Corrosion Prevention and Control Planning

Standard Practice

This new standard on corrosion prevention and control (CPC) planning is intended to support future CPC improvements to national acquisition and sustainment of equipment, systems, and infrastructure at an acceptable cost. It provides a standardized framework for a supplier's plan to control corrosion of supplied products and structures. The standard is intended for use by public and private facility owners/acquisition agencies that require their suppliers to provide corrosion prevention and control procedures as a deliverable with the purchased product, installation, or system.

The standard includes:
- Attributes of the supplied product, system or facility that require planning for CPC;
- Considerations for material selection and design of a product, system or facility to minimize corrosion;
- Items or topics that should be addressed in a CPC plan;
- Items or topics that should be addressed in CPC planning which affect CPC in design, fabrication, construction, operation and use, and maintenance and sustainability.

This standard is specifically intended to address buried onshore pipelines constructed from ferrous materials. It is intended for use by personnel in the pipeline industry.

In-Line Inspection of Pipelines

Standard Practice

This standard outlines a process of related activities that a pipeline operator can use to plan, organize, and execute in-line inspection (ILI) projects. Guidelines pertaining to data analysis are included. A key companion guide to this standard is NACE International Publication 35101-DPC, which is intended for use by individuals and teams planning, implementing, and reporting ILI projects and programs. These individuals include engineers, operations and maintenance personnel, technicians, specialists, construction personnel, and inspectors.

Protection of Austenitic Stainless Steels and Pipeline External Corrosion Direct Assessment

Standard Practice

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Pipeline External Corrosion Direct Assessment Methodology

Standard Practice

This standard outlines a process of related activities that a pipeline operator can use to plan, organize, and execute in-line inspection (ILI) projects. Guidelines pertaining to data analysis are included. A key companion guide to this standard is NACE International Publication 35101-DPC, which is intended for use by individuals and teams planning, implementing, and reporting ILI projects and programs. These individuals include engineers, operations and maintenance personnel, technicians, specialists, construction personnel, and inspectors.

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Preparation, Installation, Analysis, and Interpretation of Corrosion Coupons in Oils and Gas Operations

SP091-2017

The Application of Internal Plastic Coatings for Oilfield Tubular Goods and Accessories

Standard Practice

Discusses techniques and methods used to mitigate corrosion of iron pipe and fittings, including engineering practices for ductile- and cast-iron pipe, reported protective measures and their results, influences of the different properties of the two types of iron pipe, and case histories of installations spanning decades in a wide range of soils.

SP029-2018

The Application of Internally Applied Tape Coating Systems for the Protection of Underground Pipe, Fittings, and Valves

Standard Practice

Includes appendices on cathodic protection personnel, design engineers, project managers, purchasers, and construction engineers and contractors.

SP012-2006

A standard practice presents guidelines and procedures for use during installation, evaluation, mitigation, monitoring, and groundbeds used for control of external corrosion of underground or submerged metallic structures by impressed current cathodic protection.

SP022-2018

Corrosion Control for Buried Cast-and Ductile-Iron Pipe

Report

The standard practice presents guidelines and procedures for use during installation, evaluation, mitigation, monitoring, and comparison of devices available for pipeline isolation, and equipment specification and installation, as well as field testing and maintenance.

SP035-2018

Field-Applied Underground Wax Coating Systems for Underground Metallic Pipes: Application, Performance, and Quality Control

Standard Practice

The standard practice presents guidelines and procedures for use during installation, evaluation, mitigation, monitoring, and comparison of devices available for pipeline isolation, and equipment specification and installation, as well as field testing and maintenance.

SP016-2007

Application of Cathodic Protection for External Surfaces of Steel Well Casings

Standard Practice

Identifies the procedures used to determine the need for cathodic protection and current requirements for well casings associated with oil and gas production and gas storage. The standard also outlines practices for the design and installation of cathodic protection systems and for their operation and maintenance. The standard applies only to well casing exteriors.

SP028-2007

Electrical Isolation of Cathodically Protected Pipelines

Standard Practice

Fully details the requirements necessary to ensure adequate isolation of cathodically protected pipelines, especially those with high-voltage dielectric coatings. The standard was developed as a supplement to SP018 and SP017. It includes sections on the need for electrical isolation, methods of electrical isolation, comparison of devices available for pipeline isolation, and equipment specification and installation, as well as field testing and maintenance.

AU0/NACE SP015-2011/ISO 15168-2 (Modified)

Petroleum, petrochemical, and natural gas industries – Cathodic protection of pipeline transportation systems – Part 2: Offshore pipelines

Standard Practice

This standard specifies requirements and gives recommendations for the pre-installation surveys, design, materials, equipment, fabrication, installation, commissioning, operation, inspection and maintenance of cathodic protection (CP) systems for offshore pipelines for the petroleum, petrochemical and natural gas industries as defined in ISO 15168. It is applicable to carbon steel, stainless steel and flexible pipelines in offshore service, and to retrofits, modifications and repairs made to existing systems.

SP015-2018

AC Corrosion on Cathodically Protected Pipelines: Risk Assessment, Mitigation, and Monitoring

Standard Practice

This standard presents recommended practices for the control of internal corrosion in steel pipelines and piping systems used to gather, transport, or distribute crude oil, petroleum products, or gas. It is meant to serve as a guide for establishing minimum requirements for control of internal corrosion in crude oil gathering and flow lines, crude oil transmission, hydrocarbon products, gas gathering and flow lines, gas transmission, and gas distribution.

