

**PARARI 2019: Australian Explosive Ordnance Safety Symposium, 5 – 7 November 2019**

## **Abstract**

### **Effects of Slow Cook-Off Heating Rates on Reaction Severity**

Naval Air Warfare Center Weapons Division (NAWCWD) – China Lake, CA has recently conducted slow cook-off testing on developmental warheads and initiation system components. The purpose of the testing was to develop new warhead concepts and aid future energetic developments by determining the reaction severity when exposed to different slow cook-off heating rates. The testing was conducted in order to characterize the type of reactions, reaction temperatures and reaction times for different warhead configurations, energetics, and energetic components. These tests were conducted in the tactical configuration to MIL-STD-2105D and STANAG 4382, utilizing the 3.3°C/Hr. and 15°C/Hr. heating rates. The results from these test series have been used to advance Insensitive Munitions (IM) warhead performance and will be utilized when evaluating future warhead concepts and their IM characteristics when exposed to different heating rates.

**DISTRIBUTION A. Approved for public release: distribution unlimited.**