

# Pipe Stenciling and Traceability - 2010 NAPCA Workshop, Houston - Texas

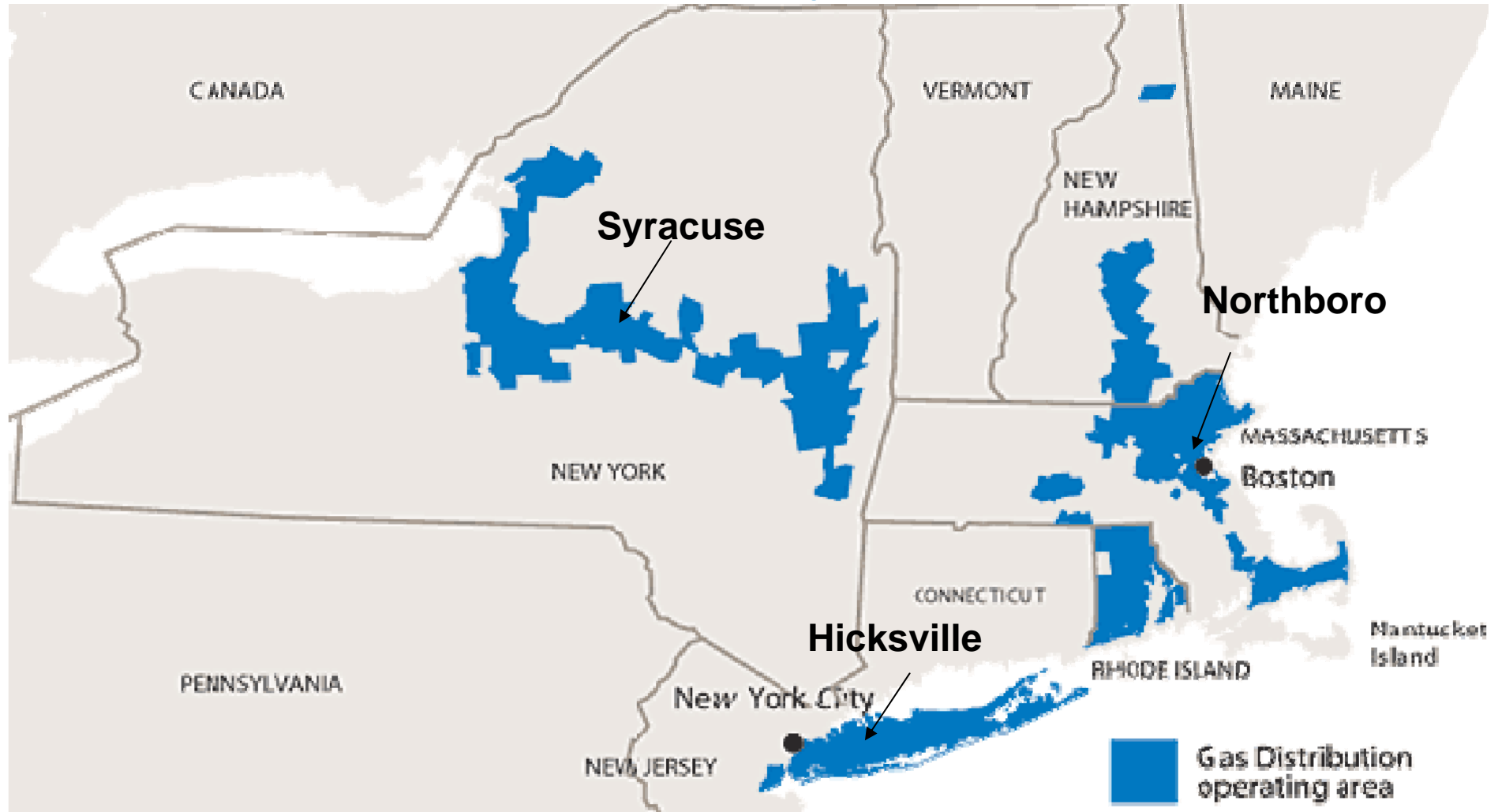
Perry Sheth, P.E  
Manager – Materials & Standards

# Topics

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- Overview of National Grid System
- Importance of tracking & traceability
- Governing codes & standards
- Gas distribution companies perspectives for multi grade stenciled pipe
- SOS survey summary
- Questions

# National Grid US Gas Distribution Gas Service Territory



# National Grid General System Information



Region	Number of Customers	Design Day (dt)	Design Temp. (F)
Long Island	545,898	920,559	0
New York City	1,257,053	1,373,656	0
New York - Upstate	589,607	1,023,836	-10
Massachusetts	829,080	1,436,247	-6
New Hampshire	84,272	156,647	-7
Rhode Island	244,345	355,595	-3
<b>total</b>	<b>3,550,255</b>	<b>5,266,540</b>	

