

Accelerator Division All-Hands meeting

November 30, 2010

Andrew Hutton

Accelerator Mission

- The Accelerator Mission is to advance the capability of Jefferson Lab to carry out world-class nuclear science and, more broadly, to develop Jefferson Lab's expertise in technologies associated with high-power superconducting linacs to enable the mission of the DOE Office of Science
- The goals to achieve the mission are designed to deliver results in five strategic areas:
 - 1 Support the 12 GeV Upgrade Project
 - 2 Operate and improve the CEBAF accelerator facilities
 - 3 Prepare the future evolution of nuclear physics experimentation at Jefferson Lab
 - 4 Enhance Jefferson Lab's core SRF competence to support DOE Office of Science projects
 - 5 Attract and educate the next generation of accelerator scientists

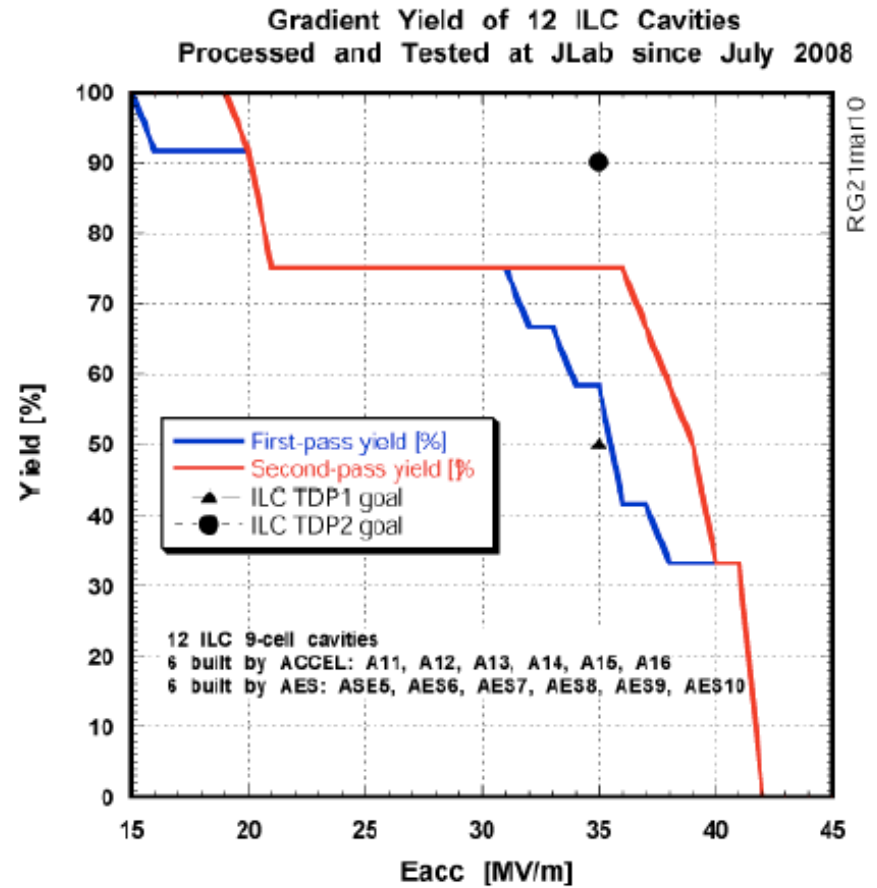
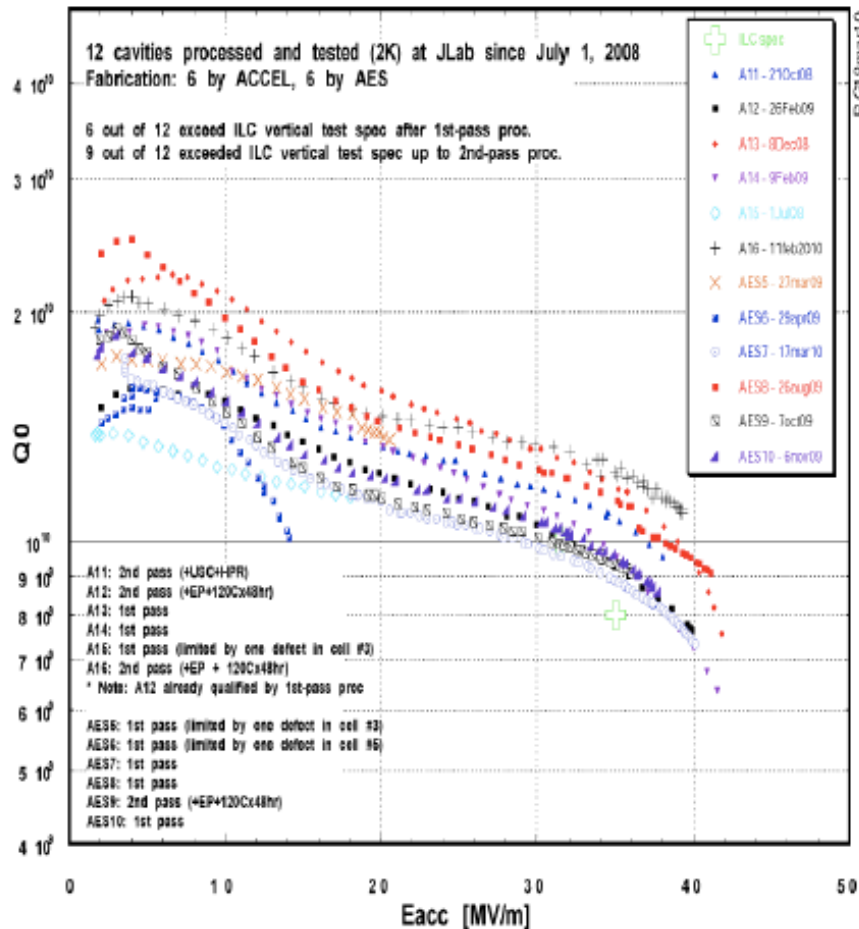
- This year's budget is subject to continuing resolution
 - Given the change in the House majority, budget is uncertain
 - Could be 12 month continuing resolution
 - Not very good (or bad) for operating budget
 - Worse for 12 GeV Project (could be \$16M shortfall)
 - Could be a limited budget agreement
 - Unlikely to be generous for operating budget
 - Probably be acceptable for the 12 GeV Project
 - TEDF will move ahead in all cases
 - May have some minor delays
- Our task is to maximize the effectiveness of the money we receive
 - In addition, we are still seeking partners with money!

ILC – International Linear Collider

- ILC has funded an R&D program at JLab to increase the performance of superconducting cavities:
 - JLab provides most of the cavity data for the Americas region
 - Improved cleaning and assembly practices
 - Electro-polishing process optimization
 - Developing next generation processing equipment
 - The last series of 10 cavities from RI (ex-Accel) met all of the ILC criteria, including 90% yield with second processing
- Results are being applied to all superconducting cavities
 - 12 GeV has adopted electropolishing for the C-100 cavities

Most Recent 9-cell Results at JLab

6 cavities built by ACCEL and 6 by AES



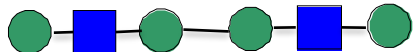
FRIB - Facility for Rare Ion Beams

- \$550M project at MSU funded by Office of Nuclear Physics
 - Will accelerate heavy ions for Nuclear physics research
- Jie Wei is new Head of FRIB Accelerator Division at MSU
 - He was involved in SNS Ring production at BNL; then went to China to design the Chinese SNS
 - He visited JLab on his first official day on the job
 - We are negotiating prototyping and processing the half-wave superconducting RF cavities
 - We have asked the ATLAS Group at ANL to take responsibility for the superconducting quarter-wave cavities
 - These cavities are a new design for us and will require a lot of development work
 - This is exactly why it is good for us!

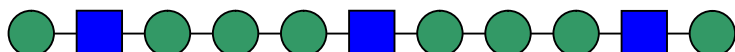
FRIB Superconducting Cavities

- 52 cryomodules required for FRIB driver linac
- 4 main cryomodule types
- 3 matching cryomodules
- 344 cavities required
- 4 cavity types
- 79 solenoids

