FAQs for Alternative MAOP Rule
Revision Date: February 18, 2010

These Frequently Asked Questions (FAQs) are intended to clarify, explain, and promote better understanding of issues concerning implementation of the Alternative MAOP Rule. These FAQs are not substantive rules and do not create rights, assign duties, or impose new obligations not outlined in the existing regulations and standards. Requests for informal interpretations regarding specific situations may be submitted to PHMSA in accordance with 49 C.F.R. § 190.11.

1. What is the alternative MAOP Rule?

The alternate MAOP Rule was promulgated by PHMSA to allow certain gas transmission pipelines to operate at higher pressures and pipeline stress levels than regulations previously allowed if certain conditions are met that ensure an adequate margin of safety. By allowing pipelines to operate at higher pressures and stress levels, greater efficiencies and gas product throughput can be achieved (73 FR 62148).

Revised: 1/19/10

2. How were the gas transmission pipeline regulations revised to reflect the alternative MAOP requirements?

The rule adds a new section 49 CFR § 192.620 in Subpart L - Operations. This new section explains what an operator is required to do to operate at a higher MAOP than formerly allowed by the design requirements. Among the conditions set forth in new § 192.620 is the requirement that the pipeline be designed and constructed to more rigorous standards. These additional design and construction standards are set forth in two additional new sections (49 CFR §§ 192.112 and 192.328) located in Subpart C—Pipe Design and Subpart G—General Construction Requirements for Transmission Lines and Mains, respectively. In addition, the rule makes necessary conforming changes to existing sections on incorporation by reference (49 CFR § 192.7), change in class location (49 CFR § 192.611), and maximum allowable operating pressure (49 CFR § 192.619).

Revised: 1/19/10

3. Why does PHMSA consider it acceptable for operation at pressures and pipeline stress levels higher than previously allowed?

The proposed changes were made possible by improvements in pipeline technology and risk controls over the past 25 years. The original standards for calculating MAOP on gas transmission pipelines were adopted in 1970. Almost all risk controls on gas transmission pipelines have been strengthened in the intervening years, beginning with the introduction of improved manufacturing, metallurgy, testing, and assessment tools and standards. Pipe manufactured and tested to modern standards is far less likely to contain defects that can grow to failure over time than pipe manufactured and installed a generation ago.

Revised: 1/19/10

4. **What operating stress levels were pipelines limited to prior to promulgation of the higher alternate MAOP Rule?**

   Operating stress levels were tied to the pipeline Class location which is a function of the population density near the pipeline. In sparsely populated Class 1 locations, the design factor specified in 49 CFR § 192.105 restricts the stress level at which a pipeline can be operated to 72% of the specified minimum yield strength (SMYS) of the steel. The operating pressures in more populated Class 2, Class 3, and Class 4 locations are limited to 60, 50, and 40 percent of SMYS, respectively.

   Original: 7/15/09

5. **What pipeline operating stress levels are permissible when the alternative MAOP Rule is applied?**

   Pipelines in Class 1 locations may operate at stress levels up to 80 percent of SMYS when the conditions of the alternative MAOP Rule are met. The rule adds a new section, 49 CFR § 192.620, to specify what actions an operator must take in order to elect an alternative MAOP based on higher operating stress levels. The rule applies to both new and existing pipelines. Pipelines in class 2 and 3 areas meeting the requirements in § 192.620 can also raise their stress levels to 67% SMYS and 56% SMYS. The stress level in a Class 4 location may not be raised higher than 40% SMYS.

   Revised: 1/04/10

6. **Are certain types of pipelines or pipeline conditions prohibited from using the alternative MAOP Rule to operate at higher operating stress levels?**

   Yes, several types of pipeline segments do not qualify under this rule. These include the following:

   - Pipeline segments in Class 4 locations.
   - Pipeline segments of grandfathered pipeline[1] already operating at a higher stress level but not constructed in accordance with current standards.
   - Pipelines with wrinkle bends.
   - Pipelines that have experienced failures indicative of a systemic problem, such as seam flaws, during initial hydrostatic testing or previous operation (see FAQ 16).
   - Pipe manufactured by certain processes, such as low frequency electric welding process.
   - Pipeline segments which cannot accommodate internal inspection devices.
   - Bare or ineffectively coated pipe*

   *Pipeline segments must have a modern non-shielding to cathodic protection external coating on the pipe and girth welds. Fusion bonded epoxy (FBE) coatings are considered modern pipe coatings for alternative MAOP pipelines. Other coating systems would require additional approvals from PHMSA for usage on alternative MAOP pipelines.

