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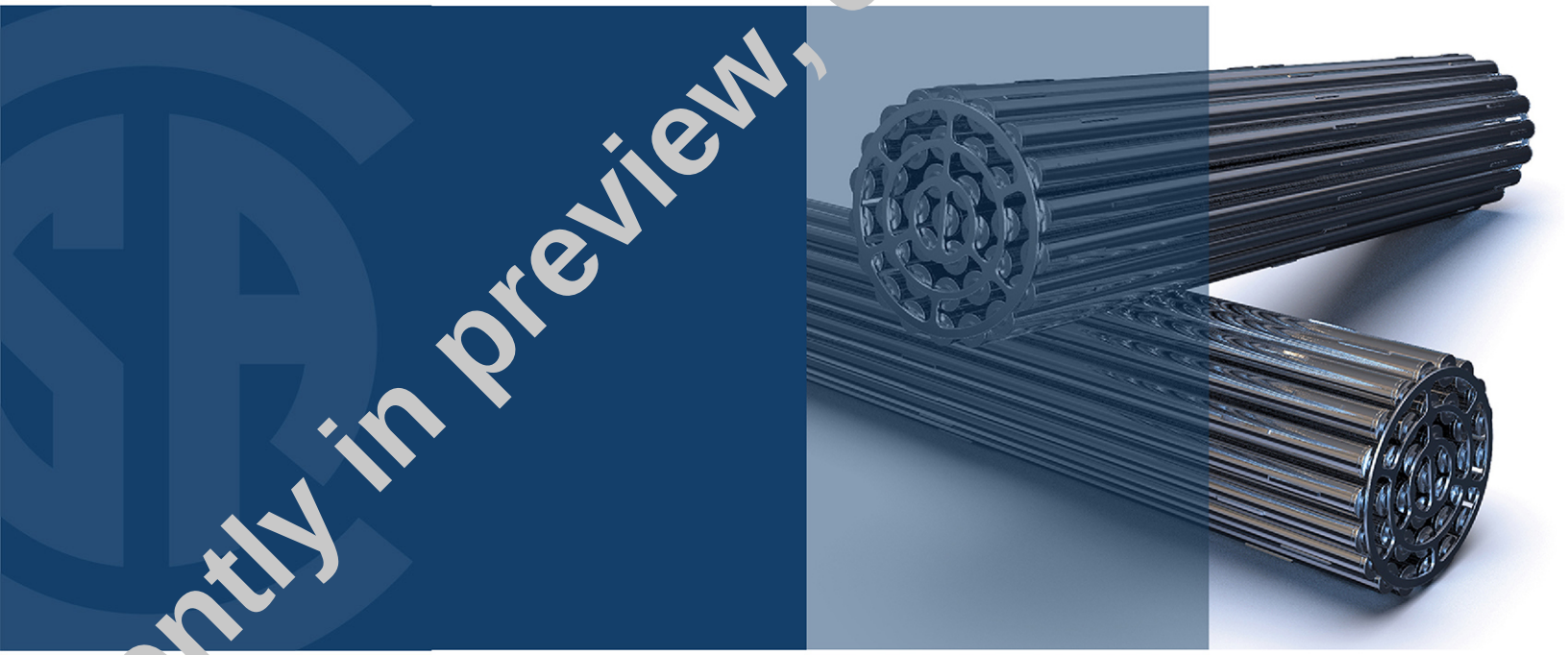
CSA N288.7:15
(reaffirmed 2020)

Groundwater protection programs at Class I nuclear facilities and uranium mines and mills



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CSA N288.7:15
June 2015

Title: *Groundwater protection programs at Class I nuclear facilities and uranium mines and mills*

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CSA N288.7:15

Groundwater protection programs at Class I nuclear facilities and uranium mines and mills

Published in June 2015 by CSA Group
A not-for-profit private sector organization
178 Rexdale Boulevard, Toronto, Ontario, Canada M9W 1R3

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ISBN 978-1-77139-699-8

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Preface

This is the first edition of CSA N288.7 *Groundwater protection programs at Class I nuclear facilities and uranium mines and mills.*

The purpose of this Standard is to provide requirements and guidance which facilitate groundwater protection at *Class 1 nuclear facilities and uranium mines and mills*. Compliance with the Standard will allow facilities to demonstrate that they will not pose an unreasonable risk to the environment or the health and safety of humans and non-human biota from groundwater.

