



# Pipeline Maintenance

## L1 PIPELINE MAINTENANCE

LEVEL 1

### Curriculum Notes

- 157.5 Hours (Includes 72.5 hours of Core Curriculum which is a prerequisite for Level One completion and must be purchased separately. See p. 10 for ordering information.)
- Published: 2002
- Instructor's Guide includes access code to download TestGen software, module exams, and performance profiles from [www.nccerirc.com](http://www.nccerirc.com).
- A full-color revision is underway and due in stock late 2013.

### PAPERBACK

### ISBN

Trainee Guide: \$100	<b>978-0-13-046676-1</b>
Instructor's Guide: \$100	<b>978-0-13-046677-8</b>

### MODULES

All of the modules listed below are included in the Trainee and Instructor Guide(s) listed above. The following ISBN and pricing information is for ordering individual modules only.

#### Introduction to the Pipeline Industry (15 Hours)

(Module ID 66101-02; *Pipeline Core* ; see p. 77)

Trainee \$20	ISBN 978-0-13-038223-8
Instructor \$20	ISBN 978-0-13-038234-4

#### Liquid Pipeline General Abnormal Operating Conditions (5 Hours)

(Module ID 66102-02; *Pipeline Core* ; see p. 78)

Trainee \$20	ISBN 978-0-13-038224-5
Instructor \$20	ISBN 978-0-13-038235-1

#### Release Identification and Response (7.5 Hours)

Trainee \$20	ISBN 978-0-13-038307-5
Instructor \$20	ISBN 978-0-13-038314-3

(Module ID 62103-02) Describes company environmental manuals and the DNR and EPA regulations. Explains the NRC and Coast Guard responsibilities and spill prevention. Covers soil contamination, release reporting and containment, hydrostatic testing, flaring/venting, and trash handling.

### Tools of the Trade (10 Hours)

Trainee \$20	ISBN 978-0-13-038309-9
Instructor \$20	ISBN 978-0-13-038315-0

(Module ID 62104-02) Explains use and care of hand and power tools used in the pipeline industry. Describes the use of welding equipment and meters and testers. Also discusses nondestructive testing and the uses of hydraulic cranes and heavy excavating equipment.

### Pipeline Documentation (15 Hours)

Trainee \$20	ISBN 978-0-13-038311-2
Instructor \$20	ISBN 978-0-13-038317-4

(Module ID 62105-02) Identifies alignment sheets used in the pipeline industry including maps, P&IDs, and electrical drawings. Also describes the types of documentation and document management required in the industry.

### Preventing Pipeline Damage (CT 14 and 28)

(15 Hours)

Trainee \$20	ISBN 978-0-13-038312-9
Instructor \$20	ISBN 978-0-13-038318-1

(Module ID 62106-02) Describes the one-call system and how it is used to prevent pipeline damage. Identifies and explains the methods used to prevent third-party and employee-caused pipeline damage. Explains the importance of public awareness. Includes placing and maintaining permanent line markers and providing security for pipeline facilities.

### Excavating and Backfilling (CT 17, 32, and 39)

(17.5 Hours)

Trainee \$20	ISBN 978-0-13-038313-6
Instructor \$20	ISBN 978-0-13-038319-8

(Module ID 62107-02) Explains OSHA requirements and methods for locating and marking pipelines. Identifies the permits required and the procedures for exposing pipe and performing damage inspection. Discusses reporting defects, water inspections, and backfilling.

## L2 PIPELINE MAINTENANCE

LEVEL 2

### Curriculum Notes

- 155 Hours
- Published: 2002
- Instructor's Guide includes access code to download TestGen software, module exams, and performance profiles from [www.nccerirc.com](http://www.nccerirc.com).

### PAPERBACK

### ISBN

Trainee Guide: \$100	<b>978-0-13-046678-5</b>
Instructor's Guide: \$100	<b>978-0-13-046679-2</b>

### MODULES

All of the modules listed below are included in the Trainee and Instructor Guide(s) listed above. The following ISBN and pricing information is for ordering individual modules only.

