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Titolo	Understanding atmospheric dispersion of accidental releases [[electronic resource] /] / George E. DeVaulI ... [et al.]
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Collana	CCPS concept book
Altri autori (Persone)	DeVaulIG. E
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Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	Understanding Atmospheric Dispersion of Accidental Releases; Contents; Preface; Nomenclature; 1. Introduction; 1.1. Purpose; 1.2. Release/Dispersion Scenario Overview; 1.3. Hazards; 2. Meteorology; 2.1 The Atmosphere; 2.2. Turbulence in the Atmosphere; 2.3. Mechanically Generated Turbulence'; 2.4. Vertical Density Stratification and Buoyancy; 2.5. Atmospheric Stability Classifications; 2.6. Similarity Scaling in the Atmospheric Boundary Layer; 2.7. Changes over Time in the Atmospheric Boundary Layer; 3. Source Estimates-Leaks and Ruptures; 3.1. Leaks and Small Holes 3.2. Phase Changes in Released Fluids3.3. Aerosol Formation in Liquid or Flashing Liquid Releases; 3.4. Transient Vessel Inventory Loss; 3.5. Catastrophic Vessel Failures; 4. Sources-Liquid Pools; 4.1. Boiling Liquid Pools; 4.2. Evaporation of Volatile Liquids; 4.3. Evaporation of Relatively Nonvolatile Liquids; 4.4. Multicomponent Mixture Spills; 5.

Buoyant and Dense-Gas Jet Releases; 5.1 Jet Length Scales; 5.2. Momentum and Buoyancy; 5.3. The Effect of Wind and Ambient Turbulence; 6. Low-Velocity Dense-Gas Releases; 6.1. Source Specification; 6.2. Source Area Region 6.3. Stably-Stratified Region 6.4. Passive Dispersion Region; 7. Passive Dispersion; 7.1. The Mechanics of Turbulent Dispersion; 7.2. Passive Dispersion from Elevated Releases; 7.3. Near-Ground Passive Dispersion; 7.4. Dispersion Averaging Times; 8. Complex Flow Considerations; 8.1. Building Wakes and Stack Downwash; 8.2. Gravity-Driven Flows and the Effects of Terrain; 8.3. Aerosol Rainout; 8.4. Fanning Plumes and Subsidence; 9. Hazard Evaluations; 9.1. Chemical Toxicity; 9.2. Flammability; 10. Computer Models; References

Sommario/riassunto

A brief introduction to a complex topic, giving a description of the processes involved in an accidental or emergency release and the resulting downwind transport and dilution of gases, vapors, and aerosols.

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