



# Operations Update And Schedule March 2014

David K. Hayes and William L. Myers  
Los Alamos National Laboratory  
Advanced Nuclear Technology Group NEN-2

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# Mission

- The Integral Experiments (IE) program element sustains and enhances a fundamental nuclear materials handling capability to conduct subcritical, critical, supercritical, prompt critical, super-prompt critical, and fundamental physics experiments, and training.
- The mission of the National Criticality Experiments Research Center (NCERC) at the Device Assembly Facility (DAF) is to conduct experiments and training with critical assemblies and fissionable material at or near criticality in order to explore reactivity phenomena, and to operate the assemblies in the regions from subcritical through delayed critical. One critical assembly, Godiva-IV, is designed to operate above prompt critical.

# Introduction

- Comet, Planet, Flat-Top, and Godiva-IV have been installed at the National Criticality Experiments Research Center.
- Between these machines, systems ranging from the thermal through the intermediate to the fast spectrum may be assembled. Steady-State, transient, and super-prompt critical conditions may be explored.

# Vertical Lift Machines

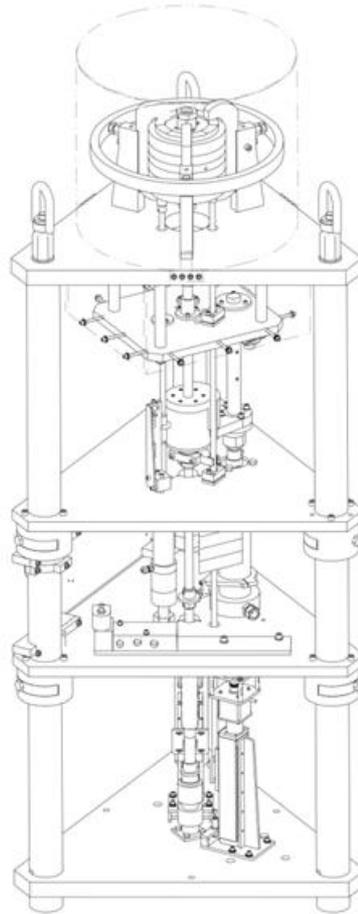
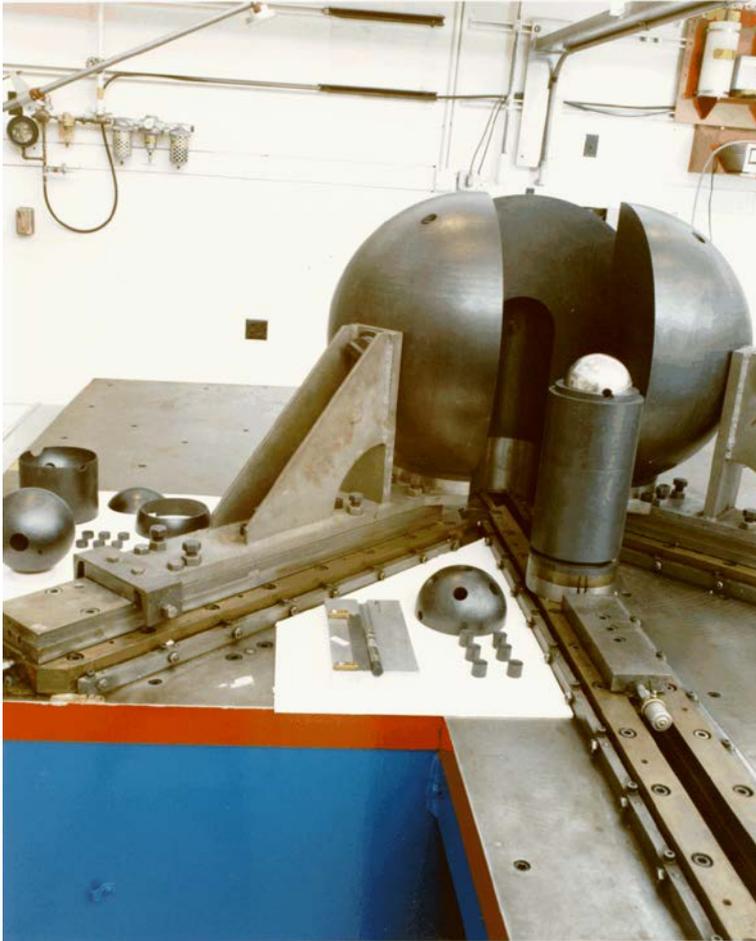


