US Operations
Integrity Management Program
Effectiveness Review

May 2012

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Executive Summary

Under the direction of Spectra Energy Audit Services, Process Performance Improvement Consultants (P-PIC) led an effectiveness review of Spectra Energy's US Operations Integrity Management Program (IMP) in Q4 of 2011. The purpose of the engagement was to review processes, procedures and records as well as assess the overall effectiveness of the Company's IMP and benchmark it against other North American gas transmission operators.

Prior to implementation of the IMP in 2004, the Company's approach and track record with respect to pipeline safety and integrity were viewed as industry leading. Over subsequent years, US Operations continued to maintain industry leadership as a technically effective workforce with a strong competency for managing single threats. However, programmatic elements of the IMP did not advance as much as technical aspects of the program, nor did they improve at the same pace as other leading operators in the industry. Currently there are processes essential to an overall effective program that must improve in order for US Operations to keep pace with its peers in addressing anticipated changes in the industry's integrity and safety commitments and related regulations. The effectiveness review identified three key factors that contributed to the current situation.

1. Roles and responsibilities for IMP are not clearly defined or well understood,
2. Information technology solutions have not kept abreast with the needs of the program and,
3. Formalized work planning and management processes for IMP are lacking.

Based on P-PIC's assessment of ten core IMP processes, US Operations currently ranks first quartile in three, second quartile in three and third quartile in four.

<u>High-Level Recommendations</u>
Senior Management should:

1. Clearly define roles and responsibilities of work related to the IMP; implementation of the roles and responsibilities within the US OMS can facilitate this.
2. Develop a multi-year IT plan that works in concert with the work management planning process to enable efficiencies and improved effectiveness in planning and execution of work as well as record keeping.
3. Complete current efforts in developing formal work planning and management processes, as well as multi-year plans that broaden the IMP to ensure that it is comprehensive, systematic and integrated to address all threats.

1.0 - Background and Purpose of the Effectiveness Review

At the request of Spectra Energy Audit Services, Process Performance Improvement Consultants (P-PIC) led an effectiveness review of Spectra Energy's US Operations Integrity Management Program (IMP). P-PIC personnel were Mark Hereth and John Zurcher. Andrew Haywood of Spectra Energy Audit Services served on the team. John Wiggin, independent consultant, participated as an observer on behalf of the US Operations staff. John provided valuable insight during the process related to programs such as the Spectra Energy Operations Performance Assurance (OPA) Program, and its implementation as the US Operations Management Systems (OMS).

The purpose of the engagement was to review procedures, processes and records related to analysis of integrity assessment results, scheduling and mitigation of findings, as well as selection of prevention and mitigation measures under management of pipeline integrity in Spectra Energy's US Operations. The review was specifically focused on assessing the effectiveness of these programs for delivering the expectations of the IMP and guidance outlined in American Society of Mechanical Engineers (ASME) B31.8S.

2.0 - P-PIC Evaluation Methodology

The review included an evaluation of policies, procedures, processes and records related to:

- Identification of threats to integrity and application of risk assessment.
- Analysis and evaluation of integrity assessment results using in-line inspection for metal loss and dents. The effectiveness reviews did not examine the use and effectiveness of direct assessment or hydrostatic testing as these represent a small fraction of the integrity assessments conducted.
- Scheduling and mitigation of findings.
- Evaluation and selection of prevention and mitigation measures.
- Evaluation of effectiveness of quality control, management of change, communication, and performance measures.

As stated above, the primary focus of the engagement was around the quality of the IMP and not explicitly directed at compliance with specific regulations.

P-PIC requested and received current versions of the US Operation's Integrity Management Plan, including supporting Operations and Maintenance Standard Operating Procedures for:

- Identification of threats to integrity.
- Integration of data and application of risk assessment.
- Analysis and evaluation of integrity assessments for in-line inspection for metal loss and dents, including classification of anomalies.
- Conducting field work to examine anomalies, including the basis for scheduling.
- Undertaking repairs, where necessary.
- Evaluation and selection of preventive and mitigation measures.

P-PIC requested a listing of in-line inspection (ILI) integrity assessments conducted in 2009 and 2010 from which three ILI assessments were selected to examine in detail in the Northeast and Southeast regions. The years 2009 and 2010 were selected because those were the last two years for which all of the steps defined above would be expected to be complete; 2011 work was undergoing completion as the review was conducted.

