(3) An *other populated area*, which means a place, as defined and delineated by the Census Bureau, that contains a concentrated population, such as an incorporated or unincorporated city, town, village, or other designated residential or commercial area;

(4) An *unusually sensitive area*, as defined in §195.6.

[Amdt. 195–70, 65 FR 75405, Dec. 1, 2000]

PIPELINE INTEGRITY MANAGEMENT

### §195.452 Pipeline integrity management in high consequence areas.

(a) *Which operators must comply?* This section applies to each operator who owns or operates a total of 500 or more miles of hazardous liquid pipeline subject to this part.

(b) *What must an operator do?* (1) No later than March 31, 2002, an operator must develop a written integrity management program that addresses the risks on each pipeline segment that could affect a high consequence area. An operator must include in the program:

(i) An identification of all pipeline segments that could affect a high consequence area. A pipeline segment in a high consequence area is presumed to affect that area unless the operator's risk assessment effectively demonstrates otherwise. (See Appendix C of this part for guidance on identifying pipeline segments.) An operator must complete this identification no later than December 31, 2001;

(ii) A plan for baseline assessment of the line pipe (see paragraph (c) of this section);

(iii) A framework addressing each element of the integrity management program, including continual integrity assessment and evaluation (see paragraphs (f) and (j) of this section). The framework must initially indicate how decisions will be made to implement each element.

(2) An operator must implement and follow the program it develops.

(3) In carrying out this section, an operator must follow recognized industry practices unless the section specifies otherwise or the operator demonstrates that an alternative practice is supported by a reliable engineering evaluation and provides an equivalent level of public safety and environmental protection.

(c) *What must be in the baseline assessment plan?* (1) An operator must include each of the following elements in its written baseline assessment plan:

(i) The methods selected to assess the integrity of the line pipe. For low frequency electric resistance welded pipe or lap welded pipe susceptible to longitudinal seam failure, an operator must select integrity assessment methods capable of assessing seam integrity and of detecting corrosion and deformation anomalies. An operator must assess the integrity of the line pipe by:

(A) Internal inspection tool or tools capable of detecting corrosion and deformation anomalies including dents, gouges and grooves;

(B) Pressure test conducted in accordance with subpart E of this part; or

(C) Other technology that the operator demonstrates can provide an equivalent understanding of the condition of the line pipe. An operator choosing this option must notify the Office of Pipeline Safety (OPS) 90 days before conducting the assessment, by sending a notice to the address specified in §195.58 or to the facsimile number specified in §195.56;

(ii) A schedule for completing the integrity assessment;

(iii) An explanation of the assessment methods selected and evaluation of risk factors considered in establishing the assessment schedule.

(2) An operator must document, prior to implementing any changes to the plan, any modification to the plan, and reasons for the modification.

(d) *When must the baseline assessment be completed?* (1) *Time period.* An operator must establish a baseline assessment schedule to determine the priority for assessing the pipeline segments. An operator must complete the baseline assessment by March 31, 2008. An operator must assess at least 50% of the line pipe subject to the requirements of this section, beginning with the highest risk pipe, by September 30, 2004.

(2) *Prior assessment.* To satisfy the requirements of paragraph (c)(1)(i) of this section, an operator may use an integrity assessment conducted after January 1, 1996, if the integrity assessment

method meets the requirements of this section. However, if an operator uses this prior assessment as its baseline assessment, the operator must re-assess the line pipe according to the requirements of paragraph (j)(3) of this section.

(3) *Newly-identified areas.* (i) When information is available from the information analysis (see paragraph (g) of this section), or from Census Bureau maps, that the population density around a pipeline segment has changed so as to fall within the definition in §195.450 of a high population area or other populated area, the operator must incorporate the area into its baseline assessment plan as a high consequence area within one year from the date the area is identified. An operator must complete the baseline assessment of any line pipe that could affect the newly-identified high consequence area within five years from the date the area is identified.

(ii) An operator must incorporate a new unusually sensitive area into its baseline assessment plan within one year from the date the area is identified. An operator must complete the baseline assessment of any line pipe that could affect the newly-identified high consequence area within five years from the date the area is identified.

(e) *What are the risk factors for establishing an assessment schedule (for both the baseline and continual integrity assessments)?* (1) An operator must establish an integrity assessment schedule that prioritizes pipeline segments for assessment (see paragraphs (d)(1) and (j)(3) of this section). An operator must base the assessment schedule on all risk factors that reflect the risk conditions on the pipeline segment. The factors an operator must consider include, but are not limited to:

(i) Results of the previous integrity assessment, defect type and size that the assessment method can detect, and defect growth rate;

(ii) Pipe size, material, manufacturing information, coating type and condition, and seam type;

(iii) Leak history, repair history and cathodic protection history;

(iv) Product transported;

(v) Operating stress level;

(vi) Existing or projected activities in the area;

(vii) Local environmental factors that could affect the pipeline (*e.g.*, corrosivity of soil, subsidence, climatic);

(viii) geo-technical hazards; and

(ix) Physical support of the segment such as by a cable suspension bridge.

