



# Probabilistic safety assessment for nuclear power plants



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# Contents

Technical Committee on Reactor Safety and Risk Management	7
Subcommittee on Probabilistic Safety Assessment for Nuclear Power Plants	9
Preface	10
<b>0 Introduction</b>	<b>12</b>
0.1 General	12
0.2 Objectives of a PSA	12
0.3 Reactor technology	12
<b>1 Scope</b>	<b>12</b>
1.1 Reactors and other potential sources	12
1.2 New and existing reactors	13
1.3 Single and multi-reactor facilities	13
1.4 Level 1 PSA and Level 2 PSA	13
1.5 Whole-site PSA	13
1.6 Malevolent acts	13
1.7 Terminology	13
1.8 Additional terminology	14
<b>2 Reference publications</b>	<b>14</b>
<b>3 Definitions and abbreviations</b>	<b>16</b>
3.1 Definitions	16
3.2 Abbreviations	22
<b>4 General requirements</b>	<b>23</b>
4.1 Systematic approach	23
4.2 Graded approach	24
4.3 Whole-site PSA	24
4.4 Level of detail	24
4.4.1 Level of detail	24
4.4.2 Radioactive sources	25
4.4.3 Treatment of similar radioactive sources	25
4.4.4 Selection of a representative radioactive source	25
4.5 Best estimate approach	25
4.5.1 Use of the best estimate approach	25
4.5.2 Use of conservative approaches	25
4.5.3 Limitations on the use of conservative approaches	26
4.5.4 Sensitivity analysis for conservative approaches	26
4.6 Model consistency	26
4.6.1 Existing NPP PSA consistency with the plant conditions	26
4.6.2 PSA consistency with the plant conditions at the design stage	26
4.6.3 New NPP PSA consistency with the plant conditions at the operating stage	26
4.6.4 Common representation	26
4.7 Use of screening approaches	26

4.7.1	Purpose of the screening approach in PSA	27
4.7.2	Screening approaches and methods	27
4.7.3	Screening of potential risk contributors	27
4.7.4	Basis for screening out a risk contributor	27
4.7.5	Confirmation of screening through walkdown	27
4.8	Expert judgement	27
4.8.1	Use of expert judgement	27
4.8.2	Justification of expert judgement	27
4.8.3	Expert judgement and sensitivity analysis	28
4.8.4	Expert judgement and independent review	28
4.9	Peer review	28
4.9.1	PSA peer review	28
4.9.2	PSA peer review process	28
4.10	PSA applications	28
4.10.1	PSA use for safety management	28
4.10.2	Uncertainty considerations in PSA applications	29
<b>5</b>	<b>Potential sources of radioactive releases</b>	<b>29</b>
5.1	Comprehensive list	29
5.1.1	Consideration of potential radioactive sources	29
5.1.2	Review of the list of radioactive sources	29
5.2	Screening potential sources	29
5.2.1	Screening of radioactive sources	29
5.2.2	Screening criteria for radioactive sources	30
<b>6</b>	<b>Hazard identification</b>	<b>30</b>
6.1	Range of hazards	30
6.1.1	List of potential hazards	30
6.1.2	Scope of potential hazards	30
6.1.3	Additional hazards	30
6.1.4	Confirmatory walkdown of potential hazards list	30
6.1.5	Review of potential hazards list	31
6.2	Subdivision of hazards	31
6.2.1	Subdivision of hazard	31
6.2.2	Justification of subdivision of hazards	31
6.3	Combinations of hazards	31
6.3.1	Combination of hazards	31
6.3.2	Types of combinations of hazards	31
6.4	Hazard screening	31
6.4.1	Screening approaches	31
6.4.2	Exclusion of hazard combinations	32
6.4.3	Screening criteria of hazard combinations	32
6.4.4	Subdivided hazards	32
6.4.5	Multi-unit hazards	32
<b>7</b>	<b>Plant operating states</b>	<b>33</b>
7.1	Comprehensive list of POSs	33
7.2	Planned evolutions	33
7.3	Unplanned evolutions	33
7.4	Attributes of a POS	33