   Revised: 2/05/10

[1] This is a pipeline that was operating at a higher pressure when the initial pipeline safety rules were promulgated in 1970 and which may be operated at the higher pressures.

7. **Are the regulatory provisions allowing pipeline operation at higher pressures and stress levels consistent with engineering standards?**

   Yes. The committee responsible for development of the B31.8 Code, now under the auspices of the American Society of Mechanical Engineers (ASME), determined pipelines could operate safely at stress levels up to 80 percent of SMYS. ASME updated the design factors in a 1990 addendum to the 1989 edition of the B31.8 Code, and they remain in the current edition.

   Original: 7/15/09

8. **Does a pipeline operator need to notify PHMSA that they will operate their pipeline under alternative MAOP requirements?**

   Yes, 49 CFR § 192.620(c)(1) requires an operator to notify PHMSA, and applicable state pipeline safety regulators, when it elects to establish a higher alternative MAOP. This notification must be provided at least 180 days prior to commencing operations at the alternative MAOP. This will provide PHMSA and states sufficient time for any inspection PHMSA may elect to conduct which may include checks of the manufacturing process, visits to the pipeline construction sites, analysis of operating history of existing pipelines, and review of test records, plans, and procedures.

   Revised: 1/19/10

9. **What must a pipeline operator do if they want to operate at higher pipeline stress levels under the alternative MAOP Rule?**

   An operator seeking to operate at a higher pressure than allowed by past regulation must certify that a pipeline is built according to rigorous design and construction standards and must agree to operate under stringent operations and maintenance (O&M) standards. 49 CFR § 192.620(c)(3) requires the certification to be submitted at least 30 days prior to operation at a higher alternative MAOP. After PHMSA or state pipeline safety authority (when the pipeline is located in a state where PHMSA has an interstate agent agreement, or an intrastate pipeline is regulated by that state) receives an operator's certification indicating its intention to operate at a higher operating stress level, PHMSA or the state would then follow up with the operator to verify compliance.

   Original: 7/15/09

10. **Can a pipeline operator apply the alternative MAOP Rule to existing pipelines to increase the operating pressure and pipeline stresses?**

    Yes. The alternative MAOP Rule allows an operator to qualify both new and existing segments of pipeline for operation at the higher MAOP, provided the operator meets the alternative MAOP Rule conditions for all such pipeline segments.

    Revised: 1/19/10

11. **How will PHMSA handle Special Permit requests to allow pipeline operation at higher stress levels that were submitted prior to the issuance of the alternative MAOP Rule?**

    Operators that have already been granted special permits prior to the MAOP rule may continue to operate under the conditions of the special permit. PHMSA will examine special permits that

have already been granted, as appropriate, to determine if any modifications are needed. Operators that desire a waiver from any requirement in the alternative MAOP rule must submit a new application for special permit.

Revised: 1/19/10

12. Have pipeline design requirements changed to accommodate alternative MAOP requirements?

Yes. The rule adds a new section to Subpart C—Pipe Design in 49 CFR Part 192. The new section, 49 CFR § 192.112, prescribes additional design standards required for the steel pipeline to be qualified for operation at an alternative MAOP based on higher stress levels. These include requirements for rigorous steel chemistry and manufacturing practices and standards. Pipelines designed under these standards contain pipe with improved toughness properties to resist damage from outside forces and to control fracture initiation and growth. The considerable attention paid to the quality of seams, coatings, and fittings is intended to prevent flaws leading to pipeline failure. Unlike other design standards, 49 CFR § 192.112 applies to a new or existing pipeline only to the extent that an operator elects to operate at a higher alternative MAOP than allowed in previous regulations.