Activities included interviews and records reviews in the corporate office in Houston as well as interviews and records reviews at two region locations; one in Waltham, Massachusetts for the

Northeast Region, and another in the Houston office for the Southeast Region. A three-tiered approach was used. The tiers were applied as follows:

1. P-PIC personnel began by evaluating policies, procedures, processes and work practices, i.e., "what you say you do".
2. A second tier entailed interviews and observations of Houston office and field personnel executing work, i.e., "what you actually do", and
3. A third tier entailed review and evaluation of completed documentation, i.e., "what you can show that you do".

The report also includes P-PIC's assessment of Spectra Energy's US Operation's IMP against other leading practice integrity programs. The assessment is based on audits and effectiveness reviews conducted by P-PIC for over 37 companies with natural gas transmission operations. P-PIC has conducted multiple audits for many of these companies. The types of engagements include audits of integrity management programs, operations and maintenance plans, and gas quality and measurement programs, among others.

3.0 - Overall Health of the Integrity Management Program

Observations

Spectra Energy's US Operations currently are and have in the past been regarded as exemplary by the US Department of Transportation's Pipelines and Hazardous Materials Safety Administration (PHMSA). Today the group maintains an exceptionally strong technical capability especially in the area of threat management where they are viewed as industry leaders in planning and execution of ILI, hydrostatic testing and direct assessment. They are also viewed as leaders in damage prevention, stress corrosion cracking management, emergency response planning and incident management, and management of manufacturing and construction-related threats. Specialized expertise was developed as needs arose, such as the capability to evaluate and manage external loads on the pipe. Expertise has grown within the company out of the emergence of long wall mining and its impact on the pipeline system. In fact, expertise in the Northeast Operations related to managing external loads is viewed as a "center of excellence" by operations throughout Spectra.

Prior to implementation of the IMP in 2004, the company's approach and the track record with respect to pipeline safety and integrity were also viewed as industry leading. US Operations maintained this industry-leading position for the first several years after implementing the IMP primarily through its leadership in the Interstate Natural Gas Association of America (INGAA) and involvement in the development of Integrity Management Supplement to the ASME B31.8, referred to as ASME B31.8S. However, over subsequent years, US Operations did not evolve other core program processes as effectively or at the same rate as its peers. As a result, from a programmatic perspective, advancement of the IMP did not keep pace with peers and US Operations slipped to the middle of the pack. Based on P-PIC's assessment, factors that contributed to this situation are described in greater detail in the subsections that follow. P-PIC believes it is important to point out that the company has recognized need to improve programmatic elements and efforts are underway to implement OMS in the US Operations.

Roles and Responsibilities

The IMP was initially managed centrally in Houston and supported by field operations. Over the next several years after implementation of the IMP, more and more responsibility for the overall program was moved into field operations. In addition to a number of key personnel moves, senior leaders and subject matter experts were asked to take on new, and in some cases additional

responsibility. To the extent these changes created impacts on current responsibilities, gaps were created in key subject matter expertise. Processes such as risk assessment, data integration, quality assurance, quality control and prevention and mitigation measures were not fully developed. There was also a loss of attention to advances in technology in areas such as in-line inspection and system integration.

One of the most prominent technical areas that did not keep pace with peers was corrosion control. Although caused in part by not having clearly defined roles and responsibilities, new requirements of the integrity management regulations and related consensus standards also created challenges. Corrosion control continued to be applied in the field operations as it had historically. However, field operations personnel did not benefit from learning from the findings of the assessments. Better integration of information from assessments back into other programs would have helped maintain focus on broad-based corrosion control. Additionally, although the IMP budget increased over time, there was a perception among many personnel interviewed in Houston and the regions that needs requiring additional costs other than for assessment and remediation activities could not be addressed within the existing budget.

Information Technology

The challenges of workload have been exacerbated by the failure to implement a broad array of information technology solutions supporting the IMP. There is a robust geographical information system that supports class location definition, High Consequence Area (HCA) identification and record keeping of pipeline assets. However, while there are an abundance of spreadsheet-based and company-developed systems on which managers rely, there is a lack of a robust data base and system to support other aspects of integrity management, including:

- Threat identification
- Risk assessment
- Assessment planning
- Assessment execution
- Work management
- Management of assessment data
- Information and data integration
- Prevention and mitigation measures
- Management of change
- Documentation

In recent years, leading peer operators have become more effective than Spectra Energy's US Operations in the use of information technology to support their IMP.

