



The DOT ERG: A Reasonable Basis for a Transportation EPHA

An Argument for Use of the
DOT Emergency Response Guidebook
as the Technical Basis for
DOE Transportation EP Hazards Assessments

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The DOT ERG: A Reasonable Basis for a Transportation EPHA

- *DOT's Emergency Response Guidebook - International Standard for emergency response to Transportation Accidents*
 - used by HazMat teams throughout U.S., Canada, & Mexico as technical basis for initial recognition, assessment, and protective actions for transportation accidents involving hazardous materials.



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- *Performs Function of Hazard Identification*
 - identifies / categorizes all HazMat into 9 classes (e.g., explosive, flammable, toxic, rad, corrosive)
 - considers transport types & barriers to release
 - identifies time urgent Toxic Inhalation Hazards



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- *Used by DOE to Categorize Offsite Accidents*
 - DOE Order 151.1 accepts ERG as basis for categorizing accidents involving **offsite** DOE transportation activities:
 - *The ... concentration in air ... is expected to require establishment of a protective action zone. ("Protective action zone" is defined in the 2000 Emergency Response Guidebook.)*



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- *Non-DOE-Owned HazMat Accidents Onsite are Assessed Using the ERG*
 - Transportation Accidents **onsite** that do not involve DOE-owned hazardous materials are not classifiable:
 - EMG identifies non-DOE transportation accidents on roads, railroads, or rivers that traverse the site as offsite hazardous material events.
- [continued]



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- If EPHA is developed w/o ERG, **onsite** transportation accidents will have two sets of initial protective actions.
 - Those involving **non-DOE-owned material** will have initial protective actions determined by ERG; **DOE-owned material** will have protective actions based on some other consequence assessment. Accidents involving same material at same location will have different protective actions for same population. More logical approach: use one basis for all transportation accidents - the ERG.



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- *DOT ERG & DOE EPHA Methodologies are Similar*
 - Analysis for ERG was performed by DOE (ANL)
 - ANL/DIS-00-1, *Development of the Table of Initial Isolation and Protective Action Distances for the 2000 Emergency Response Guidebook*
 - derivation of Initial Isolation Zones (analogous to distance to TEL) and Protective Action Zones (analogous to distance to PAC).



The DOT ERG: A Reasonable Basis for a Transportation EPHA

- *DOT ERG & DOE EPHA Protective Action Criteria are Identical*
 - ERPG-3 or equivalent for DOT Initial Isolation Distance & DOE TEL
 - ERPG-2 or equivalent for DOT Protective Action Distance & DOE distance to PAC



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- *ERG is Based Upon Extensive Quantitative Analysis*
 - ... the best available information was used to ... develop a set of up to 100,000 hypothetical incidents for each material. The set accounted for differences in the types of containers, types of incidents, severities of accidents (i.e., amounts released), locations, times of day, times of year, and meteorological conditions involved. Each scenario was analyzed by using detailed emission rate and atmospheric dispersion models to calculate downwind chemical concentrations.
 - Used CASRAM, a quantitative risk assessment model. Like ALOHA, it includes dense gas algorithm (from DEGADIS).