

After entering a reason and clicking on Post SME Update, the screen will show the saved explanation below the field.

If you click on the DIM Template screen, you will see the field you changed show in a beige color. Mousing over that field, you will see who changed it, when they changed it and the reason that was entered.

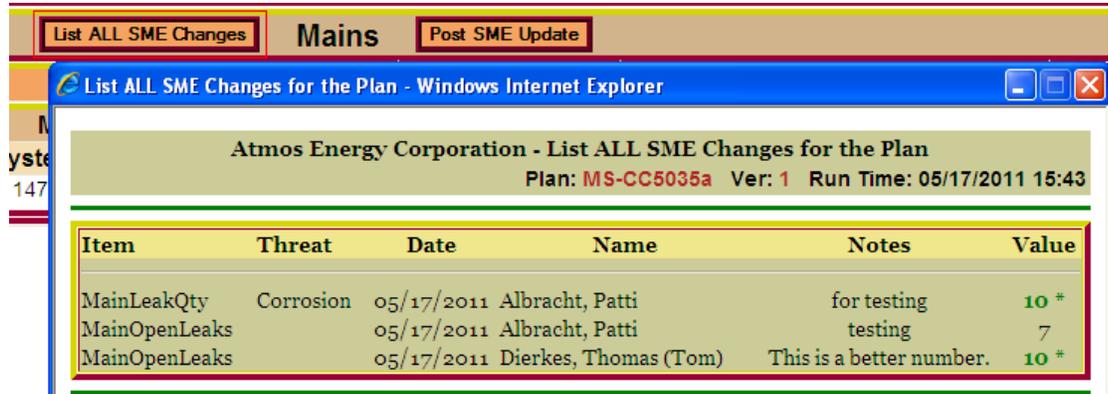
Threat	Atmos Enterprise Metrics			Likelihood of Failure (LOF)				
	Mean	StdDev	Mean + 2 StdDev	Repaired Leaks	Open Leaks	%	Miles	Per 100
Other	6.58	7.24	21.06	7.6	2	76%	188.39	4.83
Corrosion	11.76	8.27	28.30	2.0		20%	146.91	1.63
Other Outside Force Damage	.42	.52	1.45	.2				
Material, Weld, or Joint Failure	.87	1.07	3.02	.2				
Incorrect Operation	.87	.93	2.73	.0				
Equipment Failure	.34	.27	.87	.0				
Natural Force Damage	.30	.36	1.02	.0				
Totals:				10				

Main Corrosion Leaks

10 Counted
 2.0 Yearly Average (over 5 Years) ↑
 0 Leaks in 2009
 2 Open Counted
 0 Open Yearly Average ↑
 2 Total Leaks for Calculation ↑

Albracht, Patti Changed on 05/17/2011 because for testing

Back on the SME Update screen, once SME Updates have been made, a “List ALL SME Changes” button will show. If you click on it, you will see another window open with all the SME changes made. See below.



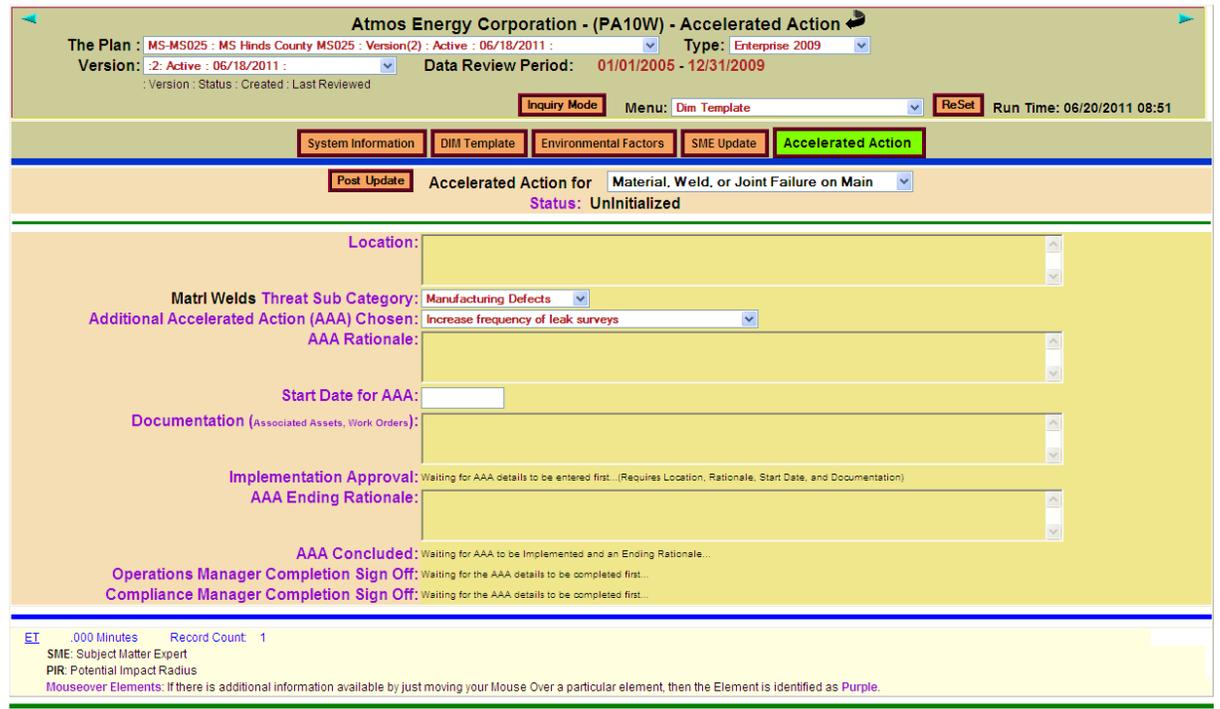
Item	Threat	Date	Name	Notes	Value
MainLeakQty	Corrosion	05/17/2011	Albracht, Patti	for testing	10 *
MainOpenLeaks		05/17/2011	Albracht, Patti	testing	7
MainOpenLeaks		05/17/2011	Dierkes, Thomas (Tom)	This is a better number.	10 *

M. *Menu\DIM Template\DIM Template\Accelerated Actions*

1. **Data Overview**

Accelerated Actions are to be put in place if a High Risk is found for a given plan. Accelerated Actions are available if a Medium Risk is found for a given plan. This action is to address and alleviate the risk. If a plan has at least one high or medium risk threat, the Accelerated Actions tab will display. Clicking on the tab will open the accelerated actions screen. Also, if the user clicks on the red “High” for one of the High risk threats or the blue Medium for one of the Medium risk threats, that will also take them to the accelerated actions screen for that particular threat.

2. Screenshot



Atmos Energy Corporation - (PA10W) - Accelerated Action

The Plan : MS-MS025 : MS Hinds County MS025 : Version(2) : Active : 06/18/2011 : Type: Enterprise 2009
 Version: :2: Active : 06/18/2011 : Data Review Period: 01/01/2005 - 12/31/2009
: Version : Status : Created : Last Reviewed

Inquiry Mode Menu: Dim Template **ReSet** Run Time: 06/20/2011 08:51

System Information DIM Template Environmental Factors SME Update **Accelerated Action**

Post Update Accelerated Action for Material, Weld, or Joint Failure on Main
 Status: UnInitialized

Location:

Matri Welds Threat Sub Category: Manufacturing Defects
 Additional Accelerated Action (AAA) Chosen: Increase frequency of leak surveys
 AAA Rationale:

Start Date for AAA:

Documentation (Associated Assets, Work Orders):

Implementation Approval: Waiting for AAA details to be entered first... (Requires Location, Rationale, Start Date, and Documentation)
 AAA Ending Rationale:

AAA Concluded: Waiting for AAA to be Implemented and an Ending Rationale...
 Operations Manager Completion Sign Off: Waiting for the AAA details to be completed first...
 Compliance Manager Completion Sign Off: Waiting for the AAA details to be completed first...

ET .000 Minutes Record Count: 1
 SME: Subject Matter Expert
 PIR: Potential Impact Radius
 Mouseover Elements: If there is additional information available by just moving your Mouse Over a particular element, then the Element is identified as Purple.

3. Overview of Accelerated Action screen

Post Update: Once you have made a change, click on this button to post that change.

Accelerated Action for: If you had clicked on the red High or blue Medium link for a particular threat and location for a plan, this dropdown field will be populated. If you clicked on the Accelerated Actions tab instead, you will need to select this option. The items shown in this dropdown will match the Threats/Locations in the DIM Template screen that are marked as High or Medium risks.

Status: This is the status of the particular additional accelerated action chosen. The statuses are as follows:

- Uninitialized – Medium Risk accelerated actions show a screen, but the accelerated action isn't saved until the user enters some data and posts an update. A high risk additional accelerated action that was in Initialized status, but deleted would show up as Uninitialized if the user came back to that accelerated action for that risk.
- Initialized – when the update process is run and a high risk is found for a plan, an additional accelerated action is created with an Initialized status. When the AAA is in this status and in update mode, the Delete AAA button is available. If the user deletes an AAA for a high risk and the update process is run, another AAA with a status of Initialized will be created. At that point that high risk AAA won't show as Uninitialized.

Post Update	Accelerated Action for	Material, Weld, or Joint Failure on Service	Delete AAA
Status: Initialized	06/17/2011	Last Change: 06/17/2011	System-DimReInitAAA

- Created – The first time the Post Update button is pressed, the status will change to Created. Once the AAA has progressed past Initialized, the Delete AAA button is no longer available. The Cancel AAA button is available.

Post Update	Accelerated Action for	Material, Weld, or Joint Failure on Service	Cancel AAA
Status: Created	Created: 06/17/2011	PA10W	Last Change: 06/17/2011 PA10W

- In Progress – Once the following fields are filled out (Location, AAA Rationale, Start Date for AAA, and Documentation) and the Post Update button is pressed, the Implementation Approved button will display. Once this button is pressed, the Status will change to In Progress.

Accelerated Action for
Status: Created **Created:** 06/17/2011 PA10W **Last Change:** 06/17/2011 PA10W

Location: West of x street, there is a pipe at lat x, long y that has a bad weld.

Threat Sub Category:

Additional Accelerated Action (AAA) Chosen:

AAA Rationale: Rewelding will only weaken this pipe. It needs to be replaced.

Start Date for AAA: Albracht, Patti

Documentation (Associated Assets, Work Orders): need this documentation

Implementation Approval:

Accelerated Action for
Status: In Progress **Created:** 06/17/2011 PA10W **In Progress:** 06/17/2011 PA10W **Last Change:** 06/17/2011 PA10W

Location: West of x street, there is a pipe at lat x, long y that has a bad weld.

Threat Sub Category:

Additional Accelerated Action (AAA) Chosen:

AAA Rationale: Rewelding will only weaken this pipe. It needs to be replaced.

Start Date for AAA: Albracht, Patti

Documentation (Associated Assets, Work Orders): need this documentation

Implementation Approval:

- Sign Off – When the AAA Ending Rationale is entered and the Post Update button is pressed, the field for AAA Concluded is available. When the AAA Concluded field is clicked in, a calendar picker window is opened. The user will click on the date the AAA was concluded and that date will fill the AAA Concluded field. The user will then click on the Post Update button and the status will change to Sign Off as shown below.

Accelerated Action for **Material, Weld, or Joint Failure on Service**
Status: In Progress **Created:** 06/17/2011 PA10W **In Progress:** 06/17/2011 PA10W **Last Change:** 06/17/2011 PA10W

Location: West of x street, there is a pipe at lat x, long y that has a bad weld.

Threat Sub Category: Manufacturing Defects
Additional Accelerated Action (AAA) Chosen: Replace defects
AAA Rationale: Rewelding will only weaken this pipe. It needs to be replaced.

Start Date for AAA: 06/21/2011 Albracht, Patti
Documentation (Associated Assets, Work Orders): need this documentation

Implementation Approval:
AAA Ending Rationale: We are done now.

AAA Concluded:

Start Date for AAA: 06/21/2011
Documentation (Associated Assets, Work Orders): need this do
Implementation Approval:

Calendar - Windows Internet Ex...

June 2011

[<<] [<] [>] [>>]

Sun	Mon	Tue	Wed	Thu	Fri	Sat
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	1	2

Operations Manager Completion Sign Off: Waiting for the AAA d
Compliance Manager Completion Sign Off: Waiting for the AAA d

Accelerated Action for **Material, Weld, or Joint Failure on Service**
Status: Sign Off **Created:** 06/17/2011 PA10W **Entering Sign Off:** 06/20/2011 PA10W **Last Change:** 06/17/2011 PA10W

Location: West of x street, there is a pipe at lat x, long y that has a bad weld.