# National Grid

## Miles of Gas Main – Type / Material Composition

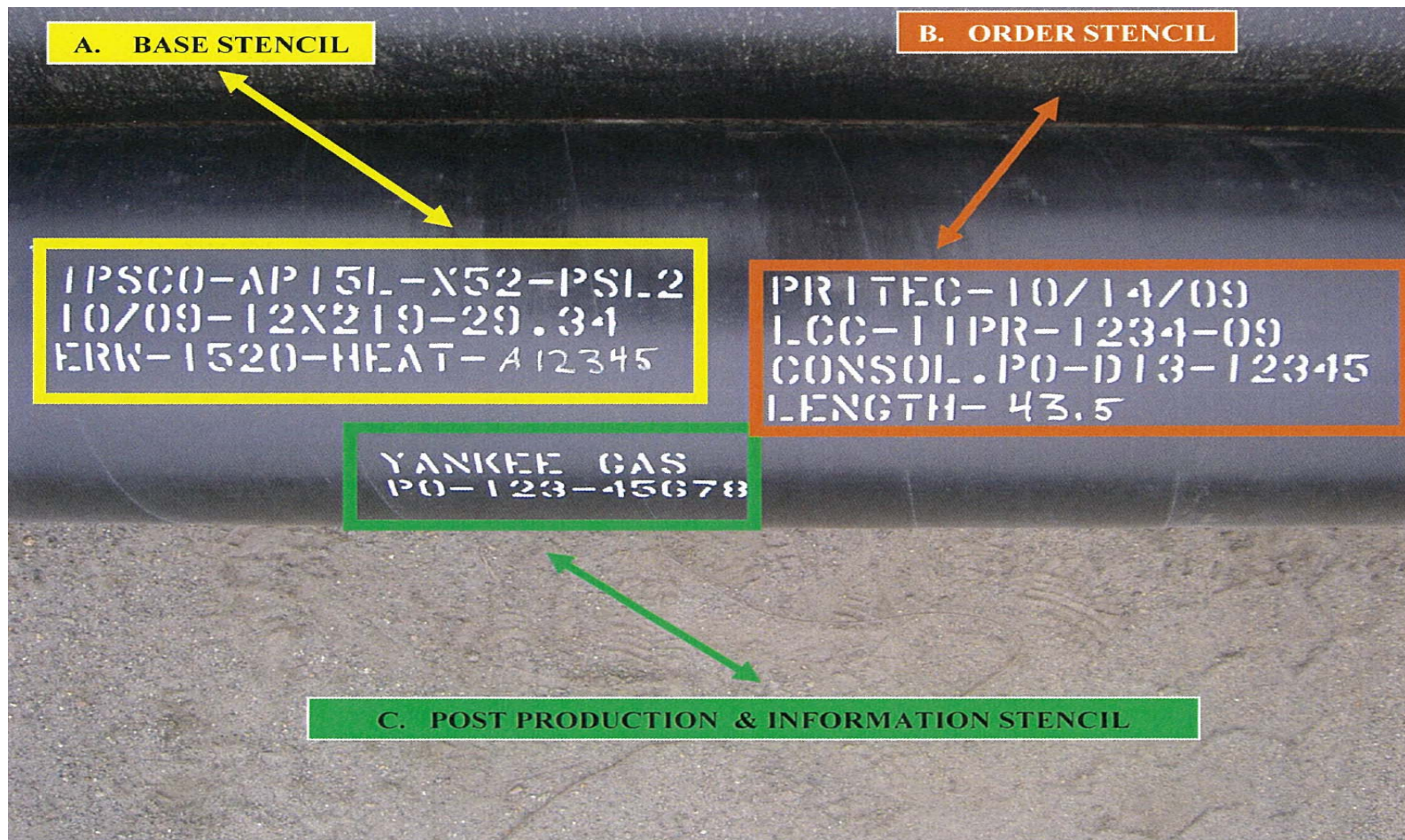
2008 Data	Long Island	New York City	New York Upstate	Mass.	New Hampshire	Rhode Island	total
Transmission	130	69	278	16	-	-	493
Cast Iron	385	1,750	713	2,348	135	896	6,227
Plastic	2,711	771	3,948	3,405	513	968	12,316
Steel - Protected	1137	1,130	3,542	1,982	646	578	9,015
Steel - Unprotected	3,496	389	286	1,768	35	666	6,640
total	7,859	4,109	8,767	9,519	1,329	3,108	34,691

