Commission Briefing
REACTOR EMERGENCY PLANNING

Office of Nuclear Reactor Regulation

Emergency Planning
A SUCCESS
Ongoing coordination, planning, practice, and refinement of emergency plans contribute to successful EP

Emergency planning

Develops workable plans

Confirms that plans work

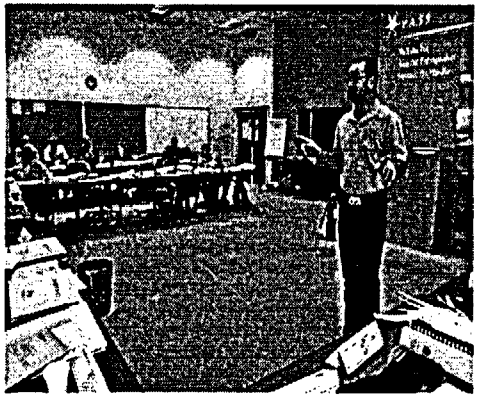
Can identify, evaluate and react to a wide spectrum of emergency conditions

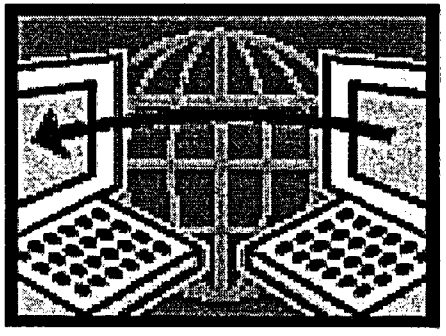
Emergency Preparedness

In the news.....

Lessons learned contributed to a robust EP infrastructure:

- Emergency planning/procedures
- Training
- Offsite response
- Drills/exercises
- Communications with public, media, offsite officials





Emergency planning is a part of NRC's "defense-in-depth" philosophy

Safety

requires high quality in the design, construction and operation of nuclear plants

requires safety systems to reduce the chances that malfunctions will lead to accidents

requires containment structures and other safety features to prevent the release of fission products offsite

Security

Emergency Planning

Regulatory Standard

Reasonable Assurance that adequate protective measures can and will be taken to protect public health and safety.

Emergency Preparedness

Actions which can and should be performed prior to an emergency

Planning and coordination meetings

Procedure development/implementation

Training

Drills and exercises

Evaluations, critiques, continuous improvements

Lessons learned

Pre-positioning/maintenance of emergency equipment


SAFET

Emergency Response

- **Actions taken in *response* to an actual event.**

Successful planning

Successful response.

EP CRITERIA for Power Reactors

10 CFR 50.33

10 CFR 50.34 10 CFR 50.47

10 CFR 50.54 10 CFR 50.72

Appendix E to Part 50.

NUREG-0654/FEMA-REP-1, Rev. 1,

16 Planning Standards

- Assignment of responsibilities
- Onsite Emergency Organization
- Emergency Response Support and Resources
- Emergency Classification System
- Notification Methods and Procedures
- Emergency Communications
- Public Education and Information
- Emergency Facilities and Equipment
- Accident Assessment

16 Planning Standards, cont'd

- Protective Actions
- Radiological Exposure Control for emergency workers
- Medical Support for Contaminated Injured Individuals
- Recovery and Reentry Planning, Post-Accident Operations
- Exercises and Drills
- Radiological Emergency Response Training Responsibility for Planning Effort: Development, Periodic Review, Distribution, Updates