Revised: 1/19/10

13. Have additional construction requirements been established in support of pipeline operations at an alternative MAOP?

Yes. The rule adds a new section to Subpart G—General Construction Requirements for Transmission Lines and Mains. The new section, 49 CFR § 192.328, prescribes additional construction requirements, including rigorous quality control (QC) and inspections, as conditions for operation of the steel pipeline at higher stress levels. Unlike other construction standards, § 192.328 applies to a new or existing pipeline only to the extent that an operator elects to operate at a higher alternative MAOP than allowed in previous regulations.

Revised: 1/19/10

14. How is a higher alternative MAOP calculated?

49 CFR § 192.620(a) describes how to calculate the alternative MAOP based on the higher operating stress levels. Operators must use higher design factors to calculate the alternative MAOP for qualifying segments of the pipeline. For a segment currently in operation this will result in an increase in MAOP. No changes were made in the design factors used for segments within compressor or meter stations or segments underlying certain crossings. Operators must design road/railroad crossings, fabrications, headers, mainline valve assemblies, separators, meter stations and compressor stations on new pipelines operating under an alternative MAOP in accordance with the design factors in 49 CFR § 192.111.

Revised: 2/05/10

15. What pipelines qualify for operation under a higher alternative MAOP?

49 CFR § 192.620 (b) describes which segments of new or existing pipeline are qualified for operation at the higher alternative MAOP. The higher alternative MAOP is allowed only in Class 1, 2, and 3 locations. Only steel pipelines meeting the rigorous design and construction requirements of 49 CFR §§ 192.112 and 192.328 and monitored by supervisory data control and acquisition systems qualify.

Mechanical couplings in lieu of welding are not allowed and 95% of girth welds must have been examined for existing pipelines to operate at alternative MAOP. Pipelines in Class 4 locations may not be allowed to operate using a higher alternative MAOP. Pipelines in Class 4 locations may be operated up to a design factor of 0.40 in accordance with 49 CFR § 192.111.

Revised: 2/05/10

16. Can existing pipelines that have experienced a failure indicative of materials concerns qualify for the use of a higher alternative MAOP?

49 CFR § 192.620 (b)(6) requires the performance of a root cause analysis, including metallurgical examination of the failed pipe, to determine if a previous operational failure is indicative of a systemic problem and precludes use of a higher alternative MAOP if a failure is determined to be systematic in nature. Results of the analysis must be reported to PHMSA Regional Office, or applicable state regulatory authorities, where the pipeline is in service at least 60 days prior to operation at the higher alternate MAOP.

Revised: 2/05/10

17. What strength test requirements must be met to operate at a higher alternative MAOP?

49 CFR § 192.620 (c)(4) addresses initial strength testing requirements. In order to establish a higher alternative MAOP, an operator must perform the initial strength testing of a new segment at a pressure at least as great as 125 percent of the alternative MAOP in Class 1 locations and 150 percent of the alternative MAOP in Class 2 and 3 locations. (For Class 2 alternative MAOP segments installed prior to December 22, 2008 the alternative test factor is 1.25.) Since existing pipelines are operated at a lower MAOP, they may have been initially tested at a pressure less than these levels. If so, § 192.620(c) allows the operator to conduct a new strength test in order to raise the MAOP.

Revised: 2/05/10

18. Are there any special training and qualification requirements associated with the use of higher alternative MAOPs?

49 CFR § 192.620(c)(6) requires operators seeking to operate at the allowable higher operating stress levels to treat construction tasks as if they were covered by subpart N, "Qualification of Pipeline Personnel." Construction activities are Construction Operator Qualification (OQ) covered tasks regardless of whether or not they meet the four-part test in 49 CFR § 192.801(b). Operators are encouraged to review their construction OQ plan with the appropriate PHMSA Regional Director prior to beginning construction.

Revised: 2/05/10

19. What additional operation and maintenance requirements apply to operation at a higher alternative MAOP?

49 CFR § 192.620(d) sets forth ten operating and maintenance requirements that supplement the existing requirements in Part 192. These include requirements for an operator to evaluate and address the issues associated with operating at higher pressures. Through its public education program, an operator must inform the public of any risks attributable to higher pressure

operations. The additional operating and maintenance requirements address the two main pipeline safety risks, excavation damage and corrosion, through a combination of traditional practices and integrity management. Traditional practices include cathodic protection, control of gas quality, and maintenance of burial depth. Integrity management measures require operators to perform internal inspection on a periodic basis to identify and repair flaws before they can fail.

