



Operator Compliance with AB1420 Gas Pipeline Regulations

September 18, 2018 –Los Angeles
September 19, 2018 - Bakersfield

Michael Edwards, P.E., Senior Oil and Gas Engineer
Division of Oil, Gas, and Geothermal Resources (DOGGR)



Introduction

Goals Today

1. Review New Requirements
2. Present Compliance Deadlines
3. Answer Questions



Overview

- **NTO 2017-11 Sensitive Gas Pipeline Map Submission**
- **Review AB1420 Regulations Changes**
 - New Terms and Definitions §1760
 - Construction & Maintenance §1774
 - Pipeline Inspection §1774.1
 - Pipeline Testing §1774.1
 - Pipeline Management Plan §1774.2
- **Compliance Timeline**
- **Take Questions**



AB 1420 Regulations

New



AB1420 Part A Regulations

- Summary: Title 14 code sections affected: §1760, §1774, § 1774.1, § 1774.2. Regulations require testing and inspection of all active gas pipelines, including those $\leq 4'' \Phi$, within sensitive areas.
- Rulemaking completed June 7, 2018.
- Regulations effective October 1, 2018.

AB1420 Part B Regulations

- Summary: Title 14 code section to be added: § 1774.3. Proposed regulations will define a GIS mapping format and data standard for active gas pipelines within sensitive areas.
- Rulemaking expected to start in 2018.
- Regulations expected to be effective in 2019.

Planned



NTO 2017-11 Sensitive Gas Pipeline Map Submission

- Statute Requirement
- Operators provided current maps of active gas pipelines in SA
- Information generally good, but some pipelines may be missing
- Received maps are a temporary measure until AB1420 Pt. B effective.



AB1420 Regulations Changes

New Terms and Definitions



Review Existing DOGGR Definition of a Pipeline from Title 14, Division 2

§1760 (m) **Pipeline:** a tube, usually cylindrical with a cross sectional area greater than 0.8 in² (1" nominal diameter), through which crude oil, liquid hydrocarbons, combustible gases and/or produced water flows from one point to another within the administrative boundaries of and oil and gas field. Pipelines regulated by CSFM are exempt.

ftp://ftp.consrv.ca.gov/pub/oil/laws/PRC10_DOGGR_New_Regs_2018.pdf



Critical Definitions: What is a “gas pipeline”?

New



- §1760(j) **Gas**: any natural hydrocarbon gas coming from the earth.