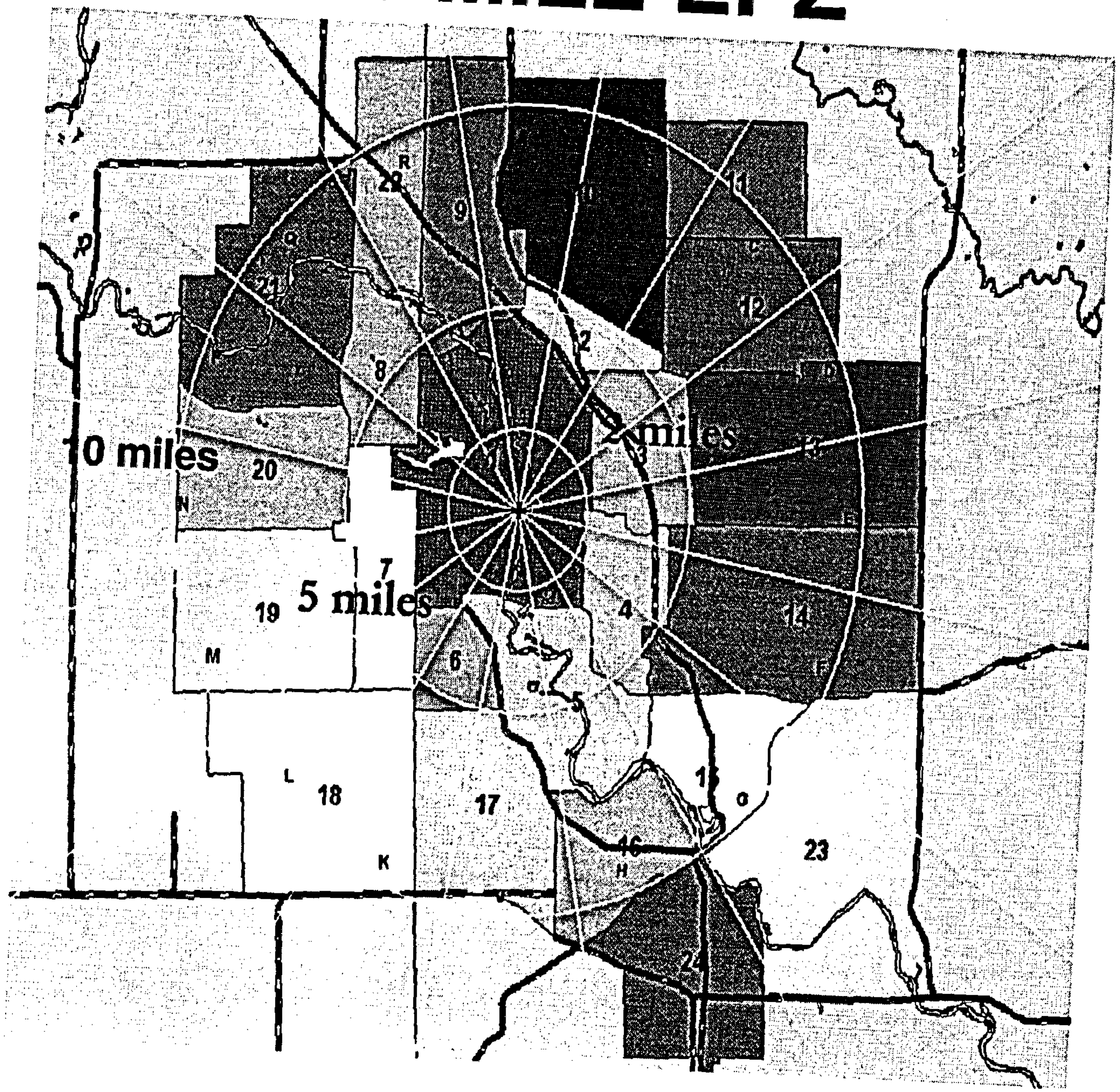
Emergency Planning Zone

A defined area around a nuclear power plant

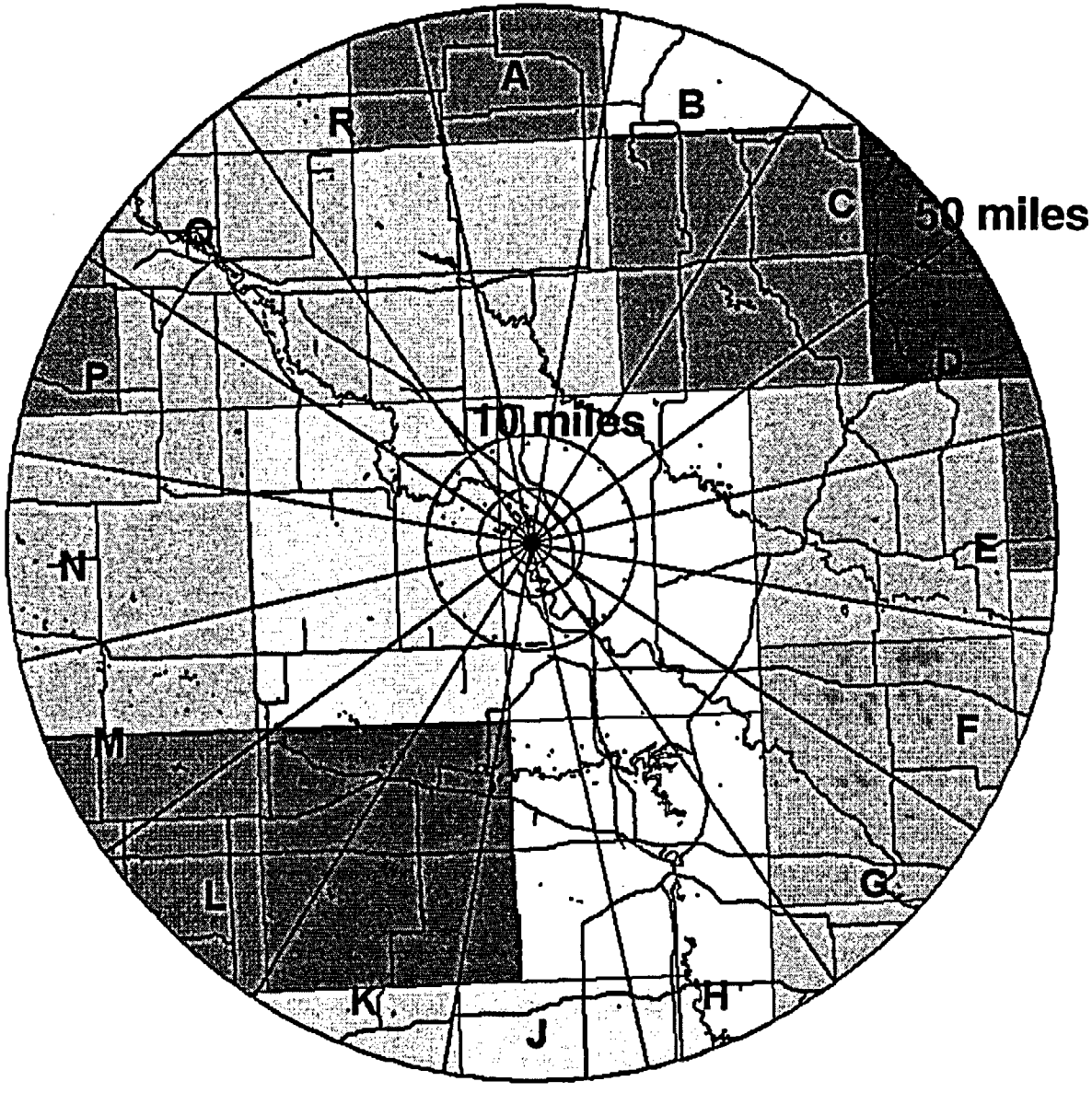
Facilitates offsite emergency planning

Supports response beyond the planning zone

10 MILE EPZ



50 MILE EPZ



Protective Actions

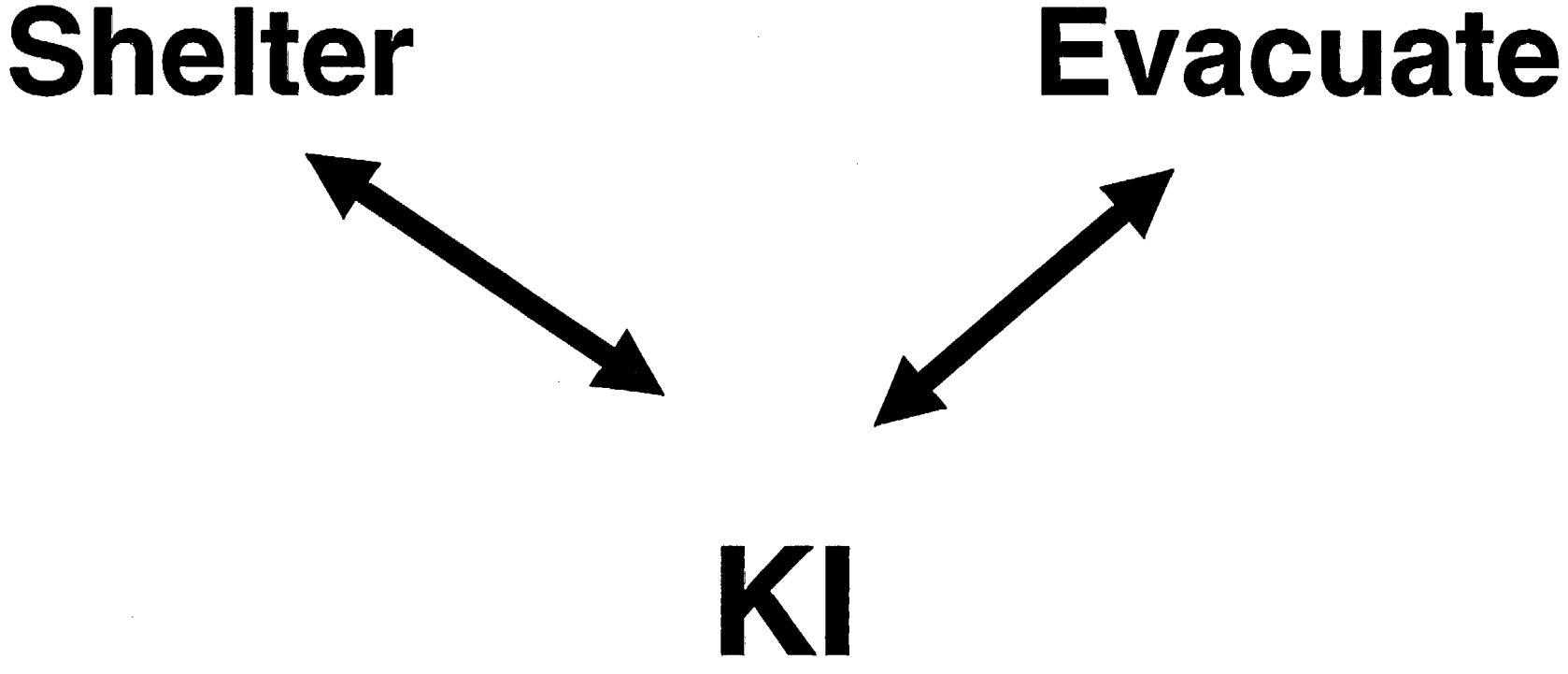
Risk of the protective action

and

Risk associated with the dose that will be avoided

Protective actions

10 mile EPZ



Protective Actions

50 mile EPZ