QWR, 80.5 MHz, beta=0.041



QWR, 80.5 MHz, beta=0.085



HWR, 322 MHz, beta=0.29

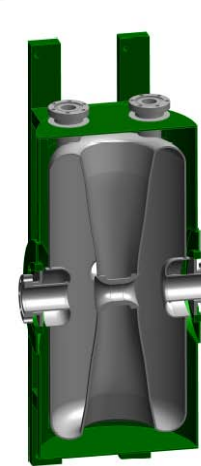


HWR, 322 MHz, beta=0.53

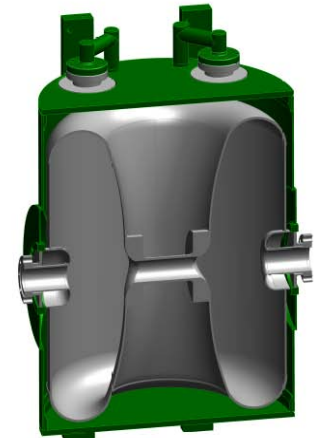


QWR 80.5 MHz Beta=0.041 QWR 80.5 MHz Beta=0.085

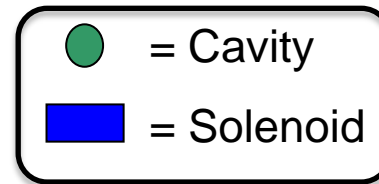
1 - meter



HWR 322 MHz Beta=0.29



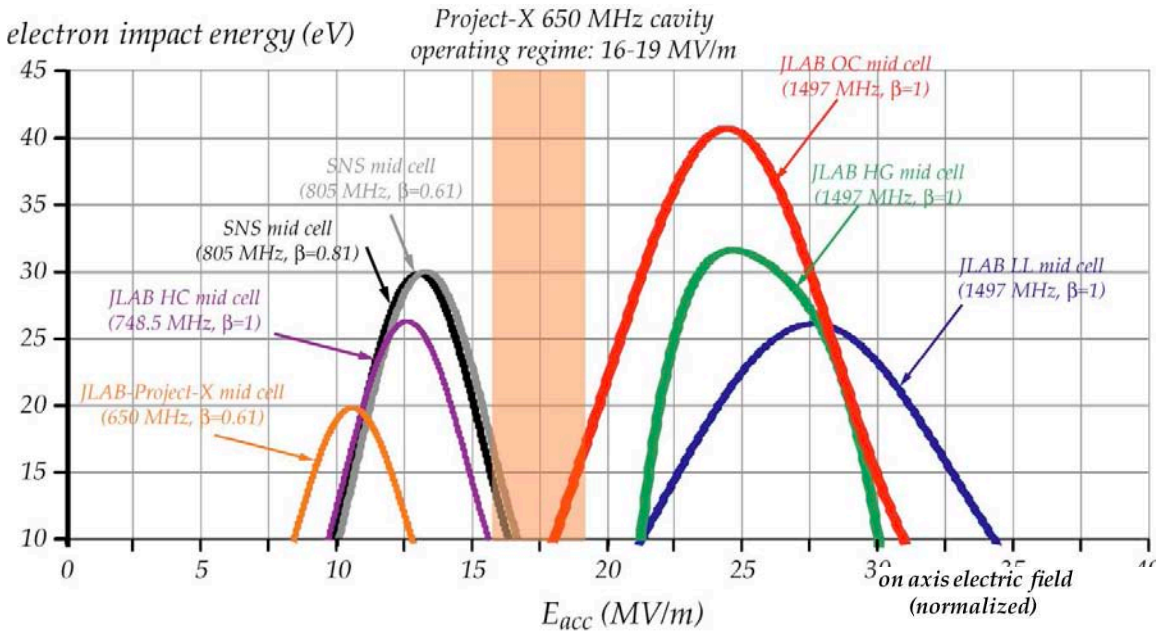
HWR 322 MHz Beta=0.53



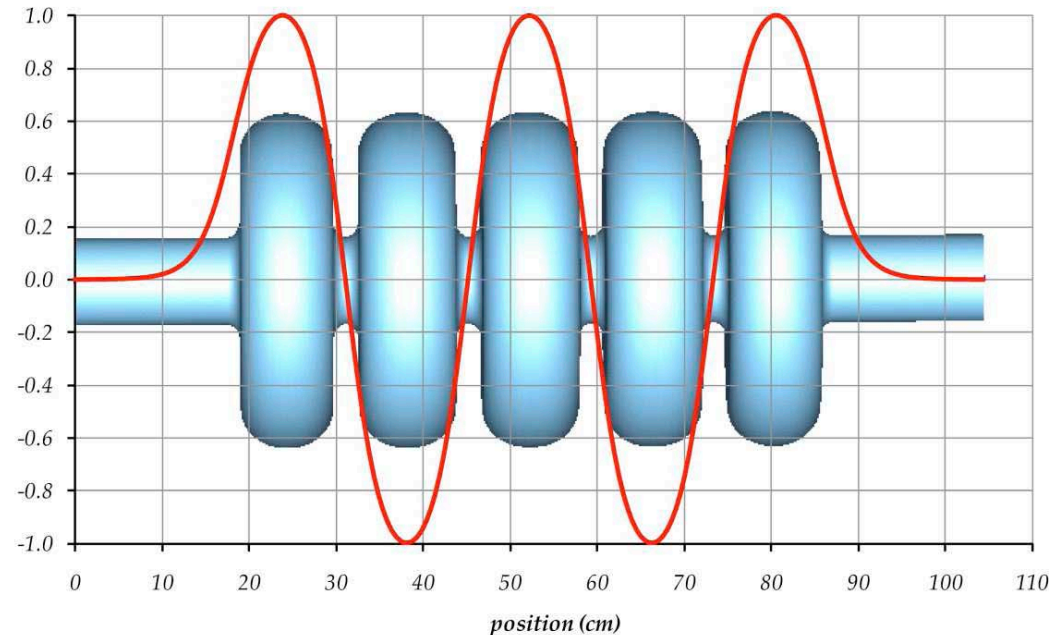
Project X - Facility for Rare Ion Beams

- \$1-2B project at Fermilab funded by Office of High Energy Physics
 - Will accelerate protons for kaon, neutrino and muon research
 - Awaiting CD0 (first step in approval process)
- Initially had 325 MHz superconducting spoke cavities at low energy followed by 1300 MHz superconducting elliptical cavities at higher energy (based on ILC 9-cell cavities)
 - Bob Rimmer proposed an intermediate 650 MHz stage
 - We have received funding for a prototype
 - Not clear whether we will be responsible for production
 - We have had some initial discussions on the spoke cavities
 - Our role is not yet clear

Project X 650 MHz Cavity Design



Frank Marhauser
designed this cavity
shape to reduce
multipacting



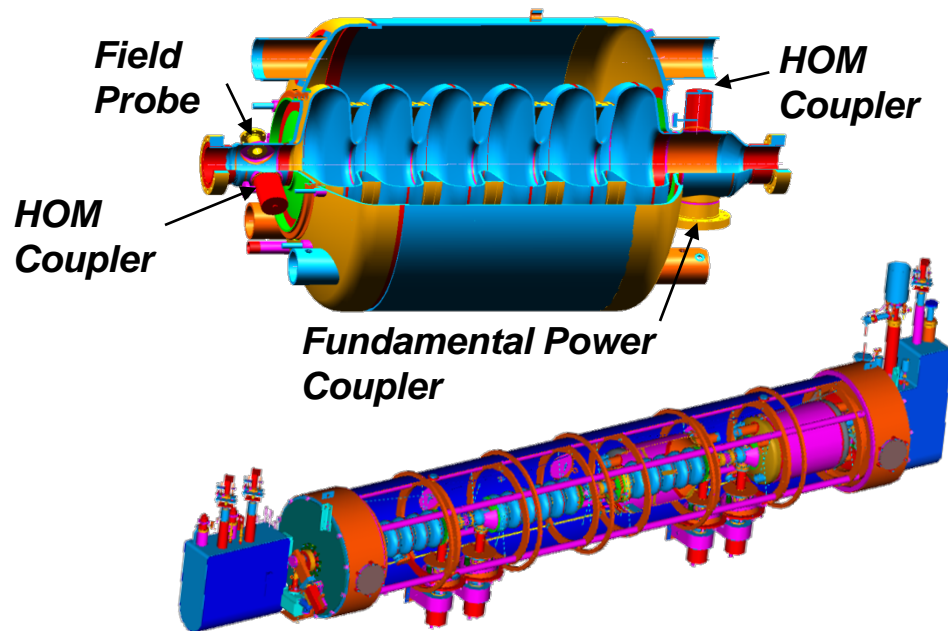
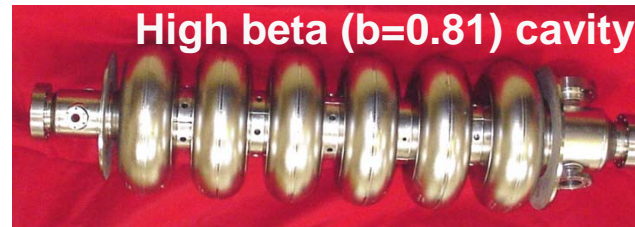
SNS-PUP - Spallation Neutron Source Power Upgrade Program

- An energy upgrade to the SNS, adding 10 new cryomodules with a total of 40 cavities
- SNS has officially requested estimates from us for various options
 - All new cavities (our preferred option)
 - Would be a new shape optimized to reduce multipacting
 - Re-using 20 spare cavities
 - The niobium used for the end groups limit performance
 - Redesigning the HOM damping
- We expect to get the contract
 - Dates for production are still unclear

SNS-PUP Cavities and Cryomodules

$\beta=0.81$ Specifications:

$E_a=15.8$ MV/m, $Q_o > 5E9$ at 2.1 K



10 Cryomodules

Partnerships

- **ESS** – The European Spallation Source at Lund, Sweden
- ~€1B project to produce a 5 MW proton beam
 - Uses spoke cavities and elliptical superconducting cavities
 - Two labs outside of Paris, France (Orsay, Saclay) are responsible for the superconducting cavities (Cost Account Managers)
 - We have had many interactions with the ESS directors
 - They visited here in July – gave a Colloquium
 - Video conference in October
 - Visit from IN2P3 (French equivalent of ONP/OHEP) in November, including Director of Orsay
- We are expecting a visit here from the two CAMs in January
 - Budget for a prototype has been promised in FY10

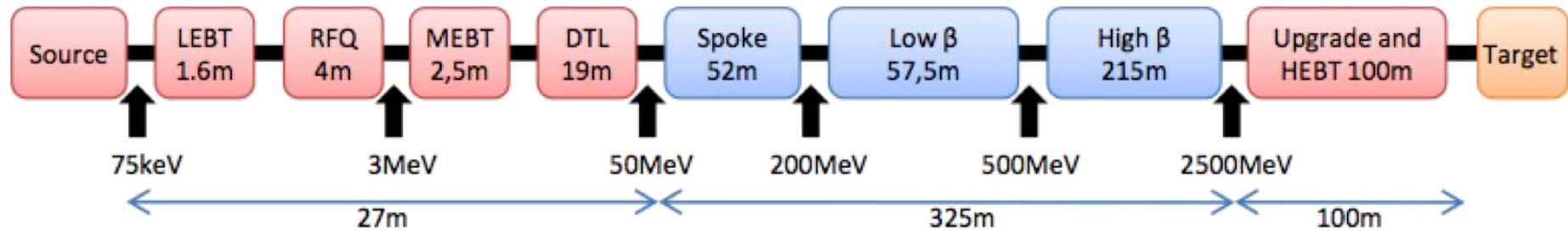


EUROPEAN
SPALLATION
SOURCE

The European Spallation Source



LINAC layout

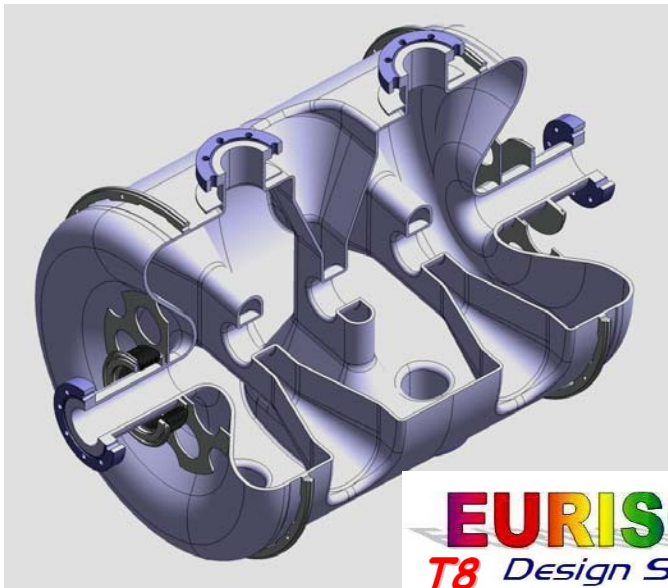


	Length (m)	Input Energy (MeV)	Frequency (MHz)	Geometric β	# of Sections	Temp (K)
RFQ	4	75×10^{-3}	352.2	--	1	≈ 300
DTL	19	3	352.2	--	3	≈ 300
Spoke	52	50	352.2	0.45	14 (3c)	≈ 2
Low Beta	57.5	200	704.4	0.63	10 (4c)	≈ 2
High Beta	215	500	704.4	0.75	19 (8c)	≈ 2
HEBT	100	2500	--	--	--	--

➡ Most of the spoke cavity tests were performed in vertical cryostat. Only a few were done in an accelerator-like configuration.