Work Planning and Management

US Operations has utilized a one-year planning horizon for integrity-related work. There were and currently are no formal, comprehensive, long-term plans identifying requirements to fully build out the IMP and sustain all of the associated programs it impacts. Lacking a clearly, defined formal, long-term plan has made it difficult for senior management to see the complete picture, and respond effectively. The outcome has been that the more programmatic aspects of integrity management are not fully developed and the IMP is not as comprehensive, systematic and integrated as it could be. Key areas that were not were developed include:

1. Broadening use of data and lessons learned into risk assessment,
2. Prevention and mitigation measures,
3. Efforts directed at how to improve processes and program effectiveness, and
4. Evaluation of program effectiveness.

Opportunities for Improvement

Today, integrity management builds upon historical, single discipline threat management and uses risk assessment to ensure that threats are managed comprehensively, and in an integrated manner. The interaction among different threats is also an essential part of leading integrity management programs today. Leading IMP's require formalization and documentation to ensure assessment findings are fed back into the program in order to evaluate the quality of assessment tools used in identifying and sizing anomalies, improve the base data used in risk assessment, evaluate the effectiveness of risk assessment and identify preventive and mitigation measures to apply in managing threats.

Defining what needs to be done to address workload cannot be viewed separately from a multi-year plan for information technology to support the IMP. There are commendable efforts underway to address the workload with a long-term view of work planning. Work planning needs to account for current workload, but as importantly, future needs. Future needs include the INGAA Integrity Management Continuous Improvement (IMCI) commitments, items on the rulemaking horizon, and planning for succession. The planning should consider required skills and experience in addressing the requirements of work activities.

Development of the information technology plan will require dedication of front line management and will be best accomplished through a full understanding of the desired applications and output to effectively support an integrity management program. It will take a number of years to get the necessary systems in place. The best long-term solution for work management will be realized by integrating the benefits gained from use of information technology. One of the benefits of using information technology should be evolving the field technician's job from one of largely being a "data collector" to one of being a "data analyst". This will enable personnel at this level to direct more of their efforts at problem solving, trouble shooting and developing longer-term prevention and mitigation plans.

Roles and responsibilities need to be clearly defined for the current organization. There are processes that have been developed for much of the IMP. The company should consider developing RACI charts, "swim lane" charts or both using the processes to clearly define roles and responsibilities. When vacancies occur in management positions and key subject matter expert positions, a management of change process should be considered.

The PIOC has been meeting regularly again since early 2010. This group should become fully engaged in oversight of the IMP and making periodic reports to the US Operations and Services Leadership Team. This should be the group that reviews and ultimately recommends items to be considered in the US Operations risk register that relate to pipeline integrity management. This group may also want to consider sponsoring implementation of a leading practice P-PIC has observed in other companies. It is the practice of creating and disseminating a "State of System" report; an annual report that summarizes work completed, observations on the state of the system, and a report on the change in the risk profile from one year to the next.

The Spectra Energy Operations Committee should continue sponsorship of periodic one-to-two day seminars where technical topics are selected and practices used within Union Gas, SET-West and US Operations are shared in detail, with the idea of drawing the best out of each, while recognizing the need to have operation specific requirements that may be different. Adoption of common elements and agreement to have differing requirements would be done so that each operating unit understands the bases.

4.0 - Benchmarking

The collective body of work that P-PIC has conducted in auditing and reviewing the effectiveness of transmission integrity management programs provides a solid basis for comparing integrity management processes.

Table 1 provides P-PICs assessment of how Spectra Energy's US Operations ranks against its competitors in each of the ten core integrity management processes. The table also provides summary commentary on US Operations and identifies P-PICs view of the industry leaders in each category.

Based on P-PIC's assessment, US Operation's processes range from first to third quartile. While there are a number of core processes where US Operations rank in the first or second quartile, there are several processes that are essential to a fully effective program that have not been sufficiently developed or rank in the third quartile. These include risk assessment, data integration, prevention and mitigation measures, and IT solutions. There were no instances of noncompliance found.

Benchmarking of Threat Management, i.e., the management of the nine threat categories identified within ASME B31.8S, including threat interaction and Integrity Management Enabling Processes are presented in Appendix A. P-PIC ranked US Operations as industry leading in three of the 10 threat management related processes and either first or second quartile in six of the remaining seven. Only one process, external corrosion, ranked in the third quartile. US Operations ranked as industry leading in two of the eight other processes and was either in the first or second quartile in four of the remaining six processes. US Operations ranked in the third quartile for the documentation and management of change processes.

