

Distribution Construction Workshop

Hilton St. Louis at the Ballpark, St. Louis MO*Apr 20, 2010**

Key Take-Aways & Meeting Notes



KEY TAKE-AWAYS

The overarching message delivered by regulators regarding new distribution construction was:

- Correcting mistakes is harder than doing it right the first time; install pipe to last 100 years.
- Use approved materials, qualified/trained personnel, and follow procedures.
- An adequate level of qualified inspector oversight is critical.

Common inspection findings include issues surrounding:

- Improper storage and handling of pipe and fittings
- Substandard backfill material and inadequate support of pipe during backfill
- Damage to pipe and coating though improper transportation or storage
- Poor condition of tools or improper/absent tools and test equipment
- Tracer wire separation
- Inadequate record keeping by company/contractor inspectors
- Risers
- Oxidation of plastic pipe surface
- Quality and quantity of construction inspection
- Welding and weld inspection
- Jeeping
- Inadequate coating thickness
- Lack of adequate clearance with other utilities and structures
- Failure to have or follow written procedures, or procedures not available at worksite
- Depth of cover not maintained after installation
- Improper tightening of bolts
- Poor pigging and purging procedures
- Properly grounding pipe
- Unqualified personnel
- Too few and inadequately trained inspectors
- Incorrect stab depth when installing stab fittings
- Service stubs left above-ground for many years.
- Procedures are changed in the office but not communicated to the field.

Good operator practices not mandated by regulations include:

- Include new construction in company's OQ program
- Preparation of plastic pipe using a scraper instead of light abrasion
- Individual bagging of plastic fittings before use
- Inspection checklist for operator inspectors
- QA/QC of new materials
- Building quality into the process
- Use adequate level of quality inspectors
- Inspectors present on-site during important activities
- Train for today's workforce
- Train crews to work on steel and plastic

Distribution Construction Workshop Hilton St. Louis at the Ballpark, St. Louis MO*Apr 20, 2010 Key Take-Aways & Meeting Notes**

- Provide pictures of good and bad fusions available on the job site

Operators should expect more focus by regulators in the areas of:

- New construction OQ requirements
- Tracking and traceability of fittings and pipe
- Revisions of plastic piping and fitting standards
- Plastic material issues such as outdoor storage
- Depth of cover post-installation

For the most part, operator's programs presented at the workshop addressed key inspection findings. Operators presented programs targeting the way they deliver new construction qualification and training, their approach to new construction inspections, and their inclusion of new construction tasks in their operator qualification program. Contractor crews require more company inspection resources. In general, operators seem to feel company employees or long term ("Alliance") contractors perform higher quality installations. Training improves the quality of the installation. Operator presenters did not provide if these programs were developed voluntarily, through the influence of the regulator, or the result of identifying shortcomings/problems. These operators had adopted or created thoughtful, progressive programs, but it was not readily apparent if these leading practices have been generally adopted by operators.

MEETING NOTES

Purpose of Workshop

The workshop allowed stakeholders in the pipeline safety community to learn about and discuss construction issues and current practices in natural gas distribution pipeline construction management and quality control. This workshop addressed common issues, focusing on the results of Federal and state regulators' inspections and explored potential solutions.

Welcome/Opening Remarks

Alan Mayberry, Deputy Associate Administrator for Field Operations, PHMSA

The Distribution Construction Workshop was an extension of last year's Transmission Construction Workshop. Some of the issues that State and Federal inspectors are finding are common to both transmission and distribution pipelines. In recent years, PHMSA has been performing more construction inspections, and they, along with their State partners, are seeing construction issues that need to be corrected. Elements of quality management systems need to be incorporated into the construction process to ensure trained persons do the quality job they know how to do. The goal for this workshop is to highlight key areas where operators should focus on while creating a plan for improving their construction practices. The plan should address issues which relate to the overall problem of inadequate pipeline construction quality. PHMSA appreciates operators sharing the good practices they have implemented aimed at ensuring quality new construction.