➡ Tests with beam have never been performed !

BUT expected (and partially experimentally proven) performances are worth it !



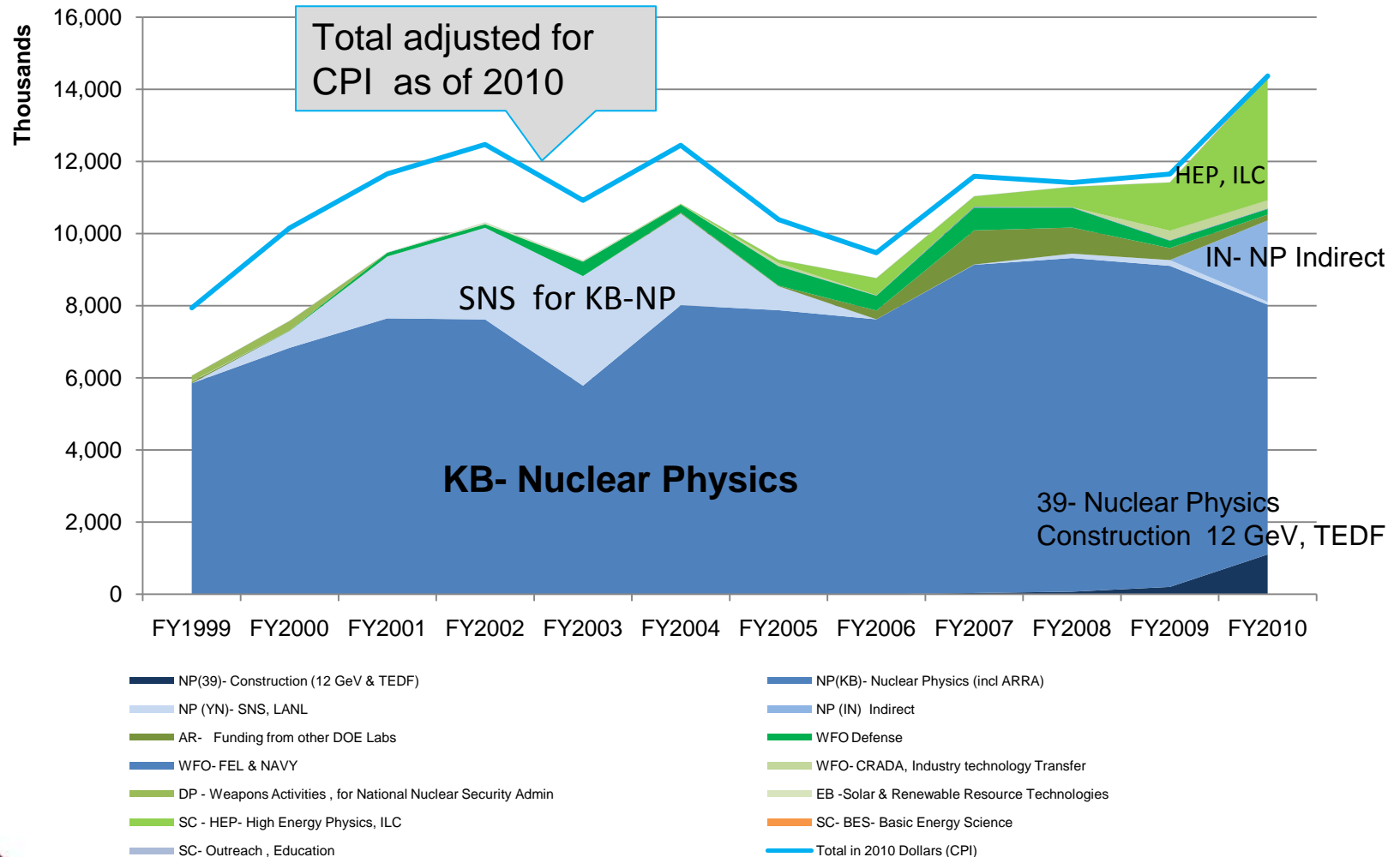
EURISOL
T8 Design Study



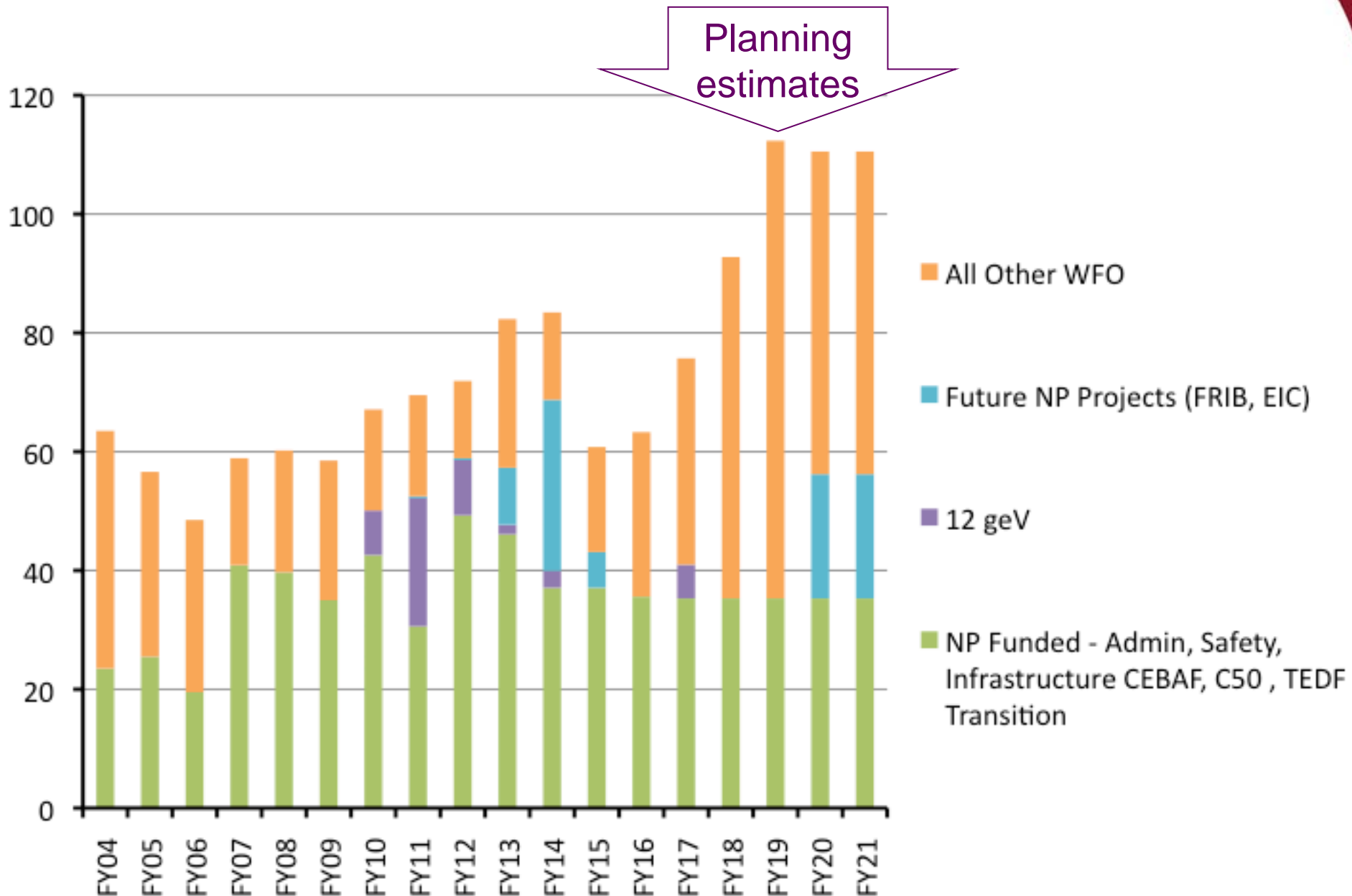
SRF Funding History

(includes overhead)

SRF Funding by B&R Source to end of FY2010



SRF FTEs Showing Growth in WFO



TEDF – Technology and Engineering Development Facility

- We have developed a business plan based on restoring original CEBAF SRF capacity – manufacturing (~75%) and R&D (~25%)
- Production capacity equivalent to:
 - 2 cryomodules per month
 - 16 multi-cell cavities per month
- New TEDF Building is designed around this capacity

Test Lab (refurbished)

