AGA DIMP Workshop

DIMP IMPLEMENTATION -
How Successful have we been?

National Association of Pipeline Safety Representatives
&
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DIMP Regulation
Part 192, SubPart P

- The purpose of IM programs is to enhance safety by identifying and reducing pipeline integrity risks
- The preamble to the Final DIMP Rule details that the regulation requires operators to identify and invest in risk control measures beyond core regulatory requirements

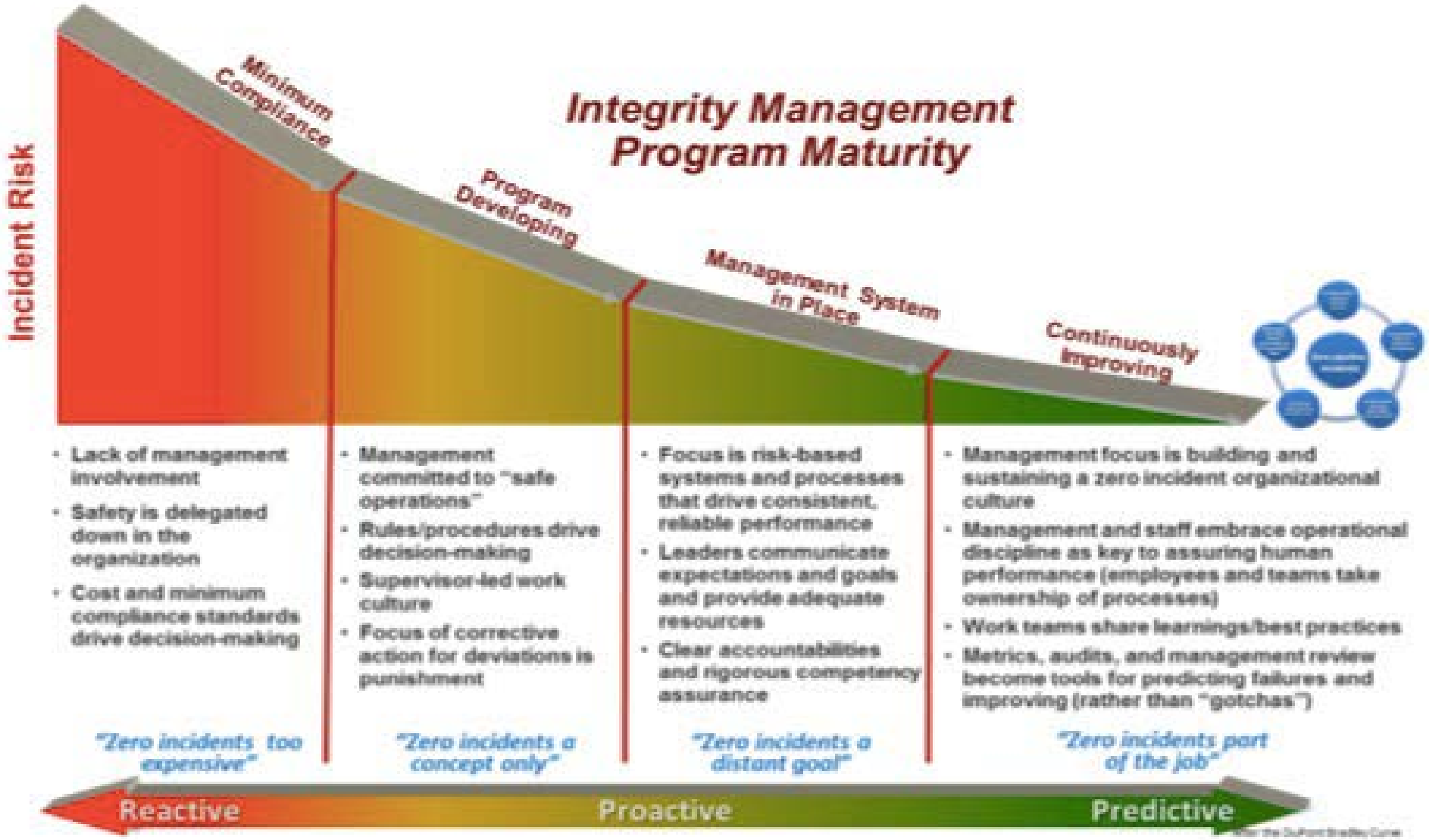
High Level Observations

- The DIMP Rule was designed to be flexible and allow distribution operators of all sizes to implement DIMP in the most effective and efficient manner for their unique operating environment.
- Regulators are looking for implementation of DIMP to:
  - Improve Integrity and safe operation of systems
  - Support replacement of vintage pipe materials
  - Support excavation damage prevention
  - Improve leak management programs
  - Improve public's confidence in safety of systems