The CSA N-Series Standards provide an interlinked set of requirements for the management of nuclear facilities and activities. The CSA N286 Standard provides overall direction to management to develop and implement sound management practices and controls while the other CSA nuclear Standards provide specific 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 meeting those requirements.

This Standard addresses the design, implementation, and management of a groundwater protection program that incorporates best practices in Canada and internationally.

Users of this Standard are reminded that additional and site-specific requirements might be specified by federal, provincial/territorial, or municipal authorities. This Standard should not be considered a replacement for the requirements contained in any

a) applicable federal/territorial, or provincial statute, including the *Nuclear Safety and Control Act*; or
b) regulation, license, or permit issued pursuant to an applicable statute.

This Standard was prepared by the Subcommittee on Groundwater Protection Programs at Class I Nuclear Facilities and Uranium Mines and Mills under the jurisdiction of the Technical Committee on Environmental Management for Nuclear Facilities and the Nuclear Strategic Steering Committee, 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 user 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 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.*

1 Scope

1.1 Facilities

1.1.1 Types of facilities

1.1.1.1

This Standard addresses the design and operation of GWPPs for Class I nuclear facilities and uranium mines and mills.

Notes:

1) *In this Standard, any type of Class I nuclear facility and uranium mine and mill (refer to the definition of nuclear facility in Clause 3.1) is included in the term "nuclear facilities".*
2) *Conventional waste management facilities on a Class I nuclear facility (or uranium mine and mill) are included in the scope of this Standard.*
3) *The applicability and suitability of this Standard to nuclear facilities will require professional judgment, knowledge of the relevant geological and hydrogeological conditions (e.g., travel time, position of freshwater aquifers, etc.), and validation of the CSM. For example, due to the potentially different environment encountered at great depths, portions of this Standard are likely not applicable to all aspects of deep sub-surface facilities. Groundwater protection for such Class I facilities will be assured in the permitting and licensing process, and portions of this Standard can be used as applicable.*
4) *Not all Class I nuclear facilities and uranium mines and mills will need a GWPP. See Clause 5 on criteria for establishing a GWPP.*

1.1.1.2

This Standard may also apply to the design and operation of GWPPs for

a) Class II nuclear facilities; and
b) facilities that use or store naturally occurring radioactive materials.

Note: *In these situations, however, the operator of the nuclear facility is responsible for determining the applicability and suitability of this Standard in consultation with the AHJ.*

1.1.2 Facility lifecycle

This Standard addresses monitoring performed during

a) baseline characterization;
b) site preparation, construction, and commissioning;
c) operations;
d) refurbishment or restarting after a prolonged shut-down;
e) decommissioning; and
f) post-decommissioning prior to abandonment and institutional control.

Note: *The nature and extent of groundwater monitoring requirements change over the lifecycle of the facility.*

1.2 Operating conditions

1.2.1 Monitoring during normal operations

The monitoring described in this Standard is applicable where nuclear and hazardous substances might be released to groundwater during normal operations over the lifecycle of a nuclear facility.

Note: *Any release resulting from a deviation from routine operational practice that is expected to occur once or several times during the operating lifetime of a nuclear facility or licensed activity (i.e., reasonably foreseeable upset events, also known as anticipated operational occurrences including leaks and spills) is considered part of normal operation. This definition of operating conditions is consistent with usage in CSA N288.4, CSA N288.5, and CSA N288.6.*