

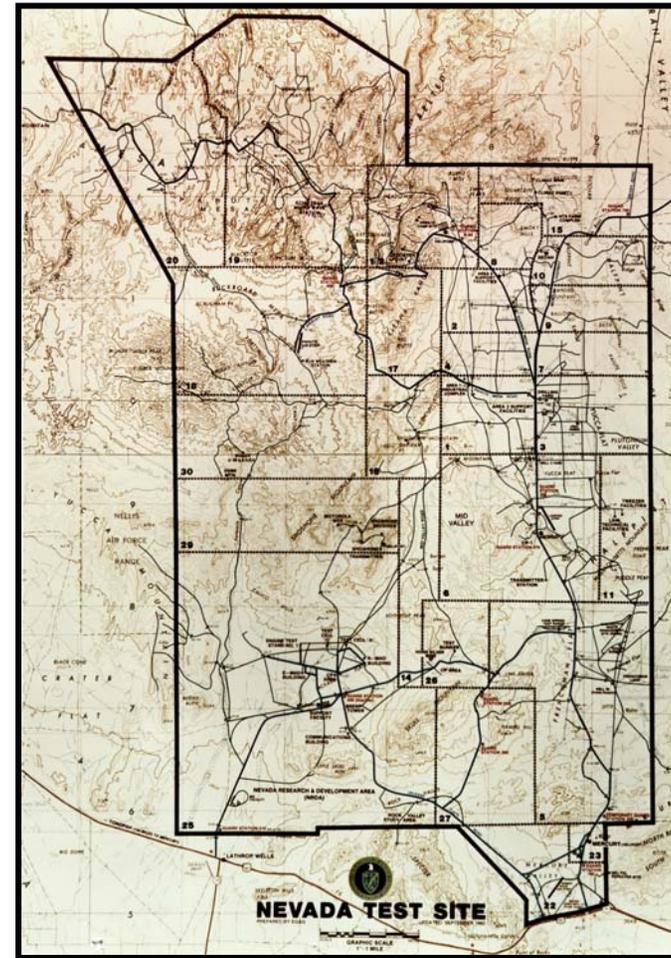
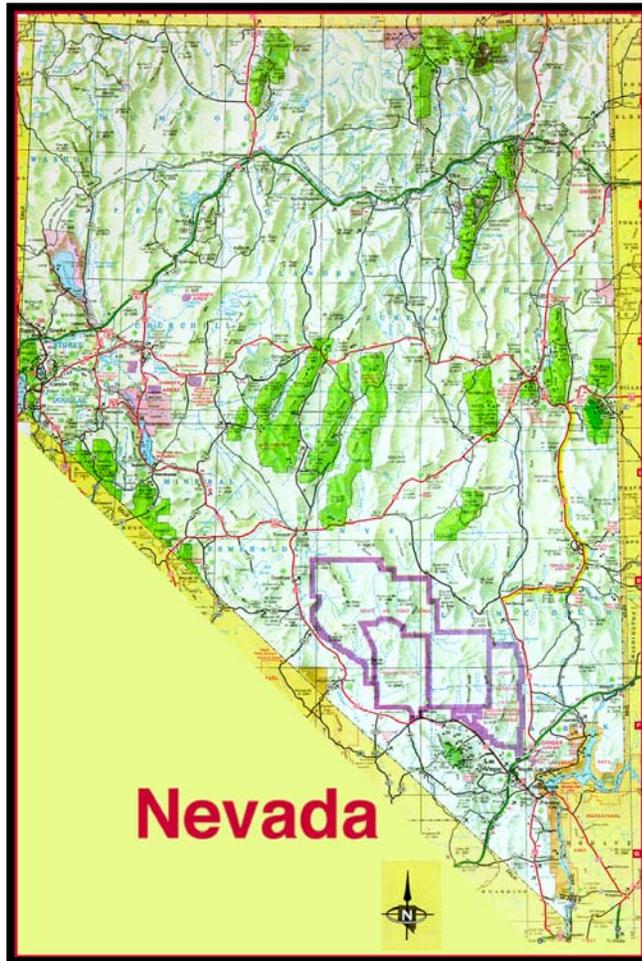
Evolution of Experience within the Nevada Test Site Nuclear Testing Program