Comet (Zeus)

Planet (Class Foils)



# Fixed Geometry Machines



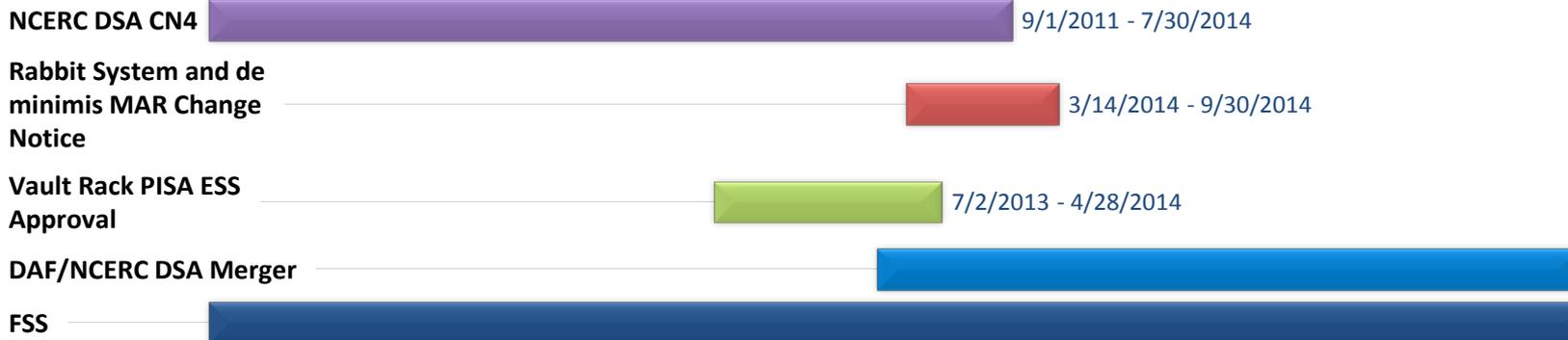
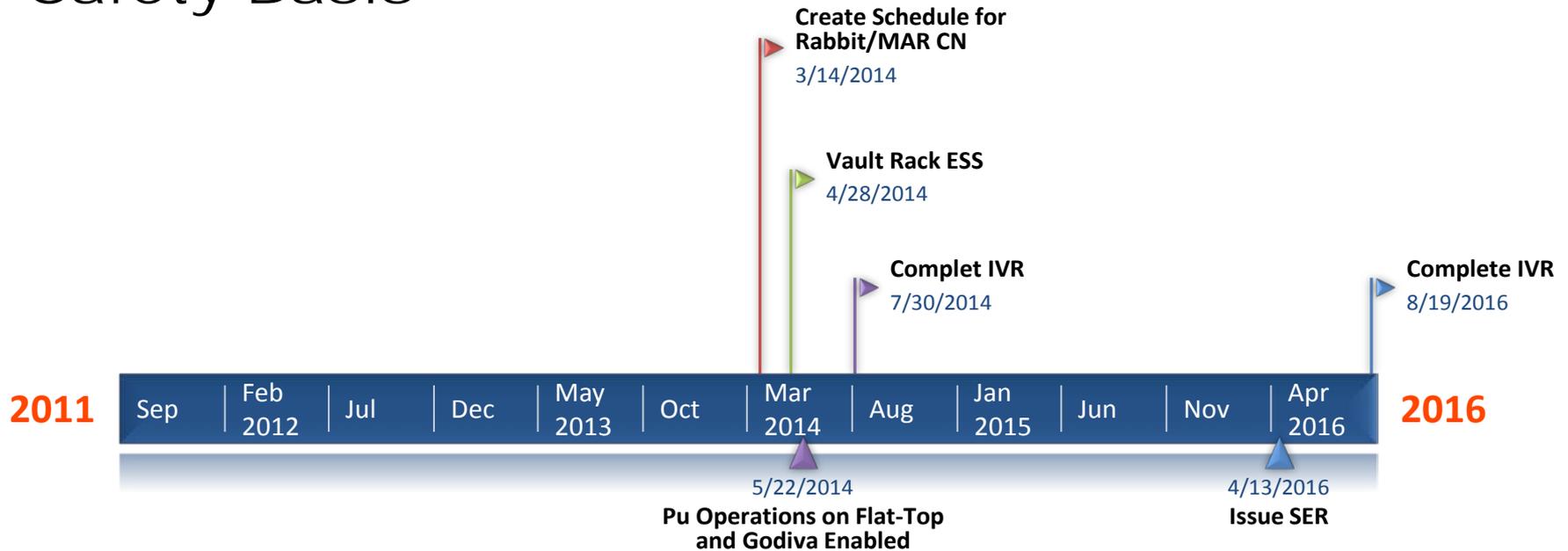
Godiva-IV



