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2010 Annual System Integrity Plan
Self-Audit Report
For
Magellan Midstream Partners, L.P.
Longhorn Pipeline
December 16, 2011



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1.0 Definitions

CMS: Compliance Management System

Longhorn: the entire pipeline system and all parties including LPP and MPL

LPP: Longhorn Partners Pipeline (the asset owner until August 27, 2009 and its direct employees / contractors, excluding MPL)

LPSIP: Longhorn Pipeline System Integrity Plan

MPL: Magellan Pipeline Company, L.P. (the asset operator and owner as of August 27, 2009)

SIP: Magellan Midstream Partners, L.P. System Integrity Plan

Operator: Magellan Pipeline Company, L.P. (MPL)

PMI: PMI Services North America, Inc

SBRMA: Scenario Based Risk Mitigation Analysis

SIP: System Integrity Plan



2.0 Introduction

The Longhorn Pipeline System (Longhorn) was initiated in the mid-1990s, with the intent of converting an existing West Texas crude oil pipeline into refined products service, and reversing the flow to take refined products from the Houston Gulf Coast area to markets in West Texas and the Southwest US. The project encountered opposition from various groups, resulting in a lawsuit and eventual settlement as described in Table 1: History of the Longhorn System, below.

Table 1: History of the Longhorn System

1949 – 1995	Exxon constructed the 18"/20" pipeline, Crane to Baytown, to transport crude oil; operated and maintained / refurbished until pipeline was idled and purged with nitrogen.
Oct 21, 1997	Longhorn acquired the existing (idled) pipeline from Exxon.
April 1998	National Environmental Policy Act (NEPA) lawsuit filed in Federal Court in Austin.
1998/1999	<ul style="list-style-type: none">• Cleaning and refurbishment of the existing pipeline;• Construction of new pump stations (Galena Park, Satsuma, Cedar Valley, Kimble County, Crane, and El Paso)• Construction of El Paso Terminal• Construction of pipeline extensions: 18" Crane to El Paso; 8" Crane to Odessa; 20" GATX to Tie-In; and 8" and 12" pipelines from El Paso Terminal to tie-ins with other systems.
March 1999	Settlement Agreement requires Environmental Assessment, which ultimately leads to the Longhorn Mitigation Plan.
November 2000	Finding of No Significant Impact issued and Longhorn Mitigation Plan published.
2001 – 2004	Pre-Startup Mitigation Commitment Activities Performed
January 27, 2005	Official startup date for the Longhorn pipeline system.
2006	High Resolution Magnetic Flux Leakage (HRMFL) in-line inspections completed for Galena Park to Crane.
August 2006	Flying J acquires Longhorn Partners Pipeline, L.P.
2008	High Resolution Magnetic Flux Leakage (HRMFL) in-line inspections completed for Crane to El Paso.
2008	Transverse Field MFL Inspection (TFI) in-line inspections completed on Galena Park to Crane.
December 22, 2008	Parent company Flying J Inc., Longhorn Partners Pipeline, L.P. and affiliated companies file for voluntary protection under Chapter 11 of the U.S. Bankruptcy Code, allowing for continued pipeline operation during financial reorganization.
August 27, 2009	Magellan Pipeline Company, L.P. purchased the Longhorn pipeline.



Longhorn agreed to implement a Longhorn Mitigation Plan (LMP) as part of the Environmental Assessment (EA) conducted. The LMP was supplemented twice, immediately after it was originally developed. The LMP includes 40 “Mitigation Commitments” that addressed various integrity issues on the Longhorn system both before and after startup. The LMP also committed Longhorn to implement the Longhorn Pipeline System Integrity Plan (LPSIP), which includes three main elements:

1. Management Commitments (14 total), addressing various integrity management programs for the pipeline system, including a commitment to conduct a self-audit of the LPSIP each year,
2. LPSIP Process Elements (12 total), addressing various risk management processes for the pipeline system, and
3. An Operational Reliability Assessment (ORA), providing an independent technical analysis of various integrity threats on the pipeline system.

This report is the result of the annual LPSIP self-audit for 2010, and addresses the first two items listed above. Magellan contracted with RCP Inc., a regulatory and engineering consulting firm, to perform the 2010 self-audit. There is a separate reporting process for the Mitigation Commitments, and they are not addressed in this report. The ORA has its own reporting process which is conducted separately from this report.

The overall structure of the LMP, Mitigation Commitments, LPSIP, Management Commitments, Process Elements, and Operational Reliability Assessment are depicted in Figure 1: LMP Organization. In this report, the 14 Management Commitments will be referred to sequentially as MCxx. Likewise, the 12 LPSIP Process Elements will be referred to sequentially as PExx. The Table of Contents for this document provides an easy reference, as the section numbers for the Management Commitments and Process Elements correspond with the appropriate MCxx or PExx number. For example, MC13 refers to the Management Commitment to perform a self-audit, and is discussed in section 13 of “Findings for the LMP Management Commitments”. Likewise, PE7 refers to the Management of Change Process Element, and is discussed in section 7 of “Findings for the 12 LPSIP Process Elements”, and so forth.

LONGHORN MITIGATION PLAN [LMP]

[INCLUDING SUPPLEMENTS 1 AND 2]

Mitigation Commitments

40 very specific “to-do” activities to mitigate specific risks on the pipeline system

System Integrity Plan [LPSIP]

Management Commitments

14 Management-Level Commitments:

- Includes a commitment to implement the 12 System Integrity Process Elements (below)
- Includes a commitment to perform an annual self-audit of the LPSIP

System Integrity Process Elements

12 programs designed to manage system integrity

Operational Reliability Assessment (ORA)

A detailed, independent technical assessment of key risk management activities for the system

Figure 1: LMP Organization



3.0 Self-Audit Methodology

The self-audit team was composed of 3 representatives from RCP Inc., all experienced auditors with over 50 years of combined experience in the industry. The auditor's statements of qualifications are given in the appendix to this report. They reviewed the LMP, the LPSIP, and the SIP as well as various documents from Longhorn as listed in the appendix, including policies and procedures, work activity reports, agreements with third parties, performance tracking spreadsheets, and other relevant documents. They also interviewed personnel from MPL in Austin, Houston, Tulsa, and El Paso, including personnel in field operations up through corporate executives, and inspected the facilities at the El Paso terminal. The complete list of personnel interviewed is given in an appendix to this report. If more than one person had held the same position during 2010, the auditors generally interviewed all those personnel at once. All the field activities for the audit were performed in March and April 2011. The auditors developed the opinions and findings in this report based on the interviews and documentation, using their best professional judgment and experience. Interim audit findings were reviewed with MPL to ensure that they were factually correct and considered all appropriate information – but the findings and conclusions in this report are the independent work of the audit team.



4.0 Significant System Developments in 2010

During 2010, Longhorn continued to implement system integrity activities as required by Federal Pipeline Safety regulations and the LMP.