Interdiction of contaminated food and milk

Relocation of population

Access control

Food animals on stored feed, not pasture

Sandia Laboratory Report 1982

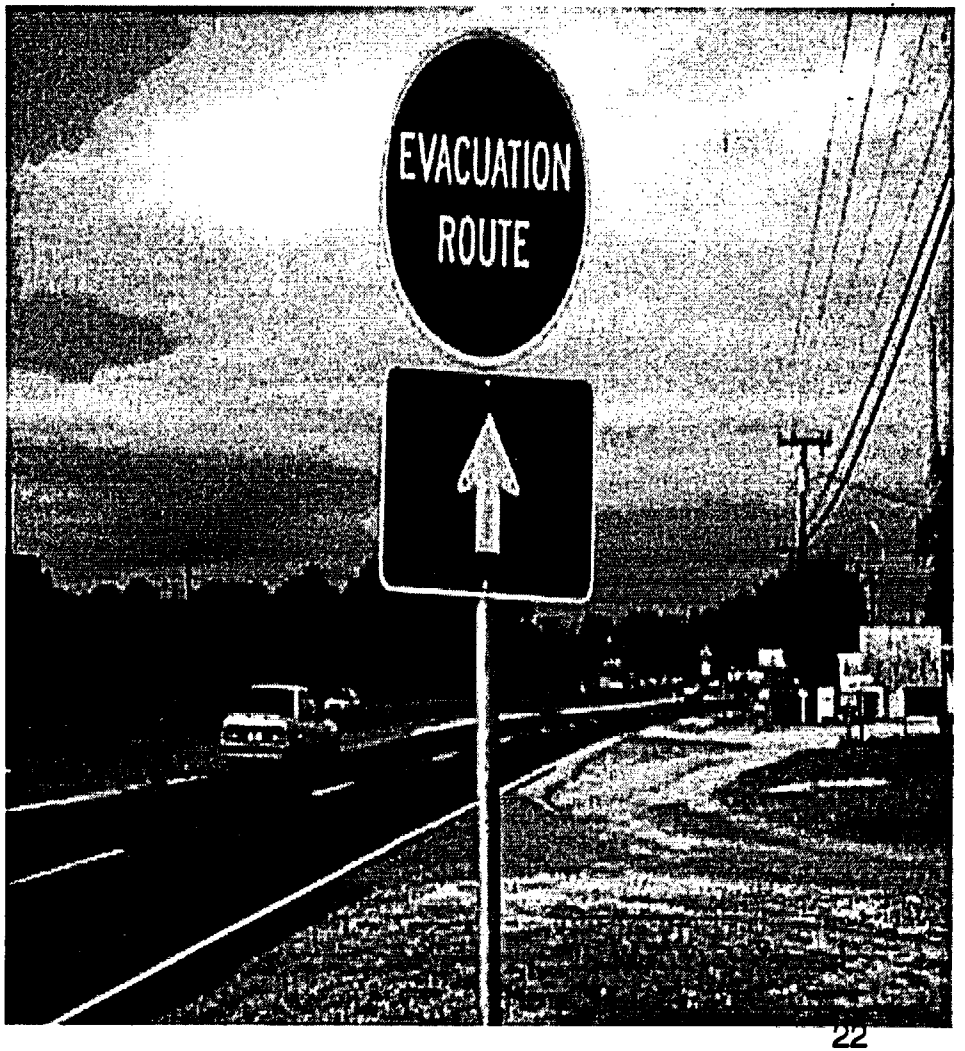
Results often taken out of context

Unrealistic assumptions

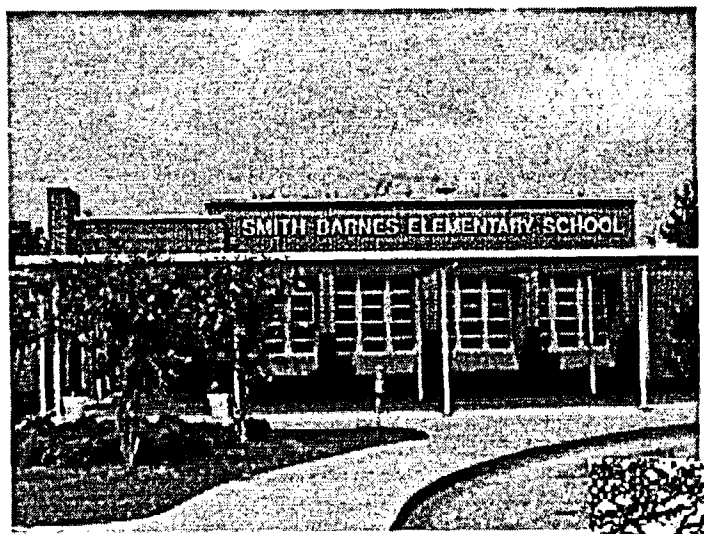
Never intended to be a basis for emergency planning

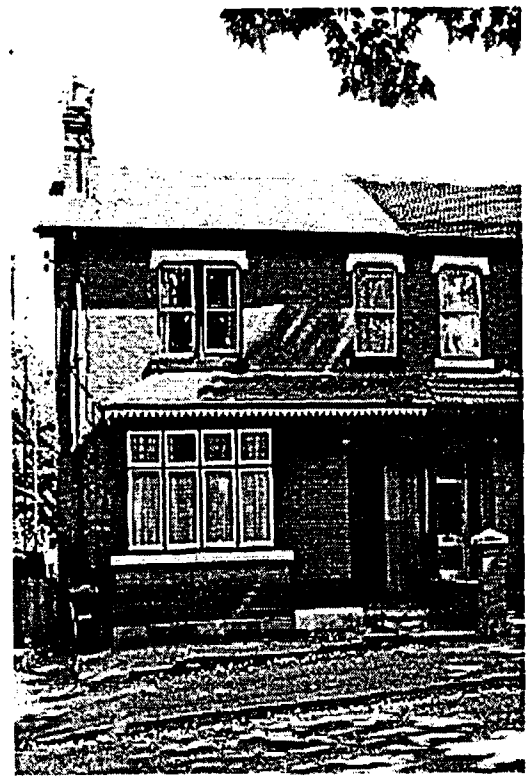
Evacuation

- Evacuation directs people away from the plume
- Reduces/eliminates radiological exposure

