PETROLEUMSTILSYNET

Identical letter

Our executive officer
Jan Sola Østensen

Your ref	Our ref (please quote when responding)	Date
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Dear Sirs

Acquisition and use of portable electronic communication equipment in hazardous areas of petroleum plants

Introduction

Portable electronic communication equipment is increasingly being used in petroleum plants, both on land and on fixed and mobile facilities offshore. The term covers all equipment able to send and/or receive sound, text, images or other data with the aid of electromagnetic signals transmitted wirelessly or via cable. Examples include PCs, tablets, smart watches and smart phones. This equipment is used in hazardous areas at land plants and on offshore facilities. Hazardous areas are classified in zones (0, 1 and 2) on the basis of how frequently, and for how long, an explosive gas atmosphere is present during normal operation. (Zone 0 is an area where an explosive atmosphere is continuously present during normal operation.)

We see cases where such equipment is subject to stresses which fall outside the scope of its certification, or where the equipment's certification imposes special restrictions which are not observed by or sufficiently known to users. Since such devices are portable, the risk exists that equipment approved for zone 2 is unintentionally used in zone 1.

Purpose

The purpose of this identical letter is to provide information about the responsible party's duty to ensure that the use of portable electronic equipment accords with sections 10 and 10a of the facilities regulations (IF) on installations, systems and equipment and on ignition source control respectively, and with the corresponding provisions in sections 7 and 10a of the technical and operational regulations(TOF).

Regulations and recognised standards

Section 10a, paragraphs 1-2 of the IF and TOF on ignition source control requires a systematic mapping of potential electrical and non-electrical ignition sources. In addition, the necessary technical, operational and organisational measures must be implemented to

reduce the risk of ignition as far as possible. Equipment and safety systems in classified areas must fulfil requirements for use in hazardous areas.

Equipment manufactured for use in zones 1 (equipment category 2) and 2 (equipment category 3) are covered by different requirements for the level of protection (including product requirements) and by different approaches to conformity assessment (quality assurance). Equipment for use in zone 1 must be designed and manufactured in such a way that ignition sources are avoided, even in the event of frequent disruptions or functional faults with the equipment which must normally be expected. See appendix I, section 2, litera b) and appendix II, section 2.2 of the regulations on equipment and safety systems for use in hazardous areas (Fusex). By comparison, equipment for use in zone 2 must be designed and manufactured in such a way that ignition sources which can be expected to become active during normal use do not occur. See appendix I, section 2, litera c) and appendix II, section 2.3 of Fusex.

Where permanent offshore facilities are concerned, reference is made to section 10a of the IF on ignition source control with guidelines. The guidelines specify that the IEC 61892 series should be used for systematic mapping of electrical equipment. Chapter 13.5.3 of IEC 61892 specifies zone 1 as the minimum manufacturing standard (equipment category 2/EPL Gb) for portable electronic communication equipment.

Where mobile facilities using the maritime regulations (see section 3 of the framework regulations on the application of maritime regulations in the offshore petroleum activities) are concerned, reference is made to the Norwegian Maritime Authority (NMA) regulation no 856 of 4 September 1987 on the construction of mobile offshore units. Section 20 on portable electrical equipment requires that, if this is to be used outside the living quarters, it must be certified for use in hazardous areas zone 1. Note that Fusex does not apply to mobile facilities.

Where land-based plants in the petroleum industry are concerned, reference is made to section 10a of the TOF on ignition source control with guidelines, which refer in part to NEK 420A from the Norwegian Electrotechnical Committee. Chapter 5.10 of NEK 420A specifies that portable equipment with a lower explosion protection level (EPL) must not be moved from one area to another which requires a higher EPL without being protected in another way. It also recommends that the equipment satisfies the user location with the highest EPL.

Risk factors when choosing and using portable electronic communication equipment

Several factors must be taken into account when acquiring and using portable electronic communication equipment for petroleum plants or facilities in order to ensure its suitability. These include:

- personnel ordering the equipment must possess sufficient expertise
- ensuring that the equipment acquired has the necessary level of protection as specified by the regulations
- certification details must be reviewed in order to determine that the equipment is suitable for its intended use

- the equipment must be adequately protected against faults arising as a result of thermal, atmospheric and mechanical stresses
- personnel using the equipment must be provided with the necessary competence and training to treat/use the equipment prudently
- the equipment must be maintained in such a way that its integrity is retained at all times.

The responsible party must deal with the use of portable electronic communication equipment in such a way that the danger of ignition is reduced as far as possible. Pursuant to the regulations, companies must utilise equipment suited for its intended use. The condition of the equipment must be assessed in relation to its intended use/function.

Yours faithfully

Finn Carlsen, by authority
director of professional competence

Torleif Husebø
discipline leader

This letter has been approved electronically in the PSA and accordingly bears no signatures