



# Construction Practices

49 CFR Part 192 Construction Overview

Prepared for Construction & Operations Training

# CONSTRUCTION AUDITS

## Construction Inspection Requirement

- The Indiana Utility Regulatory Commission's Pipeline Safety Division is required to observe no less than **20%** of our total inspection days annually
- Authority to Inspect
  - 49 CFR 192.331 | This section gives authority to PHMSA and State Agencies to inspect any pipeline facility, including construction sites, to determine compliance with Part 192.

# CONSTRUCTION AUDITS

49 CFR 192

- Subparts A-R

# CONSTRUCTION AUDITS

49 CFR 192.305, 317, 327, 321...

- **General Construction Requirements**
  - Design
  - Materials
  - Welding
  - Pressure Testing

# CONSTRUCTION AUDITS

49 CFR 192.307

- **Material Verification & Handling**
  - Personnel
  - Maintenance
  - Records
  - Inspections

# CONSTRUCTION AUDITS

49 CFR 192.317, 319, 325...

- **Excavation & Trenching**
  - **Marking of Buried Pipelines**
  - **Protection from Damage**
  - **Backfilling**

# CONSTRUCTION AUDITS

49 CFR 192.327, 329...

- **Minimum Depth of Cover**
  - Adequate Cover
  - Unique or Unusual Conditions
    - Additional Cover, traffic, farm

| MINIMUM DEPTH OF COVER REQUIREMENTS (§192.321)                                                                                                                                                                                             |                                                                                                                                  |                                 |                   |               |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|---------------------------------|-------------------|---------------|
| LOCATI-<br>ON                                                                                                                                                                                                                              | PIPE LOCATION                                                                                                                    | MINIMUM DEPTH OF COVER (INCHES) |                   |               |
|                                                                                                                                                                                                                                            |                                                                                                                                  | RURAL AREAS                     | RESIDENTIAL AREAS | PUBLIC SPACES |
|                                                                                                                                                         |  Plowed Fields                               | 24                              | 30                | 36            |
|                                                                                                                                                                                                                                            |  Pasture, Cropland, or Non-Plowed Areas     | 30                              | 30                | 36            |
|                                                                                                                                                                                                                                            |  Residential Driveways                      | N/A                             | 36                | N/A           |
|                                                                                                                                                                                                                                            |  Public Roads, Streets, Highways, Railroads | 36                              | 36                | 48            |
|                                                                                                                                                                                                                                            |  Bodies of Water (Non-Navigable)            | 48                              | 48                | 48            |
|  Note: Greater depth of cover may be required in areas where unusual conditions exist that could cause damage or reduce the effectiveness of the cover. |                                                                                                                                  |                                 |                   |               |

# CONSTRUCTION AUDITS

49 CFR 192.327, 329...

- **Minimum Depth of Cover**
  - Adequate Cover
  - Unique or Unusual Conditions
    - Additional Cover, traffic, farm

# CONSTRUCTION AUDITS

## 49 CFR 192.303

- Installation of Steel Pipe

### INSTALLATION CHECKLIST

- ☐ Verify materials are approved and undamaged.
- ☐ Confirm coating type and condition.
- ☐ Verify pipe is clean and dry before joining.
- ☐ Align pipe properly and maintain joint gap.
- ☐ Use approved joining method and equipment.
- ☐ Inspect and document each joint.
- ☐ Ensure proper backfilling and compaction.
- ☐ Protect coating during installation.
- ☐ Perform required testing.
- ☐ Document installation and maintain records.

### CONSTRUCTION AUDIT / OBSERVATION CHECKLIST

- ☐ Verify pipe and fittings are approved for service.
- ☐ Confirm manufacturer's instructions are available.
- ☐ Observe use of correct joining method.
- ☐ Verify personnel are qualified.
- ☐ Inspect trench conditions and support.
- ☐ Verify minimum cover and protection.
- ☐ Check alignment and restraint (if applicable).
- ☐ Verify testing was completed.
- ☐ Review records and traceability.

# CONSTRUCTION AUDITS

49 CFR 192.321

- Installation of Plastic Pipe

## INSTALLATION CHECKLIST

- ☐ Verify materials are approved and undamaged.
- ☐ Confirm coating type and condition.
- ☐ Verify pipe is clean and dry before joining.
- ☐ Align pipe properly and maintain joint gap.
- ☐ Use approved joining method and equipment.
- ☐ Inspect and document each joint.
- ☐ Ensure proper backfilling and compaction.
- ☐ Protect coating during installation.
- ☐ Perform required testing.
- ☐ Document installation and maintain records.

