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Standard Practice

Pipeline External Corrosion Confirmatory Direct Assessment

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Foreword

This standard covers the NACE external corrosion confirmatory direct assessment (ECCDA) process for buried onshore ferrous piping systems. This standard is intended to serve as a guide for applying the NACE ECCDA process on previously assessed typical pipeline systems.

ECCDA as described in this standard practice is specifically intended to address buried onshore pipelines constructed from ferrous materials. Users of this standard must be familiar with all applicable pipeline safety regulations for the jurisdiction in which the pipeline operates. This includes all regulations requiring specific pipeline integrity assessment practices and programs. This standard is intended for use by pipeline operators and others who must manage pipeline integrity.

This standard was prepared by Task Group (TG) 377, "Pipeline External Corrosion Confirmatory Direct Assessment." TG 377 is administered by Specific Technology Group (STG) 35, "Pipelines, Tanks, and Well Casings." This standard is issued by NACE International under the auspices of STG 35.

In NACE standards, the terms *shall*, *must*, *should*, and *may* are used in accordance with the definitions of these terms in the *NACE Publications Style Manual*. The terms *shall* and *must* are used to state a requirement, and are considered mandatory. The term *should* is used to state something good and is recommended, but is not considered mandatory. The term *may* is used to state something considered optional.

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Contents

Section 1: General

1.1 Introduction

1.1.1 This standard covers the NACE external corrosion confirmatory direct assessment (ECCDA) process for buried onshore ferrous piping systems. This standard is intended to serve as a guide for applying the NACE ECCDA process on typical pipeline systems.

1.1.2 This standard was written to provide flexibility for an operator to tailor the process to specific pipeline situations.

1.1.3 ECCDA is a continuous improvement process. Through successive applications, ECCDA should confirm conclusions drawn from previous assessments and identify and address locations at which corrosion activity has occurred, is occurring, or may occur.

1.1.3.1 ECCDA provides the advantage and benefit of locating areas where corrosion is likely to occur in the future rather than only areas where corrosion has already occurred.

1.1.3.2 Comparing the results of successive ECCDA applications is one method of evaluating the effectiveness of the ECCDA process, as well as the external corrosion direct assessment (ECDA) process, and demonstrating that confidence in the integrity of the pipeline is continuously improving.

1.1.4 ECCDA was developed as a process for improving pipeline safety. If external corrosion is a threat to be evaluated, ECCDA can be used to validate previous assessment conclusions or determine whether the reassessment interval is still appropriate.

1.1.5 ECCDA applications can include but are not limited to assessments of external corrosion on pipeline segments that:

1.1.5.1 Can be inspected using other common inspection methods (such as in-line inspection [ILI] or pressure testing).

1.1.5.2 Have been inspected using other inspection technologies as a method of managing future corrosion.

1.1.5.3 Have been inspected with another inspection technology as a method of establishing a reassessment interval.

1.1.6 ECCDA may detect other pipeline integrity threats such as mechanical damage, stress corrosion cracking (SCC), and microbiologically influenced corrosion (MIC). When such threats are detected, additional assessments or inspections must be performed. The pipeline operator should use appropriate methods such as ASME[(1)] B31.4,[1] ASME B31.8,[2] ASME B31.8S,[3] and API[(2)] 1160[4] to address risks other than external corrosion.

1.1.7 The ECCDA process has limitations, but many pipelines can be successfully assessed with ECCDA. Precautions should be taken when these techniques are applied, just as with other assessment methods.

1.1.7.1 This standard may be applied to poorly coated or bare pipelines in accordance with the methods and procedures included in NACE SP0502,[5] NACE SP0207,[6] and NACE Standard TM0109.[7] Poorly coated pipelines are usually treated as essentially bare if the cathodic current requirements to achieve protection are substantially the same as those for bare pipe.

(1) ASME International (ASME), Three Park Ave., New York, NY 10016-5990.
(2) American Petroleum Institute (API), 1220 L St. NW, Washington, DC 20005-4070.