MPSC Inspection Findings and Recommendations

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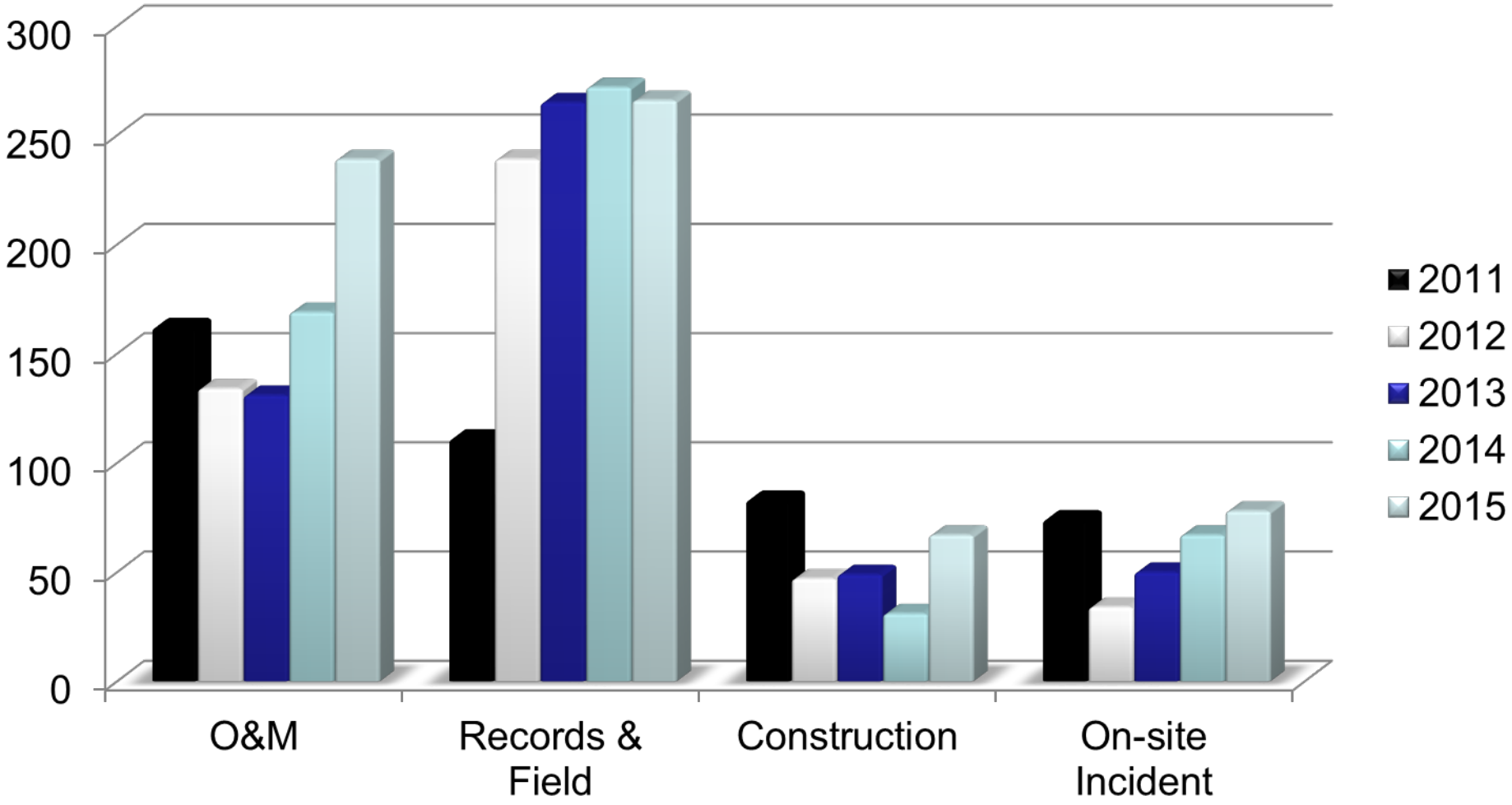
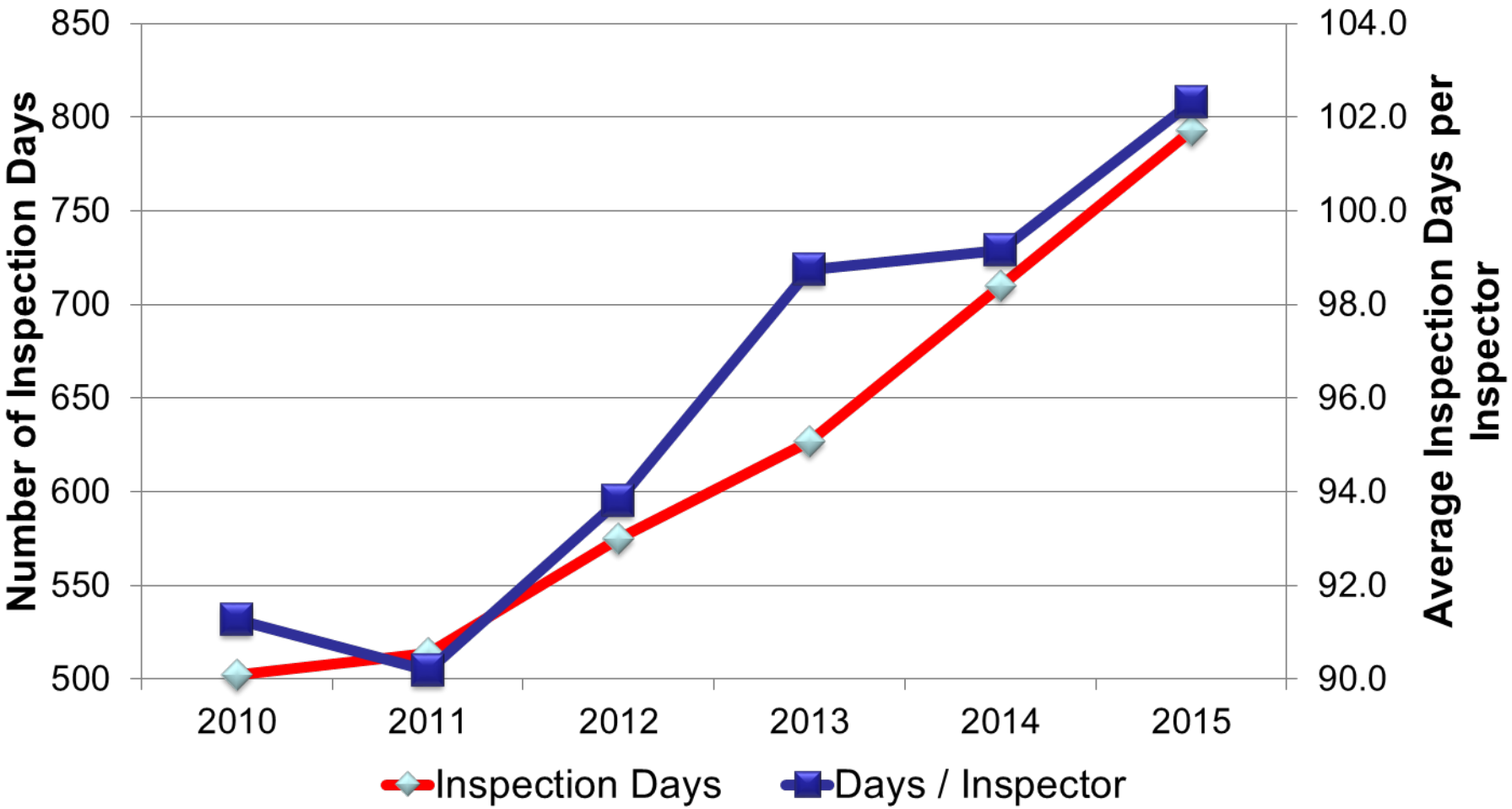
MPSC
Michigan Public Service Commission

