

Pipeline Integrity Management of Landslide Hazards

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Contents

	Page
1 Scope.....	1
1.1 Application Notes.....	1
1.2 Document Structure.....	1
2 Normative References.....	2
3 Terms, Definitions, Acronyms, and Abbreviations.....	2
3.1 Terms and Definitions.....	2
3.2 Acronyms and Abbreviations.....	5
4 Landslide Management Program.....	6
4.1 Components and Processes.....	7
4.2 Administration of the Program.....	7
4.3 Landslide Management Program Documentation.....	7
4.4 General Considerations.....	7
5 Landslide Threat and Integrity Assessment.....	8
5.1 Level 1 Assessment.....	9
5.3 Level 3 Assessment.....	12
5.4 Reassessment.....	12
6 Data Management.....	12
7 Threat Management.....	14
7.1 Classification and Decision Making.....	14
7.2 Threat Management Measure Selection.....	15
7.3 Monitoring.....	15
7.4 Mitigation Measures.....	16
8 Program Evaluation.....	17
9 Management of Change (MOC).....	17
9.1 New Construction.....	18
9.2 Acquisition of Pipeline System.....	18
9.3 Major Operational Changes.....	18
9.4 Pipeline Status.....	19
9.5 Land Use Changes.....	19
Annex A (informative) Landslide Basics.....	20
Annex B (informative) Geologic and Geotechnical Assessment of Landslides.....	26
Annex C (informative) Fitness-for-Service Assessment in Landslide Management.....	35
Annex D (informative) Landslide Assessment Examples.....	51
Annex E (informative) Data Management.....	59
Annex F (informative) Classification and Decision-making Programs.....	66
Annex G (informative) Landslide Threat Management Measures.....	77

Contents

	Page
Annex H (informative) Landslide Program Evaluation Metrics	101
Annex I (informative) Interacting Threats in Landslide Integrity Management	103
Bibliography.....	108

Figures

A.1	Conceptual Landslide Diagram [Reference 20]	21
A.2	Common Landslide-pipeline Interaction Scenarios [Reference 19].....	25
B.1	The Three-level Framework for Landslide Assessment.....	27
C.1	Example of a Girth Weld Failure Due to Longitudinal Stress/Strain	36
C.2	Example of Buckle Formation at Zero Internal Pressure	37
C.3	Wrinkle Formation Near a Girth Weld and the Resulting Cracking of Pipe Wall at the Apex of the Wrinkle.....	37
D.1	Schematic Illustration of the Interaction between Two Pipelines and a Landslide.....	53
F.1	CDM Flowchart for Newly Identified Possible Landslides.....	69
F.2	Decision-making Process for Implementing a Landslide Management Response.....	70
F.3	CDM Flowchart for Ongoing Monitoring	71
G.1	Stress-relief Excavation of a Natural Gas Pipeline Showing Pipe Rebound and Survey Lathes Placed to Provide a Visual Reference to Measure Pipe Rebound.....	88
G.2	Contour of Equivalent Plastic Strain on Deformed Sleeve Assembly under Internal Pressure and Axial/ Longitudinal Load when the Annulus is Not Pressurized.....	92
G.3	Contour of Equivalent Plastic Strain on Deformed Sleeve Assembly under Internal Pressure and Axial/ Longitudinal Load when the Annulus is Pressurized.....	93
G.4	Microhardness Map of a Fillet Weld Region on a Sleeve Assembly.....	94
I.1	Example of a C-SCC Cluster	104
I.2	Example of an S-SCC Aligned with Tape Coating that Resulted in a Leak.....	104
I.3	Example of Corrosion and SCC Near a Spiral Weld.....	105

Tables

A.1	Landslide Types and Material (based on Cruden and Varnes [Reference 15] and USGS [Reference 21]).....	22
A.2	Landslide Velocities [References 15 and 22].....	23
A.3	Landslide Causes and Triggers (modified from Cruden and Varnes [Reference 15] and USGS [Reference 21]).....	24
B.1	Processes, Methods, Techniques, and Tools for Geologic and Geotechnical Assessment of Landslide Hazards	29
D.1	Summary of FFS Assessments at the Two Landslides.....	55
E.1	Suggested Data to Record for Landslide Hazard Characterization	60
E.2	Suggested Data to Record for Events Related to Individual Landslides	61
E.3	Suggested Data to Record for Monitoring Instrument Inventory	62
E.4	Suggested Data to Record in an IMU Bending Strain Inventory.....	64
F.1	Example SME Judgment System	73
F.2	Example Matrix-based Landslide Threat Classification	74

Contents

	Page
G.1 Summary of Commonly Used Landslide Monitoring Methods for Pipelines	81
G.2 Guidance on Selection of Monitoring Approaches	83
G.3 Guidance on Selection of Mitigation Measures	98

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Pipeline Integrity Management of Landslide Hazards

1 Scope

This recommended practice (RP) provides recommendations for the management of landslide hazards for operating onshore welded steel pipelines.

The recommendations in this document are applicable for onshore transmission pipelines conveying natural gas, hazardous liquids, and carbon dioxide. Offshore pipelines, pipelines containing products other than those listed above, and pipelines made of materials other than welded steel were not explicitly considered in the development of this document, however, it may provide useful guidance to these other applications. The recommendations provided herein are based on the physical, regulatory, and social environment of the United States, but could reasonably be applied in Canada and in other countries with due consideration for their regulatory requirements. The recommendations are for active pipelines and not intended for terminals, aboveground stations and appurtenances, or delivery facilities.

The intention of this document is to provide operators, contractors, and consultants with recommendations to manage landslide hazards. Landslide hazard management may include both consideration of active features and anticipating or avoiding features such as in design processes, route selection and/or planning of mitigative measures.

1.1 Application Notes

This document is an API recommended practice that is published to provide technical information and recommendations toward building a best practice. Different methodologies, improvements and new technologies may not have been included as part of the recommended practice. For this reason, the following notes are provided to guide users of the document:

- The RP was assembled by collecting experience- and good engineering practice-based recommendations from pipeline operators, trade associations and engineering service providers. Landslides are complex problems and specific scope and requirements in this document may not be sufficient for an effective solution to all scenarios and as such the RP user is encouraged to exercise their judgment.
- Alternate processes and tools found to be suitable by pipeline operators may be substituted for those included in the RP. The development of the RP does not suggest that it presents a comprehensive listing of all applicable processes or tools. For example, the user may elect to apply stress-based assessment tools, such as those in ASME B31.4, or strain-based assessment tools. It is the users' responsibility to be in compliance with design code, fabrication requirements and applicable regulatory requirements.
- The levels of assessment presented in the RP provide a detailed listing of the types of data, analyses, and decision processes that they may involve. The intent of the RP is that the user may elect to customize the data, analyses and decision processes to suit their needs, data availability and assets.

1.2 Document Structure

This document is structured as follows:

- [Section 1](#) (this section) introduces the scope, limitations, and structure of the document.
- [Section 2](#) provides normative references pertaining to this document.
- [Section 3](#) provides the terms, definitions, acronyms, and abbreviations used in this document.
- [Section 4](#) provides recommendations for the overall structure and key components of a landslide management program for the purposes of pipeline integrity.