

July 2002

## **Evaluating the Impact of the Integrity Management Requirements under 49 CFR Part 195.452**

In an effort to begin to understand both the overall benefit and effectiveness of the integrity management rules established by the US DOT Office of Pipeline Safety, the oil pipeline industry has undertaken a survey of the in-line inspection plans of operators that will be completed during the baseline assessment period (2002-2008). A table summarizing the results of the survey appears on the following pages. The purpose of this brief paper is to highlight the results of the survey, put the results in context, and identify specific information that may be of use to regulators, in-line inspection service providers and pipeline operators.

### **Goals of the Rulemaking**

The Office of Pipeline Safety has laid out some very specific goals for the integrity management rulemaking, including –

- Accelerating the integrity assessment of pipelines in high consequence areas
- Improving integrity management systems within companies
- Improving the governments role in reviewing the adequacy of integrity plans
- Providing increased public assurance.

The pipeline industry shares these goals with the Office of Pipeline Safety. We are taking this opportunity to provide prospective information towards achieving these goals.

### **How the Survey Was Conducted**

The API Operations Technical Committee directed that a survey of the pipeline industry be conducted to determine industry plans for conducting in-line inspections over the 7-year baseline period. In addition to an interest in providing information related to the rulemaking itself, the OTC has been and continues to be concerned about the capacity of the in-line inspection industry to meet the demand for ILI equipment, inspection services, and data evaluation during the baseline assessment period.

The survey was conducted under the auspices of the American Petroleum Institute during the spring of 2002. Fifteen major pipeline operators, which collectively operate 112,000 miles of interstate oil pipelines, responded to the survey. This mileage comprises 70% of the interstate oil pipeline mileage regulated by the Office of Pipeline Safety. Each operator was asked to report the estimated mileage of ILI inspections completed or planned to be completed between 1996 and 2008. The period from 1996-2001 was included in the survey because operators may use inspections conducted during that

period that meet the requirements of the integrity management rule as part of an initial baseline assessment. The overall results of the survey are provided in the table below.

Based on the information in this survey, as well as other survey's conducted by the industry, we are providing summary information related to implementation of the integrity management rulemaking.

### **Limitations on the Survey**

The participants in this survey represent approximately 70% of the interstate oil pipeline mileage in the US. The participants are knowledgeable pipeline operators who have been involved in the development and now the implementation of the integrity management rules promulgated by the US DOT Office of Pipeline Safety. The results of this survey may not represent the actions or planning of operators who have not been actively following the integrity rules development. The summary statements below are based on the survey results and the actions and preparations of the operators surveyed.

This survey does not address other inspection methods – pressure testing or direct assessment – which will be used by operators in meeting the requirements to conduct baseline assessments within high consequence areas. Thus the survey does not reflect all types of assessments that will be conducted nor does it cover all the assessments that will be undertaken by the survey respondents.

This survey did not address the in-line inspection practices, requirements or plans of natural gas pipeline operators. To date, no integrity management rule has been established for the natural gas pipeline industry.

### **Summary Statements**

- 89% of the US hazardous liquid pipeline mileage is currently capable of being inspected using in-line inspection tools (from a previous survey conducted by API).
- 28,000 miles or 18% of the US hazardous liquid pipeline mileage were inspected during the period from 1996-2001 in a manner that meets the intent of the integrity management rules. Some portion of these miles may be used by pipeline operators as part of company baseline inspections. Thirty percent (30%) or 8500 miles of those lines inspected were in or could affect high consequence areas. Seventy percent (70%) or 19,500 miles were outside of high consequence areas.
- Plans are in place by pipeline operators who participated in this survey to complete baseline assessments for 53,000 miles of pipelines that are in or could affect high consequence areas. Included in this total are some pipeline miles that will be inspected a second time under the integrity management rules because the reassessment interval is 5 years. Approximately 8500 miles will be second inspections.
- Plans are in place by pipeline operators who participated in this survey to conduct in-line inspections for 90,000 miles outside of high consequence areas. Approximately 21,000 miles will be second inspections. These additional inspections are a direct consequence of the integrity rulemaking. High consequence areas are scattered across the US. The portions of a pipeline that an operator inspects using ILI tools is dictated by the locations of launching and receiving traps for those tools. Traps are a

permanent fixture of a pipeline system and are a major capital expense for installation. Thus for every 2 miles of a pipeline system that is in or could affect a high consequence area, pipeline operators will also inspect 3 miles outside of high consequence areas.

- During the period from 1995-2000, 24% of the US pipeline mileage regulated by OPS was inspected using ILI technology (based on a previous industry survey). This translates to an annual ILI inspection rate for the oil pipeline industry of approximately 8000 miles per year.
- The rate of inspection for oil pipeline systems will double under the integrity management rule to approximately 16,000 miles per year with the peak year -- 2003 -- at almost 19,000 miles. If this rate were projected to the entire oil (crude oil and refined products) pipeline mileage, approximately 23,000 miles of the total pipeline system mileage of 160,000 would be inspected each year.

### Inline Inspection:

#### Estimated Mileage Inspected or Planned to be Inspected Under Integrity Management Requirements in 49 CFR Part 195

Year conducted or planned	Estimated mileage				
	HCA miles, including "could affect" miles	Non-HCA miles	Undifferentiated	Total per year	Cumulative Inspections
1996	500	1120	70	1690	1690
1997	800	1930	1840	4570	6260
1998	980	1710	150	2840	9100
1999	1400	2100	1650	5150	14250
2000	1400	2460	1460	5320	19570
2001	3400	4970	1590	8370	27940
2002	7590	8650	710	16950	44890
2003	7710	9590	1450	18750	63640
2004	6980	10160	450	17590	81230
2005	6680	10130	550	17360	98590
2006	5950	11410	620	17980	116570
2007	4940	8360	0	13300	129870
2008*	4450	6770	0	11220	141090
<b>TOTAL</b>	52780	79360	10540	141090	
<b>PERCENTAGE</b>	37%	56%	7%		

\*The baseline assessment period for the integrity management requirements under 49 CFR Part 195 is completed as of March 2008. Calendar year 2008 probably does not reflect the level of reassessment in-line inspections that will be conducted; estimates and planning this far into the future will very likely change substantially.