Break is defined as a 100% circumferential separation of pipe.
Break Equivalent	A Break Equivalent is a weighting factor assigned to each ranking category (B, C, VPE, KU and RE) in order to achieve a comparable balance.
Coupon Analysis	A coupon analysis is a defined as a physical sample that is obtained from the gas main and evaluated in a lab for thickness and weight.
Cracks at Tap	A crack is defined as having less than a 100% circumferential separation of pipe. Cracks are usually located at service taps and on bell joint ends.
MRI	The Main Ranking Index (MRI) is a summation of main factor values (B, C, VPE, KU and RE) assigned to a main segment to indicate rank order. Higher numbers indicate greater maintenance activities.
Main Ranking System	The Main Ranking System is a computer program utilized for calculating, querying and reporting the main segment ranking index as well as identifying all associated maintenance activities that make up the rating.
Repairs	Includes all maintenance activities associated with a segment. (Excludes leak repairs captured under the Breaks and Cracks categories).
UMRI	Rounding factor (MRI rounded to the nearest quarter point).
Visual Observation	Visual inspection of a segment (Good versus Poor). This category is logged whenever maintenance is performed on a segment.
Segment	A Gas Main Segment is a unique unit of pipe identified by: year installed, pressure, size, material, in-street and square mile boundary. Since segments can range in length from one (1) foot to a mile (5,280 feet), the MRI takes this into account and recalibrates the segments based on a one block length (660 feet).

Derivations of the Break Equivalents B, C, VPE, KU and RE:

B – Break Equivalent Based on breaks:

(Analysis includes number of breaks, operating pressure, street classification (business versus residential), and pavement coverage multiplied by a Break Equivalent Factor).

$$B = K_1 * B_1 * MR_{20}$$

C – Break Equivalent Based on Cracks at Taps:

(Analysis includes number of cracks at taps, operating pressure, street classification (business versus residential), and pavement coverage multiplied by a Break Equivalent Factor.)

$$C = K_2 * C_1 * MR_{20}$$

VPE – Break Equivalent Based on Visual Observations of the Main:

(Analysis is based on a visual inspection ((Poors versus Goods) (or coupon analysis if available)) and also takes into account material, operating pressure, main size, street classification (business versus residential), pavement coverage multiplied by a Break Equivalent Factor.)

For Low Pressure:

If KU = 0 (coupon analysis has not been performed)
Then

$$VPE = MIN [1, MATL\_FACT * MR_{10}] * MIN [(B + C + (1 * STR\_FACT)), VP_1 + VP_2]$$

Else (coupon analysis has been performed)

$$VPE = MIN [1, MATL\_FACT * MR_{10}] * MIN [(B + C + KU + (2 * STR\_FACT)), VP_1 + VP_2]$$

For Medium or High Pressure:

If KU = 0 (coupon analysis has not been performed)
Then

$$VPE = MIN [(B + C + (1 * MR_{11} * STR\_FACT)), VP_1 + VP_2]$$

Else (coupon analysis has been performed)

$$VPE = MIN [(B + C + KU + (2 * MR_{11} * STR\_FACT)), VP_1 + VP_2]$$

KU – Break Equivalent Based on Pipe Segment Coupon Analysis:

(Analysis includes physical evaluation of material condition, operating pressure, street classification (business versus residential), and pavement coverage multiplied by a Break Equivalent Factor.)

$$KU = K_5 * MR_5 * MR_{20}$$

RE – Break Equivalent Based on Repairs Performed on the Main Segment:

(Analysis is based on a visual inspection (Poors versus Goods)and also takes into account material, operating pressure, main size, street classification (business versus residential), pavement coverage and (or coupon analysis if available) multiplied by a Break Equivalent Factor.)

$$RE = MIN [(LR + OR), (2 * MR_{20})]$$

The method of calculating LR and OR depends on the material and operating pressure of the main segment.

If the main is low pressure, and <u>not</u> Cast Iron or Ductile Iron, then:

$$LR = (K_6 * MR_6 * MR_{20} * MR_{10}), \text{ and}$$
$$OR = (K_7 * MR_7 * MR_{20} * MR_{10}).$$

If the main is medium or high pressure, and <u>not</u> Cast Iron or Ductile Iron, then:

$$LR = (K_6 * MR_6 * MR_{20}), \text{ and}$$
$$OR = (K_7 * MR_7 * MR_{20}).$$

For Cast Iron and Ductile Iron mains LR and OR depends on operating pressure and the number of un-repaired Joints.

Joints:
If the year of main installation is < 1932
then
Joints (number of joints) = (Length of main / 12),
else
Joints (number of joints) = (Length of main / 16).

For low pressure Cast or Ductile Iron main,

and where $(MR_6 + MR_7) \leq 0.5 * \text{Joints}$
Then, $LR = (K_6 * MR_6 * MR_{20} * MR_{10})$,
And, $OR = (K_7 * MR_7 * MR_{20} * MR_{10})$.

For medium or high pressure Cast or Ductile Iron main,

and where $(MR_6 + MR_7) \leq 0.5 * \text{Joints}$
Then, $LR = (K_6 * MR_6 * MR_{20})$,
And, $OR = (K_7 * MR_7 * MR_{20})$.

For medium or high pressure Cast or Ductile Iron main,

Where: $(MR_6 + MR_7) > 0.5 * \text{Joints}$
Then, Un-repaired Joints = Joints - $(MR_6 + MR_7)$
However, if calculated un-repaired Joints ≤ 0 from above formula then un-repaired joints = 0

$L_1 = MR_6 * (\text{Un-repaired Joints} / (MR_6 + MR_7))$
$R_1 = MR_7 * (\text{Un-repaired Joints} / (MR_6 + MR_7))$

For low pressure Cast or Ductile Iron main,

and where $(MR_6 + MR_7) > 0.5 * \text{Joints}$
Then, $LR = (K_6 * L_1 * MR_{20} * MR_{10})$,
And, $OR = (K_7 * R_1 * MR_{20} * MR_{10})$.

For medium or high pressure Cast or Ductile Iron main,

and where $(MR_6 + MR_7) > 0.5 * \text{Joints}$
Then, $LR = (K_6 * L_1 * MR_{20})$,
And, $OR = (K_7 * R_1 * MR_{20})$.

APPENDIX A

Formula Details:

Constants used in calculating break equivalents are:

K_1 = 1.0 associated with B.

K_2 = 0.5 associated with C.

K_3 = 0.5 associated with VPE.

K_4 = 1.0 associated with VPE.

K_5 = 1.0 associated with KU.

K_6 = 0.1 associated with RE.

K_7 = 0.01 associated with RE

Definitions of other terms and factors used in calculating break equivalents are:

B_1 = Number of breaks repaired on the main segment (excludes third party damage).

C_1 = Number of cracks at tap repaired on the main segment (excludes third party damage).

C_2 = Number of pipe coupons analyzed on the main segment.

C_3 = Sum of thickness of all coupons taken on the main segment.

C_4 = Average thickness of all coupons taken on the main segment.

C_5 =Sum of break equivalents assigned to the main segment based on each pipe coupon analyzed

(See **Appendix B** for definition of method to assign break equivalents to coupons).

