

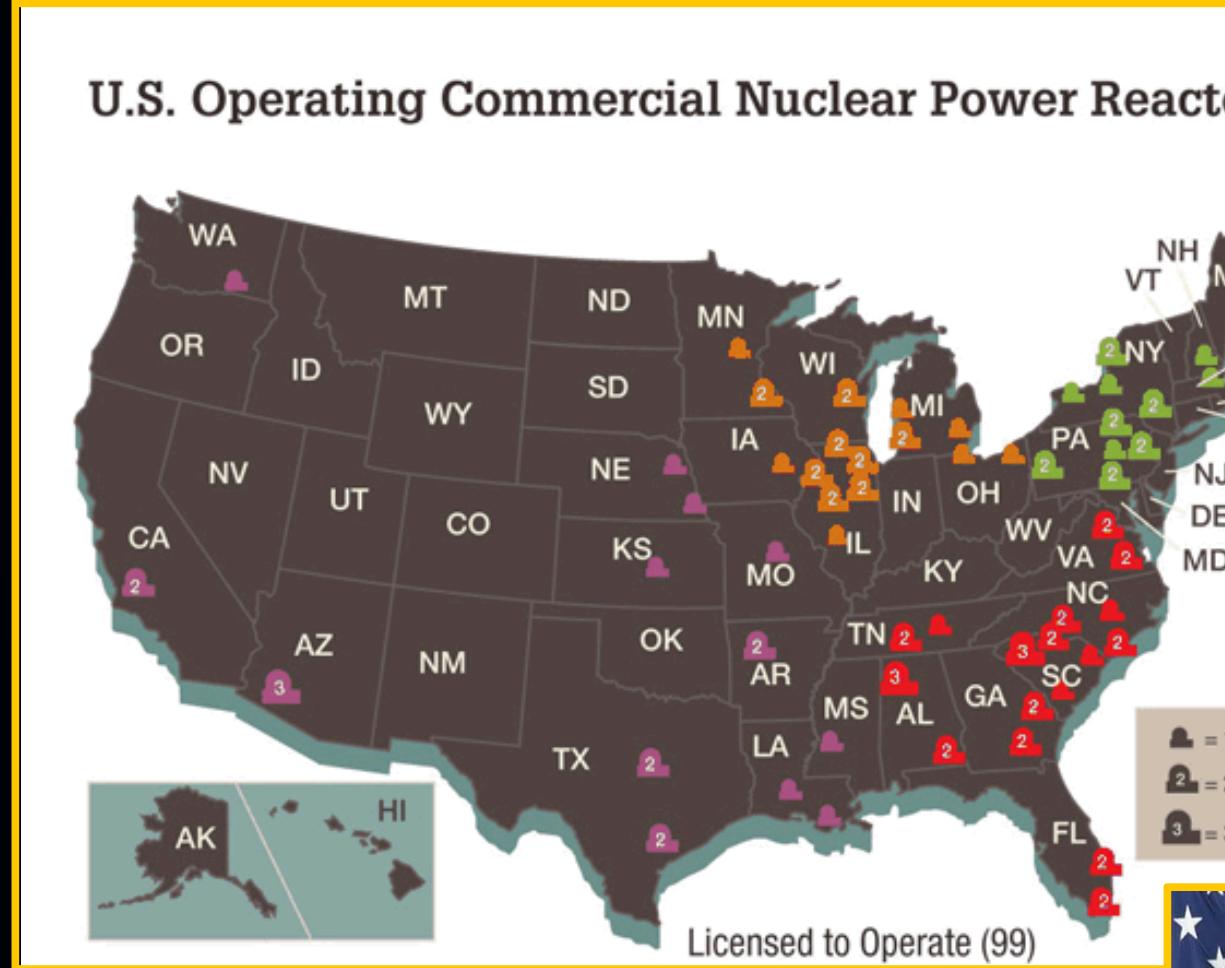


TRAINING
AND
TECHNOLOGY
DEMONSTRATION
AREA

Nuclear Energy Safety **EMERGENCY PREPAREDNESS**



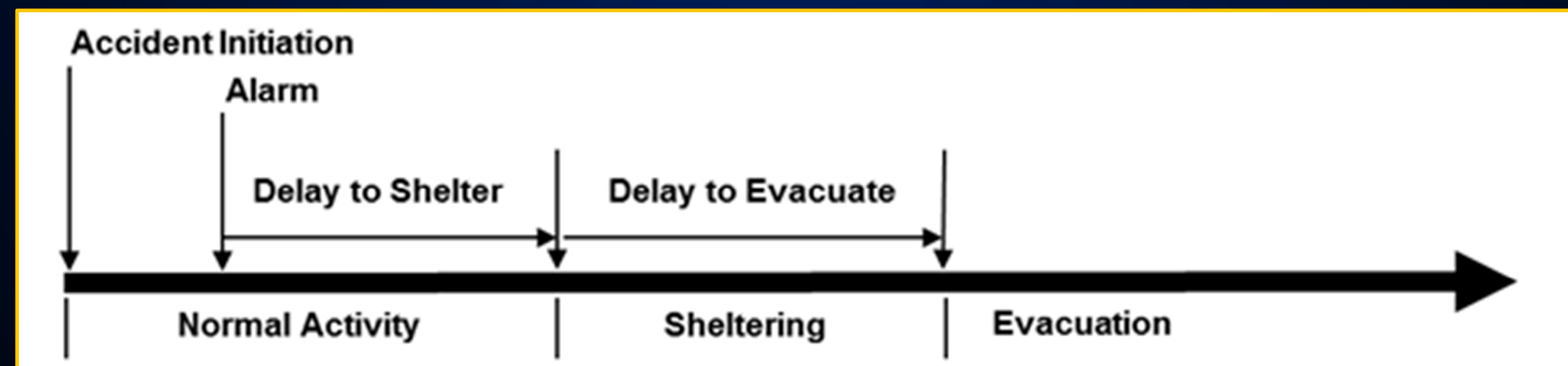
NUCLEAR POWER IN THE UNITED STATES



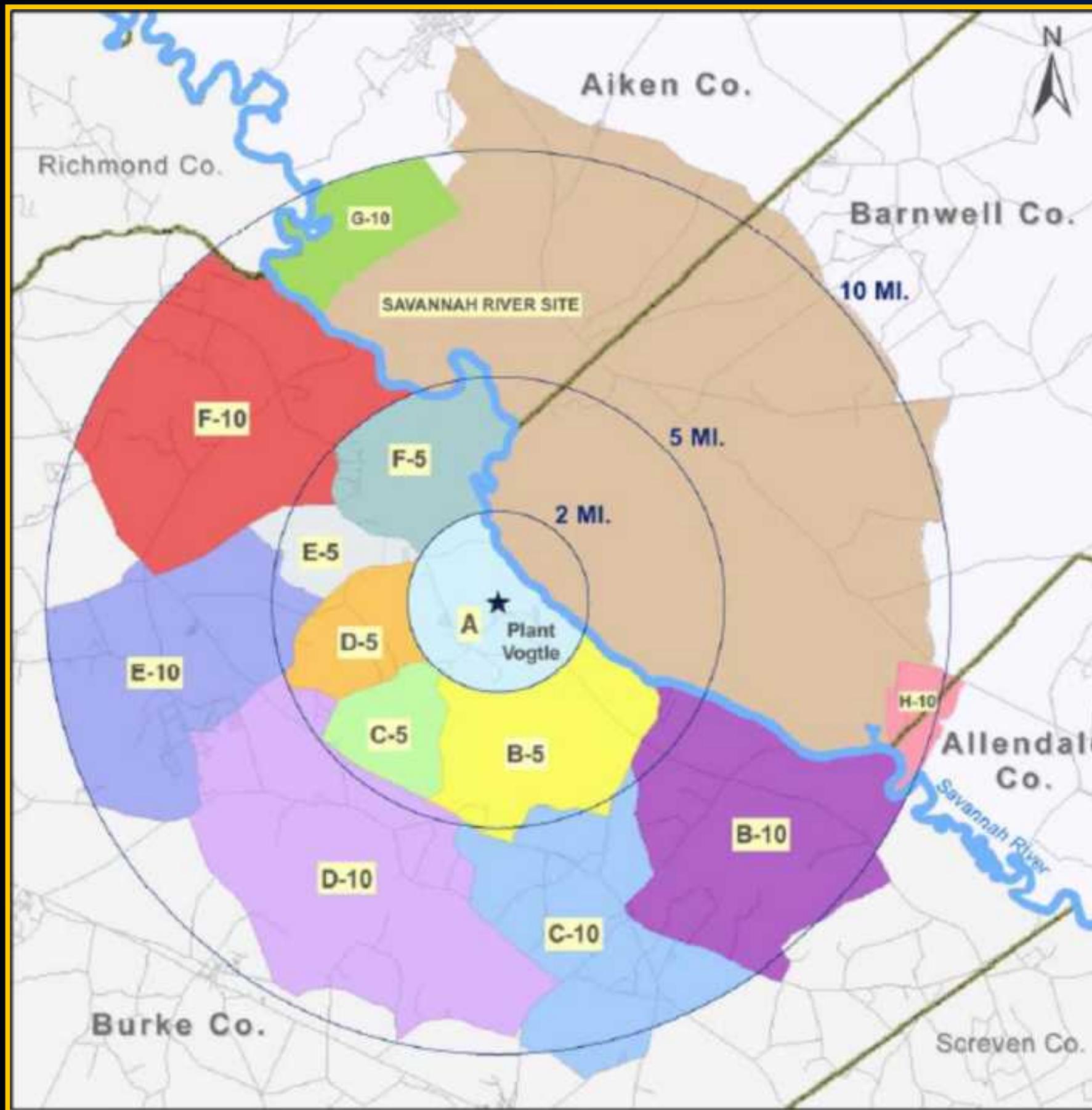
- There are 99 licensed to operate power-producing reactors in the United States.
- These plants are regulated by the Nuclear Regulatory Commission (NRC).
- The NRC is broken up into 4 regions with the headquarters being in Washington, D.C.
- The NRC independently regulates nuclear material to protect public health, safety, and the environment.

EMERGENCY PLANNING

Emergency planning determines mitigative actions following a nuclear incident, designed to balance radiation exposure and public health effects with the economic costs of the accident. Mitigative measures include: sheltering in place, evacuation, temporary relocation for people living in the EPZ and decontamination, crop disposal, and condemnation of land. These measures are based on classification criteria and the specific accident sequence.