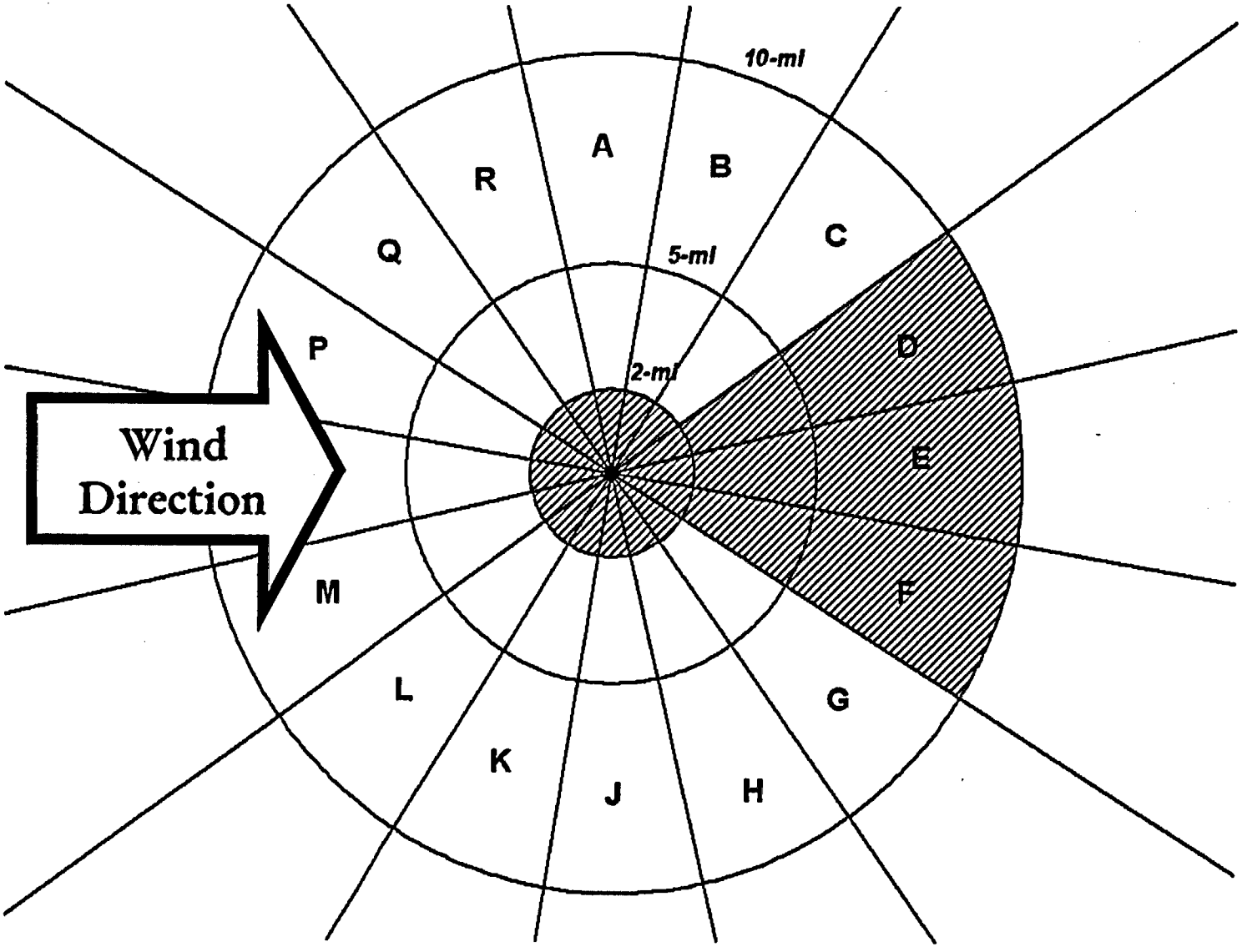


Shelter

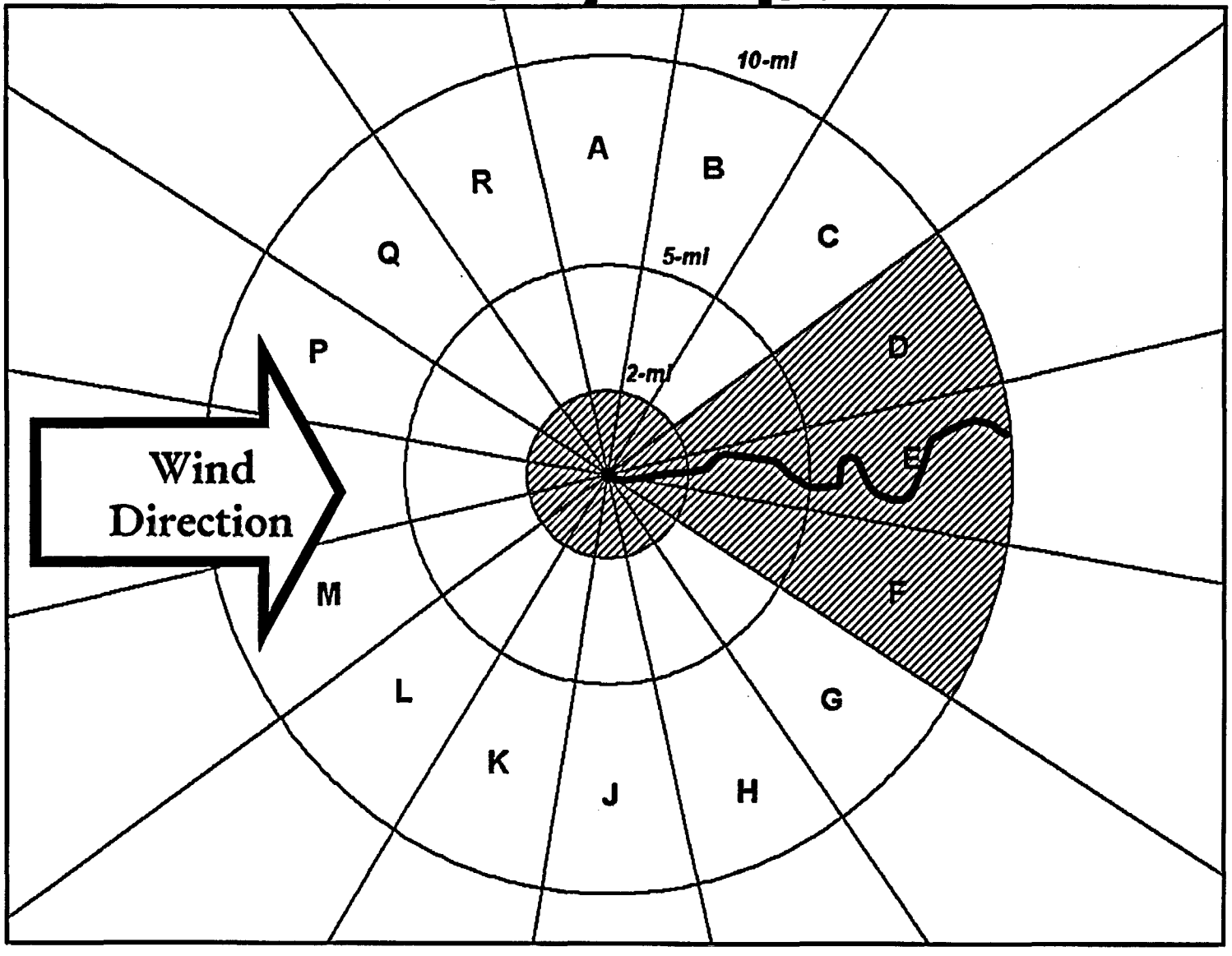




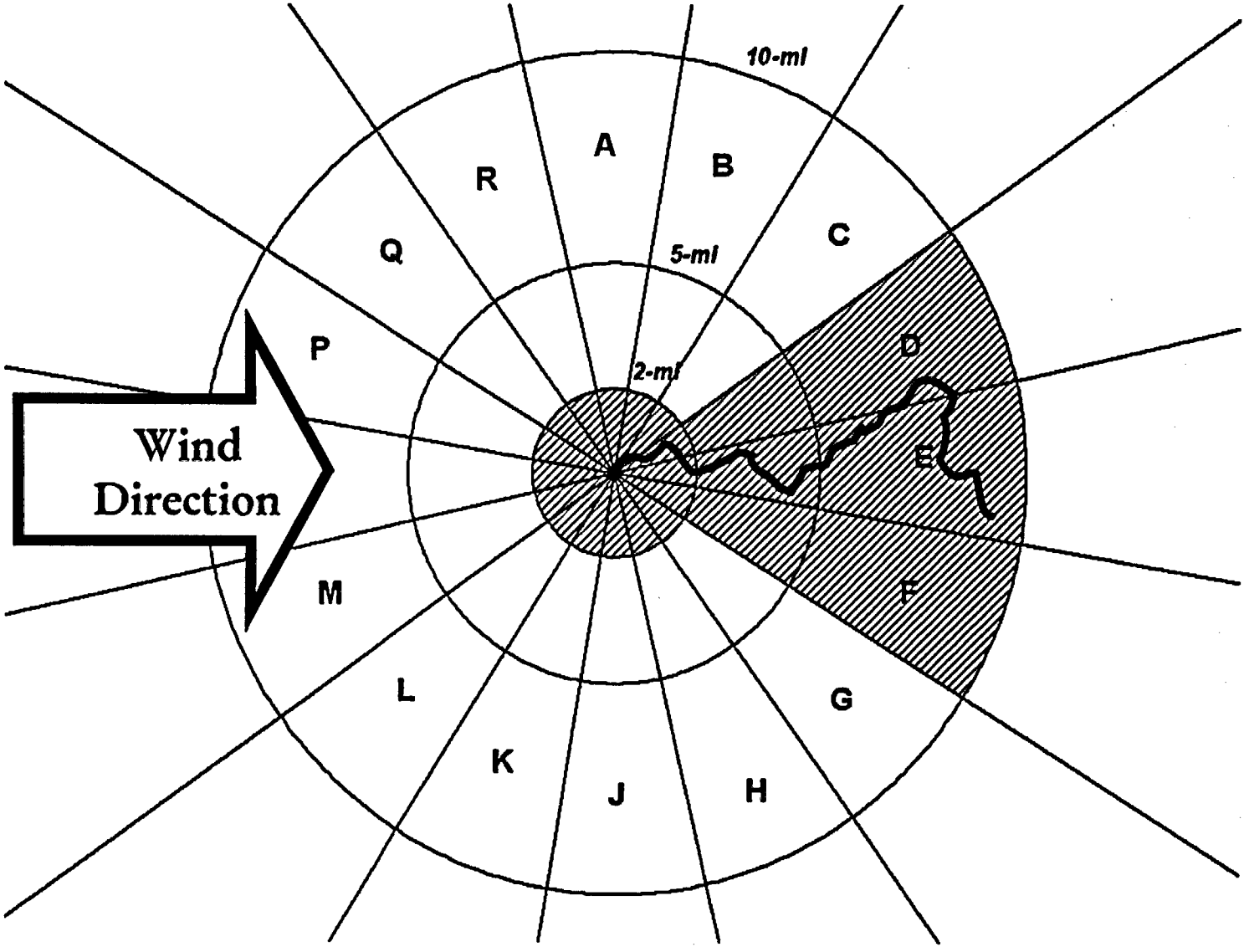
"Keyhole"