P_1 = Number of visually observed "poors" based on maintenance performed before 1990.

G_1 = Number of visually observed "goods" based on maintenance performed before 1990.

P_2 = Number of visually observed "poors" based on maintenance performed after 1989

G_2 = Number of visually observed "goods" based on maintenance performed after 1989.

L_1 = Number of leak repairs recorded in maintenance data (the reason for work is leak).

R_1 = Number of repairs recorded in maintenance data for reasons other than leak (and for work types other than test holes and internal clamping)

MR_3 = Factor based on the number of visual "poors" versus" goods" observed during maintenance prior to 1990.

$$MR_3 = P_1 * (P_1/ (P_1 + G_1)) \text{ providing } P_1 > 0, \text{ else } MR_3 = 0$$

MR_4 = Factor based on the number of visual "poors" versus" goods" observed during maintenance after 1989.

$$MR_4 = P_2 * (P_2/ (P_2 + G_2)) \text{ providing } P_2 > 0, \text{ else } MR_4 = 0$$

MR_5 = Factor based on pipe wall thickness from each pipe coupon taken from the main segment.

$$\text{If } (P_1 + P_2 + G_1 + G_2) > 0 \text{ and } (P_1 + P_2) / (P_1 + P_2 + G_1 + G_2) \geq 0.5$$

Then

$$MR_5 = C_5 * [(P_1 + P_2) / (P_1 + P_2 + G_1 + G_2)$$

else

$$MR_5 = 0.5 * C_5$$

MR_6 = Factor based on the number of leak repairs made on the main segment.

$$\text{If } (L_1 - B_1 - C_1) > 0$$

Then

$$MR_6 = L_1 - B_1 - C_1$$

Else

$$MR_6 = 0$$

MR_7 = Factor based on the number of repairs made on the main segment for reasons other than leaks, and for work types other than test holes or internal clamping (planned upgrading).

If $R_1 \geq 0$
then
$MR_7 = R_1$
else
$MR_7 = 0$

MR_{10} = Factor based on the pipe diameter of the main segment.
FOR CAST IRON MAIN SEGMENTS it reflects the decreasing likelihood large diameter cast iron main will break due to increased beam strength of the pipe. Nominally shall be 6 divided by the diameter of the main in inches. However, the upper limit shall be 2.0 and the lower limit shall be 0.2. Thus the following values shall be used:
For pipe diameter less than 4" use 2.0; for 4" use 1.5; for 6" use 1.0; for 8" use 0.75; for 10" use 0.6; for 12" use 0.5; for 16" use 0.4; for 20" use 0.3; for 24" use 0.25; and for 30" and larger use 0.2.
FOR MAINS OF MATERIALS OTHER THAN CAST IRON:
For ductile iron use 0.5 time the cast iron value for the same diameter with a lower limit of 0.2.
For coated steel and polyethylene plastic use 0.4 times the cast iron value for the same diameter with a lower limit of 0.2.
Only nominal amounts of mains exist other than coated steel, polyethylene plastic, cast and ductile iron. Use 2.0 for all diameters of these mains which are primarily of only from 1 to 4 inches in diameter. (CAB, bare steel, and copper).

MR_{11} = Factor based on the operating pressure of the main segment.
Use 1.0 for low pressure mains (≤ 12" W.C.)
Use 2.0 for medium pressure mains (> 12" W.C. and < 25 PSIG)
Use 3.0 for high pressure mains (≥ 25 PSIG)

MR_{12} = Factor based on the street type in which the main segment is laid.
Use 1.0 for residential streets
Use 1.2 for business streets

MR_{13} = Factor based on the. percent of pavement cover between the main and buildings.
Use 1.0 for mains with < 50% paving from main to building.
Use 1.2 for mains with ≥ 50% paving from main to building.
Use 1.0 for mains where percent paving is not established (the field is blank).

MR_{14} = Factor to adjust main segment length to a per block basis.
Shall be 660 feet divided by the length of the main segment in feet, providing that the result is less than 1.0, else shall be 1.0.

MR_{20} = $MR_{11} * MR_{12} * MR_{13} * MR_{14}$

VP_1 = $K_3 * MR_3 * MR_{20}$

VP_2 = $K_4 * MR_4 * MR_{20}$

STR_FACT = $MR_{12} * MR_{13}$

MATL_FACT = 2.0 for ductile iron mains and 1.0 for every other main material

APPENDIX B

DEFINITION OF PIPE COUPON THICKNESS POINTS BASED ON WALL THICKNESS OF COUPONS FOR CAST AND DUCTILE IRON MAINS

The minimum tolerable wall thickness for selected diameter cast and ductile iron mains is based on 2'-0" of frost and a buried depth of 3'-6". The minimum wall thickness varies with material, diameter and beam length. For a given material and diameter, the minimum wall thickness varies with the length of pipe between supporting blocking. Since PGL purchased cast iron in 12' lengths prior to 1932 and 16' lengths after 1931 the table below specifies minimum wall thickness for cast iron in both lengths as well as for ductile iron pipe in 16' lengths. The minimum values for wall thickness for pipe sizes and material were derived based on ring crushing failure and beam loading equations.

TABLE NO.1
FOR CAST AND DUCTILE IRON MAINS

MINIMUM TOLERABLE WALL THICKNESS IN INCHES

NOMINAL MAIN DIAMETER	PRE-1932 CAST IRON (11' SPANS)	POST-1931 CAST IRON (14' SPANS)	ALL DUCTILE IRON (14' SPANS)
4"	0.340"	NA	NA
6"	0.333"	0.329".	0.089"
8"	0.240"	0.237"	0.075"
10"	0.191"	0.189"	NA
12"	0.217"	0.191"	0.110"
16"	0.286"	0.251"	0.145"
20"	0.355"	0.312"	0.180"
24"	0.422"	0.372"	0.214"
30"	0.520"	0.458"	0.263"
36"	0.623"	0.548"	0.315"
48"	0.827"	0.727"	0.418"

NA = Nominal or no appreciable main of that diameter and type exists in PGLC system.

Cast iron pipe was manufactured to various standards over the approximately 100 years it was installed by PGL. While some pipe purchased prior to 1929 had even thicker walls than 1929 bell and spigot pipe (such as pipe purchased prior to 1900), the dimension standards, including wall thickness for 1929 bell and spigot pipe in 12 foot lengths is conservatively used as the typical standard for all pipe purchased prior to

1932 and is listed in the Table NO.2 below. Also listed is the 1952 standard wall thickness for cast iron mechanical joint pipe. While the date of transition to the thinner wall of the 1952 standard is not known, it is conservatively assumed that all cast iron pipe purchased after 1931 was made to the 1952 standard.

