



Earthquake Information System

In 1990, Martin Marietta Energy Systems, Inc., USA initiated an earthquake emergency preparedness program at the company's Paducah (Kentucky) Gaseous Diffusion Plant, a Martin Marietta-managed facility within the Department of Energy's Oak Ridge (Tennessee) complex.

The principal tool of the preparedness program is an Integrated Automated Emergency Management Information System (IAEMIS). IAEMIS was developed in a cooperative effort of Martin Marietta and the Mid-America Remote Sensing Center (MARC)

of Murray State University, Murray, Kentucky, the state-designated official transfer agent for NASA remote sensing technology. The Paducah application is the IAEMIS prototype; the system is being modified to be integrated into the emergency preparedness programs of Martin Marietta Energy Systems facilities in the eastern United States.

IAEMIS is a two-component set of software, data and procedures designed to provide information enabling management personnel to make informed decisions in the event of an earthquake or other natural disaster. The system doubles as a training aid for instructing plant workers in disaster response procedures. IAEMIS' two components are a database management hazard inventory (dBase III+) and a spatially-oriented information management system (ELAS). The latter is a computer program developed



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by NASA's Earth Resources Laboratory especially for analysis of data from the NASA-developed Landsat remote sensing satellites.

The IAEMIS system is one of many examples of MARC's work in applying remotely sensed data to improved resources management practices. MARC also conducts continuing studies of the New Madrid Fault in western Kentucky and Tennessee, source of devastating earthquakes in 1811-12. Seismologists predict another large quake along the fault over the next quarter century. MARC studies are aimed at assessing potential earthquake damage and developing ways to cope with it.

Administered through the Murray State University College of Science, MARC provides training, technical assistance and processing of remotely sensed data for both the public and private sectors. Among examples of MARC projects are land use/land cover monitoring, mineral exploration, and studies of wildlife habitat, forests, surface mines, soil erosion and water quality. In addition, MARC develops geographic information systems for specific regions, including data on urban areas, transportation networks, geology, soils, slopes and other resources, plus environmental and socioeconomic data.