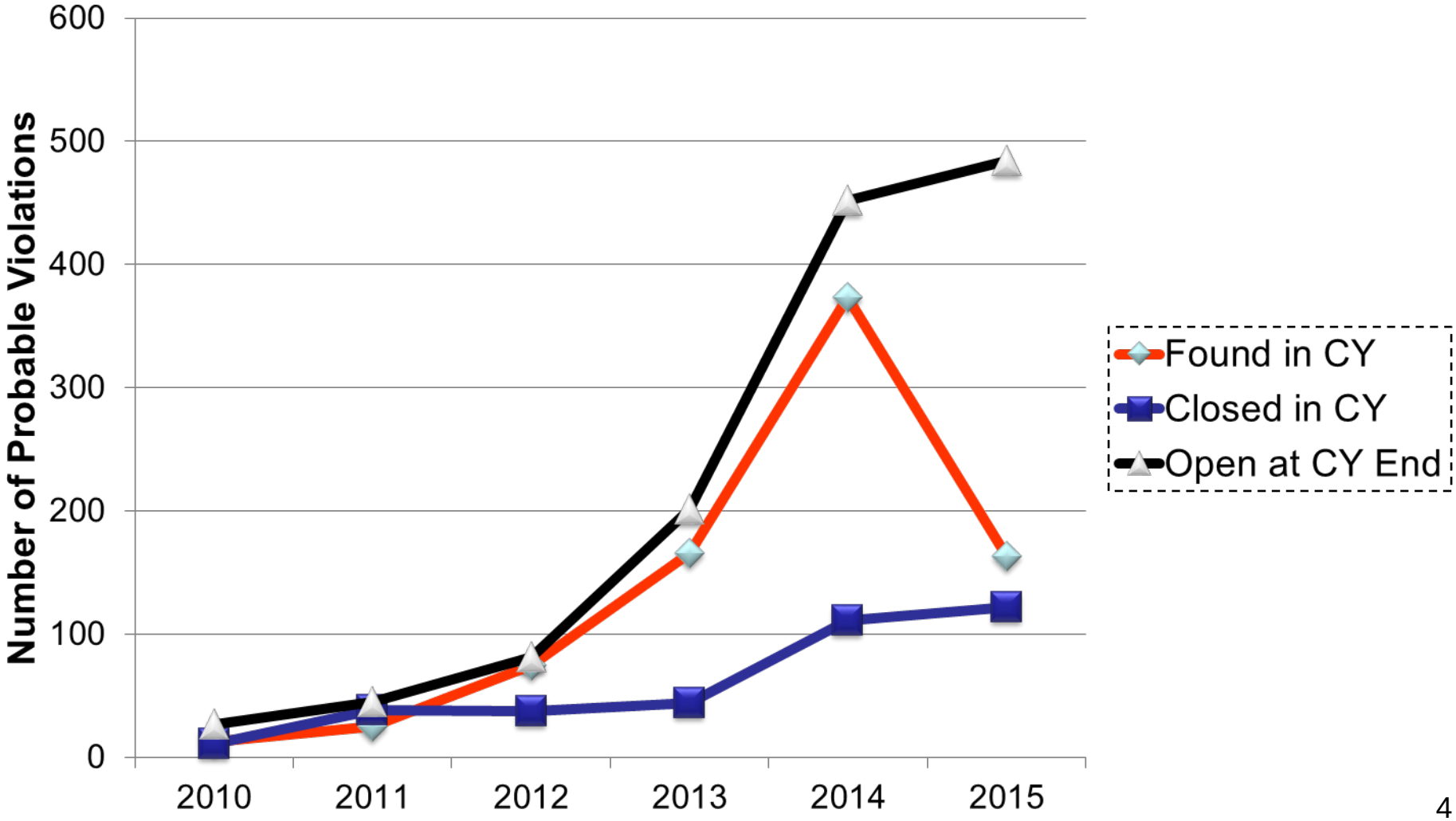
Inspection Day Activity



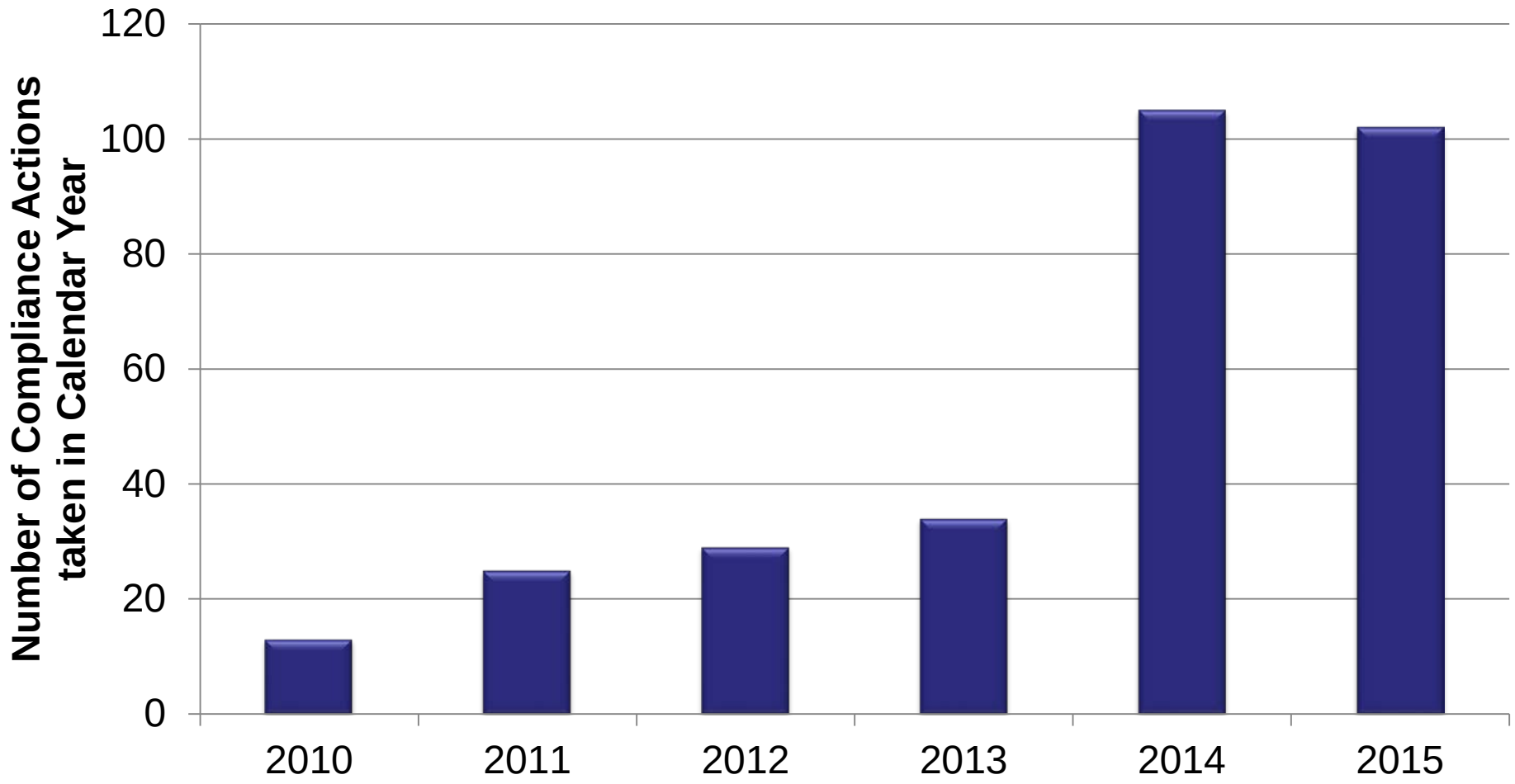
Inspection Days



Probable Violations Intrastate



Compliance Actions



2014 – 2016 Inspection Content

2014

- MAOP
- Pressure Testing
- Valve Spacing/Inspection
- Odorization
- Pipeline repair
- Patrol
- Leak survey

