Date: _____ **Michigan Public Service Commission** Case: _____

2018 First Half Inspection

Company: _____

Code	Question	Condition	EFA
192.105 (a)	Is design pressure for steel pipe determined by: $P = \left(\frac{2*St}{D}\right) * F * E * T$?	☐	☐
R 460.20403	**SOUR GAS:** In addition to the requirements set forth in 49 C.F.R. §192.105 through §192.115, is steel pipe for use in the transportation of sour gas designed using a design factor of 0.40?	☐	☐
192.121	Subject to §192.123, is design pressure for plastic pipe determined by either: $P = 2S\frac{t}{(D-t)}(DF)$ $P = \frac{2S}{(SDR-1)}(DF)$?	☐	☐
192.123 (a) (1)	Does design pressure for plastic distribution pipe not exceed 100 psig? (Refer to (e) & (f) exceptions)	☐	☐
192.123 (a) (2)	Does design pressure for plastic pipe in Class 3 and 4 locations not exceed 100 psig? (Refer to (e) & (f) exceptions)	☐	☐
192.123 (b) (1)	Is plastic pipe not used where operating temperatures are below –20ºF? (see exception)	☐	☐
192.123 (b) (2)	Is plastic pipe not used where operating temperatures will be above the HDB temperature (§192.121) for thermoplastic pipe or 150ºF for reinforced thermosetting plastic pipe?	☐	☐
192.123 (c)	Is the minimum wall thickness for thermoplastic pipe not less than 0.062"?	☐	☐
192.123 (d)	Is wall thickness for reinforced thermosetting plastic pipe at least: Normal size (in) Min thickness (in) 2.....0.060 3.....0.060 4.....0.070 6.....0.100	☐	☐
192.155	Are welded branch connections designed to ensure that the strength of the pipeline system is not reduced?	☐	☐
192.157	Are extruded outlets at least equal to the design strength of the pipe and other fittings to which it is attached?	☐	☐
192.503 (a) (1)	Prior to operating a new or returning to service a segment of pipeline, is it tested in accordance with Subpart J and §192.619 to substantiate the MAOP?	☐	☐
192.503 (a) (2)	Prior to operating a new or returning to service a segment of pipeline, are potentially hazardous leaks located and eliminated?	☐	☐

Code	Question	Condition	EFA
192.503 (b) (1)	Are test mediums compatible with the pipeline material?	☐	☐
192.503 (b) (2)	Are test mediums relatively free of sedimentary materials?	☐	☐
192.503 (b) (3)	Except for natural gas, are test mediums nonflammable?	☐	☐
192.503 (c)	Except as provided for in §192.505(a), if air, natural gas, or inert gas is used as the test medium, are the following limitations for the maximum hoop stress (as %SMYS) followed during testing?	☐	☐
	Class 1 Natural gas 80 Air or inert gas 80 Class 2 Natural gas 30 Air or inert gas 75 Class 3 Natural gas 30 Air or inert gas 50 Class 4 Natural gas 30 Air or inert gas 40		
192.503 (d)	Are non-welded tie-in joints leak tested to at least the operating pressure?	☐	☐
192.505 (a)	Rule applies to: steel pipeline, 30% SMYS and greater, excluding service lines. (Refer to (d) for single component other than pipe)	☐	☐
	If a building is within 300' of the pipeline in a Class 1 or 2 location, are hydrostatic tests conducted to at least 125% of MAOP on at least 600' of the pipeline? (see exceptions)		
192.505 (b)	Rule applies to: steel pipeline, 30% SMYS and greater, excluding service lines. (Refer to (d) for exception on single component other than pipe)	☐	☐
	In Class 1 or 2 locations, is each compressor station, regulator station, and measuring station tested to at least Class 3 location test requirements?		
192.505 (c)	Rule applies to: steel pipeline, 30% SMYS and greater, excluding service lines. (Refer to (d) for single component other than pipe)	☐	☐
	Except as provided in paragraph (e), are test pressures maintained for at least 8 hours?		
192.505 (e)	Rule applies to: steel pipeline, 30% SMYS and greater, excluding service lines. (Refer to (d) for single component other than pipe)	☐	☐
	For fabricated units and short sections of pipe, are preinstallation strength tests conducted for at least 4 hours?		
R 460.20412	**SOUR GAS:** Are sour gas pipeline facilities pressure tested in place to at least 2x the MAOP for at least 8 hours?	☐	☐
192.507 (a)	Rule applies to: steel pipeline, between 100 psig and 30% SMYS, excluding service lines.	☐	☐
	Are pipeline segments tested using a procedure that will ensure discovery of all potentially hazardous leaks?		