PHMSA has provided pipeline safety guidance including two advisory bulletins on (1) *Potential Low and Variable Yield and Tensile Strength and Chemical Composition Properties in High*

Distribution Construction Workshop
Hilton St. Louis at the Ballpark, St. Louis MO*Apr 20, 2010**
Key Take-Aways & Meeting Notes



Strength Line Pipe and (2) Girth Weld Quality Issues Due to Improper Transitioning, Misalignment, and Welding Practices of Large Diameter Line Pipe and guidance related to projects employing the higher allowable MAOP.

Michael Thompson, Chairman, National Association of Pipeline Safety Representatives (NAPSR)
NAPSR surveyed the States regulatory agencies about new construction issues identified during State inspections. From the information provided, NAPSR identified the most common construction shortcomings with two goals; defining needed improvements in construction quality, and enhancing safety over the long term. The key findings involved issues regarding improper welding and joining, poorly qualified construction personnel, lack of or not following procedures in the field, and poor construction quality assurance. At the beginning of the workshop, Michael encouraged the members of the audience to speak up so that this could be a true workshop and not a seminar.

Based on the survey findings, NAPSR created a document, “Path Forward Steps as Proposed by NAPSR in Distribution Construction”. The path includes actions which various stakeholders can take to improve distribution construction and avoid future integrity issues. This path may be implemented through additional regulation, national consensus standards, and/or best practices.

Christina Sames Vice President, Operations & Engineering Services, American Gas Association (AGA)

AGA appreciated PHMSA’s venue for the communicating distribution construction issues to the industry. The workshop format promotes dialogue and is preferred to a public meeting. AGA is interested in seeing and hearing if the issues presented are already covered by regulation but that the regulation was not followed or if the issues presented are mainly in unregulated areas. If the issues are predominantly in unregulated areas, can they be resolved without regulation? Christina urged regulators to let existing regulations prove their worth before creating new ones.

John Erickson, Vice President Operations, American Public Gas Association (APGA)

APGA appreciated PHMSA’s approach to providing the industry with feedback surrounding inspection findings.

Zach Barrett Director State Programs, PHMSA - Office of Pipeline Safety (OPS)

The quality of pipeline construction is verified years after installation. The initial installation is the “one shot to get it right”.

STEEL MATERIALS

Jim Gorman, Gas Pipeline Safety Inspector, Kansas Corporation Commission - NAPSR
Distribution New Construction Inspection Findings Related to Steel Materials

Inspectors only see a small portion of the new construction activity that is being performed. Although many pipeline facilities are built well, there are issues with the installation of steel materials that regulators have been finding including storage and handling, construction inspection, welding, coatings, clearance between other utilities, following written procedures, depth of cover, proper bolting, backfill, pigging and purging, grounding pipe, unqualified personnel, documentation



Distribution Construction Workshop Hilton St. Louis at the Ballpark, St. Louis MO*Apr 20, 2010 Key Take-Aways & Meeting Notes**



of pressure testing, documentation of inspections, and improper disposal of asbestos coatings. At the root of the problem is that company inspectors are not properly overseeing crews. The ratio of inspectors to crews working in the field is often too low. The inspectors are not getting into the trench/shacks to inspect welds and are not verifying welder's qualification. Some welders have been found to not know the correct welding procedure. Some are not scraping the last weld pass prior to coating and others are not properly aligning pipe prior to the weld. Beyond these, additional issues provided in the presentation included test stations for cathodic protection and anodes installed at convenient locations instead of as needed by risk, , torque requirements not followed because torque wrenches were not used/available, and undocumented offsets. Strong consideration needs to be given to OQ requirements for new construction. One operator attendee sought guidance regarding the type of information operators should document. The type of information may vary from State to State. Several attendees thought a good practice would be for company inspectors to use a standardized inspection form or checklist.

Scott Meierotto, Superintendent of Standards and Testing, Laclede Gas - Industry Perspectives on Installation of Steel Materials

Laclede uses company crews for all new business construction except for non-destructive testing. A company inspector is on every steel construction site. When inspectors find infractions, they are trained to explain to the employee why what they are doing is wrong and how to do it correctly instead of simply writing a citation.