5.0 - Risk Assessment

Observations

Risk assessment was an essential element of the initial development of the pipeline IMP in 2003 and 2004, but has not been applied in a consistent manner since its original application. Risk assessment has been used primarily to rank segments along the pipeline system and prioritize assessments but has not been viewed as having value in managing the program and providing decision support. In addition, the application of risk assessment has not broadened as is envisioned in ASME B31.8S, nor has it been applied more broadly as do operators with leading applications of risk assessment.

For example, strong attention has been provided to each of the threats to integrity in the Threat Response Guidance documents. While there is recognition of the importance of assessing interactive threats, the current approach does not have the depth warranted given recent incidents on other pipeline systems with similar materials, construction practices and environments.

Broader application of risk assessment will be an essential part of integrity management as the industry works to extend the application beyond HCAs, and in particular as operators will rely more and more on performance-based approaches as opposed to prescriptive approaches. A central tenant of performance-based approaches is to demonstrate that risk is reduced. Additionally, the risk assessment process must account for the implementation of prevention and mitigation measures and their effect on the risk score while having the opportunity to run what-if scenarios to anticipate risk impact and related cost of the measures.

Opportunities for Improvement

There is an opportunity to undertake a fresh look at how risk assessment is managed. Industry leaders have selected a software platform, committed to it and made it an integral part of their integrity management decision support. Some operators have developed their own software platform, and others have purchased or leased a commercially available platform. The most critical aspect is selection of one approach, staying committed to it and making it an integral part of integrity management decision-making support. In addition, the process should include a formal review by area, region and Houston office subject matter experts to confirm results are consistent field experience and operating history.

Risk assessment should reflect the completion of work on the system. Historically used risk models, including the one currently in use by US Operations, do not account for work completed. For example, completion of an assessment and repair of anomalies requiring an immediate or scheduled response or conducting a survey such as a close interval survey should result in a reduction of risk that is reflected in the final assessment documentation.

Risk assessment should provide increased attention to interacting threats. There is opportunity for improvement by conducting a fresh evaluation of potentially interacting threats, and defining where improvements in process and procedure can be made. This work should begin with a review of incident and leak history within the company and across the gas transmission industry collectively. Recognizing that PHMSA incident reports do not explicitly identify instances of interactive threats, a periodic review of incidents on pipelines operated nearby Spectra Energy pipeline systems should be undertaken to identify the potential for interacting threats having contributed to a failure. In some instances this may require follow-up with personnel of the operator to try and get additional detail.

Broadening the application of risk assessment means applying it in post-assessment mitigation decision making, as well as in evaluation of threat-based prevention measures for pipeline segments. It also entails use of risk assessment to develop a risk profile that is an aggregate view of risk of the system. While the view of risk for pipelines is relative and not absolute, leading operators develop a view of the aggregate risk and create a "profile" that can be compared year to year to show that overall system risk is being reduced. This can be accomplished in two views using the US Operations Management System (US OMS) framework. The first view is a plot of segments versus their respective risk scores. When comparing one year to another, it provides a means to compare the change in relative risk along the system. This approach can also be applied on a threat-specific basis. A second view draws upon the five-by-five matrix defined in OPA. Union Gas has applied this by depicting the number of segments that fall within each box of the matrix. Comparing the matrices from one year to another enables one to observe the change in the risk profile.

Risk assessment is currently applied in US Operations in three contexts. The first is in assessing threats and prioritizing work, largely in-line inspection. A second application is applied within the expense and capital budgeting process, and a third in developing a risk register used to communicate the most significant risks to senior management. The three applications of risk assessment should be integrated so that there is a clear path from the risk ranking of pipeline segments, to its use in the annual expense and capital budgeting process and designation of items in the risk register. Application of risk assessment under the US OMS serves as an opportunity for enabling this integration.

6.0 - Prevention and Mitigation Measures

Observations

It was apparent in interviews with P-PIC personnel that prevention and mitigation is not a formalized process and is personnel dependent. There was confusion around what is meant by "additional" prevention and mitigation measures in the regulation. PHMSA Gas Integrity Frequently Asked Question (FAQ) #90 provides a good explanation of what is meant by "additional" as well as timing in the sequence of other integrity related activities. The Integrity Management Plan, 09-0000, provides a high level view and makes reference to standard operating procedures but lacks specificity.