Longhorn completed a tie-in to the East Houston terminal in late 2010. The pipeline leak detection system and SCADA systems were updated as appropriate.

Longhorn completed the projects at the El Paso terminal which were underway in 2009.

Longhorn completed the UT-tool inspections required by the LMP, and began related rehabilitation work. Longhorn is currently rehabbing the pipeline from Eckert to Fort McKavett, which is operating under reduced pressures.

API 653 tank inspections were conducted on 6 tanks at the El Paso terminal (#1, 5, 6, 7, 12, 15), with no significant findings. Liners were installed in all of the inspected tanks.

Due to low system throughput volumes, Longhorn was unable to complete the UT in-line inspection as required by the LMP. PHMSA and other interested parties were notified of this situation. Longhorn implemented a voluntary 10% pressure reduction as a mitigation effort, pending completion of the UT in-line inspection. This inspection had been completed by the time of the audit, but the 10% pressure reduction was still in place.

5.0 Summary of Findings from the Self Audit

As mentioned above, the LMP requires that Longhorn conduct a self-audit of the LPSIP each year. The LMP specifically requires that the self-audit address 5 “core areas” of system integrity. Each of the 5 listed core areas is addressed below. Subsequent sections of this report address each of the 14 Management Commitments and the 12 Process Elements in the SIP.

5.1 A synopsis of the most important integrity issues being addressed on the Longhorn Pipeline System and the status of activities and programs used to manage these risks.

The activities and programs used to manage risk on the Longhorn system are addressed individually in the Management Commitments and Process Elements sections of this report. The activities and programs used to manage risk on the Longhorn system are mature, and the audit revealed that these programs are functioning and are effective. Areas for improvements in the programs are described in the Recommendations section of this report.

There is continued evidence of pipe movement in the pipe racks at the El Paso terminal. This problem must be addressed to ensure that cumulative pipe movement is managed such that it does not lead to pipe or pump failure within the terminal.

The El Paso terminal continues to have issues with high pump vibration levels at the tanks. Longhorn is evaluating a project to dedicate two primary tanks to the rack that have pumps with variable frequency drives. In addition, two more tank pumps will receive modifications such that vibration issues will be addressed in all tanks pumping to the rack.

Shortly after the audit was completed in 2011, one tank pump received the following modifications: trim the impeller, replace the existing 2 pedestal skid with 1 pedestal skid with additional grout, install a check valve in the overhead piping to address line pack, and remove the existing pipe supports from the skid (thus de-coupling the pump skid and piping).

The pipeline leak detection system was modified to accommodate the East Houston terminal tie-ins. The pipeline surge analysis was updated and submitted to PHMSA for their review and approval, and a Management of Change process performed to establish maximum flowrates.

An ultrasonic (UT) in-line inspection tool was run from Warda to Crane, for the first time, to check for laminations and other defects in the pipe wall as required by Mitigation Commitment #12. This required significant cleaning of the line prior to inspection. This completed the UT inspection from Galena Park to Crane per the LMP commitment (the first 2 segments were completed in 2009).

API 653 tank inspections were conducted on 6 tanks at the El Paso terminal (#1, 5, 6, 7, 12, 15), with no significant findings. Liners were installed in all of the inspected tanks.



5.2 Important insights, results, and lessons learned from the previous year.

Analysis of the UT ILI tool revealed that wall laminations resulting in blisters is not an integrity concern with the Longhorn pipeline.

Longhorn console operators and supervisors received 8 hours of training on the pipeline leak detection system in 2010, with the objective of enabling the supervisor to be the “level 1” support for leak indications.

MPL issued 15 “lessons learned” bulletins in 2010, addressing damage prevention for buried electrical lines, frozen water in pipe supports, safety implications of daylight savings time shifts, vehicle rollovers in tank farms, pressure spikes after slack line conditions, and requirements for commissioning new tanks.

The ORA contractor has concluded that AC-induced corrosion is not a problem for the previously identified 9 miles segment in a power line corridor.

The station operators in the Houston area learned that even minor events, such as draining pig traps and provers, can trigger the leak detection system alarms.

The results of the Safety Culture Surveys conducted in 2009 revealed that the use-ability of the SIP was a concern to many employees. In 2010, Magellan developed and distributed a Training Tool (users guide) that was piloted in three (3) different field locations, and later distributed to all Operations and Commercial stakeholders. The SIP Users Guide has been added to the SIP as Element 00, and will be incorporated into the new employee on-boarding training materials.

In 2010 Magellan rolled out the Leadership Expectations workshop to all Operations and Technical Services leaders. The objective of the workshop was to enhance the safety culture at Magellan. Real incidents were reviewed that emphasized the importance of human health and safety, strict adherence to procedures, and maintaining compliance with all laws and regulations.

5.3 Insights from new integrity management processes or technologies, or innovative applications of existing technologies.

Longhorn system performance metrics are now contained in a “shared drive” accessible by both Austin and Tulsa, which facilitates timely sharing of information and reduces double-entry of data.

A new Management of Change tracking process is being used in Austin to ensure closeout of all MOCR items.

The Tulsa Operations Control Center is now using the “LogMate” alarm management program, which enables better trending and analysis of alarms.



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A dial-in feature was added to the leak detection cable system. Technicians can now dial into the PC to locate alarm locations (note: this is a separate system from the PLDS leak detection system).



5.4 Performance measurement results.

The “scorecard” for 2010 is given in an appendix to this report. There were 4 releases in 2010, all from facilities, and all were minor. Only one of these, from a facility, was DOT-reportable. It was in a Tier 1 area. There were no releases in sensitive or hyper-sensitive areas in 2010, and no releases along the pipeline outside of facilities. There was one unauthorized encroachment in 2010.

The applicable government agencies also exercise oversight over the Longhorn system.

5.5 New integrity management programs or activities that will be conducted or significant improvements to existing programs and activities.

A pilot program was initiated in 2010 to coordinate all aerial patrol observations through Tulsa (as is the practice elsewhere in MPL), instead of being coordinated through the Austin field office. This transition was officially completed in 2011. This has improved management of the data, and allows automated identification of Tier 1, 2, and 3 areas. It also facilitates the identification of areas with shallow pipe and no-till agreements. All observations and their status are now tracked in a computer, and reports can easily be generated.

A study is currently being conducted of the control room console activity levels (alarm loads, etc.). This may result in some redistribution of systems and operations among consoles.

A new leak detection program is being piloted elsewhere in the MPL system, and will likely be installed for Longhorn at a time that coincides with a project to convert part of the system to crude service. The new program makes it easier to analyze alarm patterns and information, and is an improvement over the existing program.

MPL is evaluating a “spiral MFL” tool elsewhere on its system, which should be able to detect both longitudinal and circumferential defects at the same time. This technology may be applied to the Longhorn system for future inspections.

Longhorn is installing cathodic protection “coupon” test points whenever test leads are replaced.