Laclede's OQ program extends to include all new construction. This practice is partially influenced by Missouri Pipeline Safety's longstanding OQ requirements. All field employees are trained at Laclede's hands-on facility. Laclede's has found that any employees who work on plastic will, at times, also work on steel so they train all employees in steel and plastic procedures. There are many similarities between steel and plastic. All employees' training includes steel specific topics such as steel coatings and applications, hydrotesting, insulation, fitting specific issues and general tapping. Annually employees receive training for drilling and stopping. The training includes multiple approaches; classroom learning, written exams, and hands-on experiences. A supervisor is on site for all tapping or stopping of pipe over 2" in diameter. Most welding is performed by company welders. When contract welders are used, they follow company welding procedures and they follow the company's OQ procedures. The average supervisor has over 20 years of experience. A large challenge Laclede is facing is an aging workforce.

Laclede also develops one-page summaries of standard and testing notes for key procedures. The summary explains the reason behind the procedure's method. Additionally, Laclede provides a broad amount of information electronically to new construction crews via their trucks, although OQ records are not included. They make use of various checklists to ensure completeness of work.

Incoming materials are inspected at Laclede's warehouse. Fittings most apt to be rejected are most frequently inspected. This includes for a large part plastic fittings. Third party inspectors are used for inspection of steel pipe. Some of the quality inspections have found minor issues with wrong labels, wrong inserts, and coatings that are too thin. Vendors are aware of Laclede's QA/QC program.

Distribution Construction Workshop
Hilton St. Louis at the Ballpark, St. Louis MO*Apr 20, 2010**
Key Take-Aways & Meeting Notes



PLASTIC MATERIALS

Richard Sanders Director, Training and Qualifications, PHMSA - Office of Pipeline Safety - Distribution New Construction Issues Specific to Plastic Materials & Personnel Qualification

Composite materials have been discussed in the industry for a long time but PHMSA has now received special permit requests for their use. Significant changes are coming to ASTM D2513. The 2009 edition will only pertain to PE pipe. The other plastic pipe materials included in previous editions have been moved to their own standards. The standards were revised to provide more defined performance criteria for better classification of the different plastic materials.

Operators are seeking to store PE pipe outdoors for longer time periods as allowed under more recent editions of the standards. New test data is showing problems due to UV exposure. Sidewall fusions have failed due to oxidation caused by UV exposure. Early testing of the current practice of abrading the surface prior to fusion is showing that the associated procedures are not resulting in the complete removal of the oxidation layer on the outside of the pipe to be fused. PHMSA is willing to listen to and work to resolve this issue but more testing is needed. Distribution R&D funding in the past has been limited. Operators are encouraged to seek more funding for distribution-related research. Operators must follow the 1999 edition of the ASTM D 2513 standard to remain in compliance. Because the newer editions have not been adopted by reference in the regulation, if an operator is cited for pipe that has been stored outside exposed to UV for over two years, the citation will not be eliminated if that operator claims use of a newer edition of the standard. Ovality of pipe has also been noted as an issue. A ring may be used to check that a pipe is not out of tolerance.

The Plastic Pipe Data Collection (PPDC) team is reviewing plastic materials failure data to identify trends. The database collection has been expanded to include any fitting associated with plastic such as steel risers. Since steel riser failures were not originally submitted to the database, problems with them were not previously identified by PPDC. Risers have been subject to numerous issues including incorrect assembly with compromised or missing parts, high leak rates at low temperatures, and susceptibility to leaks due to a combination of low and high temperatures, tensile pull-out, and over/under torque at installation. Operators may request that the team review the data in regard to specific trends. The team is looking at data to see if there are trends that are state specific.

Some key findings regarding plastic materials are:

- Problems generally manifest themselves in the first three years and then they spike again after 28 years.
- Vendors are not consistently informing operators when changes are made to fitting design or material.
- Use of pipe that does not meet industry standards/specifications.
- Tracer wire too far or too close to (coiled around) the pipe.
- Oil and grease is contaminating new fittings when they are stored in a container in direct contact with other tools or non-plastic components. New fittings should be kept bagged until installation and segregated from steel fittings.



Distribution Construction Workshop Hilton St. Louis at the Ballpark, St. Louis MO*Apr 20, 2010 Key Take-Aways & Meeting Notes**

- Pipelines have print lines every two feet. Use caution to correctly mark segments of pipe that are shorter than two feet.
- OQ regulations currently include tasks involved with the construction of new pipelines being installed at an alternative MAOP (i.e. 80% SMYS).

