

Selection of Screening Categories for Models: NRC Perspective

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ABSTRACT

A nuclear power plant incident with the potential for a radiological release will start a chronology of events involving the plant licensee, the state, and the NRC. Depending on the potential magnitude of the incident, an emergency operations center will be manned at the appropriate level, communications between all parties will be established, and dose models will be run to determine appropriate protective actions. Once the plume is released, a new set of concerns must be considered. These include the plume's path of travel and the associated deposition patterns that might lead to possible evacuations, crop interdiction, and decontamination actions. Although models will predict the path and deposition patterns, actual protective actions are based on field measurements. For transportation accidents involving smaller amounts of radioactive material, there are predetermined protective actions based on the nature of the accident. The model criteria for this application includes source characterization, dose projection, wet and dry deposition, radiological decay, and ranges on the order of ten miles. Additionally, models must be able to input both observed and forecast weather for as many as thirty-six locations.