Plume meander "straight" path



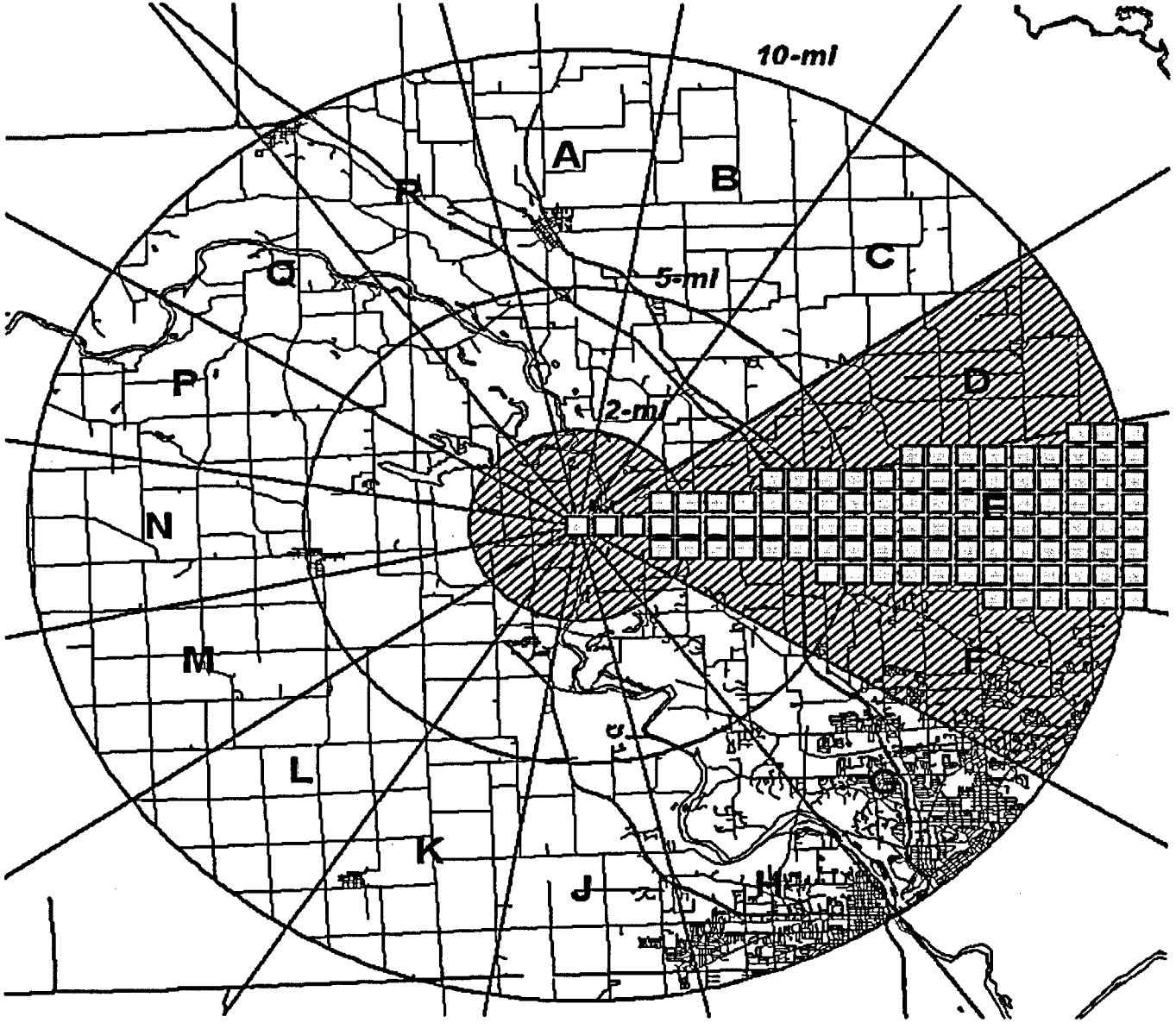
Plume meandering



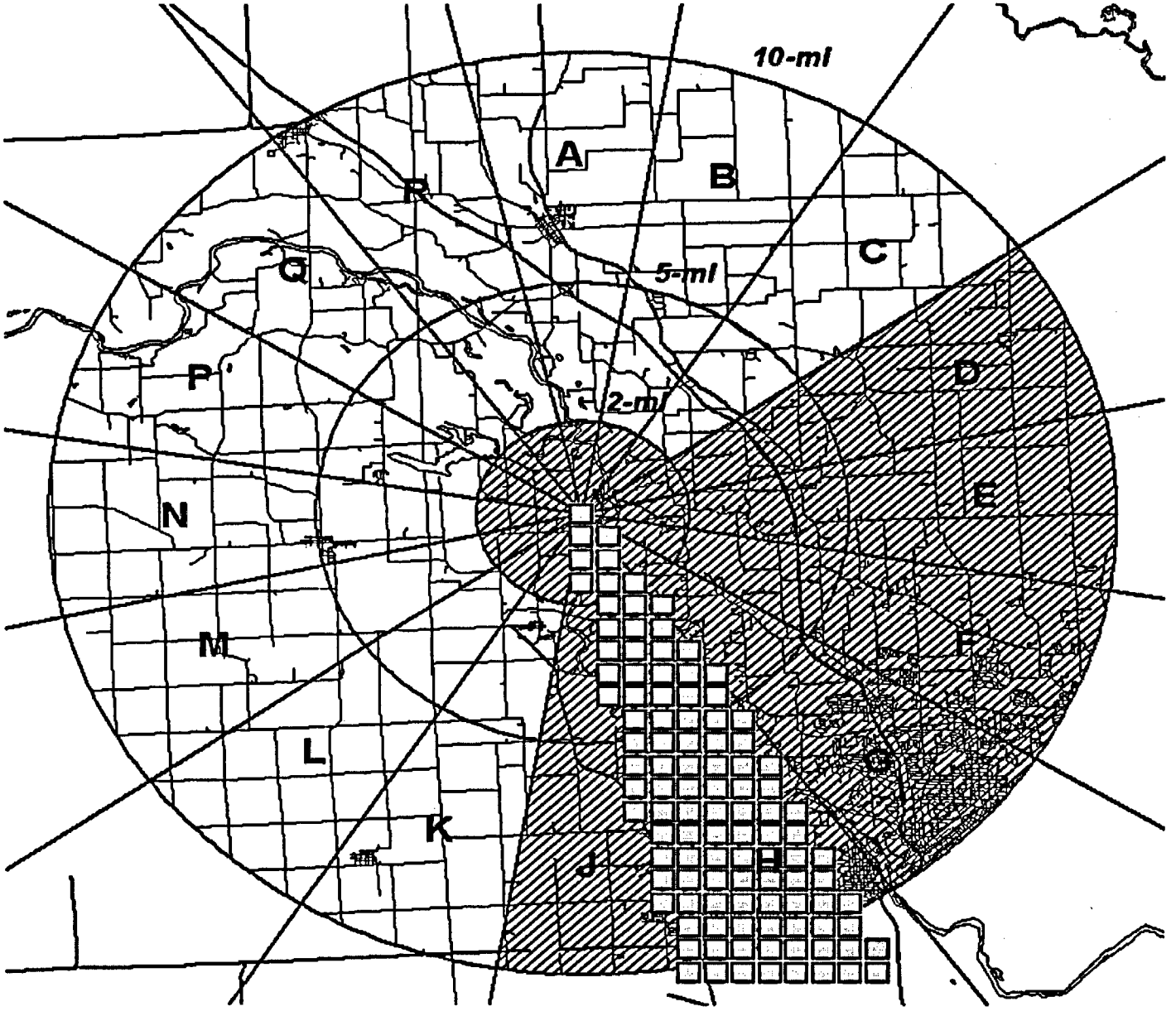
EVACUATION TIME ESTIMATE

- Assist decision makers in protective action strategies
- Assist authorities in traffic management
- Updated as demographics change
