Distribution Integrity Management Program (DIMP)

Sunil Shori
Interim Program and Project Supervisor

Gas Safety and Reliability Branch
California Public Utilities Commission

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Distribution Integrity Management Programs (DIMP) Rule

- Proposed in June, 2008
- Final rule December 2, 2009
- Written DIMP plans required to be developed by August 2, 2011

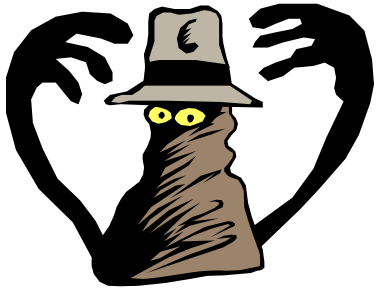
What is a Distribution Integrity Management Program?

- A program to determine whether the operator should be taking additional action(s), above and beyond Part 192 requirements, to address any **threats** to all or any portion of its distribution piping

- Similar to Integrity Management rule for transmission lines, but not prescriptive due to significant diversity among distribution pipeline systems.

What are some possible **threats**?

- Threats are things that can cause an unintended release of gas from a distribution system:
  - Corrosion,
  - Excavation damage,
  - Natural forces,
  - Other outside force damage,
  - Material, weld or joint failure (including compression coupling),
  - Equipment failure,
  - Incorrect operation, and
  - Other

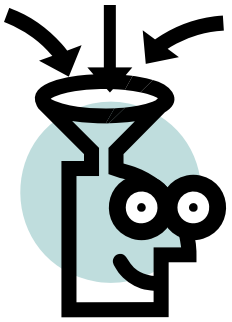


Additional/Accelerated Actions

- Are actions above and beyond Part 192 requirements or current utility practices intended to reduce one or more threats to distribution integrity

Seven Elements of a DIMP Plan

1. Develop a written integrity management plan
2. Know your infrastructure
3. Identify threats (existing and potential)
4. Assess and prioritize risk
5. Identify and implement measures to reduce risks ("Additional/Accelerated Actions")
6. Measure and monitor performance and use the results in evaluating the entire program at least every 5 years, and
7. Report results*



*This requirement does not apply to master meter & small LPG operators (fewer than 100 customers from a single source)

Required Elements Applicable to Large vs. Small Operators

Element	"Commercial" Operators	Master Meter / LPG
Written Program	Required	Simple (checklist)
Know system	Relevant factors	Location/material
Identify threats	Thorough analysis	Checklist approach
Analyze risk	Required	Required
Mitigate risk	Required	Required
Performance Measures	7 plus threat-specific	Leaks by cause
Review/revised	Required	Required
Report Performance Measures	4 measures	Not required

Simpler Requirements for Master Meter and Small LPG Operators

- Already treated differently in Part 192, particularly for documentation/reporting
- Systems cover compact geographic areas and are simpler compared to larger utilities
- Excavation damage is largely under the operator's direct control

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- *Master-meter and small propane operators are not required to report performance results*
- *"Checklist" IM program can be developed using PHMSA template*

DIMP Records for Master-Meter & Small LPG Systems

- The operator must maintain, for a period of at least 10 years, the following records:
- (1) A written IM plan in accordance with this section, including superseded IM plans;
- (2) Documents supporting threat identification; and
- (3) Documents showing the location and material of all piping and appurtenances that are installed after the effective date of the operator's IM program and, to the extent known, the location and material of all pipe and appurtenances that were existing on the effective date of the operator's program.

Threat Assessment Example – External Corrosion

- Do you have metal pipe?
- Is it coated and/or cathodically protected?
- Are CP levels adequate?
- Have you had corrosion-caused leaks?
- Have exposed pipe inspections found metal loss due to corrosion?
- Are there stray currents in the area?

Additional/Accelerated Action Examples – External Corrosion

- Increase frequency of leak surveys.
- Replace, insert or rehabilitate the pipe.
- Provide hot spot protection (e.g., install anodes at anodic locations).
- Correct cathodic protection deficiencies (i.e., coating).
- Decrease time to correct findings from monitoring or other deficiencies.

