

## **6MSD Weekly Scheduling Meeting**

Wednesday @ 1:30, MCC Conference Room

September 28, 2011

- 1) Glance Back and 2-Week Look Ahead (F. Pilat)..... 10 mins
- 2) PMI Report (P. Collins) ..... 5 mins
- 3) Critical Path Service Provider Reports..... 25 mins
  - (a) SRF (Hogan)
  - (b) Alignment (Curtis)
  - (c) Software (Bickley)
  - (d) MSINST (Wilson)
- 4) Hall Status Reports (E. Folts) ..... 10 mins
- 5) Special Topics: None ..... 0 mins
- 6) Safety Report: M. Logue ..... 5 mins
- 7) Meeting Recap and Action Items (All)..... 5 mins



# 6MSD: Glance back & look ahead

Fulvia Pilat

6MSD Meeting  
September 28, 2011

# Progress Wed Sep 21 – Wed Sep 28

Weeks: **20** down, **7** to go (**1** to nominal ops start-up)

## Highlights:

- **Concrete pour at the tunnel extension** (last Friday, 10 min before the rain..)
- **SAB-LCW** (EA and SL) completed...operational today
- **NAB-LCW** (WA and NL) commissioning in progress, operational end next week?
- **C100-2** installation started this Monday
- **C100-1** reached gradient of **18.5MV/m** per cavity or **103.6 MV** (still working to achieve headroom of 108 MV). Low level RF work in progress.
- Start of **Hall D solenoid** alignment
- **AUX CHL transformer** started yesterday....hopefully cryo tonight?
- All **arc magnets** ready for checkout
- Progress on the **Hall C** dump continues

## Areas of attention:

- C100-2, civil construction, ops start-up schedules
- Hall A target



Just in time! 😊



# CCB Report – Meeting yesterday

- *NO CRs & NTFs have been submitted, reviewed, and approved this week*

Things we discussed:

- Civil construction schedule
- C100-2 installation and testing
- Operations start-up
- Hall A & G2P
- Hall C dump (no CR required, but track the work done)
- Delay of FEL UV run (likely to January, off the 6MSD scope)
- Consistency of 6MSD schedule, SAD calendar, OPS schedule
- Transition 6MSD to operations
- 6MSD Thursday meetings
- Ask Hall Physicists to tell us about preparation for beam (next few Wednesdays)

# 2 weeks look ahead

- **Civil construction** work continuation
- **C100-2** installation+ test in tunnel
- **All LCW** systems operationsl
- **RF** installation
- **Hall-A** G2P, target? G2P beamlines
- **Hall-B:** Tests of HD-ice target
- **Hall-C:** Qweak preps, removal HKS
- Injector PSS certifications
- **Temporary gate** at NE stub tunnel → **start of injector operations**

# 4 week look ahead – Critical

C100-2 schedule - Civil work schedule – Start-up schedule

**Disconnect.** Need to be aligned → **Meeting tomorrow 10am.**

Coordinate work for the **NE stub PSS gate**

Discussions with Ballard pending

Plan transition 6MSD → operations (also discussion tomorrow)

NOTE: I will be on travel Mon-Wed next week. Dianne will do the 6MSD coordination in my absence.



# PM&IP

6MSD 9/28/11 Weekly Progress Meeting  
(9/23/11 Data)  
Report #20

# PM&IP

- Schedule Issues: Hall D Phase 3 Tunnel Extension is ~20 Days behind schedule. (Nov. 7<sup>th</sup> completion date)
- Hall A Septum and Target: 15 days behind schedule
- North Access LCW is 4.5 days late.(Oct. 7<sup>th</sup> completion date)
- Resource issues: None at press time.

# PM&IP

- Other Schedule Information at [https://www.jlab.org/6MSD Integrated Schedule/SCHEDULES/](https://www.jlab.org/6MSD_Integrated_Schedule/SCHEDULES/)
  - **Four Week Look Ahead** - Shows all activities that have started that are not complete and any activities due to start in the next four weeks
  - **Critical Path** – Shows all MUST activities that have 2 days or less float.
  - **Schedule Variance** - Shows all MUST activities that are not 100% complete and that the Start/Finish dates have slipped by at least 5 days.