Threat Sub Category: Manufacturing Defects
Additional Accelerated Action (AAA) Chosen: Replace defects
AAA Rationale: Rewelding will only weaken this pipe. It needs to be replaced.

Start Date for AAA: 06/21/2011 Albracht, Patti
Documentation (Associated Assets, Work Orders): need this documentation

Implementation Approval:
AAA Ending Rationale: We are done now.

AAA Concluded: 06/20/2011 Albracht, Patti

- Completed – Once a date has been entered into the AAA Concluded field and the Post Update button pushed, the Operations Manager Completion Sign Off and Compliance Manager Sign Off fields are available. Once both the Operations Manager and Compliance Manager have selected their sign off dates and clicked on Post Update, the status will change to Completed and the Accelerated Action will no longer be editable. The screen shows locked as shown below.

Accelerated Action for **Material, Weld, or Joint Failure on Service**
Status: Sign Off Created: 06/17/2011 PA10W Entering Sign Off: 06/20/2011 PA10W Last Change: 06/17/2011 PA10W

Location: West of x street, there is a pipe at lat x, long y that has a bad weld.

Threat Sub Category: Manufacturing Defects
Additional Accelerated Action (AAA) Chosen: Replace defects
AAA Rationale: Rewelding will only weaken this pipe. It needs to be replaced.

Start Date for AAA: 06/21/2011 Albracht, Patti
Documentation (Associated Assets, Work Orders): need this documentation

Implementation Approval:
AAA Ending Rationale: We are done now.

AAA Concluded: 06/20/2011 Albracht, Patti
Operations Manager Completion Sign Off:
Compliance Manager Completion Sign Off:

Accelerated Action for **Material, Weld, or Joint Failure on Service**
Status: Completed Created: 06/17/2011 PA10W In Progress: 06/17/2011 PA10W Completed: 06/21/2011 Last Change: 06/17/2011 PA10W

Location: West of x street, there is a pipe at lat x, long y that has a bad weld.

Threat Sub Category: *No SubThreat*
Additional Accelerated Action (AAA) Chosen: Replace defects
AAA Rationale: Rewelding will only weaken this pipe. It needs to be replaced.

Start Date for AAA: 06/21/2011 Albracht, Patti
Documentation (Associated Assets, Work Orders):
Implementation Approval: Albracht, Patti
AAA Ending Rationale: We are done now.

AAA Concluded: 06/20/2011 Albracht, Patti
Operations Manager Completion Sign Off: 06/21/2011 Albracht, Patti
Compliance Manager Completion Sign Off: 06/21/2011 Albracht, Patti

- Cancelled – An AAA can only be cancelled in the following statuses:
Created, In Progress, or Sign Off.

Accelerated Action for
Status: Cancelled **Created:** 06/17/2011 PA10W **Last Change:** 06/17/2011 PA10W **Cancelled:** 06/17/2011 PA10W

Location: West of I 30, a bus hit our gas line

Threat Sub Category: Vehicular

Additional Accelerated Action (AAA) Chosen: Provide First Responder Training

AAA Rationale: Add a big metal fence in front to stop future bus crashes.

Start Date for AAA: 06/20/2011 Albracht, Patti

Documentation (Associated Assets, Work Orders): construction order 123

Implementation Approval: 06/17/2011 Albracht, Patti

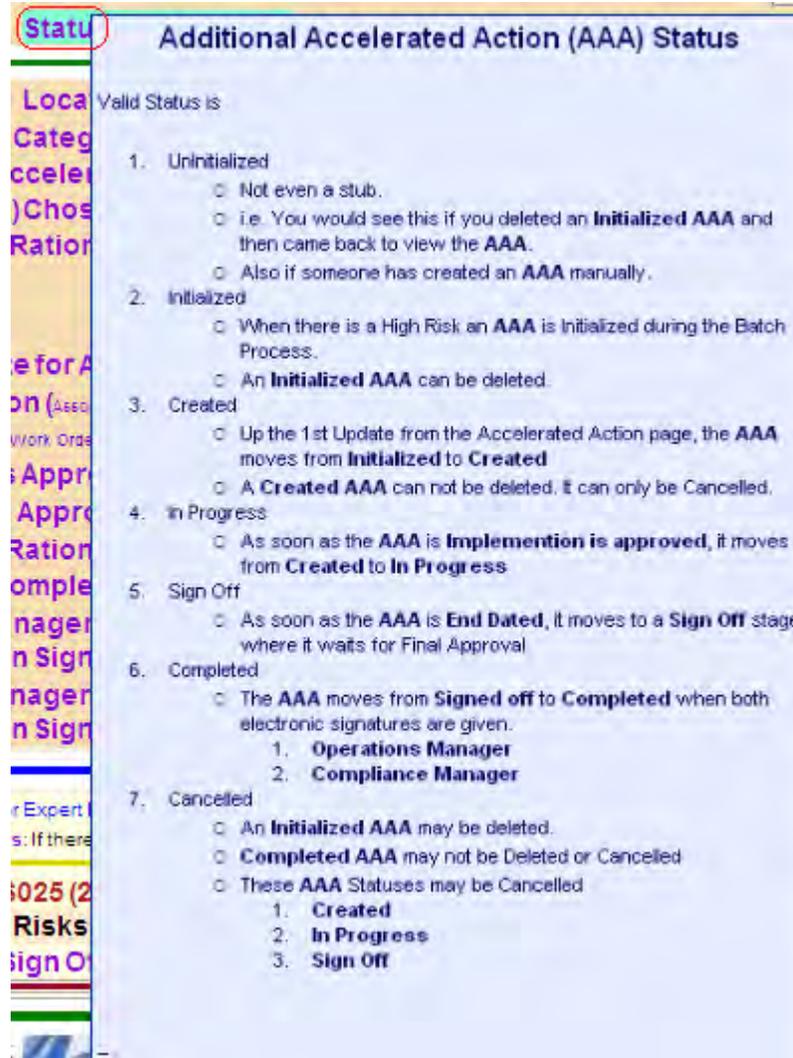
AAA Ending Rationale: fence is in place

AAA Concluded: 06/20/2011 Albracht, Patti

Operations Manager Completion Sign Off: Waiting for the AAA details to be completed first... 06/21/2011 Albracht, Patti

Compliance Manager Completion Sign Off: Waiting for the AAA details to be completed first...

Mousing over Status shows the listing and explanations of the Additional Accelerated Action statuses.



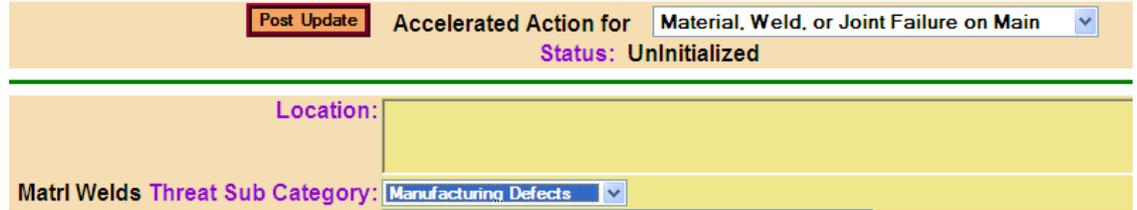
Additional Accelerated Action (AAA) Status

Valid Status is

1. Uninitialized
 - Not even a stub.
 - I.e. You would see this if you deleted an **Initialized AAA** and then came back to view the **AAA**.
 - Also if someone has created an **AAA** manually.
2. Initialized
 - When there is a High Risk an **AAA** is Initialized during the Batch Process.
 - An **Initialized AAA** can be deleted.
3. Created
 - Up the 1st Update from the Accelerated Action page, the **AAA** moves from **Initialized** to **Created**
 - A **Created AAA** can not be deleted. It can only be Cancelled.
4. In Progress
 - As soon as the **AAA** is **Implementation is approved**, it moves from **Created** to **In Progress**
5. Sign Off
 - As soon as the **AAA** is **End Dated**, it moves to a **Sign Off** stage where it waits for Final Approval
6. Completed
 - The **AAA** moves from **Signed off** to **Completed** when both electronic signatures are given.
 1. **Operations Manager**
 2. **Compliance Manager**
7. Cancelled
 - An **Initialized AAA** may be deleted.
 - **Completed AAA** may not be Deleted or Cancelled
 - These **AAA** Statuses may be Cancelled
 1. **Created**
 2. **In Progress**
 3. **Sign Off**

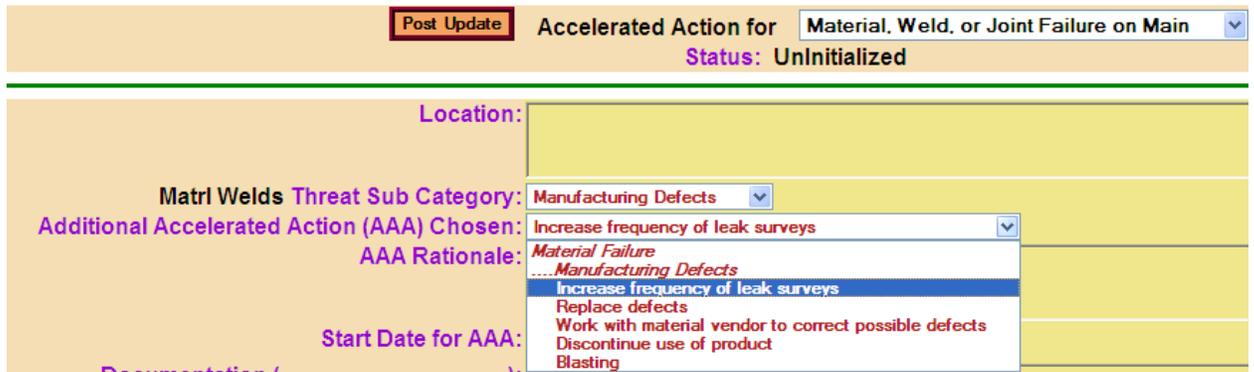
Location: This field is where you would enter the specific description of the facilities involved. This description should also include the geographic limits (i.e. GPS coordinates, street names, neighborhoods, etc), pipe materials, operating pressure, etc.

Threat Sub Category: If the Threat selected in the Accelerated Action for dropdown has a subcategory, this field will have a dropdown list. If not, this field will not be available.



The screenshot shows a form header with a "Post Update" button, "Accelerated Action for" dropdown set to "Material, Weld, or Joint Failure on Main", and "Status: Uninitialized". Below this is a "Location:" text field. The "Matri Welds Threat Sub Category:" dropdown is set to "Manufacturing Defects".

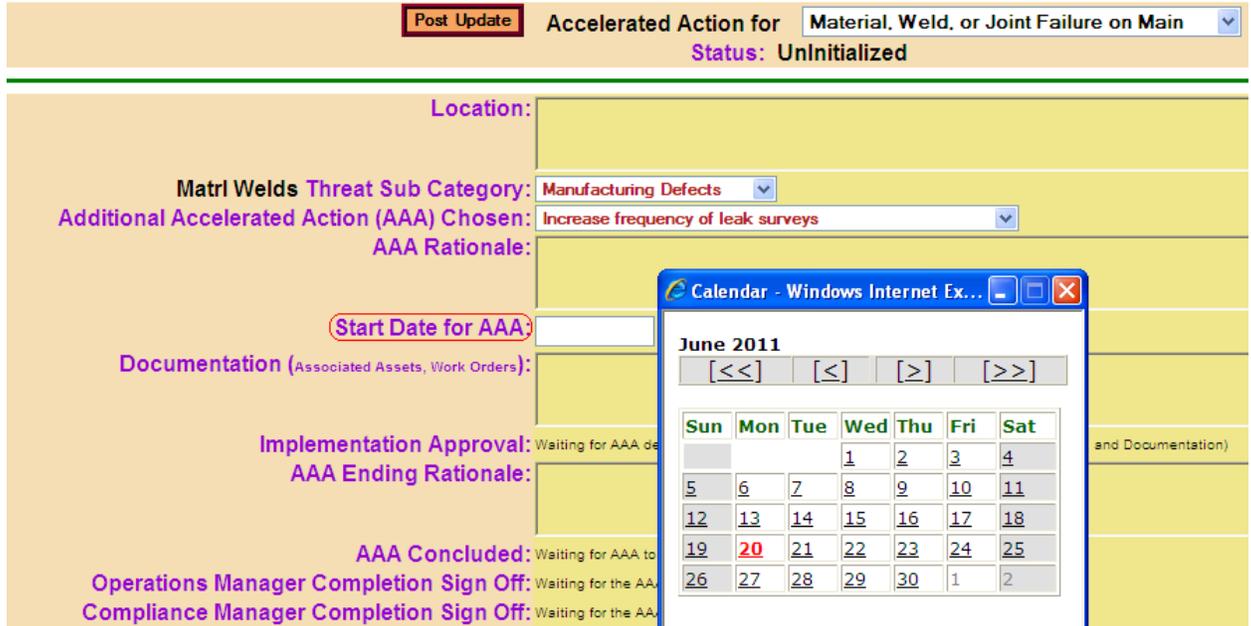
Additional Accelerated Action Chosen: The options available in this dropdown are based on the Threat and Sub Threat (if there is a sub threat).