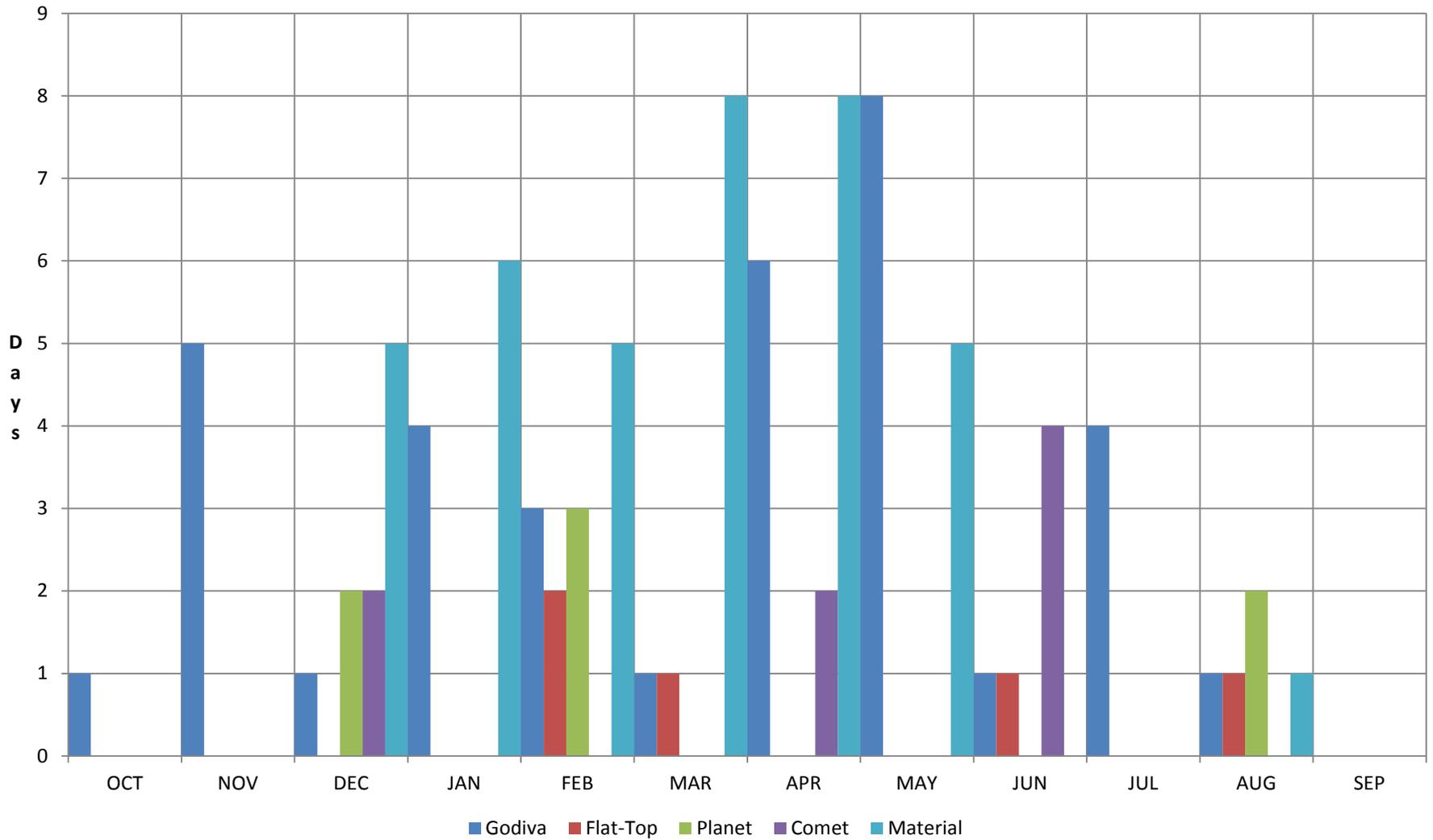
# What's Operational\*?