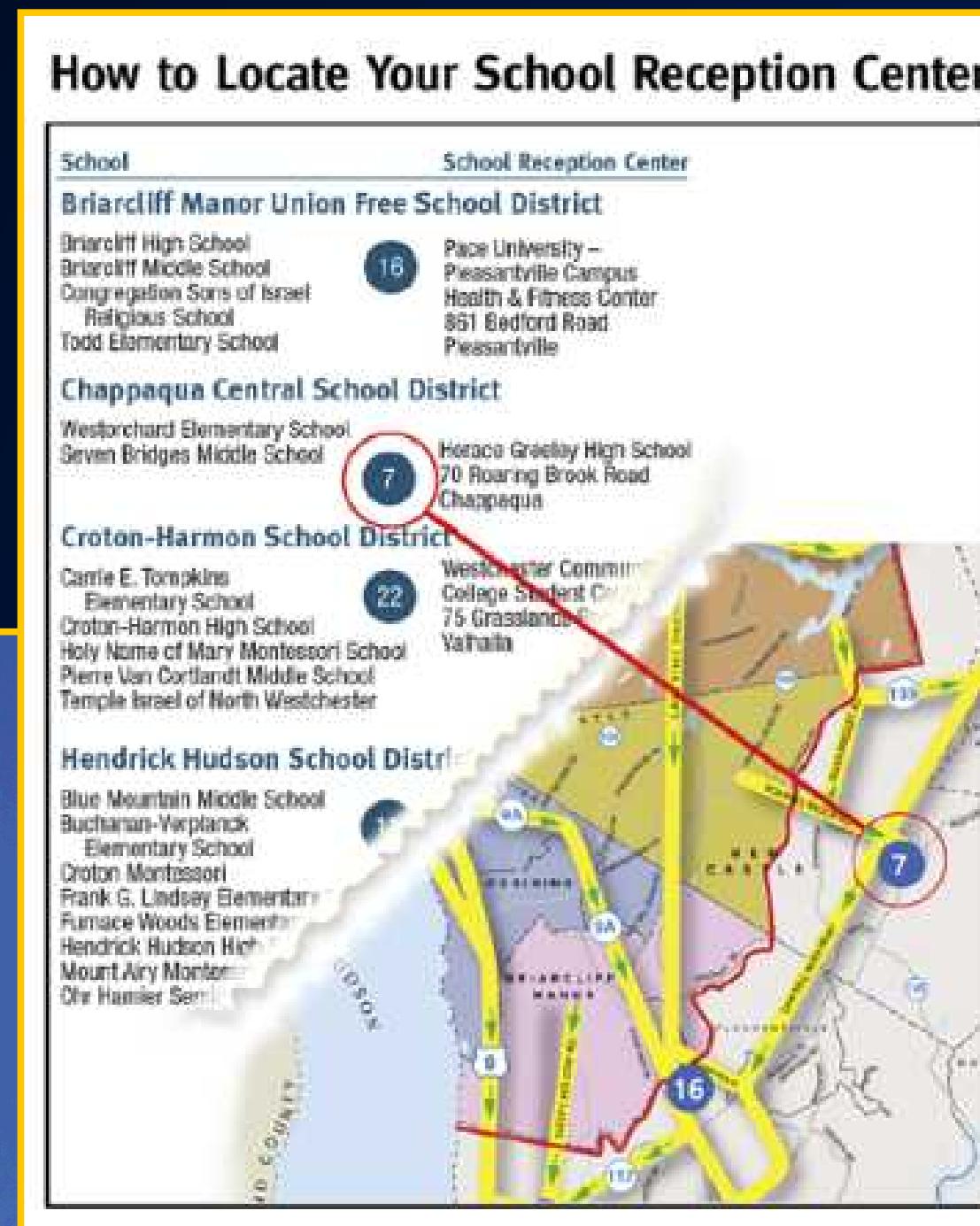
EMERGENCY PLANNING ZONES (EPZ)



Each nuclear power plant site has a plume exposure pathway EPZ and a 50 mile radius ingestion pathway EPZ.

A plume exposure pathway EPZ is an approximate 10 mile radius surrounding the nuclear power plant site. The EPZ has a robust planning and preparedness program in place.

EMERGENCY PLANNING ZONES (EPZ) CONTINUED



What about people with special needs?