# Shutdown Work Summary

Organization: SRF

Name: John Hogan

Date: 28-SEP-2011

## Last Week

### Work That Went Better Than Expected:

- N/A

### Work That Went Slower Than Expected, Delays, and Issues:

- N/A

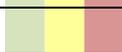
## Ongoing Shutdown Work

**Table 1: Next Week's Work** (green = no concerns; yellow = some concerns; red = serious concerns)

| Project & Customer           | Status | Completion | Tasks   | Comments/Concerns   |
|------------------------------|--------|------------|---|---|
| C100-01 Checkout             | X      |            | LLrf control; Microphonics damping investigation      | Coordination with C100-02 installation and CHL outage.                              |
| C100-02 Installation in SL25 | X      |            | Install, Align, perform system checkout for cooldown. | Leak has been identified between 2K circuit and insvac. Leak has not been repaired. |
|                              |        |            |   |   |

**Table 2: Other Upcoming Work** (green = no concerns; yellow = some concerns; red = serious concerns)

| Project & Customer | Status | Completion | Tasks  | Comments/Concerns             |
|--------------------|--------|------------|--|-------------------------------|
| C100-01 Checkout   | X      |            | Baseline diagnostic measurements still need to be completed. | Coordinating with LLrf tasks. |

| Project & Customer | Status  | Completion | Tasks  | Comments/Concerns  |
|--------------------|---|------------|--|--|
| C100-02 Checkout   |  |            | Standard SRF performance commissioning activities. | Installation on schedule for cooldown next Wednesday, 05-OCT-2011. |
|                    |  |            |  |  |

**New Work Requests Requiring Schedule Changes:**

- N/A

**Permits Not Already in Hand (hot work, lifting, blind penetrations):**

- N/A

**Significant Problems Pending (delays, technical issues, resource issues, scheduling):**

- The time to install and checkout C100-02 is very tight; there is no float for 'unknown' problems.

**Staffing Outlook:**

- Ok.

# Shutdown Work Summary

**Organization:** Alignment

**Name:** Chris Curtis

**Date:** 28th Sept, 2011

## Last Week

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### Work That Went Better Than / As Expected:

- Step 2A of Arc 10 completed.
- Cryomodule C100-3 first stage fiducialization completed.
- Hall C moller stands aligned.
- G2P target platform check.
- Initial alignment of FEL wiggler completed.
- First part of Hall D solenoid alignment completed.
- C100-2 cryomodule alignment started.
- Cartridge survey of arc magnets started.

### Work That Went Slower Than Expected, Delays, and Issues:

## Ongoing Shutdown Work

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**Table 1: Next Week's Work** ( green = no concerns; yellow = some concerns; red = serious concerns)

| Project & Customer | Status  | Completion | Tasks                        | Comments/Concerns |
|--------------------|---|------------|------------------------------|-------------------|
| 12 Gev linacs      | X <span style="background-color: #fff3cd;"> </span> <span style="background-color: #f8d7da;"> </span> | TBD        | Alignment SL25-27            | This week         |
| Hall C             | X <span style="background-color: #fff3cd;"> </span> <span style="background-color: #f8d7da;"> </span> | TBD        | Moller beamline re-alignment | This week         |
| G2p                | X <span style="background-color: #fff3cd;"> </span> <span style="background-color: #f8d7da;"> </span> | TBD        | Harp & Dump fiducialization  | Next week         |

| Project & Customer | Status | Completion | Tasks                        | Comments/Concerns |
|--------------------|--------|------------|------------------------------|-------------------|
| Hall C – Q-Weak    | X      | TBD        | Mid-way check on HKS removal | Next week         |