- Not linked to dose

Initial Plume

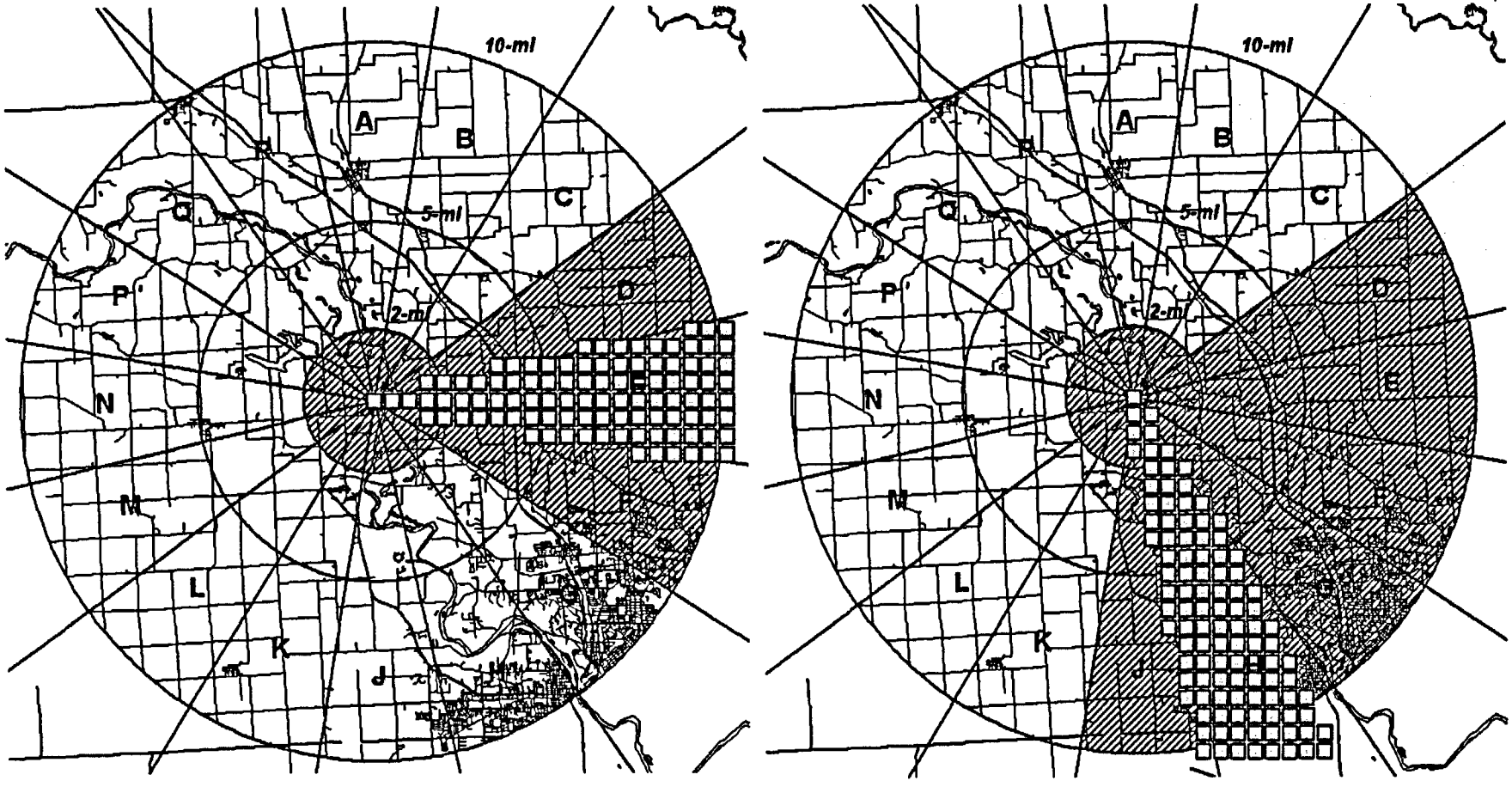


Windshift, keyhole expanded



Expanded keyhole

as wind shifts, protective action range expanded



Emergency Plans

Nuclear plant emergency plans have been implemented successfully in real-life non-nuclear situations:

- Cedar Rapids, IA, 10,000 people evacuated from toxic fumes from a fire
- St. Charles Parrish, LA, 17,000 people evacuated from leak at chemical plant
- Nanticoke, PA, 13,000 people evacuated from toxic smoke
- San Luis Obispo, CA, 3000 people evacuated from out-of-control fire

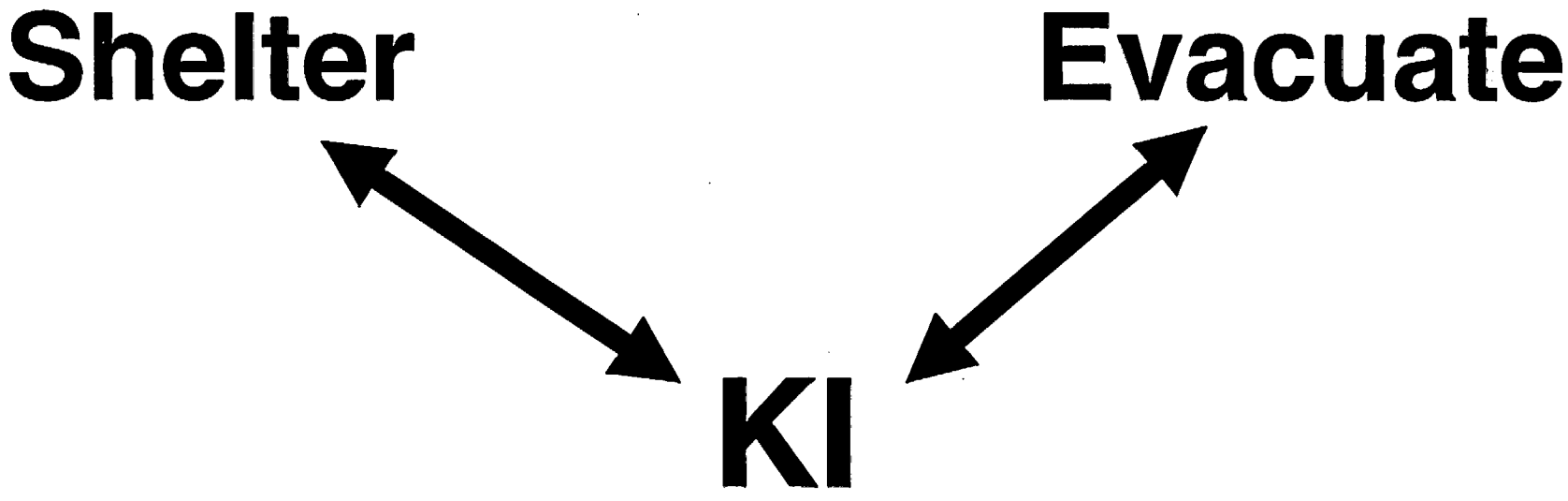
10 CFR 50.47(b)(10)

"in developing this range of actions, consideration has been given to evacuation, sheltering, and, as a supplement to these, the prophylactic use of potassium iodide"

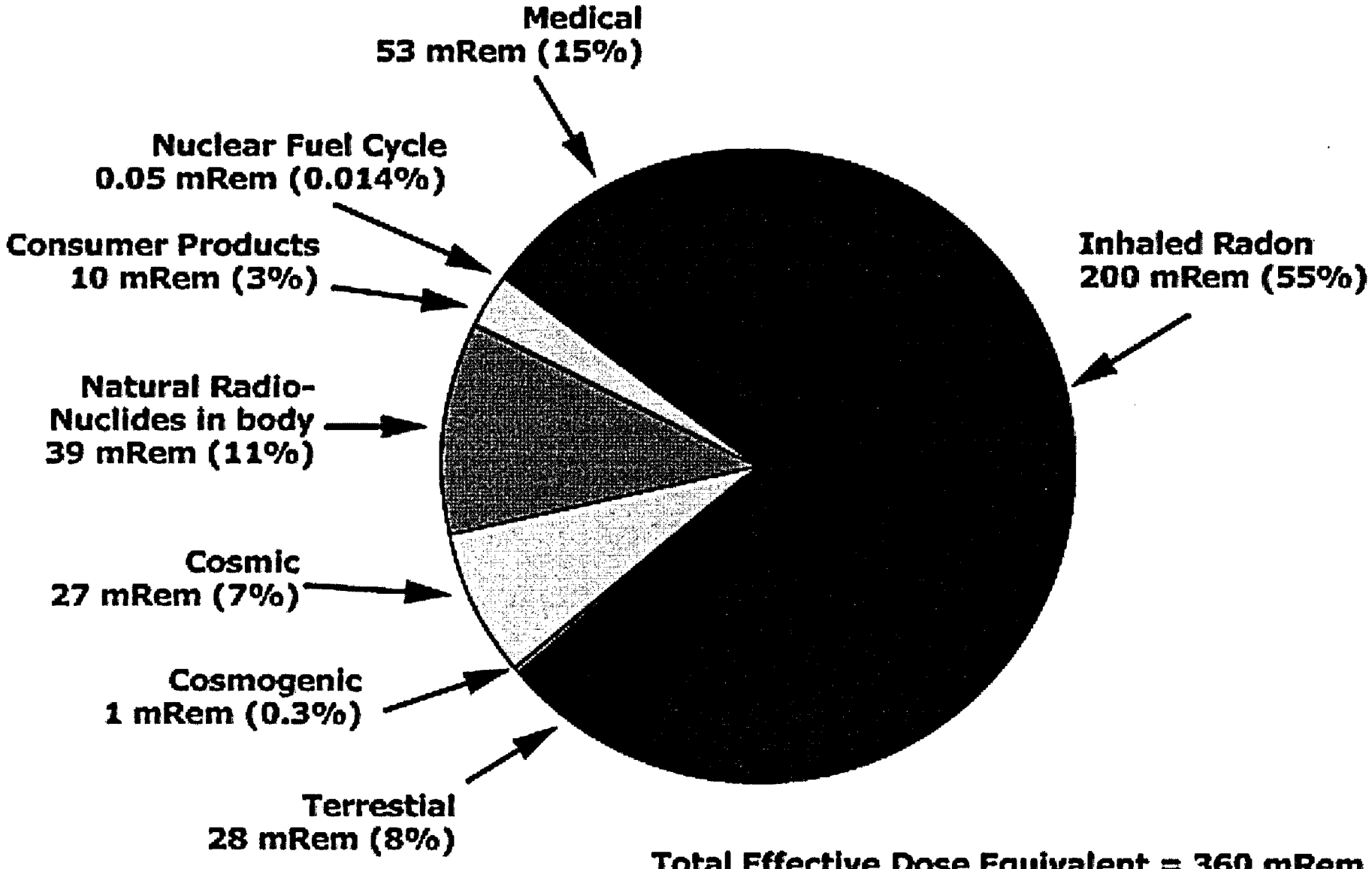
Potassium Iodide

18 states have received KI tablets from the NRC

10,100,000 KI tablets have been distributed


Shelter
Evacuate
KI

Sources of Exposure



Total Effective Dose Equivalent = 360 mRem

Emergency Planning in the New Threat Environment

Emergency Plans are not dependent on the initiating scenario

Emergency Planning basis remains valid in the post-9/11 threat environment

Emergency preparedness regulations **require** rapid notification of the public in the event of an emergency.