(2) Appendix C of this part provides further guidance on risk factors.

(f) *What are the elements of an integrity management program?* An integrity management program begins with the initial framework. An operator must continually change the program to reflect operating experience, conclusions drawn from results of the integrity assessments, and other maintenance and surveillance data, and evaluation of consequences of a failure on the high consequence area. An operator must include, at minimum, each of the following elements in its written integrity management program:

(1) A process for identifying which pipeline segments could affect a high consequence area;

(2) A baseline assessment plan meeting the requirements of paragraph (c) of this section;

(3) An analysis that integrates all available information about the integrity of the entire pipeline and the consequences of a failure (see paragraph (g) of this section);

(4) Criteria for repair actions to address integrity issues raised by the assessment methods and information analysis (see paragraph (h) of this section);

(5) A continual process of assessment and evaluation to maintain a pipeline's integrity (see paragraph (j) of this section);

(6) Identification of preventive and mitigative measures to protect the high consequence area (see paragraph (i) of this section);

(7) Methods to measure the program's effectiveness (see paragraph (k) of this section);

(8) A process for review of integrity assessment results and information analysis by a person qualified to evaluate the results and information (see paragraph (h)(2) of this section).

(g) *What is an information analysis?* In periodically evaluating the integrity of

each pipeline segment (paragraph (j) of this section), an operator must analyze all available information about the integrity of the entire pipeline and the consequences of a failure. This information includes:

(1) Information critical to determining the potential for, and preventing, damage due to excavation, including current and planned damage prevention activities, and development or planned development along the pipeline segment;

(2) Data gathered through the integrity assessment required under this section;

(3) Data gathered in conjunction with other inspections, tests, surveillance and patrols required by this Part, including, corrosion control monitoring and cathodic protection surveys; and

(4) Information about how a failure would affect the high consequence area, such as location of the water intake.

(h) *What actions must be taken to address integrity issues?* (1) *General requirements.* An operator must take prompt action to address all pipeline integrity issues raised by the assessment and information analysis. An operator must evaluate all anomalies and repair those anomalies that could reduce a pipeline's integrity. An operator must comply with §195.422 in making a repair.

(2) *Discovery of a condition.* Discovery of a condition occurs when an operator has adequate information about the condition to determine the need for repair. Depending on circumstances, an operator may have adequate information when the operator receives the preliminary internal inspection report, gathers and integrates information from other inspections or the periodic evaluation, excavates the anomaly, or when an operator receives the final internal inspection report. The date of discovery can be no later than the date of the integrity assessment results or the final report.

(3) *Review of integrity assessment.* An operator must include in its schedule for evaluation and repair (as required by paragraph (h)(4) of this section), a schedule for promptly reviewing and analyzing the integrity assessment results. After March 31, 2004, an operator's schedule must provide for review of the integrity assessment results within 120 days of conducting each assessment. The operator must obtain and assess a final report within an additional 90 days.

(4) *Schedule for repairs.* An operator must complete repairs according to a schedule that prioritizes the conditions for evaluation and repair. An operator must base the schedule on the risk factors listed in paragraph (e)(1) of this section and any pipeline-specific risk factors the operator develops. If an operator cannot meet the schedule for any of the conditions addressed in paragraphs (h)(5)(i) through (iv) of this section, the operator must justify the reasons why the schedule cannot be met and that the changed schedule will not jeopardize public safety or environmental protection. An operator must notify OPS if the operator cannot meet the schedule and cannot provide safety through a temporary reduction in operating pressure until a permanent repair is made. An operator must send a notice to the address specified in §195.58 or to the facsimile number specified in §195.56.

(5) *Special requirements for scheduling repairs*—(i) *Immediate repair conditions.* An operator's evaluation and repair schedule must provide for immediate repair conditions. To maintain safety, an operator will need to temporarily reduce operating pressure or shut down the pipeline until the operator can complete the repair of these conditions. An operator must base the temporary operating pressure reduction on remaining wall thickness. An operator must treat the following conditions as immediate repair conditions:

(A) Metal loss greater than 80% of nominal wall regardless of dimensions.

(B) Predicted burst pressure less than the maximum operating pressure at the location of the anomaly. Burst pressure has been calculated from the remaining strength of the pipe, using a suitable metal loss strength calculation, e.g., ASME/ANSI B31G (''Manual for Determining the Remaining Strength of Corroded Pipelines'' (1991)) or AGA Pipeline Research Committee Project PR–3–805 (''A Modified Criterion for Evaluating the Remaining Strength of Corroded Pipe'' (December

1989)). These documents are available at the addresses listed at § 195.3.