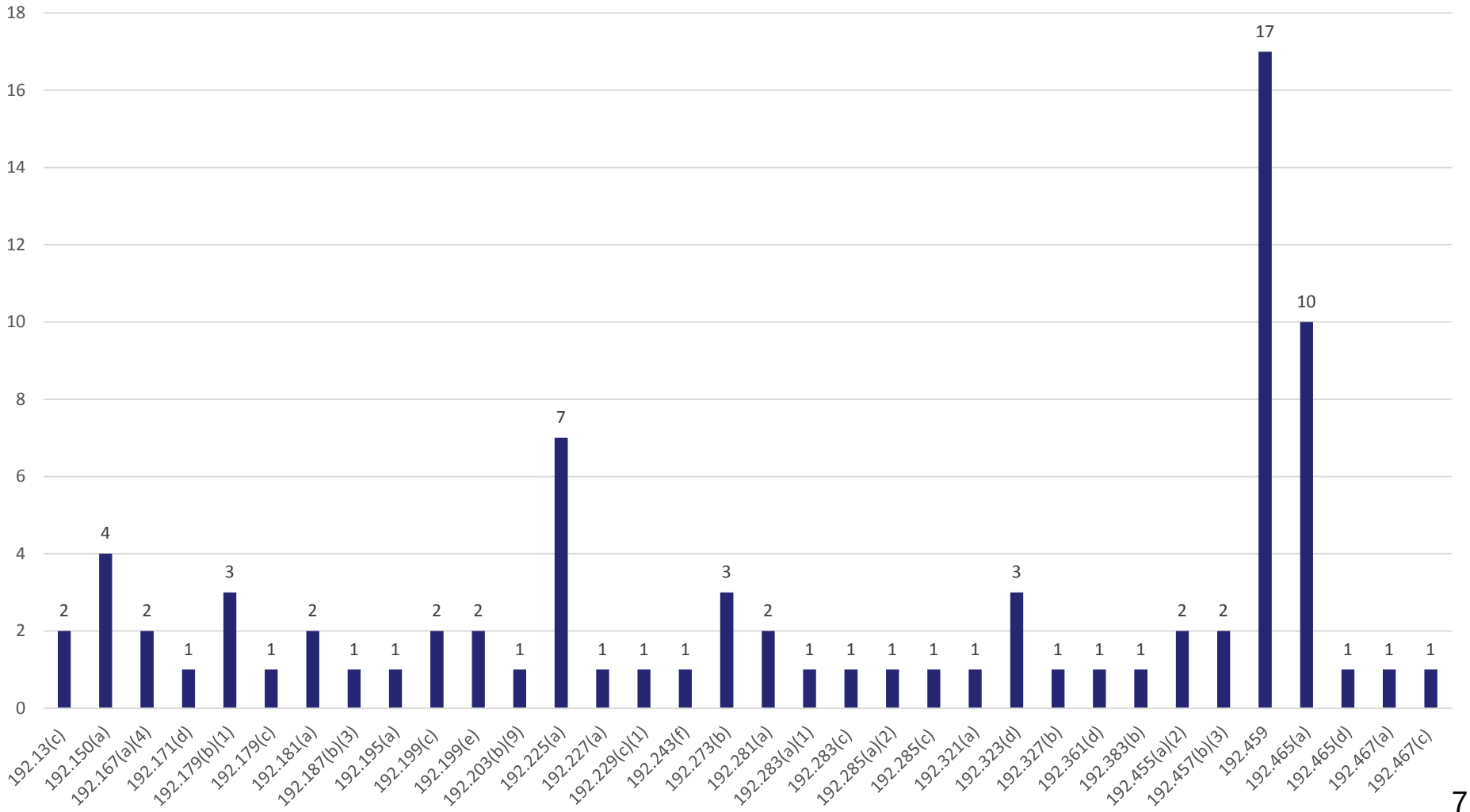
2015

- Casings
- Corrosion Control
- Component Design
- Welding
- Fusion
- Purging
- Abandonment of Facilities

2016

- Anchors/Supports
- Vaults
- OPP
- Regulator and Relief Inspections
- Atmospheric Corrosion