New addition



Test Lab Renovation Has Started



SRF Facilities in TEDF Project

Advanced Conceptual Design

Chemistry, cavity treatments, and support areas

Cavity and cryomodule cryo/RF testing

Cleanroom

R&D

Cryomodule assembly

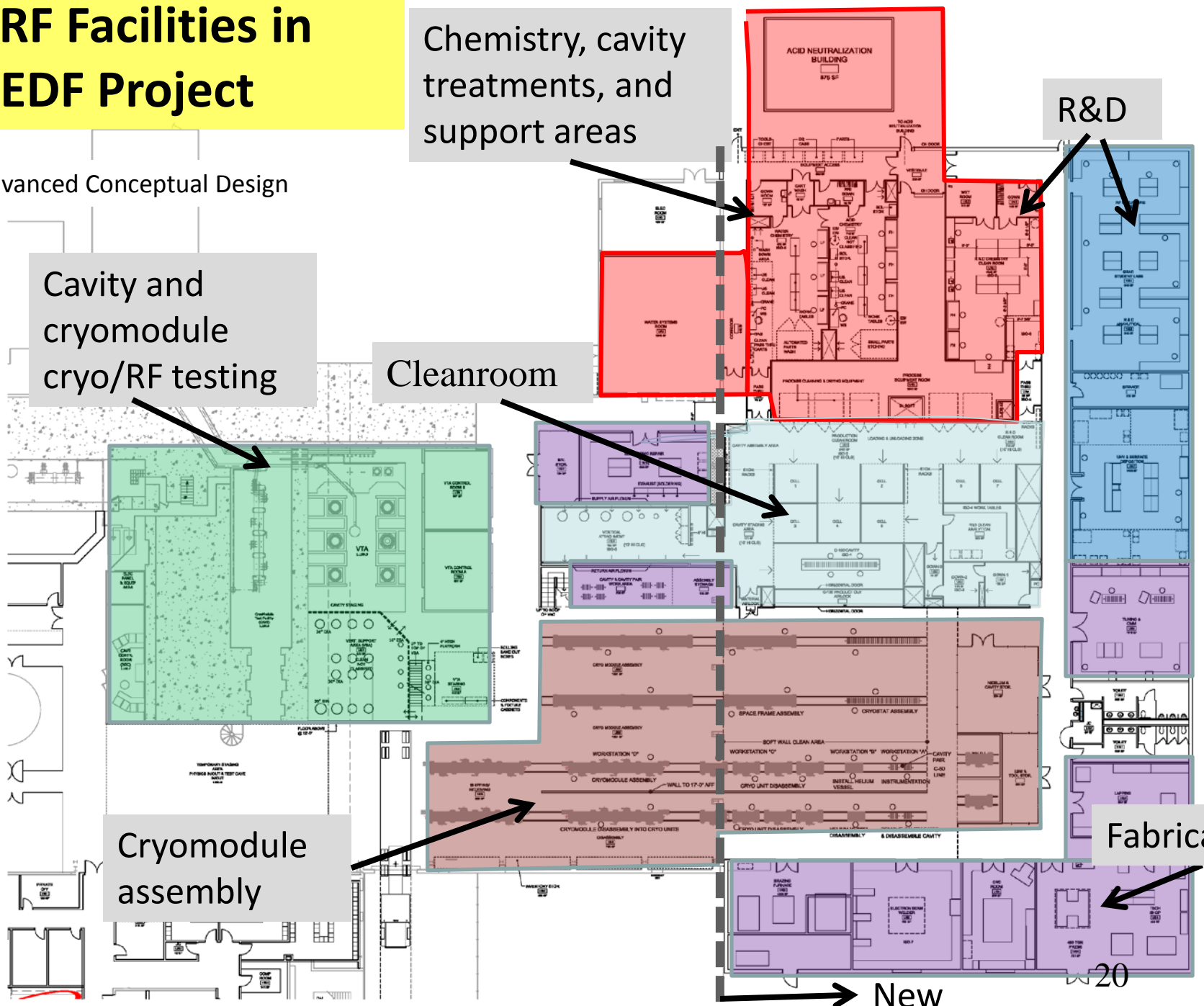
Fabrication

New

20

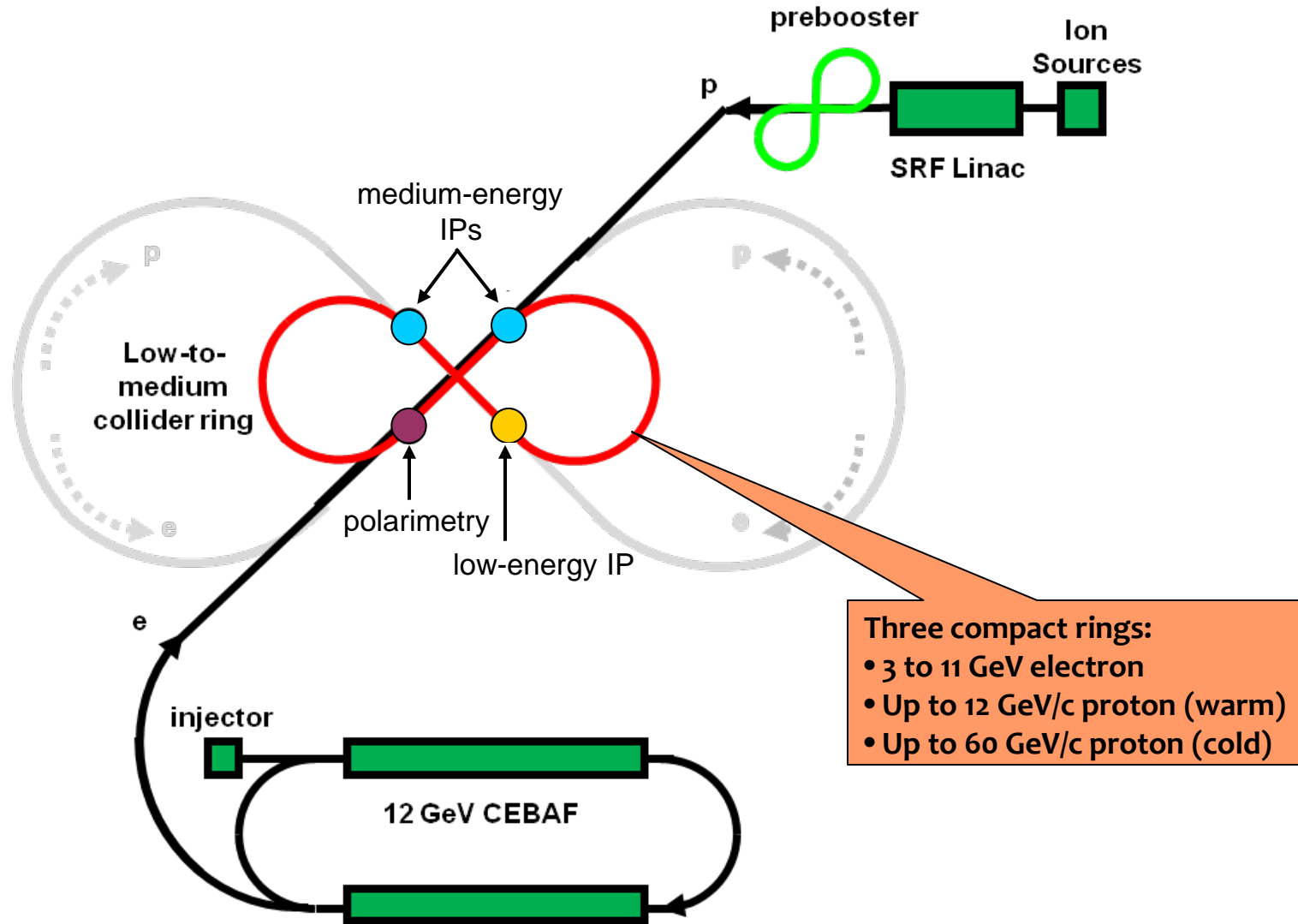
Jefferson Lab
Scale: 1/8" = 1'-0" 03.26.09

Renovation and Addition - First Floor

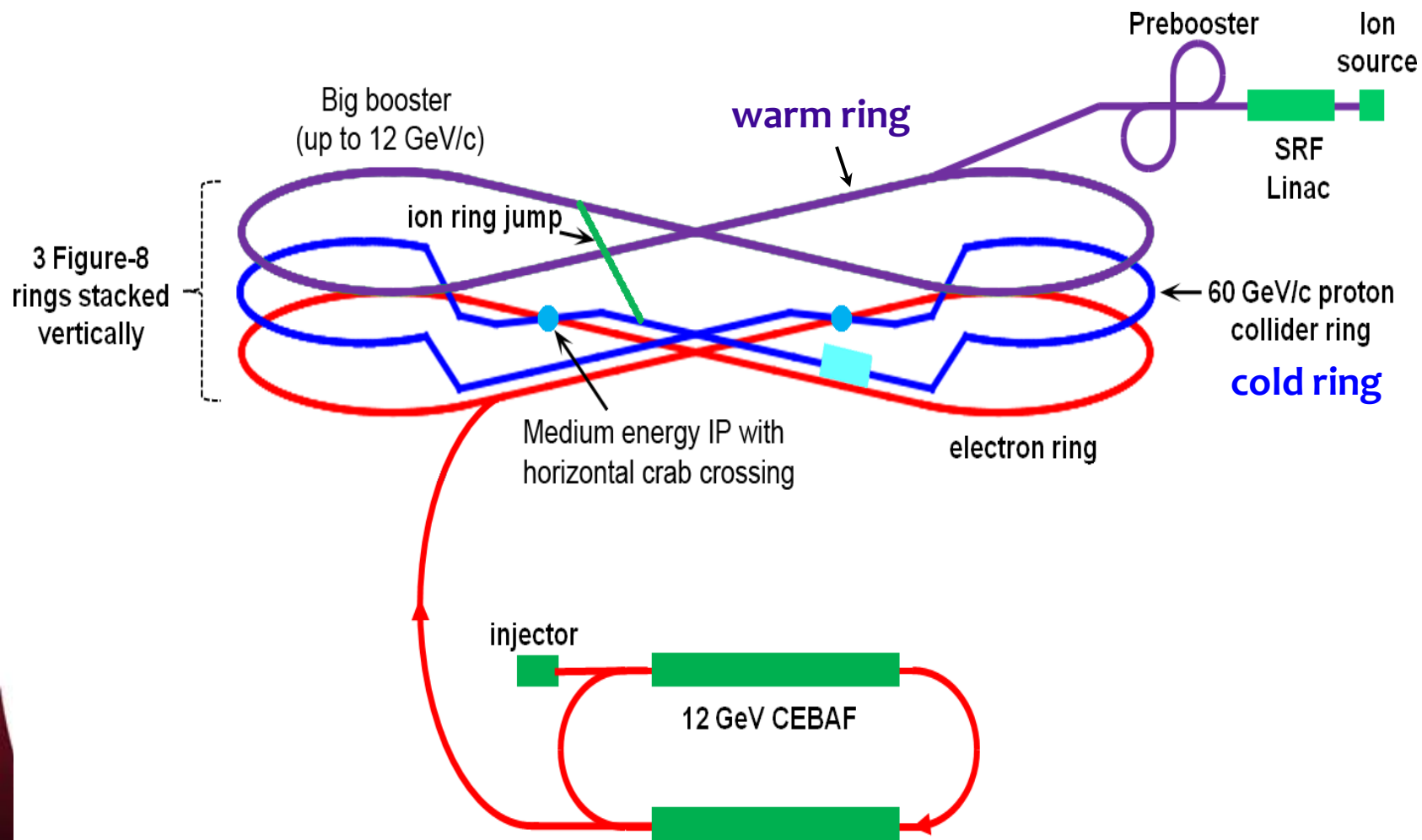


- CASA continues to design a Medium Energy Electron-Ion Collider
 - The Electron Ion Collider Advisory Committee (EICAC) reviewed the designs from BNL and JLab a year ago
 - We were (legitimately) criticized for lack of a complete design
- A new design phase was initiated
 - The basic parameters were revisited to be less extreme
 - We established a wide group of collaborators
 - Spent a lot of effort to integrate all of the pieces of the design
- I invited two experts (friends) for an “internal review” in October
 - The report was very encouraging
 - We are now working hard to complete the design before the next EICAC review
 - Users and staff have strengthened the physics case