New

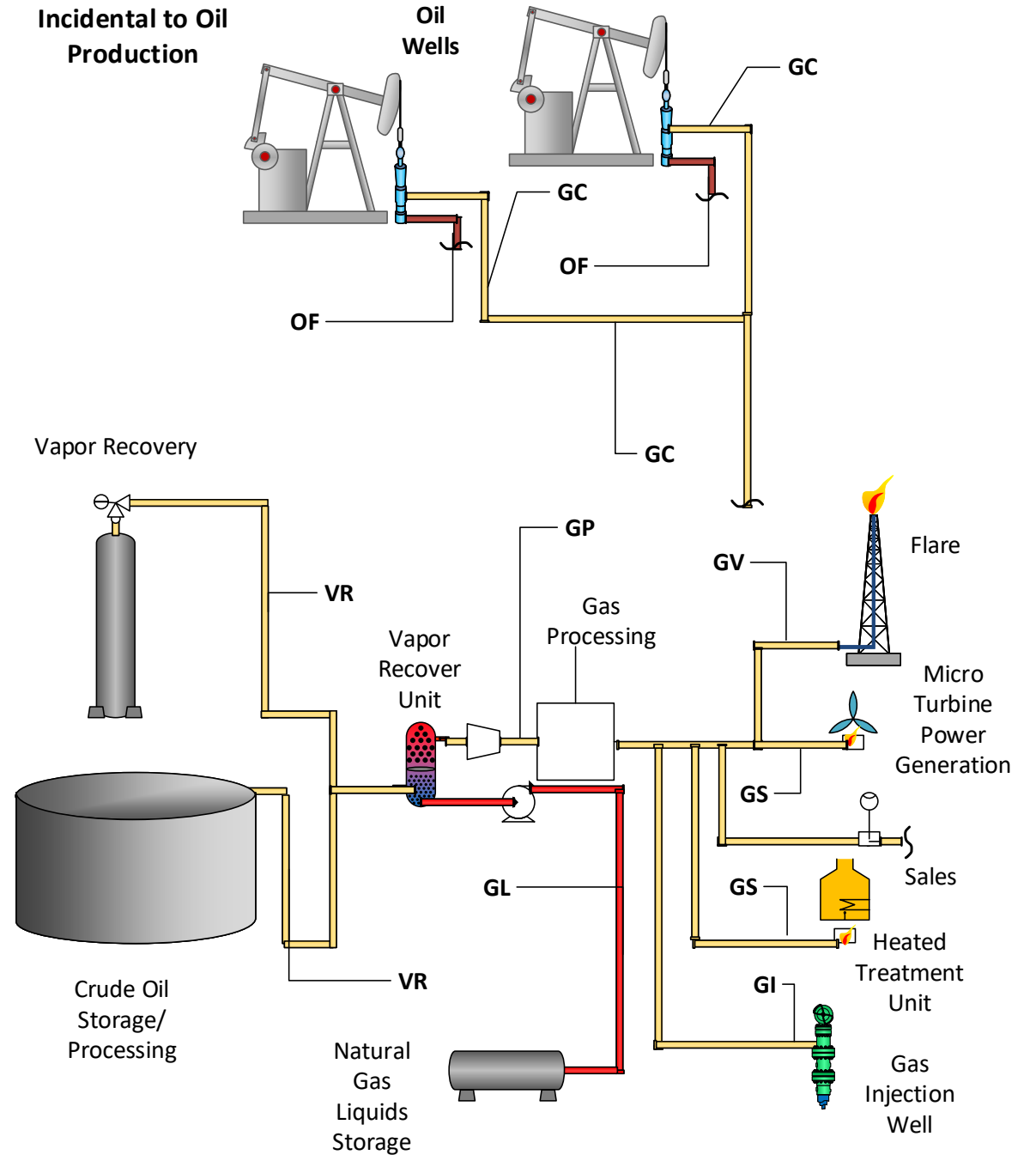


- §1760(a) **Active Gas Pipeline**: in-service pipeline that transports mostly gaseous or vapor phase natural gas and may contain lesser amounts of liquids, solids or non-hydrocarbon gases.
- Examples of gas pipelines at O&G facilities on next two slides