(C) Dents on the top of the pipeline (above 4 and 8 o'clock position) with any indicated metal loss.

(D) Significant anomaly that in the judgment of the person evaluating the assessment results requires immediate action.

(ii) *60-day conditions.* Except for conditions listed in paragraph (h)(5)(i) of this section, an operator must schedule for evaluation and repair all dents, regardless of size, located on the top of the pipeline (above 4 and 8 o'clock position) within 60 days of discovery of the condition.

(iii) *Six-month conditions.* Except for conditions listed in paragraph (h)(5)(i) or (ii) of this section, an operator must schedule evaluation and repair of the following within six months of discovery of the condition:

(A) Dents with metal loss or dents that affect pipe curvature at a girth or seam weld.

(B) Dents with reported depths greater than 6% of the pipe diameter.

(C) Remaining strength of the pipe results in a safe operating pressure that is less than the current established MOP at the location of the anomaly using a suitable safe operating pressure calculation method (e.g., ASME/ANSI B31G (''Manual for Determining the Remaining Strength of Corroded Pipelines'' (1991)) or AGA Pipeline Research Committee Project PR–3–805 (''A Modified Criterion for Evaluating the Remaining Strength of Corroded Pipe'' (December 1989)). These documents are available at the addresses listed at § 195.3.

(D) Areas of general corrosion with a predicted metal loss of >50% of nominal wall.

(E) Predicted metal loss of >50% of nominal wall at crossings of another pipeline.

(F) Weld anomalies with a predicted metal loss >50% of nominal wall.

(G) Potential crack indications that when excavated are determined to be cracks.

(H) Corrosion of or along seam welds.

(I) Gouges or grooves greater than 12.5% of nominal wall.

(iv) *Other conditions.* An operator must schedule evaluation and repair of the following conditions:

(A) Data that reflect a change since last assessed.

(B) Data that indicate mechanical damage that is located on the top half of the pipe.

(C) Data that indicate anomalies abrupt in nature.

(D) Data that indicate anomalies longitudinal in orientation.

(E) Data that indicate anomalies over a large area.

(F) Anomalies located in or near casings, crossings of another pipeline, and areas with suspect cathodic protection.

(i) *What preventive and mitigative measures must an operator take to protect the high consequence area?* (1) *General requirements.* An operator must take measures to prevent and mitigate the consequences of a pipeline failure that could affect a high consequence area. These measures include conducting a risk analysis of the pipeline segment to identify additional actions to enhance public safety or environmental protection. Such actions may include, but are not limited to, implementing damage prevention best practices, better monitoring of cathodic protection where corrosion is a concern, establishing shorter inspection intervals, installing EFRDs on the pipeline segment, modifying the systems that monitor pressure and detect leaks, providing additional training to personnel on response procedures, conducting drills with local emergency responders and adopting other management controls.

(2) *Risk analysis criteria.* In identifying the need for additional preventive and mitigative measures, an operator must evaluate the likelihood of a pipeline release occurring and how a release could affect the high consequence area. This determination must consider all relevant risk factors, including, but not limited to:

(i) Terrain surrounding the pipeline segment, including drainage systems such as small streams and other smaller waterways that could act as a conduit to the high consequence area;

(ii) Elevation profile;

(iii) Characteristics of the product transported;

(iv) Amount of product that could be released;

(v) Possibility of a spillage in a farm field following the drain tile into a waterway;

(vi) Ditches along side a roadway the pipeline crosses;

(vii) Physical support of the pipeline segment such as by a cable suspension bridge;

(viii) Exposure of the pipeline to operating pressure exceeding established maximum operating pressure.

(3) *Leak detection.* An operator must have a means to detect leaks on its pipeline system. An operator must evaluate the capability of its leak detection means and modify, as necessary, to protect the high consequence area. An operator's evaluation must, at least, consider, the following factors—length and size of the pipeline, type of product carried, the pipeline's proximity to the high consequence area, the swiftness of leak detection, location of nearest response personnel, leak history, and risk assessment results.

(4) *Emergency Flow Restricting Devices (EFRD).* If an operator determines that an EFRD is needed on a pipeline segment to protect a high consequence area in the event of a hazardous liquid pipeline release, an operator must install the EFRD. In making this determination, an operator must, at least, consider the following factors—the swiftness of leak detection and pipeline shutdown capabilities, the type of commodity carried, the rate of potential leakage, the volume that can be released, topography or pipeline profile, the potential for ignition, proximity to power sources, location of nearest response personnel, specific terrain between the pipeline segment and the high consequence area, and benefits expected by reducing the spill size.

(j) *What is a continual process of evaluation and assessment to maintain a pipeline's integrity?* (1) *General.* After completing the baseline integrity assessment, an operator must continue to assess the line pipe at specified intervals and periodically evaluate the integrity of each pipeline segment that could affect a high consequence area.