April 12, 2006



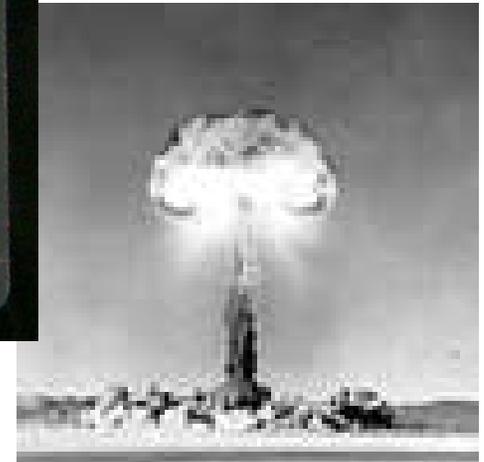
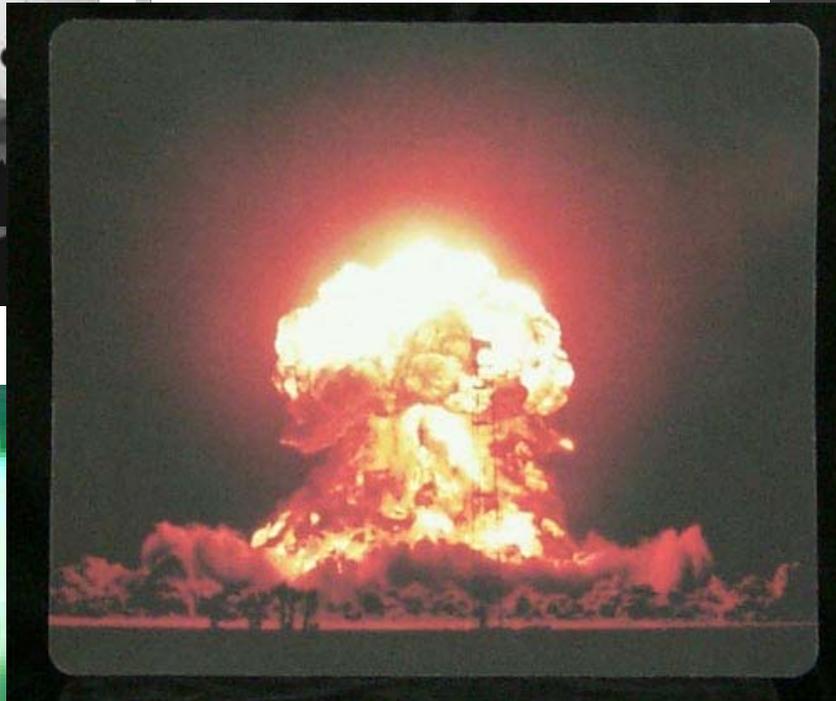
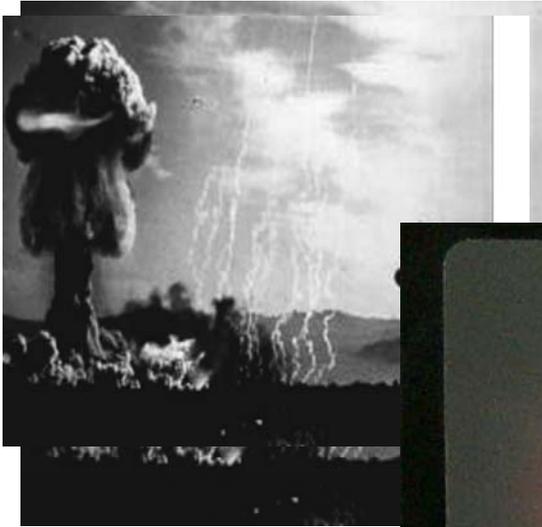
**Leon Berzins
David Hunt**

