



**Federal Aviation Administration  
Office of Commercial Space Transportation**

## **CROSSWALK/MAPPING OF PARTS 415/417, 431, AND 435 TO PART 450**

The following table provides a crosswalk that maps the changes made to parts 415, 417, 431, and 435 and the addition of part 450 as a result of the Streamlined Launch and Reentry Licensing Requirements final rule (SLR2) to related or similar legacy regulations. The legacy regulations pertain to the requirements in parts 415, 417, 431<sup>1</sup>, and 435. The information provided in this table is intended to assist operators in transitioning application materials to the new regulations.<sup>2</sup> Operators are encouraged to examine the part 450 regulations to identify areas in which greater flexibility has been provided from more prescriptive requirements under the legacy regulations. Additionally, as noted in the preamble to the final rule, many previously submitted materials will satisfy part 450 requirements; however, operators should not assume that submission of previous material will in all instances meet the new part 450 requirements.

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<sup>1</sup> Parts 431 and 435 do not contain specificity regarding the qualification of flight safety systems, acceptable methods for flight safety analyses, and ground safety requirements. Furthermore, some of the part 431 requirements are applicable to part 435. Section 435.33 points to the part 431, subpart C safety review requirements as being applicable to the safety review conducted under part 435. Section 435.51 specifies that the post-licensing requirements contained in part 431, subpart E apply to a license issued under part 435. When an applicable part 431 regulation is listed under the part 435 column in the table, it is preceded by § 435.33 or § 435.51.

<sup>2</sup> The material in this document is advisory in nature and does not constitute a regulation. This guidance is not legally binding in its own right, and will not be relied upon by the FAA as a separate basis for affirmative enforcement action or other administrative penalty. Conformity with this guidance document (as distinct from existing statutes and regulations) is voluntary only, and nonconformity will not affect rights and obligations under existing statutes and regulations. Draft document pending clearance pursuant to 49 CFR part 5.

<b>PART 450— LAUNCH AND REENTRY LICENSE REQUIREMENTS</b>	<b>PART 431—LAUNCH AND REENTRY OF A REUSABLE LAUNCH VEHICLE (RLV)</b>	<b>PART 435—REENTRY OF A REENTRY VEHICLE OTHER THAN A REUSABLE LAUNCH VEHICLE (RLV)</b>	<b>PART 415 – LAUNCH LICENSE PART 417 – LAUNCH SAFETY</b>
<b>Subpart A—General Information.</b>			
§ 450.1 Applicability.	§ 431.1(a) Scope.  § 431.2 Licenses issued under this part. (This is a new provision added as part of SLR2. It adds part 450 COLA and critical asset protection requirements.)	§ 435.1(a) Scope.  § 435.2 Licenses. (This is a new provision added as part of SLR2. It adds part 450 COLA and critical asset protection requirements.)	§ 415.1 Applicability and scope.  § 415.2 Licenses issued under this part. (This is a new provision added as part of SLR2. It adds part 450 COLA and asset protection requirements.)
§ 450.3 Scope of a Vehicle Operator License.	§ 431.3 Types of reusable launch vehicle mission licenses. This provision describes two types of RLV mission licenses: (1) mission-specific licenses and (2) operator licenses.  § 401.5 Definition of launch.	§ 435.3 Types of reentry licenses. This provision describes two types of reentry licenses: (1) reentry-specific license and (2) reentry-operator licenses.  § 401.5 Definition of reentry.	§ 415.3 Types of launch licenses. This provision describes two types of launch licenses: (1) launch-specific license and (2) launch operator license. Each license is limited to launches from one launch site.  § 401.5 Definition of launch.
§ 450.5 Issuance of a Vehicle Operator License.	§ 431.9 Issuance of a reusable launch vehicle mission license.	§ 435.9 Issuance of a reentry license.	§ 415.9 Issuance of a launch license.
§ 450.7 Duration of a Vehicle Operator License.	§ 431.3 Types of reusable launch vehicle mission licenses.  An RLV mission operator license per § 431.3(b) is valid for a two-year renewable term.  § 431.3(a) addresses mission-specific license duration.	§ 435.3 Types of reentry licenses.  An RLV mission operator license per § 435.3(b) is valid for a two-year renewable term.  § 431.3(a) addresses reentry-specific license duration.	Per § 415.3(b), a launch operator license is valid for a five-year renewable term.  § 415.3(a) addresses launch specific license duration.
§ 450.9 Additional License Terms and Conditions.	§ 431.11 Additional license terms and conditions.	§ 435.11 Additional license terms and conditions.	§ 415.11 Additional license terms and conditions.
§ 450.11 Transfer of a Vehicle Operator License.	§ 431.13 Transfer of a reusable launch vehicle mission license.	§ 435.13 Transfer of a reentry license.	§ 415.13 Transfer of a launch license.