Moving from "Compliance" to "Choice"

- Inspection findings indicate that Operators must move from a "checkbox" mentality to one of understanding the health of the pipeline systems by analyzing and understanding quality data and information and promptly acting to reduce risks
- The DIMP Rule's performance based language allows regulators to take compliance actions to ensure that operators are taking seriously the requirements to implement and continuously improve their integrity management systems.

Assessing Maturity



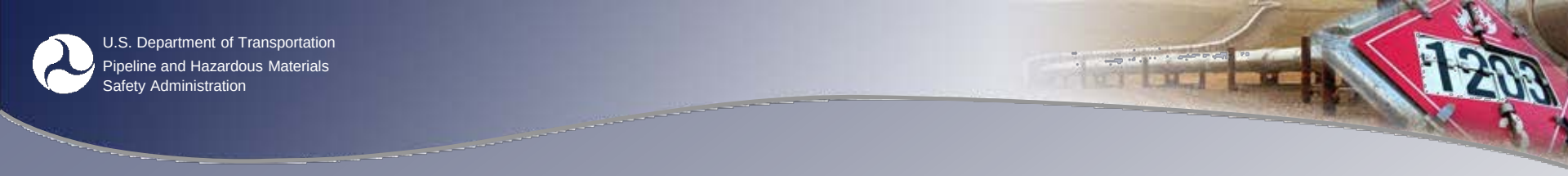
2005 Report of Phase 1 Investigation

- Goals & Performance Measurement of Recommended Actions
  - Excavation Damage is leading cause of significant incidents
  - Replacement of vintage pipe materials
  - Leak Management Programs
  - Excess Flow Valve installation
  - Research and Development enhancements
  - Guidance Development for DIMPs

Addressing Excavation Damage

- 811 3-digit dialing for One-Call programs and Efforts to promote awareness and use of “811” were implemented
- Damage Prevention Regulations were strengthened, and trends are encouraging.
- GD AR Data gathering implemented in 2010

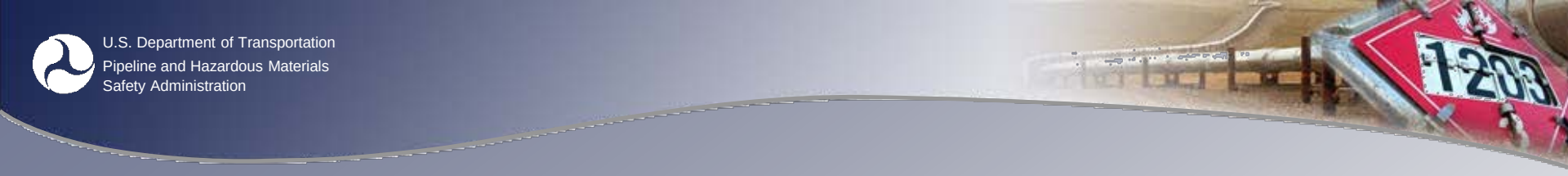
	2010	2011	2012	2013
Excavation Damages per 1000 Excavation tickets	3.8	3.7	3.5	3.1



Replacement of vintage materials

- Vintage pipe materials are being replaced with plastics, but more progress is needed

		2010		2011		2012		2013	
System Type	**Pipe Material**	Total Miles	% of Miles	Total Miles	% of Miles	Total Miles	% of Miles	Total Miles	% of Miles
MAIN	STEEL	555,941.1	26.5%	553,598.50	26.10%	551,186.10	25.80%	546,848.00	25.50%
	PLASTIC	637,170.1	30.3%	649,558.20	30.60%	661,724.30	30.90%	674,153.20	31.40%
	OTHER MATERIALS	811.6	0.0%	931.5	0.00%	1,017.90	0.00%	1,020.20	0.00%
	IRON	35,376.5	1.7%	34,420.20	1.60%	33,136.50	1.50%	31,559.80	1.50%
	COPPER	31.5	0.0%	29.9	0.00%	25.2	0.00%	23.5	0.00%
SERVICES	STEEL	249,311.5	11.9%	248,242.50	11.70%	243,880.90	11.40%	237,569.10	11.10%
	PLASTIC	586,400.5	27.9%	598,429.40	28.20%	614,713.10	28.70%	622,019.40	29.00%
	OTHER MATERIALS	22,619.3	1.1%	21,471.70	1.00%	20,443.40	1.00%	20,140.60	0.90%
	IRON	227.2	0.0%	214.5	0.00%	189.6	0.00%	167.8	0.00%
	COPPER	13,803.4	0.7%	13,521.70	0.60%	12,981.00	0.60%	12,465.60	0.60%
Grand Total		**2,101,692.7**	**100.0%**	2,120,418.10	100.00%	2,139,298.10	100.00%	2,145,967.20	100.00%



