ATLB-2320: GAS PIPE LINE WORKER

Cuyahoga Community College

Viewing: ATLB-2320 : Gas Pipe Line Worker

Board of Trustees:
2013-05-23

Academic Term:
Spring 2019

Subject Code
ATLB - AIT-Construct/Hazard Material

Course Number:
2320

Title:
Gas Pipe Line Worker

Catalog Description:
Introductory course covering the general skills, safety and mainline operations required to work on gas pipe line installations. Also includes proper selection of valves for each situation.

Credit Hour(s):
2

Lecture Hour(s):
2

Requisites

Prerequisite and Corequisite
Departmental approval: admission to Construction Tending and Hazardous Material Abatement apprenticeship program.

Outcomes

Course Outcome(s):
I. Discuss the general skills, safety and warehouse set-up for operations relative to gas pipeline work.

Objective(s):
1. Define the terms related to gas pipeline work.
2. Discuss the safety procedures that need to be followed while working on gas pipeline installations.
3. List the safety concerns that are associated with gas pipeline work.
4. Identify the set up and operation of the field warehouse.
5. Discuss the importance of establishing suitable staging locations for material handling and worker safety.

Course Outcome(s):
II. Explain how existing underground utilities are located and discuss site clearing and fencing operations.

Objective(s):
1. Discuss potholing operations used to locate underground piping
2. List the various equipment that is used to expose utilities including buried gas, electric and water systems.
3. Discuss the safety procedures followed in site clearing and potholing operations.
4. Identify the procedures followed when clearing sites for gas pipelines, including interpretation of Right of Way (ROY) stakes and proper tree falling techniques
5. Demonstrate the ability to safely operate chainsaws and other power equipment used for clearing sites.
6. Demonstrate the ability to properly install temporary fencing including “fence gaps” and corner bracing.
7. Apply proper techniques used for erosion control and discuss the various methods used.

Course Outcome(s):

III. Identify the different mainline operations and pipe connecting applications and tie-in techniques.

Objective(s):

1. Perform pipe aligning operations, including skid building, needed to position the pipe for welding.
2. Set up equipment used for sand blasting operations and demonstrate the ability to prepare gas pipe for protective coatings.
3. Identify the different coatings used for pipe joints and pipe repair.
4. Discuss the procedures employed to prepare the trenches for gas line placement.
5. Apply rigging procedures as prescribed be the Occupational Safety and Health Administration (OSHA) to lower and tie-in gas pipe.
6. List and discuss the tasks performed by the construction tender during backfill operations.
7. List the various crews working on mainline operations and discuss the respective duties of each.
8. Identify the various welding tasks performed by the construction tender during gas pipeline installations.

Course Outcome(s):

IV. Discuss various specialty operations that are employed when working around waterways and existing services and identify procedures used to restore the ROW to its original state.

Objective(s):

1. Discuss the techniques employed for waterway gas pipe line installations including dredging procedures, floating operations and aerial crossings.
2. Discuss methods used for installations of gas pipe line travelling under railroads and roadways.
3. Discuss ROW restoration operations, including fence repair and landscaping.
4. Install line markers to identify new gas pipe line locations.

Methods of Evaluation:

1. Quizzes
2. Tests
3. Classs participation

Course Content Outline:

1. General skills, safety and warehouse
    a. Terminology
        i. Right of Way ROW
        ii. Markers
        iii. Potholing
        iv. Skids
        v. Hydrovac
        vi. Holiday detector (Jeep)
        vii. Fence gap
        viii. Swamper
    b. General skills
        i. Safety
            1. Personal Protective Equipment (PPE)
            2. Power line work
            3. Trench safety
            4. Biological hazards
            5. Environmental hazards
            6. Power tool safety
        ii. Rigging
        iii. ROW identification
    c. Warehouse
        i. Purpose
            1. Personnel
            2. Meetings
            3. Tool and material storage
        ii. Trailer

1. Type
2. Location

iii. Staging
1. Loading and unloading
2. Placement

2. Utility location, clearing and fencing
   a. Locating utilities
      i. Potholing
         1. Probing
         2. Excavation
         3. Hydrovac
         4. Color coding
      ii. Scoping
   b. Site clearing
      i. Safety
         1. Chain saw operation
         2. Equipment handling
         3. PPE
      ii. Procedures
         1. ROW stakes
         2. Tree falling techniques
         3. Tool operation
   c. Fencing
      i. Gaps
      ii. Corner braces
      iii. Existing fencing
   d. Erosion control
      i. Silt fence
      ii. Jute matting
   e. Hay bale
3. Main line operations
   a. Crews
      i. Grade
      ii. Ditch
      iii. Skid
      iv. Welding
      v. Coating
      vi. Pipe lowering
      vii. Backfill
      viii. Restoration
   b. Welding tasks
      i. Pipe support
      ii. Alignment
      iii. Grinding
   c. Pipe alignment
      i. Purpose
      ii. Equipment
      iii. Procedure
   d. Coatings
      i. Types
      ii. Application
         1. Sand blasting
         2. Mixing
   e. Trench preparation
   f. Pipe installation
   g. Backfilling
4. Specialty operations

a. Types
    i. Waterways
        1. Rivers
        2. Ponds
        3. Lakes
    ii. Existing service
        1. Roads
        2. Railroads
        3. Existing pipelines
b. Procedures
    i. Horizontal boring
    ii. Directional drill
    iii. Aerial crossings
    iv. Floating
c. Dredging
d. Restoration
    i. Fence repair
    ii. Landscaping
e. Markings
    i. Pipe line markings
    ii. Inspections

Resources

LIUNA Training and Education Fund. *"Trenching Safety".* current. LIUNA Training and Education Fund Pomfret Center, Connecticut, 2007.

LIUNA Training and Education. *Pipeline Technology.* current. LIUNA Training and Education Pomfret Center, Connecticut, 2012.

LIUNA Training and Education. *Denso Liquid Coatings Application Guide.* current. LIUNA Training and Education Pomfret Center, Connecticut, 2010.

Nick Capachi. *Excavation Grading.* 5th. Craftsman Book Co Chicago, Il, 2009.

Resources Other

uwua.net/.../utility-**workers**-continue-big-push-for-**gas**-**pipeline**-**safet**...

www.wyattworksplumbing.com/ (http://www.wyattworksplumbing.com/)

https://www.dom.com/business/**gas**.../pdf/**gas_pipeline_safety**.pdf

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