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§ 450.13 Rights Not Conferred by a Vehicle Operator License.	§ 431.15 Rights not conferred by a reusable launch vehicle mission license.	§ 435.15 Rights not conferred by reentry license.	§ 415.15 Rights not conferred by launch license.
<b>Subpart B— Requirements to Obtain a Vehicle Operator License.</b>			
§ 450.31 General.	§ 431.1 General.  § 431.5 Policy and safety approvals.  § 431.7 Payload and payload reentry determinations.  § 431.81 Financial responsibility requirements.  § 431.91 General.  § 431.93 Environmental information.	§ 435.1 General.  § 435.5 Policy and safety approvals.  § 435.7 Payload reentry determination.  § 435.51 General.  § 431.81 Financial responsibility requirements.  § 435.61 General.	§ 415.5 Policy and safety approvals.  § 415.7 Payload determination.  § 415.201 General.  § 415.203 Environmental information.  § 417.21 Financial responsibility requirements.
§ 450.33 Incremental Review and Determinations.	New option not in part 431.	New option not in part 435.	New option not in part 415/417.
§ 450.35 Means of Compliance.	New requirement for prior to application acceptance; not in part 431.	New requirement for prior to application acceptance; not in part 435.	New requirement for prior to application acceptance; not in part 415/417.
§ 450.37 Equivalent Level of Safety.	§ 431.1(b) Equivalent level of safety.	§ 435.1(b) Equivalent level of safety.	§ 417.1(g) Equivalent level of safety.  § 417.301 (b) Alternate flight safety system.
§ 450.39 Use of Safety Element Approval.	§ 431.1(a) Scope. This provision refers to part 413.  § 413.7(d) Safety approval. This provision allows a part 414 safety element approval to be used to satisfy certain requirements in part 431.	§ 435.1(a) refers to part 413.  § 413.7(d) allows a part 414 safety element approval to be used to satisfy certain requirements in part 435	§ 415.1 refers to part 413  § 413.7(d) allows a part 414 safety element approval to be used to satisfy certain requirements in part 415/417.

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§ 450.41 Policy Review and Approval.	§ 431.5 Policy and safety approvals. § 431.21 General. § 431.23 Policy review. § 431.25 Application requirements for policy review. § 431.27 Denial of policy approval.	§ 435.5 Policy and safety approvals. § 435.21 General. § 435.23 Policy review requirements and procedures.	§ 415.21 General. § 415.23 Policy review. § 415.25 Application requirements for policy review. § 415.27 Denial of policy approval.
§ 450.43 Payload Review and Determination.	§ 431.7 Payload and payload reentry determinations. § 431.51 General. § 431.53 Classes of payloads. § 431.55 Payload reentry review. § 431.57 Information requirements for payload reentry review. § 431.59 Issuance of payload reentry determination. § 431.61 Incorporation of payload reentry determination in license application.	§ 435.7 Payload reentry determination. § 435.41 General. § 435.43 Payload reentry review requirements and procedures.	§ 415.7 Payload determination. § 415.51 General. § 415.53 Payloads not subject to review. § 415.55 Classes of payloads. § 415.57 Payload review. § 415.59 Information requirements for payload review. § 415.61 Issuance of payload determination. § 415.63 Incorporation of payload determination in license application.
§ 450.45 Safety Review and Approval.	§ 431.8 Human space flight. §§ 431.25(a), (b), and (d)(1) § 431.31 General. §§ 431.35 (d) (1), (2), (3), and (5) § 431.47 Denial of safety approval.	§ 435.8 Human space flight. § 435.23 Policy review requirements and procedures. §§ 431.25(a), (b), and (d)(1) §§ 431.31 General. § 435.33 Safety review requirements and procedures	§ 415.8 Human space flight. § 415.31 General (launch site safety assessment). § 415.43 Denial of safety approval. § 415.107 Safety review document. § 415.109 Launch description. § 415.115(b) Radionuclides.