Threat Assessment Example – Materials, Welds, Joints, or Construction

- Do you have materials that tend to leak due to poor toughness?
  - PVC
  - Dupont Aldyl-A (installations prior to 1983)
  - Cast Iron
- Do you have gas pipelines underneath mobilehome units or other occupied dwellings?
- Are CP levels adequate?

Additional/Accelerated Action Examples – Materials, Welds, Joints, or Construction

- Increase frequency of leak surveys to annual or even more frequently.
- Replace, insert or rehabilitate the pipe before repairs become necessary.
- In the case of any line under a coach that does leak, HCD regulations require the new gas line to be re-routed around the unit.

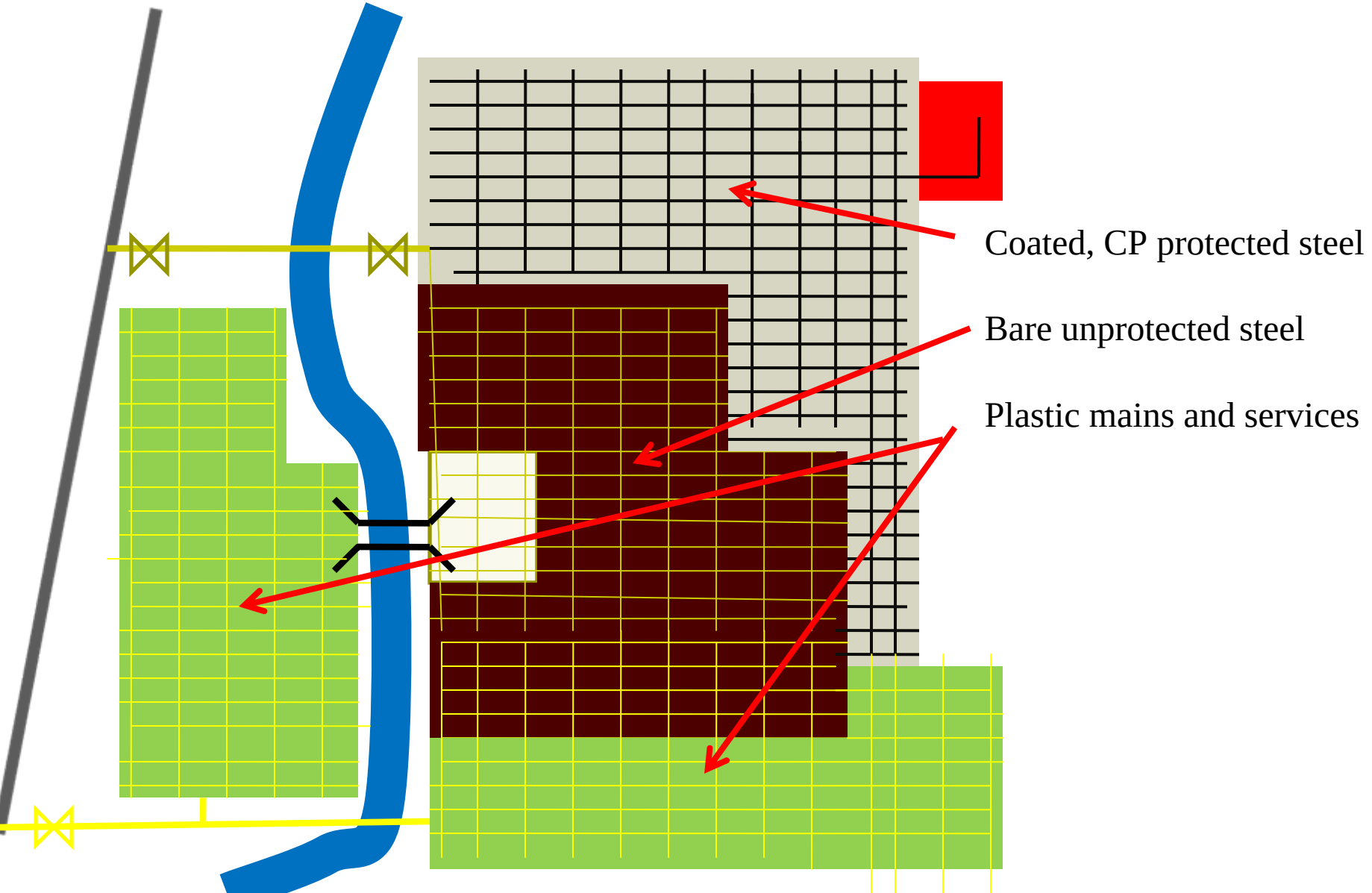
For large pipeline systems built in stages

