

Technical Pipeline Safety Standards Committee
Thursday, March 27, 2003
Arlington, VA

Executive Summary of Issues – Integrity Management for Gas Transmission Pipelines

Issues raised by Committee members during discussion of the proposed integrity management rule for gas transmission lines are summarized below.

Concerning an alternative under consideration that would revise the definition of high consequence areas (HCA). (The alternative would allow an option to rely on identified class 3 and 4 areas or to use potential impact circles (PIC). PICs would be calculated for both options. For the class location option, they would be used only for identified sites, i.e., places where people gather or buildings containing hard-to-evacuate populations. For the circle option, they would be used, along the entire pipeline, to identify areas with building density above a specified criterion as well as for identified sites). Committee comments include:

- It needs to be clear who makes the choice and whether it needs to be uniform over an operator's entire system.
- We need to consider whether this approach introduces any new anomalies. (In this regard, Stacey Gerard noted that the use of building data within 660 ft. of the pipeline to infer density in larger circles would be such an anomaly).
- Criteria on which to make a decision would be useful. What are we trying to protect?
- Graphics illustrating the industry proposal should be provided to facilitate Committee review.
- The proposed definition of identified sites uses areas where people congregate 50 days per year compared to the historical 5 days per week, 10 weeks year. This change could be unduly burdensome as it is different than the basis on which operators have previously collected data.

Concerning the density of buildings intended for human occupancy to be used as an HCA criterion. Committee comments include:

- Treating the class 3 definition (46 buildings in a class location unit) as uniform density does not reflect how population actually is distributed near pipelines.
- The size of an area where people congregate needs to be defined (e.g., in square feet). (Ms. Gerard pointed out that this portion of the rule is final).

Concerning the need to add additional margin to C-FER radius calculations used as potential impact circles. Committee comments include:

- It is important to go on record that no injury or burns are acceptable. The purpose of this calculation is simply to start focusing on where to apply initial integrity management efforts.
- We are looking for some confidence that we are starting with the right locations/population and focus the industry to begin with protection there.
- The OPS considerations are losing this focus.
- The C-FER model has a 95% correlation. It is acceptable.

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- There are other conservatisms inherent in the C-FER model:
 - It uses MAOP. Pipelines do not operate at MAOP except right at the discharge of compressor stations.
 - It presumes a worst-case double-ended guillotine rupture.

Concerning use of available data on building density within 660 ft. of the pipeline to determine the density of buildings in impact circles larger than 660 ft (i.e., extrapolation). (Identified sites would be counted, not extrapolated). Committee comments include:

- Interim use of extrapolation would be consistent with the approach used when the current regulations were established and an extended period (approximately 5 years) was allowed for operators to gather data for class location determinations.

Concerning the content of the proposed rule, other than provisions affecting the definition of HCAs. Committee comments include:

- OPS's interpretation of the Pipeline Safety Improvement Act of 2002 as requiring that reassessments begin before all baseline assessments are completed appears to be severe.
- Reporting of performance measures in "real time" is impractical. (Ms. Gerard noted that this was an overstatement and that monthly updates are probably appropriate).
- Data on damage to plastic pipe by causes other than third-party damage is necessary to determine the appropriate actions to be required for plastic pipe.
- There is significant uncertainty in the cost-benefit analysis. Sensitivity analyses, using different cases, may be necessary.
- Industry supports the rule, but recognizes it is very expensive. OPS needs to consider the effect of changes in approach on costs.
- It appears that small operators, who will rely more heavily on direct assessment, are effectively being penalized as a result of OPS's lack of comfort with this technique.
- Adding water to pipelines, i.e., for pressure testing, can potentially increase risk by creating subsequent operational problems.

Linda Kelly, in her capacity as chairman, asked that the following information be provided to the Committee prior to its May meeting in order to facilitate its deliberations:

- The impact of using 4000 vs. 5000 BTU as a criterion.
- Whether any new anomalies are created by the alternative approaches under consideration for identifying HCAs.
- Whether there are any special areas of concern as a result of the comments and discussion at this meeting.
- Graphics illustrating the industry proposal (these to be provided by the industry panel).