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		§§ 431.35 (d) (1), (2), (3), and (5)  § 431.47 Denial of safety approval.	§ 415.121 Launch schedule.
§ 450.47 Environmental Review.	§ 431.91 General.  § 431.93 Environmental information.	§ 435.61 General.  § 431.91 General.  § 431.93 Environmental information.	§ 415.201 General.  § 415.203 Environmental information.
<b>Subpart C—Safety Requirements.</b>			
<b>SAFETY CRITERIA</b>			
§ 450.101 Safety Criteria.	§§ 431.35(a) & (b) Acceptable reusable launch vehicle mission risk.	§§ 435.35 Acceptable reusable launch vehicle risk.	§ 417.107(b) Public risk criteria.  § 417.111(i) Local agreements and public coordination plans.
<b>SYSTEM SAFETY PROGRAM</b>			
§ 450.103 System Safety Program.	§ 431.33 Safety organization.  § 431.33(c)(1) & (2) are no longer explicitly required by part 450. However, § 450.155 (Readiness) lays out requirements for mission readiness and it represents a new, performance-based option for applicants to demonstrate their readiness for a launch or reentry.  § 431.35(c) Acceptable reusable launch vehicle mission risk.	§ 435.33 Safety review requirements and procedures.  § 431.33 Safety organization.  § 431.35(c) Acceptable reusable launch vehicle mission risk.	§ 415.33 Safety organization.  § 417.103 Safety organization.  § 417.111(e) Configuration management and control plan. (See note*)  § 417.111(h) Accident investigation plan (AIP).  *Requirements addressing configuration control also include §§ 417.111(e), 417.123(e)(2), 417.303(e), and 417.407(c).
<b>HAZARD CONTROL STRATEGIES</b>			
§ 450.107 Hazard Control Strategies.	Explicit hazard control strategies are not in part	§ 435.33 Safety review requirements and procedures.	Part 417 appendices provide the flight abort and wind

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	431 but may be derived to meet §§ 431.35(b) & (c).	Explicit hazard control strategies are not in part 435 but may be derived to meet §§ 435.35 and 431.35(c).	<p>weighting hazard control strategies:</p> <p>Appendix A to Part 417— Flight Safety Analysis Methodologies and Products for a Launch Vehicle Flown With a Flight Safety System.</p> <p>Appendix B to Part 417— Flight Hazard Area Analysis for Aircraft and Ship Protection.</p> <p>Appendix C to Part 417— Flight Safety Analysis Methodologies and Products for an Unguided Suborbital Launch Vehicle Flown With a Wind Weighting Safety System.</p> <p>Appendix D to Part 417— Flight Termination Systems, Components, Installation, and Monitoring.</p> <p>Appendix E to Part 417— Flight Termination System Testing and Analysis.</p> <p>Appendix G to Part 417— Natural and Triggered Lightning Flight Commit Criteria.</p>
§ 450.108 Flight Abort.	Flight abort is not mentioned explicitly in part 431 but may be derived as a hazard control to meet §§ 431.35(b) & (c).	<p>§ 435.33 Safety review requirements and procedures.</p> <p>Flight abort is not mentioned explicitly in part 435 but may be derived as a hazard control to meet §§ 435.35 and 431.35(c).</p>	<p>Part 417 appendices A, B, D, E, and G.</p> <p>§ 417.213(a), (b), and (d) are accepted means of compliance for § 450.108(c)(6) flight safety limit objectives.</p>
§ 450.109 Flight Hazard Analysis.	Similar to system safety process requirement in part	§ 435.33 Safety review requirements and procedures.	Use of a flight hazard analysis to derive hazard controls provides flexibility that does

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	431.  § 431.35(c) requires an applicant to employ a system safety process to identify hazards and assess risks to public health and safety and safety of property associated with the mission.	Similar to system safety process requirement in part 431. Section 431.35(c) requires an applicant to employ a system safety process to identify hazards and assess risks to public health and safety and safety of property associated with the mission.	not currently exist under prescriptive requirements in part 417 and is broadly consistent with practice in parts 431 and 435.  May be applicable to § 417.301(b) for an alternate flight safety system.
§ 450.110 Physical Containment.	Physical containment is not mentioned explicitly in part 431 but may be derived as a hazard control to meet §§ 431.35(b) & (c).	§ 435.33 Safety review requirements and procedures.  Physical containment is not mentioned explicitly in part 435 but may be derived as a hazard control to meet §§ 435.35 and 431.35(c).	Use of physical containment is consistent with current practice because FAA has accepted a demonstration of physical containment as a means of satisfying risk requirements.
§ 450.111 Wind Weighting.	Wind weighting is not mentioned explicitly in part 431 but may be derived as a hazard control to meet §§ 431.35(b) & (c).	Not applicable to reentry.	§§ 415.109(b)(2)(v), 417.125, 417.201(c), 417.233, and Appendix C to part 417 are accepted means of compliance for § 450.111.
<b>FLIGHT SAFETY ANALYSES</b>			
§ 450.113 Flight Safety Analysis Requirements— Scope.	§§ 431.35(a) & (d)(8)	§ 435.33 Safety review requirements and procedures.  §§ 431.35(a) & (d)(8)	§ 417.201 Scope and applicability.  A417.3 of Appendix A to part 417 - Flight Safety Analysis Methodologies and Products for a Launch Vehicle Flown With a Flight Safety System.
§ 450.115 Flight Safety Analysis Methods.	Part 431 does not have explicit requirements for the methods used to provide a flight safety analysis.  Applicant must demonstrate compliance	Part 435 does not have explicit requirements for the methods used to provide a flight safety analysis.  Applicant must demonstrate compliance with public risk criteria in § 435.35.	§ 417.203 Compliance.  Appendix A to part 417 – Flight Safety Analysis Methodologies and Products for a Launch Vehicle Flown With a Flight Safety System.