DOT and the natural gas industry committed to the development of a national consensus standard on personnel qualification and in 2002 asked the ASME B31Q Pipeline Personnel Qualification Committee to address thirteen issues at an OQ public meeting. Twelve of the thirteen have been addressed and the standard was completed in 2006. The new version of the standard due in 2010 includes new construction. This standard has not yet been incorporated by reference into 49 CFR Part 192. Operators may follow B31Q but they must also follow the OQ regulation which addresses the four-part test for covered tasks (but the standard likely covers both). B31Q includes a list of covered tasks. Operators should not delete an existing covered task just because it is not on the B31Q list. Operators using B31Q will be inspected for compliance for both the B31Q list and any task that meets the four-part test.

The ability to track and trace fittings and pipeline prior to installation has evolved greatly. The ability to track the material usually ends once it is installed. There will be an ASTM standard to cover traceability. Operators are encouraged to let the ASTM Committee F17 know about any of their concerns. An advanced notice of proposed rulemaking will be coming out soon and PHMSA seeks input from all stakeholder groups.

Don Ledversis, Program Manager - Gas Safety Engineer, Rhode Island Division Public Utilities Commission - NAPS Distribution New Construction Inspection findings related to Plastic Materials

A good inspector needs to know every aspect of construction. He/she needs to be on-site to watch that procedures are being followed properly. State regulators have frequently seen that depth of cover is not maintained over time and have put forth a resolution to PHMSA in this regard. The code is also vague regarding backfill.

Issues regulators have seen:

- Pipe ruined in transportation. The wall thickness can be compromised. Operators need accurate tools to measure loss of wall especially in smaller diameter pipe.
- Problems with joints. Pictures of good and bad fusion joints should be available to personnel on a jobsite as they are very useful to assist them in identifying problems.
- Fusions are also being compromised by inadequate and uneven plate temperatures. When lesser quality tools (higher margin of measurement error) are used for measuring temperatures, operators should seek to meet requirements in the middle of the heat range instead of the extremes.
- Operators are depending on pressure tests to find problems. The pressure test duration is not long enough to find small problems that will not show up for years, unless the pipe is uprated.
- Incorrect stab depth of stab fittings. A good practice noted is for the person installing the fitting to sign their name next to it.

Distribution Construction Workshop Hilton St. Louis at the Ballpark, St. Louis MO*Apr 20, 2010 Key Take-Aways & Meeting Notes**



- Field-created risers should be subject to QA/QC procedures.
- Service stubs are getting lost in the system due to housing construction slow down. Some of the services were left aboveground.
- There is not enough clearance between facilities to allow for proper maintenance.
- Improper backfill
- Not following procedures.
- Squeeze-offs are not located far enough away from fittings.
- Fire extinguishers are in recharge state.
- Tracer wire in contact with the service or too far from the service.
- Repairs performed by people other than operators.
- Tools are in poor repair.

Why is there not enough time to do it right the first time but enough time to come back and do it over again?

Jerry Gann, Manager of Operations Compliance, CenterPoint Energy - Industry Perspectives on Installation of Plastic Materials

New construction is covered in CenterPoint's OQ program. Contractors' OQ program are required to follow some critical company procedures. CenterPoint covers geographically distant territories. The three LDCs which comprise CenterPoint were merged over the last ten years and now all follow the same procedures. All employees are OQ qualified, trained on new construction practices, and qualified by a plastic fusion qualifier. All qualifiers go through a "train the trainer" class annually. All contractor employees are qualified by company plastic fusion qualifiers. This saves an inspector from having to review records to verify qualifications in the field. Crew leaders and inspectors receive additional training and are better compensated than the crews performing the work. CenterPoint audits contractors' OQ programs to ensure that they meet the same standards as their own OQ program.

CenterPoint has procedures which address many of the concerns identified by regulators. Plastic pipe is stored properly and rotated so that the oldest pipe is used first. Trenches must have smooth bottoms and be clear of rocks and debris. Protective sleeves are used for service branches and transition fittings. Special care is used to avoid inducing stress to the pipe during backfill and compaction. All utilities are located prior to boring. The pulling head used when boring must be 1-1/3 times larger than the diameter of the plastic pipe being installed.