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Linda Kelly, acting as chairman, called the meeting to order.

Opening Remarks

Stacey Gerard noted that OPS will be asking the Committee to vote on the proposed integrity management rule for gas transmission pipelines at its next (May) meeting. The request will encompass the notice of proposed rulemaking and the supporting cost-benefit analysis. The Committee can vote for the rule with recommended changes. OPS would be obligated to consider those recommendations in finalizing the rule. Ms. Gerard committed to provide minutes of this meeting for use by the members in their deliberations, and encouraged members to share their views and comments before the next meeting in preparation for the vote.

Andy Drake noted an exchange of correspondence between then-chairman Ted Willke and DOT after the last committee meeting regarding a DOT press release concerning that meeting. The Committee believes that the press release did not represent accurately and in context the transactions and actions of the Committee.

Presentations Re: Proposed Integrity Management Rule for Gas Transmission Pipelines

High Consequence Areas

Mike Israni, Program Manager, OPS described the modification made to the high consequence area definition by the proposed integrity management rule. Mr. Israni made the following points:

- HCAs are defined differently for hazardous liquids and gas, because of different characteristics of those products that result in different effects from leaks and ruptures
- For gas, the basic definition of an HCA was established by the final rule issued in August 2002. This includes:
 - ▶ Class 3 and 4 areas. The requirements to identify and protect these areas have been in existence for 30 years. They were adopted as part of the HCA definition, because OPS believed that operators already have data on these areas and additional effort required would be limited.
 - ▶ Areas where people congregate. These have been included in the class 3 definition, but only to a distance of 100 yards from the pipeline. The HCA definition expanded this to include other locations within the area potentially affected by pipeline ruptures.
 - ▶ Facilities having persons who are difficult to evacuate. These facilities pose issues similar to those for areas where people congregate, and they are treated similarly.

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- The proposed integrity management rule includes several features that modify the definition of HCA:
 - ▶ A new component encompassing areas where the area of an impact circle of threshold radius 1000 ft or larger includes 20 or more buildings
 - ▶ The radius is calculated using the C-FER equation and the result is increased to a defined threshold to provide additional safety margin
 - ▶ Moderate risk areas, areas within HCAs but with relatively less population density, which would have a longer interval for testing. The preamble to the proposed rule poses a question for public comment as to whether the additional actions required in such areas should be limited to additional preventive and mitigative actions only.

Mr. Israni then described the principal comments OPS has received in two public meetings. The comments and options under consideration as a result of those comments are:

1. That operators should be afforded an option between reliance on previously defined class 3 and 4 locations or use of potential impact circles to identify populated areas of potential high consequence. OPS considerations include:
 - The HCA rule is final.
 - It may be possible to offer an optional approach that operators can choose.
 - Some operators would likely find the impact circle approach beneficial. Others may not have data and would prefer to rely on class locations.
 - The option would involve applying the potential impact circles along the entire length of the pipeline.
2. That a fixed count of 20 buildings intended for human occupancy within an impact circle of any size be used as the criterion for defining an HCA. OPS considerations include:
 - 20 buildings was used in the proposed rule as the criterion for an impact circle of 1000 ft. radius. This criterion was determined to maintain the same population density represented by the existing criterion of 46 buildings in a 1-mile by 1/4 mile rectangle that defines class 3 locations.
 - If a fixed count is to be used, OPS currently considers that the number should be 10. This is derived from the number of buildings expected in a 660-ft circle in a class 3 location.
 - 10 is also more consistent with the definition of HCA used for hazardous liquid pipelines. There, highly populated areas were defined as 1000 people per square mile (roughly equivalent to 20 houses in a potential impact circle of 660 ft), but “other populated areas” were also defined. These are based on Census Bureau designations, rather than population density, but are considerably less densely populated than the highly populated areas.