Leak Management Programs

- Leak Management Programs are being inspected for compliance during DIMP inspections
- Trends are not useful at this time for gleaning meaningful data as more leaks may being identified and graded for action based on accelerated leakage surveys being implemented due to DIMP
- GD AR Data gathering implemented in 2010

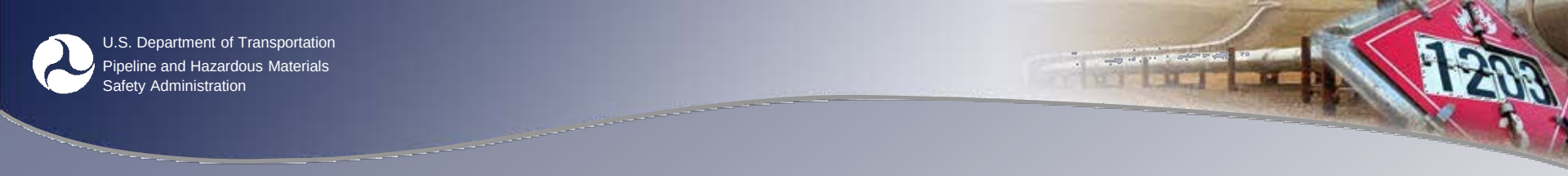
	2005	2006	2007	2008	2009	2010	2011	2012	2013
Total Leaks eliminated/repaired	516,312	502,502	485,731	487,395	553,101	485,906	481,504	491,428	479,988
Hazardous Leaks eliminated/repaired						186,419	191,999	187,361	189,782

Calendar Year	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Total Leaks Scheduled for Repair	112,141	111,692	110,579	103,085	93,466	91,968	92,207	123,965	121,130	115,689	114,846	105,589

Excess Flow Valve (EFV) installation

- EFV installations are taking place at a rapid pace in single residence service lines (RSL)
- Information from operators indicate EFVs are being installed in multiple RSL and small business as well as single RSL (regulation requiring these installations is in OMB)
- GD AR Data gathering implemented in 2010

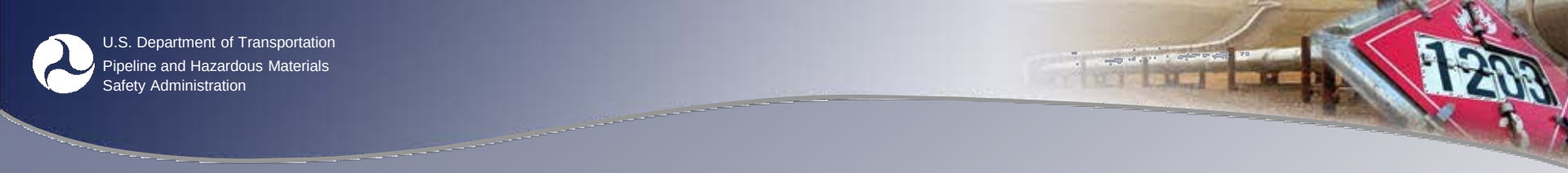
	2010	2011	2012	2013
Total Number of EFVs on Single-Family Residential Services Installed During Year	506,506	599,579	684,272	777,383
Estimated Number of EFVs in System at End of Year	6,360,456	7,039,079	7,654,511	8,497,691



Improve Confidence in Safety

- All Reported Incidents in Gas Distribution systems are trending downwards.
- NTSB report from Birmingham, AL incident forthcoming, and no NTSB report from the East Harlem, NY incident is anticipated

