



Atlanta Geological Society Newsletter

The October 29 AGS meeting starts at 6:30 pm at the Fernbank Museum of Natural History located at 767 Clifton Road NE, Atlanta GA. 30307

Atlanta Geological Society October Speaker

“Underground Space Resource of Granitic Plutons in Georgia”

Speaker C. W. Myers Bio:

Independent geologist and advocate for expanded use of underground space for siting 1) critical infrastructure, industrial and commercial facilities and 2) underground nuclear power plants. Worked 24 years at Los Alamos National Laboratory, including 12 years as head of the Earth and Environmental Sciences Division; also worked two years as a university assistant professor and two years as a petroleum geologist. Member of the International Society of Rock Mechanics Commission on Underground Nuclear Power Plants, Fellow in the Geological Society of America, and Member of the American Nuclear Society. BS 1966 and MS 1968, University of Georgia; Ph.D. 1973, University of California, Santa Cruz; and Post-Doctoral Fellowship 1973-1974, State University of New York, Stony Brook. Georgia native.

Abstract:

Granite plutons in the Piedmont region of Georgia are an underground space resource potentially suitable for constructing bedrock caverns to site special-purpose underground facilities (UGFs). Portions of rock masses in the interiors of some of these plutons might be suitable for excavation of large caverns, potentially at relatively low cost because of recent advances in underground excavation technology. Site characterization studies to evaluate these rock masses should cover not only geology and groundwater conditions, but focus on joint sets, discontinuities, and other geotechnical conditions important to determine the mechanical strength and permeability of the rock mass and options for cavern design. Domal and other high-relief pluton exposures have the advantage of direct surface-to-underground access to UGFs using tunnels or ramps rather than being dependent on shafts. Types of UGFs potentially suitable for siting in Georgia’s granitic plutons include 1) critical infrastructure facilities requiring high levels of security against, for example, hurricanes, tornados, electromagnetic pulses, or attacks by terrorists; and 2) industrial or commercial facilities requiring low operating cost and an environment with constant temperature and humidity and/or low-vibration levels. Specific examples will be described.