Personnel in the Southeast Region could not consistently produce documentation of work completed representing prevention and mitigation measures applied following assessments in the three examples P-PIC reviewed. Personnel in the Northeast Region did produce documentation demonstrating the level of prevention and mitigation work completed.

Opportunities for Improvement

This area can be improved by specifying how data from assessments, including excavations, can be integrated and used in defining prevention and mitigation measures. For time dependent threats, the findings of assessments and results of data integration should be shared and reviewed with local corrosion specialists and technicians. The local corrosion technician's understanding of the system condition should be contrasted with the portrayal of system condition as reflected in integrated data. These discussions should serve as the starting point for identification of prevention and mitigation measures.

Consideration should be given to managing prevention and mitigation measures programmatically. The program should begin to evolve from one being centered on integrity assessment to one centered more on prevention and mitigation work, supported by risk assessment. Prevention measures such as running a close interval survey to identify areas of low potentials are managed as discrete line items in region budgets and appear to be subject to discretionary cuts during the year without adequate consideration of the full programmatic implications. Management of these measures from an overall program perspective ensures only the lowest risk segments will be deferred.

7.0 - Documentation

Observations

Overall, documentation in the Northeast Region was exemplary. It is clear that region management places great importance on it and responsible personnel ensure that it is done effectively. In contrast, documentation in the Southeast Region was at a much lower level of completion. Southeast Region personnel could not consistently find portions of completed assessment packages during the time P-PIC personnel were conducting the evaluation. Forms were found in some instances to be incomplete or contradictory. Personnel had difficulty in producing documentation when P-PIC personnel requested documentation showing that ILI tools were meeting the company and ILI provider specifications. Personnel in the Northeast Region did produce unity plots of "as called" versus "as found" depths for assessments reviewed. Personnel in the Southeast Region stated that they had periodically developed unity plots of depth but had not done so for the assessments P-PIC reviewed.

P-PIC inquired as to whether or not reviews of completed integrity assessments, including excavations were conducted at the end of each year. It was found that reviews of individual integrity assessments had been conducted but there was no evidence of overall review of the effectiveness of integrity assessment methods at a region or programmatic level.

Opportunities for Improvement
It is important to reinforce the need for documentation and that it is to be done consistently and system-wide, and that forms are complete.

Unity plots should be required for all ILI runs with comparison of depth and length of anomalies as well as predicted failure pressure. Review of the entire inspection, examination, evaluation, repair, and prevention measures employed should be conducted formally for each excavation to make sure that the assessment process is complete, documentation is readily available and all documents tie to the excavation. This would include a review of all vendor provided forms and findings.

8.0 - Management of Change

Observations
Personnel executing integrity-related tasks do not appear to have a clear understanding or realization of the value of management of change. This was made apparent in discussions with personnel and review of how recent changes were managed. Personnel struggle with when it should be applied and how to effectively implement it.

The company recognized the importance of establishing clear expectations and recently conducted a workshop on application of management of change. The workshop included presentations on the genesis of management of change in other industries, how it has been applied by other pipeline operators, and how each of the operating units are currently applying and documenting management of change. The personnel involved were at the Director of Technical Operations (DTO)/Director level and plan for acting on the findings of the workshop is in development. Clearly, management of change will be a part of the OMS rollout in US Operations.

Opportunities for Improvement
Personnel must continue use of management of change where required under the regulations but also specifically focus on places in the integrity management program outside of HCAs where work is being deferred and apply the process rigorously in those instances. This would serve to build experience and confidence in the use of management of change and ensure that the impacts are documented in a way that fellow employees can understand; especially in those instances where the decision may be challenged externally or reviewed in future years.