TABLE NO.2
DIMENSION STANDARDS FOR CAST IRON PIPE IN INCHES

	1929 BELL & SPIGOT PIPE(1)			1952 MECHANICAL JOINT PIPE(2)		
Nominal Diameter	Pipe O.D.	Pipe I.D.	Wall Thickness	Pipe O.D.	Pipe I.D.	Wall Thickness
4"	4.800	4.000	0.400	4.800	4.040	0.380
6"	6.900	6.040	0.430	6.900	6.080	0.410
8"	9.050	8.150	0.450	9.050	8.230	0.410
10"	11.100	10.120	0.490	11.100	10.220	0.440
12"	13.200	12.120	0.540	13.200	12.240	0.480
16"	17.400	16.160	0.620	17.400	16.400	0.500
20"	21.600	20.240	0.680	21.600	20.440	0.570
24"	25.800	24.280	0.760	25.800	24.540	0.630
30"	31.740	30.040	0.850	32.000	30.300	0.850
36"	37.960	36.060	0.950	38.300	36.560	0.870
48"	50.500	47.980	1.260	50.800	48.680	1.060
Also commonly found in PGL's pre-1929 pipe is:						
24"	25.500	24.00	0.75			

NOTES:

(1) Use the 1929 standard for original wall thickness of cast iron pipe installed prior to 1932.

(2) Use the 1952 standard for original wall thickness of cast iron pipe installed after 1931.

For ductile iron pipe standard dimensions are given in the Table No.3 below based on ASA Standard 21.50 dated May 10, 1965.

TABLE NO.3
DIMENSIONS STANDARDS FOR DUCTILE IRON PIPE IN INCHES (1)

NOMINAL DIAMETER	PIPE O.D.	PIPE I.D.	WALL THICKNESS
4"	4.80	4.29	0.29
6"	6.90	6.28	0.31
8"	9.05	8.39	0.33
10"	11.10	10.40	0.35
12"	13.20	12.46	0.37
16"	17.40	16.66	0.37
20"	21.60	20.82	0.39
24"	25.80	24.98	0.41
30"	32.00	31.06	0.47
36"	38.30	37.24	0.53
48"	50.80	49.50	0.65

NOTES:

(1) This standard is for pipe laid without blocking on un-tamped fill. It is based on a depth of cover of 5' and a working pressure of 250 PSIG, or more, for diameters up to 36" and to 200 PSIG for 48". It is also based on pipe minimum tensile yield strength of 60,000 PSI and minimum yield strength of 42,000 PSI. While PGL laid pipe on blocking, the standard above is believed typical of the pipe dimensions used for operating pressures of 25 PSIG or less, that were far below those pressures covered in the standard for pipe of these wall thicknesses.

According to ASA Standard 21.50, for ductile iron pipe a variation in manufacturing of pipe wall thickness of up to -.05" was acceptable in pipe up to 8" in diameter, a variation of up to -.06" for 12" diameter, and a variation of up to -.07" for 16" through 36" diameter pipe. For purpose of wall thickness loss computations, it is assumed all pipe met wall thickness specifications listed in Table No. 3 when manufactured.

Main Rank Index (MRI) points assigned on the basis of pipe coupons shall be determined by the wall thickness of the coupon relative to the minimum tolerable levels that are listed in Table No.1, and to the amount of pipe wall loss. For cast iron coupons, the original wall thickness will be based on Table No.2 data values. For cast iron pipe installed prior to 1932, the 1929 standard for original wall thickness shall be used from Table No.2 to compute pipe wall loss; and for pipe installed after 1931, the 1952 standard for original wall thickness shall be used from Table No.2 to compute pipe wall loss. For ductile iron pipe coupons, the original wall thickness shall be based on data values from Table No.3 to compute pipe wall loss.

Values for the pipe coupon **MRI** points are determined based on the following five conditions:

1. If the remaining pipe wall is greater than, or equal to, the value specified in Table No.1, plus 50% of the difference between the original value from Table No.2 for cast iron (or Table No.3 for ductile iron) less the appropriate value in Table No.1, then pipe coupon **MRI** points = zero (0) break equivalents.

2. If the remaining pipe wall is greater than, or equal to, the appropriate value specified in Table No.1, but by less than 50% of the difference between the original value given in Table No.2 for cast iron (or in Table No.3 for ductile iron), then pipe coupon **MRI** points = 0.2 break equivalents.

3. If the remaining pipe wall is less than the appropriate value specified in Table No.1, but greater than, or equal to, 75% of the Table No.1 value, then pipe coupon **MRI** points = 1.0 break equivalent.

4. If the remaining pipe wall is less than 75% of the appropriate value specified in Table No.1, but greater than, or equal to, 50% of the Table No.1 value, then pipe coupon **MRI** points = 2.0 break equivalents.

5. If the remaining pipe wall is less than 50% of the appropriate value specified in Table No.1, then pipe coupon **MRI** points = 4.0 break equivalents.

Two examples of application of the pipe coupon thickness point algorithm are:

1. A pre-1932 6" cast iron pipe coupon is found to have an average wall thickness of 0.100 inches. Table No.1 specifies a minimum wall thickness of 0.333" for 12' lengths of 6" pre- 1932 cast iron pipe. A 6" coupon of 0.100 inches is less than 50% of the specified Table No.1 value. Therefore, based on condition 5 above, assign a **MRI** of 4.0 break equivalents to the main segment based on coupon thickness.

2. A post-1931 6" cast iron pipe coupon is found to have an average thickness of 0.380 inches. This is greater, by an amount of 0.051", than the 0.329" minimum for 14' lengths specified in Table No.1 for 6" post-1931 cast iron pipe. Using the

1952 standard from Table No.2, the original pipe wall thickness was 0.41 inches, or 0.030" less than the original pipe wall thickness. As determined by condition 1 above, assign the pipe coupon **MRI** points equivalent to zero break equivalents.

Table NO.4 attached gives the break equivalents determined from the above equations for ranges of coupon thickness from the various diameters of cast and ductile iron main.