Revised: 1/19/10

20. How is overpressure protection addressed when operation is at a higher alternative MAOP?

The alternative MAOP is higher than the upper limit of the required overpressure protection under previous regulations for surge events. New section 49 CFR § 192.620(e) increases the overpressure protection limit to 104 percent of the MAOP, which is 83.2 percent of SMYS for a pipeline segment operating at the alternative MAOP in a Class 1 location.

Revised: 1/19/10

22. Why is fracture control important when operating at a higher alternative MAOP?

At a higher operating stress there is an increased likelihood that a pipeline failure could also cause a running fracture is increased because of the increased energy in the pipeline due to the increased pressure. Operators must have some method of eliminating or arresting running fractures. Newer high strength steels have some toughness properties that will assist in reducing the chances of a running fracture. Operators must demonstrate that the pipeline steel has these properties or must provide for another method of arresting running fractures.

Revised: 2/05/10

23. Why include requirements on plate or coil quality when operating at a higher alternative MAOP?

All steel pipes are made from either plates or coils. If these steel plates or coils are of superior quality, then the pipe should also be of superior quality if properly rolled. Assuring quality requires that the steel mill that made the plate or coil to have an inspection and quality control program to limit variation and to improve the quality of its final product. 49 CFR § 192.112 requires operators to verify that such a quality assurance program was in place and was followed at the steel mill and pipe rolling mill.

Revised: 2/05/10

24. Why are mill test reports required for the alternative MAOP rule?

The alternate MAOP rule allows operators to establish MAOPs higher than previously allowed by 49 CFR Part 192. Operators must have adequate documentation of pipe mechanical and chemical properties to demonstrate that the pipe material is suitable for operation at the higher stress levels allowed by the alternate MAOP Rule. Such documentation should include mill test reports documenting actual yield strength, tensile strength, chemical properties, carbon equivalents and toughness of the steel used in the pipe, see 49 CFR § 192.112.

Revised: 2/05/10

25. 49 CFR § 192.620(d)(5)(v)(A) requires "Limit carbon dioxide to 3 percent by volume." Is this limit applicable across the entire pipeline that is operating at an alternative maximum allowable operating pressure based on higher stress levels? Is blending allowed over a portion of pipeline? Also, will PHMSA OPS allow greater than 3% carbon dioxide by volume if the delivered gas contains less that 7 lb-m water vapor per MMSCFD?

To comply with this provision, carbon dioxide must be limited to 3% maximum. Blending is not allowed. If the operator plans to operate above the 3% carbon dioxide limit, the pipeline is not eligible for operation under the alternative MAOP rule. This provision does not depend on whether the transported gas is considered wet or dry (i.e., maintaining water vapors below 7 lb-m per MMSCFD).

The rule is intended to allow a pipeline to operate at an alternative MAOP if the operator has a robust program to assure pipe integrity. This includes restricting carbon dioxide, hydrogen sulfide, and free water, and having a program to monitor the gas stream and run cleaning pigs, as required, to address deleterious gas stream constituents.

Revised: 2/05/10

26. Does the recent advisory bulletin ADB-09-01 (Docket No. PHMSA-2009-0148 – "Potential Low and Variable Yield and Tensile Strength and Chemical Composition Properties in High Strength Line Pipe") affect pipelines that might be operated in accordance with the MAOP Rule?