Code	Question	Condition	EFA
192.507 (b)	Rule applies to: steel pipeline, between 100 psig and 30% SMYS, excluding service lines. If stressed to at least 20% SMYS using natural gas, inert gas, or air, are leak tests made between 100 psig and 20% SMYS or the line walked to check for leaks while at 20% SMYS?	☐	☐
192.507 (c)	Rule applies to: steel pipeline, between 100 psig and 30% SMYS, excluding service lines. Are pipeline segments tested for at least 1 hour?	☐	☐
192.509 (a)	Rule applies to: steel pipeline, below 100 psig, excluding service lines. Are pipeline segments leak tested using a procedure that will ensure discovery of all potentially hazardous leaks?	☐	☐
R 460.20311 (a)	Is steel main to be operated at less than 1 psig tested to at least 10 psig?	☐	☐
R 460.20311 (b)	Is steel main to be operated at or above 1 psig but less than 60 psig tested to at least 90 psig?	☐	☐
R 460.20311 (c)	Is steel main to be operated at more than 60 psig but less than 100 psig tested to at least 1½ times the MAOP?	☐	☐
R 460.20311 (d)	Is test pressure on steel mains operating below 100 psig maintained for at least 1 hour? (Short segments for at least 30 minutes)	☐	☐
192.511 (a)	Rule applies to: steel service lines. Are connections to mains included in pressure tests? If not feasible, are connections given leakage tests at the operating pressure when placed in service?	☐	☐
192.511 (b)	Rule applies to: steel service lines. Are segments to be operated between 1 psig and 40 psig leak tested at a pressure of at least 50 psig?	☐	☐
192.511 (c)	Rule applies to: steel service lines. Are segments to be operated at more than 40 psig tested to at least 90 psig? (Segments stressed to 20% SMYS must be tested in accordance with §192.507).	☐	☐
R 460.20312	Are all service lines tested for at least 10 minutes?	☐	☐
192.513 (b)	Do test procedures for plastic pipelines ensure discovery of all potentially hazardous leaks?	☐	☐
192.513 (c)	Are test pressures for plastic pipelines at least 150% of the MAOP or 50 psig, whichever is greater?	☐	☐

Code	Question	Condition	EFA
192.513 (d)	Is the temperature of thermoplastic material below 100°F or the HDB temperature, whichever is greater, during pressure tests?	☐	☐
R 460.20313	Rule applies to: plastic pipeline. Are test pressures maintained for at least 1 hour? (short segments for at least 30 minutes)	☐	☐
192.515 (a)	Is every reasonable precaution taken to protect employees and the public during pressure tests? If the hoop stress exceeds 50% SMYS during a test, are persons not involved with the test restricted to locations outside the testing area?	☐	☐
192.515 (b)	Are test mediums disposed of in a manner that will minimize damage to the environment?	☐	☐
192.517 (a)	Are records of each test performed under §§ 192.505, 192.507 (steel pipe to operate at over 100 psig) retained for the life of the pipeline?	☐	☐
192.517 (a) (1)	Do records of tests performed under §§ 192.505 and 192.507 contain the operator's name, the name of the operator's employee responsible for making the test, and the name of any test company used?	☐	☐
192.517 (a) (2)	Do records of tests performed under §§ 192.505 and 192.507 contain the test medium used?	☐	☐
192.517 (a) (3)	Do records of tests performed under §§ 192.505 and 192.507 contain the test pressure?	☐	☐
192.517 (a) (4)	Do records of tests performed under §§ 192.505 and 192.507 contain the test duration?	☐	☐
192.517 (a) (5)	Do records of tests performed under §§ 192.505 and 192.507 contain pressure recording charts or other record of pressure readings?	☐	☐
192.517 (a) (6)	Do records of tests performed under §§ 192.505 and 192.507 contain elevation variations whenever significant?	☐	☐
192.517 (a) (7)	Do records of tests performed under §§ 192.505 and 192.507 contain leaks and failures noted and their disposition?	☐	☐
192.517 (b)	Are records of each test required by §§ 192.509, 192.511, and 192.513 (steel pipeline to operate below 100 psig, steel service lines, and plastic pipelines) retained for at least 5 years?	☐	☐
R 460.20314 (a)	Do test records contain the proposed MAOP of the pipeline?	☐	☐
R 460.20314 (b)	Do test records contain the existing class location where the pipeline will be located?	☐	☐
192.605 (b) (5)	Does the O&M plan contain procedures for starting up and shutting down any part of the pipeline in a manner designed to assure operation within the MAOP plus the allowable build-up?	☐	☐