2014–2016 Violations by Rule



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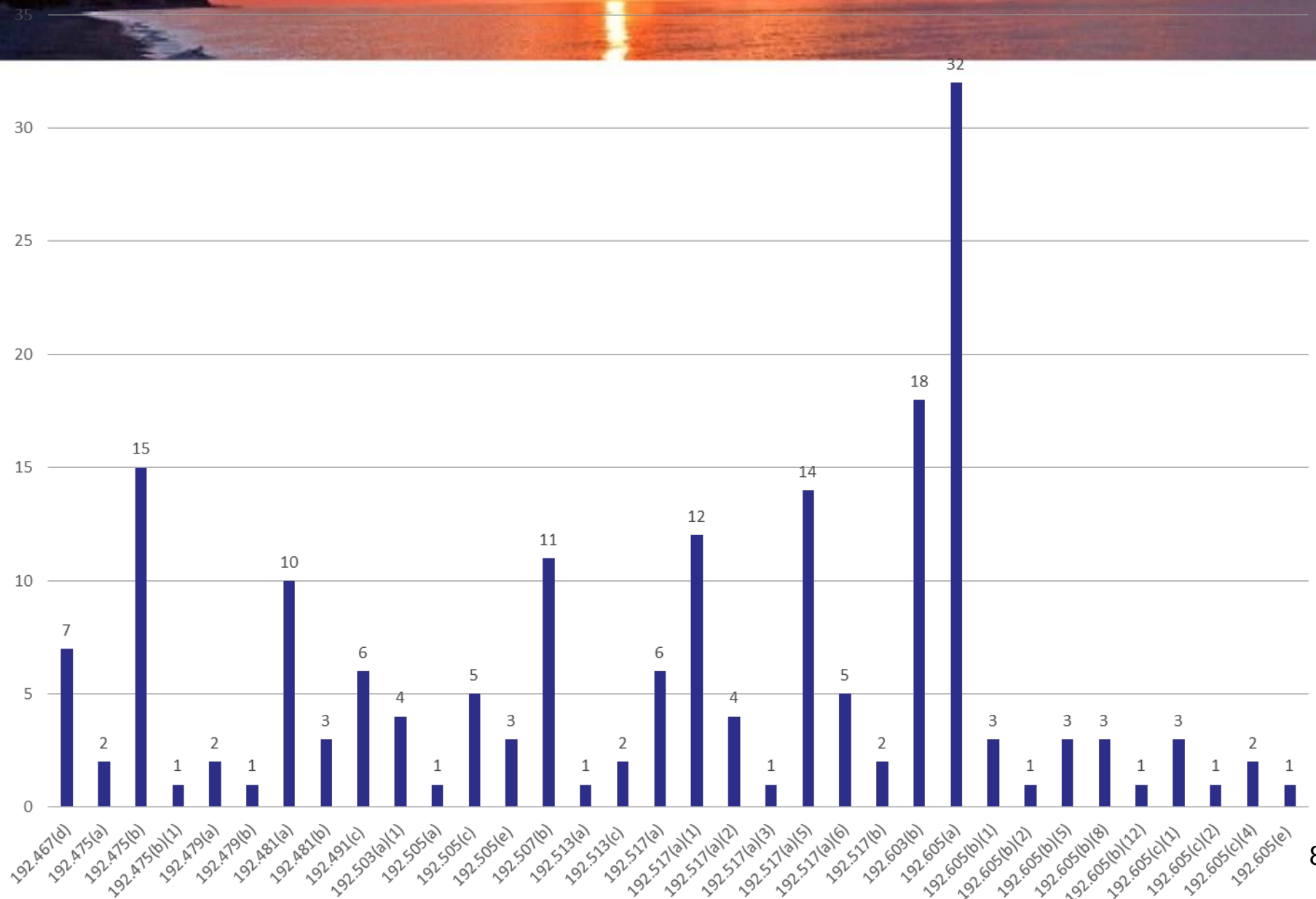
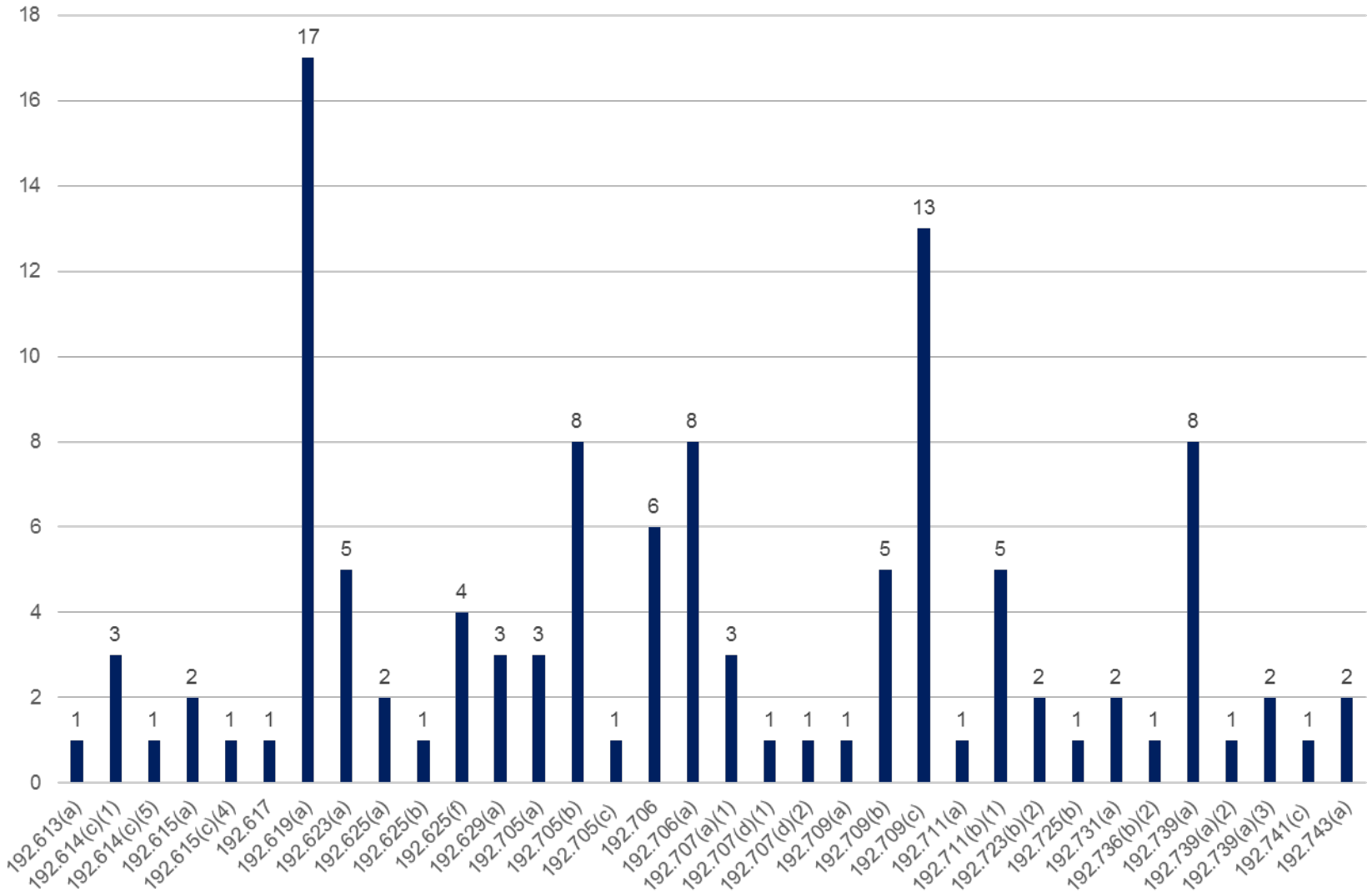
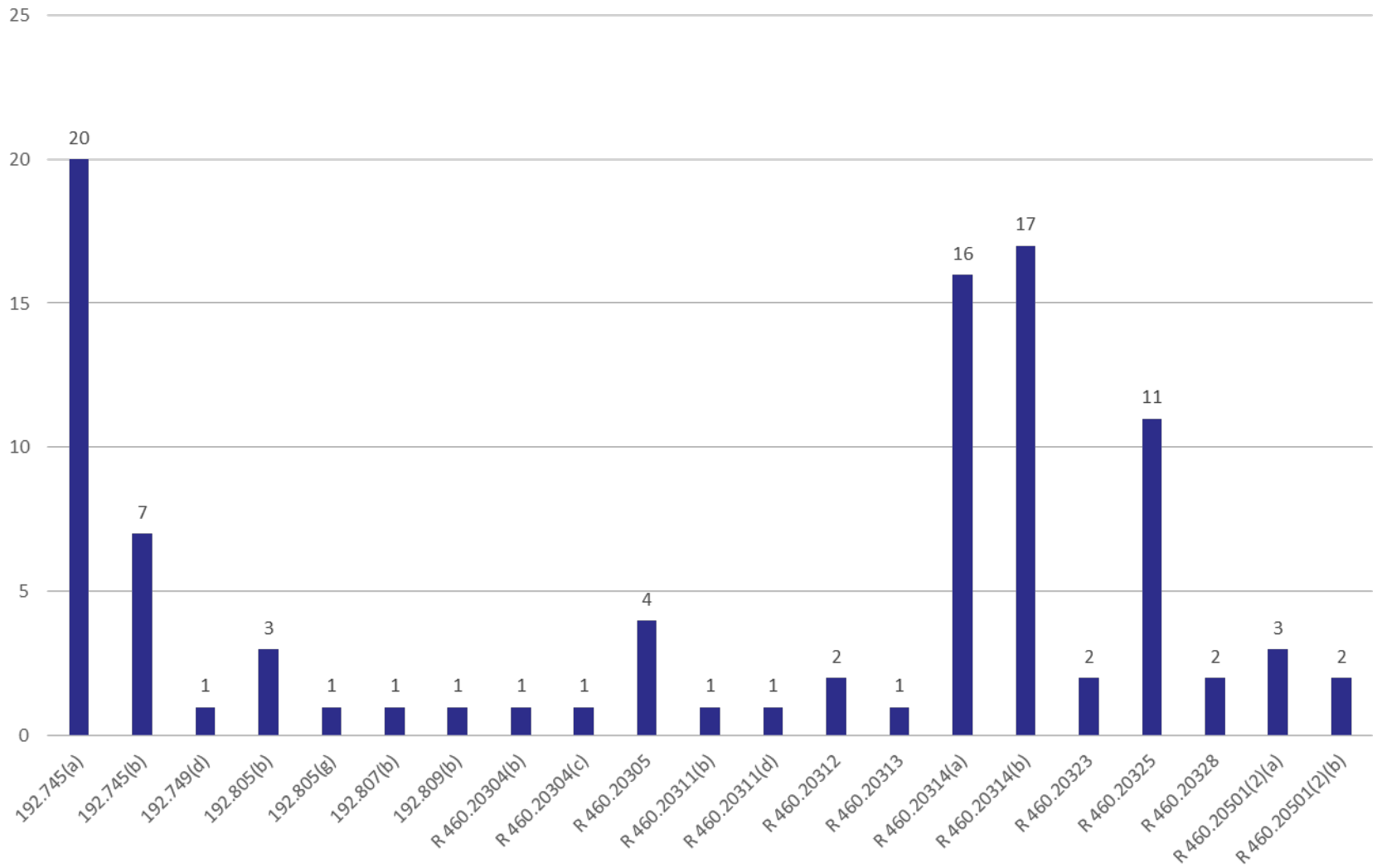


