



U.S. DEPARTMENT OF ENERGY
NATIONAL NUCLEAR SECURITY ADMINISTRATION

REAC/TS

RADIATION EMERGENCY ASSISTANCE CENTER/ TRAINING SITE (REAC/TS)



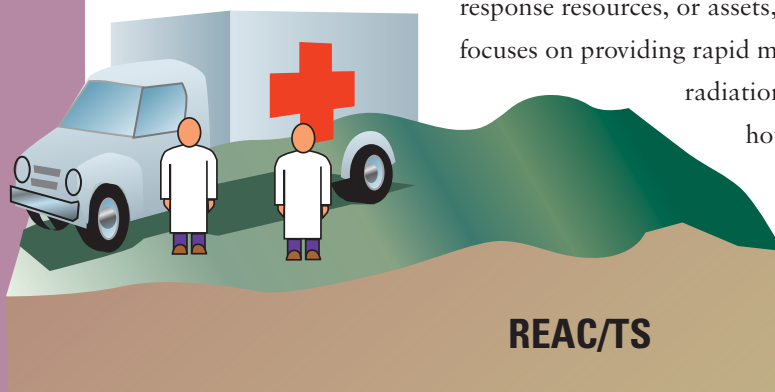
The Department of Energy's (DOE) National Nuclear Security Administration (NNSA) has the world's leading scientists, engineers and technicians from over 50 years of managing the nation's nuclear weapons program. When the need arises, DOE is prepared to respond immediately to any type of radiological accident or incident anywhere in the world with the following seven radiological emergency response assets.

AMS (Aerial Measuring System) detects, measures and tracks radioactive material at an emergency to determine contamination levels. **ARAC** (Atmospheric Release Advisory Capability) develops predictive plots generated by sophisticated computer models. **ARG** (Accident Response Group) is deployed to manage or support the successful resolution of a U.S. nuclear weapons accident anywhere in the world. **FRMAC** (Federal Radiological Monitoring and Assessment Center) coordinates Federal radiological monitoring and assessment activities with those of state and local agencies. **NEST** (Nuclear Emergency Support Team) provides the nation's specialized technical expertise to the Federal response in resolving nuclear/radiological terrorist incidents. **RAP** (Radiological Assistance Program) is usually the first NNSA responder for assessing the emergency situation and deciding what further steps should be taken to minimize the hazards of a radiological emergency. **REAC/TS (Radiation Emergency Assistance Center/Training Site)** provides treatment and medical consultation for injuries resulting from radiation exposure and contamination, as well as serving as a training facility.

INTRODUCTION

The Radiation Emergency Assistance Center/Training Site (REAC/TS) is one of the emergency response resources, or assets, administered by NNSA. REAC/TS focuses on providing rapid medical attention to people involved in radiation accidents. REAC/TS is on call 24

hours a day to provide direct or consultative help with medical and health physics problems from local, national, and international incidents. REAC/TS also provides medical support to other NNSA emergency response assets.



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REAC/TS, located in Oak Ridge, Tennessee, was started in 1976 and has assisted in more than 1,200 incidents involving radiation. REAC/TS handles many calls for assistance each year from all over the world. These calls come from state health departments, commercial nuclear power facilities, Federal agencies, hospitals, the World Health Organization (WHO), the International Atomic Energy Agency, foreign governments, and physicians in private practice.

MISSION

REAC/TS' mission is to maintain an around the clock response center to provide direct support, including deployable equipment and personnel trained and experienced in the treatment of radiation exposure, to assist Federal, state, Tribal and local organizations, and NNSA Radiological Emergency Response Assets. REAC/TS provides medical advice, specialized training, and the unique capability of on-site assistance for the treatment of all types of radiation exposure accidents.

STEPS IN THE REAC/TS RESPONSE

REAC/TS' radiation experts are on call 24 hours a day for consultations or to give direct medical and radiological advice to people at the REAC/TS facility or accident site. If needed, additional REAC/TS physicians and other team members can be deployed to the accident scene. This highly trained and qualified team is pre-



Physicians, nurses, paramedics, and physicists receive training in the treatment of radiation exposure.

pared to conduct medical and radiological triage, decontamination procedures, diethylenetriaminepentaacetic acid (DTPA) chelation therapy, Prussian Blue therapy, diagnostic and prognostic assessments of radiation injuries, and dose estimates that include cytogenetic analysis, bioassay, and in-vivo counting.

REAC/TS RESOURCES AND EQUIPMENT

REAC/TS has physicians, registered nurses, EMT paramedics, health physicists, radiobiologists, and coordinators on its emergency response team. Sophisticated state-of-the-art laboratory facilities are among REAC/TS' resources. Facilities include a health physics laboratory; numerous laboratories for chemical, radiological, and cytogenetic analysis; clinical and diagnostic imaging laboratory services; equipment for radiation assessment and treatment; a whole body counter capable of detecting extremely low levels of internal contamination; and a dual-detector counter, capable of measuring low to extremely high levels of radioactivity, designed for patient use in emergencies.

REAC/TS maintains a Radiation Accident Registry System and conducts medical follow-up of radiation accident patients. Information from the REAC/TS Registry System is used to track treatment procedures and trends in radiation-induced medical conditions. A cooperative agreement with a local 300-bed regional medical facility with more than 130 staff physicians representing 33 specialties and access to complete diagnostic and treatment facilities also adds to REAC/TS' resources. Among the advanced specialty departments are an emergency department on call 24 hours a day, intensive care units, a cardiac surgery unit, a laser surgery center, a magnetic resonance imaging center, and a radiation oncology center.

TRAINING CENTER

The REAC/TS facility is also a central training and demonstration facility where national and foreign medical, nursing, paramedical, and health physics professionals receive intense training in the treatment of radiation exposure. REAC/TS conducts regularly scheduled courses for the occupational health physician and nurse, the emergency physician and nurse, physicians and nurses involved in long term patient care, and health and medical physicists. Training courses are conducted in the handling of radiation accidents by emergency staff;

treat
advise
train



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medical planning and care in radiation accidents; health physics in radiation accidents; occupational health in nuclear facilities; occupational internal dosimetry; and radiopharmaceutical internal dosimetry.

In addition to providing radiological medical assistance, REAC/TS is ideally suited to provide medical emergency response training. REAC/TS has been working with state and local groups to train medical providers. In 1996, REAC/TS became involved in the Weapons of Mass Destruction First Responder Training Program with the objective of preparing the United States for responding to a terrorist attack involving nuclear, biological or chemical weapons of mass destruction. REAC/TS' unique qualifications make it an integral partner in the success of the Domestic Preparedness Program.

REAC/TS training programs are available for offsite presentation, and REAC/TS also conducts radiation accident management training courses at the request of the WHO.

In addition, REAC/TS conducts a series of international conferences titled, "The Medical Basis of Radiation Accident Preparedness."

COLLABORATING WITH THE WORLD HEALTH ORGANIZATION

In August 1980, REAC/TS was named a WHO Collaboration Center for Radiation Emergency Assistance. As a WHO Collaborating Center, REAC/TS is prepared to serve as a central point for advice and possible medical care in cases of radiation injuries; set up a network of available equipment and staff specializing in radiopathology; develop medical emergency plans in the event of a large-scale radiation accident; develop and carry out coordinated studies on radiopathology; prepare radiation documents and guidelines; and provide consultation or direct medical assistance to foreign governments if an actual radiation accident occurs.