Magellan conducted the Leadership Expectations workshop for all personnel in Technical Services and EH&S in the first quarter of 2011. Many field leaders in Operations also conducted sessions with their direct reports in 2011 to further communicate these safety expectations.



6.0 Findings for the LMP Management Commitments

The 14 Management Commitments described in the LMP are addressed below.

6.1 MC1: Longhorn Pipeline System Integrity “Process Elements”

The first of the 14 Management Commitments addressed in this section of this report commits Longhorn to implement a System Integrity Plan (SIP) consisting of 12 “process elements” that are “over and above” the federal and state regulatory requirements. The 12 SIP elements are addressed in the next section of this report.

6.2 MC2: Data Gathering and Identification and Analysis of Pipeline System Threats

There is a significant program in place to accumulate and integrate a wide array of information related to the operation and integrity of the Longhorn system, as described in LMP section 3.2.2. MPL has dedicated a full time person to this task, who receives information from many different data sources that is compiled and entered into the Longhorn risk model on a monthly basis. This information is also forwarded to the ORA contractor, who performs their own evaluation of the data. MPL has also dedicated a full time Risk Engineer to the Longhorn system, which works with all SMEs related to the Longhorn system to evaluate risks and ensures compliance with SIP, DOT and the LMP.

MPL continued to perform Incident Investigations during 2010. There were 15 incident investigations completed in 2010. These investigations are not limited to incidents that are reportable to government agencies, and include other types of operational incidents such as near misses. The results of these incident investigations are shared broadly throughout LPP and MPL. Likewise, Longhorn captures information concerning Incorrect Operations (IOs), and summarizes this information on a spreadsheet on a quarterly basis to identify trends and potential areas for improvement. Incorrect Operations data is drawn from Abnormal Operating Conditions (AOCs), incident investigations, and Hazard / Near Miss (HNM) cards (described in item 11 of the SIP process elements). MPL manages changes to the Longhorn system through SIP process Element 11 – Change Management. Management of Change Requests (MOCR) are listed on a report which is widely distributed throughout MPP personnel responsible for Longhorn operations. This report provides a quick reference as to whether the MOCR is either open or closed.

The LMP also commits Longhorn to conduct an annual Third Party Damage Prevention Program Assessment. The assessment for 2010 was conducted and reviewed as required.



6.3 MC3: Integration of System-Wide Activities

Using information from the data gathering processes mentioned above and the data tracking and scorecard processes mentioned in PE 12, Longhorn conducts system-wide reviews of activities to ensure that all relevant information about the operation and integrity of the system is considered and evaluated on a routine basis.

A Mitigation Plan Scorecarding and Performance Metrics document is prepared and reviewed quarterly. Incidents are reviewed on a quarterly basis by Operations Directors, VP of Operations, and VP of Technical Services.

Lastly, the Operational Reliability Assessment (ORA) provides a comprehensive, independent technical review of all types of threats to the Longhorn system on an annual basis.

6.4 MC4: Incorporation of Engineering Analysis

Longhorn consistently obtains the assistance of engineering experts (both inside the organization, and from third parties) to help identify, manage, and resolve potential integrity issues on the pipeline system. The results of each in-line inspection are reviewed by independent pipeline assessment experts who perform an independent analysis and identification of any additional areas for physical inspection of the pipe based on statistical analysis of the results (known as the probability of exceedance, or POE, review). The results of ILI tool runs are also sent to a third party to conduct seam or girth weld assessments, depending on the type of assessment tool used.

6.5 MC5: Integration of New Technologies

Longhorn continues to incorporate new technologies for the operation of the system, and to evaluate the use of additional technologies as appropriate. An Ultrasonic ILI tool (UT) was run for the first time on the pipeline from Warda to Crane, which completed the commitment to run a UT tool from Galena Park to Crane. Special “coupon” style cathodic protection test stations are being installed on the pipeline whenever test leads are replaced, in order to obtain IR- considered test readings. The Bullhorn continuous CP monitoring system is still being used.

6.6 MC6: Root Cause Analysis and Lessons Learned

This Management Commitment refers to the implementation of a formal incident investigation program for actual and near miss events, and for repairs that are made to correct deficiencies in system integrity. This program is described in PE6.

MPL uses a “Lessons Learned” program to share information and key learnings throughout the company. MPL issued 15 “lessons learned” bulletins in 2010, addressing damage prevention for



buried electrical lines, frozen water in pipe supports, safety implications of daylight savings time shifts, vehicle rollovers in tank farms, pressure spikes after slack line conditions, and requirements for commissioning new tanks.

MPL conducts monthly SIP meetings in Austin, El Paso, and Crane / Odessa, where HNM cards, LPP procedures, and other accidents and lessons-learned are reviewed with operating personnel.

6.7 MC7: Industry-Wide Experience

Longhorn continues to benefit from the industry-wide sharing received by participation in industry and governmental committees. The Sr. Vice President of Operations and Technical Services sits on the API/AOPL Pipeline Performance Excellence Team (PET), which investigates liquid pipeline issues and develops programs and recommendations for improvements throughout the industry. He also sits on the API Operations Technical Committee (OTC), the primary US industry forum for technical issues for liquid pipelines, and is a member of the US Federal Government's Technical Hazardous Liquid Pipeline Safety Standards Committee (THLPSSC), which is the primary governmental forum for all types of liquid pipeline issues. He was on the planning committee for the Pipeline Information Exchange (PIX) workshop for the 3rd year. In 2011 he will also be a member of the joint API / AOPL Pipeline Leadership organization.

Employees also participate in various internal and external meetings and events. The current VP of Technical Services participates in the API / AOPL Pipeline Safety Reauthorization Team. The Director of Operations was on the planning committee for the 2011 API Pipeline Conference. The Manager of the operations Control Center is on the API Control Room Management team, and MPL made a presentation at the 2010 API Cybernetics Symposium. MPL also has personnel who participate in the API CEHS committee, environmental committee, tank integrity committee, and operator qualification team. MPL integrity engineers attend in-line inspection conferences hosted by TDW and GE. All MPL land representatives have meetings and share information concerning land and landowner issues throughout the Magellan system. The MPL Southern District Safety Leader participated in the Central Texas chapter of the National Safety Council, and received her Advance Safety Certificate in 2010.

The Supervisor of Design Services and Supervisor of One Call serves on the NE Oklahoma Damage Prevention Council.