- Planet
  - Initial Critical 15JUN12
- Comet
  - Initial Critical 11AUG12
- Godiva
  - Assembled 24APR12
  - Initial Critical 24OCT12
  - Initial Burst 10SEP13
- Flat-Top\*
  - Initial Critical on Uranium Core 30NOV12
  - Need to operate with plutonium core
  
- General Purpose Nuclear Material Handling
- Vaults
- Count Room

# Safety Basis



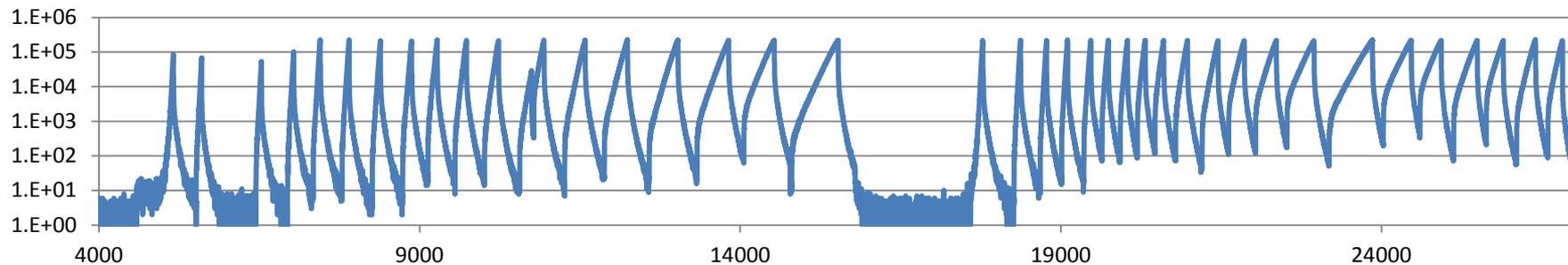
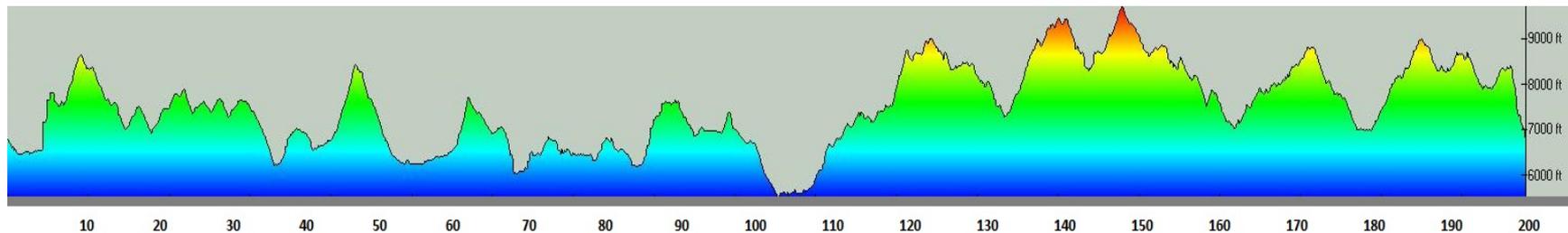
# FY14 NCERC Operations



U. S. Department of Energy  
Nuclear Criticality Safety Program



# Flat-Top Control Rod Calibration and the Tahoe 200



# Acknowledgement

This work was supported by the DOE Nuclear Criticality Safety Program, funded and managed by the National Nuclear Security Administration for the Department of Energy.



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# Submit an Experiment Request!



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<http://ncsp.llnl.gov/>



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