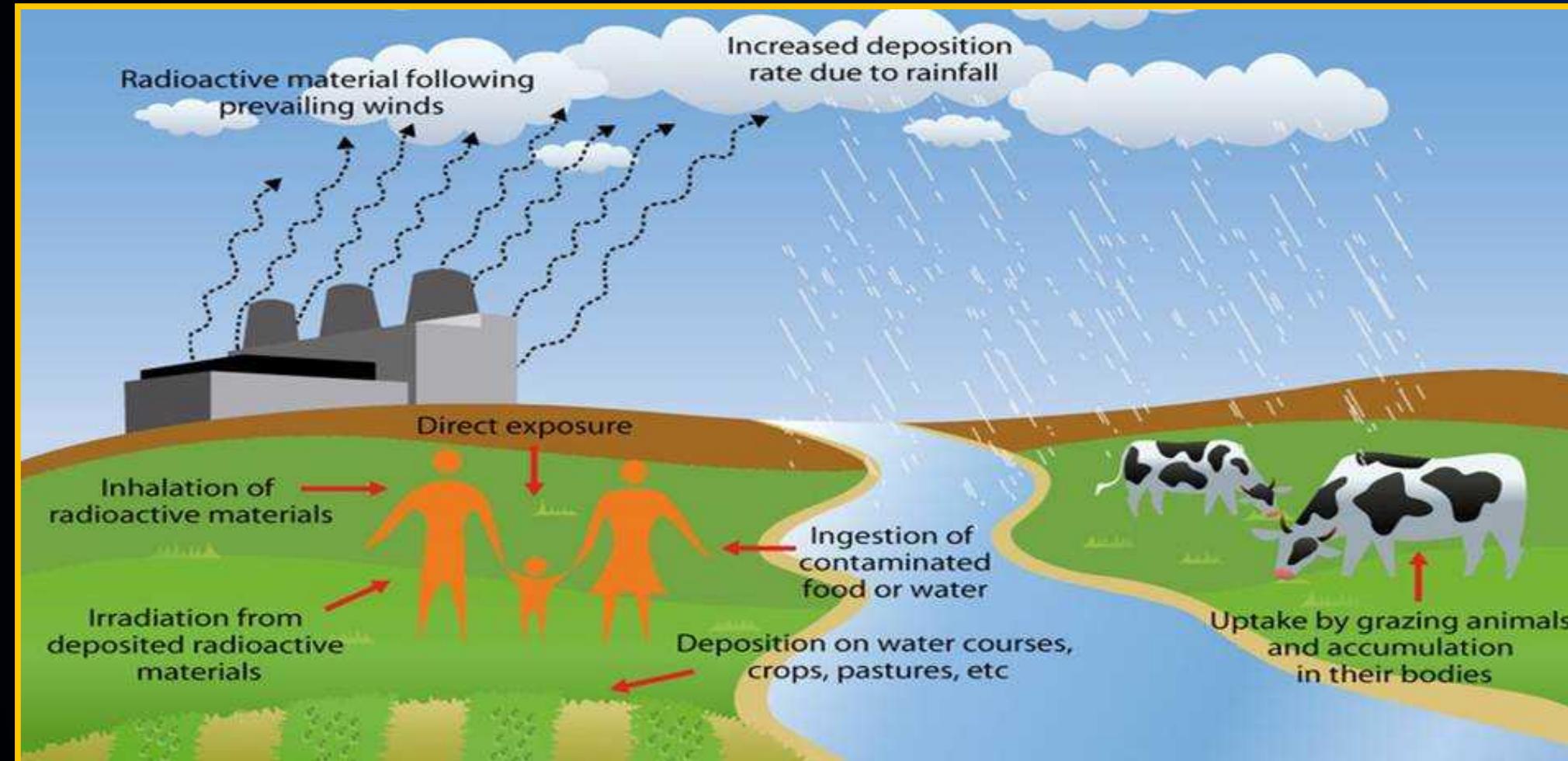
If you have a special need, such as mobility impairment, visual or hearing impairment, or need specialized transportation or equipment, prepare an emergency plan with family, friends or neighbors. If needed, the County in cooperation with your municipality can assist in making special arrangements for you.

Sites are required to educate the people living, working, and visiting within the EPZ regarding the reactor site and how to respond in the case of an accident.

This includes ways to notify the population that an incident has occurred and they need to seek out additional information.

There are pre-assigned evacuation routes within the EPZ that include separate instructions for special needs populations, such as school children, hospitals, nursing homes, jails, etc."