#### Right-of-Way Inspection (CT 15 and 16) (20 Hours)

Trainee \$20	ISBN 978-0-13-038310-5
Instructor \$20	ISBN 978-0-13-038328-0

(Module ID 62201-02) Discusses procedures for inspections of pipeline right-of-way. Explains navigable water crossing inspection. Describes methods of patrol for pipeline right-of-way inspections on land, including reportable observations and reporting protocol.

#### Facility Inspection (CT 27) (17.5 Hours)

Trainee \$20	ISBN 978-0-13-038321-1
Instructor \$20	ISBN 978-0-13-038329-7

(Module ID 62202-02) Covers inspection of pipeline facilities, including security systems and other building systems. Also discusses inspections of tanks and tank farms.

#### Valve Inspection (CT 20) (22.5 Hours)

Trainee \$20	ISBN 978-0-13-038322-8
Instructor \$20	ISBN 978-0-13-038320-4

(Module ID 62203-02) Introduces types of valves and explains how they operate. Includes information on valves that start and stop flow, regulate flow and pressure, relieve pressure, and regulate direction of flow. Discusses procedures for inspecting valves and performing basic preventative maintenance.



## Pipeline Maintenance level 2 (continued)

### Pipeline Coating Inspection (CT 5) (20 Hours)

Trainee \$20 ISBN 978-0-13-038323-5  
 Instructor \$20 ISBN 978-0-13-038331-0  
 (Module ID 62204-02) Describes different types of pipeline coatings, and methods of application. Covers basic pipeline coating problems and inspection of pipeline coating.

### Pipe Inspection and Nondestructive Testing

(CT 38.1, 38.2, and 38.3) (25 Hours)

Trainee \$20 ISBN 978-0-13-038325-9  
 Instructor \$20 ISBN 978-0-13-038333-4  
 (Module ID 62205-02) Outlines methods of pipe inspection for liquid petroleum pipelines. Discusses requirements for visual inspections of pipe, pipe components, and welds on pipe. Also discusses different methods of nondestructive testing and evaluation on pipelines, including liquid penetrant, magnetic particle, ultrasonic, and radiographic tests. Procedures for verifying nondestructive weld tests and verifying that the weld meets mandated requirements are also given.

### Pipeline Maintenance (CT 18 and 52) (32.5 Hours)

Trainee \$20 ISBN 978-0-13-038326-6  
 Instructor \$20 ISBN 978-0-13-038334-1  
 (Module ID 62206-02) Presents basic pipeline maintenance issues. Includes information and procedures on locating underground structures on the pipeline, maintaining the pipeline route, excavating utilities and pipeline components safely and properly, applying coating, tightening flanges, running maintenance pigs, and performing leak surveys on liquid and gas pipelines.

### Hydrostatic Testing (CT 41) (17.5 Hours)

Trainee \$20 ISBN 978-0-13-038327-3  
 Instructor \$20 ISBN 978-0-13-038335-8  
 (Module ID 62207-02) Explains the principles and requirements of hydrostatic testing on pipelines. Explains necessary preparations for testing, and describes the testing procedures.

## L3 PIPELINE MAINTENANCE

LEVEL 3

### Curriculum Notes

- 202.5 Hours
- Published: 2002
- Instructor's Guide includes access code to download TestGen software, module exams, and performance profiles from [www.nccerirc.com](http://www.nccerirc.com).

### PAPERBACK

ISBN

Trainee Guide: \$100

978-0-13-101077-2

Instructor's Guide: \$100

978-0-13-101078-9

### MODULES

All of the modules listed below are included in the Trainee and Instructor Guide(s) listed above. The following ISBN and pricing information is for ordering individual modules only.

### General Maintenance and Winterizing

#### Pipeline Equipment (7.5 Hours)

Trainee \$20 ISBN 978-0-13-103156-2  
 Instructor \$20 ISBN 978-0-13-103166-1  
 (Module ID 62301-02) Explains preventive and predictive maintenance and general maintenance on rotating machinery. Discusses gas compressors and maintaining pumps and prime movers.

#### Pipeline Damage Inspection (CT 34 and 35)

(10 Hours)

Trainee \$20 ISBN 978-0-13-103157-9  
 Instructor \$20 ISBN 978-0-13-103167-8  
 (Module ID 62302-02) Identifies sources and types of damage, including construction, third-party, natural events, and blasting. Covers checking pipe clearance and repairing wide cracks and foam damage.