CAST AND DUCTILE IRON PIPE DEFICEINCY POINTS BASED ON BREAK EQUIVALENTSASSIGNEDTO PIPE COUPONS

			BREAK EQUIVALENTS ASSIGNED FOR REMAINING AVERAGE COUPON WALL THICKNESS									
			4 POINTS		2 POINTS		1 POINTS		0.2 POINTS		OPOINTS	
NOMINAL DIAMETER	ORIGINAL WALL THICKNESS IN INCHES	MINIMUM THICKNESS	WALL THICKNESS FROM	TO	WALL THICKNESS FROM	TO	WALL THICKNESS FROM	TO	WALL THICKNESS FROM	TO	WALL THICKNESS FROM	TO
FOR CAST IRON PIPE INSTALLED PRIOR TO 1932 IN 12' LENGTHS (11' span between blocking)												
4	0.400	0.340	0.000	0.169	0.170	0.254	0.255	0.338	0.339	0.369	0.370	>.370
6	0.430	0.333	0.000	0.166	0.167	0.249	0.250	0.321	0.332	0.381	0.382	>.382
8	0.450	0.240	0.000	0.119	0.120	0.179	0.180	0.238	0239	0.344	0.345	>.345
10	0.490	0.191	0.000	0.095	0.096	0.142	0.143	0.189	0.190	0.340	0.341	>.341
12	0.540	0.217	0.000	0.108	0.109	0.162	0.163	0.215	0.216	0.378	0.379	>.379
16	0.620	0286	0.000	0.142	0.143	0214	0.215	0284	0.285	0.452	0.453	>.453
20	0.680	0.355	0.000	0.177	0.178	0.265	0.266	0.353	0.354	0.517	0.518	>.518
24	0.760	0.422	0.000	0.210	0.211	0.316	0.317	0.420	0.421	0.590	0.591	>.592
30	0.850	0.520	0.000	0259	0.260	0.389	0.390	0.518	0.519	0.684	0.665	>.685
36	0.950	0.623	0.000	0.311	0.312	0.467	0.468	0.621	0.622	0.786	0.787	>.788
48	1260	0.827	0.000	0.413	0.414	0.619	0.620	0.825	0.826	1.043	1.044	>1.045
FOR CAST IRON PIPE INSTALLED AFTER 1931 IN 16' LENGTHS (14' span between blocking)												
4	0.380	NA	0.000	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	0.410	0.329	0.000	0.164	0.165	0.246	0.247	0.327	0.328	0.369	0.370	>.370
8	0.410	0.237	0.000	0.118	0.119	0.177	0.178	0.235	0.236	0.323	0.324	>.324
10	0.440	0.189	0.000	0.094	0.095	0.141	0.142	0.187	0.188	0.314	0.315	>.315
12	0.480	0.191	0.000	0.094	0.095	0.142	0.143	0.189	0.190	0.334	0.335	>.335
16	0.500	0.251	0.000	0.125	0.126	0.187	0.188	0.249	0250	0.375	0.376	>.376
20	0.570	0.312	0.000	0.155	0.156	0.233	0.234	0.310	0.311	0.440	0.441	>.441
24	0.630	0.372	0.000	0.185	0.186	0.278	0279	0.371	0.372	0.500	0.501	>.501
30	0.850	0.458	0.000	0.228	0.229	0.343	0.344	0.456	0.457	0.653	0.654	>.654
36	0.870	0.548	0.000	0273	0.274	0.410	0.411	0.546	0.547	0.708	0.709	>.704
48	1.060	0.727	0.000	0.363	0.364	0.544	0.545	0.725	0.726	0.894	0.895	>.895
FOR DUCTILE IRON PIPE INSTALLED IN 16' LENGTHS (14' span between blocking)												
4	0.290	NA	0.000	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	0.310	0.089	0.000	0.044	0.045	0.066	0.067	0.068	0.089	0.199	0.200	>.200
8	0.330	0.075	0.000	0.037	0.038	0.055	0.056	0.073	0.074	0.202	0.203	>.203
10	0.350	NA	0.000	NA	NA	NA	NA	NA	NA	NA	NA	NA
12	0.370	0.110	0.000	0.054	0.055	0.082	0.083	0.108	0.109	0.239	0.240	>.240
16	0.370	0.145	0.000	0.072	0.073	0.108	0.109	0.143	0.144	0.257	0.258	>.258
20	0.390	0.180	0.000	0.089	0.090	0.134	0.135	0.178	0.179	0.284	0.285	>.285
24	0.410	0.214	0.000	0.106	0.107	0.160	0.161	0.212	0.213	0.311	0.312	>.312
30	0.470	0.263	0.000	0.131	0.132	0.196	0.197	0.261	0.262	0.366	0.367	>.367
36	0.530	0.315	0.000	0.157	0.158	0.235	0236	0.313	0.314	0.422	0.423	>.423
48	0.650	0.418	0.000	0.208	0.209	0.313	0.314	0.416	0.417	0.533	0.534	>.534

ICC Docket No. 12-0512
The Peoples Gas Light and Coke Company's Response to
Attorney General Data Requests AG 18.01-18.16
Dated: January 3, 2013

REQUEST NO. AG 18.11:

In reference to the Company's response to City of Chicago's Data Request 2.02,

a. What criteria or conditions result in a segment reaching an MRI value of 5.0 or greater?
b. Who monitors MRI?
c. Who monitors whether a certain segment is located near a hospital, school, or nursing home?
d. What constitutes being "near" a hospital, school, or nursing home?
e. Please provide all documentation relating to this policy.

RESPONSE:

a. See the response to Data Request AG 18.03.
b. The Engineering Department circulates a monthly report.
c. The Engineering Department. A process exists within the Geographical Information System (GIS) that generates a monthly report identifying which segments with an MRI value of 5.0 or greater are near a hospital, school or nursing home.
d. A main segment within an 80 foot buffer of the hospital, school, or nursing home building outline is considered "near".
e. For a complete explanation see document titled "Main Ranking System" attached to Data Request AG18.08.

REQUEST NO. AG 18.12:

In reference to the Company's proposed 2013 replacement schedule, provided in response to AG DR 10.18, how does the Company prioritize which segments get replaced first?

RESPONSE:

The segments identified in AG DR 10.18 are fragments of larger projects in contiguous areas. The project areas themselves are prioritized by operational and geographic conditions. For example:

- Some mains are weather dependent and cannot be taken out of service at certain times of the year.
- Peoples Gas cannot retire the gas main until all customers have been transferred to the new gas main which requires coordination with customers.
- A street could have a moratorium on it due to community events.
- Peoples Gas may need to install a larger header main into an area before the segment in question is retired.
- Peoples Gas may need to coordinate with other utility work taking place in that neighborhood.

REQUEST NO. AG 18.13:

Please provide the MRI value for all segments listed in response to AG DR 10.16.

RESPONSE:

See attached excel spreadsheet "PGL AG 18.13 Attach 01."

MAP_PAGE	STREET_NUM	STREET_DIREC	STREET_NAME	STREET_TYPE
3.01	4900	N	ALBANY	AVE
3.01	9100	S	CARPENTER	ST
3.01	9000	S	EAST END	AVE
3.01	1954	N	LOCKWOOD	AVE
3.01	1000	N	LOREL	AVE
3.01	3800	W	MARQUETTE	RD
3.01	4431	N	NARRAGANSETT	AVE
3.01	1799	N	NEWLAND	AVE
3.01	3442	N	OLEANDER	AVE
3.01	2998	W	TOUHY	AVE
3.01	2400	W	WARREN	BLVD
3.02	2000	W	21ST	PL
3.02	4500	W	55TH	ST
3.02	600	E	64TH	ST
3.02	2832	W	83RD	ST
3.02	7100	S	CHRISTIANA	AVE
3.02	8700	S	CREGIER	AVE
3.02	8113	S	KING	DR
3.02	12100	S	LAFLIN	ST
3.02	6600	N	LIGHTFOOT	AVE
3.02	9030	S	MERRILL	AVE
3.02	8100	S	PRAIRIE	AVE
3.02	5712	N	ROGERS	AVE
3.02	8400	S	SOUTH CHICAGO	AVE
3.02	7904	S	THROOP	ST
3.02	8204	S	WHIPPLE	ST
3.03	3800	W	59TH	PL
3.03	4600	N	KENNICOTT	AVE
3.03	5000	N	MONT CLARE	AVE
3.03	4940	W	QUINCY	ST
3.04	4250	W	72ND	ST
3.04	1336	E	90TH	ST
3.04	9800	S	EGGLESTON	AVE
3.04	5500	W	HIGGINS	AVE
3.04	5015	W	JACKSON	BLVD
3.04	3127	W	PERSHING	RD
3.04	3432	W	PETERSON	AVE
3.04	7700	S	SEELEY	AVE
3.04	2300	W	WARREN	BLVD
3.05	3300	W	55TH	ST
3.05	6300	S	DAMEN	AVE
3.05	6300	S	EBERHART	AVE
3.05	4400	N	KILBOURN	AVE
3.05	6226	N	NORDICA	AVE
3.06	6427	N	HARLEM	AVE
3.06	4306	N	KILDARE	AVE