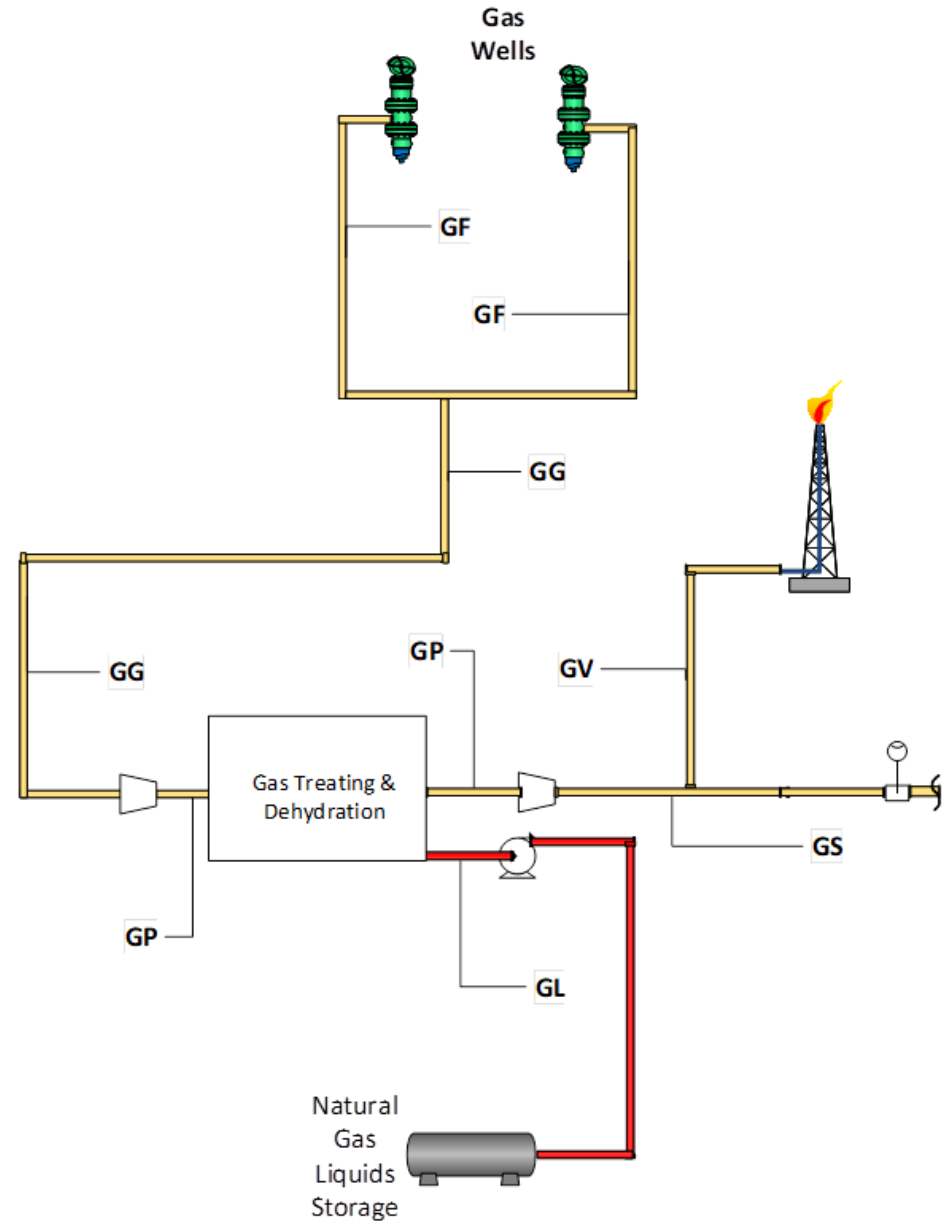
Gas Pipelines at Oil Fields

Example 1 – Gas Incidental to Oil Production



Example 2 –
Gas Well
Production

Gas Pipelines at Gas Fields



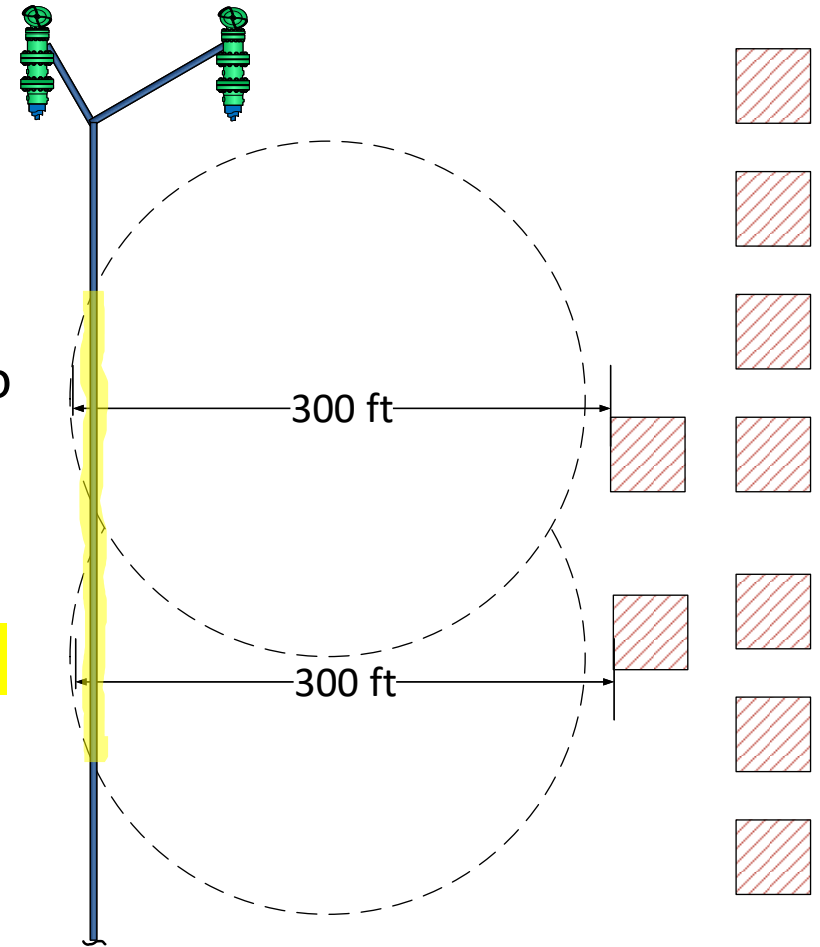
What is a “Sensitive Area”?