The Nevada Test Site – A Facility driven by Lessons Learned

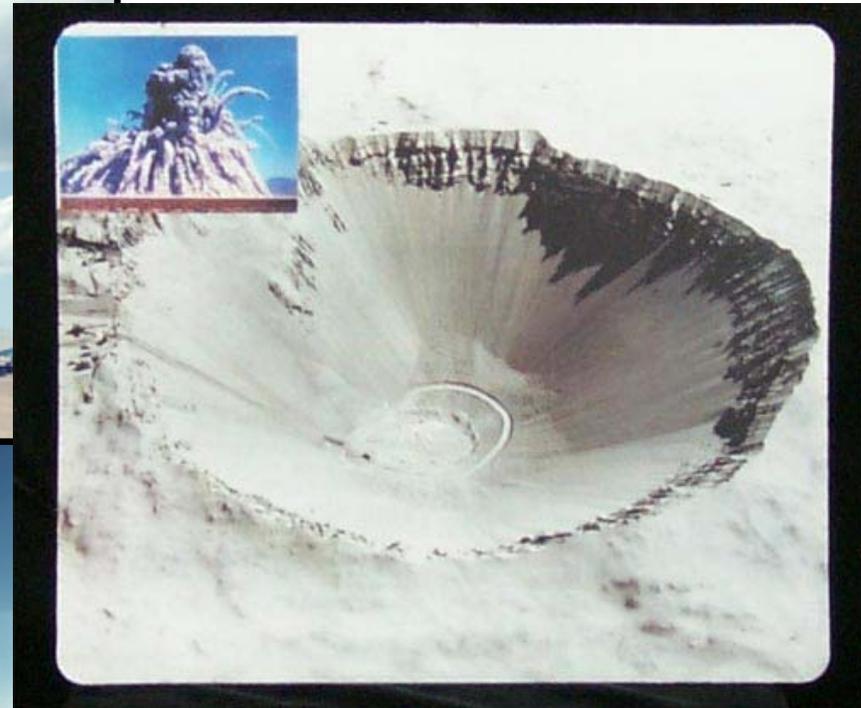


In the Beginning . . .

we tested above ground



A treaty with the Soviet Union moved tests underground



We did Lessons Learned before they even had a name



- Pre-mortems
- Post-mortems
- Dry Runs
- Written procedures
 - Checklists
 - Scripts

Written procedures were developed, tested and followed



- HOLOG Step 7 has been sent. (CP-9 Permissive)
- HOLOG Step 6 has been sent. (Water Valve Close Command)
- HOLOG Step 5 has been sent. (Start Helium Flash)
- HOLOG Step 4 has been sent. (Start CDU Charge)
- HOLOG Step 3 has been sent. (-1 Minute Signal to Experimenters)

- HOLOG Step 2 has been sent. (Charge Flashlamp Capacitor Bank)

- HOLOG Step 1 has been sent. (Start High Speed Cameras)
- HOLOG Zero Time
- The HOLOG System has been reset. (Starting over)
- The HOLOG System is in a Hold status. (Working unanticipated issue)

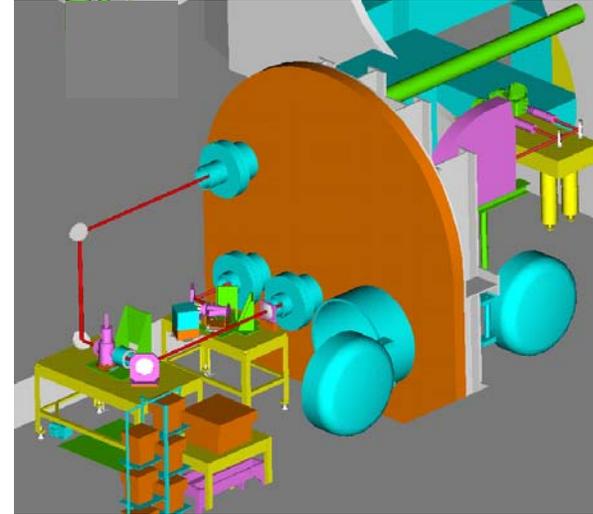
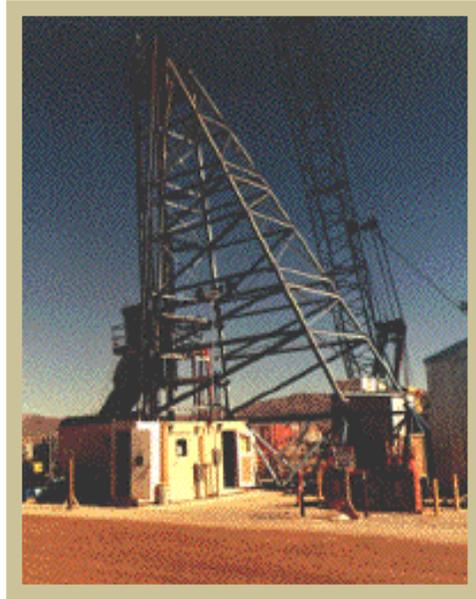
A US moratorium ended nuclear testing in 1992