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	with public risk criteria in §§ 431.35(b).		Appendix B to part 417 – Flight Hazard Area Analysis for Aircraft and Ship Protection.  Appendix C to part 417 – Flight Safety Analysis Methodologies and Products for an Unguided Suborbital Launch Vehicle Flown With a Wind Weighting Safety System.  § 417.205 General.
§ 450.117 Trajectory Analysis for Normal Flight.	§ 431.35(d)(8) requires flight trajectory analyses covering launch or ascent of vehicle through orbital insertion and reentry or descent of vehicle through landing, including its 3-sigma dispersion.	§ 435.33 Safety review requirements and procedures.  § 431.35(d)(8) requires flight trajectory analyses covering launch or ascent of vehicle through orbital insertion and reentry or descent of vehicle through landing, including its 3-sigma dispersion.	§ 417.207 Trajectory analysis.
§ 450.119 Trajectory Analysis for Malfunction Flight.	§ 431.35 (d) (8) requires flight trajectory analyses.  § 431.35 (c) addresses both nominal and non-nominal operations.	§ 435.33 Safety review requirements and procedures.  § 431.35 (d) (8) requires flight trajectory analyses.  § 431.35 (c) addresses both nominal and non-nominal operations.	§ 417.209 Malfunction turn analysis.  A417.9 Malfunction turn.
§ 450.121 Debris Analysis.	Debris analysis is not mentioned explicitly in part 431, but an applicant must address impacting inert and explosive debris to demonstrate acceptable risk per § 431.35(b).	Debris analysis is not mentioned explicitly in part 435, but an applicant must address impacting inert and explosive debris to demonstrate acceptable risk per § 435.35.	§ 417.211 Debris analysis.  § 417.107(c) Debris thresholds.  A417.11 Debris.
§ 450.123 Population Exposure Analysis.	Population exposure analysis is not mentioned	Population exposure analysis is not mentioned	§ 417.205(a)(1)(iv)

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	explicitly in part 431, but an applicant must account for population exposure in demonstrating acceptable risk for a proposed mission per § 431.35(b).	explicitly in part 435, but an applicant must account for population exposure in demonstrating acceptable risk for a proposed mission per § 435.35.	§§ A417.25(b)(10)(iii) and A417.25(c)(4) of Appendix A to part 417 – Flight Safety Analysis Methodologies and Products for a Launch Vehicle Flown With a Flight Safety System
§ 450.131 Probability of Failure Analysis.	Probability of failure (POF) analysis is not mentioned explicitly in part 431, but a POF analysis is necessary to demonstrate compliance with the public risk criteria of § 431.35(b).  Per § 431.35(b), an acceptable system safety analysis identifies and assesses probability and consequences of any reasonably foreseeable hazardous event.	Probability of failure (POF) analysis is not mentioned explicitly in part 435, but a POF analysis is necessary to demonstrate compliance with the public risk criteria of § 435.35.  Per § 435.33 and § 431.35(b), an acceptable system safety analysis identifies and assesses probability and consequences of any reasonably foreseeable hazardous event.	§ 417.224 Probability of failure analysis.
§ 450.133 Flight Hazard Area Analysis.	Flight hazard area analysis is not mentioned explicitly in part 431, but in order to meet § 431.35(b), an applicant may need to identify areas that need to be controlled or evacuated.  § 431.43(b) requires an applicant to identify suitable and attainable locations for nominal landing and vehicle staging impact or landing, if any, to satisfy risk criteria set forth in § 431.35(b)(1).	Flight hazard area analysis is not mentioned explicitly in part 435, but in order to meet § 435.35, an applicant may need to identify areas that need to be controlled or evacuated.  § 435.33 Safety review requirements and procedures.  § 431.43(b) requires an applicant to identify suitable and attainable locations for nominal landing and vehicle staging impact or landing, if any, to satisfy risk criteria set forth in § 431.35(b)(1) [§ 435.35 is risk criteria for reentry.]	§ 417.107(b) Public risk criteria.  § 417.223 Flight hazard area analysis.
§ 450.135 Debris Risk Analysis.	May be derived from § 431.35(b). Debris risk	May be derived from § 435.35. Debris risk	§ 417.225 Debris risk analysis.