Contractors bear the financial burden for investigative digs and replacements. Company and contract employees can be terminated for not following procedures. Installing the pipeline correctly the first time is in CenterPoint's best interest. It reduces maintenance and repair costs and eliminates potential litigation costs. CenterPoint is assessing bar coding of fittings and pipe. They believe it will become more important with the implementation of DIMP.

Ed Newton Team Leader, Gas Materials and Quality Systems, Southern California Gas Company (SoCalGas) and San Diego Gas & Electric (SDG&E) - Industry Perspectives on Installation of Plastic Materials

Distribution Construction Workshop Hilton St. Louis at the Ballpark, St. Louis MO*Apr 20, 2010 Key Take-Aways & Meeting Notes**



New construction is covered under Southern California Gas Company's OQ program. Quality is built into the process, not started at the job site. The company shifted from detecting failures to preventing failures and follow a "six-sigma philosophy". There needs to be good quality pipe and materials; good quality tools; robust procedures with room for normal variation; effective training programs; to integrate approved materials with design processes. The company uses a Materials & Equipment evaluation and implementation checklist it developed.

SoCalGas/SDG&E was experiencing problems with saddles being knocked off mains with relatively minor impact. Visually, the fusions appeared to be a completed correctly. SoCalGas/SDG&E duplicated the installation of the saddle with the exact materials, equipment, and soil used at the site of a failed saddle fusion. They determined that the "special cause" that led to the failures was the presence of dust contamination. The company improved the surface preparation process. The improvement was in the installation process not in the inspection or detection phase. The surface preparation method developed involves scraping, and has subsequently been added to ASTM D2657. A video of the preparation process was shown. The company does not routinely use mechanical couplings. They fuse most plastic pipe.

The purpose of an inspection is to see if the process is working properly. If it is not, the process is changed. Quality performance is written into every construction contract.

Danny McGriff, Director Pipeline Safety, Georgia Public Service Commission - Qualification of Personnel Performing New Construction Tasks and Ensuring the Quality of Installation

In March 2009 NAPSRS surveyed state pipeline inspectors. State inspectors are performing on average 111 days of new construction inspection. They found that the challenges of inspecting pipeline construction are the qualification of personnel, incorrect or absence of procedures at the work site, and unqualified company inspectors. DIMP requires that operators have knowledge of construction methods. The most common findings by State inspectors are personnel without required OQ and inadequate and unqualified company inspectors.

Welding problems include not following or not having procedures, a lack of ability to verify worker credentials in the field, and insufficient inspection of welds. Common findings were in the areas of installation, coatings, following procedures, and testing equipment. Procedures get changed in the office but they are not communicated to the field. There was a significant lag time from when as-built records were completed and when the facilities were mapped within the company records. The as-built documentation was also inconsistent.

The majority of opinions advocating code changes to improve pipeline construction favored including OQ requirements for new construction within the pipeline safety code.

Michael Gruenberg, Manager Operations Staff, Southwest Gas - Qualification of Personnel Performing New Construction Tasks and Ensuring the Quality of Installation

Southwest Gas has a large training staff. Training is critical to success. Their training team includes a specialist in adult learning. Their training recognizes that people learn differently today than in the



Distribution Construction Workshop Hilton St. Louis at the Ballpark, St. Louis MO*Apr 20, 2010 Key Take-Aways & Meeting Notes**



past. Training facilities include hands-on practice. Past training was more regurgitation of facts learned but now it is more simulation of actual performance. SW Gas also has facilities for emergency responders and excavators to practice working on and around gas facilities.

New construction is covered in SW Gas's OQ program. Everyone goes through the training and refresher training regardless of the number of years of experience. Nobody is allowed to test out of training. Their philosophy is that everything installed ultimately has to be maintained. Training is provided not just when required but when needed. Training is provided by Subject Matter Experts (SMEs), line personnel, and some is developed by manufacturers and by consultants. The root cause analysis of accidents always involves a review to determine if training was an issue.