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- 10 houses is also considered more consistent with protection of areas where 20 or more people congregate.
3. That the impact circle calculated from the C-FER equation should be used, without addition of additional safety margin. OPS considerations include:
- C-FER is based on a flux level of 5,000 BTU/hr/ft². OPS considers that the criterion should be 4,000.
 - At 5,000, pilot ignition of a house occurs within 20 minutes. OPS does not consider this enough time.
 - At 4,000 pilot ignition is delayed until approximately 2 hours.
 - 4000 is used by the National Fire Protection Association (NFPA) and American Institute of Chemical Engineers (AIChE).
 - The C-FER report states that second-degree burns can be expected in 5 seconds. A criterion of 4,000 provides additional time (although still measured in seconds).
 - State regulators strongly prefer use of a 4,000 BTU/hr/ft² criterion.
 - C-FER is not conservative for inclined terrain. In a recent West Virginia accident involving a pipeline on a hillside, the C-FER calculation predicted a burn radius of about 580 ft while measurements showed the actual area was about 700 ft.
 - OPS believes that a 15 percent safety margin would be sufficient. (Use of a 4,000 BTU criterion would, itself, equate to an increase of 10 to 12 percent).

Ms. Gerard asked if the industry had done a calculation of the number of miles that would be identified using C-FER without added conservatism as opposed to using it with a 15 percent margin factor. This calculation has not been performed, in part because the definition has been too fluid and it has not been clear what to include. Whether 10 or 20 buildings intended for human occupancy is the criterion applied in the circle has an effect, in addition to the use of any margin factor.

4. That operators should be allowed to extrapolate the building count in potential impact circles larger than 660 ft radius based on the data in-hand for structures within that distance from the pipeline. OPS considerations include:
- OPS considers the concept meritorious.
 - Such an approach might be acceptable for an interim period, allowing a longer time for operators to obtain data for the area beyond 660 ft.

The Committee then heard from a panel of other stakeholders consisting of Rick Kuprewicz (Accufacts, Inc., and member of the Washington State Assistance Committee on Pipeline Safety) and Daron Moore (El Paso Natural Gas). Mr. Kuprewicz's comments included:

- The HCA definition needs work. All want clarity, not complexity. It needs to be amenable to display as a simple logic diagram.

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- Overlap of baseline and reassessments is an issue. Confirmatory direct assessment is a new factor in its effect.
- Identified sites are a key issue. From a public perspective, they represent unsheltered survivability vs. sheltered.
- This is an issue of class 3 and 4 vs. potential impact circles, but also of large operators vs. small.
- Discussion about prescriptive vs. performance-based approaches is not appropriate. We are going to performance. The public issue is how we are going to deal with risk management
- The identified sites definition is workable.
- He favors the potential impact circle approach over class 3 and 4, since it better captures the risk of “closeness” to the pipeline. Both, however, are acceptable.
- C-FER is not a siting model. Better engineering tools should be used for that purpose.
- Direct assessment is appropriate as an assessment tool.
- The Washington Committee will write a letter to the docket. Mr. Kuprewicz does not know what the letter will say, but his recommendations to the committee were:
 - ▶ Support HCA definition clarity and the potential impact circle approach.
 - ▶ Integrity management must mesh with community “right to know”.
 - ▶ Support for the industry position on integrity management intervals.
 - ▶ Beware of the “myth of integrity management”. It does not do everything.
 - ▶ Need to keep focus on prudent operations.
 - ▶ Support OPS development of other IM inspection technologies.
- As higher-level comments:
 - ▶ Don’t overemphasize technical screening.
 - ▶ Key on inspection quality vs. frequency.
 - ▶ Be sensitive to efficiencies. The public does not want to spend billions of dollars for little gain.
 - ▶ Consider whether the risks of concern are addressed.

Mr. Moore’s comments included:

- It is not industry’s goal to harm people, in any way.
- Industry wants to focus its inspections on areas that can affect safety.
- Class 3 represents about 5 percent of pipeline mileage. If it is adopted as the definition of HCAs, it would result in about 70 percent of the pipeline being inspected.
- The overarching goals are to use credible science, to protect people and property, and to protect a significant percentage of the pipe.

