Pipeline Integrity Management of Landslide Hazards

API RECOMMENDED PRACTICE 1187
FIRST EDITION, AUGUST 2024

American
Petroleum
Institute

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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.