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	analysis is not mentioned explicitly in part 431, but applicant must account for inert and explosive debris when demonstrating acceptable risk for an RLV mission per § 431.35(b).	analysis is not mentioned explicitly in part 435, but applicant must account for inert and explosive debris when demonstrating acceptable risk per § 435.35.	Appendix A to part 417 (A417.11 Debris).
§ 450.137 Far-field Overpressure Blast Effects Analysis.	<p>May be derived from § 431.35(b) &amp; (c). DFO or far-field overpressure blast effects analysis is not mentioned explicitly in part 431, but applicant must account for far field blast overpressure when demonstrating acceptable risk for an RLV mission per § 431.35(b).</p> <p>§ 431.35(b)(1)(i) refers to public risk criteria of § 417.107(b)(1), which mentions far field blast overpressure.</p>	<p>§ 435.33 Safety review requirements and procedures.</p> <p>May be derived from §§ 435.35 and 431.35(c). DFO or far-field overpressure blast effects analysis is not mentioned explicitly in part 435, but applicant must account for far field blast overpressure when demonstrating acceptable risk per § 435.35.</p> <p>§ 435.33(a) refers to public risk criteria of § 417.107(b)(1), which mentions far field blast overpressure.</p>	§ 417.229 Far-field overpressure blast effects analysis.
§ 450.139 Toxic Hazards for Flight.	<p>May be derived from § 431.35(b) &amp; (c).</p> <p>Toxic release hazard analysis is not mentioned explicitly in part 431, but applicant must account for toxic release when demonstrating acceptable risk for an RLV mission per § 431.35(b).</p>	<p>§ 435.33 Safety review requirements and procedures.</p> <p>May be derived from § 431.35(c).</p> <p>Toxic release hazard analysis is not mentioned explicitly in part 435, but applicant must account for toxic release when demonstrating acceptable risk per § 435.35.</p>	<p>§ 417.227 Toxic release hazard analysis.</p> <p>Appendix I to part 417 – Methodologies for Toxic Release Hazard Analysis and Operational Procedures.</p>
PRESCRIBED HAZARD CONTROLS FOR			

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SAFETY-CRITICAL HARDWARE AND COMPUTING SYSTEMS			
§ 450.141 Computing Systems.	Computing system safety items and requirements are not mentioned explicitly in part 431, but computing system hazards to public may be addressed under §§ 431.35(c) & (d).	§ 435.33 Safety review requirements and procedures.  Computing system safety items and requirements are not mentioned explicitly in part 435 but computing system hazards to public may be addressed under §§ 431.35(c) & (d).	§ 415.123 Computing systems and software.  § 417.123 Computing systems and software.
§ 450.143 Safety- Critical System Design, Test, and Documentation.	Part 431 does not have explicit test requirements for safety critical systems (e.g., FSS).  Safety critical system requirements may be derived from §§ 431.35 (b), (c), and (d).	Part 435 does not have explicit test requirements for safety critical systems (e.g., FSS).  § 435.33 Safety review requirements and procedures.  Safety critical system requirements may be derived from §§ 431.35 (b), (c), and (d).	§ 417.301 General.  § 417.303 Command control system requirements.  § 417.305 Command control system testing.  § 417.307 Support systems.  § 417.309 Flight safety system analysis.  Appendix D to Part 417— Flight Termination Systems, Components, Installation, and Monitoring.  Appendix E to Part 417— Flight Termination System Testing and Analysis.
§ 450.145 Highly- Reliable Flight Safety System.	Part 431 does not have explicit flight safety system (FSS) requirements. FSS requirements may be derived from §§ 431.35 (b), (c), and (d).	§ 435.33 Safety review requirements and procedures.  Part 435 does not have explicit flight safety system (FSS) requirements. FSS requirements may be derived from §§ 431.35 (b), (c), and (d).	§ 415.127 Flight safety system design and operation data.  § 415.129 Flight safety system test data.  § 417.301 General.  § 417.303 Command control system requirements.

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			<p>§ 417.305 Command control system testing.</p> <p>§ 417.307 Support systems.</p> <p>§417.309 Flight safety system analysis.</p> <p>Appendix D to part 417— Flight Termination Systems, Components, Installation, and Monitoring.</p> <p>Appendix E to part 417— Flight Termination System Testing and Analysis.</p>
OTHER PRESCRIBED HAZARD CONTROLS			
§ 450.147 Agreements.	§ 431.75 Agreements.	§ 435.51 General.  § 431.75 Agreements.	§ 417.403(c) Local agreements.  § 417.13 Agreement with Federal launch range.
§ 450.149 Safety-Critical Personnel Qualifications.	<p>Part 431 does not have explicit personnel qualification or training requirements, but need for qualified and trained personnel is an expected outcome of system safety process in § 431.35(c).</p> <p>§ 431.37(a) requires submittal of procedures for verifying mission readiness that involves an applicant’s vehicle safety operations personnel, and launch site and reentry site personnel involved in the mission.</p>	<p>Part 435 does not have explicit personnel qualification or training requirements, but need for qualified and trained personnel qualifications is an expected outcome of system safety process in §§ 435.33 and § 431.35(c).</p> <p>§ 431.37(a) requires submittal of procedures for verifying mission readiness that involves an applicant’s vehicle safety operations personnel, and launch site and reentry site personnel involved in the mission.</p>	<p>§ 415.113 <i>Launch personnel certification program.</i></p> <p>§ 417.311 <i>Flight safety crew roles and qualifications.</i></p> <p>§ 417.105 Launch personnel qualifications and certification.</p>
§ 450.151 Work Shift and Rest Requirements.	§ 431.43(c)(4)	§ 435.33 Safety review requirements and procedures.	§ 415.37(a)(5)