- The DIMP rule allows “An operator may subdivide its pipeline into regions with similar characteristics (e.g., contiguous areas within a distribution pipeline consisting of mains, services and other appurtenances; areas with common materials or environmental factors), and for which similar actions likely would be effective in reducing risk.” Section 192.1007(c).

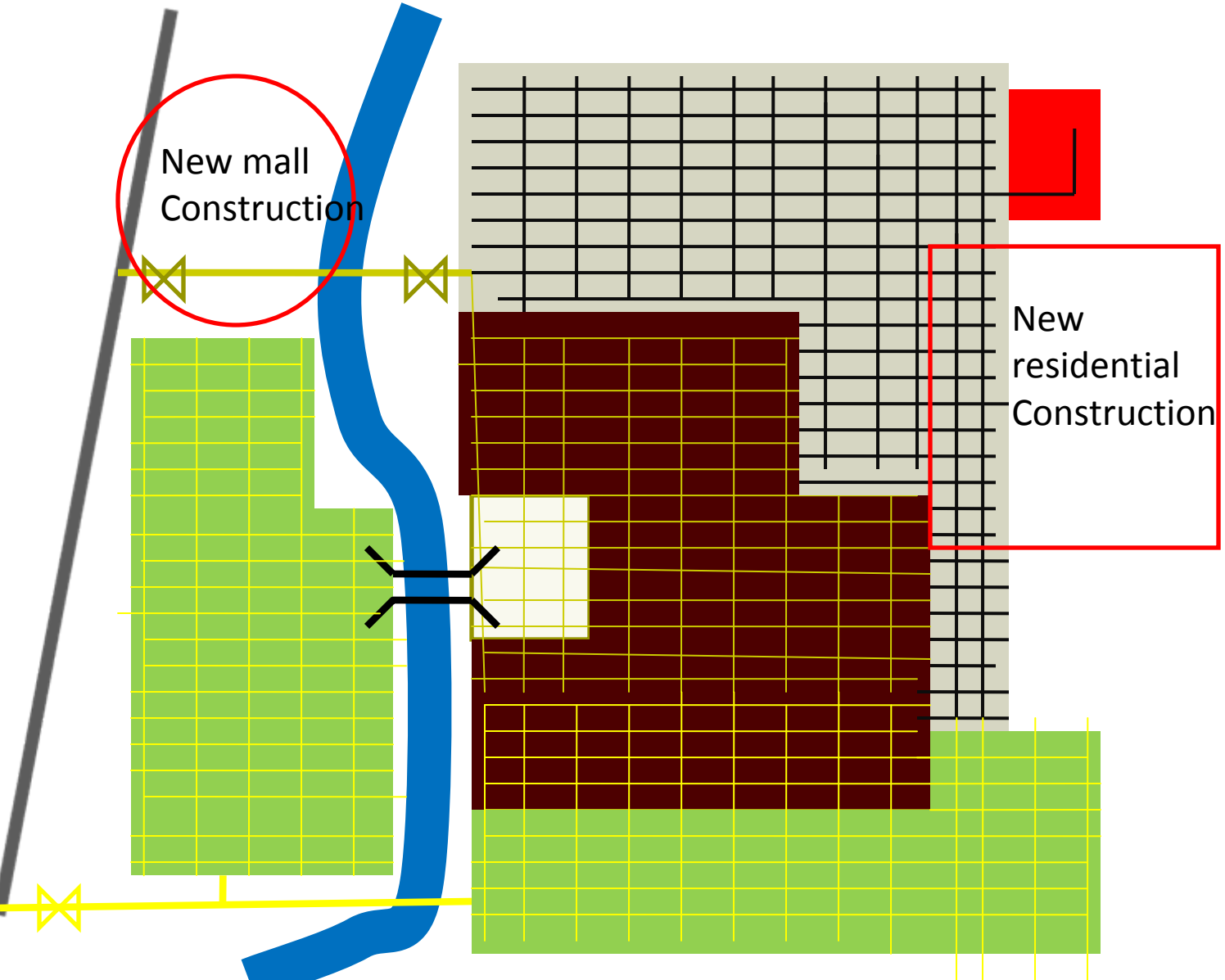
- This could be helpful in limiting the application of Additional/Accelerated Actions to the problem areas.