2014–2016 Violations by Rule



2014–2016 Violations by Rule



2014-2016 Findings

- 192.150(a): Not designing a transmission line to be piggable.
- 192.179(c): A section of transmission line between main line valves with a blowdown valve with insufficient capacity.
- 192.181(a): A single CAP project adds 36 miles of HP plastic distribution main that included zero sectionalizing valves.
- 192.195(a): Not providing pressure relieving or limiting devices for a line whose MAOP could be exceeded. Operator relies on alarms and remote operated valves.
- 192.199(e): Pressure relief devices not being discharged into the atmosphere without undue hazard (i.e. outside building/enclosure).
- 192.201(a)(2)(i): Not considering buildup of a relief valve. Exceeding the MAOP plus 10% on a 60 psig system.

2014-2016 Findings

- 192.225(a): Not welding in accordance with welding procedures:
  - Changing non-essential variables (API 1104). Welding below amperage range specified in welding procedure.
  - Welders not following welding procedure.

  Not completing 50% of the root pass before removing clamping device.

  - Not qualifying welding procedure to the material with the highest specified minimum yield strength in the group (API 1104 section 5.3.2.2).

- 192.227(a): Not qualifying welders in accordance with API 1104 Section 6.
  - Not providing documentation to show a welder is qualified per API 1104. Test results are required. Original multiple qualification is required if welder is maintaining a re-qual.

2014-2016 Findings

- 192.229(a): Failure to qualify a welder of compressor station pipe and components by destructive testing.

- 192.243(f): Nondestructive testing records not being retained for the life of the pipeline showing the number of girth welds made, the number nondestructively tested, the number rejected, and the disposition of the rejects.

- 192.273(b): Not following procedures for joining plastic pipe.

- 192.281(a): Not allowing a plastic pipe fuse to properly set prior to rough handling or pressure testing.
  - Plastic main was being butt fused and pulled with a tractor.
  - Plastic main was pressure tested.

- 192.283(c): Electrofusion procedures not available to joining crew.

2014-2016 Findings

- 192.285(c): Operator was requalifying joiners for stab fitting joints every five years without tracking the number joints made for each employee or tracking failures under 192.513.

- 192.321(a): Operator had plastic above ground where a steel blind flange rises above ground level.

- 192.323(d): Not protecting casing vents from the weather to prevent water from entering.

- 192.327(b): Contract crew initiating directional bore did not provide the required 24 inches of cover for a main.

2014-2016 Findings

- 192.361(d): Temporary service line not being protected from damage.

2014-2016 Findings

- 192.455(a): Not cathodically protecting copper main segments installed after July 31, 1971.
- 192.455(a)(2): Not cathodically protecting isolated steel fittings. Specifically, steel couplings for plastic to cast iron tie-ins.
- 192.457(b)(3): Not cathodically protecting distribution lines installed before August 1, 1971, in areas in which active corrosion is found.
- 192.459: Not examining the exposed portion of a buried pipeline for evidence of external corrosion if the pipe is bare or if the coating is deteriorated.

2014-2016 Findings

- 192.465(a): Cathodic protection system not tested once each calendar year. Exceeded the 15 month interval between surveys.

  - “Idle” operator was verifying that rectifier was working properly. However, operator was not verifying that CP was adequate at test stations along the pipeline.

  - Late year survey followed by an early year survey within 15 months.

  - Not monitoring cathodic protection on isolated steel fittings. Specifically, steel couplings for plastic to cast iron tie-ins.

  - Not monitoring cathodic protection on isolated steel service or riser in a plastic system.

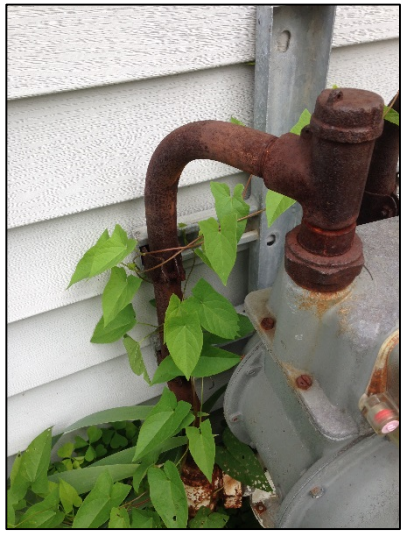
- 192.467(d): Not verifying electrical isolation of casings and foreign line crossings.

  - Operator treats all distribution casings as shorted and isolation is not verified even if test leads are present on the carrier pipe and casing.

2014-2016 Findings

- 192.475(b): Not conducting inspection for internal corrosion when the pipeline was removed. Applicable to flanged connections according to the definition of “pipe” in 192.3.

- 192.479(a): Not coating pipe downstream of a lockwing. Jurisdiction ends at the outlet of the meter.

