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GUIDE TO THE USE OF ISO 15649 AND ANSI/ASME B31.3 FOR PIPING IN EUROPE IN COMPLIANCE WITH THE PRESSURE EQUIPMENT DIRECTIVE

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Guide pour l'utilisation de l'ISO 15649 et l'ANSI/ASME B31.3 pour les tuyauteries en Europe en respectant la Directive Equipements sous Pression

Erdöl- und Erdgasindustrien - Alternative für metallische industrielle Rohrleitungen

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Foreword

This document CEN/TR 14549:2004 has been prepared by Technical Committee CEN/TC 12 “Materials, equipment and offshore structures for petroleum and natural gas”, the secretariat of which is held by AFNOR.

Annexes A, B, C, D and E are informative.

The European Pressure Equipment Directive (PED), Directive 97/23/EC, entered into force on 29th November 1999 and has been mandatory throughout all Member States of the EU and the rest of the European Economic Area (EEA) on 30th May 2002. The prime purpose of the PED is to eliminate barriers to trade without detriment to safety. In May 1985, European Community Ministers agreed on a *New Approach to Technical Harmonisation and Standards* in order to fulfil the objective of an open market in Europe with free movement of goods. *New Approach* Directives such as the PED set out essential safety requirements which must be met.

This document has been developed in order to facilitate PED compliance with respect to the current industry practice for piping that is based on ANSI/ASME B31.3.

This document is technically identical to the EEMUA publication 202 and its Amendment 1 published in May 2002.

This CEN Technical Report cannot provide a presumption of conformity with the PED, therefore the essential safety requirements of the PED should be followed and seen to be followed in full.

PED Issues and their solutions are continuing to develop, therefore users [1)] * of this CEN Technical Report are advised to make use of the references provided in this guide, in order to keep up to date via information published on the Internet World Wide Web.

[1)] In the text that follows, the term "user" often refers to the end user of pressure equipment, rather than to the user of this Guide. The precise meaning should be clear from the context in which the tern is used.

Introduction

This Guide explains how to use ISO 15649 and ANSI/ASME B31.3 while also complying with the European Pressure Equipment Directive (PED), for piping in Europe Union and other EEA countries. This Guide is intended to facilitate discussions between owner/purchaser, manufacturer/designer and notified body leading to conformity with the PED in a consistent manner.

In general, the PED acts as a jurisdictional regulation with emphasis on general requirements, while for the details of design and construction, reference needs to be made to appropriate engineering standards. ANSI/ASME B31.3 Code is a standard addressing design, fabrication, examination and testing of piping systems. Its use is subject to contractual agreements between the owner and the manufacturer/ assembler of a piping system. The PED does not prohibit the use of ANSI/ASME B31.3 (or indeed of any code), however the requirements specified in the PED should be fulfilled.

Review of ANSI/ASME B31.3 against the Articles and the essential safety requirements (ESRs) of the PED has shown that:

— some Articles and ESRs are satisfied by ANSI/ASME B31.3;

— some Articles and ESRs are not addressed by ANSI/ASME B31.3;

— some aspects of ANSI/ASME B31.3 differ from the Articles and ESRs.

The PED is transposed and translated by each Member State into its national legislation. Users are advised to review the translation implemented in the relevant Member State in order to ensure full regulatory compliance. (The relevant document in the UK is *The Pressure Equipment Regulations 1999*, SI 1999 No 2001.) National legislation can also include requirements outside the scope of the PED, for example for in-service inspection.

The full text of the PED can be found at the European Commission's PED website. The European Commission also publishes Guidelines approved by the Commission’s Working Group Pressure (WGP) that, while not legally binding, are intended to provide more detail on how to apply the PED. References in the present document to "Guideline x/x" pertain to the WGP Guidelines. See also annex E.

Europia has published a guide for the oil industry on the use of the PED with particular emphasis on refinery operations, whilst EEMUA has published a guide for purchasers of valves under the PED (EEMUA Publication 196).

NOTE ON UNIT OF PRESSURE Throughout the text of this Guide, "bar" signifies gauge pressure (above atmospheric).

1 Scope

This Guide is intended for use in the petroleum, petrochemical and chemical industries. It identifies and defines a set of common additional and modified requirements to ISO 15649 and ANSI/ASME B31.3 necessitated by the PED. Additional guidance is provided by a suite of annexes (A to E) which are intended to be read independently, but in the context of the main text. These include an actions checklist, tables identifying key requirements of the PED and the corresponding clauses of the ISO/ANSI–ASME standards, and supplementary information.

ISO 15649 incorporates ANSI/ASME B31.3 by normative reference and also contains additional common international practice. The relationships are illustrated in Figure 1.