



SAND2010-8370P



Emergency Management for Transportation Accidents Involving Radioactive Materials

KRMC Training Program Module 5: Transportation of Nuclear Materials

December 2, 2010

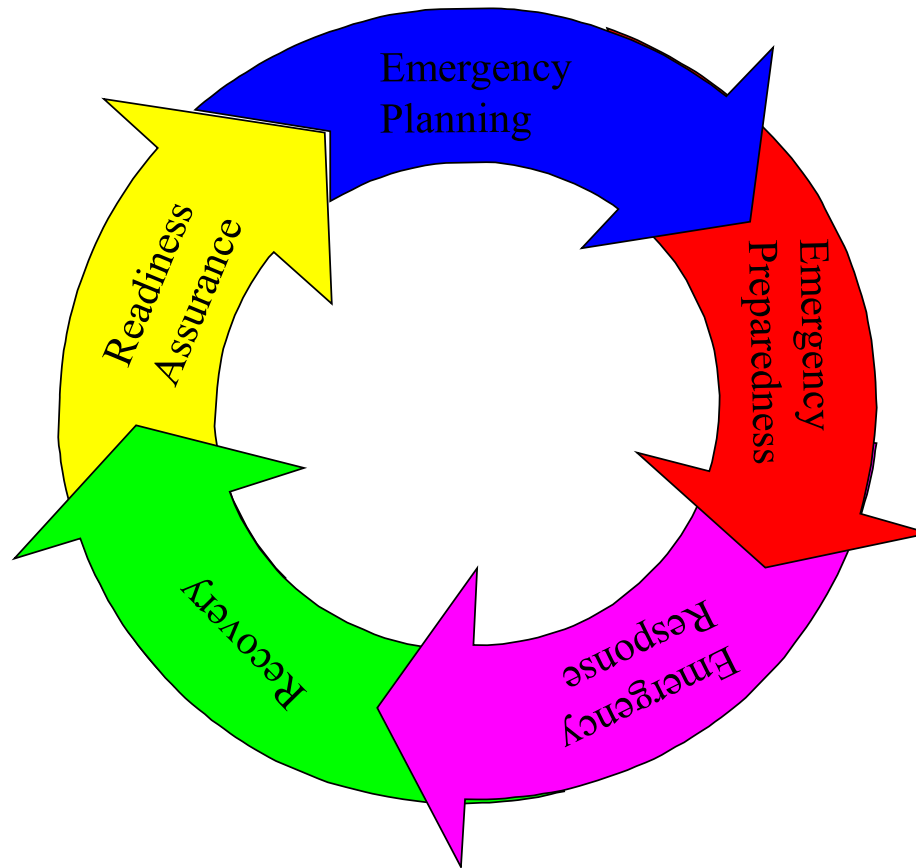
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Emergency Management Plan

5 Elements of an Emergency Management Plan





Emergency Planning

- **Identification of hazards and threats**
- **Hazard and threat mitigation**
- **Development and preparation of emergency plans and procedures**
- **Identification of personnel and resources for effective response**



Emergency Preparedness

- **Acquisition and maintenance of resources, training, drills, and exercises**



Emergency Response

- **Application of resources to mitigate consequences to:**
 - **Workers**
 - **Public**
 - **Environment**
 - **National Security**
- **Initiation of recovery from an emergency**



Recovery

- **Planning for actions following termination of emergency**
- **Actions to return site to normal**