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- The NPRM is a good start towards defining where to start on integrity management. It has a few flaws, and the HCA definition is one of them.
- The C-FER model has been validated against real accident data from the U.S. and Canada.
- The model validates the selection of the 660 ft corridor in the 1970s. C-FER predicts an impact of approximately 660 ft for a 30-inch 1000-psi pipeline.
- The fact that the 660 ft corridor has existed means industry has data for that corridor. They do not have data beyond 660 ft.
- Industry does not now identify sites beyond 300 ft (current requirement in 192.5), but recognizes the importance of protecting identified sites and is committed to getting that data.
- The concept of protecting 10 houses within a circle is new. The industry saw this for the first time at the public meeting on March 14.
- The assumption of uniform housing density in class 3 areas is not accurate. This calls into question the derivation of 10 houses as a protection criterion.
- Industry will be proposing a definition that addresses the concept of “other populated areas” via identified sites – buildings or outdoors.
- Industry has revised its proposed approach to defining HCAs since it was presented at the March 14 meeting.
 - ▶ The approach still allows a choice of using class 3 and 4 locations or applying an impact circle approach.
 - ▶ The revision provides that impact circles will be used to find identified sites outside of class 3 and 4 locations for operators who choose to rely on the class location schema.
- Some operators will comment to the docket on the effect of using 10 houses vs. 20 as a selection criterion. Those comments will show a great expansion of included pipeline and a loss of focus.

An open discussion ensued. Key points made included:

Mr. Lemoff stated that it needs to be clear who makes the choice of option and whether it is over the whole system or some portion. Mr. Moore responded that industry is working on detailed language, and that an operator selecting different options for different parts of a system would need to be able to defend that decision.

Dr. Willke asked if there would be any areas picked up under the NPRM that would not be identified using the industry approach. David Johnson offered that the industry approach would identify areas outside class 3 and 4 with 20 houses in an impact circle. The NPRM would not identify these areas. Mike Israni responded that the options under consideration are similar to

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the industry approach; whether or not it would include more pipelined depends on whether or not there are 20 houses near the pipeline.

Dr. Feigel asked if there were other conservatisms in the C-FER model. Mr. Moore answered that the model assumes MAOP and pipelines do not operate at MAOP, other than right at compressor discharge. Andy Drake also offered that the model assumes a worst-case double-ended guillotine break.

Mr. Drake noted that a safety factor of +15% is really +30% (1.15 squared) in terms of area. Mr. Drake acknowledged that there were 2 cases in which the actual burn extent exceeded the C-FER prediction, but only slightly. He concluded the model still represents reality with reasonable conservatism. It is not perfect, but reasonably parallels reality.

Ms. Gerard noted that the discussion is on where assessment will be performed. The proposed rule has other forms of protection, including prevention and mitigation. It is possible that less conservatism in assessment could be accommodated by preventive and mitigative actions. She reported that a rough comparison of pipeline mileage in the National Pipeline Mapping System with population HCAs defined for liquid pipelines indicates that about 11 percent of the mileage is in such areas. This provides a benchmark. She recognizes that much more pipe will be assessed, considering launcher-to-receiver mileage.

Mr. Drake noted that industry has wanted to deal with actual population data, instead of census reports, since work started on this subject in 1999. He reported that the Duke system has about 1700 HCAs, considering class 3 and a reasonable definition of identified sites. That includes 12 percent of mileage, 50 percent of valve sections, and 80 percent of discharges. He suggested that increasing coverage beyond this would result in loss of focus.

Mr. Kuprewicz suggested that if adding margin to C-FER causes confusion, he would recommend using C-FER. It is an empirical tool, appropriate to this purpose. It misses, however, a critical variable – time to ignition – which is important in siting. He also noted that the distinction between 20 and 10 is somewhat arbitrary. He is comfortable with 20. The important issue is survivability, particularly for unsheltered people. He reported that he was, in general, comfortable with the approach suggested by industry.

Daron Moore stated that there is a significant difference between industry and the NPRM on the definition of identified sites. He noted that the proposed definition uses 50 days per year instead of the 5 days per week, 10 weeks per year criterion used for class locations. Ms. Gerard responded that the proposal tries to identify where people congregate and considers the patterns that congregation takes. What people do on weekends is not 5 days a week.

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Dr. Willke noted that the industry proposal seems to simplify the approach, and drop out anomalies. He would like to know, before the May meeting, if additional anomalies are created.