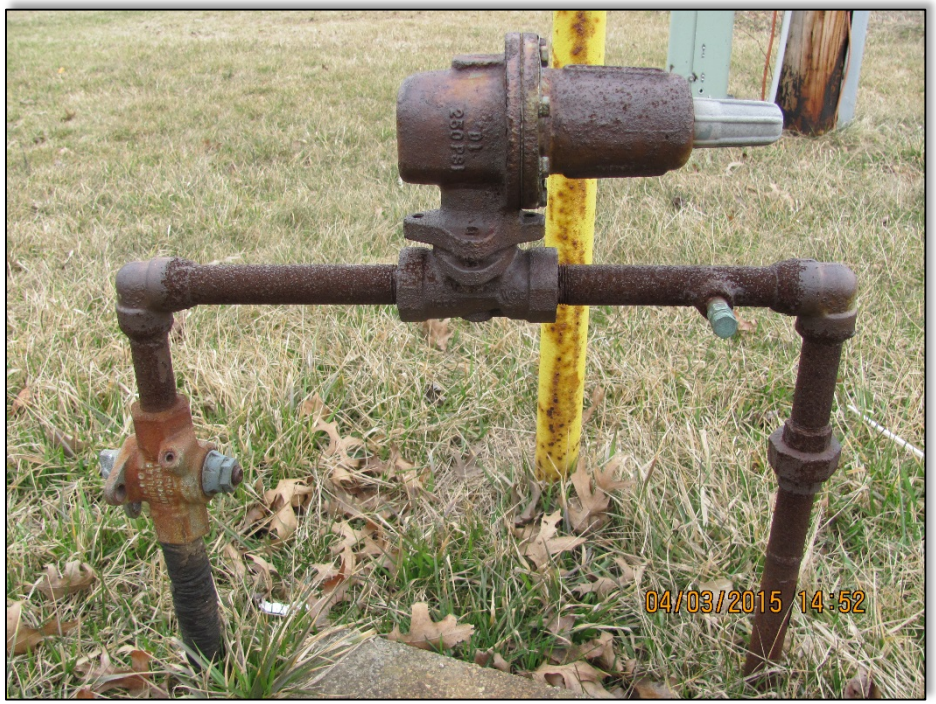


- 192.481(a): Not inspecting each pipeline for evidence of atmospheric corrosion every three years NTE 15 months.

  - Meter reader performed atmospheric corrosion inspection on meters, but not the regulator stands for multiple addresses.

  - Not monitoring for atmospheric corrosion for an outside riser where there is an inside meter.

2014-2016 Findings



2014-2016 Findings

- 192.491(c): Not maintaining records for corrosion control tests, surveys, or inspection. Records not retained for 5 years.

- 192.503(a)(1): Not pressure testing a new segment of pipeline. 192.503(d) exception only applies to tie-in joints and the girth welds connecting several pipe lengths are not considered tie-in joints.

Interpretation 192.505 14 dated June 7, 1994 states, “the entire replacement segment must be tested in accordance with Subpart J and 192.619, except the tie-in joints that are excepted under 192.503(d)...”

260’ Dig, 7 girth welds

2014-2016 Findings

- 192.505(c): Not strength testing lines operating at a hoop stress of 30% SMYS or more for eight hours.
  - Operator had a four-hour pressure test on a 1½ mile line.
  - Operator pressure tested 663' section of pre-installation pipe above grade for four hours.

- 192.507(b): Not performing a leak test between 100 psig & 20% SMYS nor walking the line to checks for leaks at 20% SMYS for pressure tests with air and nitrogen. Applies to a pipeline to operate at a hoop stress of less than 30% SMYS and at or above 100 psig.

- 192.513(a): Not pressure testing a new service.

- 192.513(c): Not testing plastic service lines to 150% of the maximum operating pressure or 50 psig, whichever is greater.
  - Plastic service line tested to 45 psig in a 15 psig system.
  - Pressure tested two feet of plastic main at 25 psig.

2014-2016 Findings

- 192.517(a): Operator fails to make & retain a 192.505/507 detailed test record for the life of the facility.

- 192.517(a)(5): Not maintaining record of pressure recording charts or pressure readings.

- 192.517(b): Operator failing to make & retain a 192.509/511/513 test record at least 5 years.

- 192.603(b): Not keeping records necessary to administer procedures established under 192.605.
    - Not having isolation maps required to isolate a transmission system as required in the emergency plan.
    - Not documenting as-found and as-left pressures during a regulator inspection as required by O&M.
    - Not documenting valve inspection findings as required by O&M.

2014-2016 Findings

- 192.605(a): Not following O&M procedure(s) or conducting/documenting a review once per year NTE 15 months.

  - Not having gas detector with crew working near blowing gas as required by procedures.
  - Not installing a bolt-on leak clamp to the specified torque as required by procedures.
  - Not performing bi-annual leak surveys on shorted casings as required by procedures.
  - Not installing an anode when required by procedures (low pipe-to-soil).
  - Not taking action for an encroachment in ROW as required by procedures.

2014-2016 Findings

2014-2016 Findings

- 192.605(b)(1): Not including procedures in the O&M plan to require transmission line leaks to be repaired as soon as feasible.
- 192.605(b)(4): Not including procedures in the O&M plan to periodically review response of operator personnel to determine effectiveness of response procedures to AOC.
- 192.605(b)(5): Compressor station pipeline not having formal written procedures for changing to/from each mode of operation to ensure operation within the MAOP.
- 192.605(b)(8): Not periodically reviewing the work done by operator personnel to determine the effectiveness and adequacy of the procedures used in normal operation and maintenance.
- 192.605(c)(1): Not including specific procedures for responding to a loss of communications.

2014-2016 Findings

- 192.614(c)(5): Not providing temporary markings of buried pipelines.
  - Not providing temporary markings of buried pipelines in the area of excavation before the activity begins. Resulting in damage.
  - Operator failed to mark facilities at an address after multiple marking requests were called in. Natural gas facilities were not marked within the allowed time period, and work was completed by the homeowner.
  - Inadequate temporary marking of buried pipelines. Incorrect marking.

- 192.615(a)(6): Operator did not have access to their sectionalizing block valve, which was in an intERstate operator's fenced in area. No way to operate the valve without intERstate operator's assistance. Gate and valve were locked.

