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Joint Standard

NACE/PODS Standard Practice

External Corrosion Direct Assessment (ECDA) Integrity Data Exchange (IDX)

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Foreword

The objective of this standard practice is the development of a new external corrosion direct assessment (ECDA) data interchange data structure that will enable electronic integration of data and standardize reporting of ECDA data associated with indirect inspection data within the pipeline industry, to allow transfer between different software packages or computer systems. This is expected to minimize difficulty in using various programs to analyze or graph data and allow the comparison of data gathered for a given pipeline segment at different times, regardless of the software system used to collect it. The format outlined is the commonly used American Standard Code for Information Interchange (ASCII) comma delimited text file, which is adaptable to all data processing systems. This standard is expected to serve as a template for future internal corrosion direct assessment (ICDA) and stress corrosion cracking direct assessment (SCCDA) data interchange standards. It presents one suggested exchange format to standardize data transfer.

Data collection and testing procedures shall conform to NACE SP0207, "Performing Close-Interval Potential Surveys on Buried or Submerged Metallic Pipelines,"[1] NACE Standard TM0109, "Aboveground Survey Techniques for the Evaluation of Underground Pipeline Coating Condition,"[2] NACE SP0169,[3] and other applicable recommended NACE standards for accurate ECDA pipeline integrity data.

This standard is intended for use by corrosion control personnel and information technology professionals involved with acquiring, analyzing, or maintaining ECDA data, contractors performing ECDA, and regulatory agencies.

For accurate and correct application, this standard must be used in its entirety. Using or citing only specific paragraphs or sections can lead to misinterpretation and misapplication of the recommendations and practices presented. Specific practices are not designated for every situation because of the complexity of conditions to which buried or submerged piping systems are exposed.

This standard was prepared by joint Task Group (TG) 357 on External Corrosion Direct Assessment (ECDA) Integrity Data Exchange (IDX) in 2007 and was revised by TG 357 in 2014. TG 357 is administered by Specific Technology Group (STG) 35 on Pipelines, Tanks, and Well Casings. This standard is issued by NACE International under the auspices of STG 35, and the Pipeline Open Data Systems (PODS) Association.(1)

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.

(1) Pipeline Open Data Systems (PODS) Association, P.O. Box 273084, Fort Collins, CO 80527.

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Section 1: General

1.1 Introduction

1.1.1 This standard defines the requirements for a data format suitable for ECDA integrity data management. A standardized format assures accurate data transfer between contractor and operator databases in formats that are convenient and familiar to each. Such standardization accommodates industry-wide data mining and facilitates review by regulatory agencies.

1.1.2 ECDA-related data elements to cover a wide variety of data capture needs are presented. Not all fields are mandatory in all applications. The purpose of this standard is to provide a standard field naming and unit format convention (i.e., data dictionary) for using the various ECDA indirect inspection data elements.

1.1.3 This standard presents an open format that is intended to accommodate the widest probable range of variables that might be mandatory to document an ECDA survey and subsequent investigation. It is not necessary to enter data or comments in all of the data fields—only those applicable to the current study or those necessary to meet operator requirements. This format also acts as a checklist to remind the surveyor(s) of information to be gathered.

1.2 Scope

1.2.1 This standard addresses ECDA indirect inspection data, including close-interval surveys (CIS), aboveground coating evaluation surveys (e.g., direct-current voltage gradient [DCVG] and Pearson survey), and corrosiveness of environment surveys (e.g., linear polarization resistance [LPR] probe surveys and pH/soil resistivity surveys).

1.2.2 This standard does not address specific procedures for performing surveys, validating, or interpreting indirect inspection data.

1.2.3 Sound engineering practice and common sense should be used to assure that survey data are valid. Error checks should be made at regular intervals to ensure the quality of data recorded and stored.

1.2.4 Some users may not find it applicable to their use.

1.3 Benefits

1.3.1 The use of common field names allows users (vendors and operators) to exchange data in a predictable and reliable manner without the need for custom data conversion. This minimizes the risk of data translation errors.

1.3.2 The use of a common exchange format allows operators to use various vendors without the need for multiple data transformation concerns.

1.3.3 A common data exchange format should enable more industry ECDA-related applications to be developed.

1.3.4 These benefits may be realized in a similar fashion as has the in-line inspection (ILI) data exchange standard.[4] An operator may validate ILI survey data prior to formally accepting the survey from the vendor, and load it to an enterprise database for electronic integration and alignment with the operator's common linear reference. Realignment may take place nightly or at another desired frequency, keeping the survey synchronized with pipeline reroutes and other changes to pipe length. This in turn enables reclassification of anomalies as changes that require reclassification are detected. Costs of manual integration for an annual risk ranking are eliminated.

Section 2: Definitions

Aboveground Coating Evaluation Survey: Method to assess the coating condition of an underground pipeline.

Aboveground Marker (AGM): A portable or permanently installed device placed on the surface above a pipeline that both detects and records the passage of an ILI tool or transmits a signal that is detected and recorded by the tool.