6.8 MC8: Resource Allocation

Funds and personnel are made available as required to implement the requirements of the SIP. Allocation of resources is now done on an MPL-wide basis. Discretionary expenditures are reviewed and approved by the Maintenance Capital Expense Management Team (MCEMT),

composed of the two Directors of Operations, the Director of Engineering, an Asset Integrity Director, and the Director of HSE. Proposed projects are classified into one of four categories:

- Break / Fix (evaluated to see if repairs are economically justified)
- Regulatory / SIP (non-discretionary unless the asset is shut in)
- Discretionary
- Obsolescence (a new category for 2010, addressing equipment that is no longer manufactured and for which spare parts are difficult to obtain)

MPL uses a Project Assessment Tool (PAT) to risk-rank proposed projects for health, safety, environmental, and commercial risks. While there are no dedicated funds for Longhorn discretionary expenditures, all personnel who were interviewed during the auditing process expressed their belief that Longhorn has adequate resources from both a financial and personnel standpoint. The Longhorn system still has dedicated resources, including a full time integrity engineer and a full time risk model and data / ORA coordinator. There was little personnel turnover for Longhorn in 2010.

6.9 MC9: Workforce Development

Longhorn console operators and supervisors received 8 hours of training on the pipeline leak detection system in 2010, with the objective of enabling the supervisor to be the “level 1” support for leak indications.

MPL continues to use their new employee “on-boarding” process, which continues to evolve as feedback is received from the participants. All supervisors have also attended a Leadership Expectations class (there were 7 total classes), which includes case studies tied to actual incident investigations and lessons-learned.

6.10 MC10: Communication to Longhorn and Operations Management

This commitment is no longer relevant, since MPL both owns and operates the Longhorn pipeline system and there is no separate Longhorn management structure with which to communicate outside of MPL itself.

6.11 MC11: Management of Change

This management commitment refers to the implementation of a Management of Change Program. The LMP requires that all documents and files affected by the change be identified and modified in a timely basis. MPL’s management of change process is described in SIP Element 11 and is addressed in section PE7 of this report.



6.12 MC12: Performance Monitoring and Feedback

This management commitment is addressed in PE12.

6.13 MC13: Self Audit

The LPSIP self-audit has been prepared each year as required. This report is the result of the 2010 LPSIP self-audit. Recommendations from prior self audits are being tracked to completion on the 2009 Self Audit Recommendation & Action Plan. The auditor's remaining recommendations are given in the "recommendations" section of this report.



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6.14 MC14: Longhorn's Continuing Commitment

Longhorn continued to implement the programs required by the LMP in 2010. All personnel interviewed by the auditors indicated that financial and personnel resources had not been adversely affected by Magellan's purchase of the Longhorn system in 2009 and confirmed that no integrity related items had been affected.

7.0 Findings for the 12 LPSIP Process Elements

The 12 process elements described in the LMP are addressed below.

7.1 PE1: Longhorn Corrosion Management Plan

There were multiple incidents of missing corrosion control data in 2010 including rectifier, pipe to soil, and critical bond readings, as well as 3 incidents where the available data indicated that rectifiers were not functioning for more than one month in a row but were not promptly repaired. These incidents were all attributed to a single corrosion control technician who appears to have simply stopped performing many of his assigned duties. That employee was terminated once the problems became known, and the potentially affected facilities were all inspected by a third party who indicated that “it is not likely that the integrity of the Longhorn pipeline, with respect to external corrosion, has been compromised by the delinquent corrosion control tests and inspections that occurred at a statistically insignificant number of test and inspection locations.” The situation has since been reported to PHMSA.

Close interval surveys were performed as needed in the higher-tier areas, including 100% of the tier III locations.

UT readings are taken twice a year on the 42 mile replacement project piping, to ensure that the pitting problem is not recurring.

A corrosion issue potentially caused by AC-induced current was previously identified for a nine mile segment of pipe in a power line corridor, and initial mitigation actions were taken at that time. During 2008, a theoretical study of AC-induced corrosion was performed (which did not account for the mitigation activities already performed). The results of that study were received in December, 2008. The 2009 ORA concluded that this issue has been resolved. A guideline has been established to target AC-induced voltage below 10 volts.

Six API 653 internal inspections were completed at the El Paso terminal during 2010. No significant corrosion issues were noted. No floor replacements were required following these inspections.

Cathodic protection was initiated for the 4 new tanks at El Paso in May, 2010. The initial surveys did not indicate adequate cathodic protection, almost certainly due to the extremely dry conditions under the tanks. Subsequent surveys did indicate adequate cathodic protection.

Internal corrosion is monitored through the use of corrosion coupons, which are inspected 3 times a year. The coupon results have not indicated any internal corrosion problems. Corrosion inhibitors are used to ensure minimal internal corrosion. These have historically been injected at rates well above the manufacturer’s recommendations. In August, 2010, the rates were lowered to match the manufacturer’s recommended levels. Corrosion coupons inspected since that time do not indicate that this has caused any problems.



7.2 PE2: In Line Inspection and Rehabilitation Program

In 2010, Longhorn completed the ultrasonic (UT) inspection of the pipeline from Galena Park to Crane (Galena Park to Warda was done in 2009, and Warda to Crane was done in 2010). This completed the commitment to run a UT tool to inspect for laminations and hydrogen blisters on the “old” part of the pipeline system. Analysis of the UT ILI tool revealed that wall laminations resulting in blisters are not an integrity concern with the Longhorn pipeline. Deformation tools were run in these segments prior to the UT tools. Rehabilitation and Probability of Exceedance (POE) digs were performed beginning in 2010, and were continued into 2011. Longhorn applies HCA remediation timeframes even to pipe segments outside of HCAs. All rehabilitation was conducted in the necessary timeframe.

On December 17, 2009, Longhorn requested an extension of time to complete the UT inspection of the mainline, which was required within 5 years of system startup (by January 27, 2010). While PHMSA did not object to the extension itself, they did find that Longhorn had not properly informed all relevant parties of this requested deadline modification, and had not provided adequate supporting documentation. Longhorn responded to this decision on February 23, 2010. PHMSA issued a final order on the matter on April 14, 2011. All of these documents are posted on PHMSA’s enforcement website.

MPL follows recent industry standards to ensure the quality of ILI runs, and uses conservative methods to re-calibrate ILI results when determining what ILI indications to dig. The ORA contractor performs a statistical analysis of the ILI data to identify any additional areas for physical inspection, beyond those that would normally be inspected, as an extra precaution. The ORA process provides a detailed, independent analysis of all ILI data. The schedule for recent ILIs has been driven by the mitigation commitments, and has not been altered by ORA technical analysis. This will change over time, as the mitigation commitment ILIs are accomplished.

MPL is evaluating a “spiral MFL” tool elsewhere on its system, which should be able to detect both longitudinal and circumferential defects at the same time. This technology may be applied to the Longhorn system for future inspections.

7.3 PE3: Key Risk Areas Identification and Assessment

The risk model is being maintained, and is updated with new data on a monthly basis. The tier-based segmentation of the pipeline has not been revised since the model was created but the HCA designations are updated per 195. The factors that affect the tier segmentation change rather slowly, so annual updates should not be required, but an update of the segmentation based on current population densities should be considered. It should be noted that the Longhorn system is regulated under the PHMSA pipeline integrity management regulations in 49 CFR 195.452, which includes requirements for the identification and management of High



Consequence Areas, including populated areas. The populated area information and resulting pipeline integrity management programs are periodically updated as required by this regulation.