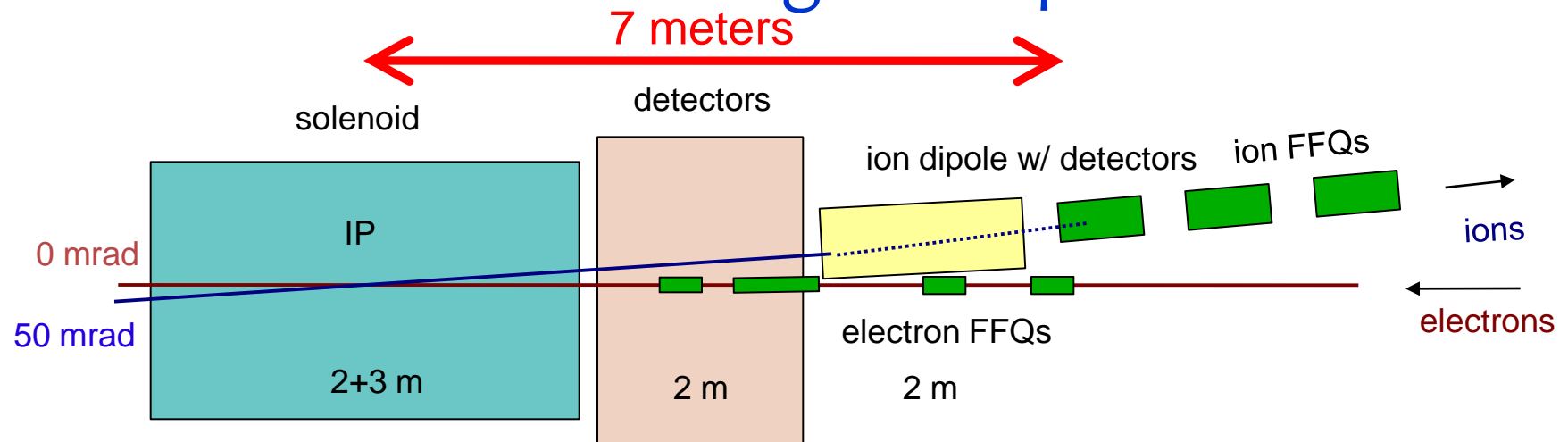
MEIC : Medium Energy EIC



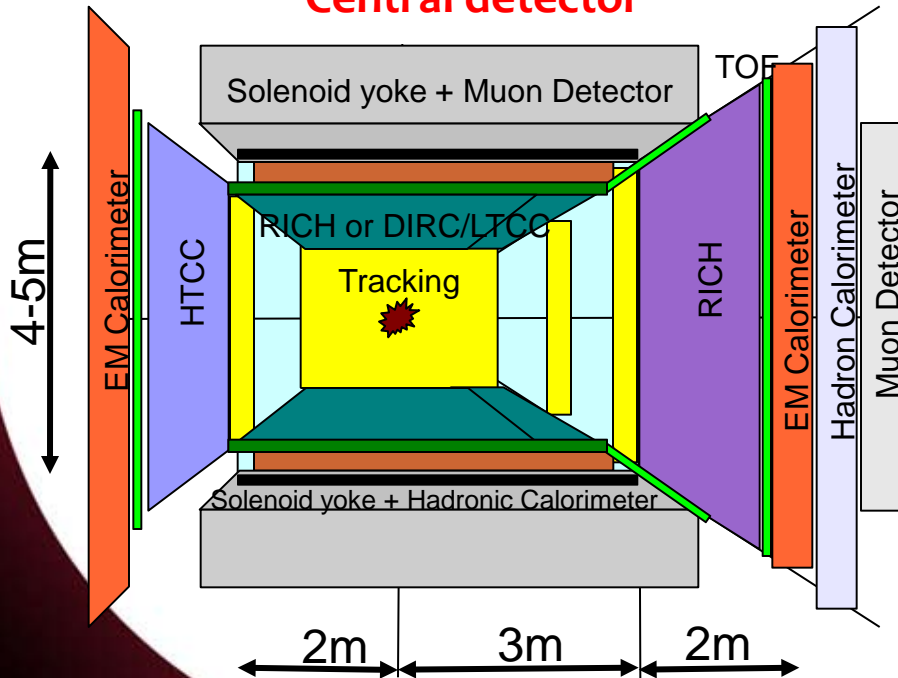
Detailed Layout



High Acceptance Detector



Central detector



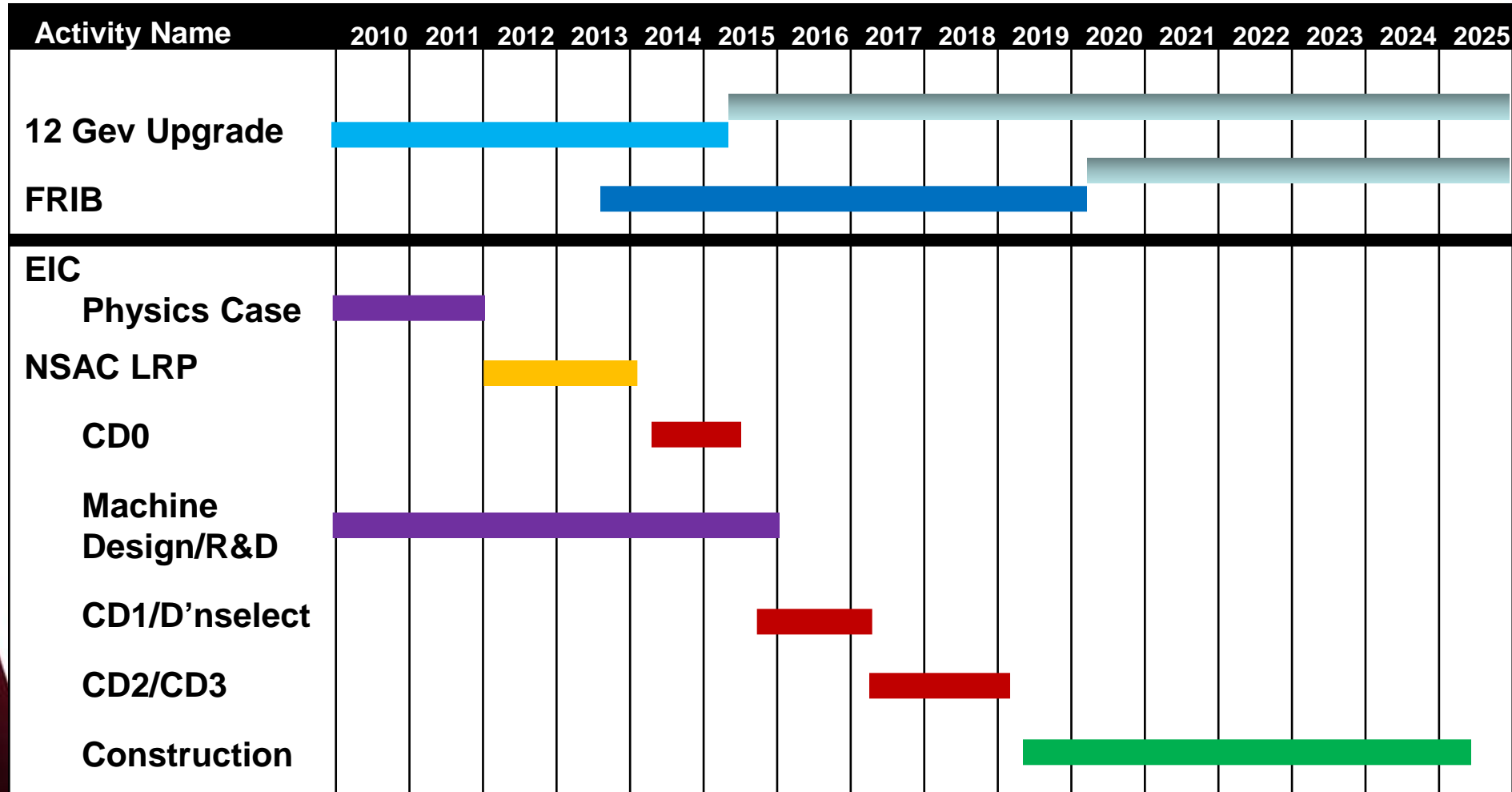
Detect particles with angles **down to 0.5°** before ion FFQs. Need 1-2 Tm dipole.

Detect particles with angles **below 0.5°** beyond ion FFQs and in arcs.

Very-forward detector

Large dipole bend @ 20 meter from IP (to correct the 50 mr ion horizontal crossing angle) allows for **very-small angle detection ($<0.3^\circ$)**

EIC Realization Imagined



Summary

- This is a time of world crisis
 - Many labs are laying off staff (some voluntary, some not)
- JLab has a funded Upgrade
- Jlab has a proposal for a collider to follow the Upgrade
- JLab has a \$70M new building under construction
- The Accelerator Division is actively developing partnerships
 - Initially focused on SRF Institute
 - Other Groups will become involved
- In ordinary circumstances, I would say that we are doing well
 - Looking at the rest of the world, JLab is on a roll!

Agenda for the Meeting

Accelerator Operations

Arne Freyberger

C100 Project Status

John Hogan

Six Month Down Planning

Fulvia Pilat

Accelerator Seminars

Anne Marie Valente

Closing

Andrew Hutton

CEBAF Operations

Arne Freyberger
Accelerator Operations
Accelerator Division

Jefferson Lab
CEBAF Center Auditorium
10:30am

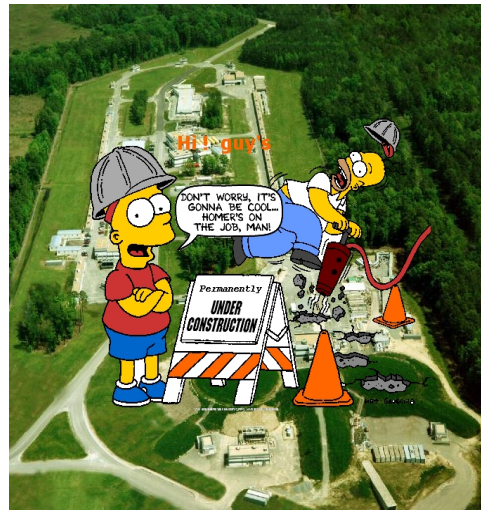
November 30th, 2010

1 CEBAF Operations

- FY10 Budget
- FY10 staffing
- Constant Scenario Plan
- FY11 Schedule
- FY11 startup
- Schedule

2 Project Details

3 Summary



FY10 Budget: Overview and Status

FY10 was the first year since FY08 that did not require any cuts to RSR or AIM Projects. That is, FY10 was the first year in a while where every project received funding at the requested level.