This screenshot shows the same form as above, but with the "Additional Accelerated Action (AAA) Chosen:" dropdown menu open. The menu lists several options: "Increase frequency of leak surveys", "Material Failure", "Manufacturing Defects", "Increase frequency of leak surveys", "Replace defects", "Work with material vendor to correct possible defects", "Discontinue use of product", and "Blasting". The "Increase frequency of leak surveys" option is currently selected.

AAA Rationale: This is a text field. Enter the reason this particular additional accelerated action was chosen.

Start Date for AAA: This is a date field. When you click inside the field, a calendar picker will display for you to select the date. This is the date that the accelerated action will begin.



Post Update Accelerated Action for Material, Weld, or Joint Failure on Main Status: Uninitialized

Location:

Matrl Welds Threat Sub Category: Manufacturing Defects

Additional Accelerated Action (AAA) Chosen: Increase frequency of leak surveys

AAA Rationale:

Start Date for AAA:

Documentation (Associated Assets, Work Orders):

Implementation Approval: Waiting for AAA de... and Documentation)

AAA Ending Rationale:

AAA Concluded: Waiting for AAA to...

Operations Manager Completion Sign Off: Waiting for the AA...

Compliance Manager Completion Sign Off: Waiting for the AA...

Calendar - Windows Internet Ex...
June 2011
[<<] [<] [>] [>>]

Sun	Mon	Tue	Wed	Thu	Fri	Sat
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	1	2

Documentation (Associated Assets, Work Orders): This is a text field. You can enter the eAM or CM+ work order number for the accelerated action.

Operations Approval: This is a date field and works the same way as the Start Date with the calendar picker. This date is for when the accelerated action implementation was approved by the operations manager.

Compliance Approval: This is a date field and works the same way as the Start Date with the calendar picker. This date is for when the accelerated action implementation was approved by the compliance manager.

AAA Ending Rationale: This is where the reason for ending the additional accelerated action is entered. This would be something like the pipe was replaced.

AAA Concluded: This is a date field and works the same way as the Start Date with the calendar picker. This date is for when the accelerated action was concluded.

Operations Manager Completion Signoff: This is a date field and works the same way as the Start Date with the calendar picker. This date is for when the operations manager signs off that the accelerated action is complete.

Compliance Manager Completion Signoff: This is a date field and works the same way as the Start Date with the calendar picker. This date is for when the compliance manager signs off that the accelerated action is complete.

4. Getting to Accelerated Actions screen

Accelerated Actions tab: From the DIM Template screen, if the particular plan shown has a High or Medium risk, the Accelerated Actions tab will show and can be clicked to get to the Accelerated Actions tab.

High or Medium link: From the DIM Template screen, if the plan has a High or Medium risk, the red High or blue Medium will be a link to get to the accelerated action screen. The Accelerated Action for screen will be set for the Threat and location selected. This link will also be available from the Top DIM Risk report.

Atmos Energy Corporation - (PA10W) - DIM Template

The Plan : MS-MS025 - MS Hinds County MS025 : Version(2) : Active : 04/21/2011 : Type: Enterprise 2009
 Version : 2 : Active : 04/21/2011 : Data Review Period: 01/01/2005 - 12/31/2009
: Version : Status : Created : Last Reviewed

Inquiry Mode Menu: Overview - Pre Alpha ReSet Run Time: 05/17/2011 16:03

System Information
 DIM Template
 Environmental Factors
 SME Update
 Accelerated Action

Mains

Threat	Atmos Enterprise Metrics			Likelihood of Failure (LOF)					Consequence of Failure (COF)					Risk		
	Mean	StdDev	Mean +2 StdDev	Repaired Leaks	Open Leaks	%	Miles	Per 100 Mi.	LOF	PIR	Pop Den	Migration	SME		COF	
Other	6.58	7.24	21.06	183.8	6	67%	2,560.66	7.40	Medium 2	5	3	1	3	12	Medium	24.00
Material, Weld, or Joint Failure	.87	1.07	3.02	34.2	1	13%	2,560.66	1.37	Medium 2	5	3	1	3	12	Medium	24.00
Corrosion	11.76	8.27	28.30	24.2	1	9%	1,770.21	1.41	Low 1	5	3	1	3	12	Medium	12.00
Other Outside Force Damage	.42	.52	1.45	20.8	1	8%	2,560.66	.84	Medium 2	5	3	1	3	12	Medium	24.00
Natural Force Damage	.30	.36	1.02	6.8		3%	2,560.66	.27	Low 1	5	3	1	3	12	Medium	12.00
Incorrect Operation	.87	.93	2.73	4.2		2%	2,560.66	.17	Low 1	5	3	1	3	12	Medium	12.00
Equipment Failure	.34	.27	.87	.2			2,560.66	.01	Low 1	5	3	1	3	12	Medium	12.00
Totals:				274	8			11 Leaks per 100 Miles								

Services

Threat	Atmos Enterprise Metrics			Likelihood of Failure (LOF)					Consequence of Failure (COF)					Risk		
	Mean	StdDev	Mean +2 StdDev	Repaired Leaks	Open Leaks	%	Count	Per 1000	LOF	PIR	Pop Den	Migration	SME		COF	
Other	1.007	.806	2.620	382.6	12	43%	73,217	5.39	High 3	2	3	1	3	9	High	27.00
Other Outside Force Damage	.179	.252	.684	242.4	8	27%	73,217	3.41	High 3	2	3	1	3	9	High	27.00
Material, Weld, or Joint Failure	.350	.485	1.321	139.4	4	16%	73,217	1.96	High 3	2	3	1	3	9	High	27.00
Natural Force Damage	.094	.155	.403	50.2	2	6%	73,217	.71	High 3	2	3	1	3	9	High	27.00
Corrosion	3.952	5.491	14.935	45.4	1	5%	36,316	1.29	Low 1	2	3	1	3	9	Medium	9.00
Incorrect Operation	.380	.580	1.539	34.2	1	4%	73,217	.48	Medium 2	2	3	1	3	9	High	18.00
Equipment Failure	.069	.090	.250	.6			73,217	.01	Low 1	2	3	1	3	9	Medium	9.00
Totals:				895	28			12.2 Leaks per 1000 Services								

Damages

Threat	Atmos Enterprise Metrics			Likelihood of Failure (LOF)				Consequence of Failure (COF)					Risk	
	Mean	StdDev	Mean +2 StdDev	Damages	Locates	Per 1000	LOF	PIR	Pop Den	Migration	SME	COF		
Excavation Damage	4.96	2.17	9.31	99.0	16,303.0	6.10	Low 2	5	3	1	3	12	Medium	24.00
Totals:				99		6.1 Damages per 1000 Locates								

ET 000 Minutes Record Count: 1
 SME Subject Matter Expert
 PIR Potential Impact Radius
 Mouseover Elements: If there is additional information available by just moving your Mouse Over a particular element, then the Element is identified as Purple.

Send comments to Tom.Dickes
[FAQ for \(PA10W\)-DIM Template \(DIMFAQ\)](#)

N. Menu\DIM Template\DIM Template\Plan Signoff

1. Data Overview

Distribution needed a distinct way of signing off on DIM plans and displaying the signoff of the DIM plans. A plan signoff section has been added to the bottom of all of the DIM Template forms.

2. Screenshot

Atmos Energy Corporation - (PA10W) - System Information

The Plan: KY-CC2609 : KMD Sto-MVIlle Franklin KY. Cost... : Version(1) : Active : 07/23/2011 : Type: Enterprise 2009
 Version: :1: Active : 07/23/2011 : Data Review Period: 01/01/2005 - 12/31/2009
 Inquiry Mode: Menu: Dim Template ReSet Run Time: 08/03/2011 13:21

Assets

Asset	Qty
Casing	0
Bonds	0
critical	0
non-Critical	0
Rectifiers	0
CP Sections	0
<= 100 ft	0
>= 100 ft	0
Test Points	0
Rectified Footage	0
Anodic Footage	0
Bare Steel Footage	0
Coated Steel Footage	0
Leak Surveys	0
Total Footage	0 mi
Business Districts	0
Odorizers	0
Odor Sniff Points	0
Distribution Patrols	0
Reg Stations	0
Regs	0
Reliefs	0
Valves	0
Critical	0
Net	0
Other	0

Plan Identification

Name: KMD Sto-MVIlle Franklin KY. Cost Center 2609. NO CIS. Type: Cost Center BU: KMD State: KY CostCenter: 2609

Plan Overrides

County: Density Factor:

Sources of Information

MAIN Leaks:	0	SERVICE Leaks:	0	Migration:	1	County:	Locates:	0
Open Main Leaks:	0	Open Service Leaks:	0	Density Factor:	2.3	Density:	0	
Main Damage Leaks:	397	Srvc Damage Leaks:	5	Miles Main:	Spotty	GIS:	0	Metrics: 10/012008
Main MAOP:	397	Service MAOP:	5	Miles Service:	Spotty	CIS:	0	EMG: 0

System IDs in Plan - Active

Status	System ID	Identification	CIS	Compliance	GIS	Defaults
LOCK - ENT - ST	KY-CC2609					

Miles Main

	Miles	Pct	Services	Pct
Bare Steel	20.61	76.89%	Bare Steel	0
Steel	5.88	21.91%	Steel	0
PE	0.32	1.20%	PE	0

Mains by Diameter (Miles)

	NULL	2" or Less	Over 2" thru 4"	Over 4" thru 8"	Over 8" thru 12"	Over 12"
Mains by Diameter (Miles)	4	1	3	13	5	0

Plan Signoff Summary:

Plan: KY-CC2609 (1) KMD Sto-MVIlle Franklin KY. Cost Center 2609. NO CIS. Status: Active Last Change: 07/25/2011 07:49 AAA Status: Completed
 Number High Risks AAA: 0 Concluded: 0 Number Medium Risks AAA: 0 Concluded: 0

3. Overview of Plan Approval

Plan: KY-CC2609 (1) KMD Sto-MVIlle Franklin KY. Cost Center 2609. NO CIS. Status: Active Last Change: 07/25/2011 07:49 AAA Status: Completed
 Number High Risks AAA: 0 Concluded: 0 Number Medium Risks AAA: 0 Concluded: 0

Plan: This area will show the plan name, the (version), and the description of the plan.

Status: This is the status of the plan.

: The pencil will only display if the user is first in Update mode and the plan is in either Active or Locked status. This is available for plan approval. If the conditions described have been satisfied and you click on it, the following screen will appear:

Change Plan Status Run Time: 08/03/2011 13:32

Name:	KY-CC2609 (1)	Status:	Active
Describe:	KMD Sto-MVile Franklin KY. Cost Center 2609. NO CIS.		
Type:	Cost Center	BU:	KMD
Cost Center:	2609	State:	KY
Notes:	<input type="text"/>		

Operations Sign Off

Change this Plan ID Close

If the person is designated as an Operations manager, they will see the Operations Sign Off button above. If the person clicks on the button, the operations manager signature will be added to the footer of the plan as shown below:

mouseover elements: if there is additional information available by just moving your mouse over a particular element, then the Element is identified as Purple.