7.4 PE4: Damage Prevention Program

The damage prevention program for Longhorn appears to have been effectively implemented in 2010. Longhorn has committed to install and maintain a high number of pipeline markers. The aerial patrol program is well organized and executed, and surveillance occurs more frequently than required. Flights are conducted in both directions (up the pipeline one day, and back in the other direction the next). That gives the aerial patrol observer the ability to spot potential issues from both perspectives on a regular basis. An operations person flies with the pilot annually to make sure the flight is taking the correct path.

Longhorn spends about 5 times more money per mile for ROW maintenance (\$1MM for 700 miles of pipe) than the average for MPL.

A pilot program was initiated in 2010 to coordinate all aerial patrol observations through Tulsa (as is the practice elsewhere in MPL), instead of being coordinated through the Austin field office. This transition was officially completed in 2011. This has improved management of the data, and allows automated identification of Tier 1, 2, and 3 areas. It also facilitates the identification of areas with shallow pipe and no-till agreements. All observations and their status are now tracked in the centralized computer system, and reports can easily be generated.

An aerial photo survey is conducted every 5 years to look for scouring of 13 water crossings. The last survey was conducted in 2010.

There are locations of shallow pipe in agricultural areas, and no-till agreements are obtained when possible for those areas, which give a financial incentive to farmers to not use the ROW for farming activities. COMs are reminded on an annual basis about the no-till agreements in their area, and they confirm and document that the land use has not changed. The agreements are renewed every 5 years. There are a total of 10 no-till agreements, and 3 areas where they have been pursued but not obtained. There were no new no-till agreements obtained in 2010. The revised aerial patrol reporting process includes a review for observations in areas of shallow pipe and / or no-till agreements.

Execution of the public awareness program for Longhorn was implemented as required by the LMP. An annual mailout was conducted for residents and other establishments within 2 miles of the pipeline in rural areas, and ¼ mile of the pipeline in metropolitan areas. A supplemental mailout was sent to all parties involved in unauthorized encroachments. Door-to-door visits and doorhangers were conducted at 3,473 locations adjacent to the ROW from Harris to Bastrop counties. The same program will be conducted in 2011 from Travis to El Paso counties. Response cards have been included in the mailouts since 2007. Each year the replies have decreased versus the previous year (310 in 2001, 81 in 2010). This does not seem inappropriate, because the great majority of residents along the pipeline system do not change from year to



year, and those who had questions or comments in one year are likely not to have them in subsequent years. It is interesting that, even though the number of reply cards has dropped from year to year, the % of replies that state that they have seen or heard information about pipeline safety in the past year has remained very consistent (about 55%), as well as those who claim that they were aware of the need to call One Call before digging (about 75%). A smaller % of respondents each year claim that they were aware of the Longhorn pipeline before they received the brochure (perhaps because those who were already aware of Longhorn had replied in prior years, not the current year). It is reassuring to note that each year a larger % of respondents claim to be aware of the “811” system, which is the nationwide number for One Calls (currently 38%).

Longhorn COMs (Coordinators of Operations and Maintenance) participated in 25 group emergency responder and excavator meetings, covering 100% of the pipeline mileage. There were an additional 117 meetings with emergency responders along the ROW. Over 1,200 emergency responders and public officials were targeted by a fall and winter newsletter on pipeline safety issues. MPL also provided handouts for 911 operator training in Greater Harris County.

Longhorn continues to operate a school outreach program targeted at 4th and 5th grade students, but has had difficulty getting schools to participate. In the Austin area, 18 schools were targeted, but only 3 participated. In the Houston area, 6 schools participated, reaching 676 students. Longhorn is currently re-evaluating the school outreach program, and may make modifications in future years.

Longhorn participated in the Houston Home and Garden Show as well as the El Paso Rodeo, in an effort to broadly disseminate pipeline safety information. Longhorn also placed safe digging ads in the El Mundo Hispanic newspaper and the TX Co-op Power magazine. The farm store kiosk program was continued in 2010, and an effectiveness survey was conducted with store owners and managers. The results of the survey may be used to modify this program in the future. Longhorn also participates jointly with programs conducted by Dig-Tess, including the sponsorship of NASCAR driver Joey Logano.

7.5 PE5: Encroachment Procedures

Operations personnel are keenly aware of the need to prevent unauthorized encroachments and to properly manage authorized encroachments. An encroachment agreement is executed for every authorized encroachment. MPL uses two different encroachment agreements: a “short form” that is used for routine activities (such as installing utility lines across the ROW), and a “long form” that is used for more complex situations such as land development. The land representative is informed of every encroachment agreement, and reviews them to ensure that they are appropriate. These are retained permanently in the TRACT land files.

There were a total of 111 encroachments in 2010, all of which were documented using the “short form” for encroachments. One of these was unauthorized, as compared to 3 in 2009. It was a



fence installation in Travis County. MPL gathers ROW near miss and unauthorized encroachment data in the Mitigation Plan Scorecarding & Performance Metrics report. The patrol program identified 1 near-miss incident, involving an unauthorized encroachment on the ROW in 2010. Although unauthorized encroachments are not uncommon for any pipeline, these near misses and unauthorized encroachments reinforce the need for an active ROW patrol program, in addition to the public awareness programs.

7.6 PE6: Incident Investigation Program

To promote awareness of hazards and to ensure “near misses” are identified, MPL uses a hazard / near miss (HNM) card (note that these operational “near misses” are not the same as the ROW “near misses” described in PE4). All operations employees are encouraged to complete these cards (a lot of HNM cards is better than just a few). There were 6 HNM reports for 2010, versus 79 in 2009. Longhorn used to make more HNM reports than average for MPL. In 2010 they were below average. The HNM report has been revised to include Consequences and Probability.

The LPSIP requires that incident investigations be performed for accidents, incidents, repairs, and near misses (“close calls”). The Incident Data Report form (13-FORM-1301) includes checkboxes to identify the event as Minor, Serious, or Major. The vice-president level determines the level of investigation required for each II, which is typically documented on the Incident Investigation Report (13-FORM-1302). Longhorn did 15 Incident Investigations in 2010, versus 16 in 2009. Some of these were for non-operational events. None of the Incidents in 2010 were considered “serious”. The level of detail contained in the II reports has improved over prior years, partly due to a new process where 2 people in Tulsa review IIs as they are submitted and kick them back to the author if they contain insufficient information (instead of waiting for the next scheduled quarterly review). Note that IIs for the Longhorn system are reviewed on a monthly basis. In 2011, MPL plans to send 15 people to formal Root Cause Analysis training, which addresses a prior audit concern.

In 2011, MPL will generate Lessons Learned bulletins (see MC7) based on an analysis of Incident Investigations and Hazard / Near Miss reports.