#### Performing In-Line Inspections (CT 29) (15 Hours)

Trainee \$20 ISBN 978-0-13-103158-6  
 Instructor \$20 ISBN 978-0-13-103168-5  
 (Module ID 62303-02) Explains the preparation for pigging, types of pigs and associated tools, and running pigs. Includes following up on collected data, such as interpreting findings.

#### Pipeline Repair

(CT 9.5, 37, 40.1, 40.2, 40.3, 40.4, 40.5, 40.7, and 40.91) (40 Hours)

Trainee \$20 ISBN 978-0-13-103159-3  
 Instructor \$20 ISBN 978-0-13-103170-8  
 (Module ID 62304-02) Covers the proper procedures for several pipeline repairs. Includes information on installing various types of pipe sleeves, cutting and replacing sections of pipe, performing taps of two inches or smaller, and repairing shorted casings.

#### Relocating and Lowering Pipelines

(CT 33 and 34) (15 Hours)

Trainee \$20 ISBN 978-0-13-103160-9  
 Instructor \$20 ISBN 978-0-13-103171-5  
 (Module ID 62305-02) Explains preparations for moving pipelines, both in-service and out-of-service, procedures for moving pipelines, inspecting the line, and backfilling the excavation.

#### Hot Tapping and Stopping® - 2.5" and Larger

(CT 40.6, 40.8, 40.9, and 40.91) (15 Hours)

Trainee \$20 ISBN 978-0-13-103161-6  
 Instructor \$20 ISBN 978-0-13-103172-2  
 (Module ID 62306-02) Discusses hot tapping procedures, including safety issues, selection of equipment, and preparation for tapping. Covers installing tapping machines, and stopping procedures.

### Tank Repair (40 Hours)

Trainee \$20 ISBN 978-0-13-103162-3  
 Instructor \$20 ISBN 978-0-13-103173-9  
 (Module ID 62307-02) Explains complete tank repair, including flange tightening, nondestructive testing, electrically insulated fittings and flanges, welding, bottom repair, bottom replacement, moving, arc burn and weld repair, roof installation, shell plate replacement, aluminum and steel floating roof demolition, building a floating roof, floating roof in-service seal replacement, and nozzles, manways, and sumps.

### Maintenance Welding on Pipelines (CT 42)

(25 Hours)

Trainee \$20 ISBN 978-0-13-103163-0  
 Instructor \$20 ISBN 978-0-13-103174-6  
 (Module ID 62308-02) Covers repairing arc burns, defective welds, direct pass defects, butt welds, and previously repaired welds. Includes weld or cylinder of pipe replacement, general welding procedures, and dealing with problems. Also discusses the requirements for inspection of maintenance welds on pipelines.

### Performing Pipeline Disconnection Procedures

(CT 36) (20 Hours)

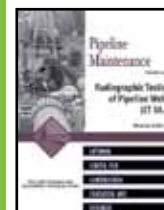
Trainee \$20 ISBN 978-0-13-103164-7  
 Instructor \$20 ISBN 978-0-13-103175-3  
 (Module ID 62309-02) Identifies equipment and procedures required to safely perform disconnection procedures and hazards that may be encountered. Explains performing safe disconnects, purging pipeline segments, and sealing disconnected pipeline.

### Vault Maintenance and Confined Space Entry

(CT 59) (15 Hours)

Trainee \$20 ISBN 978-0-13-103165-4  
 Instructor \$20 ISBN 978-0-13-103176-0  
 (Module ID 62310-02) Identifies safety requirements and hazards of confined space entry. Discusses vault inspections.

## Radiographic Testing of Pipeline Welds



(CT 38.4) 25 Hours  
 Published: 2003  
 Module ID 62401-03

Trainee: \$20

ISBN 978-0-13-106800-1

Instructor: \$20

ISBN 978-0-13-106801-8

Provides specific training for certified SNT-TC-IA Level II radiographic technicians who perform radiographic testing of pipeline welds. Recognition of specific discontinuities using copies of radiographic images is featured.