**Table 2: Other Upcoming Work** ( green = no concerns; yellow = some concerns; red = serious concerns)

| Project & Customer | Status | Completion | Tasks   | Comments/Concerns                  |
|--------------------|--------|------------|---|------------------------------------|
| 12 GeV Arcs        | X      | TBD        | Final alignment of dipoles in NE arc              | To start around Oct 11             |
| PEPPO              | X      | October    | Alignment of PEPPO components                     | Scheduled for week of Oct 17th     |
| G2p                | X      | TBD        | Alignment of all downstream components and target | Target status?                     |
| Q-Weak             | X      | TBD        | Target alignment                                  | After cool-down. Oct 18/19         |
| Q-Weak             | X      | TBD        | HKS monitoring; final alignment of detectors etc. | Working to have these ready.       |
| Hall D             | X      | October    | Solenoid alignment                                | Second phase of solenoid alignment |

**New Work Requests Requiring Schedule Changes:**

- None

**Permits Not Already in Hand (hot work, lifting, blind penetrations):**

- None

**Significant Problems Pending (delays, technical issues, resource issues, scheduling):**

- Change of schedule for some tasks has helped.

**Staffing Outlook:**

- Same.

# Shutdown Work Summary

**Organization:** Controls Software

**Name:** Matt Bickley

**Date:** September 28, 2011

## Last Week

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### Work That Went Better Than/As Expected:

- 12 GeV: Zone replication tested (SL23)

### Work That Went Slower Than Expected, Delays, and Issues:

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## Ongoing Shutdown Work

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**Table 1: Next Week's Work** ( green = no concerns; yellow = some concerns; red = serious concerns)

| Project & Customer | Status  | Completion | Tasks                                     | Comments/Concerns  |
|--------------------|---|------------|---|--|
| PEPPo              | X <span style="background-color: #d4edda;"> </span> <span style="background-color: #fff3cd;"> </span> <span style="background-color: #f8d7da;"> </span> | 17-Oct-11  | Viewers                                   | Ready to test with hardware                              |
| PEPPo              | X <span style="background-color: #d4edda;"> </span> <span style="background-color: #fff3cd;"> </span> <span style="background-color: #f8d7da;"> </span> | 17-Oct-11  | Dipole power supply controls              | Hardware ready next week                                 |
| PEPPo              | X <span style="background-color: #d4edda;"> </span> <span style="background-color: #fff3cd;"> </span> <span style="background-color: #f8d7da;"> </span> | 17-Oct-11  | Discriminator/scaler for data acquisition | Work started; lower priority than G2P (harp) work        |
| 12 GeV             | X <span style="background-color: #d4edda;"> </span> <span style="background-color: #fff3cd;"> </span> <span style="background-color: #f8d7da;"> </span> | 1-Oct-11   | Low-level RF                              | Gang phase, helium interlock and "RF on" sequence remain |
| 12 GeV             | X <span style="background-color: #d4edda;"> </span> <span style="background-color: #fff3cd;"> </span> <span style="background-color: #f8d7da;"> </span> | 1-Oct-11   | RF screens                                | Ops reviewing  |
| G2P                | X <span style="background-color: #d4edda;"> </span> <span style="background-color: #fff3cd;"> </span> <span style="background-color: #f8d7da;"> </span> | 14-Nov-11  | New harp controls                         | Development ongoing; chassis available soon              |
| G2P                | X <span style="background-color: #d4edda;"> </span> <span style="background-color: #fff3cd;"> </span> <span style="background-color: #f8d7da;"> </span> | 15-Nov-11  | New BPM controls                          | Position and calibration algorithm must be developed     |

| Project & Customer | Status | Completion | Tasks                  | Comments/Concerns                            |
|--------------------|--------|------------|------------------------|--|
| G2P                | X      | 21-Sep-11  | Viewers                | Ready to test with hardware                  |
| G2P                | X      | 3-Oct-11   | Septum magnet controls | Development under way                        |
| PSS/MPS            | X      | 15-Nov-11  | CAEN power supply      | Development under way; not going to be early |