Plan: KY-CC2609 (1) KMD Sto-MVile Franklin KY. Cost Center 2609. NO CIS. Status: Locked  Last Change: 08/03/2011 13:33 AAA Status: Completed
 Number High Risks AAA: 0 Concluded: 0 Number Medium Risks AAA: 0 Concluded: 0 Operations Sign Off on Plan: 08/03/2011 PA10W
 Compliance Sign Off on Plan:

If the Operations manager decides they have signed off on the plan incorrectly, they can undo the signature by clicking on the pencil icon again. They will see the following screen:

Change Plan Status Run Time: 08/03/2011 13:33

Name:	KY-CC2609 (1)	Status:	Locked
Describe:	KMD Sto-MVile Franklin KY. Cost Center 2609. NO CIS.		
Type:	Cost Center	BU:	KMD
Cost Center:	2609	State:	KY
Notes:	<input type="text"/>		

Reset Operations Sign Off

Change this Plan ID Close

They can click on the Reset Operations Sign Off button and it will remove the date and code of the person who signed off on the plan. The reset button may

be used if a different operations manager should sign off on the. Once signed off, accelerated actions can't be created. If accelerated actions already exist, they can be completed after sign off.

When a compliance manager clicks on the pencil, they will see the following screen:

Change Plan Status			
Run Time: 08/03/2011 13:35			
Name:	KY-CC2609 (1)	Status:	Locked
Describe:	KMD Sto-MVille Franklin KY. Cost Center 2609. NO CIS.		
Type:	Cost Center	BU:	KMD
Cost Center:	2609	State:	KY
Notes:	<div style="border: 1px solid gray; height: 20px; width: 100%;"></div>		
<input type="button" value="Change this Plan ID"/>		<input type="button" value="Close"/>	

Once the compliance manager has clicked on the Compliance sign off button, the plan status will change to Reviewed, the date that the compliance manager signed off will be added to the plan sign off block, along with the user id of the compliance manager. The pencil to edit will no longer be available.

This block also shows the AAA Status, the number of high risk AAA, the number of high risk AAA's concluded, the number of Medium Risk AAA's, and the number of medium risk AAA's concluded. These should be checked before approval. The AAA status will be the lowest status of the AAAs in the plan. Example: if one AAA is Initialized and another is In Progress, the AAA Status will show as Initialized.

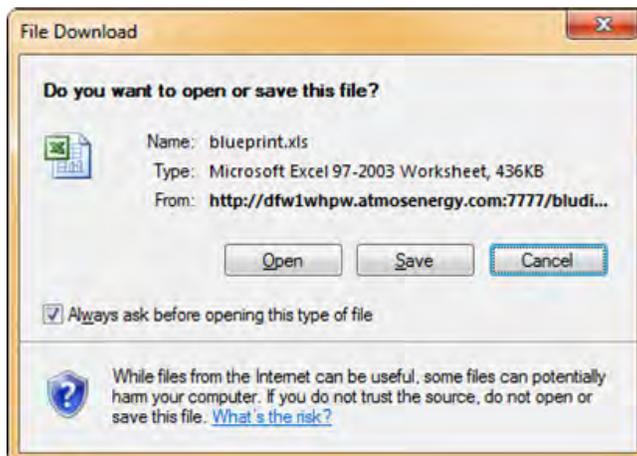
Plan: KY-CC2609 (1) KMD Sto-MVille Franklin KY. Cost Center 2609. NO CIS.	Status: Reviewed	Last Change: 08/03/2011 13:35	AAA Status: Completed
Number High Risks AAA: 0 Concluded: 0 Number Medium Risks AAA: 0 Concluded: 0 Operations Sign Off on Plan: 08/03/2011 PA10W			
Compliance Sign Off on Plan: 08/03/2011 PA10W			

IV. Exporting data to Excel

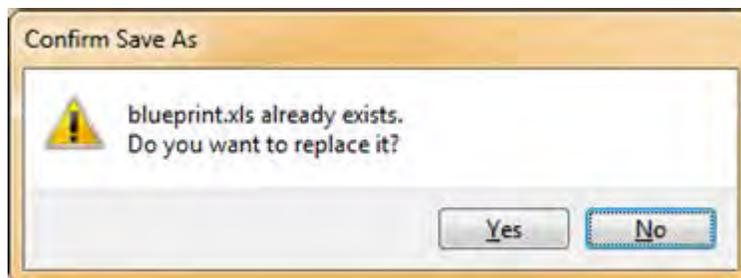
Wherever there is a  symbol on a DIM screen, you can download the information to an excel file.

To ensure that you can open the excel file in XP or Windows 7, the recommended procedure is as follows:

Click on the excel symbol. You will see a dialog box asking you to Open, Save or Cancel. Click on Save.

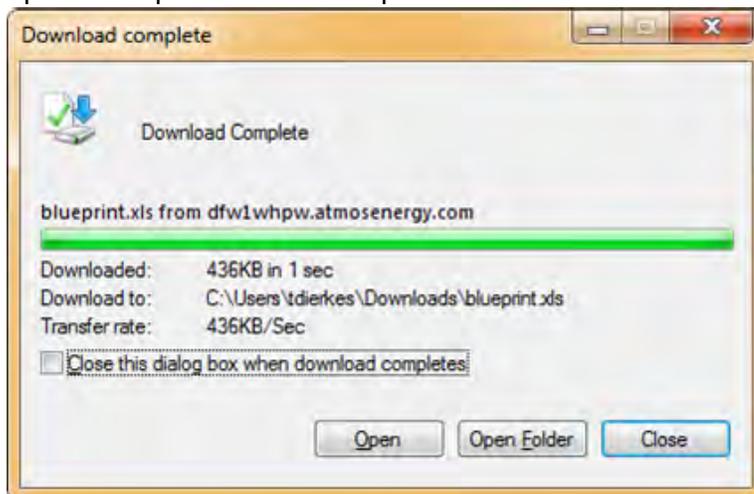


Click on Save for the dialog box that shows where the file will be saved. If you have saved an excel file from DIM before, you will get the dialog box below.

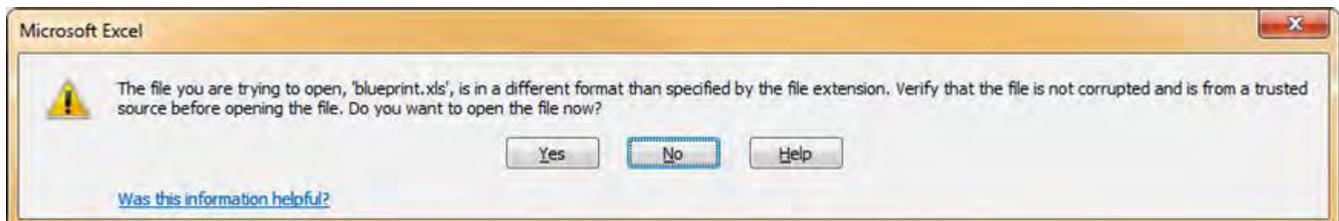


Click on Yes to Replace

Once it is complete you will have a Download Complete dialog box, giving you the option to Open it. Click on Open.



You may see the following message display. Click on Yes. The message is stating that the content looks like HTML. This is not an issue.



V. How to get Update Access

If you need to have update access to this site, you will need to submit an IT Security request to your supervisor. The body of the request needs to include the following text to ensure that the user will get update access.

add user USERNAME (User's Full Name) to BLUPRN and add them to the DIM_READ role. Also Create Session Priv

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Section: Appendix C

Subject: Enterprise Statistical Analysis

Reference: 49 CFR, Part 192, Subpart P (2010)

Issue Date: 12/07/11 **Effective Date:** 12/07/11 **Revision Date:** 12/07/11

Appendix C

Enterprise Statistical Analysis

- C.1 General
- C.2 eAM, GIS, and CIS Data Analysis
- C.3 Open Leaks
- C.4 Outlier Analysis
- C.5 Mean and Standard Deviation Calculation
- C.6 Sample Output

Distribution Integrity Management Plan

Section: Appendix C

Subject: Enterprise Statistical Analysis

Reference: 49 CFR, Part 192, Subpart P (2010)

Issue Date: 12/07/11 **Effective Date:** 12/07/11 **Revision Date:** 12/07/11

C.1 General (§192.1007(a),(d),(e), and (f))

In order to assess risk, Liberty Utilities will first statistically analyze leak data from its internal database(s), such as eAM, in conjunction with data from its Geographical Information System (GIS) and Customer Information System (CIS). A five-year time frame is used for the statistical analysis as it is representative of a full leak survey cycle. The purpose of the statistical analysis is the establishment of benchmark leakage figures for the Enterprise, which are then used to classify the Likelihood of Failure (LOF) by threat category within each IM Region for mains, services, and excavation damages.

By utilizing the above approach, **Liberty Utilities** has a sufficiently large data population available for statistical analysis that reflects diversity in pipe materials, environmental and operating conditions, age of infrastructure, and leak history. As a result, the benchmark figures for each leak cause calculated from the statistical analysis of this data would not be subject to state or regional influences.

Subsequent to the calculation of risk for the applicable threat categories in each IM Region, a second statistical analysis is then performed to classify the risk by threat category within the various IM Regions.

The programmatic statistical analysis will be kept current by the UOC Compliance Committee. It will be updated no later than September 1st of each calendar year.

In addition to Liberty Utilities' internal databases and the twelve (12) PHMSA Form 7100.1-1's that are filed for the distribution facilities of each **Liberty Utilities** Division comprising the Enterprise as defined by this IM Plan, data from external sources such as Common Ground Alliance, State One Call Systems, U.S. Geological Survey, U.S. Census Bureau, and others will be utilized in assessing risks.

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Section: Appendix C

Subject: Enterprise Statistical Analysis

Reference: 49 CFR, Part 192, Subpart P (2010)

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C.2 eAM, GIS, and CIS Data Analysis (§192.1007(a), (e), and (f))

Detailed below is the process by which the statistical analysis is performed to develop the benchmark figures for the LOF of each leak cause by main and services.

- Obtain leak data from internal database(s) for the most recent five (5) calendar years.
- Capture the number of leaks on mains and services for the following leak causes:
 - Corrosion
 - Natural Forces
 - Excavation
 - Other Outside Force
 - Material or Welds
 - Equipment
 - Operations
 - Other
- Obtain the following from GIS and CIS :
 - Miles of Main by Material
 - Number of Premises.

Programmatically enter from eAM or other internal databases, by calendar year, five years of data for leaks causes (mains and services) along with miles of main and number of services into the DIMPlate. The number of services by material type is programmatically established through a proration methodology using the premise data from CIS and pipe mileage data from GIS. Data for each successive year will be subsequently entered and the calculations performed for the most recent five year calendar period.

Upon completion of entering leakage and pipe data as described above, the DIMPlate will calculate the Enterprise benchmark measures for the number of leaks, by cause, per 100 miles of main and per 1,000 services.

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Section: Appendix C
Subject: Enterprise Statistical Analysis
Reference: 49 CFR, Part 192, Subpart P (2010)

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C.3 Open Leaks

Open leaks scheduled to be repaired shall also be considered in the calculation of the Enterprise benchmark figures and the LOF figures by threat category for mains and services in the various IM Regions. Considering open leaks at the end of each year within the five-year period recognizes their impact on the integrity of an IM Region. Since open leaks have not yet been classified by location (main or service) and cause, assumptions are made to categorize them using a proration methodology based on historical trends.

In order to ascertain location, the ratios of repaired main and service leaks respectively to total repaired leaks within a division must be initially determined for each year within the five-year time period. These ratios will then be applied to total open leaks for that Division for the applicable year to determine the number of open leaks that will be classified as either main or service. Likewise ratios will be calculated to determine the leak causes attributable to those open leaks now assigned to mains and services. These ratios are determined by dividing the number of repaired leaks by cause for the applicable year by the total number of repaired leaks in that division. The calculated ratios for leak causes are then applied to the total number of open leaks attributable to mains and services to determine the number of open leaks by cause.

C.4 Outlier Analysis

An **Outlier** is an observation that lies an abnormal distance from other values in a random sample from the population. Prior to calculating the mean and standard deviation for each main and service line leak cause, an outlier analysis, if needed, may be performed. Identified outliers will be eliminated from the data prior to calculating the mean and standard deviation for each leak cause.

The result of the data compilation for five years worth of repaired and open leak data will be used to calculate normalized rates of leaks per 100 miles of main and leaks per 1,000 services. An outlier analysis, if needed, may be performed for each leak cause for mains and services to identify those data points that are outliers. Identified outliers will be eliminated from the data prior to calculating the mean and standard deviation for each leak cause.

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Section:	Appendix C		
Subject:	Enterprise Statistical Analysis		
Reference:	49 CFR, Part 192, Subpart P (2010)		
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		Revision Date:	12/07/11

Outliers will be determined using the BOX PLOT Method described in the NIST/SEMATECH e-Handbook of Statistical Methods.

