

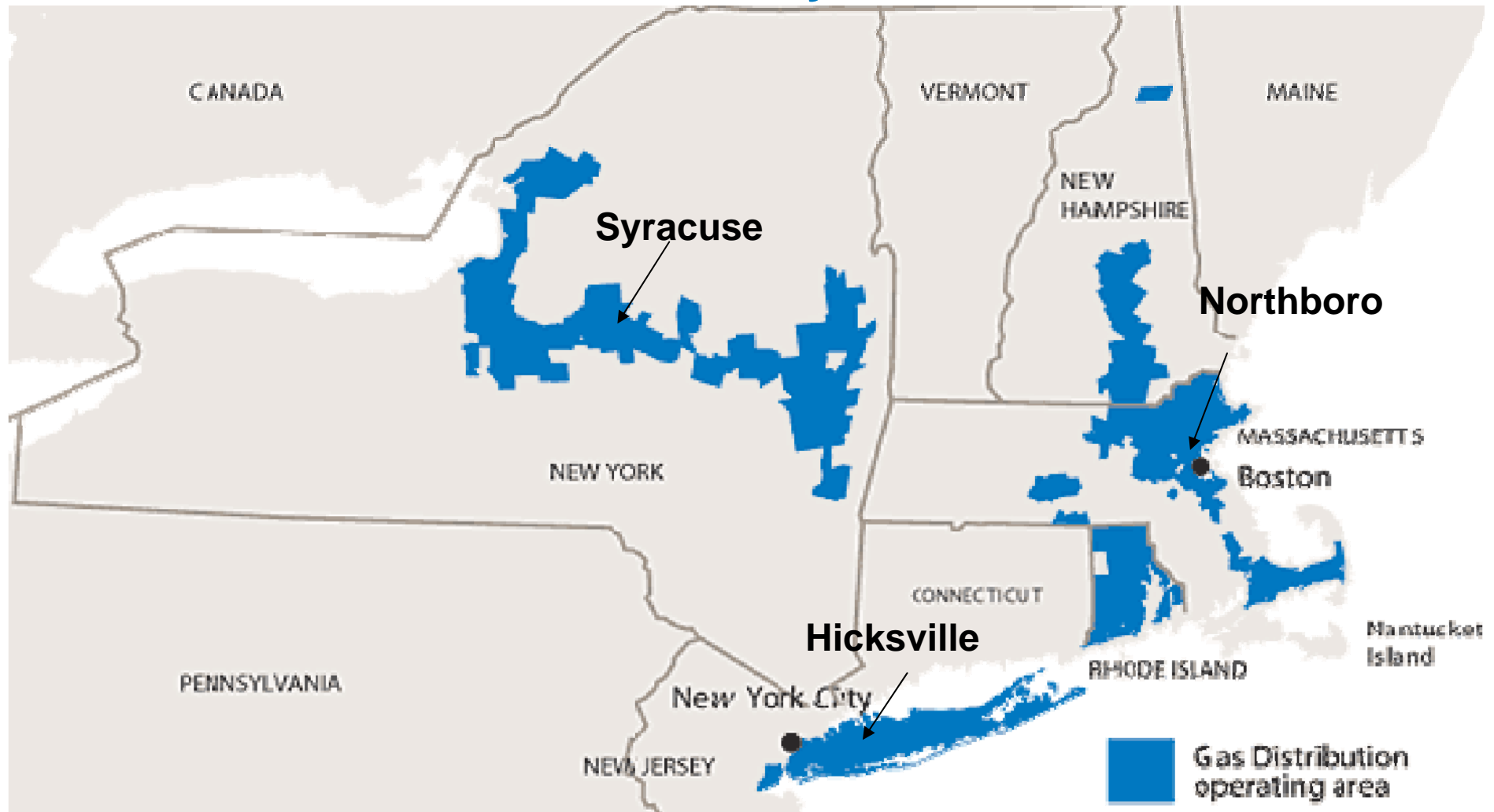
Pipe Stenciling and Traceability - 2010 NAPCA Workshop, Houston - Texas

Perry Sheth, P.E
Manager – Materials & Standards

Topics

- 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
total	3,550,255	5,266,540	