Ms. Gerard noted that the concept of extrapolation is clearly an anomaly. OPS might accept this for some period of years to allow operators to look for areas where they might have missed a block of houses.

Mr. Moore responded that identified sites would be counted, not extrapolated. He further noted that an extended time period for use of extrapolation would be consistent with the 5 years allowed when the regulations were first established for operators to collect class location data.

Dr. Willke noted that he would like to have criteria on which to make a decision. What are we trying to protect?

Jim Wunderlin noted that Mr. Moore's proposal is reasonable, from the perspective of a small operator. He further noted that small operators will need to use DA extensively because of proximity to the customer and the lower pressures at which these lines operate.

Mike Comstock asked for graphics to help better understand the concepts under discussion.

Lori Traweek (AGA) commented that consistency of what we are trying to protect is more important than population density. The NPRM suggested 20 buildings in a 1000 ft circle. If that is appropriate, why would you use a different criterion in a smaller circle? We should protect 20 buildings in any potential impact circle, regardless of size. Ms. Gerard asked about instances in which small circles could be calculated that would not include 20 houses. It would be difficult to proceed with no new protection for developed areas where such circles might exist. Ms. Traweek responded that small impact circles are a result of science telling us that the pipeline cannot have much impact. Such areas are already class 3 and 4 and receive extra protection from that.

Lois Epstein (Cook Inlet Keeper) noted that the bar chart describing C-FER verification showed 2 instances in which the burn radius exceeded the C-FER calculation and that one other is very close. She concluded from this that some additional margin is appropriate. She also commented that it would be inappropriate to "cap" the amount of mileage covered at 11 or 12 percent. Mr. Lemoff responded to Ms. Epstein by noting that the chart shows significant margin to fatalities and injuries.

In summary, Ms. Gerard noted:

- The government has an appreciation for the benefits of a scientific approach to identifying areas the pipeline can affect.

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- She appreciates the concern about a possible waste of resources to do the identification.
- The concept of extrapolation assumes that what is within 660 ft repeats out to 1000. That is a significant assumption.

Ms. Kelly, as chair, closed this portion of the meeting by noting that, based on the discussion, the Committee would like the following information before the next meeting:

- The impact of using 4000 vs. 5000 BTU as a criterion.
- Whether any new anomalies are created by the alternative approaches under consideration for identifying HCAs.
- Whether there are any special areas of concern as a result of the comments and discussion at this meeting.
- Graphics illustrating the industry proposal (these to be provided by the industry panel).

Mr. Israni made a presentation regarding the other requirements in the proposed rule. His comments included:

- The scope of the rule is gas transmission pipelines. It does not include gathering or distribution lines.
- The rule includes the following elements:
 - ▶ HCA segment identification, which must be complete in 12 months
 - ▶ Develop IM framework, 12 months
 - ▶ Develop a plan, 12 months
 - ▶ Evaluate threats, continual evaluation and assessment, preventive and mitigative measures, etc.
- It is important that operators select an appropriate assessment technology – ILI, pressure testing, direct assessment (DA), or equivalent technology.
- Regarding direct assessment:
 - ▶ It is used for specific threats, and
 - ▶ Its use as a primary assessment method will be conditional.
- Use of External Corrosion Direct Assessment (ECDA) requires that operators identify ECDA Regions
 - ▶ Regions need not necessarily be contiguous,
 - ▶ They must have similar characteristics and history,
 - ▶ They must be subject to similar expectations (in terms of pipeline condition)
 - ▶ They can be redefined as appropriate.