The Tulsa Operations Control Center is now using the “Log mate” alarm management program, which enables better trending and analysis of alarms.

MPL conducts a quarterly review of all incident data with the VP of Operations; the Operations Directors; and the VP of Technical Services. The auditors did not investigate the level of detail or trending that is reported to management or the outputs that may come from these reviews.

MPL has an action item (AI) tracking process that tracks IIs, HNM cards, and SIP meeting action items. The AI tracking process excludes action items that are performed immediately. The Safety Leader participates in the bi-weekly conference calls, and identifies any incidents that



might require an Incident Investigation. She also gets copies of all spill reports, for the same reason.

7.7 PE7: Management of Change

A new Management of Change tracking process is being used in Austin to ensure closeout of all MOCR items.

Longhorn performed one HAZOP analysis in 2010, for the East Houston Terminal connection.

MPL's management of change process is described in SIP Element 11. The LMP requires that all documents and files affected by the change be identified and modified in a timely basis. Upon review of the 2010 completed MOCR's, the auditors found instances of incomplete supporting documentation for placing 2 new tanks into full service, for re-establishing a delivery system, and for restoring a pipeline segment to service.

The LMP requires that all changes on the Longhorn system "be evaluated using an appropriate hazard analysis (HAZOP, what-if, etc.)". The MPL MOCR form includes a yes / no checkbox to indicate whether a Process Hazard Analysis is required, and MPL's procedures provide that the asset integrity engineer should determine the appropriate PHA methodology for change requests. MPL changed their SIP / PHA procedure in 2008 to specify that PHAs were required for all changes "on a Longhorn Pipeline System", and the PHA process was updated to provide two options: a what-if/checklist, or a full HAZOP. MPL is currently using the Facility Integrity Checklist as the primary method to perform PHA's.

The SIP requires that Pre-Startup Safety Reviews (PSSR's) occur prior to bringing new equipment into operation or prior to bringing modified equipment back online. The MOCR form includes a signature line in the MOCR Closure Approvals section that confirms whether a PSSR was completed.

7.8 PE8: Depth of Cover Program

The depth of cover program is tracked as part of the Asset Integrity (AI) report. Regular depth of cover surveys are performed as required, results are evaluated, and remediation is performed as appropriate. The last depth of cover survey was conducted in 2007.

In-line inspections to-date have not identified any correlation between shallow pipe and excavation damage, which indicates that this threat is being adequately managed.

7.9 PE9: Fatigue Analysis and Monitoring Program

The fatigue analysis and monitoring program is conducted as part of the ORA, which is functioning as planned. The results of this program are described in the ORA report.



7.10 PE10: Scenario Based Risk Mitigation Analysis

The scenario based risk mitigation analysis (SBRMA) is conducted annually as required, after the results of the Annual Third Party Damage Prevention Program Assessment (ATPDPPA) and the results of the relative risk model are available. The SBRMA for the 2009 operating year was performed as required, and identified the potential to conduct additional analysis on the pipe to be removed during the Pedernales River crossing replacement project. The SBRMA for the 2010 operating year had not been conducted as of the time of this audit.

7.11 PE11: Incorrect Operations Mitigation

MPL has found that operator error has been a significant contributing factor to incidents and near misses on the Longhorn system. Longhorn has taken steps to address that issue, and uses an incorrect operations (IO) tracking spreadsheet which is updated monthly and reviewed monthly. IOs include Abnormal Operating Conditions (AOCs), IIs, and Hazard / Near Miss (HNM) cards. There were 19 AOCs in 2010, the same number as in 2009. Action Items are also reviewed monthly.

MPL does have an operations control center simulator specifically for LPP, which is used to train and to re-qualify board operators in the Tulsa control center. This helps to ensure that they can rapidly recognize and effectively respond to abnormal operating conditions on the Longhorn pipeline system.

7.12 PE12: System Integrity Plan Scorecarding and Performance Metrics Plan

This element commits Longhorn to establish and track general program performance measures, specific programs performance measures, and to conduct an annual system integrity plan audit. These measures have been established and are being tracked as required, and the annual system integrity plan audit has been conducted each year as required. Longhorn has also established several other performance measures and tracking systems, including the Mitigation Plan Scorecarding & Performance Metrics report and incorrect operations scorecard. The scorecard metrics are reviewed monthly. Longhorn no longer tracks all calls to their 800 number, as many of these calls were not related to system integrity (i.e. job inquiries, etc.), and now only tracks integrity-related calls. The Longhorn website has been incorporated into the MPL website.

Longhorn system performance metrics are now contained in a “share drive” accessible to both Austin and Tulsa, which facilitates timely sharing of information and reduces double-entry of data. There was one unauthorized encroachment in 2010. There were 4 releases in 2010, all from facilities, and all were minor. See appendices 10.1 for a description of releases and other key metrics on the system in 2010.

8.0 Recommendations

While the LPSIP is being implemented effectively, there are several opportunities for continued improvement in the opinion of the auditors. These have been grouped into the following categories (in no particular order of importance):

8.1 Pipe Movement at El Paso Terminal

The 2008 audit (conducted in 2009) noted evidence of pipe movement in the racks at the El Paso terminal. The 2009 audit (conducted in 2010) noted continued movement of pipes in the racks, and questioned whether this item had been adequately addressed. The auditor's site visit in 2011 identified additional pipe movement beyond the inspections in 2010 and 2009. This issue presents a potentially serious integrity threat to the piping and pump systems at the El Paso terminal. Magellan is aware of this situation, and has taken steps to address water hammer by installing check valves on the discharge of some pumps to address 'slack line conditions'. MPL is also installing I-rod supports to prevent damage from pipe movement associated with thermal expansion while addressing the root causes of this issue.

8.2 Pump vibration at El Paso Terminal

The tank pump skid vibration issues at the El Paso terminal still need to be resolved and may involve skid anchoring and grout modifications, recycle valve modifications (or elimination), use of variable frequency drives, and / or pipe support modifications. The four new tanks (numbers 20-23) completed after Magellan acquired Longhorn are equipped with VFDs. Two of these tanks will be dedicated to the truck rack to provide gasoline and oil. This will be completed in 2012 in conjunction with manifold modifications. The pump skid for tank 12 was modified in 2011. Magellan is currently working on full modifications to Tanks 6 & 7 and hope to complete them in 2011. These modifications will provide a primary and backup tank for both gasoline and oil to the rack; and a primary tank for premium to the rack.

Once all this work is complete, Magellan should continue to evaluate the modifications needed on the remaining tanks to safely perform tank to tank and tank to rack transfers.

8.3 MOCR Process

The El Paso terminal operations have had the most operational changes in the past few years, and likewise have had the most deficiencies identified during these audits for compliance with the MOCR process. MPL / Longhorn should place additional emphasis on MOCR compliance at the terminal. Magellan is currently evaluating 3rd party software that may assist with this effort.



