

assessments. The number of excavations required per region is less. These changes will allow operators to plan and conduct confirmatory direct assessments in a manner that is most cost-effective, *i.e.*, identifies areas of concern at lowest cost.

There is no data available at present regarding the cost to implement confirmatory direct assessment. The flexibility included in these proposed requirements means that costs may vary depending on assumptions the operator makes in planning and conducting these assessments. For purposes of this evaluation, the RSPA/OPS assumes that the cost will be less than, but more than half, that of direct assessment, or \$3,000 per mile. Actual costs for many operators may be lower, and the total cost estimates in this analysis are thus expected to be conservatively high.

It is estimated that the cost of periodic reassessment will generally not occur until the sixth year (when reassessment costs will begin for a pipeline baseline assessed using direct assessment) unless the baseline assessment indicates significant defects that would require earlier reassessment.

RSPA/OPS believes that the higher the operating pressure of a pipeline, the greater the potential risk the pipeline poses to the general public. That is because a failure of a pipeline operating at a higher pressure will result in a larger impact area and potentially more significant consequences. It is under this assumption that RSPA/OPS is proposing the shortest assessments intervals for pipelines that operate at or above pressures of 50 percent of SMYS. By basing the assessment interval according to pipeline pressure, operators will have to focus their safety resources on lines that pose the greatest danger. RSPA/OPS believes that varying the assessment interval according to the risk provides the greatest reward per dollar of safety operators will expend.

Integrating information related to the pipeline's integrity is a key element of the integrity management program. Costs will be incurred in realigning existing data systems to permit integration and in analysis of the integrated data by knowledgeable pipeline safety professionals. The total costs for the information integration requirements in this proposed rule are \$31.5 million in the first year and \$15.75 million annually thereafter.

The proposed rule requires operators to evaluate the risk of pipeline segments that can affect high consequence areas to determine if additional preventive or mitigative measures that would enhance public safety should be implemented. One of the many additional preventive

or mitigative actions that the notice proposes an operator take is to install automatic shutoff valves or remotely controlled valves. RSPA/OPS could not estimate the total cost of installing such valves because there are too many factors that would have to be analyzed in order to produce a valid estimate of how many operators will install them. However, based on the results of a generic feasibility study on remotely controlled valves that RSPA/OPS completed in 1999, we concluded that conversion of existing sectional block valves to remote operation was not economically feasible. Operator- and location-specific factors could change this conclusion for individual valves but RSPA/OPS could not analyze these specific factors for individual block valves and therefore, did not estimate the total cost for installing remote valves. RSPA/OPS presumes that operators will analyze valve-specific factors and will not replace valves unless that action is cost-beneficial. RSPA/OPS estimates that the cost to operators to perform the required risk analyses will be approximately \$24.1 million.

Affected operators will be required to assess more line pipe in segments that could affect high consequence areas as a result of this proposed rule than they would have been expected to assess if the proposed rule had not been issued. Integrity assessment consists of a baseline assessment, and subsequent reassessment. The period in which baseline assessments must be completed depends upon the assessment method chosen and the grade of the high consequence areas. The baseline period for most pipe is ten years for pipeline to be assessed with in-line inspection or hydrostatic testing and five years for pipeline to be assessed using direct assessment. These periods are extended to 13 and 7 years, respectively, for pipeline that can affect lower grade high consequence areas, containing relatively lower population densities. Reassessments must be conducted at no less than ten year intervals for pipeline operating above 50 percent SMYS and 15 years for pipeline operating at less than 50 percent SMYS. The proposed reassessment interval for pipe assessed with direct assessment is five years unless all anomalies are excavated, in which case the interval may be extended to ten years. Confirmatory direct assessments would be required to be performed at least every seven years, if an operator established a reassessment interval longer than seven years.

RSPA/OPS analyzed two scenarios, varying the amount of pipeline that operators are expected to modify to

accommodate in-line inspection. This approach was taken, because of industry comments that significant amounts of pipeline would likely be modified and the costs for that work. Some pipe already can accommodate in-line inspection tools. Some can be modified to accommodate the in-line inspection tools with relatively simple modifications. Others require much more extensive retrofits. Until we see results of operators assessments we can not judge whether direct assessment is sufficient or pigging is needed. One of the analyzed scenarios assumed that only the piping that can easily be modified would be changed. The other scenario was based on the assumption that a portion of the pipe requiring more extensive changes would also be modified. As a result of this work, RSPA/OPS has estimated the annual cost of additional baseline assessment that will be required by this proposed rule as between approximately \$59 million and \$298 million annually. The cost for additional re-assessment is estimated at approximately \$32 million per year.

Although there are a variety of benefits associated with this proposed rule, the principal benefits are difficult, if not impossible, to quantify. The proposed integrity management program requirements will ensure that all gas transmission operators perform at least to an established baseline safety level and will raise the overall level of safety performance nationwide. The proposed rule will lead to greater uniformity in how risk is evaluated and addressed and will provide a better and clearer basis for government, industry and the public to discuss safety concerns and how they can be resolved. Public awareness of the integrity program will lead citizens to be more informed about pipeline safety and provide information to operators about activities on the pipeline right-of-way that will help to improve safety. The integrated integrity management programs that operators will be required to implement in response to this proposed rule will result in a higher level of safety, which should in turn result in improved public confidence in the safety of natural gas transmission pipelines. Operators have begun integrity programs on their own because they have recognized the importance of knowing the condition of their pipelines and having the public assured that the lines are safe. After a major pipeline accident, and the accompanying national spotlight from the media the public becomes alarmed with the potential threat that pipelines pose. Pipelines that are presently unpiggable