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- Confirmatory direct assessment (CDA) is a new concept, designed to address the requirement for 7-year reassessment intervals in the 2002 Act. It includes:
 - ▶ Use of one vs. two indirect assessment tools
 - ▶ More limited requirements for excavations.
- The baseline assessment interval begins on December 17, 2002, the date the Pipeline Safety Improvement Act of 2002 was signed into law.
- Operators utilizing ILI or pressure testing must complete baseline assessment within 10 years and 50 percent of the assessments, beginning with the pipe representing the most risk, during the first 5 years.
- Operators utilizing DA must complete baseline assessments within 7 years and 50 percent, starting with the most risk, in the first 4 years.
- Anomalies identified during assessment become immediate repair conditions, 180-day remediation conditions, or conditions to be monitored over longer periods, depending on their severity.
- Reassessment intervals begin after a baseline assessment is complete and again upon completion of any subsequent assessment. When the reassessment interval is longer than 7 years, CDA is required within 7 years.
- The rule requires performance measurement. Specific performance measures, which must be made available to regulators in “real time”, include:
 - ▶ Miles assessed vs. program requirements,
 - ▶ Number of immediate repairs completed,
 - ▶ Number of scheduled repairs completed, and
 - ▶ Number of leaks, failures and incidents, by cause.

The preamble to the proposed rule includes several questions on which public comment has been requested. These are:

- Should rural buildings (e.g., churches) be MRAs, requiring less frequent assessment?
- Should 20-year reassessments be allowed for pipelines operating below 30 percent SMYS?
- Should it be acceptable to use CDA alone for pipe operating below 20 percent SMYS?
- Should a 10-year reassessment interval be allowed for pipe operating below 30 percent SMYS assessed by DA?
- Should the rule adopt the NACE standard for DA without extensive requirements?

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Committee discussion on the proposed rule raised the following points:

Eric Thomas commented that “real time” is impractical. There needs to be some procedure or time frame for making performance measures available. Ms. Gerard replied that “real time” had been an overstatement and that monthly is probably appropriate.

Mr. Israni asked for Committee comments on whether, and how, to include plastic pipe. OPS has recently become aware that there is some plastic pipe in transmission service. Mr. Lemoff asked for data on damage to plastic pipe by causes other than third-party damage.

Stacey Gerard reported, for the record, on a telephone call she received from Bob Linney (Air Products). He told her that he believed the recent legislation requires consideration of product characteristics and consideration of valves as elements that the rule did not include.

The Committee then heard from a panel of industry representatives. Mark Hareth (HSB) addressed industry performance and its relationship to the rule, making the following points:

- The industry experiences about 50 incidents in a year
- For any one cause, except third-party damage (TPD), the annual total is in single digits. For TPD, it is about 10 to 12.
- These low numbers make it difficult to see any improvement resulting from IM
- As a result, B31.8S also uses process measures as performance measures, not just outcomes.
- Allegro-HSB has completed a review of safety performance over the period 1985 to 2001 to increase understanding of current safety performance and to help assure that efforts to improve performance build on existing practices.
- An interim goal is needed. Six sigma, reducing error rates to one in one million, is one such goal, used with success to manage “defects” in manufacturing.
- Considering 310,000 miles of transmission pipeline and four “circles” per mile gives 1.24 million “units” of pipeline to be managed.
- Recent experience has shown 3 internal corrosion incidents per year in line pipe.
- It is only necessary to reduce this rate to 2 incidents per year to achieve one in a million over 1.24 million units.

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- With respect to the rule requirements to perform pressure testing at least once on all affected pipe to address construction and material issues, Mr. Hareth made the following points:
 - ▶ There have been 66 incidents in 10 years
 - ▶ None of them have occurred in class 4 areas
 - ▶ Four have occurred in class 3 areas
 - ▶ The reason for the low incidence rate in class 3 and 4 areas is not known with certainty. It is believed to be related to the lower stresses at which this pipe operates.
 - ▶ A report on vintage pipe, being developed, will address this issue more thoroughly.

Terry Boss (INGAA) then made a presentation regarding the environmental and economic costs associated with the proposed rule, including:

- Under the proposed rule, INGAA estimates that 10,620 miles of its members pipeline (which totals 167,000 miles) will be included in integrity management programs. This would mean that 77,357 miles would be inspected.
- Under industry's proposed alternative definition of HCAs, these totals are reduced to 8,496 and 53,746 miles, respectively.
- If the criterion for identifying HCAs is changed to 10 houses in a potential impact circle, the totals would be 15,000 miles in IM programs and 109,500 miles inspected.
- INGAA assumed that the costs for implementing IM programs, which would be passed on to consumers, would be about \$3.5 billion over 20 years.
- The resulting "additional" direct costs to consumers (i.e., above INGAA's original assumption) would be \$6.6 billion under the proposed rule, \$4 billion under the industry HCA alternative, and \$10.6 billion with the 10-house criterion (all over 20 years)
- Consumers would also experience an increase in indirect costs, due to supply restrictions. These would be \$8 billion, \$2.8 billion, or \$10.4 billion over 20 years for the same alternatives.
- The various alternatives would also affect the environmental impact in terms of estimated number of excavations and amount of gas released to the environment as pipelines are blown down for testing. The increases, over the amounts assumed in earlier discussions, would be:
 - ▶ 320,000 excavations and 4.14 times more gas under the proposed rule
 - ▶ 185,000 excavations and 2.91 times more gas under the industry HCA alternative
 - ▶ 510,000 excavations and 5.87 times more gas under the 10-house HCA criterion

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Committee discussion following these presentations included the following comments:

Gene Feigel noted that there is significant uncertainty in the cost-benefit analysis. He believes that the only way to deal with this is to model it considering uncertainties and to run cases as sensitivity analyses. He noted that the OPS study has discounted many uncertain elements.

Andy Drake noted that this is the most expensive rule since the regulations were first established. The industry is on record, in a letter to Secretary Mineta, supporting the rule, but it is still very expensive. The cost-benefit is soft. OPS needs to consider the effect of the differences introduced since the industry agreed to support this approach.

Lois Epstein asked if the cost-benefit analysis included consideration of the California price spikes and the downstream effect of lost gas. Terry Boss responded that this was considered as consequential impacts.

George Mosinskis (AGA) reported that AGA is also developing estimates of impact. The current estimate is that 31,000 miles would be tested, 21,000 of which is in HCAs (of 55,000 total miles for AGA members).

[At this point, the Committee considered proposed revisions to gas pipeline safety standards. This consideration is reported later in these minutes, in order to present the IM discussions without interruption]

Additional presentations were then made by industry representatives regarding other aspects of the proposed rule. Andy Drake discussed baseline and reassessment intervals, making the following points:

- The cost grows considerably when required actions depart from accepted standards. The benefit of the rule also drops significantly in this event.
- Duke is on its 3rd generation inspections. Its experience indicates that an order of magnitude more defects are identified during first generation inspections.
- The overlap issue is a result of interpretations of the law. It is not a technical issue. It will actually be worse than portrayed, because the baseline period began on 12/17/02. The actual baseline will thus be only 9 years rather than 10.
- The inspection service industry will be hard pressed to handle all the inspections required during an overlap.
- Price response to pipeline unavailability is non-linear. The possible outage load during overlap years is unprecedented, with potentially huge impact on consumers.

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- Industry believes OPS's interpretation of the law is severe. (Ms. Gerard noted that OPS does not make legal interpretations, and is acting on the advice of counsel).
- The root issue is interpretation of the term "facility", as used in the Act. Industry believes, based on discussions with Congress that this refers to the entire system. OPS considers it to represent portions of the system (i.e., segments).
- Graham Hill commented at the February Houston workshop that the law was not intended to be applied on a segment basis.
- OPS should obtain additional clarification from Congress, if necessary to allow adopting industry's interpretation.
- OPS should encourage use of previous inspections, not as baselines but as considerations in determining necessary reassessment intervals. OPS does not seem opposed, but the rule should be more clear in this regard. (Ms. Gerard asked that Mr. Drake prepare recommended language, for the next Committee meeting).

Comments on this presentation included:

George Mosinskis noted that the overlap issue is more severe for LDCs due to the shorter time intervals for DA.

Lois Epstein questioned the treatment of prior assessments, wondering why an operator would not credit them and suggesting that this would reduce the amount of mileage requiring assessment annually. Andy Drake responded that the rule requires that reassessments be performed 7 years after the date of any credited prior assessment, and that no annual mileage reduction would thus result.

Ms. Epstein commented that she believes Congress was concerned that there would be huge delays before reassessments, and that many Members agree with OPS's interpretation of the law.