9.0 Conclusions

The SIP was effectively implemented in 2010, and served its function of managing risks on the Longhorn system. Personnel at all levels of the organization are aware of and committed to comply with the requirements of the SIP. Comprehensive programs are in place to manage risks on the pipeline system and to implement the commitments in the SIP. These programs are mature, and are being improved on a continual basis. Several recommendations for additional improvement have been identified for further consideration by Longhorn.

10.0 Appendices

10.1 Summary of key metrics for 2010

Category	Measure	2010 Results
Incident Data	Releases in each Tier (DOT Reportable only)	Tier 1 = 1
		Tier 2 = 0
		Tier 3 = 0
	Releases in sensitive & hypersensitive areas (DOT Reportable only)	0
	Releases by cause (DOT Reportable only)	TPD = 0
		Corrosion = 0
		Design = 1
		Incorrect Operations = 0
	Releases by volume (BBL) (DOT Reportable only)	Tier 1 = 0.24
		Tier 2 = 0
Tier 3 = 0		
Near Misses NOTE: WAS THE NEAR MISS TIER 1???	Tier 1 = 1	
	Tier 2 = 0	
	Tier 3 = 0	
Risk Awareness	Identification of new and/or previously unrecognized risks	1
	Number & type of projects completed that are not required by prescriptive code	2
Public Customer Service	Number of validated complaints on safety or environmental issues	1
	Number of landowner contacts related to pipeline safety and land use	65
Operator Resources and Innovation	Number of new technologies, alternative methodologies and innovative approaches to control risk	1
Damage Prevention Program	Number of third party damage incidents due to One-Call Process not being practiced (One-Call Violations)	0
Unauthorized Encroachments	Number of unauthorized encroachments	1
Facility Inspections	Number of facility inspections	10
Corrosion Management Plan – Smart	Dents with any of the following: metal loss, corrosion, exceeds 6% of the outside diameter, or located on the longitudinal seam or girth weld	10



Pig Results	Remaining strength of the pipe results in a safe operating pressure that is less than the current MOP at the location of the anomaly using a suitable pressure calculating criterion (e.g. B31 G, modified B31 G, RSTRENG or LAPA)	1
	Casing shorts with associated metal loss	0
	Girth weld anomalies	0
	Corrosion with 3" of either side and/or across girth welds	See ORA Report
	Preferential corrosion of or along seam welds	See ORA Report
	Gouges or grooves greater than 50% of nominal wall thickness	1
	Cracks located in the pipe body, girth weld, and longitudinal seam that are determined to be injurious to the integrity of the pipe	See ORA Report



Leading Measure	Definition	Standard	Score
Number of Releases	Number of Releases from company assets or projects that are managed by area employees in quantities exceeding 1 Gallon.	Zero (0)	4
Number of Recordable Releases	Number of DOT Reportable releases experienced on the Longhorn system.	Zero (0)	1
Number of Line Hits	Number of contacts with pipeline by first, second or third parties. Contact with pipeline includes coating contact or damage.	Zero (0)	0
Number of Near Misses	Number of events that in slightly different circumstances could have resulted in damage to the pipeline by first, second or third parties.	Zero (0)	1
Number of Markers Repaired or Replaced		Actual Number	291
Number of Unauthorized Encroachments	Number of activities that resulted in a structure being placed on the ROW that was not authorized by Longhorn Pipeline.	Zero (0)	1
Number of Emergency Drills Conducted			15
Number of Facility Inspections Completed			10



10.2 Key documents reviewed for the 2010 SIP self-audit

2010 LPSIP Self Audit Backup Docs - Appendices

#	Doc. Name
	Magellan Organization Chart
	2010 Mitigation Plan Scorecarding & Performance Metrics
	2010 Mitigation Plan - Commitment Implementation Status Report
	2009 Self Audit Recommendations & Action Plan
	Incorrect Operations Mitigation Report & Data
	Hazard Near Miss (HNM) - Closed List
	Hazard Near Miss (HNM) - Open/New List
	Closed Action Items (AI)
	Open Action Items (AI)
	Abnormal Operating Condition (AOC) Report
	Incident Investigation Reports
	Safety Culture Assessment Presentation
	Facilities Risk Model
	Summary Report of 2009 ORA Developments
	Summary of ILI results and planned inspections
	Asset Integrity Report - 2010
	Public Awareness Summary Report - 2010
	Management of Change Data, including <ul style="list-style-type: none">- Example MOCR Reports- Open MOCR list- Closed MOCR list
	Encroachment Report Date - 2010
	Valve Inspection Report data - 2010
	Corrosion Control Records – 2010, including: <ul style="list-style-type: none">- MPL Longhorn Rectifier Maintenance Activity Report- MPL Longhorn Test Point Exception Report
	PHMSA / Longhorn correspondence - 2010
	2009 Scenario Based Risk Mitigation Analysis (SBRMA)
	Example new employee training records
	Example Leak Detection Systems Report
	2010 Third Party Damage Prevention Program (TPDPP) Annual Assessment
	System Integrity Plan - 2010

Note: The auditors have performed this audit for 3 consecutive years, and also relied upon program descriptions and documentation from prior years when they also apply to this year's audit. Those documents are described in our prior audit reports.



10.3 Personnel Interviewed

Austin Interviews:

Kris Thorne and Mike Stackhouse - Safety
Darcy Madsen – Field Records

Tulsa Interviews

Melanie Little – VP Operations (via teleconference)
Kent Myer – prior VP Operations (via teleconference)
Mike Pearson – prior VP Operations (via teleconference)
Joe Strief - Director of Operations
Jim Jacobsen – Manager of OCC
Joe Turcotte - previous OCC Manager
Chad Cole – Supervisor - Longhorn console
Ryan Vratil – prior Supervisor - Longhorn console
Allan Wolff – SCADA system supervisor
Mike Pearson – VP Technical Services
Larry Davied – prior VP Technical Services
Doug Chabino – Director Asset Integrity
Bill Nelson (for Bob Jackson) – Manager of Engineering and Construction - TX
Jeff Morton – Integrity Engineer
Rick Wooldridge – Mgr Asset Integrity 2
Clyde Clausen – Mgr Asset Integrity 1
Linh Tran – Data Analysis / Risk Model
Dyan Gillean - Supervisor One Call

Galena Park Interviews

Randy Hermes – Field Supervisor
Jim Griffin - Landman
Ed Fuchs – Galena Park – Operations Manager
Rusty Holman – Galena Park Terminal Supervisor

El Paso Interviews

Cole Ballard – Area Operations Manager - El Paso
Tommy Adams – Area Operations Manager - Crane / Odessa area
Mike Blankendahl – Operations Supervisor – Odessa Delivery Terminal
Roy Van Tine – El Paso Terminal Supervisor
Brad Martin – El Paso Technician
Greg Melton – El Paso COM



10.4 Statements of Qualifications for the Auditors

W.R. (Bill) Byrd, P.E. President

Executive Summary

As founder and principal of RCP, Mr. Byrd enjoys a solid reputation for working with the public, corporate executives, legal representatives, and regulatory agencies to resolve complex regulatory, integrity management, safety, and compliance management issues. He combines exceptional analytical and communication skills with a broad background in engineering, operations, management, economics, and regulatory affairs, yielding excellent professional judgment and capabilities that can be applied to intractable problems. He is a widely respected public speaker, and is routinely called upon to make presentations to industry associations and other groups at the national level. He is a licensed Professional Engineer in five states, and graduated with honors from Georgia Institute of Technology for both his M.S. and B.S. in Mechanical Engineering.