New



§1760(r) defines a “Sensitive area” to mean any of the following:

- (1) An area containing a building intended for human occupancy, such as a residence, school, hospital, or business that is located within 300 feet of an active gas pipeline and that is not necessary to the operation of the pipeline.
- (2) An area determined by the Supervisor to present significant potential threat to life, health, property, or natural resources in the event of a leak from an active gas pipeline.
- (3) An area determined by the Supervisor to have an active gas pipeline that has a history of chronic leaks.



AB1420 Regulations Changes

Construction and Maintenance



Requirements for Construction and Maintenance (§1774)

- Newly installed (and repaired/modified existing) pipelines shall be designed, constructed, and all pipelines shall be tested, operated, and maintained in accordance with good oil field practice and applicable standards **in CCR Title 8, Section 6533** ~~set forth in either the API RP 1110, and API Spec. eff 1990, ASTM spec eff. 1991, 49CFR192~~ or other methods approved by the Supervisor.

Revised



Examples of Applicable Pipeline Standards Found in 8CCR§6533

ASME B31.3-2002 Process Piping

ASME B31.4-2002 Pipeline Transportation Systems for Liquids and Slurries

ASME B31.8-2003 Gas Transmission and Distribution Piping Systems

API 1104 -2001 Welding of Pipelines and Related Facilities

API 570-2003 Pipeline Inspection Code



Good Oil Field Practice

GOFP means the practices, methods and acts engaged in by professional and experienced producers of oil and natural gas that would be expected to accomplish the desired result in a manner consistent with law, regulation, reliability, safety, and environmental protection.

Examples of GOFP from §1774:

- Routing pipe aboveground when possible.
- Use of cathodic protection.
- Install protective wrapping at surface-to-air interfaces.



AB1420 Regulations Changes

Inspection and Testing



Pipeline Leak Detection and Mechanical Integrity Testing

- DOGGR regulated pipelines require both LD and MIT
- LD ≠ MIT
- What's the Difference?
 - **Leak Detection** – determines leak status at time of inspection.
 - **Mechanical Integrity Test** – validates the integrity of the pipeline and provides a prediction of future performance



Pipeline Inspection Requirements (§1774.1)

- All above ground pipelines require a visual corrosion and leak inspection, annually (§1774.1(a))
- All gas pipelines in sensitive areas, ≥ 10 yrs old require:
 - Annual leak and defect inspection (§1774.1(b))
 - Leak inspection (§1774.1(b)) per accepted industry/regulatory standard (e.g. EPA method 21)
 - Leak inspection methods could include (e.g. organic vapor analyzer, infrared photography, soapy film, etc.)

New



Required Pipeline Mechanical Integrity Testing (§1774, §1774.1)

- In general, when is **testing** required?
 - **At Installation** per applicable stds & GOFP. (§1774)
 - **After Repair** per applicable stds & GOFP. (§1774, §1774.1(d))
 - Pressure testing required for any repaired pipeline after a reportable leak. Test results shall be provided to DOGGR within 7 days.
 - **At Periodic Intervals** per applicable stds., for pipelines 10 or more years old (§1774.1(f))

Revised



AB1420 Gas Pipeline Periodic Testing Requirements



Testing for Gas Pipelines (§1774, §1774.1(f) & (g))

New



- §1774 – Gas pipelines not within Sensitive Areas – test at least to frequency per Cal-OSHA Title 8, §6533

New



- §1774.1(f) – Gas pipelines within Sensitive Areas – in-service ≥ 10 yrs, test every two years.
 - Copies of the test results must be maintained for ~~5~~ 10 years & available to DOGGR upon request

New



- §1774.1(g) - Exemption for vapor recovery piping if:
 - equipped with safeguards (e.g. O₂ sensors with monitor, alarm, auto shutdown)
 - Leak tested annually

New



- §1774.1(i) All sensitive (gas) pipelines must be tested, by January 2, 2020



Periodic Testing Gas Pipelines Outside Sensitive Areas

- This testing applies to all DOGGR regulated pipelines outside ES, S, & U areas.
- Periodic testing for compliance with 8CCR §6533 will be accepted by DOGGR.
- Testing Intervals per §6533
 - 10 years – most oil & gas pipelines
 - 5 years for these pipelines:
 - $H_2S > 3\%$
 - Located next to/over public roads or flowing waterways