**Table 2: Other Upcoming Work** (green = no concerns; yellow = some concerns; red = serious concerns)

| Project & Customer | Status | Completion | Tasks   | Comments/Concerns   |
|--------------------|--------|------------|---|---|
| 12 GeV             | X      | 14-Nov-11  | IOC boot management   |   |
| CASA               | X      | 1-Nov-11   | MO monitor  |   |
| Hall A             | X      | 1-Nov-11   | IOCs moved to accelerator network   | Implementation and 80% of testing done; testing remains for 20% |
| Operations         | X      |            | LCW monitoring  | Server quote: \$20K; loaner?                                    |
| Operations         | X      | 1-Nov-11   | Control system write logging  | Wider installation  |
| Operations         | X      | 14-Nov-11  | Digital image management  | Camera and network ready; computer to be installed              |
| Operations         | X      | 1-Nov-11   | Confirm network changes do not impact accelerator or endstation operation | Testing under way   |

**New Work Requests Requiring Schedule Changes:**

- None

**Permits Not Already in Hand (hot work, lifting, blind penetrations):**

- None

**Significant Problems Pending (delays, technical issues, resource issues, scheduling):**

- LCW monitoring requires a new server

**Staffing Outlook:**

- OK

# Shutdown Work Summary

**Organization:** MSINST

**Name:** Neil Wilson

**Date:** 9/28/11

## Last Week

### Work That Went Better Than Expected/Completed:

- Hall C Beam Dump 2nd He Tube Window Replaced, Leak Drastically Reduced
- Q-Weak Moeller Quad Beam Tube Flange welded on, Remaining Stands Re-Installed
- Installed SL 24 & 25 Warm Region Girder, Vac. Hook Up, Baked Out & Leak Checked
- Welded Handles on PSS Gates-Safety Item
- Grouted PEPPo Stands
- Vac. Group – Numerous smaller misc. jobs

### Work That Went Slower Than Expected, Delays, and Issues:

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## Ongoing Shutdown Work

**Table 1: Next Week's Work** ( green = no concerns; yellow = some concerns; red = serious concerns)

| Project & Customer | Status | Completion | Tasks                                       | Comments/Concerns   |
|--------------------|--------|------------|---|---|
| Hall C             | X      | 11/19/11   | Q-Weak Beam Line Re-Installation            | In Progress, need some guidance on what to do with inoperative quads. |
| Hall A G2P         | X      | 11/19/11   | Installation Support - Mechanical & Vacuum  | In Progress   |
| 6GeV               | X      | 10/7/11    | LCW System Valve Alignment & Filter Changes | In Progress   |
| 6GeV               | X      | 10/7/11    | BSY Beam Dump Re-Start                      | West Arc LCW in operation   |

| Project & Customer | Status | Completion | Tasks                                       | Comments/Concerns                             |
|--------------------|--------|------------|---|---|
| 12GeV              | X      | Open       | NL26 CPS Installation                       | Oct 3 <sup>rd</sup> Latest Update             |
| 6GeV               | X      | 10/21/11   | Hall C Dump – Install Ion Chamber Tube Caps | In Cue, we have the caps. Planned for 9/30/11 |

**Table 2: Other Upcoming Work** ( green = no concerns; yellow = some concerns; red = serious concerns)

| Project & Customer | Status | Completion | Tasks  | Comments/Concerns  |
|--------------------|--------|------------|--|--|
| 12GeV              | X      | 10/11/11?? | Erect Fence in NE Stub   | Mat'l on site, installation dwg's done. Actual Installation Date??       |
| 12GeV              | X      | 10/21/11?? | Build Tagger Shielding Wall                                    | Need to know rules of engagement. Too early for a decision at this time. |
| 12GeV              | X      | 10/21/11?? | Install Missing Beam Pipes in East Arc, Pump Down & Leak Check | NE Stub/Tagger Tunnel access requirements the determining factor         |
| 6GeV               | X      | 10/7/11    | Dipole P/S Flows checked, Acid flushing if needed              | Need N&S LINAC LCW Systems operating & stable                            |
| PEPPo              | X      | 10/17/11   | Girder Installation  | Standing By  |
| Hall C             | X      | 11/19/11   | Q-Weak Moeller Quad Move                                       | In Progress  |
| G2P                | X      | 11/19/11   | Continuing Installation Support                                | In Progress as parts & mat'l. are received                               |
| 12GeV              | X      | Open       | Fabricating Headers for Klystron Racks & CPS's                 | Fill Work  |
| Hall D             | X      | Open       | LCW Piping Installation  | On Hold until Sept 28 <sup>th</sup> . Hall D Requested                   |
| 12GeV              | X      | Open       | Fabricating Headers for Klystron Racks & CPS's                 | Manifolds on Site, Work In Progress                                      |
| 6GeV               | X      | Open       | Vac. Support/Maintenance                                       | On Going, Prep. for machine start up                                     |

