N290.20:21

Aging management requirements for nuclear power plants

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Preface

This is the first edition of CSA N290.20, *Aging management requirements for nuclear power plants*.

The CSA N-Series Standards provide 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 Group 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 might provide more specific direction for those requirements.

This Standard reflects the operating experience of the Canadian nuclear power industry.

Users of this Standard are reminded that the design, manufacture, construction, commissioning, operation, and decommissioning of nuclear facilities in Canada are subject to the provisions of the *Nuclear Safety and Control Act* and its supporting Regulations.

This Standard was prepared by the Subcommittee on Aging Management Requirements for Nuclear Power Plants, under the jurisdiction of the Technical Committee on Reactor Control Systems, Safety Systems, and Instrumentation for Nuclear Power Plants and the Strategic Steering Committee on Nuclear Standards, and has been formally approved by the Technical Committee.

Notes:

1) *Use of the singular does not exclude the plural (and vice versa) when the sense allows.*
2) *Although the intended primary application of this Standard is stated in its Scope, it is important to note that it remains the responsibility of the users of the Standard to judge its suitability for their particular purpose.*
3) *This Standard was developed by consensus, which is defined by* CSA Policy governing standardization — Code of good practice for standardization *as "substantial agreement. Consensus implies much more than a simple majority, but not necessarily unanimity". It is consistent with this definition that a member may be included in the Technical Committee list and yet not be in full agreement with all clauses of this Standard.*
4) *To submit a request for interpretation of this Standard, please send the following information to inquiries@csagroup.org and include "Request for interpretation" in the subject line:*
   a) *define the problem, making reference to the specific clause, and, where appropriate, include an illustrative sketch;*
   b) *provide an explanation of circumstances surrounding the actual field condition; and*
   c) *where possible, phrase the request in such a way that a specific "yes" or "no" answer will address the issue.*

   Committee interpretations are processed in accordance with the CSA Directives and guidelines governing standardization *and are available on the* Current Standards Activities *page at standardsactivities.csa.ca.*
5) *This Standard is subject to review within five years from the date of publication. Suggestions for its improvement will be referred to the appropriate committee. To submit a proposal for change, please send the following information to inquiries@csagroup.org and include "Proposal for change" in the subject line:*
   a) *Standard designation (number);*
   b) *relevant clause, table, and/or figure number;*
   c) *wording of the proposed change; and*
   d) *rationale for the change.*

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Aging management requirements for nuclear power plants

1 Scope

1.1

This Standard specifies requirements and guidance for the aging management of nuclear power plants (NPPs). Specifically, this Standard addresses the aging management of

a) structures, systems, and components (SSCs) that are important to safety; and
b) SSCs that, in the case of failure, would prevent SSCs important to safety from performing their safety function.

Note: *Other nuclear facilities may apply this Standard using a graded approach commensurate with risk.*

1.2

This Standard addresses the integration of NPP programs to support aging management.

1.3

This Standard applies to the following life cycle phases of the NPP:

a) design;
b) construction (including procurement, fabrication and installation, delayed construction, storage, and transportation activities);
c) commissioning;
d) operation (including long-term operation and extended shutdown, if applicable); and
e) decommissioning.

1.4

This Standard addresses two aspects of aging management of SSCs: physical aging and non-physical aging (obsolescence).

1.5

This Standard excludes management of obsolescence that is due to non-equipment-related drivers.

Note: *For example, changes in current regulations, codes and standards, or loss of staff knowledge due to workforce change.*

1.6

This Standard does not address the broader topic of asset management.

Note: *Although asset management is not addressed in this Standard, the concepts and guidance may be adapted and used for establishing strategies to optimize the management of facility assets.*

1.7

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