7.5	Multi-reactor POSs	34
7.6	Screening POSs	34
7.7	Grouping POSs	34
7.7.1	Similarity of POSs	34
7.7.2	Bounding POS	34
<b>8</b>	<b>Level 1 PSA</b>	<b>34</b>
8.1	Additional provisions for power reactors	34
8.2	Scope and elements of a Level 1 PSA	34
8.2.1	Scope of a Level 1 PSA	34
8.2.2	Elements of a Level 1 PSA	35
8.3	Hazard characterization for Level 1 PSA	35
8.4	Accident sequence analysis	35
8.4.1	Scope of accident sequence analysis	35
8.4.2	Plant response	35
8.4.3	Process upsets	36
8.4.4	Mitigation	36
8.4.5	Dependency	36
8.4.6	End state	36
8.4.7	Event tree	36
8.5	Success criteria	36
8.5.1	Definition of success criteria	36
8.5.2	Basis for success criteria	36
8.5.3	Justification of success criteria	36
8.5.4	Sequence specific success criteria	37
8.5.5	Common success criteria	37
8.5.6	Validity of common success criteria	37
8.5.7	Sensitivity to common success criteria	37
8.6	System analysis	37
8.6.1	General requirements	37
8.6.2	Fault trees	38
8.6.3	Common cause failures	38
8.7	Human reliability analysis	39
8.7.1	General requirements	39
8.7.2	Human error probabilities	41
8.8	Basic event data analysis	42
8.8.1	Basic event probability	42
8.8.2	Use of mean probability	42
8.8.3	Use of point estimate probability	42
8.8.4	Basic event data sources	42
8.8.5	Use of operating experience	42
8.8.6	Exclusion of operating experience	43
8.8.7	Blending data sources	43
8.8.8	Justification of blended data sources	43
8.8.9	Uncertainty analysis of basic event probability	43
8.8.10	Sensitivity analysis of basic event probability	43
8.9	Level 1 PSA quantification	43
8.9.1	General	43
8.9.2	Model integration	43

8.9.3	Circular logic	43
8.9.4	Truncation limit	44
8.9.5	Quantification methodology	44
8.9.6	Cutset review	44
8.9.7	Cliff-edge effects	44
8.10	Sensitivity analysis	44
8.10.1	Purpose of sensitivity analysis	45
8.10.2	Scope of sensitivity analysis	45
8.10.3	Types of sensitivity analysis	45
8.10.4	Justification of sensitivity analysis	45
8.10.5	PSA inputs reassessment criteria	45
8.11	Uncertainty analysis	45
8.11.1	Purpose of uncertainty analysis	45
8.11.2	Scope of uncertainty analysis	45
8.11.3	Completeness uncertainty	45
8.11.4	Modelling uncertainty	45
8.11.5	Parametric uncertainty	46
8.11.6	Parametric uncertainty distributions	46
8.11.7	Parametric uncertainty analysis	46
8.12	Importance analysis	46
8.12.1	Important contributors	46
8.12.2	Types of importance analysis	46
8.12.3	Justification of importance analysis	46
8.12.4	Scope of importance analysis	46
8.12.5	Importance measures	46
8.12.6	Confirmation of importance analysis results	47
8.12.7	Reassessment of important contributors	47
8.13	Level 1 PSA for other POSs	47
<b>9</b>	<b>Level 2 PSA</b>	<b>47</b>
9.1	Additional provisions for power reactors	47
9.2	Scope and elements of Level 2 PSA	47
9.2.1	Scope of a Level 2 PSA	47
9.2.2	Elements of a Level 2 PSA	47
9.3	Interface with Level 1 PSA	48
9.3.1	Grouping of Level 1 PSA sequences	48
9.3.2	Justification for grouping of Level 1 PSA sequences	48
9.3.3	Representative sequences	48
9.4	Accident progression analysis	48
9.4.1	NPP-specific accident progression analysis	48
9.4.2	Reference NPP selection	48
9.4.3	Reference NPP justification	48
9.4.4	Scope of accident progression analysis	49
9.4.5	Relevant phenomena for accident progression analysis	49
9.4.6	Thermal hydraulic analysis	49
9.4.7	Simulated duration for accident progression analysis	49
9.4.8	Results of accident progression analysis	49
9.5	Level 2 PSA human reliability analysis	49
9.6	Level 2 PSA data analysis	49