FY10 Procurement

All procurement dollars were effectively spent in FY10. A mid-year adjustment to some plans allowed for funding of several **unfunded priorities** projects.

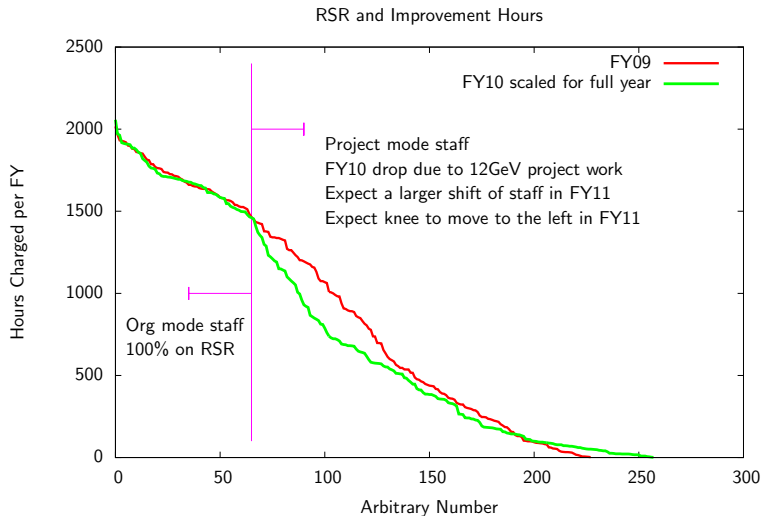
- It is important to fill out unfunded priorities projects!!! Just in case funds become available.

Labor Status

RSR required 8 fewer FTE in FY10 compared to FY09.

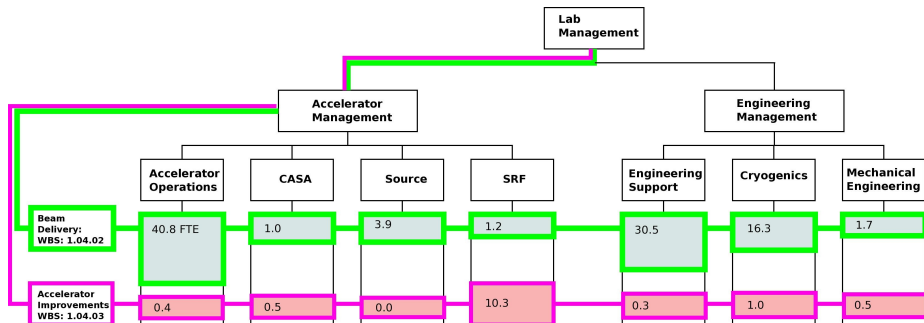
RSR required 4 fewer FTE in FY10 compared to the **plan**.

FY10 labor charges compared to FY09



FY10 program executed with 8 FTE less than the FY09 program.

FY10 Beam Delivery & Accel. Improvements Staff



- Slightly under 100FTE on Beam Delivery, drawn from Accelerator and Engineering divisions.
- Slightly more than 250 distinct individuals work on Beam Delivery and Improvement projects in FY10!!

FY11 & FY12 Constant Effort Scenario

3.5% growth per year

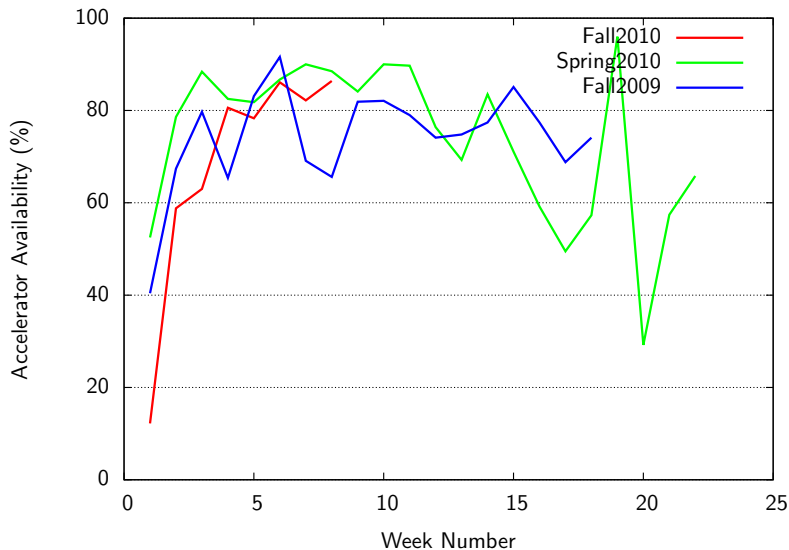
Weeks of operation in FY11 & FY12 is limited by the 6-month and 12-month shutdown during these years. Schedule is **presently** not driven by budget issues.

	FY10	FY11	FY12
Weeks of Beam Delivery	35	28	27
Power (M\$)	7.6	7.3	7.6
Cryogenics (M\$)	1.7	1.7	1.8
Procurements (M\$)	2.8	2.2	2.7
Accelerator FTE	47	46	47
Engineering FTE	49	40	30
AIP(M\$)	1.1	1.1	1.1

- FY11/FY12 Engineering staff moves onto 12GeV project.
- Less money for stuff in FY11. We'll have to work hard get our AWP to fit within the target.

This slide represents the plan circa July 2010. FY11 budget is still not finalized. Presently we are operating under a *continuing resolution* at FY10 levels until February 27th. Expect (hope) for an extension of CR into 2011.

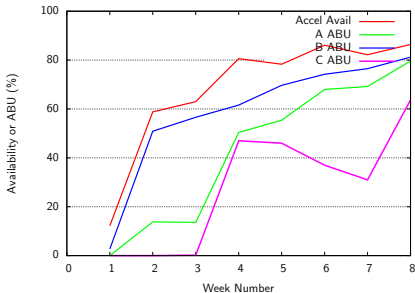
Fall2010 Startup



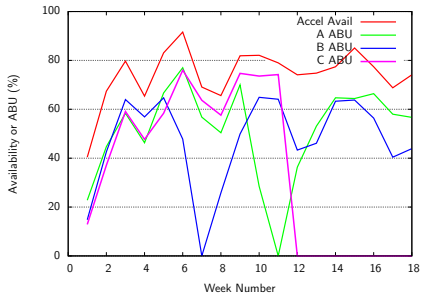
Hall ABU Trends

- QWeak [Hall-C] target 3 weeks late Fall2010
- DVCS [Hall-A] new electronics 4weeks late
- Qweak commissioning week 10 of Spring 2010 run?
- PREX target issues cause Hall-A fluctuations during Spring 2010 run.

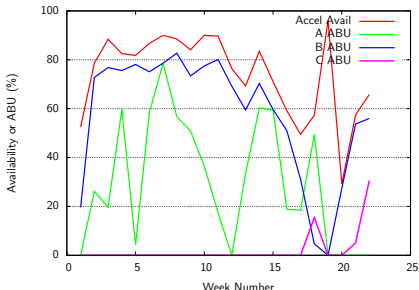
Fall2010 ABU and Accelerator Availability:



Fall 2009:

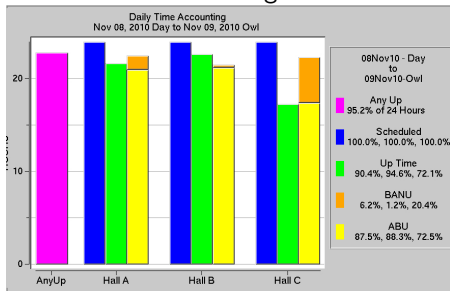


Spring 2010:

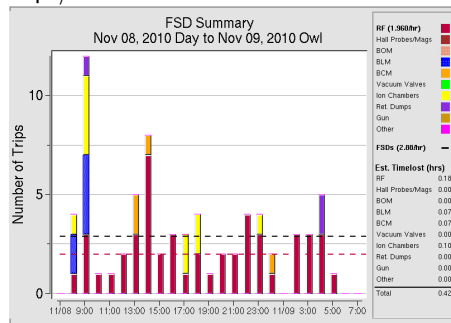


Fall2010 Running has been Robust!

A randomly selected great day this fall with all three halls using the beam!!



A typical daily FSD plot at 5.6GeV. RF trip rate has been consistent below 2 trips/hour.



Remaining 6GeV CEBAF Schedule!!

FY11:

Now→Dec 23rd 2010: CEBAF Operations

Hall-A DVCS
Hall-B TPE
Hall-C QWeak

Dec. 23rd 2010 → Jan. 3th 2011: Winter Break

Jan. 3rd 2011 → Mar 31th 2011: CEBAF Operations

Hall-A N-Δ, D Threshold, ...
Hall-B TPE, HD-ICE install
Hall-C QWeak

Mar 31th 2011→Friday May 13th 2011: Tentative CEBAF Operations

Depends on the FY11 Budget.

Hall-A E07-006, E08-014
Hall-B HD-ICE
Hall-C QWeak

Friday May 13th 2011 → Oct. 20th 2011: 6-month Shutdown

Fulvia will present more details on this later.

- LCW upgrade, no LCW for majority of down.
- PSS upgrade
- NE Stub tie-in. Hello Hall-D!
- West Arc Dipoles pulled, modified, mapped, reinstalled.
- 2 C100 cryomodules installed and commissioned.
- Positron experiment in Injector.
- g2p installation

FY12: Tentative

Oct 20th 2011→ Nov. 19th 2011: CEBAF Restoration

- Recover CEBAF after the long down and major surgery.
- BBU and beam tests on the new C100

Nov. 19th 2011 → Dec. 22nd 2011: CEBAF Operations

Hall-A g2p
Hall-B HD-ICE
Hall-C QWeak

Dec. 22nd 2011 → Jan. 5th 2012: Winter Break

Nothing planned

Jan. 5th 2012 → Monday May 13th 2012: Final 6GeV CEBAF Operations

Hall-A g2p, Prototron FF
Hall-B HD-ICE
Hall-C QWeak

Monday May 13th 2012: Start 12month Shutdown

- The end of 6GeV operations.
- Start of 12month shutdown for 12GeV upgrade.
- Did someone say party!