Readiness Assurance

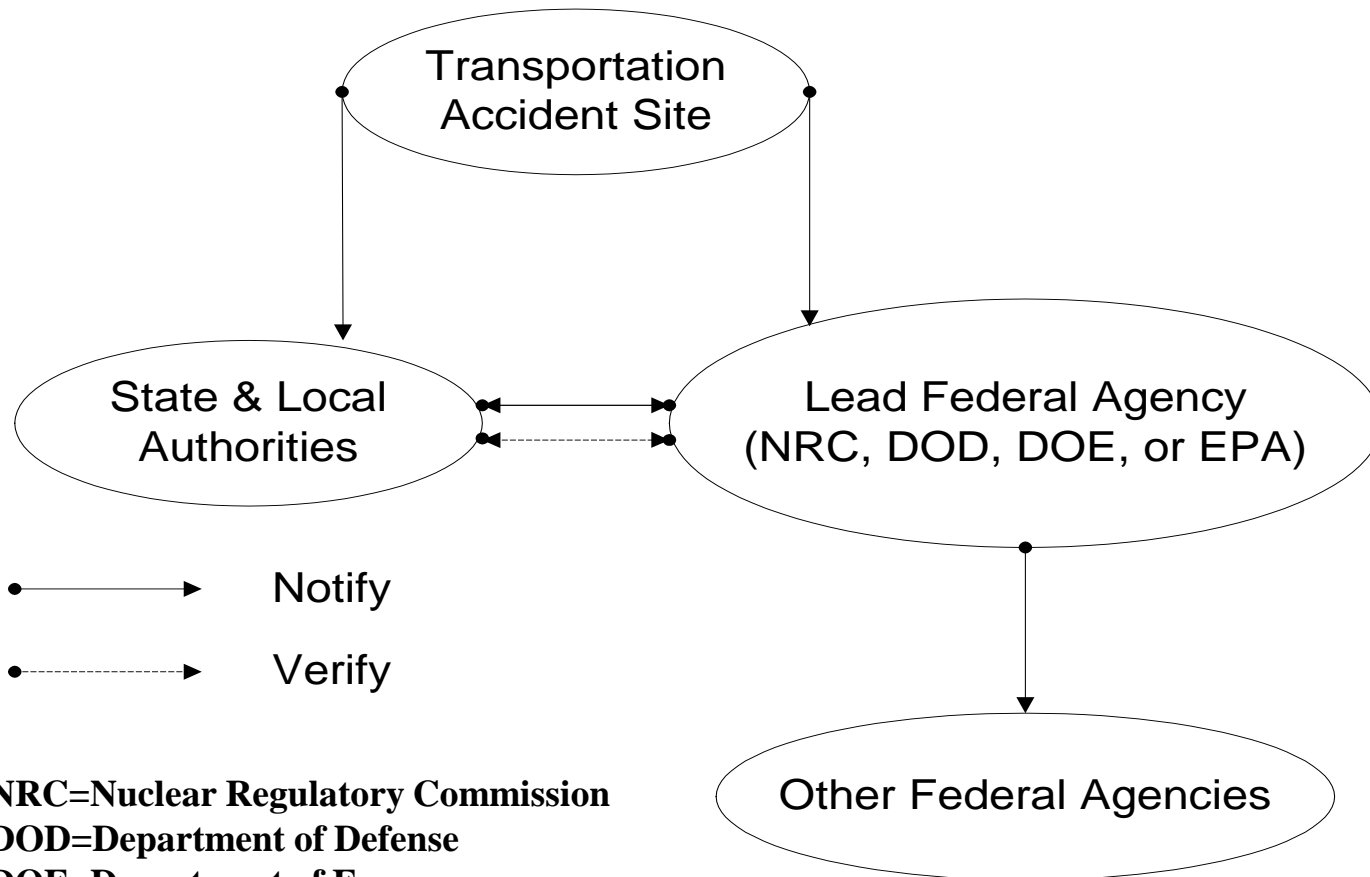
- **Assessments and documentation to ensure stated emergency capabilities are sufficient to implement emergency plans**



U.S. Lead Federal Agencies for Radioactive Materials Transportation Accidents

Transportation Accident Involving:	Lead Federal Agency
Shipment licensed by Nuclear Regulatory Commission or an NRC Agreement State	Nuclear Regulatory Commission
Shipment by or for Department of Defense	Department of Defense
Shipment by or for Department of Energy	Department of Energy
Shipment not licensed or owned by a federal agency of an Agreement State	Environmental Protection Agency