The advisory bulletin informs pipeline system owners and operators of the potential for high strength line pipe installed in recently constructed pipelines to exhibit inconsistent chemical and mechanical properties. PHMSA has observed numerous instances of pipe with yield strength and tensile strength properties that do not meet the line pipe specification minimums. This advisory bulletin pertains to micro-alloyed high strength line pipe grades, generally Grade X-70 and above. PHMSA has reviewed metallurgical testing results from several recent projects indicating pipe joints produced from plate or coil from the same heat may exhibit variable chemical and mechanical properties by as much as 15% lower than the reported strength values by the pipe manufacturer. The advisory bulletin can be accessed online at the following URL. [http://www.phmsa.dot.gov/pipeline/regs/advisory-bulletin]

PHMSA expects operators of pipelines under the alternate MAOP to perform in-line inspections (ILI) and to remediate the pipeline in accordance with the "Interim Guidelines for Confirming Pipe Strength in Pipe Susceptible to Low Yield Strength for Gas Pipelines, September 10, 2009" which can accessed online at the following URL.
[http://primis.phmsa.dot.gov/lowstrength/docs/InterimGuidelinesGas.pdf].

The operator should review with the PHMSA Region Director, the deformation and/or geometry tool reports as required in the above referenced interim guidelines. The operator's analysis must consider from pipe properties tests and property distributions, hydrostatic test pressures and reported test behavior, and pipe end to center diameter variations from deformation and/or geometry tool reports. Pipe exhibiting an indicated diameter greater than 1.00 % (based upon pipe diameter) above the nominal pipe diameter should be noted on the report of potential deformations. The interim guidelines may be modified by PHMSA if the verification review by the PHMSA Region Director shows negligible integrity risk.

Revised: 2/05/10

27. How should an operator implement 49 CFR § 192.620(c)(6)?

49 CFR § 192.620(c)(6) provides "If the performance of a construction task associated with implementing alternative MAOP can affect the integrity of the pipeline segment, treat that task as a "covered task", notwithstanding the definition in § 192.801(b) and implement the requirements of subpart N as appropriate."

An operator must have and follow a Construction Operator Qualification (COQ) Program for construction tasks that can affect pipeline integrity. The COQ program must comply with 49 CFR § 192.801 and must be followed throughout the construction process for the qualification of individuals performing tasks on an alternative MAOP special permit pipeline.

A construction quality assurance plan (§ 192.328(a)), to ensure quality standards and controls of the pipeline, must be followed throughout the construction phase with respect to the following: pipe inspection (at the last pipe shipping or storage location prior to stringing on the construction right of way, whether rail yard or pipe storage yard), hauling and stringing, field bending, welding, non-destructive examination of girth welds, applying and testing field applied coating, lowering of the pipeline into the ditch, padding and backfilling, and hydrostatic testing. These tasks can affect the integrity of the pipeline segment and must be treated as covered tasks. The individuals driving the pipe stringing trucks to the pipeline ROW would not need to be COQ qualified, unless they are responsible for the pipe unloading.

Other tasks that can affect pipeline integrity which must be treated as covered tasks include, but are not limited to surveying, locating foreign lines, one call notifications, ditching, alternating current (AC) interference surveys and mitigation; cathodic protection (CP) system surveys, mitigation, and installation; conducting directional drills; anomaly evaluations and repairs; right of way clean up (including installation of line markers); and quality assurance monitoring.

Operators are encouraged to review their construction OQ plan with the appropriate PHMSA Regional Director prior to beginning construction.

Revised: 2/05/10

28. Does 49 CFR § 192.620(c)(6) apply only to construction tasks performed after the effective date of the final alternative MAOP rule or does it apply to all construction tasks associated with implementing alternative MAOP, regardless of when the task was performed?

All construction tasks associated with implementing alternative MAOP that occurs after December 22, 2008 (the effective date of the rule) must comply with § 192.620(c)(6). As stated in the preamble to the amendment to the alternative MAOP rule (74 FR 62503), construction activities that occurred prior to December 22, 2008 do not have to comply with 49 CFR § 192.620(c)(6). However, it is important to emphasize that, for existing pipelines, all of the requirements of 49 CFR § 192.112 (including material quality standards) and 49 CFR § 192.328 (including the construction Quality Assurance requirements) apply to construction activities regardless of when they occurred (prior to, on, or after December 22, 2008).