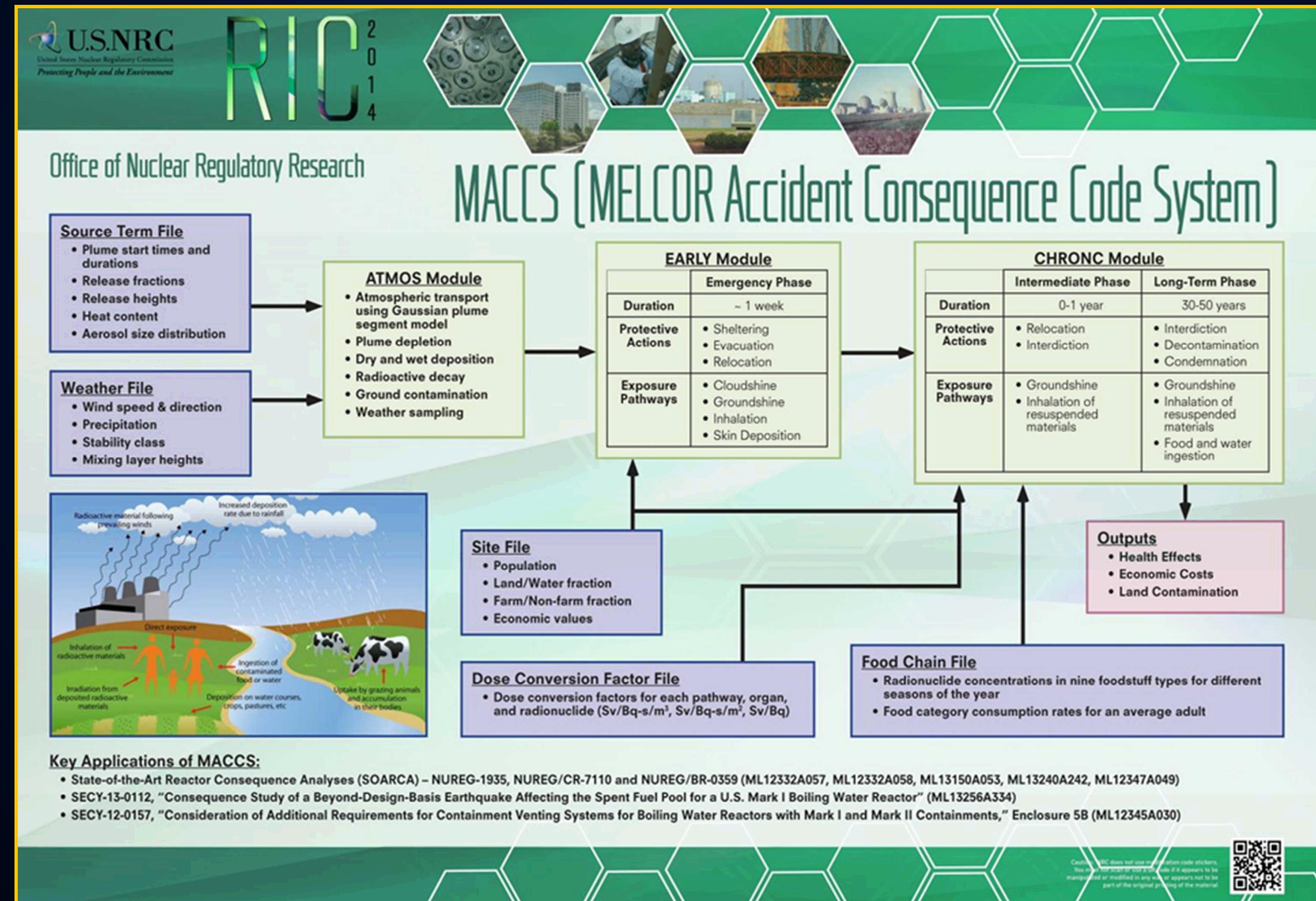
MACCS (MELCOR ACCIDENT CONSEQUENCE CODE SYSTEM)



