Geologist and visiting scholar, Laura Giacomini, electronics technician, Larry Overstreet, and geologist, Carol Lutken spent much of the month of June subsampling the 10 cores recovered from the Gulf of Mexico for the CMRET during the January cruise of TDI Brooks, International's, R/V Powell. The cores were collected from areas in the northern Gulf where gas hydrate is known or suspected to occur in the near-subsurface of the continental slope. The samples have been sent to colleagues at Mississippi State University and the University of Southern Mississippi.

At MSU, chemical engineer, Dr. Rudy Rogers will evaluate the core samples for hydrate-producing potential. If attempts to induce the growth of hydrates in the laboratory are successful, some of the frozen hydrates will be shipped to the United States Geological Survey, Menlo Park, where further analyses of their chemical and physical properties will be carried out.

At USM, Dr. Charlotte Brunner will determine the ages of the samples through micropaleontologic evaluation as well as isotope work. She will also determine grain-size distribution and sedimentation rates for this part of the Gulf of Mexico.

All efforts in the ongoing investigation are aimed at improving our understanding of the chemical and mechanical “behavior” of these frozen gases, stable at great depths and/or low temperatures, but which pose environmental and engineering risks when they dissociate with decreased pressures (such as occur when the overburden is removed or penetrated by drilling) or increases in temperature (such as the arrival of a warmer than usual current). If harnessed successfully, they may also become a vast source of natural gas. The research of the Gulf of Mexico Hydrates Research Consortium, administered by the MMRI/CMRET is supported by the US Department of Interior Minerals Management Services [MMS], Department of Energy National Energy Technology Laboratory [NETL], and NOAA's National Institute for Undersea Science and Technology [NIUST].
CCEP COMPLETES STATE-WIDE EARTHQUAKE ECONOMIC LOSS

The Center for Community Earthquake Preparedness (CCEP) has recently completed a Level 1 evaluation of the projected economic losses to Mississippi from earthquakes. A number of earthquake scenarios were examined using the Hazards U.S.- Multi-hazard (HAZUS-MH) economic loss modeling code. These initial results indicate that Mississippi stands to lose over 3 billion dollars from a major earthquake with an epicenter in the southern end of the New Madrid Seismic Zone. The study also indicates that DeSoto County is the most vulnerable to earthquake losses and could lose as much as one billion dollars to a major New Madrid earthquake event. Other earthquake scenarios were also examined where the epicenter was within the political bounds of the state. From these hypothetical earthquakes, HAZUS also predicts significant economic loss from smaller earthquakes due to their “within the state” locations. These Level 1 results were used to aid the Mississippi Emergency Management Agency (MEMA) as it prepared the hazard mitigation plan for the entire state.

Due to continued funding from the MEMA, work is presently underway to refine the HAZUS data base to more accurately reflect the present built environment. As the data base verification nears completion, a new series of HAZUS evaluations will be conducted that will likely reflect higher losses. Regardless of the projected economic loss, the need for earthquake damage mitigation measures is clear. Since earthquakes give no warning, preparation must begin before the event and there is no time like the present.

MMRI/CMRET RESEARCHERS MAKE PRESENTATIONS AT AAPG ANNUAL CONVENTION

In April, 2004, Bob Woolsey, Tom McGee, Beth Stidham, and Carol Lutken traveled to Dallas, Texas, to participate in the Annual Convention of the American Association of Petroleum Geologists. MMRI/CMRET researchers made five presentations at the meeting. Carol co-chaired sessions - two oral and one poster - entitled “Gas Hydrate Exploitation, Sediment Strength, and Slope Instability Along Continental Margins” where researchers from all over the world reported recent findings in the areas of chemical and physical properties of hydrates and resource and geohazard potential of gas hydrates. Tom also attended the Energy Minerals Division meeting addressing the future of gas hydrates as an energy resource.

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