SLOVENSKI STANDARD
oSIST prEN IEC 62859:2020

01-junij-2020

Jedrske elektrarne - Merilna in nadzorna oprema - Zahteve za usklajevanje varnosti in kibernetske varnosti (IEC 62859:2016+A1:2019)

Nuclear power plants - Instrumentation and control systems - Requirements for coordinating safety and cybersecurity (IEC 62859:2016+A1:2019)

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Centrales nucléaires de puissance - Systèmes d'instrumentation et de contrôle-commande - Exigences pour coordonner sûreté et cybersécurité (IEC 62859:2016+A1:2019)

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Ta slovenski standard je istoveten z: **prEN IEC 62859:2020**

ICS:

27.120.20	Jedrske elektrarne. Varnost	Nuclear power plants. Safety

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2003-01.Slovenski inštitut za standardizacijo. Razmnoževanje celote ali delov tega standarda ni dovoljeno.

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

DRAFT
prEN IEC 62859

March 2020

ICS

English Version

Nuclear power plants - Instrumentation and control systems - Requirements for coordinating safety and cybersecurity (IEC 62859:2016 + A1:2019)

Centrales nucléaires de puissance - Systèmes d'instrumentation et de contrôle-commande - Exigences pour coordonner sûreté et cybersécurité (IEC 62859:2016 + A1:2019)

To be completed
(IEC 62859:2016 + A1:2019)

This draft European Standard is submitted to CENELEC members for enquiry.
Deadline for CENELEC: 2020-05-29.

The text of this draft consists of the text of IEC 62859:2016 + A1:2019.

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If this draft becomes a European Standard, CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

This draft European Standard was established by CENELEC in three official versions (English, French, German).
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European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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European foreword

This document (prEN IEC 62859:2020) consists of the text of document IEC 62859:2016, prepared by IEC/TC 45 "Nuclear instrumentation".

This document is currently submitted to the CENELEC Enquiry.

The following dates are proposed:

• latest date by which the existence of this document has to be announced at national level	(doa)	dor + 6 months
• latest date by which this document has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	dor + 12 months
• latest date by which the national standards conflicting with this document have to be withdrawn	(dow)	dor + 36 months (to be confirmed or modified when voting)

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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 and security measures in the subject-matter covered by this standard.

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Bibliography

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 61508-1	NOTE Harmonized as EN 61508-1 (not modified).
IEC 61508-2	NOTE Harmonized as EN 61508-2 (not modified).
IEC 61508-3	NOTE Harmonized as EN 61508-3 (not modified).
IEC 61508-4	NOTE Harmonized as EN 61508-4 (not modified).

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Annex ZA
(normative)
Normative references to international publications with their corresponding European publications

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. 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.

Publication	Year	Title	EN/HD	Year
IEC 60709	2004	Nuclear power plants - Instrumentation and control systems important to safety - Separation	EN 60709	2010
IEC 60880	2006	Nuclear power plants - Instrumentation and control systems important to safety - Software aspects for computer-based systems performing category A functions	EN 60880	2009
IEC 61500	2009	Nuclear power plants - Instrumentation and control important to safety - Data communication in systems performing category A functions	EN 61500	2011
IEC 61513	2011	Nuclear power plants - Instrumentation and control important to safety - General requirements for systems	EN 61513	2013
IEC 62138	2004	Nuclear power plants - Instrumentation and control important for safety - Software aspects for computer-based systems performing category B or C functions	EN 62138	2009
IEC 62340	-	Nuclear power plants - Instrumentation and control systems important to safety - Requirements for coping with common cause failure (CCF)	EN 62340	-
IEC 62566	2012	Nuclear power plants - Instrumentation and control important to safety - Development of HDL-programmed integrated circuits for systems performing category A functions	EN 62566	2014
IEC 62645	2014	Nuclear power plants – Instrumentation and control systems – Requirements for security programmes for computer-based systems		

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IEC 62859

Edition 1.0 2016-10

INTERNATIONAL STANDARD

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Nuclear power plants – Instrumentation and control systems – Requirements for coordinating safety and cybersecurity

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INTERNATIONAL
ELECTROTECHNICAL
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COMMISSION
ELECTROTECHNIQUE
INTERNATIONALE

ICS 27.120.20

ISBN 978-2-8322-3719-9

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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NUCLEAR POWER PLANTS – INSTRUMENTATION AND CONTROL SYSTEMS – REQUIREMENTS FOR COORDINATING SAFETY AND CYBERSECURITY

FOREWORD

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International Standard IEC 62859 has been prepared by subcommittee 45A: Instrumentation, control and electrical systems of nuclear facilities, of IEC technical committee 45: Nuclear instrumentation.

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

FDIS	Report on voting
45A/1104/FDIS	45A/1118/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.

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The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC website 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

I&C systems have evolved during the last decades from non-digital equipment and stand-alone environments to digital technologies and interconnected systems. Such an evolution exposes them to risks related to cyberattacks. In addition to well-established safety-oriented provisions, more recent cybersecurity requirements and controls now apply to the same systems. A normative framework is needed to master the interactions and potential side-effects when safety and cybersecurity provisions converge on the same I&C systems and architectures, taking into account the nuclear I&C specifics and the SC 45A related standards.

This standard specifically focuses on the issue of requirements for coordinating safety and cybersecurity provisions for I&C programmable digital systems and architectures. It defines both generic principles and guidance for practical situations to integrate cybersecurity requirements in nuclear I&C architectures and systems, fundamentally tailored for safety. Technical but also conceptual, organizational and procedural aspects are covered.

It is intended that this standard be used by designers and operators of nuclear power plants (NPPs) (utilities), systems evaluators, vendors and subcontractors, and by licensors.

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

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IEC 62859 is at the second level of the IEC SC 45A standard series. It is to be considered as bridging IEC 62645 (also at the second level of the IEC SC 45A standard series) and IEC 61513, the top level document of the IEC SC 45A standard series. Regarding the specific theme of cybersecurity, IEC 62645 is the top-level in the SC 45A standard series. Both IEC 62645 and IEC 62859 are considered formally as second level documents with respect to IEC 61513, although IEC 61513:2011 does not actually ensure proper reference to and consistency with them (this will be done in a future revision of IEC 61513).

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For a generic description of 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 additional requirements for I&C programmable digital systems and architectures, with regard to the coordination between safety and cybersecurity, and clarifies the processes by which I&C programmable digital systems are designed, implemented and operated in nuclear power plants. Aspects for which special requirements and recommendations have been produced are:

– IAEA guidance on I&C;
– IAEA guidance on computer security at nuclear facilities;
– regulatory interpretations for country specific requirements.

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 documents of the IEC SC 45A standard series are IEC 61513 and IEC 63046[1]. IEC 61513 provides general requirements for I&C systems and equipment that are used to perform functions important to safety in NPPs. IEC 63046 provides general requirements for electrical power systems of NPPs; it covers power supply systems including the supply

1 In preparation. Stage at the time of publication: IEC ANW 63046:2016.