3.06 11502	S	OAKLEY	AVE
3.06 8604	S	UNION	AVE
3.07 6400	S	GREEN	ST
3.07 5834	W	HIGGINS	AVE
3.07 1100	N	LEAMINGTON	AVE
3.07 5840	N	LINCOLN	AVE
3.07 6976	N	MCALPIN	AVE
3.07 2646	W	MONTROSE	AVE
3.07 6100	S	RICHMOND	ST
3.07 9600	S	UNIVERSITY	AVE
3.08 6300	W	BARRY	AVE
3.08 5113	W	IRVING PARK	RD
3.08 5102	N	MONITOR	AVE
3.09 3900	N	RIDGEWAY	AVE
3.09 1100	N	SPRINGFIELD	AVE
3.1 2200	W	54TH	PL
3.1 3399	W	83RD	ST
3.1 9048	S	LOOMIS	ST
3.1 4200	N	MC VICKER	AVE
3.1 5140	S	MONITOR	AVE
3.1 9600	S	NORMAL	AVE
3.1 7711	S	PULASKI	RD
3.1 7716	S	TRIPP	AVE
3.1 5300	W	WELLINGTON	AVE
3.11 7700	S	BISHOP	ST
3.11 6700	S	CLYDE	AVE
3.11 8544	S	ESSEX	AVE
3.11 8946	S	ESSEX	AVE
3.11 7300	S	HERMITAGE	AVE
3.11 11628	S	OAKLEY	AVE
3.12 3500	W	65TH	ST
3.12 8242	W	ADDISON	ST
3.12 3799	S	CAMPBELL	AVE
3.12 8232	S	HOMAN	AVE
3.12 6400	S	LAFLIN	ST
3.12 8228	S	SCOTTSDALE	AVE
3.13 1731	W	GARFIELD	BLVD
3.13 5900	W	LELAND	AVE
3.13 2864	N	MILWAUKEE	AVE
3.13 6732	S	PULASKI	RD
3.14 2058	W	76TH	ST
3.14 3128	W	CHASE	AVE
3.14 400	N	WALLER	AVE
3.15 3701	W	59TH	PL
3.15 7514	W	HORTENSE	AVE
3.15 4400	N	KIMBALL	AVE
3.15 5515	S	NORMANDY	AVE

3.15 900	N	WOLCOTT	AVE
3.16 4399	N	SACRAMENTO	AVE
3.17 3342	N	OSCEOLA	AVE
3.17 2300	N	PARKSIDE	AVE
3.18 8332	S	BLACKSTONE	AVE
3.19 2330	W	42ND	ST
3.19 5300	W	QUINCY	ST
3.19 5700	W	WEST END	AVE
3.2 2248	W	47TH	PL
3.2 2432	E	74TH	PL
3.2 10524	S	MAPLEWOOD	AVE
3.2 7900	S	WABASH	AVE
3.21 5000	W	ALTGELD	ST
3.21 4814	W	SHAKESPEARE	AVE
3.21 9032	S	STEWART	AVE
3.22 7900	S	BENNETT	AVE
3.22 3600	W	DIVERSEY	AVE
3.22 5801	S	KOSTNER	AVE
3.22 3247	N	OAKLEY	AVE
3.22 5500	N	OLCOTT	AVE
3.23 1	E	110TH	ST
3.23 2052	W	MARQUETTE	RD
3.23 9244	S	RACINE	AVE
3.24 3700	S	ARCHER	AVE
3.24 2923	S	BONAPARTE	ST
3.24 9000	S	CLYDE	AVE
3.24 4900	N	MONITOR	AVE
3.24 5655	S	NARRAGANSETT	AVE
3.25 4232	N	GREENVIEW	AVE
3.25 6100	S	VERNON	AVE
3.26 11416	S	HALE	AVE
3.26 3112	N	HARLEM	AVE
3.26 10132	S	INDIANA	AVE
3.26 6147	S	KOMENSKY	AVE
3.27 3500	N	PULASKI	RD
3.28 6100	N	CALDWELL	AVE
3.28 5114	S	HOMAN	AVE
3.28 8300	S	KEATING	AVE
3.28 5800	N	KOLMAR	AVE
3.29 7742	S	VINCENNES	AVE
3.3 2300	E	100TH	ST
3.3 3517	W	62ND	ST
3.3 746	N	LECLAIRE	AVE
3.31 6800	S	ELIZABETH	ST
3.31 9028	S	ESSEX	AVE
3.31 5924	N	OZANAM	AVE
3.32 6350	S	CLAREMONT	AVE

3.33 2332	W	59TH	ST
3.33 7930	S	CALIFORNIA	AVE
3.33 11536	S	CAMPBELL	AVE
3.33 2100	N	KIMBALL	AVE
3.33 2635	W	ROOSEVELT	RD
3.33 6800	S	WOLCOTT	AVE
3.34 5300	N	CANFIELD	AVE
3.34 4800	W	DICKENS	AVE
3.34 3628	W	EDDY	ST
3.34 2832	N	MILWAUKEE	AVE
3.35 3500	W	16TH	ST
3.35 2100	W	GRAND	AVE
3.35 1804	W	MORSE	AVE
3.36 2800	W	55TH	ST
3.36 6800	S	JUSTINE	ST
3.37 4400	N	MANGO	AVE
3.37 5000	S	SEELEY	AVE
3.37 858	N	SPAULDING	AVE
3.39 3701	W	63RD	ST
3.39 7100	S	HAMLIN	AVE
3.39 8122	S	MERRILL	AVE
3.39 6700	S	WOLCOTT	AVE
3.4 800	W	BLACKHAWK	ST
3.4 9600	S	EWING	AVE
3.41 7703	W	FOREST PRESERVE	AVE
3.41 6200	N	OZANAM	AVE
3.41 2100	N	SAYRE	AVE
3.42 3600	W	70TH	ST
3.42 5622	S	CAMPBELL	AVE
3.42 1914	S	LEAVITT	ST
3.42 2700	N	TROY	ST
3.43 4510	N	KILBOURN	AVE
3.43 5028	N	NORDICA	AVE
3.43 3200	W	WARREN	BLVD
3.44 1000	N	MILWAUKEE	AVE
3.45 4002	N	DRAKE	AVE
3.45 2914	W	PRATT	AVE
3.46 11212	S	LONGWOOD	DR
3.46 4101	N	PULASKI	RD
3.48 4618	W	83RD	ST
3.48 3600	N	HARLEM	AVE
3.49 2218	S	SPAULDING	AVE
3.49 5532	S	WHIPPLE	ST
3.5 1200	W	18TH	ST
3.5 2214	S	BLUE ISLAND	AVE
3.5 3400	W	CARROLL	AVE
3.5 7400	S	CRANDON	AVE

