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

**Part 5:
Eddy current testing of steam
generator heating tubes**

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

*Partie 5: Essai de tuyaux de chauffage pour générateurs de vapeur
par courant de Foucault*



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Foreword

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

Part 5:

Eddy current testing of steam generator heating tubes

1 Scope

This document gives guidelines for pre-service inspection (PSI) and in-service inspections (ISI) by eddy current tests on non-ferromagnetic steam generator heating tubes of light water reactors, whereby the test is carried out using mechanised test equipment outwards from the tube inner side.

An in-service eddy current test of steam generator heating tube plugs as a component of the primary circuit is not an object of this document. Owing to the different embodiments of steam generator heating tube plugs, the use of specially adapted test systems to be qualified is necessary.

Test systems for the localisation of inhomogeneities (surface) and requirements for test personnel, test devices, the preparation of test and device systems, the implementation of the testing as well as the recording are defined.

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

It is recommended that the technical specifications are based on experience on U-tube bends with even bend radius (similar to the S/KWU design). To test other kind of tube bends (e.g. U-tube bends with two 90° bends) further qualifications will be provided.

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

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

ISO 12718, *Non-destructive testing — Eddy current testing — Vocabulary*

ISO 15548-1, *Non-destructive testing — Equipment for eddy current examination — Part 1: Instrument characteristics and verification*

ISO 15548-2, *Non-destructive testing — Equipment for eddy current examination — Part 2: Probe characteristics and verification*

ISO 15548-3, *Non-destructive testing — Equipment for eddy current examination — Part 3: System characteristics and verification*

ISO 15549, *Non-destructive testing — Eddy current testing — General principles*

ISO 18490, *Non-destructive testing — Evaluation of vision acuity of NDT personnel*