

ISO 27875:2026-07 (E)

Space systems - Re-entry risk management for uncrewed spacecraft and launch vehicle orbital stages

Contents

Page

Foreword	v
Introduction	vii
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Symbols and abbreviated terms	3
4.1 Symbols	3
4.2 Abbreviated terms	3
5 Re-entry risk management	4
5.1 General	4
5.2 Re-entry safety programme	4
5.3 Re-entry safety oversight and management	4
5.4 Re-entry risk assessment and mitigation plan (RRAMP)	4
5.4.1 Preparation of the plan	4
5.4.2 Authorization of the plan	4
5.5 Re-entry risk management concept	4
6 Risk assessment in the case of uncontrolled re-entry	5
6.1 General	5
6.2 Identification of safety requirements	5
6.2.1 Identification of requirements	5
6.2.2 Risk assessment plan	5
6.3 Identification of a standardized process and resources for analysis	6
6.3.1 Standardized process and resources for analysis	6
6.3.2 Typical methods, analysis tools, analytic conditions, etc	6
6.4 Identification of system and mission dependent parameters	8
6.5 Estimation of the expected number of casualties in the case of uncontrolled re-entry	9
6.5.1 Estimation of the expected number of casualties	9
6.5.2 Estimation and assessment of the expected number of casualties	10
6.6 Estimation of risk other than casualty	10
6.6.1 General	10
6.6.2 Radioactive substances	10
6.6.3 Floating objects	10
6.6.4 Pressurized or explosive fragments	10
6.6.5 Hazardous chemical substances	11
6.7 Risk decision and actions	11
6.7.1 Acceptance of risk or suggestion for risk reduction	11
7 Risk-reduction measures	11
7.1 General	11
7.2 Design measures to reduce casualties	12
7.3 Controlled re-entry	12
7.4 Design measures to reduce other risks	12
7.4.1 Radioactive substances	12
7.4.2 Floating fragments	13

7.4.3	Pressurized or explosive fragments	13
7.4.4	Hazardous chemical substances	13
8	Planning, design and operation of controlled re-entry	13
8.1	General	13
8.2	Identification of requirements	14
8.3	Planning of the controlled re-entry	14
8.3.1	Landing location and area	14
8.3.2	Design features for controlled re-entry	14
8.4	Risk assessment for controlled re-entry	15
8.4.1	Risk assessment method	15
8.4.2	Risk assessment conductance	15
8.4.3	In case of nonconformity	15
8.5	Notification	16
8.5.1	Normal plan	16
8.5.2	Contingency plan	16
8.6	Post re-entry activities	16
	Annex A (informative) of the re-entry risk assessment and mitigation plan	17
	Annex B (informative) Risk management process	20
	Annex C (informative) Calculation of expected number of casualties	24
	Annex D (informative) Design for demise during re-entry	30
	Annex E (informative) Example of report of the re-entry risk assessment for design review	31
	Bibliography	38