**New Work Requests Requiring Schedule Changes:**

- None

**Permits Not Already in Hand (hot work, lifting, blind penetrations):**

- None

**Significant Problems Pending (delays, technical issues, resource issues, scheduling):**

- None.

**Staffing Outlook:**

- Staff reduction scheduled for Oct 7<sup>th</sup>

# Work Summary

**Organization:** Hall A

**Name:** E. Folts

**Date:** 9/28/11

## Last Week

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**Work That Went Better Than Expected:**

**Work That Went Slower Than Expected, Delays, and Issues:**

- Target testing

## Ongoing Shutdown Work

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**Table 1: Next Week's Work** ( green = no concerns; yellow = some concerns; red = serious concerns)

| Project & Customer | Status  | Completion | Tasks                           | Comments/Concerns                |
|--------------------|---|------------|---------------------------------|----------------------------------|
| G2P Water          | x <span style="background-color: #fff2cc;"> </span> <span style="background-color: #f4cccc;"> </span>   | continuing | Water manifold work             | Hold for new regulator and water |
| Septum magnet      | x <span style="background-color: #fff2cc;"> </span> <span style="background-color: #f4cccc;"> </span>   | continuing | Installing guards               |                                  |
| G2P Target         | <span style="background-color: #d9ead3;"> </span> <span style="background-color: #fff2cc;"> </span> x <span style="background-color: #f4cccc;"> </span> | continuing | Disassembly for troubleshooting | Coil damaged due to quench?      |
| G2P beam line      | x <span style="background-color: #fff2cc;"> </span> <span style="background-color: #f4cccc;"> </span>   | continuing | FZ 2 beam line supports         | Parts beginning to arrive        |
| G2P beam dump      | <span style="background-color: #d9ead3;"> </span> x <span style="background-color: #f4cccc;"> </span>   | On order   | Assembly, pre survey, install   | Delayed due to changes & mods    |
| Hall maintenance   | x <span style="background-color: #fff2cc;"> </span> <span style="background-color: #f4cccc;"> </span>   | continuing | General repair and maintenance  |                                  |

Hall B no concerns, working on detectors and HDice cooldown

Hall C concerned about crane being down (HKS removal), finished with SOS steel plates and testing exit windows.

# Shutdown Work Summary

Organization: Hall B

Name: Denny Insley

Date: 9/21/2011

## Last Week

R3S4 repair work is complete          100%

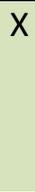
### Work That Went Slower Than Expected, Delays, and Issues:

- HDice ongoing
- FWD Carriage plate installation?

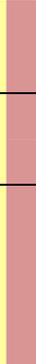
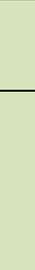
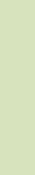
## Ongoing Shutdown Work

**Table 1: Next Week's Work** (green = no concerns; yellow = some concerns; red = serious concerns)

| Project & Customer  | Status | Completion                  | Tasks | Comments/Concerns |
|---|--------|-----------------------------|-------|-------------------|
| <b>6 GeV repairs</b><br>Remove tooling<br>from R3S4 and<br>move to R3S5 | X      | 9-29-2011                   |       |                   |
| Electron Run Blower   | X      | Electron blower<br>on going |       |                   |
| Fab Blower suction<br>line  | X      | Pump on order<br>Ongoing    |       |                   |

| Project & Customer   | Status  | Completion | Tasks | Comments/Concerns |
|--|---|------------|-------|-------------------|
| 12GeV PCal<br>Move tested<br>window to semi<br>clean room in EEL | X    | 09-27-2011 |       |                   |

