



*United States
Nuclear Regulatory Commission*

**NRC REQUIREMENTS FOR
ATMOSPHERIC MODELING**

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**Workshop on Atmospheric Dispersion Modeling
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Areas of Need

- . Power Plant Design Basis and Severe Accidents
Accidents and control room habitability
- . Incident Response
- . Cost/Benefit Analyses
- . High Level Waste Disposal
Pre-closure and Post-closure
- . Facility Decommissioning
Resuspension

Models

- . 5% Overall (0.5% sector in some cases) Meteorology - χ/Q for Plant Design using Gaussian plume assumptions
- . Building Wake Effects for Control Room Habitability
- . Gaussian Plume
 - Weather sampling for severe accidents
 - Environmental Impact Statements
 - Cost/Benefit analyses
 - Real time for incident response
- . Fire for Repository Pre-closure - Volcanoes for Post-closure
 - Suzuki model

New/Unmet Needs

- . Land Contamination method
- . Beta Test Version of Incident Response Models
 - Orographic features
 - Multiple meteorology station data
- . Measurements Close-in for Code Comparison
 - Near buildings
 - Line source and diffuse source
 - High-energy releases, as a function of wind speed