- For most small operators, especially those in mobilehome parks, subdividing is most likely not necessary.

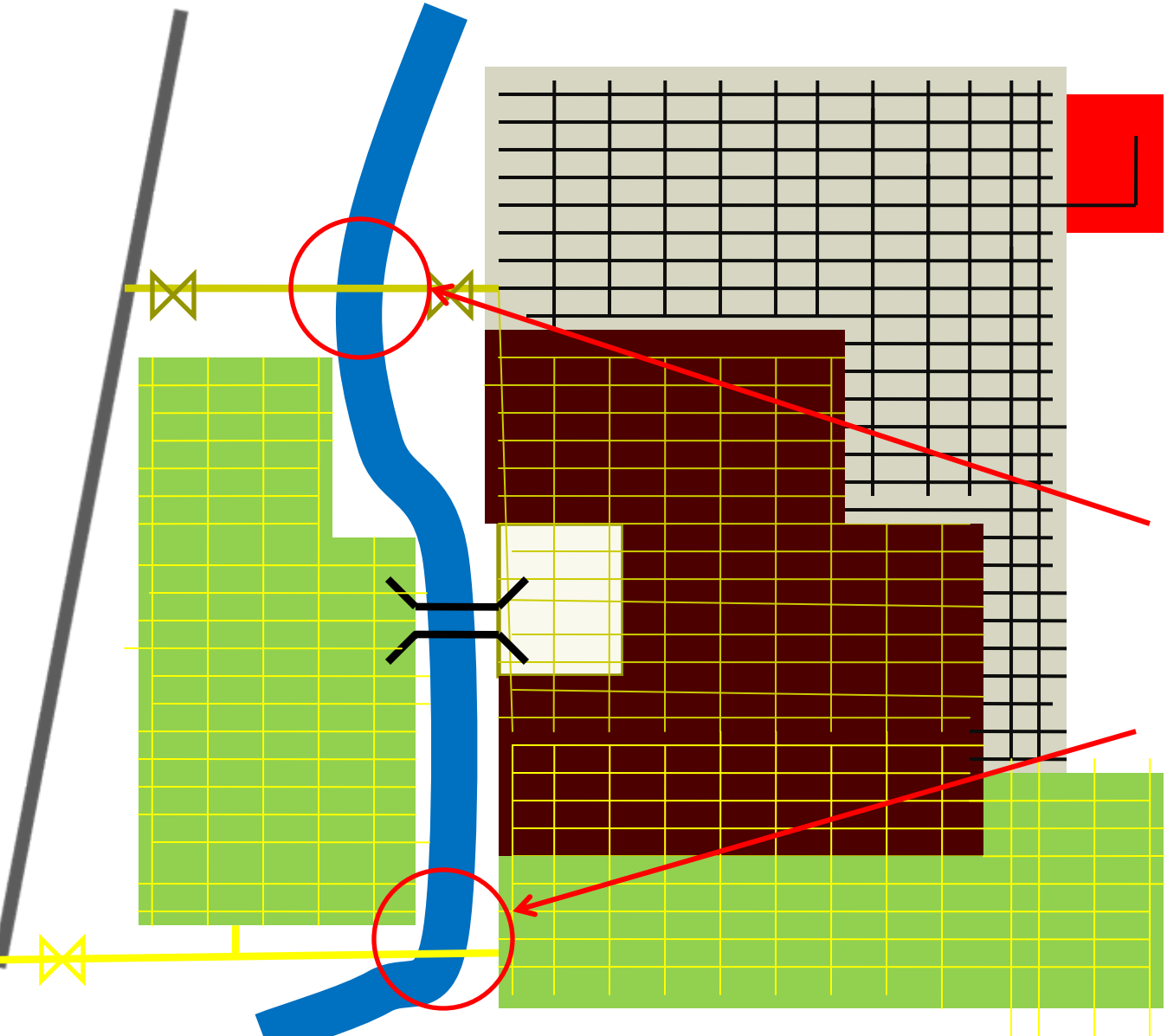
What subdividing can look like for the External Corrosion Threat Groups…