**Table 2: Other Upcoming Work** (  = no concerns;  = some concerns;  = serious concerns)

| Project & Customer           | Status  | Completion | Tasks | Comments/Concerns |
|------------------------------|---|------------|-------|-------------------|
| • R3S5 removal<br>And repair | x    | 9-28-2011  |       |                   |
| Warm HDice<br>Alignment      |      | Done       |       |                   |
| Cool Down<br>HDice           |      | Sep 21?    |       |                   |
| Load test Pcal<br>windows    |      | Sep 22     |       |                   |

**New Work Requests Requiring Schedule Changes:**

- HDice Hall Alignment Aug 25

**Permits Not Already in Hand (hot work, lifting, blind penetrations):**

- None needed Hot work complete

**Significant Problems Pending (delays, technical issues, resource issues, scheduling):**

- None

**Staffing Outlook:**

- OK

# Shutdown Work Summary

**Organization:** Hall C

**Name:** W. Kellner

**Date:** 09-28-2011

## Ongoing Shutdown Work

**Table 1: This Week's Work** ( green = no concerns; yellow = some concerns; red = serious concerns)

| Project & Customer | Status | Completion            | Tasks   | Comments/Concerns  |
|--------------------|--------|-----------------------|---|--|
| 6Gev               | Yellow | On hold<br>Crane down | Disassemble and move the HKS dipole to the ESB for storage      | Hall C beam left area will be fenced off till move is completed in October |
| 6Gev Q-weak        | Yellow | On hold               | Q-weak LH2 target test cool down                                | Cryo Target techs / Experimenters  |
| 6Gev SOS           | Green  | Completed             | Cut and remove remaining steel plates of the SOS electronic hut | Area is decontaminated and cleaned   |

**Table 2: Upcoming Work** ( green = no concerns; yellow = some concerns; red = serious concerns)

| Project & Customer | Status | Completion | Tasks   | Comments/Concerns |
|--------------------|--------|------------|---|-------------------|
| 6Gev Q-weak        | Yellow | Started    | Pressure test water-cooled exit windows               |                   |
| 6Gev Q-weak        | Yellow | Started    | Install main detector # 9 with new support structures |                   |
|                    |        |            |   |                   |

