



BSI Standards Publication

Guidelines for in-service inspections for primary coolant circuit components of light water reactors

Part 2: Magnetic particle and penetrant testing

National foreword

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**Guidelines for in-service inspections
for primary coolant circuit
components of light water reactors —**

**Part 2:
Magnetic particle and penetrant testing**

*Lignes directrices pour les contrôles périodiques des composants du
circuit primaire des réacteurs à eau légère —*

Partie 2: Contrôle par poudre magnétique et ressuage





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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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A list of all parts in the ISO 20890 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Guidelines for in-service inspections for primary coolant circuit components of light water reactors —

Part 2: Magnetic particle and penetrant testing

1 Scope

This document gives guidelines for pre-service inspections (PSI) and in-service inspections (ISI) of the surfaces using the magnetic particle testing and penetrant testing on components of the reactor coolant circuit of light water reactors. This document is also applicable to other components of nuclear installations.

Test systems for the localisation of surface inhomogeneities and requirements for test personnel, test devices, test media, accessories as well as optical auxiliaries, the preparation and implementation of the test as well as the recording are defined.

NOTE 1 Data concerning the test section, test extent, inspection period, inspection interval and evaluation of indications are defined in the applicable national nuclear safety standards.

NOTE 2 In general, this document is in accordance with ISO 3452 and ISO 9934 series. This document provides details to be considered in the standard test procedure (see [Annex A](#)).

2 Normative references

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.

ISO 3059, *Non-destructive testing — Penetrant testing and magnetic particle testing — Viewing conditions*

ISO 3452-1, *Non-destructive testing — Penetrant testing — Part 1: General principles*

ISO 3452-2, *Non-destructive testing — Penetrant testing — Part 2: Testing of penetrant materials*

ISO 3452-3, *Non-destructive testing — Penetrant testing — Part 3: Reference test blocks*

ISO 3452-4, *Non-destructive testing — Penetrant testing — Part 4: Equipment*

ISO 3452-5, *Non-destructive testing — Penetrant testing — Part 5: Penetrant testing at temperatures higher than 50 °C*

ISO 3452-6, *Non-destructive testing — Penetrant testing — Part 6: Penetrant testing at temperatures lower than 10 °C*

ISO 8596, *Ophthalmic optics — Visual acuity testing — Standard and clinical optotypes and their presentation*

ISO 9934-1, *Non-destructive testing — Magnetic particle testing — Part 1: General principles*

ISO 9934-2:2015, *Non-destructive testing — Magnetic particle testing — Part 2: Detection media*

ISO 9934-3, *Non-destructive testing — Magnetic particle testing — Part 3: Equipment*

ISO 9712:2012, *Non-destructive testing — Qualification and certification of NDT personnel*