Code	Question	Condition	EFA
192.609 (a)	Rule applies to: steel pipelines operating at over 40% SMYS. Whenever there is an increase in class location, does the operator determine the present class location for the segment involved?	☐	☐
192.609 (b)	Rule applies to: steel pipelines operating at over 40% SMYS. Whenever there is an increase in class location, does the operator compare the design, construction, and testing procedures followed in the original construction with those required for the present class location?	☐	☐
192.609 (c)	Rule applies to: steel pipelines operating at over 40% SMYS. Whenever there is an increase in class location, does the operator determine the physical condition of the segment from available records?	☐	☐
192.609 (d)	Rule applies to: steel pipelines operating at over 40% SMYS. Whenever there is an increase in class location, does the operator determine the operating and maintenance history of the segment?	☐	☐
192.609 (e)	Rule applies to: steel pipelines operating at over 40% SMYS. Whenever there is an increase in class location, does the operator determine the MAOP and the corresponding operating hoop stress for the segment of pipeline involved?	☐	☐
192.609 (f)	Rule applies to: steel pipelines operating at over 40% SMYS. Whenever there is an increase in class location, does the operator determine the area affected by the increase and barriers to limit further expansion?	☐	☐
192.611 (a)	Rule applies to: steel pipelines operating at over 40% SMYS. If the current MAOP is not commensurate with the new class location, is it revised according to one of the following? (1) If possessing a valid 8 hour pressure test: (i) New Class New MAOP Not to Exceed 2.....0.8x test pressure.....72% SMYS 3.....0.667x test pressure.....60% SMYS 4.....0.555x test pressure.....50% SMYS (2) Reduce the MAOP to match the hoop stress for new segments in the class location. (3) Test the segment in accordance with Subpart J and reestablish its MAOP according to 192.611(a)(1)(i).	☐	☐
192.611 (b)	Do revised MAOPs not exceed previous MAOPs?	☐	☐

Code	Question	Condition	EFA

192.611 (d) Are MAOP revisions resulting from class location changes completed within 24 months of the class location change? (The time period starts when buildings are ready for occupancy, not when the operator discovers the change) ☐ ☐

192.619 (a) Is MAOP determined under (c) or (d) or the lowest of the following? ☐ ☐

(1) The design pressure of the weakest element in the segment. (see exception)

(2) The pressure obtained by dividing the pressure to which the segment was tested after construction as follows:

(i) For plastic pipe in all locations, the test pressure is divided by a factor of 1.5.

(ii) For steel pipe operated at 100 psig or more, the appropriate class location factor.

Class	Pre 11/12/70	Post 11/12/70	Converted 192.14
1	1.1	1.1	1.25
2	1.25	1.25	1.25
3	1.4	1.5	1.5
4	1.4	1.5	1.5

(3) The highest actual operating pressure to which the segment was subjected to in the below table. (Unless the segment was pressure tested in accordance with Subpart J after the earlier date in the table or uprated)

Type	Highest Pressure Range
Transmission	July 1, 1965 - July 1, 1970
Gathering	July 1, 1965 - July 1, 1970
(jurisdictional after 4/13/06)	Jurisdictional date to 5 years prior
(non-jurisdictional gathering before 3/15/06)	Jurisdictional date to 5 years prior
Distribution	July 1, 1965 - July 1, 1970

(4) The pressure determined by the operator to be the maximum safe pressure, considering the history of the segment.