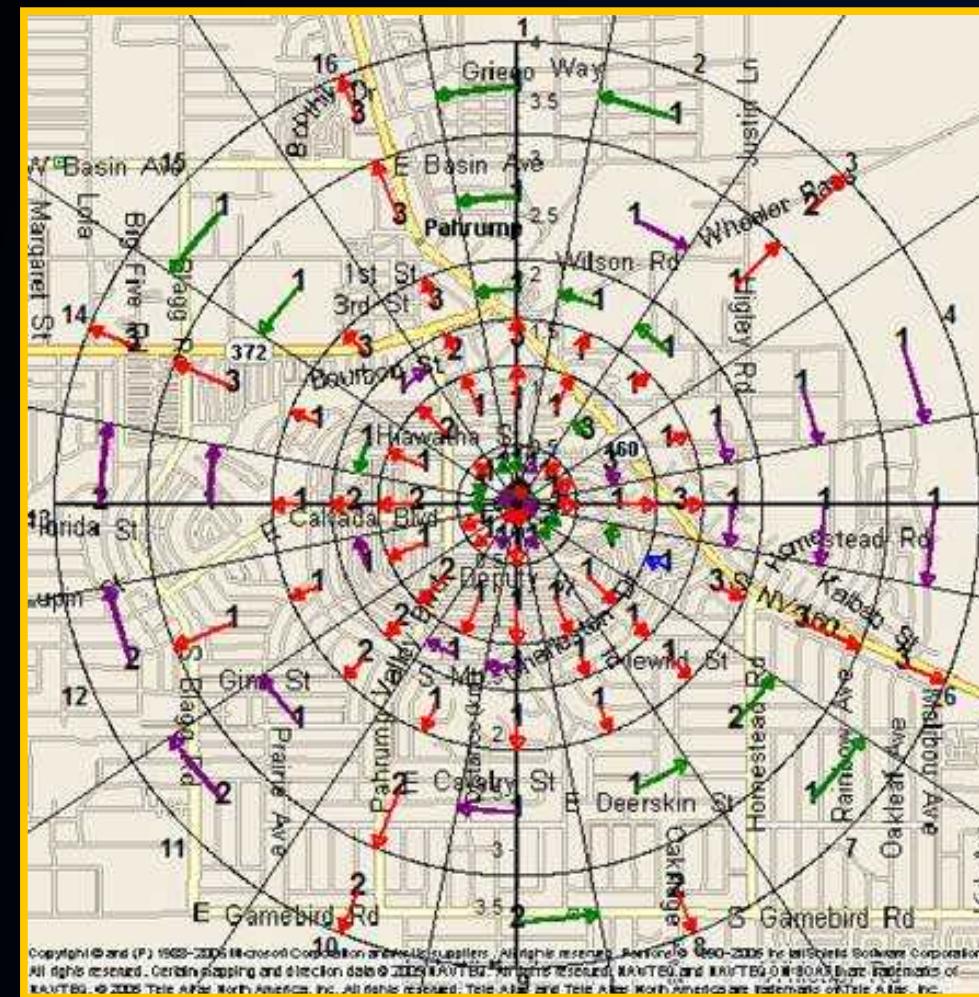
Sandia developed and maintains
MACCS (MELCOR Accident
Consequence Code System)
MACCS:

- *performs probabilistic health and economic consequence assessments*
- *calculates atmospheric dispersion and transport, countermeasure strategies, dosimetry, health effects, and economic impacts.*

MACCS (MELCOR ACCIDENT CONSEQUENCE CODE SYSTEM)



MACCS EVACUATION MODEL



MACCS evacuation map defines the direction people will move in each sector (compass direction plus radial ring). This is based on site-specific evacuation time estimates (ETEs).

A keyhole evacuation has shown in our analysis to be a beneficial evacuation method. In a keyhole evacuation a mandatory evacuation is declared for a radial area surrounding the site (can be a 2 mile radius or 5 mile radius depending on the release characteristics and weather) and extended downwind to a 5 mile or 10 mile area. This gets the people most at risk evacuated first.