2014-2016 Findings

- 192.619(a): Not correctly establishing and/or exceeding MAOP.
  - Operator established MAOP without considering the design of the plastic pipe.
  - Gathering Line “High Five” considerations. Five years preceding March 15, 2006, or date line becomes subject to this Part, whichever is later.
  - Lack of records to support current MAOP’s.
  - Operator found exceeding MAOP to keep supply of gas to a smaller distribution system during frigid winter.
  - Class 900 valves and flanges are not good for 2220 psig over 100°F. Important to verify at outlet of compressor prior to cooling.

- 192.623(a): Operating a low-pressure system at pressures high enough to make unsafe the operation of any connected gas burning equipment. (3”-14” WC per Technical Standards for Gas Service R460.2331(4)).

2014-2016 Findings

- 192.625(a): Not odorizing a distribution system to be detectible at a concentration of 1/5 LEL (under-odorizing).

- 192.625 (b): Gas is naturally odorized within a class 3 location, but odor intensity reads have not been performed or recorded.

- 192.629(a): Not purging a pipeline of air with gas in a manner to prevent the formation of a hazardous mixture of gas and air.

- 192.705(a): Not having an adequate patrol method for the ROW.
  - Operator was performing vehicle patrols where the pipeline crosses the roads. Entire ROW could not be examined.
  - Walking patrol not appropriate for ROW condition. Vegetation overgrowth prevented leak surveyor from walking.
  - Leak surveyors not aware that they are responsible to conduct patrols, specifically for indications of construction activity affecting safety and operation.

2014-2016 Findings

- 192.705 & R 460.20325: Operators of gathering lines not aware of patrolling requirements of MI Rule (>40% SMYS). 12 times per year NTE six weeks.

- 192.706(a): Operator was not leak surveying the entire length of a Class 3 location. Leak survey work order scope of the Class 3 area was less than the scope provided in the class location study.

- 192.707(a)(1): Not maintaining line markers appropriately.
  - Line markers not being maintained at each crossing of a public road.
  - Missing line markers at roads for >20% SMYS pipe in distribution systems.

- 192.711(a): Operator not taking immediate temporary measures to protect the public for a leak found on a transmission line operating at or above 40% SMYS.

2014-2016 Findings

- 192.711(b)(1): Not making transmission pipeline system non-integrity management repairs as soon as feasible.

- 192.725(b): Not pressure testing service risers which were temporarily disconnected.

- 192.739(a): Not inspecting or documenting inspection of pressure limiting, relief, or regulating equipment.
    - No records of programmable logic controller (PLC) that was acting as OPP.
    - Buried regulator that did not allow for inspection.
    - Inadequate inspection of equipment.

- 192.745(a): Not inspecting transmission line valves once per year NTE 15 months. Emergency valve was not partially operated because gas control would not allow for inspection of the valve.

2014-2016 Findings

- 192.745(b): Operator not taking prompt remedial action to correct any transmission line valves found inoperable & no alternate valve assigned.
- 192.805(g): Operator employee performing odor intensity reads was qualified using on-the-job training but was not being re-evaluated.
- 192.807(b): Failure to maintain records to support an individual's qualification for five years from completion of a covered task.
- R 460.20304(c): Welder not able to access the welding procedure being followed on the jobsite when welding was performed.
- R 460.20305: Not maintaining record of qualified welders that indicate the <u>results</u> of the tests. Test records missing the destructive test results.

2014-2016 Findings

- R 460.20311/313: Pressure test on steel and plastic pipeline is ended too quickly.

- R 460.20314(a) and (b): Not retaining the MAOP and class location existing at the time of the test in which the pipeline is located.

____ Township: _____ T 10N R 15W City / Village: _____

_____ Existing Class Location: _____ Proposed MAOP: _____PSIG

- R 460.20328: Not tagging pressure limiting/relief devices with the MAOP and set pressure. Not updating set pressures of pressure limiting and regulating stations when operational changes occur.

- R 460.20501(2)(a): Not maintaining record or maps showing the locations of service lines. Portions of service lines are not shown on records or maps.

2014-2016 Recommendations

192.179(a)

- Recommend installation of valves when there is a class location change and the operator does not meet the spacing requirements for the new class location if the opportunity presents.

- Example: The valve spacing is 14 miles on a transmission line and there is a change in class location from class 2 to class 3 because of a new sub-division along the ROW.

2014-2016 Recommendations

192.179(c)

- Recommend the operator consider modifying blowdown valve discharge location near overhead electric lines.

"Each blowdown discharge must be located so the gas can be blown to the atmosphere without hazard and, if the transmission line is adjacent to an overhead electric line, so that the gas is directed away from the electrical conductors."

2014-2016 Recommendations

192.731(a)

- Recommend the operator inspect each pressure relieving device in a compressor station in accordance with 192.739.

- Interpretation 192.731 7 dated February 8, 1999 states, “applies to gas relief devices on any vessel or piping in the compressor station that is used in the transportation of gas.”

2014-2016 Recommendations

- Recommend the operator consider incorporating language into procedures to require crews to utilize and “man” fire extinguishers when performing work with added risk of ignition.

  - Hot tapping
  - Working near blowing gas
  - In-service welding

2014-2016 Recommendations

ADB-2016-01

- To remind owners and operators of the potential for damage to pipeline facilities caused by severe flooding and actions operators should consider taking to ensure the integrity in the event of flooding, river scour, and river channel migration.

- Exposed pipelines may result in failure when exposed to:
  - Excessive bending loads
  - Debris/impact forces
  - Harmonic vibrations

2014-2016 Recommendations

ADB-2016-03

- To remind owners and operators of the need to 1) monitor and 2) inform.

2014-2016 Recommendations

ADB-2016-05

- To remind owners and operators that PHMSA does not recognize “idle”, “inactive” or “decommissioned” pipelines.
- Either active or abandoned.
- Abandoned pursuant to the requirements of 192.727.
- Active must comply with all safety regulations including, among others, periodic maintenance, IMP, and PAP.

Questions or Comments?

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Thank You!

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2016 Pipeline Safety Conference
September 26-28