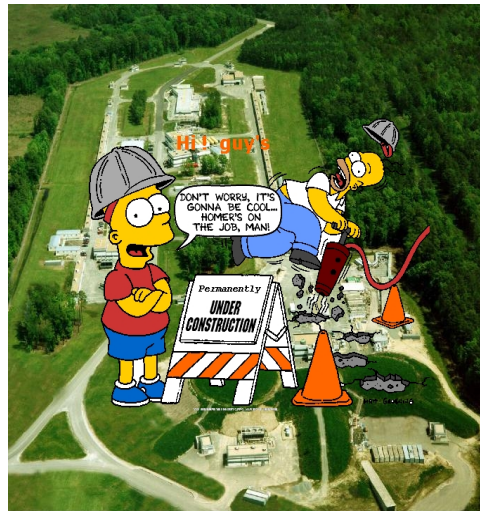
Project Details

1 CEBAF Operations

2 Project Details

- CED
- cebaf.jlab.org
- Positrons
- Injector Upgrade

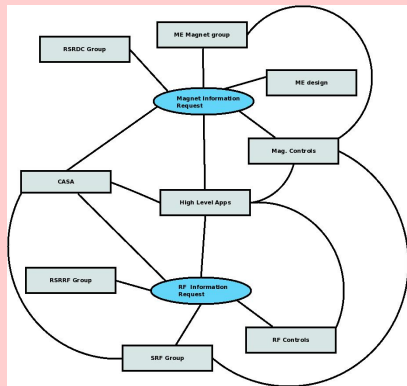
3 Summary



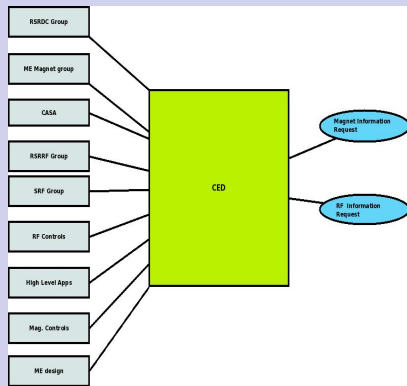
CEBAF Element Database (CED)

- Single resource for complete description of the installed CEBAF elements.
- Change from a system/task oriented view to a more holistic CEBAF machine view.
 - Conflicts with other systems will be easier to flesh out.

Present State of Information Flow



Proposed State of Information Flow



- Requirement is to have CED complete and populated with the 6GeV CEBAF elements by the end of 6GeV operations.
- Goal is to have all the infrastructure, all the modeling critical elements in place by the start of the final 6GeV run: Nov. 2011.
- Magnet work and C100 installation this summer will serve to test the transfer of information into CED.

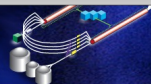
Team of Joyce, Keese, Laurie, Slominski working hard to make CED a reality. Everyone can help by responding to their requests for information in a timely manner.

http://cebafe.jlab.org

Most Visited ▾ Getting Started Latest Headlines ▾ Quick Guide: Install... http://clasweb.jlab.o... Insight Desktop Jefferson Lab Visitor... EmacsWiki: Customi... ELOG

CEBAF | The world's best electrons

CEBAF Status Information



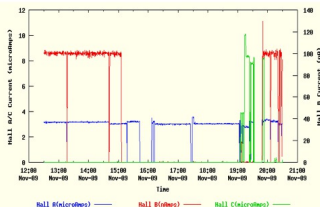
Contact Information

- **Crew Chief**
269-7050 (control room)
630-7050 (cell)
- **Program Deputy**
876-7997 (cell)
- **Hall A Counting House**
6328 or 6349
- **Hall B Counting House**
5247
- **Hall C Counting House**
6666 or 6000
- **Radcon**
876-1743 (cell)

Additional Info

- Program Information
- Hall Status (SWIS)
- Schedules & Planning
- Operations Summaries
- Maintenance
- Electronic Logbooks
- ATLAS

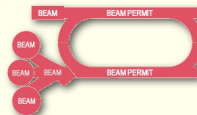
Hall Beam Currents



Shift Information

Shift:	Swing
CEBAF Program:	Hall A (4) Hall B (5) Hall C (1)
MCC Crew Chief:	Freeman
MCC Operators:	McCaughan, Richardson
Program Deputy:	Pilat
Announcements:	

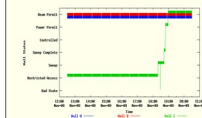
Access Status



Recent Elog Entries

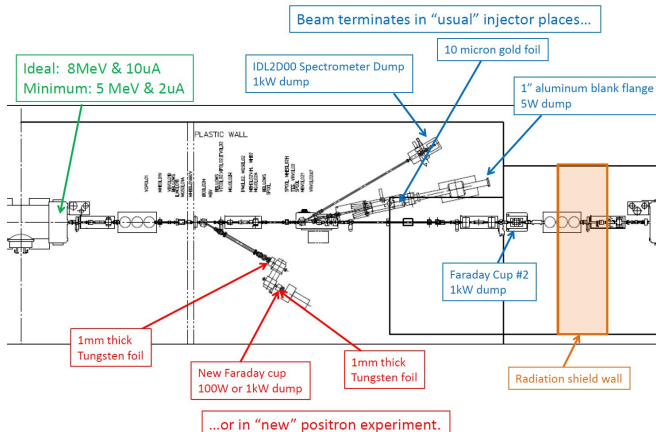
- RE: Hall C target change to Empty Target
- Bypassing 2L07 due to comm fault
- Hall C target change to
- AutoLog - Unmasked Hall C Fast Raster
- Hall C Raster has been set to X= 12.0 by Y= 12.0
- AutoLog - Masking Hall C Normal Target
- IHA3H09A/B harp scans
- Hall B - Procedure: Changing Radiator
- HYST AREA 3-0 Cycles Magnets for LEM
- Autolog LEM South Linac
- Interlock Change Added: FSD Masked
- HYST AREA 3-0 Cycles Magnets for LEM

Hall PSS History



Polarized Positrons Source Development

- Novel approach to polarized positron production, that makes use of the high current, highly polarized electron beams at CEBAF.
- Joe Grames the lead on this project.
- Goal is to perform the installation and make measurements during the six-month down.
 - Installation and measurements will only go forward if they can be done without having a negative impact on the other 6-month activities.



e^+ on the CEBAF horizon?

Physics potential of 4GeV CEBAF was **greatly** enhanced by:

- the introduction of polarized beam and continual improvement in the beam polarization from 30%→85% or slightly higher.
- Increase in 5-pass beam energy from 4→6GeV.

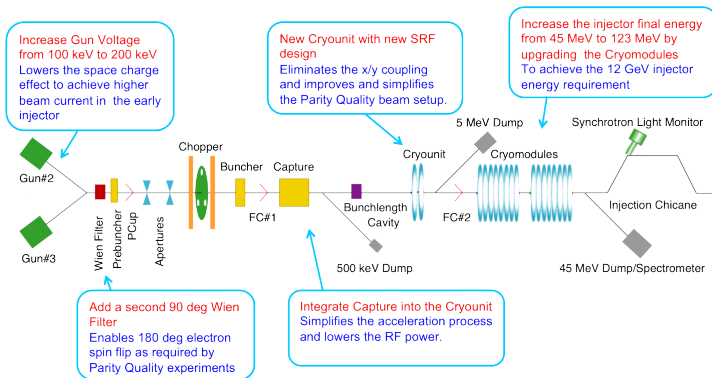
12GeV beam properties highly constrained:

- Energy and Current are well constrained in the 12GeV era by the design and 1MW site power limit.
- Beam polarization presently at the high 80% will be difficult to improve and gains from any improvement will not be overly significant.

Integrating a polarized positron source with the 12GeV CEBAF will increase the physics reach of the 12GeV program. In may be the only way to go beyond the present physics scope

Full Energy Injector

12GeV Compatible Inj. Upgrade Upgrade the 65MeV injector to 125MeV injector compatible with 12GeV CEBAF. Optimize warm RF and $\frac{1}{4}$ cryomodule section so that it is optimized for the new 200kV capable gun and 12GeV parity experiments.



Kazimi is leading this effort. Design effort includes help from Hofler, Law, Hannon, Marhauser, Mammosser

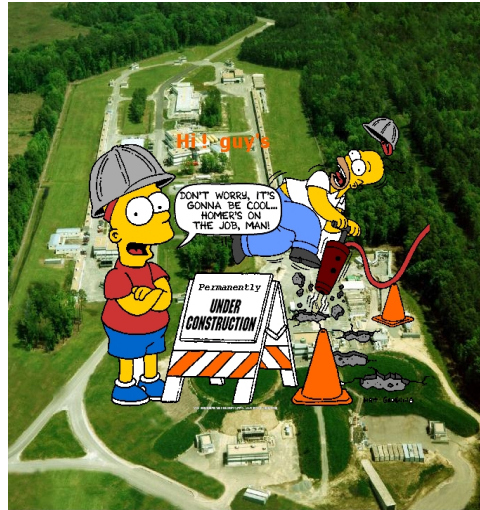
Accelerator Operations Summary

FY11 CEBAF Operations off to a great start!

- 1 One long run from Sept. 25th 2010 to May 13th 2011.
- 2 C50 program completed, resulting in a robust RF system with headroom to spare!
- 3 QWeak taking data!
- 4 Start of the six-month down, May 2011.
- 5 Estimated ~9 FTE of Eng. support will move onto 12GeV project.
Engineering needs to carefully evaluate their FY11 staffing modules to make sure that staff are properly distributed over the AWP/service provider requests.
- 6 Procurement budget will be more constrained than FY10 budget.

END HERE!!!

Thank You for your time and attention.