NRC & FEMA

Relationship is codified in regulations and in Memoranda of Understanding

FEMA/NRC steering committee, Regional Assistance Committee, Federal Radiological Preparedness Coordinating Committee

RADIOLOGICAL EMERGENCY PREPAREDNESS PROGRAM

Ensure health and safety of citizens living around commercial nuclear power plants

Inform and educate the public about radiological emergency preparedness

REP PROGRAM MISSION

Enhance planning, preparedness, and response for all types of radiological emergencies with Federal, State, Tribal and local governments and the private sector

Ensure adequate offsite emergency plans and preparedness are in place and can be implemented to protect public health and safety

FEMA RESPONSIBILITIES

- Evaluate offsite emergency response plans
- Evaluate biennial exercises
- Make findings on adequacy of planning
- Provide regulatory oversight and guidance
- Respond to requests for assistance
- Coordinate Federal planning activities

EXERCISE FINDINGS

Deficiency – a performance inadequacy that could cause a finding that offsite emergency preparedness does not provide reasonable assurance public health and safety can be protected

Area Requiring Corrective Action – a performance inadequacy that does not adversely impact public health and safety

ANNUAL LETTER OF CERTIFICATION

- Voluntary reporting mechanism
- Submitted by January 31st each year
- Summary of annual preparedness activities
- Not a certification of reasonable assurance from State or local officials

ALERT AND NOTIFICATION SYSTEMS

- Physical means of notifying public within 10-mile emergency planning zone
- Most often outdoor siren systems
- Planned back up notification methods
- Reviews conducted upon significant modifications to system

REP PROGRAM SUCCESS

- Wide recognition as a successful program
- Success a result of
  - Interagency Coordination
  - Communication
  - Management Support
- Continued success fully expected

Emergency Response
NRC's Responsibilities

Assess plant conditions

Evaluate Protective Action Recommendations

Support off-site officials

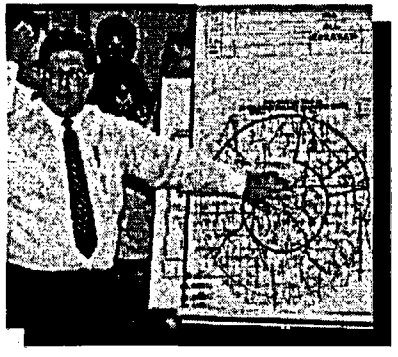
Keep other agencies informed

Keep news media informed

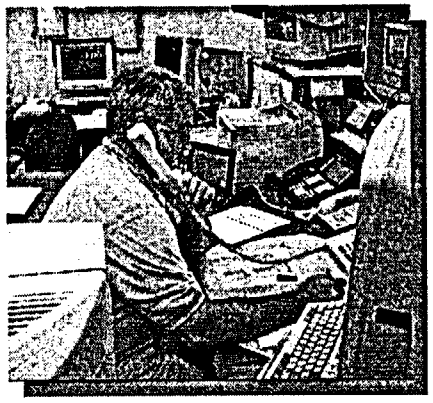
Coordination With Other Agencies

- Department of Homeland Security • Department of Defense
- Federal Aviation Administration • Department of Energy
- Environmental Protection Agency • Department of Justice
- Federal Emergency Management Agency • States • Locals




NRC's Response Organization

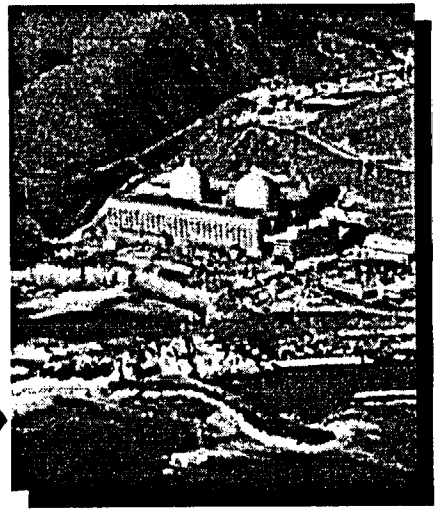


← HQ Operations Officer (HOO)

Executive Team →

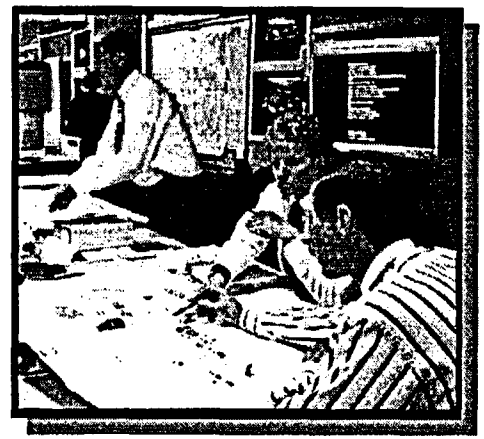
← HQ and Regional Assessment Teams

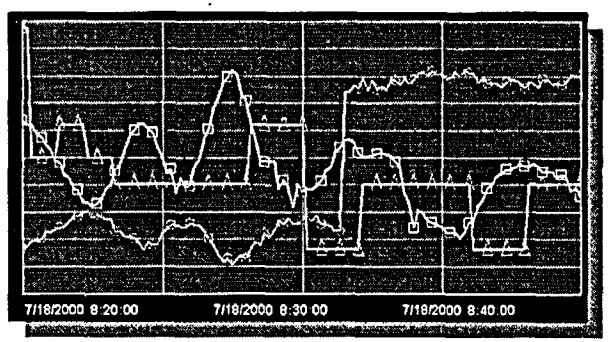
Site Team →

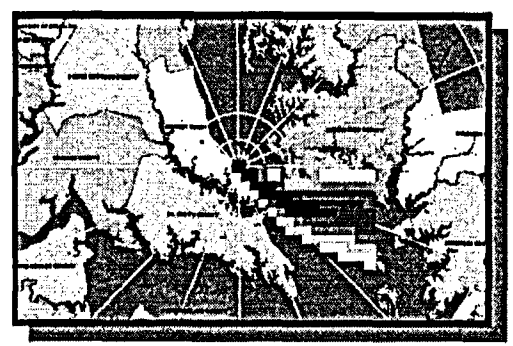


Assessment Teams

- Reactor Safety Team
- Fuel Cycle Safety Team
- Safeguards Team
- Protective Measures Team







Recent Activities

- TOPOFF 2 Interagency Exercise
- Coordination with DHS on National Response Plan
- Coordination with DOD on Interagency Exercise Planning
  - Unified Defense 04
  - Amalgam Virgo 04
- Continuing activities to Headquarters Operations Center and Regional Response Centers

The Nuclear Regulatory Commission's effective and robust emergency planning regulations continue to demonstrate our strong commitment to the protection of the public health and safety