

CONTEC

Comissão de Normalização
Técnica

SC-15

Cathodic Protection

**Design of Galvanic Cathodic Protection
System - Subsea Pipeline**

Revalidation

Revalidated in 02/2016.

Design of Galvanic Cathodic Protection System - Subsea Pipeline

Procedure

This Standard replaces and cancels its previous revision.

The CONTEC - Authoring Subcommittee provides guidance on the interpretation of this Standard when questions arise regarding its contents. The Department of PETROBRAS that uses this Standard is responsible for adopting and applying the sections, subsections and enumerates thereof.

Technical Requirement: A provision established as the most adequate and which shall be used strictly in accordance with this Standard. If a decision is taken not to follow the requirement ("non-conformity" to this Standard) it shall be based on well-founded economic and management reasons, and be approved and registered by the Department of PETROBRAS that uses this Standard. It is characterized by imperative nature.

Recommended Practice: A provision that may be adopted under the conditions of this Standard, but which admits (and draws attention to) the possibility of there being a more adequate alternative (not written in this Standard) to the particular application. The alternative adopted shall be approved and registered by the Department of PETROBRAS that uses this Standard. It is characterized by verbs of a nonmandatory nature. It is indicated by the expression: **[Recommended Practice]**.

Copies of the registered "non-conformities" to this Standard that may contribute to the improvement thereof shall be submitted to the CONTEC - Authoring Subcommittee.

Proposed revisions to this Standard shall be submitted to the CONTEC - Authoring Subcommittee, indicating the alphanumeric identification and revision of the Standard, the section, subsection and enumerate to be revised, the proposed text, and technical/economic justification for revision. The proposals are evaluated during the work for alteration of this Standard.

"This Standard is exclusive property of Petróleo Brasileiro S. A. - PETROBRAS, internal application and PETROBRAS Subsidiaries and shall be used by its suppliers of goods and services under contracts or similar under the conditions established in Bidding, Contract, Agreement or similar.

The use of this Standard by other companies / organizations / government agencies and individuals is the sole responsibility of the users.."

CONTEC

Comissão de Normalização
Técnica

SC - 15

Cathodic Protection

Introduction

PETROBRAS Technical Standards are prepared by Working Groups - WG (consisting specialized of Technical Collaborators from Company and its Subsidiaries), are commented by Company Units and its Subsidiaries, are approved by the Authoring Subcommittees - SCs (consisting of technicians from the same specialty, representing the various Company Units and its Subsidiaries), and ratified by the Executive Nucleus (consisting of representatives of the Company Units and its Subsidiaries). A PETROBRAS Technical Standard is subject to revision at any time by its Authoring Subcommittee and shall be reviewed every 5 years to be revalidated, revised or cancelled. PETROBRAS Technical Standards are prepared in accordance with PETROBRAS Technical Standard N-1. For complete information about PETROBRAS Technical Standards see PETROBRAS Technical Standards Catalog.

FOREWORD

This Standard is the English version (issued in 10/2014) of PETROBRAS N-1935 REV. D 12/2010 including its Amendment - 09/2013. In case of doubt, the Portuguese version, which is the valid document for all intents and purposes, shall be used.

1 SCOPE

1.1 This Standard determines the additional requirements to ISO [15589-2](#) to be adopted in the design and installation of galvanic cathodic protection systems for subsea rigid pipelines.

1.2 The acceptance of the design is conditioned to the compliance with this Standard and ISO [15589-2](#).

1.3 This Standard applies to procedures started from its issue date.

1.4 This Standard contains Technical Requirements and Recommended Practices.

2 NORMATIVE REFERENCES

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document applies.

PETROBRAS [N-133](#) - Soldagem;

ISO [15589-2](#) - Petroleum and Natural Gas Industries - Cathodic Protection of Pipeline Transportation System - Part 2: Offshore Pipelines;

ASTM [D 1248](#) - Standard Specification for Octyl Ortho-Phthalate Ester Plasticizers;

DNV [OS F101](#) - Submarine Pipeline Systems;

DNV [RP F103](#) - Cathodic Protection of Submarine Pipelines by Galvanic Anodes;

AWS [D1.1](#) - Structural Welding Code - Steel.

NOTE For documents referred in this Standard and for which only the Portuguese version is available, the PETROBRAS department that uses this Standard should be consulted for any information required for the specific application.

3 TERMS AND DEFINITIONS

For the purposes of this document, the following terms and definitions are adopted.

3.1

WD

Water Depth

3.2

3LPE

Polyethylene Triple Layer