3.5 6000	N	MARMORA	AVE
3.5 9922	S	NORMAL	AVE
3.5 1000	N	SACRAMENTO	AVE
3.51 4400	N	CAMPBELL	AVE
3.51 4000	W	CERMAK	RD
3.51 1600	W	JUNEWAY	TER
3.51 358	S	LARAMIE	AVE
3.52 3300	W	83RD	PL
3.52 5300	N	CLARK	ST
3.52 7310	W	GREGORY	ST
3.52 8100	S	INGLESIDE	AVE
3.52 6600	S	KENNETH	AVE
3.52 9104	S	KINGSTON	AVE
3.52 5634	S	MASSASOIT	AVE
3.52 5640	S	NAGLE	AVE
3.53 9600	S	DOBSON	AVE
3.53 7400	W	FOREST PRESERVE	AVE
3.53 9058	S	JEFFERY	BLVD
3.53 5100	S	LAWNDALE	AVE
3.53 3410	N	OZANAM	AVE
3.53 2400	W	PENSACOLA	AVE
3.53 6152	N	SPRINGFIELD	AVE
3.53 5038	N	TRIPP	AVE
3.54 432	W	126TH	PL
3.54 1900	W	21ST	PL
3.54 2033	E	67TH	ST
3.54 3900	W	68TH	PL
3.54 3800	W	78TH	PL
3.54 2800	W	83RD	ST
3.54 4000	N	LAVERGNE	AVE
3.54 5100	S	MULLIGAN	AVE
3.54 9648	S	VAN VLISSINGEN	RD
3.55 5000	W	ARGYLE	ST
3.55 9512	S	AVENUE M	
3.55 1813	S	LEAVITT	ST
3.55 1800	S	RACINE	AVE
3.56 3836	W	60TH	PL
3.57 5532	S	KOLMAR	AVE
3.58 232	W	91ST	ST
3.58 3800	N	ALTA VISTA	TER
3.58 3377	N	MILWAUKEE	AVE
3.59 1114	N	ELSTON	AVE
3.59 9727	S	WESTERN	AVE
3.6 2648	W	39TH	PL
3.6 2532	W	DEVON	AVE
3.6 5700	S	HOMAN	AVE
3.6 9400	S	MAY	ST

3.6 3346	N	MILWAUKEE	AVE
3.6 2745	W	MONROE	ST
3.6 1645	W	MONTVALE	AVE
3.61 6430	W	HIGGINS	AVE
3.61 6210	S	HOYNE	AVE
3.61 7700	S	MARYLAND	AVE
3.61 10298	S	WESTERN	AVE
3.62 532	W	72ND	ST
3.62 5001	S	KILDARE	AVE
3.62 8100	S	MANISTEE	AVE
3.62 1353	N	MILWAUKEE	AVE
3.62 1000	N	ORLEANS	ST
3.62 5500	S	WASHTENAW	AVE
3.63 1832	W	58TH	ST
3.63 7904	S	ANTHONY	AVE
3.63 2533	W	DEVON	AVE
3.63 5698	N	ELSTON	AVE
3.63 4216	W	HENDERSON	ST
3.63 6100	N	HOYNE	AVE
3.63 4232	N	MOZART	ST
3.63 32	N	OAKLEY	AVE
3.64 1905	W	101ST	ST
3.64 4999	S	ARCHER	AVE
3.64 3500	N	CLAREMONT	AVE
3.64 8100	S	GREEN	ST
3.64 2799	N	NATCHEZ	AVE
3.64 12200	S	RACINE	AVE
3.64 7100	S	WENTWORTH	AVE
3.65 2530	N	CLARK	ST
3.65 5222	S	KOLIN	AVE
3.65 2800	W	LYNDALE	ST
3.65 4200	N	MAJOR	AVE
3.65 6932	W	NELSON	ST
3.65 8532	S	SACRAMENTO	AVE
3.66 2932	E	81ST	ST
3.66 10828	S	CALUMET	AVE
3.66 2801	N	NARRAGANSETT	AVE
3.66 4900	W	SCHUBERT	AVE
3.67 2500	W	38TH	ST
3.67 1602	N	HUMBOLDT	BLVD
3.67 5899	W	LAWRENCE	AVE
3.68 4400	S	TROY	ST
3.69 4230	W	79TH	PL
3.69 8300	S	ANTHONY	AVE
3.7 1000	W	116TH	ST
3.7 6206	N	KILDARE	AVE
3.71 2225	W	71ST	ST

3.71 6400	N	GLENWOOD	AVE
3.71 1201	N	STATE	PKWY
3.71 826	N	WOLCOTT	AVE
3.72 8600	S	KINGSTON	AVE
3.73 4000	W	WARWICK	AVE
3.74 40	E	OAK	ST
3.74 1232	S	WESTERN	AVE
3.76 7601	W	BRYN MAWR	AVE
3.77 3000	N	NEWLAND	AVE
3.78 2712	S	ARCHER	AVE
3.78 4821	W	AUGUSTA	BLVD
3.78 3733	N	RICHMOND	ST
3.79 4802	W	IRVING PARK	RD
3.79 2800	N	SPAULDING	AVE
3.8 1902	S	CANALPORT	AVE
3.81 6102	W	ROSEDALE	AVE
3.81 5204	W	WASHINGTON	BLVD
3.83 1303	N	STATE	PKWY
3.83 10800	S	UNION	AVE
3.84 5354	N	LINDER	AVE
3.84 6500	S	PEORIA	ST
3.85 2263	W	109TH	ST
3.85 3248	W	BERTEAU	AVE
3.86 10810	S	HALSTED	ST
3.86 2022	N	HUMBOLDT	BLVD
3.86 5650	N	NEVA	AVE
3.88 1611	W	BELMONT	AVE
3.88 2100	N	MOBILE	AVE
3.88 6134	W	MONTROSE	AVE
3.89 7836	S	PRAIRIE	AVE
3.9 200	W	ALEXANDER	ST
3.9 1000	N	HAMLIN	AVE
3.9 1500	N	LAWNDALE	AVE
3.9 6300	N	MELVINA	AVE
3.92 3600	N	OCONTO	AVE
3.94 200	W	110TH	PL
3.94 2100	W	GRANVILLE	AVE
3.94 5000	W	HENDERSON	ST
3.94 3300	N	KARLOV	AVE
3.94 8100	S	SOUTH SHORE	DR
3.95 2800	N	LONG	AVE
3.96 9154	S	CLYDE	AVE
3.98 1049	W	COLUMBIA	AVE
3.99 4932	S	WESTERN	AVE
4 824	W	29TH	ST
4 3032	W	43RD	ST
4 1500	E	83RD	ST