Table 1 - Benchmarking of Core Integrity Management Processes

Integrity Management Processes	Quartile Ranking/ Industry Leaders	Comments
Core Processes		
HCA Identification	1Q Spectra Energy Company A	Industry-leading program for HCA identification
Baseline and Reassessments Planning	2Q Company A Company B	Planning is strong but lack uniform tracking tools; software tool integrated with GIS to track assessments and access data was under development; different approaches used in each Region
Baseline and Reassessment Execution	1Q Spectra Energy Company A	Strong and effective on execution. Company A is also strong on execution.
Threat Evaluation	1Q Company C Company D	Industry-leading in single threats analysis; need to enhance interactive threat analysis
Risk Assessment	3Q Company C Company E Company F	Risk assessment is not an integral part of supporting integrity decision processes; Company C has integrated preventive and mitigation measures integrated risk assessment and develops overall risk profile.
Remediation	2Q Company A Company E	Excellent with new review processes recently implemented. Also apply conservative corrosion anomaly response criteria; hence, anomalies are excavated prior to criteria in ASME B31.8S, Figure 4. Opportunity to improve excavation documentation.
Data Integration	3Q Company G Company E	Lacking a formalized data integration process and supporting software; Company G has fourth generation data integration to support integrity management, including damage prevention
Preventive and Mitigation Measures	3Q Company E	Adequate. Company E applies a best practice that is to develop P&M measures at the district level with personnel providing local knowledge.
Information Technology Solutions	3Q Company G Company D	Strong GIS; IT solutions lacking to support other areas of IMP
Continuous Improvement	2Q Company B Company H	Limited improvements have been made but this has not been an area of concentration.

Notes: 1Q – top quartile performer; industry leader in respective area; effective processes and outcomes; 2Q – exceeds mere compliance; 3Q – compliant with regulations and standards with limited instances where process exceeds mere compliance; 4Q – compliant with regulations with limited instances of non-compliance or ineffective processes.

Appendix A – Benchmarking of Threat Management and Other Processes

Integrity Management Processes	Quartile Ranking/ Industry Leaders	Commentary
Threat Management		
Damage Prevention	1Q Spectra Energy Company A Company E	Industry-leading program; enhanced by involvement in Common Ground Alliance; Company E adapts aerial and ground frequency to local activity.
External Corrosion	3Q Company A Company D Company B	Loss of core subject matter expertise; strong expertise in NE Region; apparent lack of application of corrosion control criteria.
Internal Corrosion	1Q Company A Spectra Energy Company F	Comprehensive program applied systematically on receipt end of system.
Stress Corrosion Cracking	1Q Spectra Energy Company I	Well established, industry-leading program applied on a system-wide basis.
Manufacturing-Related	1Q Company A	Comprehensive program based on development of processes to address specific sub-threats
Construction-Related	1Q Company A	Comprehensive based on development of processes to address specific sub-threats
Equipment-Related	2Q Company C Company J	Adequate program; can be enhanced with greater emphasis on types and mechanisms of equipment failures. A leading practice is the use of facility walk down risk assessment by Company C and Company J.
Weather and Outside Force	2Q Company E Company I Company H	Effective program; opportunity to improve monitoring for and mitigation of threats. Company E, Company I, and Company H have robust, fully-tested programs.
Operator Error	1Q Company A Company D	Effective procedures; industry leadership in development of Operator Qualification and Control Room Management Standards; active and effective internal audit
Interacting Threats	2Q Company E Company D Company C	Adequate program, can be enhanced with consideration of multiple threats and interaction of threats from multiple causes

Integrity Management Processes		
Other Processes		
Public Awareness	1Q Company A Enbridge Company D Company K	Strong corporate level program, makes excellent use of the internet and its website regarding Public Awareness activities; in fact Public Awareness information is just two clicks (links) away from the main page on the company website, which is far superior to any of its peer companies.
Emergency Preparedness and Response	1Q Company A Spectra Energy Company D	Company A also has some of the most succinct, well-written response plans, makes effective use of visual aids and reference materials' and training.
Direct Assessment Plan	1Q Company D Company F	Led industry development of DA processes. Company D and Company F have extensive application of DA.
Performance Measures	2Q Company K Company F	Opportunity to broaden use of performance measures to include process measures; to show progress in strengthening processes and deployment of processes
Documentation and Recordkeeping	3Q Company L Spectra and Company E with Company M	Lack of consistent rigor in completion of documentation among Regions
Management of Change	3Q Company K Company D	Need to define uniform approach and adopt tracking and documentation software; Company K and Company D have well developed approaches
Communications (External)	1Q Spectra Energy Company A	Excellent external communications with PHMSA headquarters and regional office personnel, as well as key external stakeholders
Communications (Internal)	2Q Company C Company N	Opportunity to emphasize internal communication of IMP progress and effectiveness through use of newsletters and meetings in region/area offices. Company C uses a "state of the union" presentation annually in regions and areas.