

# CURRENT STATUS OF THE DOE/NNSA NUCLEAR CRITICALITY SAFETY PROGRAM HANDS-ON CRITICALITY SAFETY TRAINING COURSES

**Douglas G. Bowen \***

Oak Ridge National Laboratory

Oak Ridge, Tennessee, USA

[bowendg@ornl.gov](mailto:bowendg@ornl.gov)

## ABSTRACT

The U.S. Department of Energy/National Nuclear Security Administration (DOE/NNSA) Nuclear Criticality Safety Program (NCSP) has conducted two-week Nuclear Criticality Safety (NCS) Practitioner courses since 2011 to support the training and qualification of new NCS staff. The course was developed in accordance with the American National Standard Institute/American Nuclear Society (ANSI/ANS) standard for NCS training and qualifications (ANSI/ANS-8.26-2007). In 2013, an NCS Manager's course was developed for process supervisors, managers, regulators, and other professionals with NCS-related responsibilities. This course was revised in 2019 for Criticality Safety Officers (CSOs) based on an NCSP Criticality Safety Support Group tasking (2018-01). This course was piloted at the Nevada Field Office and the National Criticality Experiments Research Center (NCERC) in June 2021. These courses consist of the following training components: classroom education, facility training, and hands-on subcritical and critical experiments training. The two-week Practitioner course offers a week of classroom training, with practical workshops and exercises focused on teaching students how to perform an NCS evaluation. The second week of training involves hands-on critical and subcritical experiments and measurements. The first week is offered in Las Vegas, Nevada, at the DOE Nevada Field Office or the National Atomic Testing Museum. Depending on the student's clearance level, the second week is offered at Sandia National Laboratory (SNL) (uncleared and L-cleared students) or at the National Criticality Experiments Research Center (Q-cleared students). The one-week Manager's course is offered at SNL or NCERC, depending on clearance or interest, and includes classroom and hands-on critical and subcritical experiments and measurements. This paper provides an overview and status report for the DOE/NNSA NCSP training courses in NCS and to provide information about future course offerings. This paper will also discuss the challenges associated with executing the training courses during the COVID-19 pandemic. The 2-week Practitioner and 1-week manager courses are currently offered twice per year and adjustments are made based upon demand.

**Key Words:** subcritical experiments, critical experiments, training, Nuclear Criticality Safety, education.

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\* This manuscript has been authored by UT-Battelle, LLC under Contract No. DE-AC05-00OR22725 with the U.S. Department of Energy. The United States Government retains and the publisher, by accepting the article for publication, acknowledges that the United States Government retains a non-exclusive, paid-up, irrevocable, world-wide license to publish or reproduce the published form of this manuscript, or allow others to do so, for United States Government purposes. The Department of Energy will provide public access to these results of federally sponsored research in accordance with the DOE Public Access Plan (<http://energy.gov/downloads/doe-public-access-plan>).