(2) *Evaluation.* An operator must conduct a periodic evaluation as frequently as needed to assure pipeline integrity. An operator must base the frequency of evaluation on risk factors specific to its pipeline, including the factors specified in paragraph (e) of this section. The evaluation must consider the past and present integrity assessment results, information analysis (paragraph (g) of this section), and decisions about repair, and preventive and mitigative actions (paragraphs (h) and (i) of this section).

(3) *Assessment intervals.* An operator must establish intervals not to exceed five (5) years for continually assessing the line pipe's integrity. An operator must base the assessment intervals on the risk the line pipe poses to the high consequence area to determine the priority for assessing the pipeline segments. An operator must establish the assessment intervals based on the factors specified in paragraph (e) of this section, the analysis of the results from the last integrity assessment, and the information analysis required by paragraph (g) of this section.

(4) *Variance from the 5-year intervals in limited situations*—(i) *Engineering basis.* An operator may be able to justify an engineering basis for a longer assessment interval on a segment of line pipe. The justification must be supported by a reliable engineering evaluation combined with the use of other technology, such as external monitoring technology, that provides an understanding of the condition of the line pipe equivalent to that which is obtainable under paragraph (j)(2) of this section. An operator must notify OPS nine months before the end of the intervals of five years or less of the reason why the operator intends to justify a longer interval. An operator must send a notice to the address specified in §195.58 or to the facsimile number specified in §195.56. The notice must state a proposed alternative interval.

(ii) *Unavailable technology.* An operator may require a longer assessment period for a segment of line pipe (for example, because sophisticated internal inspection technology is not available). An operator must justify the reasons why it cannot comply with the required assessment period and must also demonstrate the actions it is taking to evaluate the integrity of the pipeline segment in the interim. An operator

must notify OPS 180 days before the end of the intervals of five years or less that the operator may require a longer assessment interval. An operator must send a notice to the address specified in §195.58 or to the facsimile number specified in §195.56. The Operator may have up to an additional 180 days to complete the assessment.

(5) *Assessment methods.* An operator must assess the integrity of the line pipe by:

(i) Internal inspection tool or tools capable of detecting corrosion and deformation anomalies including dents, gouges and grooves;

(ii) Pressure test conducted in accordance with subpart E of this part; or

(iii) Other technology that the operator demonstrates can provide an equivalent understanding of the condition of the line pipe. An operator choosing this option must notify OPS 60 days before conducting the assessment, by sending a notice to the address specified in §195.58 or to the facsimile number specified in §195.56.

(6) However, for low frequency electric resistance welded pipe or lap welded pipe susceptible to longitudinal seam failure, an operator must select integrity assessment methods capable of assessing seam integrity and of detecting corrosion and deformation anomalies.

(k) *What methods to measure program effectiveness must be used?* An operator's program must include methods to measure whether the program is effective in assessing and evaluating the integrity of each pipeline segment and in protecting the high consequence areas. See Appendix C of this part for guidance on methods that can be used to evaluate a program's effectiveness.

(1) *What records must be kept?* An operator must maintain for review during an inspection:

(i) A written integrity management program in accordance with paragraph (b) of this section.

(ii) Documents to support the decisions and analyses, including any modifications, justifications, variances, deviations and determinations made, and actions taken, to implement and evaluate each element of the integrity management program listed in paragraph (f) of this section.

(2) See Appendix C of this part for examples of records an operator would be required to keep.

[Amdt. 195–70, 65 FR 75406, Dec. 1, 2000]

## Subpart G—Qualification of Pipeline Personnel

SOURCE: Amdt. 195–67, 64 FR 46866, Aug. 27, 1999, unless otherwise noted.

### § 195.501 Scope.

(a) This subpart prescribes the minimum requirements for operator qualification of individuals performing covered tasks on a pipeline facility.

(b) For the purpose of this subpart, a covered task is an activity, identified by the operator, that:

(1) Is performed on a pipeline facility;

(2) Is an operations or maintenance task;

(3) Is performed as a requirement of this part; and

(4) Affects the operation or integrity of the pipeline.

### § 195.503 Definitions.

*Abnormal operating condition* means a condition identified by the operator that may indicate a malfunction of a component or deviation from normal operations that may:

(a) Indicate a condition exceeding design limits; or

(b) Result in a hazard(s) to persons, property, or the environment.

*Evaluation* means a process, established and documented by the operator, to determine an individual's ability to perform a covered task by any of the following:

(a) Written examination;

(b) Oral examination;

(c) Work performance history review;

(d) Observation during:

(1) performance on the job,

(2) on the job training, or

(3) simulations;

(e) Other forms of assessment.

*Qualified* means that an individual has been evaluated and can:

(a) Perform assigned covered tasks and