What subdividing can look like for the Excavation Threat Groups



What subdividing can look like for the Natural Forces Threat groups



Creek crossings

1950 feeder main installed by trenching and is vulnerable to erosion

New crossing installed By boring and is too deep to be vulnerable to erosion

Risk = Likelihood x Consequence

- Generally, the likelihood of an event is the main driver for risk on master-meter and small propane systems; however,
- Would a failure have greater consequences than average because of:
  - Larger diameter/higher pressure than most
  - Pipelines in an area (i.e., a business district) under wall-to-wall pavement
  - The significance of the facility, and/or
  - The response time to get crews to it should it fail

Examples of Performance Measures that could be used by the example utility

Corrosion on bare steel in business district	Replace 5% per year	Corrosion leaks repaired/mile and /service
Excavation near the feeder main	Inspect at least once per day	# of excavation damages
Excavation on the Northeast side	Increased public awareness	# of excavation damages
Corrosion on bare steel outside the business district	Increase leak surveys to once per year	Corrosion leaks repaired/mile and /service
Natural forces on two creek crossings	Inspect after heavy rains	# of natural force damage leaks repaired

Performance Measures Required of Master-meter and Small Propane Operators

- § 192.1015 (b)(5), *Measure performance, monitor results, and evaluate effectiveness, states:*

  "The operator must monitor, as a performance measure, the number of leaks eliminated or repaired on its pipeline and their causes."

What can Master-Meter and Small Propane Operators use to obtain or develop DIMP Plans?

- Utilize a vendor (i.e., contractors you use for other gas pipeline work) developed DIMP plan customized for your specific system;
- Use the SHRIMP tool developed by the American Public Gas Association (APGA) Security and Integrity Foundation (SIF);
- Develop your own using the PHMSA template as guidance.

PHMSA DIMP Guidance Template

- PHMSA has not developed a generic DIMP plan; however…
- PHMSA has developed a template that can be used by Master Meter and small LPG operators subject to the requirements of §192.1015. That template can be found on the DIMP Resources page of the DIMP website
- Again, any DIMP tool will need to be customized for each specific operator.

DIMP: PHMSA Guidance for MM and Small Liquefied Petroleum Gas Pipeline Operators:

- *"This document provides guidance to help master meter operators and small LPG operators (i.e., those serving fewer than 100 customers from a single source) implement the requirements of subpart P of Part 192. Operators of larger distribution pipelines should refer to the Gas Piping Technology Committee (GPTC) guidelines."*
- *"…Master meter and small LPG distribution operators should complete the actions described in the following paragraphs. Retain this document and any records generated through actions suggested in this document. This collection of documents will become your integrity management plan."*

Resources for Developing a DIMP Plan

- Link to SHRIMP: http://www.apgasif.org/i4a/pages/index.cfm?pageid=3290
- Link to PHMSA's DIMP website: http://primis.phmsa.dot.gov/dimp/
- Link to PHMSA DIMP Guidance Template: http://primis.phmsa.dot.gov/dimp/docs/GuidanceForMasterMeterAndSmallLiquefiedPetroleumGasPipelineOperators_11_09.pdf
- Link to DIMP Inspection Form: http://primis.phmsa.dot.gov/dimp/docs/DIMP_InspectionForm192.1015Operators_04.11.2011.pdf

Thanks for your attention

Questions?