<http://www.itl.nist.gov/div898/handbook/prc/section1/prc16.htm>

Data points that lie outside the “Upper and Lower Outer Fences” per the Box Method will be excluded prior to calculating the mean and standard deviation for each leak cause for mains and services. Excluding “Upper and Lower Extreme Outliers” is a conservative approach to the analysis of the leak data as the elimination of these data points will lower mean values and narrow the range of standard deviations.

C.5 Mean & Standard Deviation Calculation

The mean and standard deviation for each set of data points by leak cause will be determined after elimination of outliers from each applicable data set. The outcome of the statistical analysis is a mean and standard deviation for the number of leaks per 100 miles of main and number of leaks per 1,000 services. The standard deviation is used by **Liberty Utilities** to evaluate the extent of variation within the leak data set from its mean. A low standard deviation indicates that the data points (leaks) are close to the mean, whereas a high standard deviation would be indicative that the leak data is spread out over a large range of values.

C.6 Sample Output

Shown below and on the following page are screen shots of the DIMPlate depicting Enterprise metrics for the various leak causes. Corresponding mean and standard deviation values are displayed for each leak cause by mains and services.

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Section: Appendix C
Subject: Enterprise Statistical Analysis
Reference: 49 CFR, Part 192, Subpart P (2010)

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Threat	Atmos Enterprise Metrics		
	Mean	StdDev	Mean + 2 StdDev
Other	6.64	7.28	21.21
Corrosion	12.58	9.76	32.09
Material, Weld, or Joint Failure	1.01	1.52	4.06
Other Outside Force Damage	.45	.63	1.72
Natural Force Damage	.30	.36	1.03
Incorrect Operation	.99	1.37	3.74
Equipment Failure	.34	.26	.87
Totals:			

Figure C.6.1 – Sample Values for Main Leak Metrics for

Threat	Atmos Enterprise Metrics		
	Mean	StdDev	Mean + 2 StdDev
Other	.978	.817	2.611
Other Outside Force Damage	.165	.253	.670
Corrosion	3.262	3.317	9.895
Material, Weld, or Joint Failure	.344	.480	1.304
Natural Force Damage	.092	.155	.402
Incorrect Operation	.341	.496	1.332
Equipment Failure	.066	.101	.267
Totals:			

Figure C.6.2 – Sample Values for Service Leak Metrics

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Section: Appendix D

Subject: IM Region Data

Reference: 49 CFR, Part 192, Subpart P (2010)

Issue Date: 12/07/11 **Effective Date:** 12/07/11 **Revision Date:** 12/07/11

Appendix D

IM Region Data

- D.1 General
- D.2 IM Region Data
- D.3 Environmental Factors
- D.4 O&M Data
- D.5 Corrosion Data
- D.6 Excavation Data

Distribution Integrity Management Plan

Section: Appendix D

Subject: IM Region Data

Reference: 49 CFR, Part 192, Subpart P (2010)

Issue Date: 12/07/11 **Effective Date:** 12/07/11 **Revision Date:** 12/07/11

D.1 General (§192.1007(a))

This appendix contains the detailed descriptions of data referenced in Chapter 3, “System Knowledge”. The tables contained in this appendix are intended to represent potential data that may be gathered during various construction and O&M activities for the determination of risk.

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Section: Appendix D

Subject: IM Region Data

Reference: 49 CFR, Part 192, Subpart P (2010)

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D.2 IM Region Data (§192.1007(a))

IM Region Data				
Data	Description	Template Item #	Data Source	Response
Miles of Main by Material	Miles of main by material and for steel by bare and coated.		GIS	Miles
	OR If miles of main by material is not available, the SME is to enter TOTAL miles of main in the system and then approximate percentages by material.		SME	Percentage
Miles of Main by Diameter	Miles of main by diameter		GIS	Miles
Number of Service Lines	Number of service lines, both active and idle, by material.		CIS/CM, Plant Accounting, or GIS	Number
	OR If number of services by material is not available, the SME is to enter TOTAL number of services, <u>both active and idle</u> , in the system and then approximate percentages by material.		SME	Percentage

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Section: Appendix D

Subject: IM Region Data

Reference: 49 CFR, Part 192, Subpart P (2010)

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Data	Description	Template Item #	Data Source	Response
Critical Valves	Number of critical (emergency) valves in the IM Region AND Standard Industry Components?		GIS/eAM SME	Number Yes / No (Drop Down Menu)
Distribution Patrol Zones	Number of distribution patrol zones in the IM Region		GIS/eAM	Number
Odorant Test Points	Number of odorant test points in the IM Region .		GIS/eAM	Number
CP Zones	Number of CP zones in the IM Region .		GIS/eAM	Number
CP Test Points	Number of CP test points in the IM Region .		GIS/eAM	Number
Corrosion Control System	Types of corrosion control systems in the IM Region .		GIS/eAM or SME	None / Anodes / Rectifier (Drop Down Menu)
Isolated Steel Sections (less than 100' in length)	Sections of mains or services less than 100' in length that are electrically isolated in the IM Region .		GIS/eAM	Number

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Section: Appendix D
Subject: IM Region Data
Reference: 49 CFR, Part 192, Subpart P (2010)

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Data	Description	Template Item #	Data Source	Response
Review Period	Prior five-year period		System	Dates - MM/DD/YY YY

NOTES:

Standard Industry Components - Are components, such as regulators, relief valves, and valves in district regulator stations, town border stations, city gate stations, purchase stations, and critical valve assemblies commonly used in the natural gas industry for those applications? A response of “YES” to Standard Industry Components does not require further explanation. A response of “NO” to “Standard Industry Components” requires a comment(s) on the **Liberty Utilities** DIMPlate explaining why certain components are not standard.

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Section: Appendix D

Subject: IM Region Data

Reference: 49 CFR, Part 192, Subpart P (2010)

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D.3 Environmental Factors (§192.1007(a))

Environmental Factors				
Factor	Description	Template Item #	Data Source	Response
Wash Out	Have washouts occurred in the IM Region that resulted in leaks or failures?		SME	Yes / No / NA
Earthquake Fault Zone	Do portions of the IM Region traverse earthquake fault zones such that there is a likelihood of a leak or failure occurring due to ground movement? See <u>Note 1</u> below.		Program	Yes / No / NA
Landslide / Subsidence	Have landslides or subsidence occurred in the IM Region that resulted in leaks or failures?		SME	Yes / No / NA
Freeze / Thaw Cycles	Have freeze / thaw cycles occurred in the IM Region that resulted in leaks or failures? See <u>Note 2</u> below.		SME	Yes / No / NA
Snow Loading	Has snow loading occurred in the IM Region that has resulted in leaks or failures?		SME	Yes / No / NA

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Section: Appendix D
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Overbuilds	Are there issues within the IM Region with pipeline facilities being enclosed in buildings or buildings being built over the facilities?		SME	Yes / No / NA
------------	--	--	-----	---------------

NOTE 1 – Earthquake Zones

1. A response of “NO” to Environmental Factors does not require further explanation. Each “YES” response requires comment(s) on the **Liberty Utilities** DIMPlate in the space provided. In commenting on a “YES” response, the comment should include an indication if the factor is GENERAL or LOCAL within the system under consideration.
2. Earthquake Fault Zones – Based on the criteria established in ASME B31.8S – Managing System Integrity of Gas Pipelines – 2001 edition, Appendix A, A9.3(h), the following areas within the boundaries of **Liberty Utilities’** infrastructure have a greater than minimal threat from earthquakes.

Illinois – South of latitude 39° North

Missouri – South of latitude 38° North and East of longitude 92° West

Tennessee – Between longitudes 83° and 85° West, and West of longitude 87° West

NOTE 2 – Freeze / Thaw Cycles

Based on a 24” frost depth, Iowa and northern Missouri have a greater than minimal threat due to freeze / thaw cycles according to U.S. Geological Survey.

* http://www.soundfootings.com/pdf/US_Map_Frost_DepthAVG.pdf

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Section: Appendix D

Subject: IM Region Data

Reference: 49 CFR, Part 192, Subpart P (2010)

Issue Date: 12/07/11 **Effective Date:** 12/07/11 **Revision Date:** 12/07/11

D.4 O&M Data (§192.1007(a))

O&M Data				
Data Point	Description	Template Item #	Data Source	Response
Leak History – Number of Repaired Leaks on Mains	Number of repaired leaks, by cause, on mains over the five-year data review period		GIS/eAM	Number By Cause
Leak History - Number of Repaired Leaks on Service Lines	Number of repaired leaks, by cause, on service lines over the five-year data review period		GIS/eAM	Number By Cause
Odorant Levels	Is odorant readily detectable in the IM Region?		SME	Yes / No

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Section: Appendix D

Subject: IM Region Data

Reference: 49 CFR, Part 192, Subpart P (2010)

Issue Date: 12/07/11 **Effective Date:** 12/07/11 **Revision Date:** 12/07/11

D.5 Corrosion Data (§192.1007(a))

CORROSION DATA				
Corrosion Type	Description	Template Item #	Data Source	Response
External –Bare Steel	Localized Light General Medium General Heavy General		SME	Localized, Light General, Medium General, Heavy General (Drop Down Menu)
External – Coated Steel	Localized Light General Medium General Heavy General		SME	Localized, Light General, Medium General, Heavy General (Drop Down Menu)
Graphitization – Cast Iron	Is there Cast Iron in the IM Region ? If “Yes”, what is the level of graphitization?		SME	Yes / No (Drop Down Menu) None Observed, Local, General (Drop Down Menu)
Internal	None Observed Local or General		SME	None Observed, Local, General (Drop Down Menu)
Atmospheric	Localized Light General– Medium General Heavy General		SME	Localized, Light General, Medium General, Heavy General (Drop Down Menu)

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Section: Appendix D

Subject: IM Region Data

Reference: 49 CFR, Part 192, Subpart P (2010)

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D.6 Excavation Data (§192.1007(a) and (e))

Excavation Data				
Excavation Data	Description	Template Item #	Data Source	Response
Number of Line Locate Requests for the IM Region	Number of line locate requests for the IM Region		Locate Data Management Systems	Number
Number of Excavation Damages for the IM Region	Number of excavation damages for the IM Region		Damage Prevention Database	Number
Are there any known excavation or infrastructure projects that will impact IM Region in the next one to three years?	Yes/No If “Yes”, what is the anticipated exposure of the IM Region to construction activity based on SME input?		SME SME	Yes/No (Drop Down Menu) Low/Medium/High (Drop Down Menu)

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Section: Appendix E

Subject: Potential A&A Actions to Mitigate “High” Risk Threats

Reference: 49 CFR, Part 192, Subpart P (2010)

Issue Date: 12/07/11 **Effective Date:** 12/07/11 **Revision Date:** 12/07/11

Appendix E

Potential A&A Actions to Mitigate “High” Risk Threats

- E.1 General
- E.2 Corrosion
- E.3 Natural Forces
- E.4 Excavation Damage
- E.5 Other Outside Forces
- E.6 Material or Welds
- E.7 Equipment Failure
- E.8 Incorrect Operations
- E.9 Other

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Section: Appendix E

Subject: Potential A&A Actions to Mitigate “High” Risk Threats

Reference: 49 CFR, Part 192, Subpart P (2010)

Issue Date: 12/07/11 **Effective Date:** 12/07/11 **Revision Date:** 12/07/11

E.1 General (§192.1007(d))

This appendix contains the detailed descriptions of potential A&A Actions that may be taken to mitigate “High” risk threats as discussed in Section 6.14. This appendix is organized by the primary threat and its associated potential A&A Actions.

E.2 Corrosion

Potential A&A Actions to mitigate “High” risk for the threat of External Corrosion:

1. Increase frequency of leak surveys
2. Review cathodic records for history and possible corrective actions.
3. Replace or insert pipe as needed.

Potential A&A Actions to mitigate “High” risk for the threat of Internal Corrosion:

1. Increase frequency of leak surveys.
2. Install a separator.
3. Install a pipe liner.
4. Evaluate and monitor gas supply inputs and take corrective action with supplier.
5. Evaluate and replace pipe with poly if applicable.
6. Install moisture removal or control equipment.

Potential A&A Actions to mitigate “High” risk for the threat of Atmospheric Corrosion:

1. Coat or paint exposed facility.
2. Replacement or relocation of facility.
3. Increase frequency of atmospheric corrosion survey.