U.S. Radioactive Materials Transportation Accident Notification Process



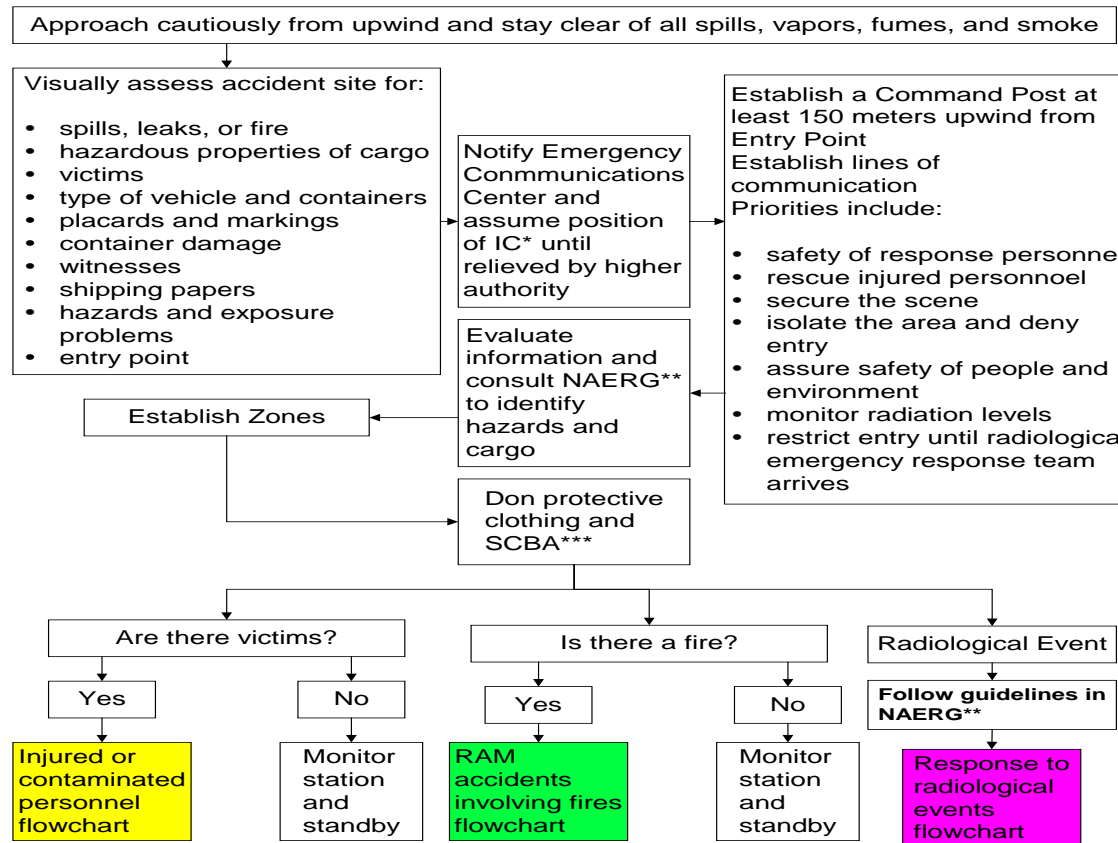
NRC=Nuclear Regulatory Commission
DOD=Department of Defense
DOE=Department of Energy
EPA=Environmental Protection Agency



U.S. Radioactive Materials Transportation Accident Response Functions

Response Action	Responsible Agency
Maintain cognizance of federal response conduct and manage onsite actions	Lead Federal Agency
Coordinate initial federal offsite radiological monitoring and assessment	Department of Energy
Coordinate intermediate and long-term federal offsite radiological monitoring and assessment	Environmental Protection Agency
Develop and evaluate recommendations for offsite protective actions for the public	Lead Federal Agency, in coordination with other agencies
Present recommendations for protective actions to appropriate state/local officials	Lead Federal Agency, in coordination with other agencies
Coordinate release of federal information to Lead Federal Agency	Congress
Provide reports to President and keep White House informed on all aspects of emergency	Lead Federal Agency
Coordinate law enforcement aspects of criminal acts involving radioactive material	Department of Justice and Federal Bureau of Investigation