9.7	Release categorization and source term analysis	50
9.7.1	Accident progression end states	50
9.7.2	Grouping accident progression end states into release categories	50
9.7.3	Scope of source term analysis	50
9.7.4	Factors for source term analysis	50
9.7.5	Grouping of fission products	50
9.8	Level 2 PSA quantification	50
9.8.1	General	50
9.8.2	Model integration	50
9.8.3	Dependencies	51
9.8.4	Circular logic	51
9.8.5	Truncation limit	51
9.8.6	Rare event approximation	51
9.8.7	Cutset review	51
9.8.8	Cliff-edge effects	51
9.8.9	Large release sequences review	51
9.9	Level 2 PSA sensitivity analysis and attributes	51
9.9.1	Level 2 PSA sensitivity analysis	51
9.9.2	Level 2 PSA sensitivity analysis attributes	51
9.10	Level 2 PSA uncertainty analysis	51
9.11	Level 2 PSA importance analysis	52
9.11.1	Level 2 PSA importance analysis requirements	52
9.11.2	Additional importance analysis for Level 2 PSA	52
9.11.3	Phenomenological event importance analysis	52
9.12	Level 2 PSA for other POSs	52

## 10 PSA update 52

10.1	General	52
10.1.1	Purpose of PSA update	52
10.1.2	PSA update process	52
10.1.3	PSA update criteria	52
10.1.4	Evaluation of changes	52
10.1.5	Changes to be considered	53
10.2	Periodic updates	53
10.3	Non-routine updates	53
10.3.1	Requirement for non-routine update	53
10.3.2	Non-routine update criteria	53
10.3.3	Scope of non-routine update	54
10.3.4	Applicable causes for non-routine update	54

## 11 Documentation 54

11.1	Initial preparation	54
11.1.1	Documentation requirements	54
11.1.2	Residual risk	54
11.1.3	Uncertainty	54
11.2	Periodic updates	55
11.3	Non-routine updates	55
11.3.1	Scope of change	55
11.3.2	Impact of change	55

<b>12</b>	<b>Application of PSA to the management of BDBAs</b>	<b>55</b>
12.1	General requirements	55
12.2	Accident management procedures	56
12.3	Emergency planning	56
12.4	Cliff-edge effects	56
12.5	Design extension conditions	57
12.5.1	Identification of DECAs	57
12.5.2	Assessment of DECAs	57
<b>13</b>	<b>Considerations for whole-site PSA</b>	<b>57</b>
13.1	Approach for whole-site PSA	57
13.2	Consideration for whole-site PSA	57
13.3	Integrated approach for whole-site PSA	58
13.4	Discrete approach for whole-site PSA	58
13.5	Composite approach for whole-site PSA	58
13.6	Aggregation of risk metrics	58
13.7	Justification of approach for whole-site PSA	59
<hr/>		
Annex A (informative)	— Examples of hazards	60
Annex B (informative)	— Examples of potential POSs	62
Annex C (normative)	— Internal events	65
Annex D (normative)	— Internal fires	73
Annex E (normative)	— Seismic events	83
Annex F (normative)	— Internal floods	92
Annex G (normative)	— High winds	100
Annex H (informative)	— PSA applications	107
Annex I (informative)	— Aggregating risk metrics for whole-site PSA	109

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# Preface

This is the second edition of CSA N290.17, *Probabilistic safety assessment for nuclear power plants*. It supersedes the previous edition published in 2017.

This Standard provides requirements regarding preparation and maintenance of a probabilistic safety assessment at a water-cooled nuclear power plant. It reflects Canadian regulatory requirements, operating experience of the Canadian nuclear industry, and international good practices, including requirements of the International Atomic Energy Agency (IAEA), the American Society of Mechanical Engineers (ASME), and the American Nuclear Society (ANS).

Changes to this edition include

- a) the addition of OPEX on POS duration;
- b) guidance on mission time based on industry developments;
- c) clarification of qualitative and quantitative screening criteria in Annex E;
- d) clarification and streamlining of clauses to improve readability;
- e) updating the publications listed in Clause 2 with latest editions; and
- f) alignment of definitions with CSA common definitions and other CSA N290 series of Standards.

Users of this Standard are reminded that the site selection, design, manufacture, construction, installation, commissioning, operation, and decommissioning of nuclear facilities in Canada are subject to the *Nuclear Safety and Control Act* and its *Regulations*. The Canadian Nuclear Safety Commission might impose additional requirements to those specified in this Standard.

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 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 was prepared by the Subcommittee on Probabilistic Safety Assessment for Nuclear Power Plants, under the jurisdiction of the Technical Committee on Reactor Safety and Risk Management and the Strategic Steering Committee on Nuclear Standards, and has been formally approved by the Technical Committee.

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