

Nuclear power plants — Control rooms — Operator controls

ICS 27.120.20

National foreword

This British Standard is the UK implementation of EN 61227:2016. It is identical to IEC 61227:2008. It supersedes BS IEC 61227:2008 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee NCE/8, Instrumentation, Control & Electrical Systems of Nuclear Facilities.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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Amendments/corrigenda issued since publication

Date	Comments
30 April 2016	This corrigendum renumbers BS IEC 61227:2008 as BS EN 61227:2016

English Version

Nuclear power plants - Control rooms - Operator controls
(IEC 61227:2008)

Centrales nucléaires de puissance - Salles de commande -
Commandes opérateurs
(IEC 61227:2008)

Kernkraftwerke - Warten - Handbedienungen
(IEC 61227:2008)

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European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

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European foreword

This document (EN 61227:2016) consists of the text of IEC 61227:2008 prepared by SC 45A "Instrumentation, control and electrical systems of nuclear facilities" of IEC/TC 45 "Nuclear instrumentation".

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2017-03-01
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2019-03-01

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As stated in the nuclear safety directive 2009/71/EURATOM, Chapter 1, Article 2, item 2, Member States are not prevented from taking more stringent safety measures in the subject-matter covered by the Directive, in compliance with Community law. In a similar manner, this European standard does not prevent Member States from taking more stringent nuclear safety measures in the subject-matter covered by this standard.

Endorsement notice

The text of the International Standard IEC 61227:2008 was approved by CENELEC as a European Standard without any modification.

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE 1 When an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60073	-	Basic and safety principles for man-machine interface, marking and identification - Coding principles for indicators and actuators	EN 60073	-
IEC 60964	-	Nuclear power plants - Control rooms - Design	EN 60964	-
IEC 61771	-	Nuclear power plants - Main control-room - Verification and validation of design	-	-
IEC 61772	-	Nuclear power plants - Control rooms - Application of visual display units (VDUs)	EN 61772	-
IAEA Safety Guide NS-G-1.3	2002	Instrumentation and control systems important to safety in nuclear power plants	-	-

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INTRODUCTION

a) Technical background, main issues and organisation of this standard

This IEC standard specifically focuses on operator controls.

It is intended that this standard be used by operators of NPPs (utilities), systems evaluators and by licensors.

b) Situation of the current standard in the structure of IEC SC 45A standard series

IEC 61227 is the third level IEC SC 45A document tackling the generic issue of operator controls.

IEC 61227 is to be read in association with IEC 60964 and IEC 61772. IEC 60964 is the appropriate IEC SC 45A chapeau document for control rooms which provides guidance on control room design and which references IEC 61227. IEC 61772 establishes requirements for the application of VDU (Visual Display Units).

For more details on the structure of IEC SC 45A standard series, see item d) of this introduction.

c) Recommendations and limitations regarding the application of this standard

It is important to note that this standard establishes no additional functional requirements for safety systems.

To ensure that this standard will continue to be relevant in future years, the emphasis has been placed on issues of principle, rather than specific technologies.

d) Description of the structure of the IEC SC 45A standard series and relationships with other IEC documents and other bodies documents (IAEA, ISO)

The top-level document of the IEC SC 45A standard series is IEC 61513. It provides general requirements for I&C systems and equipment that are used to perform functions important to safety in NPPs. IEC 61513 structures the IEC SC 45A standard series.

IEC 61513 refers directly to other IEC SC 45A standards for general topics related to categorization of functions and classification of systems, qualification, separation of systems, defence against common cause failure, software aspects of computer-based systems, hardware aspects of computer-based systems, and control room design. The standards referenced directly at this second level should be considered together with IEC 61513 as a consistent document set.

At a third level, IEC SC 45A standards not directly referenced by IEC 61513 are standards related to specific equipment, technical methods, or specific activities. Usually these documents, which make reference to second-level documents for general topics, can be used on their own.

A fourth level extending the IEC SC 45A standard series, corresponds to the Technical Reports which are not normative.

IEC 61513 has adopted a presentation format similar to the basic safety publication IEC 61508 with an overall safety life-cycle framework and a system life-cycle framework and provides an interpretation of the general requirements of IEC 61508-1, IEC 61508-2 and IEC 61508-4, for the nuclear application sector. Compliance with IEC 61513 will facilitate consistency with the requirements of IEC 61508 as they have been interpreted for the nuclear