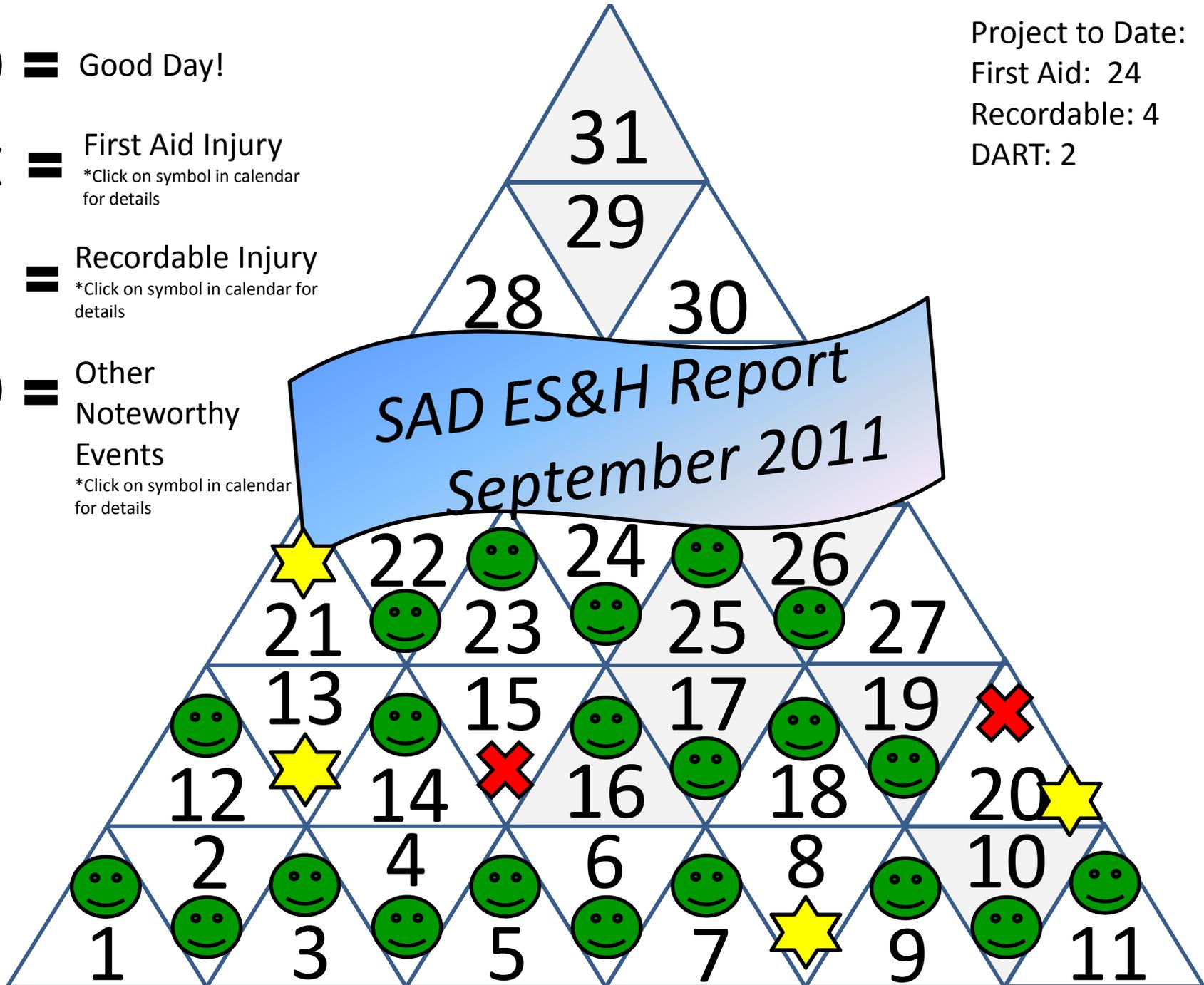
 = Good Day!

 = First Aid Injury  
\*Click on symbol in calendar for details

 = Recordable Injury  
\*Click on symbol in calendar for details

 = Other Noteworthy Events  
\*Click on symbol in calendar for details

Project to Date:  
First Aid: 24  
Recordable: 4  
DART: 2



# September 2011 Events

|   | Date     | Location                          | Event  |
|---|----------|-----------------------------------|--|
|    | 09/08/11 | Off-line chem room in building 58 | Employee and another co-worker were working in the chem room installing threaded inserts into the wall and floor for use in mounting hardware for the VEP experiment. After he drilled a hole in the wall he put down the drill and was about to watch co-worker install one of the fasteners into the wall. As he backed away from where co-worker was, he placed his hand on the wall to steady himself and contacted the electrical junction box that was mounted on the wall. Employee was diagnosed that second degree burn of left palm. Employee was treated with over the counter burn gel to left palm. Employee returned to work with no restrictions. |
|    | 09/13/11 | Behind the Lead Shed              | Employee states, "while torquing a bolt, the wrench slipped pinching my middle and ring fingers between the wrench and the dunnage." He was diagnosed with a contusion of left middle and ring fingers. Employee was treated with an ice pack that was applied to fingers. Employee returned to work on regular duty with no restrictions.   |
|  | 09/15/11 | TEDF 2nd floor section D          | Subcontractor was struck on back of hard hat by a wooden board which caused his head to go forward hitting his mouth on a metal pipe. Subcontractor was diagnosed with a laceration to upper lip with 3-4 upper teeth fractures. Subcontractor was evaluated by JLab Occupational Medicine and sent off-site for further evaluation. Subcontractor returned to work with no restrictions.  |