National Grid

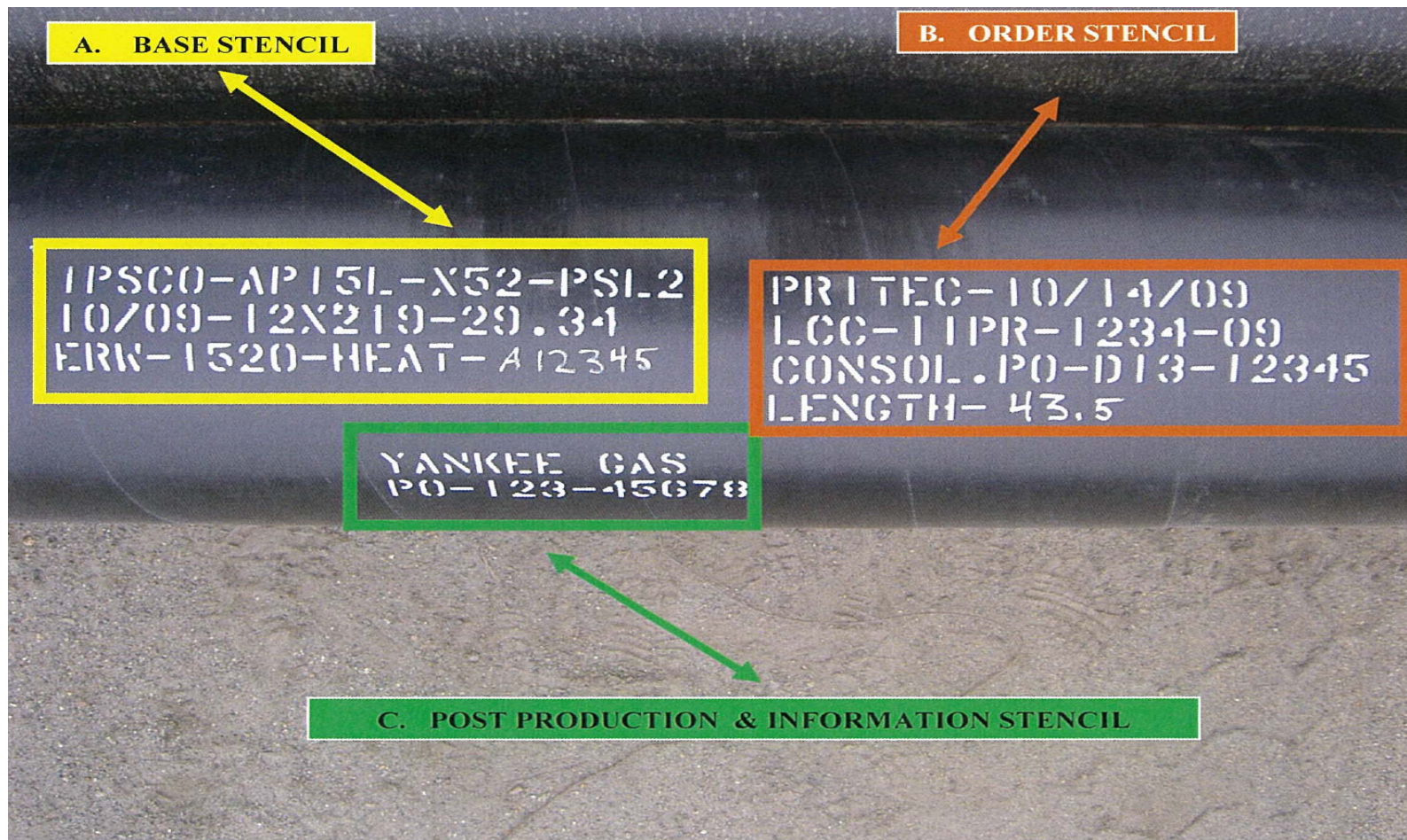
Miles of Gas Main – Type / Material Composition

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

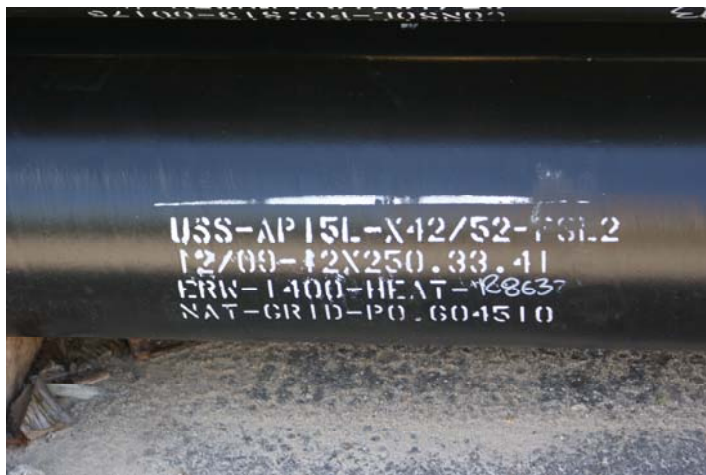
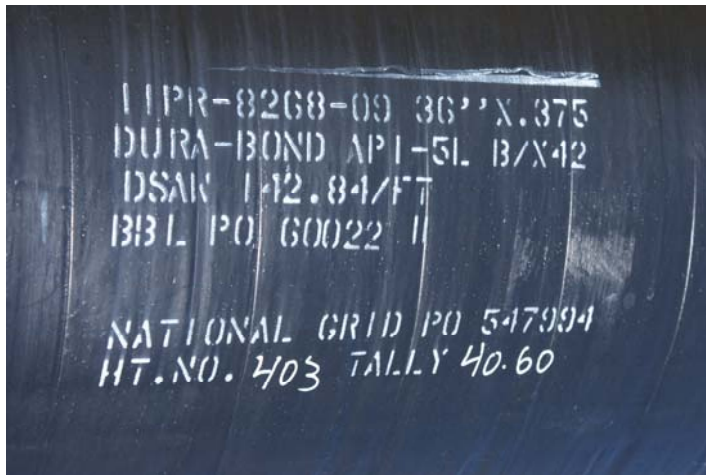
Governing Codes & Standards

- 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

- 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

- 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

- 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

- 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

- 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

Questions...