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Section: Appendix E

Subject: Potential A&A Actions to Mitigate “High” Risk Threats

Reference: 49 CFR, Part 192, Subpart P (2010)

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E.3 Natural Forces

Potential A&A Actions to mitigate “High” risk for the threat of Natural Forces or the presence of potential environmental factors such as wash out, earthquake fault zone, landslide / subsidence, freeze / thaw cycles, snow loading, and overbuilds:

1. Conduct leak survey after significant event (ie earthquake, tornado, etc.)
2. Relocate facilities from high risk areas.
3. Install slip or expansion joints.
4. Use extra-heavy fittings.
5. Install automatic shut-off valves.
6. Expand the use of excess flow valves.
7. Install bracing or barricades.

E.4 Excavation Damage

Potential A&A Actions to mitigate “High” risk for the threat of Excavation Damage:

1. Install additional line markers.
2. Conduct enhanced awareness education including emphasis on repeat offenders.
3. Request regulatory intervention.
4. Inspect targeted excavation and backfill activities.
5. Improve accuracy of line locating.
6. Participate in pre-construction meetings with project engineers and contractors in high-risk areas.
7. Continual review of system map accuracy and availability.
8. Recruit support of public safety officials (i.e. fire department, police department, etc.)
9. Educate the general public through Public Awareness program.

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Section: Appendix E

Subject: Potential A&A Actions to Mitigate “High” Risk Threats

Reference: 49 CFR, Part 192, Subpart P (2010)

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E.5 Other Outside Forces

Potential A&A Actions to mitigate “High” risk for the threat of Fire / Explosion:

1. Provide First Responder training.
2. Monitor and, if needed, improve response capability.

Potential A&A Actions to mitigate “High” risk for the threat of Vehicular Damage:

1. Identify and take appropriate protective steps for at-risk facilities.

Potential A&A Actions to mitigate “High” risk for the threat of Vandalism:

1. Install or improve security (i.e. locks, fences, alarms, etc.)
2. Increased surveillance.

Potential A&A Actions to mitigate “High” risk for the threat of Blasting Damage:

1. Provide **Liberty Utilities** blasting guidelines to excavator.
2. Improve communication and monitor notifications from permitting agencies.

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Section: Appendix E

Subject: Potential A&A Actions to Mitigate “High” Risk Threats

Reference: 49 CFR, Part 192, Subpart P (2010)

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E.6 Material or Welds

Potential A&A Actions to mitigate “High” risk for the threat of Material failure:

1. Increase frequency of leak surveys.
2. Locate and replace manufacturing defects.
3. Investigate and work with material vendor to correct potential defects.
4. Discontinue use of product.

Potential A&A Actions to mitigate “High” risk for the threat of Weld failure:

1. Increase frequency of leak surveys.
2. Repair or replace welds in question.
3. Investigate and, if needed, revise construction and/or certification procedures.
4. Trend material failures.
5. Discontinue the use of product.

E.7 Equipment Malfunction

Potential A&A Actions to mitigate “High” risk for the threat of Equipment Malfunction:

1. Repair or replace equipment.
2. Investigate whether equipment is being utilized properly.
3. Revise Liberty Utilities Material Standards.
4. Trend equipment failures.
5. Discontinue the use of product.

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Section: Appendix E

Subject: Potential A&A Actions to Mitigate “High” Risk Threats

Reference: 49 CFR, Part 192, Subpart P (2010)

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E.8 Incorrect Operations

Potential A&A Actions to mitigate “High” risk for the threat of Incorrect Operations:

1. Perform internal audits and/or inspections.
2. Investigate any incorrect operations.
3. Review and improve procedures.
4. Improve training program(s).
5. Disqualify employee(s) from performing tasks.

E.9 Other

Potential A&A Actions to mitigate “High” risk for the threat of Other:

1. Investigate actual cause, make appropriate data changes, if necessary, and have SME(s) manually reassess risks for the particular IM Region for further A&A Actions.
2. Increase frequency of leak surveys.
3. Increase odorant level.
4. Increase frequency of odorant sniff testing.
5. Re-evaluate locations of odorant sniff testing.
6. Relocate facilities from high risk areas.

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Section: Appendix F

Subject: U.S. Census Data for Population Density

Reference: 49 CFR, Part 192, Subpart P (2010)

Issue Date: 12/07/11 Effective Date: 12/07/11 Revision Date: 12/07/11

Appendix F

U.S. Census Data for Population Density (2000)

- F.1 General
- F.2 U.S. Census Data – Illinois (2000)
- F.3 U.S. Census Data – Iowa (2000)
- F.4 U.S. Census Data – Missouri (2000)

Distribution Integrity Management Plan

Section: Appendix F

Subject: U.S. Census Data for Population Density

Reference: 49 CFR, Part 192, Subpart P (2010)

Issue Date: 12/07/11 Effective Date: 12/07/11 Revision Date: 12/07/11

F.1 General (§192.1007(a))

This appendix contains the 2000 U.S. Census data of population density by county. The sections are organized by state.

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Section: Appendix F

Subject: U.S. Census Data for Population Density

Reference: 49 CFR, Part 192, Subpart P (2010)

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F.2 U.S. Census Data - Illinois (2000)

Population Density for the State of Illinois (people per sq. mile of land)					
Adams County	80	Grundy County	89	McHenry County	431
Alexander County	41	Hamilton County	20	McLean County	127
Bond County	46	Hancock County	25	Menard County	40
Boone County	149	Hardin County	27	Mercer County	30
Brown County	23	Henderson County	22	Monroe County	71
Bureau County	41	Henry County	62	Montgomery County	44
Calhoun County	20	Iroquois County	28	Morgan County	64
Carroll County	38	Jackson County	101	Moultrie County	43
Cass County	36	Jasper County	21	Ogle County	67
Champaign County	180	Jefferson County	70	Peoria County	296
Christian County	50	Jersey County	59	Perry County	52
Clark County	34	Jo Daviess County	37	Piatt County	37
Clay County	31	Johnson County	37	Pike County	21
Clinton County	75	Kane County	777	Pope County	12
Coles County	105	Kankakee County	153	Pulaski County	37
Cook County	5,686	Kendall County	170	Putnam County	38
Crawford County	46	Knox County	78	Randolph County	59
Cumberland County	33	La Salle County	98	Richland County	45
De Witt County	42	Lake County	1,440	Rock Island County	350
DeKalb County	140	Lawrence County	42	Saline County	70
Douglas County	48	Lee County	50	Sangamon County	218
DuPage County	2,710	Livingston County	38	Schuyler County	16
Edgar County	32	Logan County	50	Scott County	22
Edwards County	31	Macon County	198	Shelby County	30
Effingham County	72	Macoupin County	57	St. Clair County	386
Fayette County	30	Madison County	357	Stark County	22
Ford County	29	Marion County	73	Stephenson County	87
Franklin County	95	Marshall County	34	Tazewell County	198
Fulton County	44	Mason County	30	Union County	44
Gallatin County	20	Massac County	63	Vermilion County	93
Greene County	27	McDonough County	56	Wabash County	58

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Section: Appendix F

Subject: U.S. Census Data for Population Density

Reference: 49 CFR, Part 192, Subpart P (2010)

Issue Date: 12/07/11 Effective Date: 12/07/11 Revision Date: 12/07/11

**Population Density for the State of Illinois (cont.)
(people per sq. mile of land)**

Warren County	35	White County	31	Williamson County	145
Washington County	27	Whiteside County	89	Winnebago County	542
Wayne County	24	Will County	600	Woodford County	67

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Section: Appendix F

Subject: U.S. Census Data for Population Density

Reference: 49 CFR, Part 192, Subpart P (2010)

Issue Date: 12/07/11 Effective Date: 12/07/11 Revision Date: 12/07/11

F.3 U.S. Census Data – Iowa (2000)

Population Density for the State of Iowa (people per sq. mile of land)					
Adair County	15	Emmet County	28	Marion County	58
Adams County	11	Fayette County	30	Marshall County	69
Allamakee County	23	Floyd County	34	Mills County	33
Appanoose County	28	Franklin County	18	Mitchell County	23
Audubon County	15	Fremont County	16	Monona County	15
Benton County	35	Greene County	18	Monroe County	19
Black Hawk County	226	Grundy County	25	Montgomery County	28
Boone County	46	Guthrie County	19	Muscatine County	95
Bremer County	53	Hamilton County	29	O'Brien County	26
Buchanan County	37	Hancock County	21	Osceola County	18
Buena Vista County	36	Hardin County	33	Page County	32
Butler County	26	Harrison County	23	Palo Alto County	18
Calhoun County	20	Henry County	47	Plymouth County	29
Carroll County	38	Howard County	21	Pocahontas County	15
Cass County	26	Humboldt County	24	Polk County	658
Cedar County	31	Ida County	18	Pottawattamie County	92
Cerro Gordo County	82	Iowa County	27	Poweshiek County	32
Cherokee County	23	Jackson County	32	Ringgold County	10
Chickasaw County	26	Jasper County	51	Sac County	20
Clarke County	21	Jefferson County	37	Scott County	347
Clay County	31	Johnson County	181	Shelby County	22
Clayton County	24	Jones County	35	Sioux County	41
Clinton County	72	Keokuk County	20	Story County	140
Crawford County	24	Kossuth County	18	Tama County	25
Dallas County	70	Lee County	74	Taylor County	13
Davis County	17	Linn County	267	Union County	29
Decatur County	16	Louisa County	30	Van Buren County	16
Delaware County	32	Lucas County	22	Wapello County	84
Des Moines County	102	Lyon County	20	Warren County	71
Dickinson County	43	Madison County	25	Washington County	36
Dubuque County	147	Mahaska County	39	Wayne County	13

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Section: Appendix F

Subject: U.S. Census Data for Population Density

Reference: 49 CFR, Part 192, Subpart P (2010)

Issue Date: 12/07/11 Effective Date: 12/07/11 Revision Date: 12/07/11

**Population Density for the State of Iowa (cont.)
(people per sq. mile of land)**

Webster County	56	Winneshiek County	31	Worth County	20
Winnebago County	29	Woodbury County	119	Wright County	25

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Section: Appendix F

Subject: U.S. Census Data for Population Density

Reference: 49 CFR, Part 192, Subpart P (2010)

Issue Date: 12/07/11 Effective Date: 12/07/11 Revision Date: 12/07/11

F.4 U.S. Census Data – Missouri (2000)

Population Density for the State of Missouri (people per sq. mile of land)					
Adair County	44	DeKalb County	27	Marion County	65
Andrew County	38	Dent County	20	McDonald County	40
Atchison County	12	Douglas County	16	Mercer County	8
Audrain County	37	Dunklin County	61	Miller County	40
Barry County	44	Franklin County	102	Mississippi County	33
Barton County	21	Gasconade County	30	Moniteau County	36
Bates County	20	Gentry County	14	Monroe County	14
Benton County	24	Greene County	356	Montgomery County	23
Bollinger County	19	Grundy County	24	Morgan County	32
Boone County	198	Harrison County	12	New Madrid County	29
Buchanan County	210	Henry County	31	Newton County	84
Butler County	59	Hickory County	22	Nodaway County	25
Caldwell County	21	Holt County	12	Oregon County	13
Callaway County	49	Howard County	22	Osage County	22
Camden County	57	Howell County	40	Ozark County	13
Cape Girardeau County	119	Iron County	19	Pemiscot County	41
Carroll County	15	Jackson County	1,083	Perry County	38
Carter County	12	Jasper County	164	Pettis County	58
Cass County	117	Jefferson County	302	Phelps County	59
Cedar County	29	Johnson County	58	Pike County	27
Chariton County	11	Knox County	9	Platte County	176
Christian County	96	Laclede County	43	Polk County	42
Clark County	15	Lafayette County	52	Pulaski County	75
Clay County	464	Lawrence County	57	Putnam County	10
Clinton County	45	Lewis County	21	Ralls County	20
Cole County	182	Lincoln County	62	Randolph County	51
Cooper County	30	Linn County	22	Ray County	41
Crawford County	31	Livingston County	27	Reynolds County	8
Dade County	16	Macon County	20	Ripley County	22
Dallas County	29	Madison County	24	Saline County	31
Daviess County	14	Maries County	17	Schuyler County	14

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Section: Appendix F

Subject: U.S. Census Data for Population Density

Reference: 49 CFR, Part 192, Subpart P (2010)

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Population Density for the State of Missouri (cont.) (people per sq. mile of land)					
Scotland County	11	St. Louis County	2,001	Vernon County	25
Scott County	96	Ste. Genevieve County	36	Warren County	57
Shannon County	8	Stoddard County	36	Washington County	31
Shelby County	14	Stone County	62	Wayne County	17
St. Charles County	507	Sullivan County	11	Webster County	52
St. Clair County	14	Taney County	63	Worth County	9
St. Francois County	124	Texas County	20	Wright County	26

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Section: Appendix G

Subject: Calculated Potential Impact Radius (PIR) Values

Reference: 49 CFR, Part 192, Subpart P (2010)

Issue Date: 12/07/11 **Effective Date:** 12/07/11 **Revision Date:** 12/07/11

Appendix G

Calculated Potential Impact Radius (PIR) Values

- G.1 General
- G.2 Calculated PIR Values

Distribution Integrity Management Plan

Section: Appendix G

Subject: Calculated Potential Impact Radius (PIR) Values

Reference: 49 CFR, Part 192, Subpart P (2010)

Issue Date: 12/07/11 **Effective Date:** 12/07/11 **Revision Date:** 12/07/11

G.1 General §192.1007(a) and (c)

This appendix contains a table containing the calculated PIR Values for a range of main sizes and typical pressures found in Liberty Utilities' distribution systems.