Radioactive Materials Transportation Accident First Responder Flow Chart

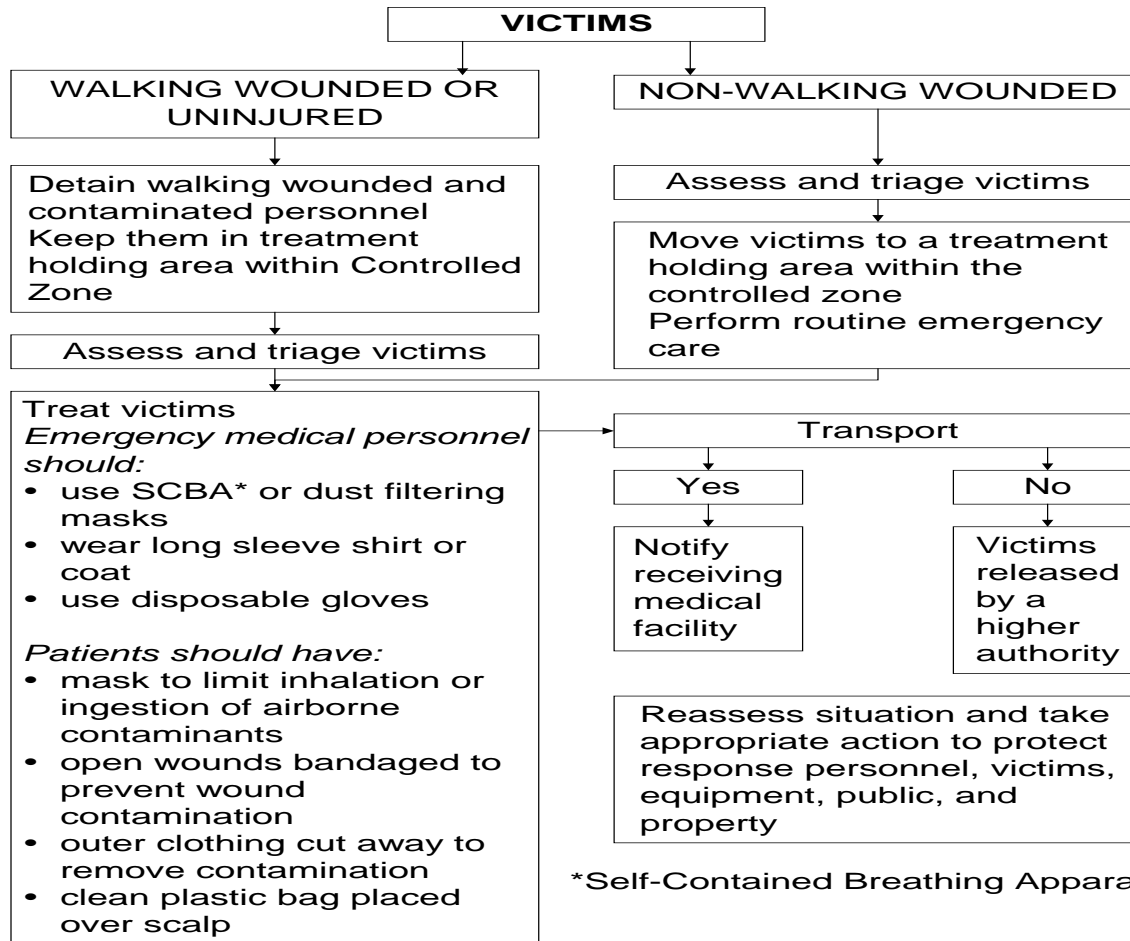


*Incident Commander

**North American Emergency Response Guidebook

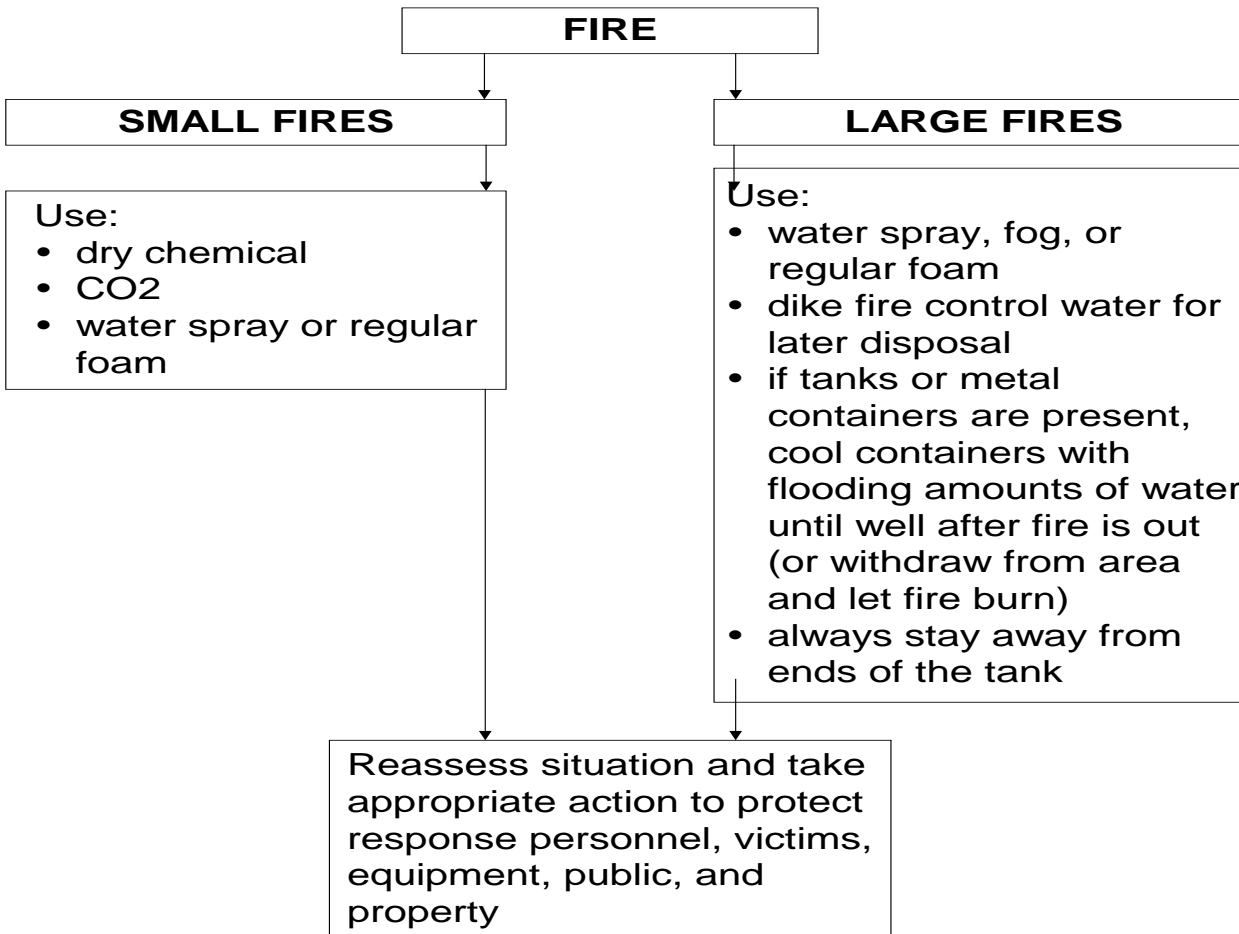
***Self-Contained Breathing Apparatus

Flow Chart Involving Injured or Contaminated Individuals



*Self-Contained Breathing Apparatus

Flow Chart Involving Fires





Response Flow Chart For Radiological Events

Radiological Event

- Call emergency response telephone number(s)
- Notify Radiation Authority
- Priorities for rescue, life saving, first aid, and control of fire and other hazards are higher than priority of measuring radiation levels
- Isolate spill or leak area at least 50 meters in all directions
- Detain and/or isolate uninjured persons or equipment suspected to be contaminated
- Delay decontamination and clean-up until instructions are received from Radiation Authority
- Follow specific instructions in NAERG for evacuation, fire or explosion, spill or leak information, first aid information, and health information

Use NAERG as guideline for first response actions and information

Reassess situation and take appropriate action to protect response personnel, victims, equipment, public, and property

North
American
Emergency
Response
Guidebook



Emergency Response Procedures

- **Assist in emergency rescue and first aid procedures, as necessary**
- **Provide technical information to assist in medical treatment and assist hospital in contamination control and decontamination**
- **Evaluate radiological hazards, including determining if there is package release and whether a radiation hazard exists**



Emergency Response Procedures (continued)

- **Minimize personnel exposure to radiation and spread of contamination:**
 - **Assist police to clear area**
 - **Locate and monitor exposed persons and assist in decontamination**
 - **Demarcate exclusion area**
 - **Set up control point, upwind of accident**
 - **Provide Personnel Protection Equipment as necessary**



Emergency Response Procedures (concluded)

- **Contain release radioactive material**
- **Carry out decontamination of equipment, vehicles, and environment, and restore to pre-accident conditions**
- **In addition, personnel handling potentially contaminated patients or remains need to take additional precautions prescribed in the DOE Transportation Emergency Preparedness Program (TEPP)**



Selected Resources

- DOE Transportation Emergency Preparedness Program
http://www.em.doe.gov/Transportation/TEPP_Home.aspx
- Transportation External Coordination Working Group <http://tecworkinggroup.org/>
- Federal Emergency Management Agency (FEMA) www.fema.gov
- Nuclear Regulatory Commission www.nrc.gov
- Environmental Protection Agency www.epa.gov