4 4900	W	ALTGELD	ST
4 11800	S	HALSTED	ST
4 2846	N	MULLIGAN	AVE
4 5601	N	NEWCASTLE	AVE
4 11034	S	NORMAL	AVE
4 6200	S	ROCKWELL	ST
4 7546	S	WENTWORTH	AVE
4.01 10928	S	LOWE	AVE
4.02 2800	W	25TH	PL
4.02 1600	S	ALLPORT	ST
4.02 7450	W	FOSTER	AVE
4.02 3532	S	HAMILTON	AVE
4.02 5400	S	KOSTNER	AVE
4.02 5015	N	WESTERN	AVE
4.03 9000	S	EUCLID	AVE
4.03 10700	S	HALE	AVE
4.03 3101	W	HOWARD	ST
4.03 7220	S	KIMBARK	AVE
4.03 6316	N	MONTICELLO	AVE
4.03 5200	S	NEWLAND	AVE
4.03 3428	W	SCHOOL	ST
4.04 3808	W	66TH	PL
4.04 8100	S	ALBANY	AVE
4.04 6913	N	CALDWELL	AVE
4.04 7810	S	MICHIGAN	AVE
4.05 2400	N	BERNARD	ST
4.05 5420	S	HAMLIN	AVE
4.05 7134	S	SANGAMON	ST
4.05 6800	S	WOOD	ST
4.06 6126	N	ARTESIAN	AVE
4.06 2900	W	CULLOM	AVE
4.06 5232	N	RAVENSWOOD	AVE
4.08 6360	W	HYACINTH	ST
4.08 5025	N	MONTICELLO	AVE
4.09 1	W	113TH	ST
4.09 4747	N	KARLOV	AVE
4.1 1842	W	32ND	ST
4.1 6800	S	LAFLIN	ST
4.1 5000	W	SCHUBERT	AVE
4.11 5801	W	OHIO	ST
4.11 11621	S	VINCENNES	AVE
4.13 2400	W	WARNER	AVE
4.14 800	E	MARQUETTE	RD
4.14 3430	N	MILWAUKEE	AVE
4.15 2000	W	MARQUETTE	RD
4.17 828	N	FRANKLIN	ST
4.17 5900	N	KOLMAR	AVE

4.18 7100	S	CAMPBELL	AVE
4.18 2900	N	SPAULDING	AVE
4.2 4884	S	ARCHER	AVE
4.2 2900	N	NORA	AVE
4.21 9100	S	BENNETT	AVE
4.21 2400	N	CLARK	ST
4.21 6914	W	HIGGINS	AVE
4.21 8000	S	PEORIA	ST
4.22 6208	N	NAGLE	AVE
4.24 2100	W	32ND	ST
4.24 101	N	CENTRAL	AVE
4.24 6800	S	PULASKI	RD
4.25 3040	W	53RD	ST
4.25 6100	N	PAULINA	ST
4.26 4652	N	LEAMINGTON	AVE
4.26 11100	S	MICHIGAN	AVE
4.27 1004	S	JEFFERSON	ST
4.28 312	W	108TH	ST
4.28 3123	W	HOWARD	ST
4.29 5234	W	ADDISON	ST
4.29 2700	W	SUNNYSIDE	AVE
4.29 4830	W	THOMAS	ST
4.3 4300	W	MONTROSE	AVE
4.31 5150	S	KILPATRICK	AVE
4.32 4700	N	SAINT LOUIS	AVE
4.33 3200	S	UNION	AVE
4.34 8800	S	HARPER	AVE
4.34 3504	S	HOYNE	AVE
4.34 4500	N	MC VICKER	AVE
4.34 1916	S	RACINE	AVE
4.36 3314	N	PULASKI	RD
4.36 1640	N	TALMAN	AVE
4.37 2048	W	119TH	ST
4.37 2526	W	39TH	PL
4.38 3932	S	SACRAMENTO	AVE
4.39 1832	W	MARQUETTE	RD
4.39 1600	W	WOLFRAM	ST
4.41 200	W	24TH	PL
4.41 1859	W	59TH	ST
4.41 4999	S	WABASH	AVE
4.42 800	N	KARLOV	AVE
4.42 700	N	LARAMIE	AVE
4.42 9330	S	PHILLIPS	AVE
4.42 6314	W	RAVEN	ST
4.44 9400	S	HARVARD	AVE
4.44 7100	S	SPRINGFIELD	AVE
4.45 5700	S	PULASKI	RD

4.46 8200	S	ELIZABETH	ST
4.46 6411	N	WESTERN	AVE
4.49 1	W	112TH	PL
4.49 1600	S	PEORIA	ST
4.5 5018	N	CENTRAL PARK	AVE
4.5 5800	S	KOSTNER	AVE
4.5 1402	S	ROCKWELL	ST
4.51 1000	N	CENTRAL PARK	AVE
4.51 3400	W	DIVERSEY	AVE
4.53 4532	W	82ND	PL
4.53 8600	S	EXCHANGE	AVE
4.53 3001	W	HOWARD	ST
4.53 8900	S	PHILLIPS	AVE
4.53 9500	S	WINCHESTER	AVE
4.54 6431	S	ARCHER	AVE
4.54 5600	N	MAJOR	AVE
4.54 10510	S	WABASH	AVE
4.55 5100	S	TRIPP	AVE
4.56 4100	W	69TH	ST
4.57 6100	S	NASHVILLE	AVE
4.6 1798	W	108TH	PL
4.6 2100	W	110TH	ST
4.6 6300	S	KING	DR
4.61 6200	N	RIDGEWAY	AVE
4.62 5232	W	54TH	ST
4.62 4445	N	NARRAGANSETT	AVE
4.62 5110	N	NATCHEZ	AVE
4.62 2700	N	RICHMOND	ST
4.62 10222	S	WESTERN	AVE
4.64 5784	N	ELSTON	AVE
4.66 5350	N	MAGNET	AVE
4.66 9904	S	YALE	AVE
4.67 7401	S	COTTAGE GR	AVE
4.67 6246	N	KILDARE	AVE
4.67 7000	S	WABASH	AVE
4.68 2548	W	38TH	ST
4.68 1200	W	DEVON	AVE
4.69 2200	W	WALTON	ST
4.7 6300	S	OAKLEY	AVE
4.71 2201	W	103RD	ST
4.71 6206	S	NASHVILLE	AVE
4.73 3599	W	61ST	PL
4.74 2600	W	SUPERIOR	ST
4.77 9900	S	BELL	AVE
4.77 4400	N	MOZART	ST
4.77 4028	N	SAWYER	AVE
4.8 2100	S	BLUE ISLAND	AVE