## Governing Codes & Standards

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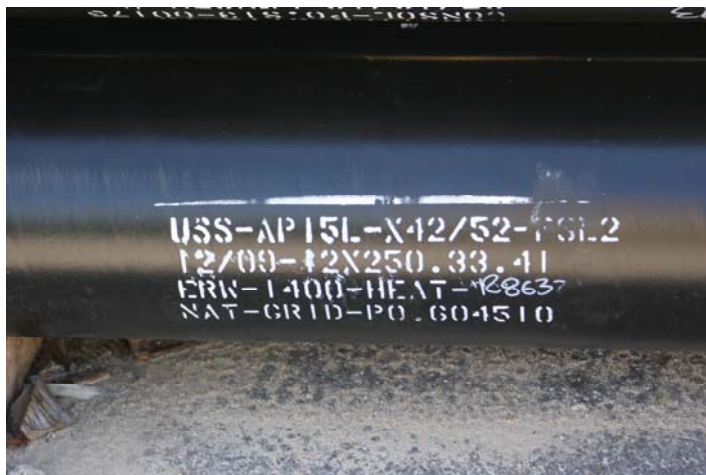
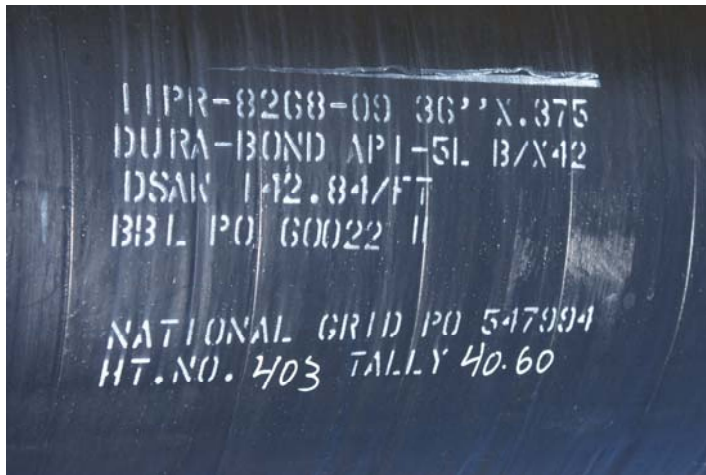
- PHMSA – Pipeline safety regulation Part 192
  - 192.55 & Appendix B – Steel pipe & qualification of pipe
  - 192.7 – Documents incorporated by reference
- ASME B31.8 – Gas transmission & distribution piping
- State code rules & regulation
- API 5L & API 1104
- TAMP & DIMP

# Stencil format procedure





# What is users concern for stenciling?





## SOS - Multiple Stenciling of Grades

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- Does your company specification allow multiple stenciling on steel pipe? E.g. Grade B/ X42/ X52
- If yes, do you use the highest or lowest grade of pipe for MAOP calculation?
- How do you select the welding procedure for multiple stenciled steel pipe?
- Does your company have concern for the multiple stenciling of steel pipe ?
- If yes, what are your company's concerns?
- How do you keep the mapping record of multiple stenciled steel pipe?

## Summary of Responses

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- Received 30 responses from US gas distribution & transmission companies
- 15 companies are not allowing multi grade stenciled pipes
- 5 companies are allowing multi grade stenciled pipes but not by choice
- 10 companies are allowing multi grade stenciled pipes with the hopes that API 5L & API 1104 standards would be aligned in the near future.

## Concerns

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- Field identifying which welding procedures to use for both new and in-service welding.
- Carbon Equivalents due to higher strength materials being used.
- Pipe markings.
- Mill Test reports depicting something other than what is in the pipe (i.e.; telling mill to give a report for X42 when pipe is really X52)
- The primary concern is the confusion at the jobsite. A bigger concern is the new SMYS values for each grade listed in API 5L. There is discussion going on to revise API 5L and API 1104 to address these issues.

## Concerns

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- Ours concerns are related to the welding quality if using a welding procedure that has been qualified with a material that only met the lower grades
- Concerned with what the grade of the pipe was and the welding procedure to be used.
- Compliance with API 1104
- Welding procedures; excessive hardness/brittleness/cracking; Cannot bend or fabricate (small diameters); wearing out drills/shell cutters; basically being in compliance with 5L, 1104, and 49 CFR Part 192 as it references both.
- Concerns about confusion in the ranks about the sorts of issues this questionnaire covers: proper welding procedures, proper mixing/matching of grades

## Summary

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- Gas utility companies utilize legacy qualified welding procedures
- These procedures were qualified using single grade stenciled pipe
- Cost prohibitive to requalify welding procedures using multiple grade stenciled pipes
- Cost prohibitive to requalify welders with new procedures
- Confusion in record keeping & tracking multi grade pipes
- Regulators are issuing NOPV's & citations
- No benefits to users

# Pipe Stenciling and Traceability

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*Questions...*