Options to Periodically Test

Mechanical Integrity Testing §1774.1(f)

- **Non-destructive testing using ultrasonic techniques**, e.g. guided wave testing, subject to O&G Supervisor approval.
- Revised
→ ■ **Pressure Testing** per recognized standard such as API or ASME, or method per CSFM¹, PHMSA²
- **Internal inspection devices**, e.g. smart pig subject to O&G Supervisor approval.
- **Hybrid testing** schemes may combine methods/schedules in a rational way subject to O&G Supervisor approval.



1. California State Fire Marshall
2. Pipeline and Hazardous Materials Safety Administration

Pipeline Integrity Testing Methods & References

- Pressure Testing (ASME B31.3, .4, .8, & PCC-2, API 1110, ASTM-F 2164, TN-46/2013a, 49CFR192, 195)
- Inline Inspection Tool (NACE SP 0102)
- Guided Wave Testing (NACE SP 0313)
- Spot Ultrasonic (API 570, 574, 579)

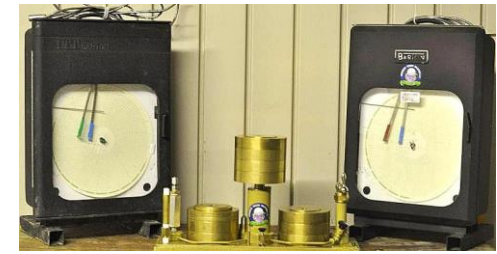


O&G Supervisor Approval for a Test

- For any §1774.1(f) test method requiring O&G Supervisor approval:
 - Send a **written request** to the District Deputy at the local District DOGGR office.
 - Include a **detailed description** of the pipeline undergoing test (e.g. clear pipeline identification, test segment boundaries, whether buried or aboveground, etc.).
 - **Explain why** chosen test method is **appropriate** (e.g. GWT pre – assessment shows test objectives can be achieved).
 - **Wait for a** confirming **response** back from DOGGR before performing the test.



Pressure Testing - Considerations



- Anticipated that pressure testing will be used for majority of sensitive area gas pipelines.
 - No DOGGR Supervisor approval necessary.
 - Can accommodate metallic, plastic, and fiber re-inforced plastic (FRP) pipelines.
- Updated regulations allow more “industry standard” choices:
 - Hydrotest standards specific to plastic pipe can be used (e.g. ASTM-F 2164 and TN-46/2013a).
 - ASME PCC-2 can be used for pneumatic tests.



Pneumatic Pressure Testing

- May be a chosen option for low pressure gas lines.
- Nitrogen is the preferred test medium.
- The operator is responsible for performing a safe test.
- Follow appropriate testing standards (e.g ASME B31.8, ASME PCC-2)
- ASME PCC-2 has some good guidance:
 - Verify maximum calculated stored energy < ASME PCC-2 allowable.
 - Perform a hazard analysis per ASME PCC-2-2013, Section 6.2(f).
 - Provide overpressure protection per ASME PCC-2-2013, Section 6.2(h).
 - Pressurize pipeline up to test pressure gradually, using a stepped approach ref. ASME PCC-2-2013, Section 6.2.1.



Some Tips to Achieve Quality Pressure Test Results



- Important that operator conduct quality tests to:
 - Reduce test results uncertainty
 - Increase likelihood DOGGR will agree with results
 - Reduce the likelihood that a test must be repeated

