

1 Gouges and Arc Burns

1.1 Course Description

This course focuses on assessing gouges and arc burns in pipelines, highlighting the importance of compliance with regulatory removal requirements (in some jurisdictions). Key topics include the assessment process, characterization, and non-destructive examination (NDE) techniques.

Self-assessments reinforce key concepts, and a final graded assessment evaluates the learner's understanding of the material. The online course format allows individuals to review and reinforce the material at their own pace. What sets this course apart is that it uniquely details the NDE process and remediation activities for maintaining pipeline integrity.

Note: This course does not include the assessment of data collected through in-line inspection.

Format: Online

Duration: ~1 hour

1.2 Learning Objectives

By the end of the course, participants should be able to:

1. Describe gouges and arc burns, and how they are characterized.
2. Examine the non-destructive examination process for gouges and arc burns.
3. Outline follow-up actions based on findings from non-destructive examination.

1.3 Who Should Take This Course

The course is best suited for:

- Individuals who are involved in pipeline integrity and are seeking to understand how gouges and arc burns are assessed within the context of threat management.
- Early-to-mid-career practitioners with an engineering/technical background (e.g., technicians, technologists, engineers).
- Individuals with a basic understanding of pipeline design, construction, and operation principles and activities.

1.4 Course Topics

Main topic areas covered in this course include:

- Background
 - Threat Identification Process
 - Gouges and Arc Burns
 - Impact on Pipeline Integrity
 - Overview of the Assessment Process
- Characterizing Gouges and Arc Burns
 - Characterizing Gouges and Arc Burns
 - Position on the Pipe
 - Size and Shape
 - Impact on Hardness
 - Threat Interactions
 - Gouges Causing Cracking
- The NDE Process

- Coating Examination
- Pipe Surface Preparation
- Visual Inspection
- NDE Tools Used
- Removal by Grinding
- Successful Removal of Defect from Grinding
- Unsuccessful Removal of Defect from Grinding
- Site Clean-Up
- Documentation
- Follow-Up Actions for Gouges