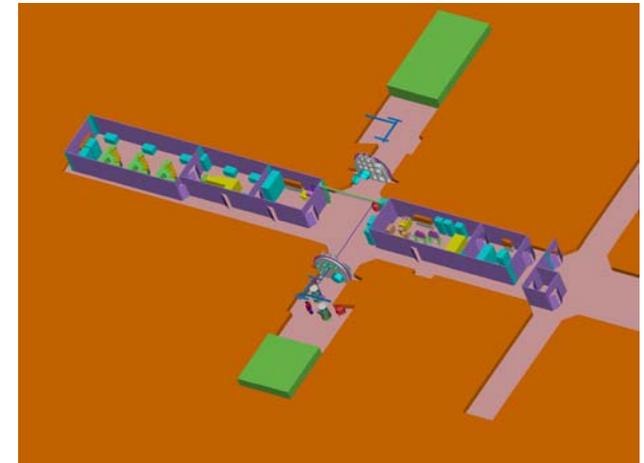
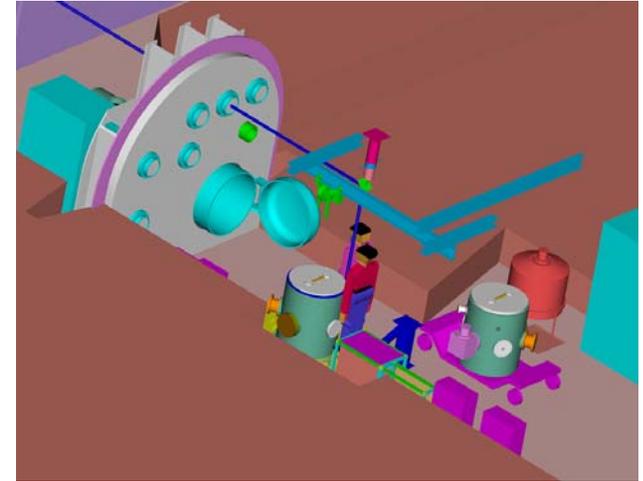
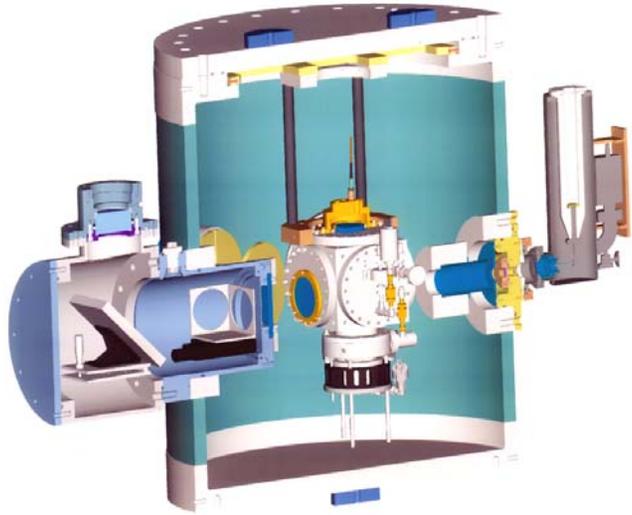
As a result of the cessation of nuclear testing, new ways of ensuring confidence in the safety, security and performance of the U. S. stockpile are needed. Instead of an empirical approach to stockpile stewardship (based in large part on data from nuclear tests), we must develop a science-based approach. We will:

- Devise ways of obtaining more detailed data from non-nuclear experiments

This science-based approach required a continuing series of experiments



The vessel concept was perfected during the OBOE series

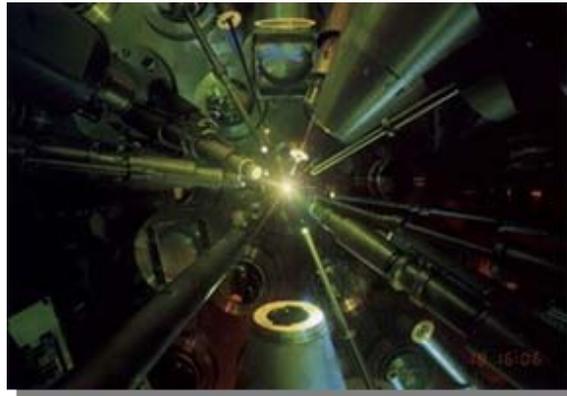


Our history at NTS is full of examples



- Taking advantage of lessons learned:
 - Venting leads to Containment Panels (CEPs)
 - Peninsula shot leads to “written process”
 - Intentional expenditure of the Holog Zero room leads to OBOE vessels
 - Learning to take advantage of lessons learned in other facilities
 - Ruby laser tuning
 - Add-ons because we accepted we could never get it right the first time
 - And our data is very expensive

Lessons learned at NTS have been transferred to programs at Livermore



PHOENIX: A new program taking advantage of the lessons from the past



BEEF