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		§ 431.43(c)(4)	§ 417.113(f) Launch crew work shift and rest rules.
§ 450.153 Radio Frequency Management.	Part 431 does not have explicit radio frequency management requirements, but may be addressed through analysis of hazards per §§ 431.35(c) and (d).	Part 435 does not have explicit radio frequency management requirements, but may be addressed through analysis of hazards per §§ 435.33 and 431.35(c) & (d).	§ 417.111(f) Frequency management plan.
§ 450.155 Readiness.	§ 431.37(a) Mission readiness requirements.	§ 435.33 Safety review requirements and procedures.  § 431.37(a) Mission readiness requirements.	§ 415.37(a) Flight readiness requirements.  § 417.117 Reviews.  § 417.119 Rehearsals.
§ 450.157 Communications.	§ 431.41 Communications plan.	§ 435.33 Safety review requirements and procedures.  § 431.41 Communications plan.	§ 417.111(k) Communications plan.  § 415.37(b) Communications plan requirements.
§ 450.159 Pre-flight Procedures.	§ 431.37(a) Mission readiness requirements.	§ 435.33 Safety review requirements and procedures.  § 431.37(a) Mission readiness requirements.	§ 417.121 <i>Safety critical preflight operations.</i>  § 417.113 Launch safety rules.  § 415.37(a) Flight readiness requirements.
§ 450.161 Control of Hazard Areas.	Part 431 does not have explicit requirements for surveillance of waterborne vessel hazard areas. However, § 431.35(b)(1)(iii) requires the risk level to an individual (regardless of location) does not exceed $1 \times 10^{-6}$ probability of casualty.  § 431.75 pertains to agreements for notices to mariners and airmen and §	Part 435 does not have explicit requirements for surveillance of waterborne vessel hazard areas. However, § 431.35(b)(1)(iii) requires the risk level to an individual (regardless of location) does not exceed $1 \times 10^{-6}$ probability of casualty.  § 435.33 Safety review requirements and procedures.	§ 417.111(j) Hazard area surveillance and clearance plan.  § 417.121(f) Hazard area surveillance.  § 417.205(a) Public risk management.  § 417.223(a) General.  § 417.227 Toxic release hazard analysis.

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	431.37(a) requires procedures for verifying mission readiness.	§ 431.75 pertains to agreements for notices to mariners and airmen and § 431.37(a) requires procedures for verifying mission readiness.	B417.5(a) of Appendix B to part 417 – Flight Hazard Area Analysis for Aircraft and Ship Protection.
§ 450.163 Lightning Hazard Mitigation.	Part 431 does not have explicit lightning hazard mitigation requirements but may be addressed through the analysis of hazards per §§ 431.35(c) and (d).	§ 435.33 Safety review requirements and procedures.  Parts 435 does not have explicit lightning hazard mitigation requirements but may be addressed through the analysis of hazards per §§ 431.35(c) and (d).	Appendix G to part 417 – Natural and Triggered Lightning Flight Commit Criteria.
§ 450.165 Flight Commit Criteria.	§ 431.39 Mission rules, procedures, contingency plans, and checklists.	§ 435.33 Safety review requirements and procedures.  § 431.39 Mission rules, procedures, contingency plans, and checklists.	§ 417.113 Launch safety rules.
§ 450.167 Tracking.	Part 431 does not have an explicit tracking requirement but may be derived through § 431.35(c).	§ 435.33 Safety review requirements and procedures.  Part 435 does not have an explicit tracking requirement but may be derived through § 431.35(c).	§ 417.113(c)(2)(iii)  § 417.307(b) Launch vehicle tracking.  § 417.307(c) Telemetry.  § 417.125(f) Tracking.
§ 450.169 Launch and Reentry Collision Avoidance Analysis Requirements.	§ 431.43(c)(1)  § 431.79(b)	§ 435.33 Safety review requirements and procedures.  § 431.43(c)(1)  § 431.79(b)	§ 417.231 Collision avoidance analysis.  § 417.17(b)(3)
§ 450.171 Safety at End of Launch.	§ 431.43(c)(3)	§ 435.33 Safety review requirements and procedures.	§ 415.39 Safety at end of launch.