## CONSTRUCTION AUDIT / OBSERVATION CHECKLIST

- ☐ Verify pipe and fittings are approved for service.
- ☐ Confirm manufacturer's instructions are available.
- ☐ Observe use of correct joining method.
- ☐ Verify personnel are qualified.
- ☐ Inspect trench conditions and support.
- ☐ Verify minimum cover and protection.
- ☐ Check alignment and restraint (if applicable).
- ☐ Verify testing was completed.
- ☐ Review records and traceability.





**ACCEPTED**  
Customer MEADE  
W.O. NO. \_\_\_\_\_ DATE 9/16/2015  
NO. PCS. \_\_\_\_\_ MATERIAL \_\_\_\_\_  
PART NO. \_\_\_\_\_ SER. NO. 41NDE1016  
PART NAME 618" Fusion Header  
INSPECTOR XAN  
COMMENTS \_\_\_\_\_



**ACCEPTED**  
Customer Meade  
W.O. NO. \_\_\_\_\_ DATE 3-18-25  
NO. PCS. \_\_\_\_\_ MATERIAL \_\_\_\_\_  
PART NO. \_\_\_\_\_ SER. NO. 66C062113  
PART NAME 28 Header  
INSPECTOR NS  
COMMENTS \_\_\_\_\_

# CONSTRUCTION AUDITS

49 CFR 192.227, 225, 241, 243...

- **Welding Requirements**
  - Qualification of welding procedures and personnel
  - Recordkeeping
  - Testing

# CONSTRUCTION AUDITS

49 CFR 192.147

- **Valves & Regulators**
  - **Material & Design**
  - **Installation**
  - **Operation**
  - **Maintenance**

# CONSTRUCTION AUDITS

49 CFR 192.147

- **Corrosion Control Requirements**
  - External Corrosion Control
  - Internal Corrosion Control
  - Corrosion Control Monitoring

# CONSTRUCTION AUDITS

49 CFR 192.505, 513, 517...

- Pressure Testing Overview
  - External Corrosion Control
  - Internal Corrosion Control
  - Corrosion Control Monitoring



# CONSTRUCTION AUDITS

49 CFR 192.629, 751, 615...

- **Purging and Placing into Service**
  - Purging
  - Pressure Test/Leak Check
  - Service

# CONSTRUCTION AUDITS

49 CFR 192.801, 803, 805...

- **Operator Qualifications**
  - **Qualifications, Covered Tasks**
  - **Knowledge**
  - **Ability**
  - **Periodic Evaluation**
  - **Documentation**

 Energy  
Worldnet

EWN-315000



Scheidt,  
Reid

Meade Construction  
625 Willowbrook Center Parkway  
Willowbrook, IL 60527  
(708) 588-2500



 Energy  
Worldnet

EWN-624353



Clark,  
Darron

Meade Construction  
625 Willowbrook Center Parkway  
Willowbrook, IL 60527  
(708) 588-2500



Operator Qualifications

NISOURCE



Dustin  
Padgett  
126965

Columbia Gas<sup>®</sup>  
A NISource Company

Operator Qualifications

NISOURCE



William  
Cramblett  
132453

Columbia Gas<sup>®</sup>  
A NISource Company

# CONSTRUCTION AUDITS

49 CFR 192.7, 13, 605...

- **Construction Inspection Best Practices**
  - **Verify Materials**
  - **Monitor Construction**
  - **Verify Qualifications**
  - **Verify Testing**
  - **Observe Excavation & Backfill**

# Weak Link

PHMSA's intent behind the requirement is to reduce **construction-related damage to plastic pipe systems**, which can later contribute to leaks or failures in service.

## Relevant Code Reference

“For each pipeline section, plastic pipe and components that are pulled through the ground must use a weak link...” — **49 CFR 192.376(b)**



# Common PHMSA Findings

- Incomplete pressure test records (:192.517)
- Improper fusion qualifications (:192.285)
- Insufficient tracer wire installation (:192.321(e))
- Coating damage left unrepaired (:192.461)

# Safety Culture and Field Communication

- Job briefings improve situational awareness (Industry Best Practice)
- Emergency response coordination is essential (:192.615)
- Public safety is the top operational priority (49 USC Chapter 601)
- Stop-work authority should be encouraged (Industry Best Practice)



# Questions and Discussion

Field Lessons Learned • Inspection  
Challenges • Best Practices