APR11-2011-020006

Abstract for an Invited Paper for the APR11 Meeting of the American Physical Society

## Confidence in Nuclear Weapons as Numbers Decrease and Time Since Testing Increases

MARVIN ADAMS, Department of Nuclear Engineering, Texas A&M

As numbers and types of nuclear weapons are reduced, the U.S. objective is to maintain a safe, secure and effective nuclear deterrent without nuclear-explosive testing. A host of issues combine to make this a challenge. An evolving threat environment may prompt changes to security systems. Aging of weapons has led to "life extension programs" that produce weapons that differ in some ways from the originals. Outdated and changing facilities pose difficulties for life-extension, surveillance, and dismantlement efforts. A variety of factors can make it a challenge to recruit, develop, and retain outstanding people with the skills and experience that are needed to form the foundation of a credible deterrent. These and other issues will be discussed in the framework of proposals to reduce and perhaps eliminate nuclear weapons.