<b>PART 450— LAUNCH AND REENTRY LICENSE REQUIREMENTS</b>	<b>PART 431—LAUNCH AND REENTRY OF A REUSABLE LAUNCH VEHICLE (RLV)</b>	<b>PART 435—REENTRY OF A REENTRY VEHICLE OTHER THAN A REUSABLE LAUNCH VEHICLE (RLV)</b>	<b>PART 415 – LAUNCH LICENSE PART 417 – LAUNCH SAFETY</b>
		§ 431.43(c)(3)	§ 417.129 Safety at end of launch.
§ 450.173 Mishap Plan—Reporting, Response, and Investigation Requirements.	§ 431.45 Mishap investigation plan and emergency response plan.	§ 435.33 Safety review requirements and procedures.  § 431.45 Mishap investigation plan and emergency response plan.	§ 417.111(h) Accident investigation plan (AIP).
§ 450.175 Test-induced Damage.	Optional; not covered in part 431.	Optional; not covered in part 435.	Not covered in parts 415 or 417.
§ 450.177 Unique Safety Policies, Requirements and Practices.	§ 431.11 Additional license terms and conditions.	§ 435.11 Additional license terms and conditions.	§ 415.11 Additional license terms and conditions.  § 417.127 Unique safety policies, requirements, and practices.
<b>GROUND SAFETY</b>			
§ 450.179 Ground Safety—General.	Part 431 does not have explicit ground safety requirements. An applicant is expected to address ground safety through its system safety process where § 431.35(c) requires an applicant to identify hazards to the public.	§ 435.33 Safety review requirements and procedures.  Part 435 does not have explicit ground safety requirements. An applicant is expected to address ground safety through its system safety process where § 431.35(c) requires an applicant to identify hazards to the public.	§ 417.111(c) Ground safety plan.  Subpart E of part 417 – Ground Safety §§ 417.401, 417.402, 417.403, 417.405, 417.407, 417.409, 417.411, 417.413, 417.415, and 417.417
§ 450.181 Coordination with a Site Operator.	Part 431 does not have explicit ground safety requirements. Applicant is expected to address ground safety through its system safety process where § 431.35(c) requires an applicant to identify hazards to the public.  § 431.37(a) Mission readiness requirements.	§ 435.33 Safety review requirements and procedures.  Parts 435 does not have explicit ground safety requirements. Applicant is expected to address ground safety through its system safety process where § 431.35(c) requires an	§ 417.9 Launch site responsibility.  § 417.13 Agreement with Federal launch range.  § 417.403(c) Local agreements.

<b>PART 450— LAUNCH AND REENTRY LICENSE REQUIREMENTS</b>	<b>PART 431—LAUNCH AND REENTRY OF A REUSABLE LAUNCH VEHICLE (RLV)</b>	<b>PART 435—REENTRY OF A REENTRY VEHICLE OTHER THAN A REUSABLE LAUNCH VEHICLE (RLV)</b>	<b>PART 415 – LAUNCH LICENSE PART 417 – LAUNCH SAFETY</b>
	§ 431.75 Agreements.	<p>applicant to identify hazards to the public.</p> <p>§ 431.37(a) Mission readiness requirements.</p> <p>§ 435.51 General.</p> <p>§ 431.75 Agreements.</p> <p>§ 431.37(a) Mission readiness requirements.</p>	
§ 450.183 Explosive Site Plan.	Part 431 does not have explicit ground safety requirements. Applicant is expected to address ground safety through its system safety process where § 431.35(c) requires an applicant to identify hazards to the public.	<p>§ 435.33 Safety review requirements and procedures.</p> <p>Parts 435 does not have explicit ground safety requirements. Applicant is expected to address ground safety through its system safety process where § 431.35(c) requires an applicant to identify the hazards to the public.</p>	§ 417.9(c) [For a launch from an exclusive-use site.]
§ 450.185 Ground Hazard Analysis.	Parts 431 does not have explicit ground safety requirements. Applicant is expected to address ground safety through its system safety process where § 431.35(c) requires an applicant to identify hazards to the public.	<p>§ 435.33 Safety review requirements and procedures.</p> <p>Part 435 does not have explicit ground safety requirements. Applicant is expected to address ground safety through its system safety process where § 431.35(c) requires an applicant to identify hazards to the public.</p>	<p>§ 417.405 Ground safety analysis.</p> <p>Appendix J to part 417 – Ground Safety Analysis Report.</p>
§ 450.187 Toxic Hazards Mitigation for Ground Operations.	Part 431 does not have explicit ground safety requirements. Applicant is expected to address ground safety through its system safety process where §	<p>§ 435.33 Safety review requirements and procedures.</p> <p>Part 435 does not have explicit ground safety</p>	<p>§ 4177.411 (a)(1)(ii)</p> <p>Appendix I to part 417 – Methodologies for Toxic Release Hazard Analysis and Operational Procedures</p>