Revised: 2/18/10

29. **49 CFR § 192.620(d)(5)(ii) requires operators to use filter separators or separators and gas quality monitoring equipment at receipt points where gas with potentially deleterious contaminants enter the pipeline. Do operators have to install such equipment if its customers own and operate properly designed separation equipment upstream of receipt points?**

    Customers of the operator who do not operate pipeline facilities or transport gas are not themselves obligated to comply with 49 CFR Part 192 and PHMSA does not have enforcement authority over them. Operators are directly responsible for compliance with 49 CFR § 192.620(d)(5)(ii) on their pipelines. If the operator relies on equipment owned or operated by another entity to meet regulatory requirements, the operator is responsible for assuring the equipment is appropriately maintained and operated correctly. Further, the operator must assure that personnel working with or maintaining the equipment meet applicable regulatory requirements such as Operator Qualification and Drug/Alcohol testing criteria. The operator is also required to maintain records documenting compliance with all applicable regulations. If separation equipment owned and operated by one of the pipeline operator's customers fails to perform adequately resulting in contaminants entering the pipeline, the operator is responsible for the failure.

    Revised: 2/05/10

30. **49 CFR § 192.620(d)(10)(iii) allows for direct assessment or pressure testing for periodic assessment of segments to the extent permitted for a baseline assessment under § 192.620(d)(9)(iii). Is direct examination by excavation of the pipeline, removal of coating, and the use of precision NDE equipment in direct contact with the pipe an acceptable assessment method?**

    In accordance with National Association of Corrosion Engineers (NACE) RP0502-2002, Section 3.4.1.3, 100% direct examination is an acceptable assessment method and complies with 49 CFR § 192.925. American Society of Mechanical Engineers (ASME) B31.8S, Section 6.1 also provides that operators may choose to conduct direct examination of the entire length of the segment being assessed. To address external corrosion and dents, operators must make detailed measurements and/or maps of the metal loss and/or indentation. To address internal corrosion, operators must examine the pipe for internal metal loss with Non-Destructive Evaluation (NDE) methods such as ultrasonic testing (UT). To address stress corrosion cracking (SCC), operators must examine the pipe for SCC by NDE methods such as magnetic particle inspection (MPI). 49 CFR § 192.939 sets out maximum reassessment intervals for each of the different assessment methods.

    Revised: 1/19/10

31. **49 CFR § 192.620(d)(11)(ii)(A) requires that a dent discovered during the baseline assessment for integrity under paragraph (d)(9) that meets the criteria in § 192.309(b) be repaired. In the preamble of the Final Rule, PHMSA states "With respect to dents, the repair criteria of § 192.309(b) apply only for dents found during construction baseline assessments (i.e., for new pipelines). PHMSA notes that this section already requires repair of two percent dents for pipelines over 12 3/4 inches in diameter. The criteria for repairing dents on existing pipelines and subsequent assessments on new pipelines and existing pipelines are in § 192.933(d)." (73**

FR 62165) The final rule language could be interpreted to require that dents in existing lines be remediated in accordance with §§ 192.309(b) and 192.933(d). Please clarify if this is the intent of the rule.

The rule preamble excerpt cited above merely acknowledges that the pre-existing 49 CFR § 192.309(b) applies to new pipelines under construction and that the pre-existing § 192.933(d) applies to existing operational pipelines. As stated in the preamble "PHMSA recognizes that the repair criteria in this rule are more stringent than those in subpart O. PHMSA considers this appropriate. A pipeline that will operate under alternative MAOP is subject to more stress and has less wall thickness margin to failure than most pipelines operating under subpart O (with the exception of some grandfathered lines)." The repair criteria in § 192.620(d)(11)(ii) are intended to require that dents in existing lines implementing alternative MAOP must be repaired if they meet criteria in either § 192.309(b) [per § 192.620(d)(11)(ii)(A)] or § 192.933(d) [per § 192.620(d)(11)(ii)(B)]. This is intended to require that existing pipelines that will be operated at stress levels allowed by the alternative MAOP rule are in "like new" condition with respect to dent defects.

Revised: 1/19/10

32. Has PHMSA taken any steps to require more rigorous standards for high strength steel to decrease the likelihood of "low and variable strength" steel in alternative MAOP pipelines?

PHMSA has sent letters to operators with pipelines operating under the alternative MAOP Rule requiring them to confirm the pipe strength in accordance with advisory bulletin ADB 09-01 and to remediate the pipeline in accordance with the "Interim Guidelines for Confirming Pipe Strength in Pipe Susceptible to Low Yield Strength for Gas Pipelines" September 10, 2009 which can accessed online at the following URL. [http://www.phmsa.dot.gov/pipeline/regs].