Accomplishments/Experience

- Serving as the consulting expert to the API / AOPL Pipeline Performance Excellence Team, a permanent team composed of pipeline executives dedicated to improving the safety of the liquid transmission pipeline industry.
- Serving on the INGAA Foundation with other pipeline company and contractor executives to identify, prioritize, and fund research projects for the gas transmission industry.
- Serving as a consulting expert during the first criminal prosecution under the Pipeline Safety Act.
- Serving as an expert witness during the first class action lawsuit brought against a pipeline company under the citizen suit provisions of the Pipeline Safety Act.
- Serving as an expert witness / consulting expert on several other pipeline accidents and lawsuits, including those of national significance.
- Chairing the Offshore Corrosion Surveillance Subcommittee for a major pipeline company.
- Leading the development and implementation of a corrosion control strategy for oil and gas operations on the North Slope of Alaska in response to congressional investigations.
- Leading the development of a multi-skill progression program for a major pipeline company with a unionized workforce.
- Developing a new approach for H₂S contingency planning in large sour oil and gas production areas, and co-authored two papers based on that work at the first annual EPA/SPE Joint Exploration and Production Environmental Conference. This revised planning approach has since been adopted throughout the oil and gas industry for use in production operations.
- Developing solutions for produced water toxicity issues on the Outer Continental Shelf, NORM sampling and testing procedures for oil field wastes, and asbestos exposure issues.

Associations/Affiliations

- American Gas Association
- American Petroleum Institute
- American Society of Safety Engineers
- American Society of Mechanical Engineers
- Interstate Natural Gas Association of America Foundation
- Texas Gas Association
- Houston Pipeliners Association
- Gulf Coast Environmental Affairs Group



Chris Foley, CSP
Vice President, Consulting Services

Executive Summary

Mr. Foley has extensive engineering and senior management experience in a broad range of industrial sectors, including energy services, power generation, pulp and paper, and petrochemical. He has a strong background in operations & maintenance, project management, systems safety engineering, environmental compliance, and construction engineering. Board Certified Safety Professional and B.S., Industrial Engineering – Texas A&M University.

Accomplishments/Experience

In his 18 years of industrial experience, Mr. Foley has developed comprehensive regulatory compliance programs for pipelines, air, water, waste, emergency response, hazardous materials and processes, and occupational safety management for Fortune 500 companies. Specific accomplishments include:

- Directed due diligence efforts for several crude and HVL pipeline acquisitions. These efforts included comprehensive phase I environmental assessments, jurisdictional determination reviews, permit transfers, remediation project assessments, integrity management assessments, operator qualification transition, and regulatory program development, including O&M, Integrity Management, Operator Qualification, Oil Spill Response Plan, One call, Public Awareness, and Environmental, Health & Safety Plans.
- Conducted a comprehensive permit review of Longhorn Pipeline Partners, Houston Ship Channel to El Paso refined products pipeline. This included all federal, state, and local jurisdictions for the construction, start-up, and on-going operations of the refined products pipeline, various pump stations, and breakout terminals.
- Managed all aspects of EHS compliance for thirteen combined cycle power generation facilities in the Western Region of the U.S. This included acquisition and compliance monitoring for air and wastewater permits, performing comprehensive environmental due diligence reviews of recently acquired facilities, and served as lead point of contact for all agency representatives for a wide variety of regulatory issues.
- Developed EHS Management Tools utilizing web-based communication tools, for audit tracking.
- Coordinated Process Safety Management and Risk Management Plan compliance for all highly hazardous production processes within a large pulp & paper facility and lead several PSM/RMP compliance audit teams at various facilities throughout the country.
- Played a key role with the East Harris County Manufacturers Association, planning and hosting joint communication forums between local chemical industries and community members which presented each facility's chemical release modeling scenarios, accident prevention measures, emergency response capabilities, and community alert notification systems.
- Lead Project Engineer during various petrochemical production facility expansion and shutdown maintenance projects, and new LNG production facility start-up project.

Associations/Affiliations

- American Gas Association
- American Petroleum Institute
- Texas Oil & Gas Association
- Southern Gas Association
- Texas Gas Association
- ANSI Gas Piping Technical Committee



David G. Knoelke
Senior Staff Consultant

Executive Summary

As a Senior Staff Consultant for RCP, Mr. Knoelke has 36 years of pipeline experience including engineering, operations and pipeline regulatory compliance assignments with a major pipeline operator. He has served on multiple API Committees (Performance Excellence Team, Data Mining Team, Public Awareness Committee) and was Chairman of API's Public Awareness Committee from 2006 through 2010. He has held management positions in pipeline engineering and operations. Since 2000 he was the lead DOT Compliance Coordinator and was instrumental in the development of this operator's Gas and Liquid Integrity management Programs and Public Awareness Programs.

Accomplishments/Experience

In his 36 years of pipeline experience Mr. Knoelke has developed multiple DOT Compliance Programs and developed and implemented training for these programs and mentored colleagues on the use and value of those programs. His engineering and operations background in conjunction with his API Committee participation brings a broad perspective with his participation on compliance projects. Examples of his accomplishments include:

- Provided DOT Compliance support in development of BP Pipeline's Liquid and Gas Integrity Management Programs and supported those programs through 4 Federal Audits and 3 State Audits of those programs.
- Developed and managed the updating of BP's Operations and Maintenance Manuals (Liquid and Gas).
- Moderated and presented various subjects at API Pipeline Conferences including: Data on Pipeline Industry spill trends, Damage Prevention, Public Awareness and Program Evaluations.
- Participated on the Governor appointed, State of Washington's Citizens Committee for Pipeline Safety as the Industry Liquid Pipeline Representative from 2007 through 2010.
- Represented BP on multiple Federal and State Pipeline DOT audits including: Integrated Inspections, Procedure Reviews, Integrity Management Program, Operator Qualification, Drug and Alcohol, DOT Field and Records, Storage Vessels and Terminals.
- Engineering Supervisor of pipeline projects and Technical Service Team Leader for Amoco and BP Pipelines

Education

B.S., Mechanical Engineering, Marquette University.

Awards

- API 30 Year Active Participation Award
- State of Washington Certificate of Appreciation for serving on Governor Appointed Committee for Pipeline Safety