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Section: Appendix G

Subject: Calculated Potential Impact Radius (PIR) Values

Reference: 49 CFR, Part 192, Subpart P (2010)

Issue Date: 12/07/11 **Effective Date:** 12/07/11 **Revision Date:** 12/07/11

G.2 Calculated PIR Values

		MAOP (psig)															
		20	30	40	50	60	70	80	100	150	200	250	300	350	400	450	500
Pipe Diameter (inches)	2	6	8	9	10	11	12	12	14	17	20	22	24	26	28	29	31
	3	9	11	13	15	16	17	19	21	25	29	33	36	39	41	44	46
	4	12	15	17	20	21	23	25	28	34	39	44	48	52	55	59	62
	6	19	23	26	29	32	35	37	41	51	59	65	72	77	83	88	93
	8	25	30	35	39	43	46	49	55	68	78	87	96	103	110	117	123
	10	31	38	44	49	53	58	62	69	85	98	109	120	129	138	146	154
	12	37	45	52	59	64	69	74	83	101	117	131	143	155	166	176	185
	16	49	60	70	78	86	92	99	110	135	156	175	191	207	221	234	247
	20	62	76	87	98	107	115	123	138	169	195	218	239	258	276	293	309

Figure G.2.1 – Calculated PIR Values

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Section: Appendix H

Subject: Sample Consequence of Failure (COF) Calculation

Reference: 49 CFR, Part 192, Subpart P (2010)

Issue Date: 12/07/11 **Effective Date:** 12/07/11 **Revision Date:** 12/07/11

Appendix H

Sample Consequence of Failure (COF) Calculation

- H.1 General
- H.2 Sample COF Calculation

Distribution Integrity Management Plan

Section: Appendix H

Subject: Sample Consequence of Failure (COF) Calculation

Reference: 49 CFR, Part 192, Subpart P (2010)

Issue Date: 12/07/11 **Effective Date:** 12/07/11 **Revision Date:** 12/07/11

H.1 General (§192.1007(c))

This appendix contains a sample calculation for COF to display the methodology and the programmatic calculation that is accomplished by the DIMPlate.

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Section: Appendix H

Subject: Sample Consequence of Failure (COF) Calculation

Reference: 49 CFR, Part 192, Subpart P (2010)

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H.2 Sample COF Calculation

The following formula is used to calculate the COF score for any IM Region.

$$\text{COF Score} = \text{PIR}_{\text{factor}} + \text{Population Density}_{\text{factor}} + \text{Gas Migration}_{\text{factor}} + \text{SME Review}_{\text{factor}}$$

Example - IM Region - Bulldog, MS - Mains
MAOP - 60 PSIG

A. Potential Impact Radius_{factor}

The Potential Impact Radius (PIR) means the radius of a circle within which the potential failure of a pipeline could have significant impact on people or property. PIR is determined by the formula $r = 0.69 * (p * d^2)^{1/2}$, where ‘r’ is the radius of a circular area in feet surrounding the point of failure, ‘p’ is the maximum allowable operating pressure (MAOP) in the pipeline segment in pounds per square inch, and ‘d’ is the nominal diameter of the pipeline in inches.

A review of the pipe assets in the Bulldog IM Region shows that the largest main operating within the 60 psig system has a diameter of 4”. Calculate the largest actual PIR within the Bulldog IM Region for mains.

$$\text{PIR} = (0.69)[(60)(4)^2]^{1/2}$$

$$\text{PIR} = 21.37 \text{ feet}$$

Note that the same process is used to determine the PIR for services within the Bulldog IM Region.

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Subject: Sample Consequence of Failure (COF) Calculation

Reference: 49 CFR, Part 192, Subpart P (2010)

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Table 4.6.1.a contains PIR values for mains and Table 4.6.1.b contains PIR values for service lines. The PIR ranges are different due to service lines' closer proximity to structures.

PIR (ft.)	PIR _{factor}
PIR ≤ 20	1
20 < PIR ≤ 40	2
40 < PIR ≤ 60	3
60 < PIR ≤ 80	4
80 < PIR	5

Table 4.6.1.a – Main PIR_{factor}

PIR (ft.)	PIR _{factor}
PIR ≤ 10	1
10 < PIR ≤ 20	2
20 < PIR ≤ 30	3
30 < PIR ≤ 40	4
40 < PIR	5

Table 4.6.1.b – Service Line PIR_{factor}

The calculated PIR of 21.37 feet for mains would have a corresponding PIR_{factor} of 2 in accordance with Table 4.6.1.a.

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Subject: Sample Consequence of Failure (COF) Calculation

Reference: 49 CFR, Part 192, Subpart P (2010)

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B. Population Density_{factor}

Using the U.S. Census Bureau data found in Appendix F, next determine the population density of Attala County in which the Bulldog IM Region is located. The actual Population Density_{factor} would be a value interpolated from the following scale.

Population Density (PD) (Number of People / square miles of land)	Population Density _{factor}
$PD \leq 50$	1
$50 < PD \leq 100$	2
$100 < PD \leq 150$	3
$150 < PD \leq 200$	4
$200 < PD$	5

Table 4.6.2 - Population Density_{factor}

From examining the census data, we find that Attala County has a population density of 27 persons per square miles of land. Based on Table 4.6.2 above, the Population Density_{factor} for the Bulldog IM Region would have a value of 1.

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Section: Appendix H

Subject: Sample Consequence of Failure (COF) Calculation

Reference: 49 CFR, Part 192, Subpart P (2010)

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C. Gas Migration_{factor}

From eAM and GIS, we know that the Bulldog IM Region has 5,000 feet of business district leak survey footage in comparison to an overall leak survey footage of 44,000 feet in the IM Region. The Gas Migration_{factor} is based on the ratio of business district leak survey footage to overall survey footage in the IM Region.

$$\text{Gas Migration}_{\text{Factor}} = (5,000 \text{ ft} / 44,000 \text{ ft}) (100\%) = 11.36\%$$

From Table 4.6.3 below, we can determine that the value for the Gas Migration_{factor} for the Bulldog IM Region is 3.

Business District Percentage (BD) (% System Mains in Business Districts)	Gas Migration _{factor}
BD ≤ 4%	1
4% < BD ≤ 8%	2
8% < BD ≤ 12%	3
12% < BD ≤ 16%	4
16% < BD	5

Table 4.6.3 - Gas Migration_{factor}

D. Subject Matter Expert_{factor}

The SME(s) will determine if other factors in the IM Region would influence the COF. The SME Review_{factor} has a scale of 1 to 5. The default SME Review_{factor} is 3. The SME(s) will need to document any factors that would result in changing the default SME Review_{factor}.

For the purpose of this example, the default SME value of 3 is selected.

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Section: Appendix H

Subject: Sample Consequence of Failure (COF) Calculation

Reference: 49 CFR, Part 192, Subpart P (2010)

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E. COF Determination

To summarize the COF for the Bulldog IM Region, the four factors that were previously calculated above are now summed into a final score. This figure will be multiplied by the LOF of various threat categories to determine corresponding risk.

$$\text{COF}_{\text{Bulldog}} = 2 + 1 + 3 + 3 = 9$$

The calculated COF score can range from 4 to 20 and is used along with the LOF score to determine the IM Region's risk score as discussed earlier in Section 4.2 – "Risk Methodology".

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Section: Appendix I

Subject: Key Elements of **Liberty Utilities'** Programs & Policies

Reference: 49 CFR, Part 192, Subpart P (2010)

Issue Date: 12/07/11 **Effective Date:** 12/07/11 **Revision Date:** 12/07/11

Appendix I

Key Elements of Liberty Utilities' Programs and Policies

- I.1 General
- I.2 Leak Management Program
- I.3 Damage Prevention Program
- I.4 Operator Qualification Program
- I.5 Public Awareness Program
- I.6 Excess Flow Valve Installation
- I.7 Alcohol Misuse and Drug Abuse Policy
- I.8 Continuing Surveillance Program
- I.9 Pipeline Patrolling Program
- I.10 Welding Program
- I.11 Plastic Pipe Joining Program
- I.12 Corrosion Control Program
- I.13 Technical Training Programs

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Section: Appendix I

Subject: Key Elements of **Liberty Utilities'** Programs & Policies

Reference: 49 CFR, Part 192, Subpart P (2010)

Issue Date: 12/07/11 **Effective Date:** 12/07/11 **Revision Date:** 12/07/11

I.1 General (§192.1007(d) and (f))

Liberty Utilities has developed several programs over many years to improve the effectiveness of both O&M and Construction Activities, provide first-class training opportunities for employees, monitor and document the qualifications of employees, and to meet specific Federal mandates. This Appendix contains documented references to these programs, including the key element and program reference that directly support **Liberty Utilities'** IMP.

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Section: Appendix I

Subject: Key Elements of **Liberty Utilities'** Programs & Policies

Reference: 49 CFR, Part 192, Subpart P (2010)

Issue Date: 12/07/11 **Effective Date:** 12/07/11 **Revision Date:** 12/07/11

I.2 Leak Management Program

Key Elements of Liberty Utilities' Leak Management Program	
Program Element	Liberty Utilities Plan Reference
Qualification/Training Requirements for Personnel Conducting Leak Survey	Operator Qualification Minimum Tasks per Job Description Matrix
Auditing and Quality Assurance of Leak Survey Equipment	O&M Procedures, Section 9.3.1
Classification of Leaks	O&M Procedures, Section 9.4
Established Frequency of Leak Survey in Business Districts	O&M Procedures, Section 9.1.2
Established Frequency of Leak Survey for Cathodically Unprotected Lines	O&M Procedures, Section 9.1.2
Established Frequency of Leak Survey of Remaining Lines	O&M Procedures, Section 9.1.2
Hazardous Leaks Requiring Immediate Repair – Ongoing Action Required	O&M Procedures, Section 9.4.2 (a)
Non-hazardous Leaks Requiring Scheduled Repair – Time to Eliminate Leak	O&M Procedures, Section 9.4
Non-Hazardous Leaks Not Requiring Scheduled Repair– Monitoring Requirements	O&M Procedures, Section 9.4
Records and Data Management Defined	O&M Procedures, Section 9.6

Liberty Utilities' Leak Management Program, as outlined in the company's Operating and Maintenance Procedures, meets or exceeds the minimum requirements of 49 CFR Part 192 and various rules promulgated by individual states in which distribution facilities are operated.