ADB-11-01, ADB-2012-6
Quality of MAOP Records

Are design, construction, inspection, testing and other related data to calculate MAOP reliable? Are records traceable, verifiable, and complete?

Code	Question	Condition	EFA
	Traceable records are those which can be clearly linked to original information about a pipeline segment or facility. Verifiable records are those in which information is confirmed by other complementary, but separate, documentation. Complete records are those in which the record is finalized as evidenced by a signature, date or other appropriate marking.		
192.619 (b)	If MAOP is established per (a)(4), are over-pressure protective devices installed to prevent the MAOP from being exceeded?	☐	☐
192.619 (c)	Has grandfathered pipe been validated to be in satisfactory condition if operating at a pressure higher than would be allowed using the design or test pressure criteria, considering the operating and maintenance history of the segment? (Does not apply to distribution, refer to §192.621)	☐	☐
192.621 (a)	Do high-pressure distribution systems not exceed the lowest of the following: (1) The design pressure of the weakest element in the segment? (2) 60 psig unless the service lines are equipped with service regulators or other pressure limiting devices in series? (4) The pressure limits a joint could be subjected to without the possibility of parting? (5) The pressure determined to be the maximum safe pressure by the operator, considering the history of the segment?	☐	☐
192.621 (b)	If high-pressure distribution systems operate at a pressure determined in accordance with (a)(5), are overpressure protective devices installed to prevent the MAOP from being exceeded?	☐	☐
R 460.20322	Are cast-iron pipelines containing unreinforced bell and spigot joints not operated at pressures greater than 10 psig?	☐	☐
192.623 (a)	Are low-pressure distribution systems prevented from operating at a pressure too high for the safe operation of any connected gas burning equipment?	☐	☐
192.623 (b)	Are low-pressure distribution systems prevented from operating at a pressure lower than the minimum pressure for the safe and continuing operation of any connected low-pressure gas burning equipment?	☐	☐
192.625 (a)	Is gas in distribution systems odorized or contain natural odorant to be detectable by a person with a normal sense of smell at a concentration in air of 1/5 LEL?	☐	☐

Code	Question	Condition	EFA
	PHMSA recommends that when the odorization of LPG is being accomplished by a manual injection process, quality control checks should be conducted to ensure that the requisite amount of odorant is being injected. PHMSA recommends that when odorization of LPG is automatically injected, equipment calibration checks should be periodically performed to ensure consistent injection levels of the required odorant. PHMSA recommend that persons who receive new or recently cleaned tanks be notified of this fact and that persons filling these tanks implement appropriate quality control measures to ensure that potential odorant fade is adequately addressed. PHMSA recommends that all LPG transported in rail tank car tanks or cylinders be odorized in accordance with the requirements of § 173.315(b)(1), of the HMR, unless odorization would be harmful in the use or further processing of the LPG, or if odorization will serve no useful purpose as a warning agent in such use or further processing.		
192.625 (b)	Is gas in a transmission line in Class 3 or Class 4 locations odorized or contain natural odorant to be detectable by a person with a normal sense of smell at a concentration in air of 1/5 LEL? (see exceptions)	☐	☐
192.625 (c)	In the concentrations in which it is used, is the odorant in gas not deleterious to persons, materials, or pipe, and not toxic when breathed nor corrosive or harmful to the materials to which they will be exposed?	☐	☐
192.625 (d)	Is odorant not soluble in water to an extent greater than 2.5 parts to 100 parts by weight?	☐	☐
192.625 (e)	Does equipment for odorization introduce the odorant without wide variations?	☐	☐
192.625 (f)	Is periodic sampling of gas conducted using an instrument capable of determining the percentage of gas in air at which the odor becomes readily detectable?	☐	☐
R 460.20323	Are adequate records available to establish compliance with §192.625, including the quantity of odorant used per MMCF of gas and sampling to determine the effectiveness of odorization?	☐	☐
ADB–2012–11	Are MAOP exceedances on transmission pipelines that exceed the allowable build-up of pressure-limiting or control devices reported to PHMSA and the MPSC on or before the 5th day following the date on which the exceedance occurred?	☐	☐
General Recommendation	Did the state review operator records of previous accidents and failures including reported third party damage and leak response to ensure appropriate operator response as required by 192.617 or 195.402(c)(5)?	☐	☐