GLAST Large Area Telescope:
Integration and Test
One and Two Tower
Integration Readiness Review

Introduction

Elliott Bloom
I&T Manager
Single Tower Assembly and Test FLOW

RCVG PROCESSING INITIAL TOWER INTEGRATION FINAL TOWER INTEGRATION

TKR BENCH EGSE: TKR TEST STAND RCVG SINGLE BAY EGSE: GASU BASED TEST STAND TKR LPT SINGLE BAY EGSE: GASU BASED TEST STAND SINGLE TOWER IN GRID EGSE: GASU BASED TEST STAND

FLIGHT TEM/TPS RCVG TEST WITNESS SUBSYSTEM TEST CAL CPT

CAL BENCH EGSE: CAL TEST STAND RCVG TEST

METROLOGY BAY TEM - CAL INTEGRATION EGSE: CAL TEST STAND SINGLE TOWER TEST PARTICLE AND SVAC TESTS
Second Tower Assembly and Test Flow

FIRST TOWER INTEGRATION → TWO TOWER INTEGRATION → TWO TOWER TESTS

SINGLE TOWER IN GRID
EGSE: GASU BASED TEST STAND

SINGLE TOWER TEST
PARTICLE AND SVAC TESTS

TWO TOWERS IN GRID
EGSE: GASU/PDU BASED TEST STAND

TWO TOWER TEST
PARTICLE AND SVAC TESTS

SINGLE BAY
EGSE: GASU BASED TEST STAND

SINGLE TOWER TEST

READY FOR NEXT STAGE IN ASSEMBLY
DIRECTOR’S MEMORANDUM

TO:       All Hands           October 11, 2004
FROM:     Jonathan Dorfan

SUBJECT:   Immediate Lab-Wide Safety Stand-down
Monday October 11, a serious accident took place in the Linac gallery resulting in severe burns for one of our colleagues. As a result, I have decided to take immediate and decisive action.
All accelerators have been stopped and I have directed that all work, other than desk and janitorial work and essential maintenance involving equipment safety will cease immediately.

This electrical accident’s subsequent safety investigation and SLAC wide effort to improve safety shut down any work but safety training for over a week. Electrical hot check work and rigging were shut down for over a month, and have just started again after significant changes in Lab procedures for approving this work.

Our standard electrical and rigging procedures in I&T have shown us to be a good example in the subsequent DoE and OSHA investigation of SLAC’s compliance with their safety rules.

LAT I&T is compliant.
EM-2 (August 04- January 05)

- **Mini-Tower Pre-ship LPT**: 8/5/04
- **Install Mini-Tower (Bldg 33)**: 8/5/04
- **Mini-Tower Post-ship LPT**: 8/5/04
- **Remove Mini-CAL**: 8/6/04
- **EM CAL - 8/5/04**: Post-Ship Test 8/6/04
- **Install EM CAL**: 8/6/04
- **Single Bay CPT**: 8/6/04
- **Cosmics and radioactive source w/TKR thresholds, Cosmics w/TACK delays for CAL**: 8/9/04
- **EM GASU - 8/5/04**: STM 8/5/04
- **EM GASU Validation**: 8/6/04
- **Return CAL to NRL**: 8/24/04
- **Mini-A CD Integration (on Bench)**: 9/16/04
- **Install Mini-A CD**: 9/21/04
- **Mini-A CD LPT**: 9/23/04
- **Mini-Tower test with Mini-A CD**: 10/07/04
- **Re-receive CAL**: 10/13/04
  - **11/22/04**
- **Mini-LAT LPT**: 11/29/04
- **Mini-LAT Timing**: 12/6/04
- **Mini-LAT Cosmics**: 12/13-17
- **Mini-LAT Van de Graaff**: 12/20-23
- **Complete EM-2 SVAC** 01/17/05

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**Offline Pipeline testing as of 10/12/04**

**SVAC to Process and Analyze data offline – SAS Offline Pipeline is Essential**

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**I&T Two Tower IRR 6**
# Internal Peer Review RFA Status

<table>
<thead>
<tr>
<th>Department</th>
<th># RFAs</th>
<th># Responses</th>
<th># Open</th>
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<td>MGSE</td>
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Open Internal Peer Review RFAs will be assessed after the conclusion of the Two Tower IRR to determine if items should be closed or remain open.
Level of I&T Readiness Overview

• **Areas that are generally ready**
  – Facility
  – MGSE (Except for Personnel Access Platform)
  – Procedures – Mechanical
  – EGSE
  – Particle Test
  – SVAC

• **Current Holes in I&T Readiness**
  – Procedures – Electrical (Closure of test definition)
  – MGSE – PAP
  – Tracker – lack of dry run experience with realistic EM.
  – Subsystem Script deliveries.
  – Survey and Alignment plans.
  – Hardware deliveries don’t optimally support I&T flow. (TEM/PS)
Two Tower IRR Agenda

• 0800 - 0815 Introduction E. Bloom
• 0815 - 0830 Safety Overview K. Fouts
• 0830 - 0915 I&T Plan K. Fouts
• 0915 - 0930 Break
• 0930 - 1200 IFCT K. Fouts/B. Grist
• 1200 - 1330 Lunch
• 1330 - 1400 MGSE K. Fouts
• 1400 - 1415 QA Status D. Bartholomew
• 1415 - 1445 Online E. Bloom
• 1445 - 1500 Break
• 1500 - 1530 Particle Test E. Bloom
• 1530 - 1600 SVAC Plan E. Bloom
• 1600 - 1700 Summary of Open Items D. Horn
  » Procedures – Electrical (lack of test definition)
  » MGSE – PAP
  » Tracker – lack of dry run experience with realistic EM.
  » Subsystem Script deliveries.
  » Survey and Alignment plans.
  » Hardware deliveries don’t optimally support I&T flow. (TEM/PS)
  » Other?