	ALL REPORTED					Total
Incident Cause Type	**2009**	**2010**	**2011**	**2012**	**2013**	
ALL OTHER CAUSES	25	20	20	8	17	**90**
CORROSION	2	5	4	3	1	**15**
EXCAVATION DAMAGE	43	24	31	18	36	**152**
INCORRECT OPERATION	5	9	8	7	4	**33**
MATERIAL/WELD/EQUIP FAILURE	12	8	13	11	13	**57**
NATURAL FORCE DAMAGE	11	9	11	6	5	**42**
OTHER OUTSIDE FORCE DAMAGE	59	49	34	37	32	**211**
Grand Total	**157**	**124**	**121**	**90**	**108**	**600**



Significant and Serious Incidents

- Significant and Serious Incidents are trending downwards, but are receiving more attention from the media and Stakeholders

	SIGNIFICANT					Total
Incident Cause Type	**2009**	**2010**	**2011**	**2012**	**2013**	
ALL OTHER CAUSES	16	10	14	6	15	**61**
CORROSION	1	3	2	3	0	**9**
EXCAVATION DAMAGE	19	13	17	12	22	**83**
INCORRECT OPERATION	5	9	5	5	2	**26**
MATERIAL/WELD/EQUIP FAILURE	8	6	7	5	6	**32**
NATURAL FORCE DAMAGE	10	4	2	6	2	**24**
OTHER OUTSIDE FORCE DAMAGE	21	11	11	15	15	**73**
Grand Total	**80**	**56**	**58**	**52**	**62**	**308**

	SERIOUS					Total
Incident Cause Type	**2009**	**2010**	**2011**	**2012**	**2013**	
ALL OTHER CAUSES	8	5	8	1	9	**31**
CORROSION	0	2	2	2	0	**6**
EXCAVATION DAMAGE	6	4	7	6	8	**31**
INCORRECT OPERATION	5	7	3	2	0	**17**
MATERIAL/WELD/EQUIP FAILURE	2	3	3	3	0	**11**
NATURAL FORCE DAMAGE	5	1	0	3	0	**9**
OTHER OUTSIDE FORCE DAMAGE	11	3	6	7	5	**32**
Grand Total	**37**	**25**	**29**	**24**	**22**	**137**

R&D-http://primis.phmsa.dot.gov/matrix/

- R&D projects include, but not limited to:
  - Remote Sensing of Natural Gas Leaks
  - Internal Inspection of non-Piggable Gas Pipelines
  - Guided Wave Ultrasonic Inspection of Cased Crossings
  - Advanced Development and Technology Transfer of a Methane/Natural Gas Microsensor
  - Above-ground Detection Tools Including Disbondment and Metal Loss for all Metals Including Cast-Iron Graphitization
  - Evaluation of Structural Liners for the Rehabilitation of Liquid and Natural Gas Piping Systems
  - Post-Mortem Testing of Cast Iron and Steel Pipe Lined with Cured-in-Place Pipe Liners
  - Smart Pipeline Network
  - Odorant Effectiveness

Guidance Development

- Gas Piping technology Committee published GPTC APPENDIX G-192-8 on DIMP in 2010 to support Operators implementing DIMP
- PHMSA published the Guidance for Master Meter and Small LPG Pipeline Operators in 2009 and revised it in 2012
- PHMSA supported APGA SIF in developing SHRIMP as a DIMP development tool for small to medium sized operators
- PHMSA published the DIMP Enforcement Guidance in 2012

Other Performance Measurement

- Mechanical Fitting Failure Reporting
  - Total Report Submitted Numbers *(08/02/2014)*:
    - MFFRs submitted in 2011 – 8355
    - MFFRs submitted in 2012 – 7562
    - MFFRs submitted in 2013 – 9378
- MFFR data submitted for 2013 shows similar trends to previous 2 years of data collection
- 4.9% of hazardous leaks repaired or replaced involved a mechanical fitting in 2013

Where are We today?

- The DIMP regulation has been implemented for 3 years with the majority of first round inspections expected to be completed by the end of 2014 – focus is to bring operators up to a minimum bar from which to mature.
- At this time, 3 years worth of performance data trending does not provide adequate justification for DIMP regulation modification or inspection program changes
- Inspection findings indicate that safety culture changes at the operator level are needed and are beginning to happen in some operators

Leadership at All Levels

- Top Management- accountable for continuous improvement, regular review of safety performance and communications about safety
- Management- ensure effective process, procedures and training to meet objectives; assess, evaluate and adjust as needed to meet objectives; foster continuous improvement
- Field Staff – identify improvements, reveal risks
  - Stop work for safety of employees and public
  - Bring rigor of employee safety to pipeline asset protection