



SLOVENSKI STANDARD

SIST EN 61772:2013

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Jedrske elektrarne - Nadzorne sobe - Uporaba video prikazovalnikov (VDU)

Nuclear power plants - Control rooms - Application of visual display units (VDUs)

Kernkraftwerke - Warten - Anwendung von Sichtgeräten

Centrales nucléaires de puissance - Salles de commande - Utilisation des unités de visualisation

Ta slovenski standard je istoveten z: EN 61772:2013

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

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February 2013

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English version

**Nuclear power plants -
Control rooms -
Application of visual display units (VDUs)
(IEC 61772:2009)**

Centrales nucléaires de puissance -
Salles de commande -
Utilisation des unités de visualisation
(CEI 61772:2009)

Kernkraftwerke -
Warten -
Anwendung von Sichtgeräten
(IEC 61772:2009)

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CENELEC

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

Management Centre: Avenue Marnix 17, B - 1000 Brussels

Foreword

This document (EN 61772:2013) consists of the text of IEC 61772:2009 prepared by SC 45A "Instrumentation and control of nuclear facilities" of IEC/TC 45 "Nuclear instrumentation".

The following dates are fixed:

- latest date by which this document has to be implemented (dop) 2014-01-14
at national level by publication of an identical national standard or by endorsement
- latest date by which the national standards conflicting (dow) 2016-01-14
with this document have to be withdrawn

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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 61772:2009 was approved by CENELEC as a European Standard without any modification.

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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 When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60964	2009	Nuclear power plants - Control rooms - Design	EN 60964	2010
IEC 61226	2005 ¹⁾	Nuclear power plants - Instrumentation and control systems important to safety - Classification of instrumentation and control functions	-	-
IEC 61227	2008	Nuclear power plants - Control rooms - Operator controls	-	-
IEC 61513	-	Nuclear power plants - Instrumentation and control important to safety - General requirement for systems	EN 61513	-
IEC 61771	-	Nuclear power plants - Main control room - Verification and validation of design	-	-
IEC 61839	2000	Nuclear power plants - Design of control rooms - Functional analysis and assignment	-	-
IEC 62241	2004	Nuclear power plants - Main control room - Alarm functions and presentation	-	-
ISO 11064	Series	Ergonomic design of control centres	EN ISO 11064	Series
IAEA Safety Guide NS-G-1.3	2002	Instrumentation and control systems important to safety in nuclear power plants	-	-

¹⁾ IEC 61226 is superseded by IEC 61226:2009, which is harmonised as EN 61226:2010.

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IEC 61772

Edition 2.0 2009-04

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Nuclear power plants – Control rooms – Application of visual display units (VDUs)

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Centrales nucléaires de puissance – Salles de commande – Utilisation des unités de visualisation

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

NUCLEAR POWER PLANTS – CONTROL ROOMS – APPLICATION OF VISUAL DISPLAY UNITS (VDUs)

FOREWORD

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International Standard IEC 61772 has been prepared by subcommittee 45A: Instrumentation and control of nuclear facilities, of IEC technical committee 45: Nuclear instrumentation.

This second edition cancels and replaces the first edition published in 1995 and constitutes a technical revision.

The main technical changes with respect to the previous edition are as follows:

- Expand the previous text to cover the use of Large Screen Displays (LSDs), to provide improved recommendations on the use of colour, and to improve the coverage of back-fit or upgrade applications.
- Provide references to relevant normative standards.
- Harmonise terminology according to SC 45A guidance.
- Cover experience of VDU systems design and use.
- Present examples of good practice, including methods of access to displays of current interest.

The text of this standard is based on the following documents:

FDIS	Report on voting
45A/728/FDIS	45A/740/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

The committee has decided that the contents of this publication will remain unchanged until the maintenance result date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

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INTRODUCTION

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

During the work to create a standard for the design of control rooms of nuclear power plants, it became obvious that the volume of such a standard would become very large. Therefore the standard was split into one main standard (IEC 60964 with an annex) and some supplementary standards. This standard is one of the supplementary standards.

It is intended that the Standard be used by operators of NPPs (utilities), designers, systems evaluators and by licensors.

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

IEC 61772 is the third level IEC SC 45A document tackling the generic issue of use of VDUs in NPPs Main Control Room.

IEC 61772 is to be read in conjunction with IEC 60964 which is the appropriate IEC SC 45A document which provides general requirements concerning the design of Nuclear Power Plants main control rooms. IEC 61227, IEC 61771, IEC 62241 and IEC 61839 should also be read with this standard.

For more details on the structure of the 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 the 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 45 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 industry. In this framework IEC 60880 and IEC 62138 correspond to IEC 61508-3 for the nuclear application sector.

IEC 61513 refers to ISO as well as to IAEA 50-C-QA (now replaced by IAEA GS-R-3) for topics related to quality assurance (QA).

The IEC SC 45A standards series consistently implements and details the principles and basic safety aspects provided in the IAEA code on the safety of NPPs and in the IAEA safety series, in particular the Requirements NS-R-1, establishing safety requirements related to the design of Nuclear Power Plants, and the Safety Guide NS-G-1.3 dealing with instrumentation and control systems important to safety in Nuclear Power Plants. The terminology and definitions used by SC 45A standards are consistent with those used by the IAEA.

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