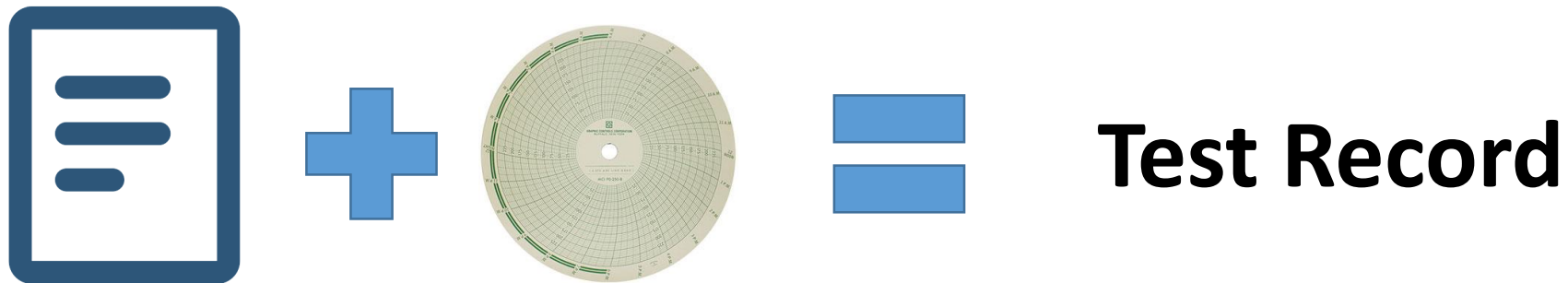
TIPS

- Use **blind flanges** to isolate test segment in lieu of valves.
- For a hydrotest, use **good fill technique** and high point vents (if installed) to eliminate trapped air in test segment.
- **Allow** sufficient time for test medium **to equilibrate** to ambient temperature after filling, and before commencing test.
- If pipeline is **hydrotested**, **aboveground**, and has been **100% inspected** for leakage:
 - Document this in your notes and/or report, as this supports a “pass” determination.
 - Provide this documentation to DOGGR



Optional Pressure Testing Template

- DOGGR provided templates may be used by operators to record test information
 - Two older downloadable templates now available on DOGGR website.
 - An updated downloadable template soon available on DOGGR website.



AB1420 Regulations Changes Pipeline Management Plan



Pipeline Management Plans



Revised



Pipeline Management Plan (PMP) §1774.2

- For All Pipelines:
 - Provide descriptive information, test schedule and method. Gas pipelines not previously included in PMP must be added here.
 - Describe preventative maintenance for associated appurtenances, instrumentation, and equipment (valves, gauges, sensors, etc.) to ensure safe operations
 - Provide a list & maps of all pipelines indicating passing thru ES, S, U areas & designated waterways
 - Describe pipeline contents being transferred
 - Submit an updated current copy to DOGGR by October 1, 2019



Pipeline Management Plans (cont)



Pipeline Management Plan (PMP) §1774.2

- Larger operators may use their line lists
 - Can provide a electronic copy of line list directly to DOGGR District
 - Any lacking information must be supplemented
- Optional Operator Template
 - Currently available for download at DOGGR web site
http://www.conservation.ca.gov/dog/for_operators/Pages/Facilities.aspx



AB1420 Pt. A Regulations Changes

Operator Compliance Timeline





AB 1420 Pt. A - Operator Compliance Time Line

- **Oct 1, 2018:** New regulations effective
- **Oct 2018 – Sept 2019 and annually:** Complete inspection on SA gas pipelines ≥ 10 yrs old.
- **Oct 2018 – Sept 2019:** Prepare an updated PMP
- **Oct 1, 2019:** Updated PMP due. Forward document your DOGGR district office.
- **Oct 2018 – Sept 2019:** For SA gas pipelines, submit to DOGGR MIT requests for DOGGR Supv approval.
- **Ongoing:** For all pipeline MIT, notify District of pending field activities at least two days prior.
- **January 2020:** Complete all MIT on SA gas pipelines ≥ 10 yrs old.



AB1420 Pt. A Regulations Changes Presentation Wrap-up



Summary of Key Points in Presentation

- Identify all your gas pipelines that fit DOGGR “pipeline” definition (§1760 (m)).
- Identify DOGGR sensitive areas and active gas pipelines contained within.
- Perform a defect and leak inspection on active gas pipelines in sensitive areas at least annually, if ≥ 10 yrs old.
- Test active gas pipelines within sensitive areas on a two year frequency, if ≥ 10 yrs old.
- Continue to integrity test all other gas pipelines on a frequency no less than required by 8CCR§6533 (10 years for most pipelines).
- Design and construct new (and repair/modify existing) gas pipelines iaw GOFP & applicable standards in 8CCR6533.
- Update your pipeline management plan, inspect, and test your sensitive gas pipelines on time to meet required schedules.



Operator Compliance with AB1420 Part A Gas Pipeline Regulations – Conclusion



Questions?

Michael Edwards, P.E., Senior Oil and Gas Engineer
Division of Oil, Gas, and Geothermal Resources (DOGGR)

Michael.Edwards@conservation.ca.gov

714.816.6818

