



Establishment of MAOP Validation Programs

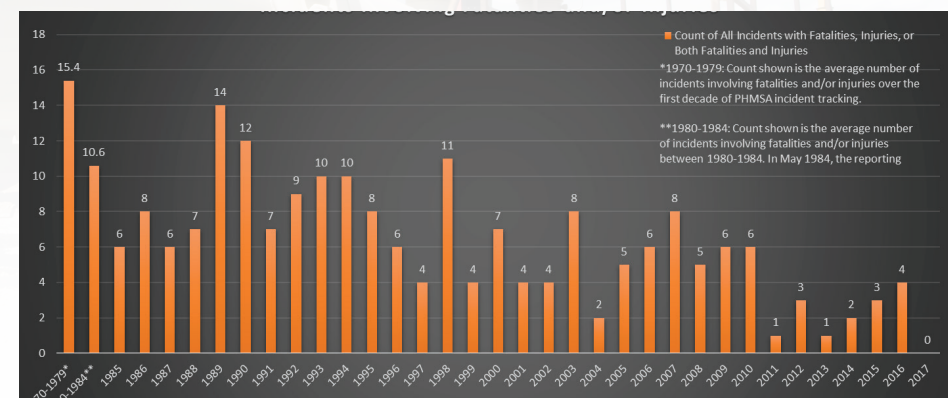
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The federal regulatory code governing natural gas pipeline design, operations, and maintenance came into effect around 1970 (some US states had regulatory codes governing these activities in effect prior to 1970). I say “around” because, as with any regulatory codes, it takes time for operators to progress activities to be in compliance with regulations. However, the intent of the code fulfills a government required objective – impose regulations on industry to ensure the protection of the people and their property.

Regulation is in place on businesses to protect the people from fraud and misrepresentation. In our case, as natural gas system operators, the code is imposed to make sure pipelines do not go bump in the night (or in the day).

Initially, the regulations did not tell operators how to perform the activities, but just what the results of the activities should be. The rules were not prescriptive. Flexibility and creativity was given to the operators on how they would comply with the rules.

Today, as the natural gas industry is getting ready to receive the new rules, we see that the tone has changed. Some of the proposed new rules are prescriptive, very much telling operators how to do things. This is not necessarily bad, and it



can be argued that the accountability for compliance effectiveness has now moved a little to the regulating body. If the prescriptions work, great. If they don't, now there is an opening for finger-pointing.

Pipeline Installations and Records

One can argue that pipelines are designed, constructed, operated and maintained by very competent and ethical people. In addition, guidelines had been available for the performance of these activities long before 1970, therefore it can be assumed that this caliber of individuals would utilize these guidelines, and exceed them because that's what they do. In most cases, through the cycle of conceiving a pipeline and maintaining it, activities are performed very well, if not excellent. However, there are still incidents due to a myriad of reasons.

The San Bruno incident in 2010 was an awakening for many

pipeline operators. The irony is that many incidents of this magnitude and with devastating human impact had occurred before this date (see PHMSA data incidents graph) and they continue to occur today.

Notice of Proposed Rule Making (final publication date has yet to be determined)

To try to improve pipeline safety, PHMSA issued a notice of proposed rulemaking (NPRM) that has many proposed modifications to 49CFR, Part 192. In addition, there are two new sections that will have a significant impact to operators.

§ 192.607 Verification of Pipeline Material

§ 192.624 Maximum allowable operating pressure verification

Once codified, these sections will require operators to know the material composition of their assets and their qualifications for service. In ad-

dition, they will require a systemic approach to verifying a pipeline's MAOP. In a perfect world, excellent records traceability from design, material ordering, construction, and testing will allow for the most efficient manner of compliance with these sections. However, this is not realistic and most operators will have to perform a significant amount of work to achieve compliance.

The performance of the work described in these new sections of code is not exactly new to the industry. What is new is - how do you get a good understanding of your assets and prioritize the necessary work in an efficient production-line manner?

Gaining Asset Knowledge

Before setting up a production-line for performing MAOP Validation, you must be honest and recognize that you are going to find issues. These issues will require direct examinations of pipeline assets, immediate replacements of inferior assets, and pressure reductions until longer-term mitigations can be accomplished. As a result, here are some critical responsive processes that you must establish:

- Issues Resolution – Identifying, categorizing, prioritizing and mitigating issues as they are discovered.
- System Reviews and Pressure Reductions –Hydraulic analysis to reduce system pressure or alter systems will be required on an as needed basis. It will also be critical to keep track of the pressure reductions so that systems can be returned to the

necessary state after mitigations are complete.

- Direct Examinations – This activity is not new, but the volume will significantly increase as you find out what you don't know, but you need to know... now!
- Emergency Material – Throughout this program you will utilize a greater amount of emergency material. This is a good opportunity to review your current stock and update required material types and inventory. Don't forget about pressure control fittings!
- Pipeline Features List (PFL) Data Use – What are you going to do with the data once MAOP calculations have been performed? Are you going to use this data to update GIS tables? Access the PFL data via GIS? Make these decisions early on so that your program can have an end-in-mind and minimize costly changes.

Once you establish how you are going to deal with what can go wrong, you can focus on the development of your MAOP Validation production-line. Here are some of the critical elements of your production-line:

- Process Development – Clear and repeatable processes, procedures and checklists are needed for 1) records review; 2) pipeline features lists build; 3) proxy specifications utilization; 4) quality control; and 5) quality assurance.
- Records Management - Records typing, attribution, storage and accessibility. These re-

cords will be used throughout the life of the pipeline, not just for this program.

- Personnel Training – It is important that some individuals know the big picture, intimately, and it is critical that production individuals know their specific activities to an expert level. Training provides consistency of method.
- PFL Storage – Your storage solution will be dependent on how you decided that you are going to use this data. Remember, you started this program with the end-in-mind.

Advanced Tactics

Organization Engagement & Commitment - The entire organization must be engaged and committed to this effort. If the entire organization is not on the same page, you will have inconsistencies such as the Integrity Management group using assumption values for their work and MAOP Validation using different values for their effort. These types of inconsistencies are difficult to rationalize to your regulator.

Regulator Involvement - A final but critical bit of advice is to work with your regulator throughout the development of your program. Cut them in. Make them be a part of the solution, not an adversary. Don't keep them in the dark! And, if you have a marginal or non-existent relationship with your regulator, now is the time to build that critical relationship.