<b>PART 450— LAUNCH AND REENTRY LICENSE REQUIREMENTS</b>	<b>PART 431—LAUNCH AND REENTRY OF A REUSABLE LAUNCH VEHICLE (RLV)</b>	<b>PART 435—REENTRY OF A REENTRY VEHICLE OTHER THAN A REUSABLE LAUNCH VEHICLE (RLV)</b>	<b>PART 415 – LAUNCH LICENSE PART 417 – LAUNCH SAFETY</b>
	431.35(c) requires an applicant to identify hazards to the public.	requirements. Applicant is expected to address ground safety through its system safety process where § 431.35(c) requires an applicant to identify hazards to the public.	
§ 450.189 Ground Safety Prescribed Hazard Controls.	Part 431 does not have explicit ground safety requirements. Applicant is expected to address ground safety through its system safety process where § 431.35(c) requires an applicant to identify hazards to the public.	§ 435.33 Safety review requirements and procedures.  Part 435 does not have explicit ground safety requirements. Applicant is expected to address ground safety through its system safety process where § 431.35(c) requires an applicant to identify hazards to the public.	§ 417.407 Hazard control implementation. § 417.409 System hazard controls. § 417.411 Safety clear zones for hazardous operations § 417.413 Hazard areas  § 417.415 Post-launch and post-flight attempt hazard controls.
<b>Subpart D—Terms and Conditions of a Vehicle Operator License.</b>			
§ 450.201 Responsibility for Public Safety and Safety of Property.	§ 431.71(a) Public safety responsibility.	§ 435.51 General.  § 431.71(a) Public safety responsibility.	§ 417.7 Public safety responsibility
§ 450.203 Compliance.	§ 431.71(b)	§ 435.51 General.  § 431.71(b)	§ 417.11(a)
§ 450.205 Financial Responsibility Requirements.	§ 431.81 Financial responsibility requirements	§ 435.51 General.  § 431.81 Financial responsibility requirements.	§ 417.21 Financial responsibility requirements.
§ 450.207 Human Spaceflight Requirements.	§ 431.8 Human space flight. [refers to part 460]	§ 435.8 Human space flight [refers to part 460]	§ 415.8 Human space flight. [refers to part 460]
§ 450.209 Compliance Monitoring.	§ 431.83 Compliance monitoring.	§ 435.51 General.	§ 417.23 Compliance monitoring.

<b>PART 450— LAUNCH AND REENTRY LICENSE REQUIREMENTS</b>	<b>PART 431—LAUNCH AND REENTRY OF A REUSABLE LAUNCH VEHICLE (RLV)</b>	<b>PART 435—REENTRY OF A REENTRY VEHICLE OTHER THAN A REUSABLE LAUNCH VEHICLE (RLV)</b>	<b>PART 415 – LAUNCH LICENSE PART 417 – LAUNCH SAFETY</b>
		§ 431.83 Compliance monitoring.	
§ 450.211 Continuing Accuracy of License Application; Application for Modification of License.	§ 431.73 Continuing accuracy of license application; application for modification of license.	§ 435.51 General. § 431.73 Continuing accuracy of license application; application for modification of license.	§ 417.11 Continuing accuracy of license application; application for modification of license.
§ 450.213 Pre-flight Reporting.	§§ 431.79(a)(1) & (2)	§ 435.51 General. §§ 431.79(a)(1) & (2)	§ 415.115(a)(3) § 415.129(a) General. § 417.17 Launch reporting requirements and launch specific updates.
§ 450.215 Post-Flight Reporting.	No explicit post-flight reporting requirement in part 431. § 431.79(c) requires reporting of a mishap.	No explicit post-flight reporting requirement in part 435. § 435.51 General. § 431.79(c) requires reporting of a mishap.	§ 417.25 Post launch report. § 417.125(g) Post-launch review for an unguided suborbital launch vehicle.
§ 450.217 Registration of Space Objects.	§ 431.85 Registration of space objects.	Not applicable; requirement is addressed under a licensed launch.	§ 417.19 Registration of space objects.
§ 450.219 Records.	§ 431.77 Records.	§ 435.51 General. § 431.77 Records	§ 417.15 Records.
Appendix A to Part 450—Collision Analysis Worksheet	§ 431.43(c) As mentioned previously, § 431.2 is a new provision added as part of SLR2 that adds part 450 COLA requirements such as § 450.169(f).	§ 435.33 Safety review requirements and procedures. § 431.43(c) As mentioned previously, § 435.2 is a new provision added as part of SLR2 that adds part 450 COLA requirements such as § 450.169(f).	R-15 launch plan worksheet. A417.31 C417.11 As mentioned previously, § 415.2 is a new provision added as part of SLR2 that adds part 450 COLA requirements such as § 450.169(f).

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