PHMSA has met with the American Petroleum Institute (API) 5L pipe committee concerning more rigorous standards for steel plate/coil and pipe rolling. Based upon our meeting, API is proposing standards changes to the API 5L pipe standard which are summarized as follows:

- Quality Assurance management system for the supplying steel and rolling mill (Par. 8.3.1)
- Coil/plate rolling practice shall be controlled to ensure mechanical properties are uniform (Par. 8.3.7)
- Qualifications in hot rolling practice deviations (Par, 8.3.8)
- Standard sampling locations along plate or coil length according to documented procedures (Par. 10.2.3.2)
- Modifications to retest procedures (Par. 10.2.12.2)
- Manufacturing Procedure Specification – new (Appendix B.3)
- Inspection and Test Plan – required (Appendix B.4)
- Manufacturing Procedure Qualification Tests – mechanical tests (Appendix B.5.3)
- Qualification to consider assessment of coil/plate tensile property variability and coil/plate to pipe strength changes
- Purchaser shall be notified of all plate/coil/pipe that do not meet the initial defined rolling practices control parameters, but have been re-qualified (Appendix B5.6 and B5.7).

Until the pipe quality assurance changes have been approved by API 5L, incorporated into the API 5L pipe standard, and PHMSA has seen the quality improvements in new pipelines, PHMSA will continue to require pipeline operators to run deformation tools and remediate the pipeline in accordance with the "Interim Guidelines for Confirming Pipe Strength in Pipe Susceptible to Low Yield Strength for Gas Pipelines" for all alternative MAOP Rule pipelines.

Original: 2/05/10

33. Does PHMSA expect the operator of an alternative MAOP pipeline to run geometry and high resolution MFL tools at separate time intervals?

49 CFR § 192.920(d)(9)(i)(A) and (B) require operators to run geometry tool and high resolution magnetic flux (MFL) tool as follows:

> "(A) Assess using a geometry tool after the initial hydrostatic test and backfill and within six months after placing the new pipeline segment in service; and
> (B) Assess using a high resolution magnetic flux tool within three years after placing the new pipeline segment in service at the alternative maximum allowable operating pressure."

Operators of pipelines operating under the alternative MAOP Rule must perform high resolution deformation tool inspections, remediate any findings in accordance with the "Interim Guidelines for Confirming Pipe Strength in Pipe Susceptible to Low Yield Strength for Gas Pipelines." Inspections for low strength pipe and any pipe repairs/removals must be completed prior to operating the pipeline alternative MAOP, operating above 72% SMYS.

The operator may elect to run the geometry and high resolution MFL tools in combination or separately. Operators may also want to run a high resolution deformation tool and high resolution MFL tool together. Should the high resolution MFL tool be run in the first 6 months of the pipeline being placed in service to establish a baseline assessment, the next high resolution MFL tool run must meet § 192.620(d)(10) reassessment intervals.

Original: 2/05/10

34. The alternative MAOP Rule requires the use of "non-shielding coating." What coatings does PHMSA consider to be "non-shielding?"

For the purpose of the alternative MAOP Rule, a "non-shielding" coating is a coating that allows cathodic protection (CP) currents to pass through the coating and along the outside surface of pipe and which is an oxygen barrier, even if the coating has disbonded from the pipe surface. An example of such a coating is Fusion Bonded Epoxy (FBE) which does allow CP currents to reach the external surface of the pipe, even if the coating disbonds from the pipe surface. The intent of the alternative MAOP Rule is for operators to use modern external coatings that do not impede CP. Also, PHMSA would consider a two-part epoxy girth weld field joint coating or repair coating as a "non-shielding" coating.

Some examples of "shielding" coatings are polyethylene tapes, shrink sleeves, coal tar mastics, asphalts, etc. These coatings can prevent CP currents from reaching the pipe when they disbond from the pipe surface. The use of "shielding" coatings is not the intent of the alternative MAOP Rule.

Original: 2/05/10