The two master contractors have their own training staffs but SW Gas provides "train the trainer" education. SW Gas audits the contractor training. The smaller installers which include plumbers and HVAC technicians are trained and qualified by SW Gas. This training is paid for by the contractors. All contractors on a job site must be qualified. Inspectors can pull the card of any employee on site.

Operator qualifications include written and oral assessments as well as practical, demonstrable assessments. They have pass/fail criteria in which employees must correctly answer 80% of the questions. After the test, the questions and answers are reviewed by the entire group being trained. Employees have three opportunities to pass the tests. If they do not pass, company employees are ineligible for one year and contractor employees credentials are revoked. The OQ program is reviewed annually through an annual report of total qualifications, pass/fail data, incident critiques and field audits. Changes are managed through the management of change process.

New construction OQ supports DIMP principles. The training program mitigates the threat of incorrect operation, ensuring qualifications support the safety and reliability of the pipeline system.

Charles Rayot, Supervising Engineer, Ameren- Illinois Utilities - Qualification of Personnel Performing New Construction Tasks and Ensuring the Quality of Installation

A construction inspector is assigned to every contractor crew. Every construction inspector has performed the activity being performed by the contract employee. An inspector is always present when activities designated as "major areas of focus" are performed. The construction inspector has responsibility for all job site safety, paperwork, customer notification, materials, coordination with Ameren Operating Centers, verifying utility locates, ensuring the accuracy of as-builts, approving extras, paving restoration, and employee OQ. Evaluation of contractor OQ program consists of reviewing their covered task list, abnormal operating conditions, and their documentation and recordkeeping.

Ameren has a quality assurance program which includes separate unannounced inspections beyond those performed by the construction inspector. Quality installations are also ensured through the use of long term, alliance contractors. Work is limited for new contractors that have not previously performed work for Ameren.

Distribution Construction Workshop
Hilton St. Louis at the Ballpark, St. Louis MO*Apr 20, 2010**
Key Take-Aways & Meeting Notes



Closing Remarks

Zach Barrett thanked the attendees and reiterated his opening message of “doing it right the first time”.

Michael Thompson made closing remarks on behalf of NAPSR. He thanked all attendees for taking the time to attend the workshop with a common shared goal of assuring that the gas distribution systems in service and those that are being installed today are, repaired, replaced, maintained, and constructed of the highest quality materials and installed by the most skilled and qualified work force available to date. What was discussed at the workshop demonstrates that there are many common elements for concern between distribution and transmission pipeline construction, not the least of which is quality assurance. Without adequate oversight/inspections by company and regulatory inspectors, even the best of crews, company or contractor, may simply run amuck resulting in today’s installations becoming tomorrow’s DIMP program.

Unlike transmission pipelines, over 55% percent of the nation’s current natural gas distribution network is made up of plastic pipe. Most people realize that tomorrow, that number will continue to increase. Without downplaying the role of steel pipeline in gas distribution systems, regulators as well as the company inspectors must be prepared to increase their vigilance of the installation of plastic materials in distribution systems. There is an apparent trend in newly installed plastic distribution systems demonstrating an increased failure rate in the first three years following installation and leveling off afterwards. NAPSR members have identified numerous areas where these failures have been occurring, as shown at the workshop. Issues abound with plastic pipeline facility construction and span the entire range from improper storage in the operators’ yard, to damaging backfill materials used in bedding and shading of the pipeline. Again, as was noted throughout today’s presentations, many of these issues center around quality assurance and proper oversight/inspection.

Distribution Integrity Management regulations have arrived. It must be noted that the integrity of distribution facilities depends on both maintaining the existing facilities and ensuring that new facilities are properly constructed to avoid future integrity issues.

In order to help ensure that the time, effort and discussions by the participants are fruitful, a proposed Path Forward for dealing with the issues raised was presented by NAPSR. A copy of the proposal was handed out to all attendees (see attachment).

Michael further explained that the educational piece of NAPSR’s recommendation must be two-pronged: First, it should be aimed at providing the individual the knowledge and skills to enable him/her to properly carry out the task; second, it should focus on altering the behavior of an individual, company, or contractor, who possesses all the knowledge, skills and ability to successfully perform the task, but because of other factors, chooses to cut corners.