Keith Lewis then made a brief presentation concerning direct assessment noting:

- The language in the proposed rule regarding external corrosion direct assessment (ECDA) should be removed and replaced with a reference to the NACE recommended practice (RP0502-2002), which has now been finalized.
- A draft standard on dry gas internal corrosion direct assessment (ICDA) was issued last week.
- A standard on stress corrosion cracking direct assessment (SCCDA) is being developed. This will probably take a little longer.
- Techniques for SCC ILI are more difficult for gas than liquids, probably requiring a liquid slug to be used.

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- The rule should be revised to use the same baseline and reassessment intervals for DA as used for other assessment methods.

Jim Wunderlin noted that it appears that small operators, relying on DA, are being penalized by a lack of comfort in OPS with this technique. He asked whether that might change by the time the rule is finalized. Ms. Gerard responded that research projects are underway. The final rule likely needs to be in clearance by August in order to meet the statutory December deadline. It is unlikely that research results will be available that soon.

Dave Johnson (Pipeco, formerly Enron) made a brief presentation regarding dents and third party damage.

- Third-party damage represents the largest single threat to gas pipelines.
- The industry does not want to put significant resources into identifying and remediating existing dents, since they are benign.
- Bottom-side dents are constrained, and are generally not a threat.
- With respect to dents, industry recommends:
 - ▶ Make use of existing research
 - ▶ Focus on potential threats, which are principally unconstrained (top-half) dents subject to fatigue mechanisms with likely mechanical damage.
- With respect to third-party damage, relevant facts include:
 - ▶ It represents 32 percent of annual incidents.
 - ▶ 88 percent fail immediately
 - ▶ 12 percent, or about 2 incidents per year, are delayed
 - ▶ Damage of concern cannot accurately be identified by ILI
 - ▶ Prevention is the appropriate means to address
- The rule should not mandate ILI specifically for third-party damage.

Dr. Willke asked what is the character of damage that leads to delayed failures. Mr. Johnson responded that this includes dents with corrosion damage or stress concentrators that then grow.

Lori Traweck (AGA) made a presentation regarding low-stress pipelines.

- About 31,000 miles of transmission pipeline operated by LDCs will be able to affect HCAs.
- About 45 percent of this pipeline (approximately 14,000 miles) operates below 30 percent SMYS.

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- Industry has an action plan to determine appropriate actions for this low-stress pipeline including:
 - ▶ Use of CDA as the sole assessment method, including baseline
 - ▶ Development of specific preventive and mitigative measures, by threat (e.g., increased patrolling, increased CP monitoring).

Ms. Gerard noted that Fred Joyner will manage, for OPS, the co-funded research on low-stress pipeline. She encouraged industry to work with him to get results in time to affect the final rule.

Andrew Theodus (NICOR/Columbia) made a final presentation regarding pressure testing

- The proposed rule would require a once-in-lifetime pressure test for all pipe to assure integrity from material and manufacturing defects.
- There is no technical basis for requiring testing of low-stress pipeline other than those with known/expected problems.
- This pressure testing requirements could exacerbate supply outages, particularly for LDCs, and would have a higher environmental impact.

Eric Thomas noted that adding water to lines, for pressure testing, could potentially increase risk by creating subsequent operational problems.

The Committee also discussed a proposed rule revising gas pipeline safety standards. Buck Furrow (OPS) described the content of that rule:

- The rule makes changes recommended by the National Association of Pipeline Safety Representatives (NAPSR) in a 1995 report.
- Several of the recommendations in the report have already been addressed. This rule incorporates other recommended changes.
- Mr. Furrow did not describe all of the proposed changes, but rather asked for questions or comments from the Committee.

The Committee expressed concern about the proposed requirement to protect meters from vehicular damage, that the proposed language could be interpreted to require such protection for indoor meters. Alternative language was proposed. OPS will take this language as guidance, reflecting the Committee's intent, and will revise the proposed rule as needed. The Committee voted to accept the recommended change, with one dissent.

The Committee voted unanimously to approve the proposed rule and to conclude that the draft regulatory evaluation reasonably supports the proposed rule.

Linda Kelly adjourned the meeting.