

assessment according to the level of risk they pose. Thus, highest risk segments would be scheduled for assessment first, lowest risk last. A schedule for taking remedial action on the pipeline segment after the assessment would also be based on risk factors.

- The time frame for conducting the baseline assessment should, among other factors, consider the impact on gas supply to residents. This could also be a factor in determining if a variance from the required time frame is warranted.

- The sequence in which the segments are prioritized for assessment should be determined by considering information such as, how much pipe is in areas of potentially high consequences, which of these pipe segments represent the highest risk, which threats for these segments represent significant risks, how much time will be needed to develop the infrastructure to perform the required assessments (*e.g.*, validate the required assessment technologies, develop consensus standards for the application of these technologies, expand the industry capability to deploy and effectively use these technologies to assess pipeline integrity). If the assessment finds potential problems, the schedule for making the repairs would also be based on risk factors.

Comments on Baseline Assessment and Remediation

INGAA commented that several practical factors will influence the time frame for completing a baseline assessment. These include time for: (a) Program development (suggested, 18 months); (b) assembly and analysis of risk factor data (suggested, 18 months); (c) limitations on the availability of assessment tools from vendors; and (d) potential detrimental impacts on supply to critical customers. Given these factors, INGAA estimated that the shortest time for completing baseline assessments would be about ten (10) years after promulgation of the rule. Even if ten years were allowed, INGAA estimated in an early analysis that the economic cost to customers over the ten year baseline assessment period would range from \$3.9 to \$6.1 billion.

INGAA reported that repair time frames should consider the results of a recently completed analysis by Kiefner and Associates in which the allowable repair time is related to the calculated (or pressure tested) safe operating pressure. Three categories were defined: (a) Segments with a safe operating pressure of 110% of MAOP or less should be repaired immediately, (b) those with a safe operating pressure of

less than 139% of MAOP but above 110% of MAOP should be repaired on a defined schedule, and (c) those with a safe operating pressure of greater than 139% of MAOP require interval monitoring. Interval monitoring implies reassessment on a ten year interval to assure that sub-critical anomalies will not fail during that time.

AGA/APGA commented that factors considered in determining the time frame for the baseline assessment should include scope of the rule (*i.e.*, only above 20% SMYS), availability of pigging equipment, availability of properly qualified people, and the impact on the gas supply. Considering these factors, they believe that a minimum of ten (10) years should be allowed to complete the baseline assessment, with half of the pipeline completed within five years and variances available for those unable to meet the schedule.

AGA/APGA agree that repairs should be scheduled to reflect the seriousness of the defect. However, engineering distinctions among the gas pipeline systems dictate that the highly prescriptive approach to repair requirements in the Large Liquid Pipeline Operator Rule is inappropriate. RSPA/OPS should consider the guidance on repair and mitigation being developed by the ASME/ANSI B31.8S.

The Association of Texas Intrastate Natural Gas Pipelines commented that it would be useful if RSPA/OPS included a special provision for assessment interval for new pipe segments or replaced pipe segments.

PG&E supported a ten year baseline assessment period. PG&E commented that practical considerations (*e.g.*, long-lead materials, construction difficulties, and economies of scale) should be considered in developing assessment schedules to ensure that economic efficiencies can be realized while satisfying the intent of any rule that the highest risk segments be assessed first.

Enron commented that a ten year baseline assessment interval seems appropriate, and that reassessment in class 1 and 2 locations should be on the same interval, but that reassessment in Class 3 and 4 locations should be on a fifteen year interval. Enron also strongly urged RSPA/OPS to allow operators to carry out repairs consistently with existing procedures rather than imposing a prescriptive repair time frame.

Baseline assessment factors: The recent pipeline safety law (Pipeline Safety Improvement Act of 2002) requires that an operator conduct a baseline assessment not later than ten years from the date the law is enacted.

This time frame is consistent with the baseline time frame we were considering based on our study of the relevant influencing factors. The law further requires that at least 50% of facilities in high consequence areas must be assessed no later than 5 years from enactment. This requirement is also consistent with what we were considering. Our proposal incorporates these requirements.

The factors we considered relevant to establishing the time frame for an operator to conduct the baseline assessment include:

- The desire to establish an integrity baseline for all affected pipe segments as quickly as possible.
- The ability of the gas pipeline service industry to expand both its assessment equipment, and, of equal importance, its qualified technical staff.
- The ability of the pipeline industry to gather and integrate risk factor data necessary to characterize the significance of threats to pipe integrity.
- The time required for the pipeline industry to modify its lines to accommodate in-line inspection equipment.

- The impact on critical gas supply and the associated impact on the price of natural gas. INGAA recently funded a study to evaluate the supply and consumer cost impacts associated with various baseline assessment intervals. The study did not include the actual cost of modifying the pipeline to accommodate ILI equipment, and the study assumed operators would perfectly coordinate their assessment activities to minimize the impact on customers. The study included supply impacts resulting from modifying a pipeline to accept ILI equipment and from the assessment activity itself. Supply impacts associated with remediation or repair of defects discovered during the assessment were not included. The study included differences in the supply impacts associated with different assessment technologies.

The INGAA analysis found that consumer cost impact was more significant with short baseline assessment periods than with longer times. The cost impacts in the current analysis were estimated to be \$7.2B for a 14-year baseline period, \$13.1B for a 10-year baseline period, and \$20.1B for a 5-year baseline period. Although not quantifiable in the model, the potential for critical supply interruptions, resulting from the need to perform assessments during high demand periods and the increased difficulty of coordinating assessments on lines