Distribution Construction Workshop

Hilton St. Louis at the Ballpark, St. Louis MO***Apr 20, 2010

Key Take-Aways & Meeting Notes



ATTENDEES:

Name	Organization
Rick Lonn	AGL Resources
Bill Burnett	Ameren
Charles Rayot	Ameren
Jerome Themig	Ameren
Bruce Paskett	American Gas Association (AGA)
Christina Sames	American Gas Association (AGA)
Phil Bennett	American Gas Association (AGA)
John Erickson	American Public Gas Association (APGA)
Roscoe E. Miller	Arizona Corporation Commission
Greg Loarie	Arkansas Public Service Commission (APSC)
Robert Henry	Arkansas Public Service Commission (APSC)
Brian Daschbach	Baltimore Gas & Electric
Steven Troch	Baltimore Gas & Electric
Jerry Gann	CenterPoint Energy
Leonardo Rosas Jr.	CenterPoint Energy
RJ Scandariato	Central Hudson Gas & Electric
Russell Dickens	Columbia Gas of Ohio/NiSource
David Jordan	Continental Industries
Don Wartluft	Continental Industries
Julie Galante	CYCLA
Brian Moidel	Dominion
Jimmy Zhou	Dow Chemical
Ken Ocean	Enbridge Gas Distribution
Dan McGriff	Georgia Public Service Commission
Alicia Farag	GTI
Ernest Lever	GTI
Charles Gribbins	Illinois Commerce Commission
Darin Burk	Illinois Commerce Commission
Jim Watts	Illinois Commerce Commission
Matt Smith	Illinois Commerce Commission
Brad Raley	Illinois Gas Company



Distribution Construction Workshop

Hilton St. Louis at the Ballpark, St. Louis MO***Apr 20, 2010

Key Take-Aways & Meeting Notes



Mark Van Slyke	Intermountain Gas Company
Garry Alden	Jacobs Engineering
Jim Gorman	Kansas Corporation Commission
Jason Brangers	Kentucky Public Service Commission
Steve Samples	Kentucky Public Service Commission
Barbara McCarthy	Laclede Gas Company
Craig Hoeflerlin	Laclede Gas Company
Diane Schmitt	Laclede Gas Company
John Doherty	Laclede Gas Company
Mark Lauber	Laclede Gas Company
Nicole Steimel	Laclede Gas Company
Ric Robben	Laclede Gas Company
Scott Meierotto	Laclede Gas Company
Tony Yocco	Laclede Gas Company
Dan Miller	MidAmerican Energy
Bob Leonberger	Missouri Public Service Commission
George Mosinskis	NAPSR
Art Shapiro	National Grid
Perry Sheth	National Grid
Jose Costa	Northeast Gas Association (NGA)
Angela Whitfield	NICOR Gas
Clint Whybark	NICOR Gas
Keith Dalton	NiSource
Mark Chepke	NiSource
Richard Losey	NiSource
Jon Huddleston	NW Natural
Craig Brownlee	Oklahoma Natural Gas Company
Michael Thompson	Oregon Public Utility Commission
Philip Sher	Philip Sher Pipeline Consultant
Alan Mayberry	PHMSA
Richard Sanders	PHMSA
Vinnie Holohan	PHMSA
Zach Barrett	PHMSA
Stephen Boros	PPI
Richard Wolf	PPS



Distribution Construction Workshop
Hilton St. Louis at the Ballpark, St. Louis MO*Apr 20, 2010**
Key Take-Aways & Meeting Notes



Helge Ferchert	Puget Sound Energy
Greg Goble	R.W.Lyall
Don Ledversis	Rhode Island Public Utilities Commission
Joe Schneider	South Jersey Gas Company
Dana Schneider	Southern California Gas Company
Ed Newton	Southern California Gas Company
Michael Gruenberg	Southwest Gas Corporation
Jerry Schmitz	Southwest Gas Corporation
Thomas Lael	Thomas Lael Services LP
Keith Erickson	University of Illinois
Darin Houchin	USDI
Kevin Preece	Vectren
Rick Slagle	Vectren
Kerry Campbell	Virginia Natural Gas
Mel Huey	Washington Gas
Tom Stemrich	Wisconsin Public Service Commission