SP013-2013

Guided Wave Technology for Pipelines

Standard Practice

A guided wave is created by restricting the propagation of sound or electromagnetic waves in one or two dimensions. A particular frequency of the wave travel – with little attenuation – is very far distances. Changes in the dimensions of the restrictions can cause partial reflections that can be analysed to find the location of the change.

SP010-2018

Control of Internal Corrosion in Steel Pipelines and Piping Systems

Standard Practice

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SP018-2006

Liquid Applied Internal Protective Coatings for Oilfield Production Equipment

Standard Practice

Provides guidelines for obtaining an effective internal lining to protect against general or pitting corrosion of metal tanks and vessels commonly used in oilfield operations at atmospheric and elevated pressures. It also includes various factors required to obtain satisfactory lining in equipment design and fabrication considerations, lining selection, surface preparation, lining application, and inspection.

SP034-2016

Design, Installation, and Operation of Thermoplastic Liners for Oilfield Pipelines

Standard Practice

The NACE international standard practice defines the process necessary to design, install, and operate thermoplastic-lined oilfield pipelines and provides a foundation for proper use of thermoplastic linings in cases where there is no established standard. It is not intended to replace existing national or corporate standards and requirements based on specific local experience. This standard is intended for use by line installers, owners of lined pipelines and pipelines that might at some point need a liner, liner materials suppliers, and consultants, and engineering firms engaged in the subject field. The intent is that project specifications be developed based on this standard. The standard provides a common-design basis consistent with best engineering practices. It is to the benefit of liner-users and installers to have a standard for liner design, installation, and operation to help ensure that the installed product meets performance expectations. This standard represents minimum requirements and should not be interpreted as a restriction on the use of better procedures or materials.

SP016-2007

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Monitoring Techniques and Corrosion Control for Drill Pipe, Casing, and Other Steel Components in Contact with Drilling Fluids

This state-of-the-art report includes descriptions of corrosion inhibition programs that have been used on drilling rigs in many different areas. Field information from tests evaluating corrosion control of drill pipe, casing, and steel components in contact with various drilling fluids is incorporated and presented.

Field Monitoring of Corrosion Rates in Oil and Gas Production Environments Using Electrochemical Techniques

Application of corrosion inhibitors is one of the primary internal corrosion control strategies for carbon steel infrastructure. This report brings together state-of-the-art knowledge covering experiences in the application of corrosion-resistant alloys (CRAs) and issues of welding, fabrication, and assessment for successful operation in oil and gas production environments with specific consideration of corrosion and environmentally assisted cracking, and it highlights technology gaps impacting the industry.

Use of Corrosion-Resistant Alloys in Oilfield

This report presents an overview of the various methods used in the oil and gas industry to test and mitigate under deposit corrosion (UDC) occurring in corrosion-prone environments where solids are present and carbon steels are used. The testing techniques are different in nature and in design and therefore assess and evaluate UDC in different ways. The objective is to provide industry users with some tools and means from which to choose when confronted with such an issue.

Plastic Liners for Oilfield Pipelines

Provides an overview of thermoplastic liners used in oilfield pipelines, and reflects current practices. This report is intended to assist those who are considering the use of liners, but have only limited access to resources with knowledge of the terminology, techniques, and applications of liners in the oilfield.

Underdeposit Corrosion (UDC) Testing and Mitigation Methods in the Oil and Gas Industry

This technical committee report presents an overview of the various methods used in the oilfield to test and mitigate under deposit corrosion (UDC) occurring in corrosion-environment categories. It includes methods for voltage drop considerations when structure-to-electrolyte potential measurements are made and provides guidance to minimize incorrect data from being collected and used.

Techniques for Monitoring Corrosion and Related Parameters in Field Applications

This standard test method provides descriptions of the measurement techniques and cautionary measures most commonly used on underground and submerged piping other than offshore piping to determine whether a specific criterion has been met at a test site. This standard contains instrumentation and general measurement guidelines. It includes methods for voltage drop considerations when structure-to-electrolyte potential measurements are made and provides guidance to minimize incorrect data from being collected and used.

Plastic Liners for Oilfield Pipelines

This standard test method provides two test methods for evaluating protective coatings on any substrate, such as steel, copper, aluminum, etc., so the factors of both chemical resistance and permeability can be considered. This standard test methods for evaluating protective coatings used as linings for immersion service. This standard test method provides two test methods for evaluating protective coatings on any substrate, such as steel, copper, aluminum, etc., so the factors of both chemical resistance and permeability can be considered.

Evaluation of Underground Pipeline Coating Condition

This standard test method provides a procedure for conducting a test to determine the corrosive properties of gasoline and distillate fuels in preparation for transport through a pipeline. Also included is information on test specimen preparation, equipment, and a system for rating the test specimen. This standard test method provides a procedure for conducting a test to determine the corrosive properties of gasoline and distillate fuels in preparation for transport through a pipeline. Also included is information on test specimen preparation, equipment, and a system for rating the test specimen.

Determination of Corrosive Properties of Insoluble Petroleum Product Cargoes

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Laboratory Methods for the Evaluation of Protective Coatings and Linering Materials in Immersion Service

Provides guidelines to help manufacturers and users of protective coatings select materials by providing standard test methods for evaluating protective coatings used as linings for immersion service. This standard test method provides a procedure for conducting a test to determine the corrosive properties of gasoline and distillate fuels in preparation for transport through a pipeline. Also included is information on test specimen preparation, equipment, and a system for rating the test specimen. This standard test method provides a procedure for conducting a test to determine the corrosive properties of gasoline and distillate fuels in preparation for transport through a pipeline. Also included is information on test specimen preparation, equipment, and a system for rating the test specimen.