# September 2011 Events

|   | Date     | Location  | Event  |
|---|----------|---|--|
|    | 09/20/11 | Test Lab, outside of rm. 129 by the cooling tower | Employee states "While I was walking backwards carrying a large box with a co-worker, I stumbled over the curb putting most of my weight on the toes of my left foot." Employee was evaluated by Occupational Medicine personnel and sent to Port Warwick for further evaluation. Evaluation shows left great toe dislocation and chip fracture and the employee must wear post op shoe and use crutches. Employee has returned to work, restricted duty with a follow-up appointment with an orthopedist. |
|    | 09/20/11 | Hall D Site                                       | Employee was on the Hall D construction site photographing a wall removal when he was stung by an insect on his left upper arm. The insect was under his shirt sleeve when he killed it and shook it out so he was unable to see what stung him. Employee was diagnosed with an insect bite to left upper arm. The area was cleansed and treated with an over the counter topical analgesic. Employee returned to work with no restrictions. Follow up with Occ. Med tom.                                  |
|  | 09/21/11 | Wooded area behind the Hall D Site.               | Employee states "While removing limbs out of a ditch, a bee hive within the ditch was disturbed and I was stung on the head." Employee was diagnosed with an Insect sting to the top of head. The area was cleansed with normal saline and over the counter topical analgesic swab was applied to the area. Employee returned to work on regular duty.   |

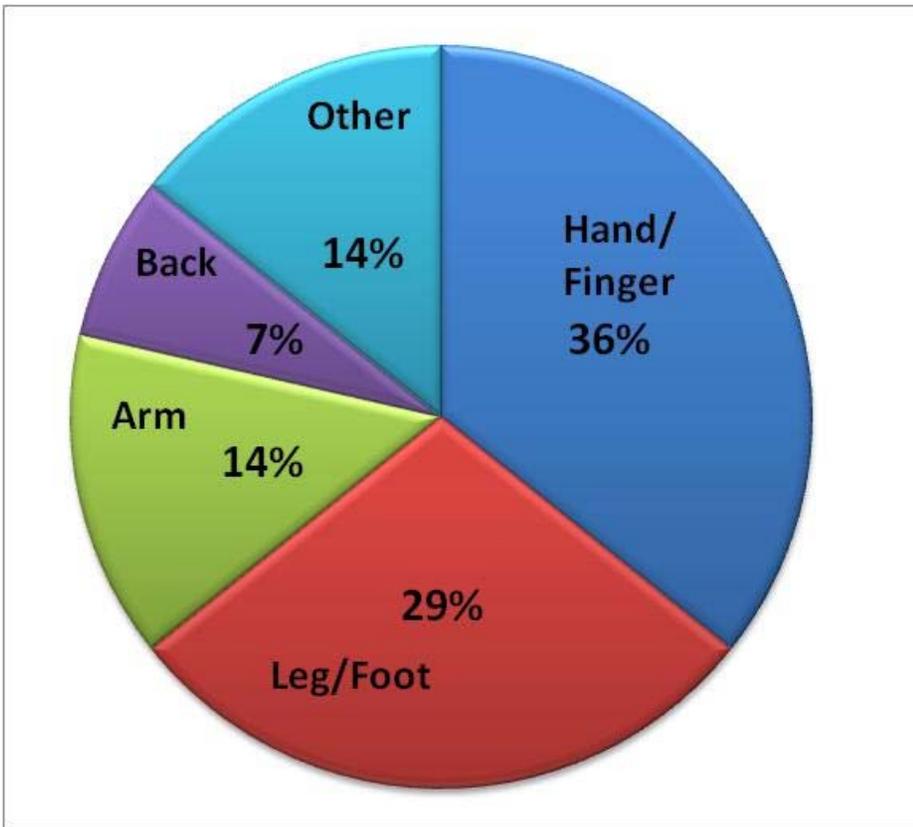
# Comparisons

|                       | FY 10<br>(12 weeks) | FY11<br>(26 weeks) |
|-----------------------|---------------------|--------------------|
| First Aid<br>Injuries | 12                  | 24                 |
| Recordable            | 2                   | 4                  |
| DART                  | 1                   | 2                  |

- TRC Breakdown:
  - FY10: 12 GeV (1)  
ACC (1)
  - FY11: 12 GeV (2)  
TEDF (1)  
ACC (1)

# Injuries Reported During 2010 SAD

**Injuries Reported During 2010 SAD**



**Injuries Reported During FY11 SAD**

