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**N285.4-14**

# **Periodic inspection of CANDU nuclear power plant components**

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In addition to the members listed above, the Technical Committee would like to recognize Tom Boyd of Babcock & Wilcox Canada Ltd and Marjorie Harmsen of Bruce Power Inc. for their contributions to the development of this Standard.

# Preface

This is the sixth edition of CSA N285.4, *Periodic inspection of CANDU nuclear power plant components*. It supersedes the previous editions, published in 2009, 2005, 1994, 1983, and 1978. It is one of the CSA N285 series of Standards on CANDU® nuclear power plant components.

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This Standard provides uniform rules for the periodic inspection of pressure-retaining systems and components in CANDU nuclear power plants. It has been revised and updated to account for new knowledge and experience gained from CANDU research and operations, advances in technology, and changes to the regulatory framework in Canada.

The CSA N-Series of Standards provides an interlinked set of requirements for the management of nuclear facilities and activities. CSA N286 provides overall direction to management to develop and implement sound management practices and controls, while the other CSA nuclear Standards provide technical requirements and guidance that support the management system. This Standard works in harmony with CSA N286 and does not duplicate the generic requirements of CSA N286; however, it may provide more specific direction for those requirements.

Users of this Standard are cautioned that, due to restructuring, a clause in this edition might not be directly comparable to the clause with the corresponding number in the previous edition of this Standard. Users are also reminded that the design, manufacture, construction, commissioning, operation, inspection, maintenance, and decommissioning of nuclear facilities in Canada are subject to the provisions of the *Nuclear Safety and Control Act* and Regulations as well as other regulatory documents of the Canadian Nuclear Safety Commission (CNSC). The CNSC might impose additional requirements to those specified in this Standard.

This Standard was prepared by the Technical Committee on Periodic Inspection of CANDU Nuclear Power Plant Components, under the jurisdiction of the Strategic Steering Committee on Nuclear Standards, and has been formally approved by the Technical Committee.

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- 1) *Use of the singular does not exclude the plural (and vice versa) when the sense allows.*
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- c) *wording of the proposed change; and*
- d) *rationale for the change.*

# N285.4-14

## ***Periodic inspection of CANDU nuclear power plant components***

### **1 Scope**

#### **1.1**

This Standard defines requirements for the periodic inspection of pressure retaining systems, components, and supports that form part of a CANDU nuclear power plant.

Periodic inspection (see Annex A for additional guidance) is considered to include the fluid boundary portions of components and piping, including their supports that comprise

- a) systems containing fluid that directly transports heat from nuclear fuel;
- b) systems essential for the safe shutdown of the reactor or the safe cooling of the fuel, or both, in the event of a process system failure; and
- c) other systems or components whose failure could jeopardize the integrity of the systems described in Item a) or b), or both.

In addition, for components exposed to conditions beyond the known experience base, and where such components constitute part of a vital system, the components may be considered suitable for inclusion in the periodic inspection program, as supplementary inspections.

#### **1.2**

This Standard addresses

- a) failure aspects;
- b) classification of areas subject to inspection;
- c) provision for access;
- d) inspection techniques and procedures;
- e) personnel qualifications;
- f) frequency of inspection;
- g) responsibilities;
- h) documentation;
- i) records;
- j) evaluation of inspection results;
- k) dispositioning; and
- l) repair, replacement, and modification requirements.

#### **1.3**

In this Standard, “shall” is used to express a requirement, i.e., a provision that the user is obliged to satisfy in order to comply with the standard; “should” is used to express a recommendation or that which is advised but not required; and “may” is used to express an option or that which is permissible within the limits of the standard.

Notes accompanying clauses do not include requirements or alternative requirements; the purpose of a note accompanying a clause is to separate from the text explanatory or informative material.