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Subject: Key Elements of **Liberty Utilities'** Programs & Policies

Reference: 49 CFR, Part 192, Subpart P (2010)

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I.3 Damage Prevention Program

Key Elements of Liberty Utilities' Damage Prevention Program	
Program Element	Liberty Utilities Plan Reference
Participate in a qualified One-Call System (Qualified as per 49 CFR, Part 192.614)	O&M Procedures, Section 3.3.1
Provide a means of receiving and recording notification of planned excavation activities	O&M Procedures, Section 3.3.3
Provide for actual notification of persons who give notice of their intent to excavate of the type of temporary markings to be provided and how to identify the markings	O&M Procedures, Section 3.4.1
Provide for temporary marking of buried pipelines in the area of excavation activity before, as far as practical, the activity begins.	O&M Procedures, Section 3.4.1
Provide for inspection of pipelines that the operator has reason to believe could be damaged by excavation activities	O&M Procedures, Section 3.3.1
Conduct inspections as frequently as necessary during and after the activities to verify the integrity of the pipeline	O&M Procedures, Section 25.2.1
Locate facilities in a timely manner after receipt of notification ticket.	O&M Procedures, Section 3.4.1
In the case of blasting, include leakage surveys as part of the inspection	O&M Procedures, Section 3.7
Requirements for Locator Training and Qualification	Operator Qualification Minimum Tasks per Job Description Matrix
Mapping Accuracy	O&M Procedures, Section 3.3.4
Data & Records for Excavation Damage	O&M Procedures, Section 3.3.1
Special Requirements for Trenchless Excavation	Construction Procedures, Chapter 8

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Subject: Key Elements of **Liberty Utilities'** Programs & Policies

Reference: 49 CFR, Part 192, Subpart P (2010)

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Key Elements of Liberty Utilities' Damage Prevention Program (cont.)	
Program Element	Liberty Utilities Plan Reference
Public Education & Awareness	O&M Procedures, Section 3.5
Damage Recovery	ORACLE Accounts Receivable
Enforcement	O&M Procedures, Section 3.6.1

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Subject: Key Elements of **Liberty Utilities'** Programs & Policies

Reference: 49 CFR, Part 192, Subpart P (2010)

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I.4 Operator Qualification (OQ) Program

Key Elements of Liberty Utilities' OQ Program	
Program Element	Liberty Utilities Plan Reference
The program is contained in a written qualification program.	OQ Plan
Identifies covered tasks	OQ Plan, pages 4 – 11
Ensures through evaluation that individuals performing covered tasks are qualified	OQ Plan, page 12
Allows individuals who are not qualified to perform a covered task if directed and observed by an individual that is qualified	OQ Plan, page 14
Evaluates an individual if the operator has reason to believe that the individual's performance of a covered task contributed to an incident	OQ Plan, page 15
Communicates changes that affect covered tasks to individuals performing those covered tasks	OQ Plan, page 19
Identifies those covered tasks and intervals at which evaluation of the individual's qualification is needed	OQ Plan, pages 4 – 11
Provide training, as appropriate, to ensure that individuals performing covered tasks have the necessary knowledge and skills to perform the tasks in a manner that ensures the safe operation of facilities	OQ Plan, page 12
Notification of significant modification to the program	OQ Plan, page 19
Record keeping that demonstrates compliance	OQ Plan, page 21

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Subject: Key Elements of **Liberty Utilities'** Programs & Policies

Reference: 49 CFR, Part 192, Subpart P (2010)

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I.5 Public Awareness Program

Key Elements of Liberty Utilities' Public Awareness Program	
Program Element	Liberty Utilities Public Awareness Plan Reference
<p>The Public Awareness program is contained in a written program document and follows the general program recommendations of API RP 1162:</p> <ul style="list-style-type: none"> • Identifies pipeline assets covered by the program. • Names an administrator(s) • Means of contact or address list for each audience type • Determines message type and content for each audience • Establishes Baseline Delivery Frequency for each message • Establishes delivery methods for each message • Documents supplemental program elements • Process for program implementation and tracking progress • Establishes a program evaluation process • Establishes process for continuous improvement 	<p>Pages 1, 6-9, 10, 11-13, & 17</p>
<p>Specifically includes provisions to educate the public, appropriate government organizations, and persons engaged in excavation related activities on use of the one-call notification system, possible hazards, physical indications of a gas release, steps that should be taken to protect public safety in the event of a release (including emergency response plans for emergency officials), procedures for reporting such an event, how to follow safe excavation practices and report unauthorized digging or suspicious activity, how community decisions about land may impact community safety, encroachments, and how to contact the operator with questions or comments.</p>	<p>Pages 6 – 9</p>
<p>Key Elements of Liberty Utilities' Public Awareness Program (cont.)</p>	

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Reference: 49 CFR, Part 192, Subpart P (2010)

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Program Element	Liberty Utilities Public Awareness Plan Reference
Includes activities to advise affected municipalities, school districts, businesses, and residents of pipeline facility locations.	Pages 6 - 9
The program and media are as comprehensive as necessary to reach all areas	Page 6
Conducted in English and other languages commonly understood by a significant number of non-English speaking population	Page 6

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Subject: Key Elements of **Liberty Utilities'** Programs & Policies

Reference: 49 CFR, Part 192, Subpart P (2010)

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I.6 Excess Flow Valves

Key Elements of Liberty Utilities' Excess Flow Valve Program	
Program Element	Liberty Utilities Plan Reference
Performance Standards	O&M Procedures, Section 8.3.1
Installation of EFVs	Construction Manual, pages 35 & 36
Maintenance of Existing EFVs	Construction Manual, pages 37 & 38

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Subject: Key Elements of **Liberty Utilities'** Programs & Policies

Reference: 49 CFR, Part 192, Subpart P (2010)

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I.7 Alcohol Misuse and Drug Abuse Policy

Key Elements of Liberty Utilities' Alcohol Misuse and Drug Abuse Program	
Program Element	Liberty Utilities Alcohol Misuse and Drug Abuse Plan Reference
Pre-employment Drug Testing	Section III, pages 1 & 2
Random Drug and Alcohol	Section III, pages 3 & 4
Post-Accident Drug and Alcohol Testing	Section III, pages 2 & 3
Reasonable Cause Drug and Alcohol Testing	Section III, page 4
Return-to-Work	Section III, page 4
Employee Drug and Alcohol Misuse Program (Training)	Section I, pages 1 & 2
Supervisor Drug and Alcohol Training	Section I, page 2
Employee Assistance Program	Section I, page 2
Monitoring of Contractor Compliance	Appendix D

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Section: Appendix I

Subject: Key Elements of **Liberty Utilities'** Programs & Policies

Reference: 49 CFR, Part 192, Subpart P (2010)

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I.8 Continuing Surveillance Program

Key Elements of Liberty Utilities' Continuing Surveillance Program	
Program Element	Liberty Utilities Plan Reference
Provides for Visual Inspections	O&M Procedures, Section 25.2.5
Provides for Review and Analysis of Records	O&M Procedures, Section 25.2.7

I.9 Pipeline Patrolling Program

Key Elements of Liberty Utilities' Pipeline Patrolling Program	
Program Element	Liberty Utilities Plan Reference
Patrolling mains in places where physical movement or external loading could cause failure or leakage (inside of business districts)	O&M Procedures, Section 10.1.2
Patrolling mains in places where physical movement or external loading could cause failure or leakage (outside of business districts)	O&M Procedures, Section 10.1.2

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Reference: 49 CFR, Part 192, Subpart P (2010)

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I.10 Welding Program

Key Elements of Liberty Utilities' Welding Program	
Program Element	Liberty Utilities Welding Program Reference
WPWQI Program	Welding Procedures, Ch 1
Qualifying and Approving Welding Procedures	Welding Procedures, Ch 2
Qualifying Welders by Representation	Welding Procedures, Ch 3
Welder Qualification	Welding Procedures, Ch 4
Qualifying Visual Welding Inspectors by Representation	Welding Procedures, Ch 5
Visual Welding Inspector Qualification	Welding Procedures, Ch 6
Welding Procedure Specification Outline	Welding Procedures, Ch 7
Welding Procedure Specification Selection Guide	Welding Procedures, Ch 8
Inspection and Testing of Production Welds	Welding Procedures, Ch 9
Repair and Removal of Defects	Welding Procedures, Ch 10

I.11 Plastic Pipe Joining Program

Key Elements of Liberty Utilities' Plastic Pipe Joining Program	
Program Element	Liberty Utilities Plan Reference
Butt Fusion Procedures	O&M Procedures, Section 22.3.2
Saddle Fusion Procedures	O&M Procedures, Section 22.3.2
Electrofusion Procedures	O&M Procedures, Section 22.3.3

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I.12 Corrosion Control Program

Key Elements of Liberty Utilities' Corrosion Control Program	
Program Element	Liberty Utilities Plan Reference
Purpose/Applicable Code & Regulation	O&M Procedures 13.1
Monitoring	O&M Procedures 13.2
Coated Steel Pipe	O&M Procedures 13.3
Bare Steel Pipe	O&M Procedures 13.4
Isolated Coated Steel Service, Metallic Fittings & Short Mains	O&M Procedures 13.5
Rectifier Impressed Current	O&M Procedures 13.6
Interference Bonds	O&M Procedures 13.7
Internal Corrosion Control	O&M Procedures 13.8
Atmospheric Corrosion Control	O&M Procedures 13.9
Examination of Buried Pipe When Exposed	O&M Procedures 13.10
Remedial Measures	O&M Procedures 13.11
Records	O&M Procedures 13.12
100 mV Shift Reading Procedures	O&M Procedures 13.13
Shorted Casings – TX Specific	O&M Procedures 13.14

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I.13 Technical Training Program

Liberty Utilities has formalized training for its construction, service, and compliance employees. Listed below are the applicable courses and their descriptions.

Key Elements of Liberty Utilities' Technical Training Program		
Course Title	Course Description	Course Content
Meter Reading 101	This course teaches participants how to read gas meters and become familiar with basic terminology used in the natural gas industry.	Liberty Utilities Customer Service Process, natural gas industry overview, Liberty Utilities billing, MeterPro, Itron®, PC basics, reading gas meters, checking gas meters for irregularities, abnormal operating conditions, atmospheric corrosion, safety awareness, tampering and theft.
Measurement 101	This course teaches participants about the principles associated with gas measurement.	Gas measurement procedures, fundamental gas properties, laws and basic electrical principles.
Measurement 102	This course builds upon Measurement 101 by introducing more advanced gas measurement topics and troubleshooting techniques.	Gas controllers, heaters, maintaining proper odorant levels and associated equipment, and how to maintain and troubleshoot electronic / electrical circuits.
Key Elements of Liberty Utilities' Technical Training Program (Cont.)		

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Course Title	Course Description	Course Content
Corrosion 101	This course teaches participants about cathodic protection. Classroom learning is augmented with video, demonstrations, and participants spend 50% of training completing hands-on field-based exercises.	Conduct pipe-to-soil measurement, monitoring rectifiers, install and repair corrosion control devices, install and replace CP test leads to Pipe, install anodes and insulating devices, inspect for external corrosion and repair pipe coating, install, inspect and test electrical isolation devices, perform internal corrosion control and learn basic electricity principles.
Corrosion 102	This course teaches participants about troubleshooting cathodic protection (CP) systems.	Troubleshoot rectifiers, interference boards, and internal corrosion.
Construction-Service 101	This course is designed to provide new or new-to-role employees with in-depth understanding of Construction & Service basics.	Monitoring Atmospheric Corrosion, Internal Corrosion Control, Purging Pipelines (Distribution), Installing Domestic Gas Meters & Regulator Sets, Preventing Accidental Ignition, Locating and Marking Lines, Abandon / Deactivate Gas Pipeline Facilities, Emergency Response, Leak Survey, and Patrols & Grading.
Key Elements of Liberty Utilities' Technical Training Program (cont.)		
Course Title	Course Description	Course Content

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Construction 102	Phase 2 of year 1 new to job training as a Construction Technician.	The best practices associated with activation of service from the service riser to the customer's premise, fusion pipe joining, identifying operating conditions with established MAOP & hot by-pass, installation and excavation practices, installing/replacing services lines and valves, testing service lines and mains and transmission lines.
Service 102	Phase 2 of year 1 new to job training as a Service Technician.	Monitoring for atmospheric corrosion, identifying operating conditions within established MAOP & hot by-pass procedures, MDT/Mobile Applications, MapFrame and best practices associated with activation of service from the service riser to the customer's premise.
NFPA 54 Codes	Participants learn how to use the NFPA 54 Manual as a reference for the installation of gas piping, fuel gas appliances, and related accessories.	
Key Elements of Liberty Utilities Technical Training Program (cont.)		
Course Title	Course Description	Course Content

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First Responder	This course teaches participants how to represent Liberty Utilities as a First Responder to an emergency or abnormal operating condition.	
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Subject: Log of Review and Changes to **Liberty Utilities'** IMP

Reference: 49 CFR, Part 192, Subpart P (2010)

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Appendix J

Log of Review and Changes made to Liberty Utilities' IMP

- J.1 General
- J.2 Log of Reviews to **Liberty Utilities'** IMP
- J.3 Summary of Changes Made to **Liberty Utilities'** IMP

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J.1 General

This appendix contains logs of the internal reviews completed on **Liberty Utilities'** IMP and any associated changes made to the IMP.

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J.2 Log of Reviews to Liberty Utilities' IMP

Type of Review	Section(s) Review	Date of Review	Reviewed By	Results of Review

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J.3 Summary of Changes Made to Liberty Utilities' IMP