4.8 6798	S	PULASKI	RD
4.81 1432	E	83RD	ST
4.81 2300	W	THOMAS	ST
4.84 1500	N	LA SALLE	ST
4.84 8998	S	RIDGELAND	AVE
4.85 3638	W	62ND	ST
4.86 2200	W	SCHOOL	ST
4.87 4001	N	MONTICELLO	AVE
4.87 100	S	SACRAMENTO	BLVD
4.89 5900	S	WOLCOTT	AVE
4.9 5000	S	PULASKI	RD
4.91 4900	N	NORDICA	AVE
4.91 2444	N	SACRAMENTO	AVE
4.92 6100	S	MAY	ST
5 10208	S	INDIANA	AVE
5 5800	N	ROGERS	AVE
5.01 1515	W	18TH	PL
5.02 3616	W	82ND	PL
5.02 9516	S	BENNETT	AVE
5.02 312	W	ILLINOIS	ST
5.03 9506	S	CLAREMONT	AVE
5.05 6200	N	NAGLE	AVE
5.07 500	W	107TH	ST
5.1 5934	N	ELSTON	AVE
5.13 6236	W	HIGGINS	AVE
5.14 4618	N	LEAVITT	ST
5.17 1958	N	LATROBE	AVE
5.17 5732	S	PULASKI	RD
5.18 11644	S	CAMPBELL	AVE
5.2 800	E	75TH	ST
5.2 8100	S	EMERALD	AVE
5.22 4530	W	MARQUETTE	RD
5.23 5348	W	ALTGELD	ST
5.24 1206	W	115TH	ST
5.24 4814	W	QUINCY	ST
5.26 2300	W	WARREN	BLVD
5.32 8612	S	HONORE	ST
5.35 9220	S	COLFAX	AVE
5.35 8600	S	CREGIER	AVE
5.35 5844	N	MILWAUKEE	AVE
5.36 9032	S	UNION	AVE
5.37 7501	S	COTTAGE GR	AVE
5.37 10300	S	MAPLEWOOD	AVE
5.39 2000	W	WABANSIA	AVE
5.4 2600	N	CLARK	ST
5.4 3200	W	CRYSTAL	ST
5.4 3299	N	OKETO	AVE

5.41 9100	S	COLFAX	AVE
5.43 214	W	LOCUST	ST
5.46 7600	S	BISHOP	ST
5.48 1100	N	HAMLIN	AVE
5.5 3810	S	CAMPBELL	AVE
5.5 5400	N	MAGNET	AVE
5.51 3000	W	HOOD	AVE
5.52 8200	S	TROY	ST
5.54 8500	S	DORCHESTER	AVE
5.55 3418	N	MILWAUKEE	AVE
5.58 4201	W	CERMAK	RD
5.58 301	S	SACRAMENTO	BLVD
5.59 1700	W	59TH	ST
5.61 8200	W	ADDISON	ST
5.62 11603	S	VINCENNES	AVE
5.64 2800	N	NEWLAND	AVE
5.72 5026	S	KILPATRICK	AVE

REQUEST NO. AG 18.14:

In reference to the Company's response to City of Chicago's Data Request 2.04:

a. Who decides whether a segment presents an "immediate concern"?
b. How much "mitigation" is allowable until a segment is replaced?
c. Please provide all documentation relating to this policy.

RESPONSE:

a. In reference to the response to Data Request 2.04, the statement "Immediate concern" was made in reference to a leak repair. The gas leak is the immediate concern. The MRI value is a result of that maintenance activity.
b. In reference to the response to Data Request 2.04, segments that reach a threshold greater than 6.0 or that reach a threshold of 5.0 and are adjacent to a school, hospital or nursing home are replaced.
c. See document titled "Main Ranking System" attached to the response to Data Request AG18.08.

ICC Docket No. 12-0512
The Peoples Gas Light and Coke Company's Response to
City of Chicago Data Request CITY 2.01 – 2.06
Dated: November 13, 2012

REQUEST NO. CITY 2.01:

Referring to PGL Ex. 13.0 (Hayes) at pages 6-7: Does the MRI computed by PGL for a given pipeline segment quantify PGL's assessment of the risk of pipeline failure in that segment?

(a) Do PGL's computed MRI values reflect only economic factors, like the cost of replacement in comparison to the cost of continued maintenance?

(b) Do the actions that PGL associates with particular MRI values -- *e.g.*, scheduling for retirement those segments with an MRI greater than 6.0 – reflect an assessment of only economic factors?

RESPONSE:

The MRI value is a tool for performing comparative ranking of gas main segments. The Main Ranking System was developed to identify and prioritize gas main segments as candidates for replacement. Each individual segment is evaluated, based on its maintenance history. Criteria taken into account include breaks, crack at taps, pipe wall thickness based on pipe coupons, visual observation, incidence of leak and other repairs. Each of these criteria is assigned a multiplication factor based on "Break Equivalents" which is than multiplied by the number of occurrences.
The sum of the aforementioned numerical value is then multiplied by a factor based on pipe material, operating pressure, diameter, street type and pavement cover. The result of this calculation is a value that is assigned to each segment known as the Main Ranking Index (MRI).

(a). There are no economic factors in the MRI formula.
(b). No.

REQUEST NO. CITY 2.02:

Do the MRI values determined for pipeline segments reflect any public safety considerations?

(a) For example, would the MRI value computed for a pipeline segment in a crowded residential corridor be affected by that characteristic of its location?

(b) If safety considerations are reflected in MRI values, please provide a full explanation of how those considerations are incorporated and how the relative safety of pipeline segments can be discerned from their MRI values.

RESPONSE:

Yes.

(a) One of the factors in the MRI calculation is pavement cover. A gas leak can migrate for longer distances under a solid surface (such as concrete) than it can under a less dense surface (such as an area covered in grass). There tends to be solid pavement in parkways of crowded urban areas, and therefore the MRI calculation takes crowded urban areas into consideration in an indirect way. There is also a safety factor added to gas main segments adjacent to hospitals, schools and nursing homes,

(b) There is a 1.2 multiplier against the MRI value for gas main segments adjacent to parkways with more than 50% of solid pavement. In addition gas main segments adjacent to hospitals, schools and nursing homes are scheduled for replacement as soon as they reach an MRI value of 5.0.

REQUEST NO. CITY 2.03:

Do the corrective actions associated with particular MRI values incorporate public safety considerations?

RESPONSE:

Yes. The gas main segment is scheduled for replacement when it reaches an MRI threshold of 6.0. The gas main segment is scheduled for replacement when it reaches a threshold of 5.0 and is adjacent to a hospital, school or nursing home.

REQUEST NO. CITY 2.04:

Is there a threshold MRI value that would indicate a need for immediate or expedited pipeline replacement?

a) If so, what is that value?

RESPONSE:

No. The MRI value is based on maintenance activities that have already occurred. Any immediate concerns are mitigated before the pipeline is replaced.

REQUEST NO. CITY 2.05:

If the MRI value computed for a particular pipeline segment does not reflect a need for immediate or expedited replacement for safety reasons, does PGL determine a different index, value, or other indicator that identifies pipeline segments that require immediate or expedited replacement for safety reasons?

(a) Please provide a full explanation of the determination and use of any such indicator(s).

(b) Please provide all documentation describing the method of determination and PGL's practices for use of any such indicator(s)?

RESPONSE:

The MRI tool provides guidance based on maintenance activities that have already occurred. The shop manager has the authority to have gas main segments replaced based on field conditions regardless of the MRI value. Each situation is evaluated on a case-by-case basis.

REQUEST NO. CITY 2.06:

Referring to PGL's response to PGL AG 10.15 and 10.18: Please explain why only one of the pipeline segments with an MRI greater than 6.0 is scheduled for replacement in 2013.

RESPONSE:

Gas main segments currently on the list will be replaced in 2012 or 2013. Only one segment is listed as being replaced in 2013 as it is part of the "2013 construction work" which will be awarded to a construction contractor in 2013 while the other segments were previously awarded for replacement as part of the "2012 construction work".