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Offsite Response Organization (ORO) Capabilities and Practices in the Intermediate Phase of a Radiological Emergency Response

International MACCS User Group (IMUG)

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ORO Study: Task

The NRC commissioned a study to better understand offsite response organization (ORO) capabilities and practices for protective actions in the intermediate phase of emergency response to a nuclear power plant (NPP) incident.

Study Areas

- Identification of radiological hot spots
- Relaxation of evacuation and relocation orders
- Food condemnation or embargo
- Drinking water safety
- Beyond the 10-mile emergency planning zone (EPZ)
- Notable observations



ORO Study: Methodology

Methodology involved interviews with states as well as reviews of after action reports (AARs) and state radiological emergency plans

Characteristic	States with NPPs	Interviewed States	Percentage of NPP States
Number of States	30	9	30.0%
Number of Operating NPP Sites	60	19	31.7%
Number of Operating Reactors	100	33	33.0%
Population	264,750,000	88,890,000	33.6%
Area (square miles)	1,760,821	524,274	29.8%

Between interviews, plans, and AARs we had at least one data point from 34 unique states



ORO Study: General Results (1)

Identification of Radiological Hot Spots

- Intent and planning
- Resources

Relaxation of Evacuation and Relocation Orders

- Criteria for relocation, reentry, and return
- Prioritization for reentry
- Public information

Food Condemnation or Embargo

- Criteria and establishment of boundaries
- Disposition



ORO Study: General Results (2)

Water

- Criteria for potential drinking water contamination
- Planning, exercises, recent experience

Beyond the 10-Mile EPZ

- Planning considerations
- Recent experience with evacuations

Notable Observations in the Intermediate Phase

- Leveraging technology
- Developing partnerships
- Addressing needs of vulnerable populations and household pets



ORO Study: Next Steps

NRC will publish NUREG/CR report in 2017 or early 2018

- Identify clear trends on ORO capabilities and practices
- Provide confidence for modeling assumptions for use in radiological consequence studies

Potential Relevance of ORO Study Results for MACCS

ORO Study Topics	Related MACCS Model
Identification of Radiological Hot Spots	Early Phase Relocation Models
Beyond the 10-Mile EPZ	Early Phase
Relaxation of Evacuation and Relocation Orders	Intermediate Phase Relocation and Habitability Assessment
Food Condemnation or Embargo	Long-term Phase Agricultural Restrictions
Water	Long-term Phase Societal Dose Assessment





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