

Criteria For Development of Evacuation Time Estimate Studies

Jeff Laughlin

**Office of Nuclear Security and Incident Response
Division of Preparedness and Response**

ETE Topics

- What is an ETE?
- ETE Development
- New concepts
- NRC rule change
- Update criteria

What Is An ETE?

- Time to evacuate the 10 mile EPZ
- Info for Protective Action Recommendation (PAR)
- Offsite Response Organizations (ORO) use for Protective Action Decision (PAD)

ETE Development

- Four population groups
- Multiple scenarios
- Based on emergency response planning areas (ERPAs)

ETE Development

- Four Population Groups
 - Permanent residents and transients
 - Transit-dependent permanent residents
 - Special facility residents
 - Schools

ETE Development

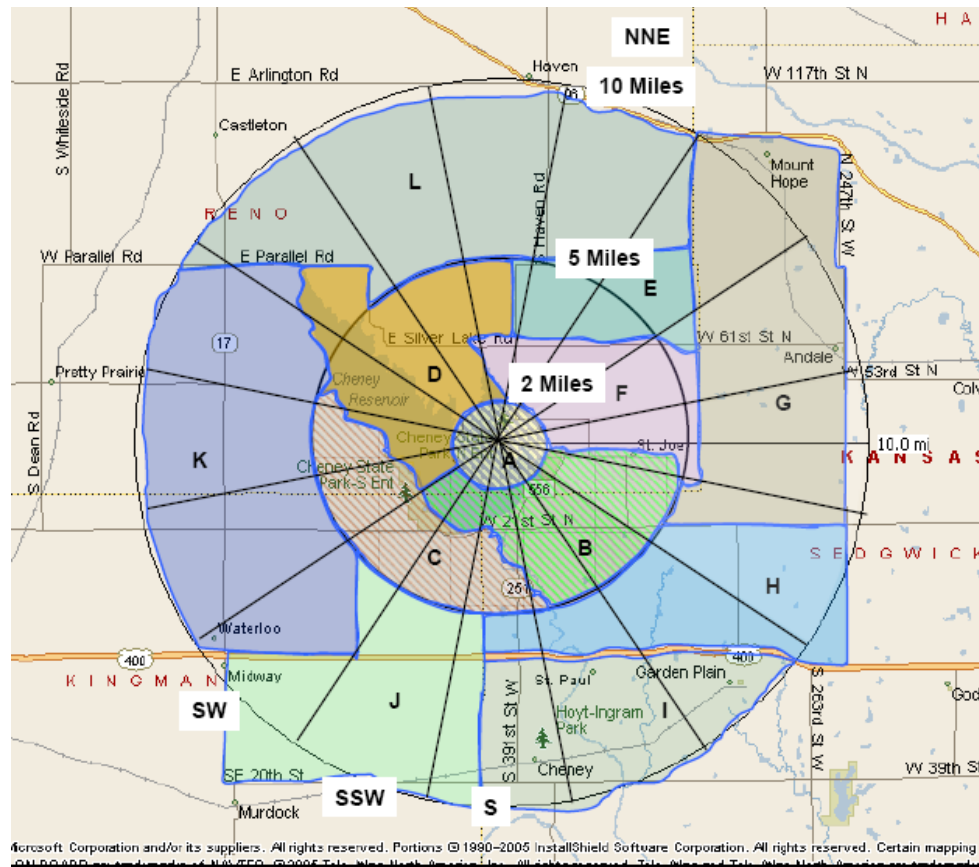
- Multiple scenarios
 - Ensure ETE has range of evacuation times
 - Minimum 10 scenarios



ETE Development

- Based on Emergency Response Planning Areas (ERPAs)
 - Local planning areas within EPZ
 - By geographical or political boundaries

ETE Development



New Concepts

- Staged Evacuation
- Evacuation Tail
- Shadow Evacuation
- ETE Updates

New Concepts

- Staged Evacuation
 - 0-2 mile zone evacuates
 - 2-5 mile zone shelters
 - 2-5 mile downwind (keyhole) evacuates
 - following 90% evacuation time of 0-2 mile zone

New Concepts

- Evacuation Tail
 - 10 percent of public takes longer to evacuate
 - Decision-makers use 90% ETE value

New Concepts

- Shadow Evacuation
 - Occurs outside official evacuation zone
 - 20 percent shadow evacuation assumed out to 15 miles from nuclear power plant

Rule Change

New Addition

“Evacuation time estimates have been developed by applicants and licensees.

Licensees shall update the evacuation time estimates on a periodic basis.”

Update Criteria

- **Mandatory ETE Updates**
 - Within 365 days of availability of most recent decennial census
 - Population increase

Questions?

Jeff Laughlin

Emergency Preparedness Specialist

(301) 287-9229

jeff.laughlin@nrc.gov