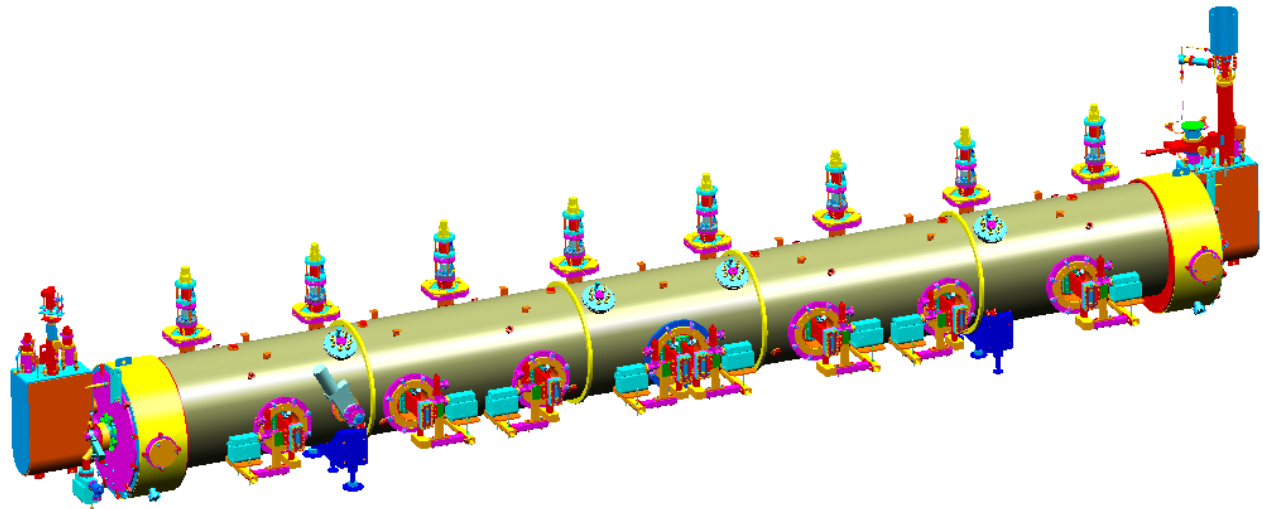


12 GeV Cryomodules

John Hogan

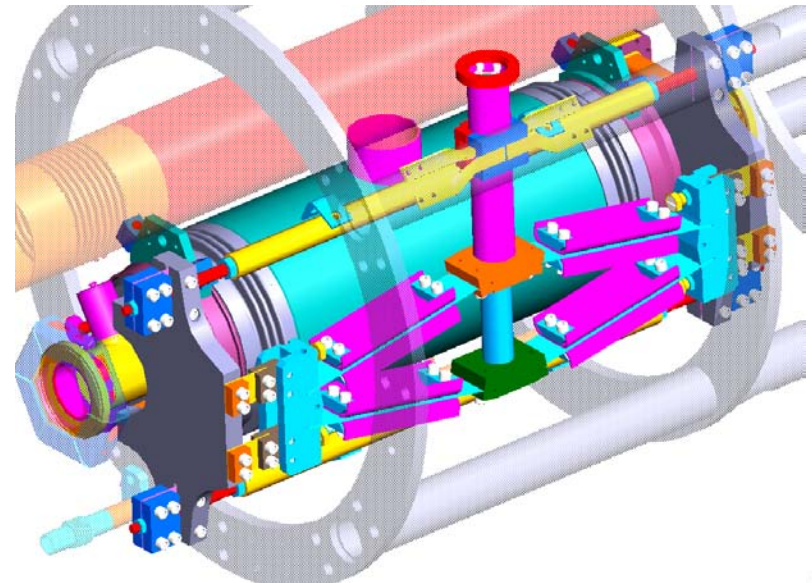
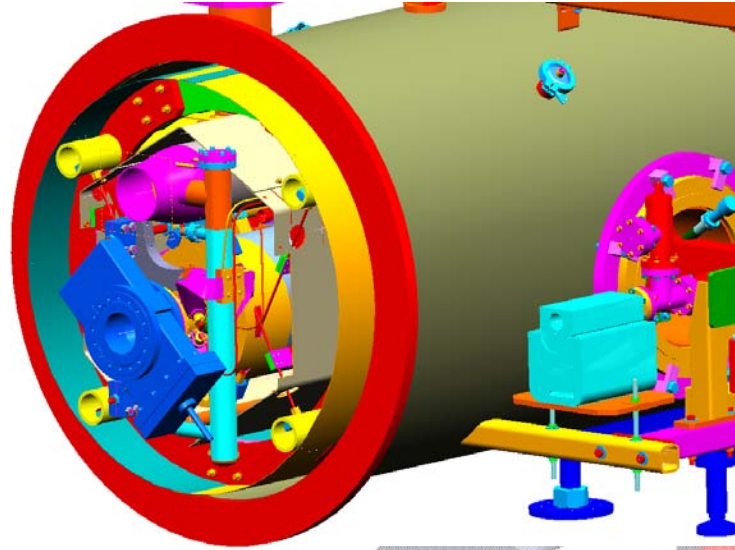
SRF

November 2010



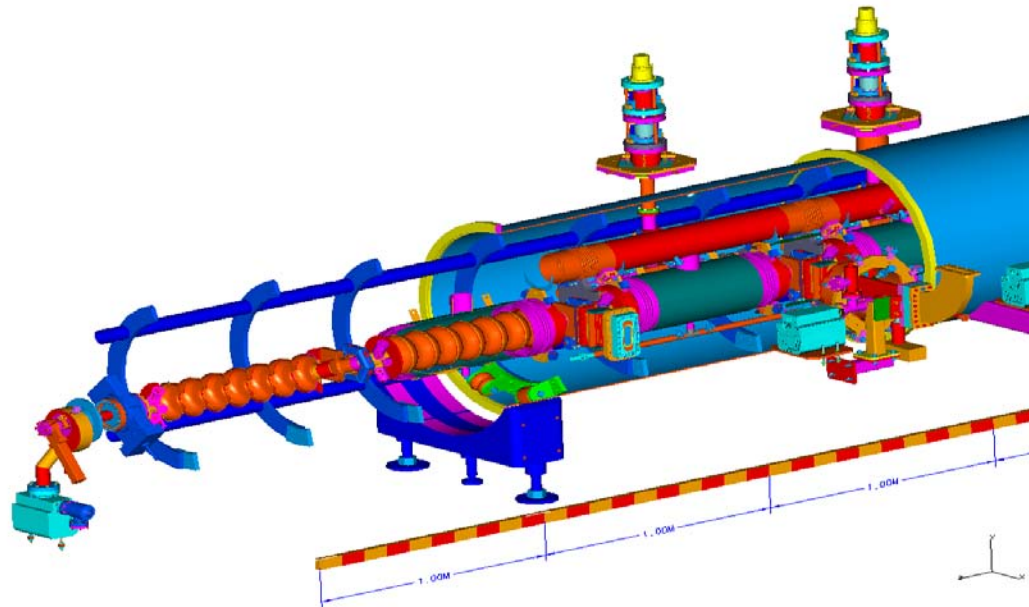
Outline

- Scope
- Schedule
- Status
 - Design
 - Procurements
 - Assembly
 - Testing & Installation

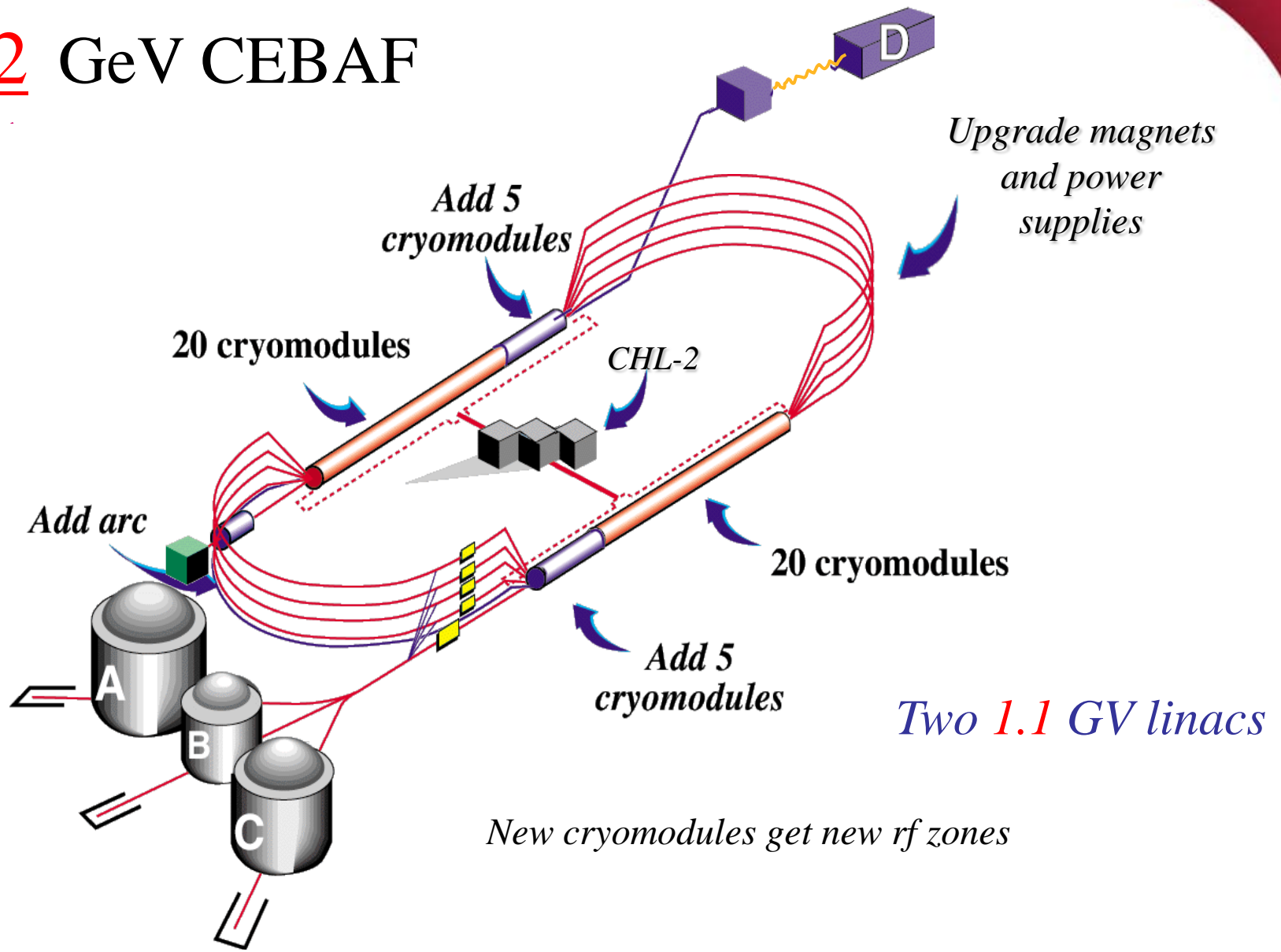


Scope

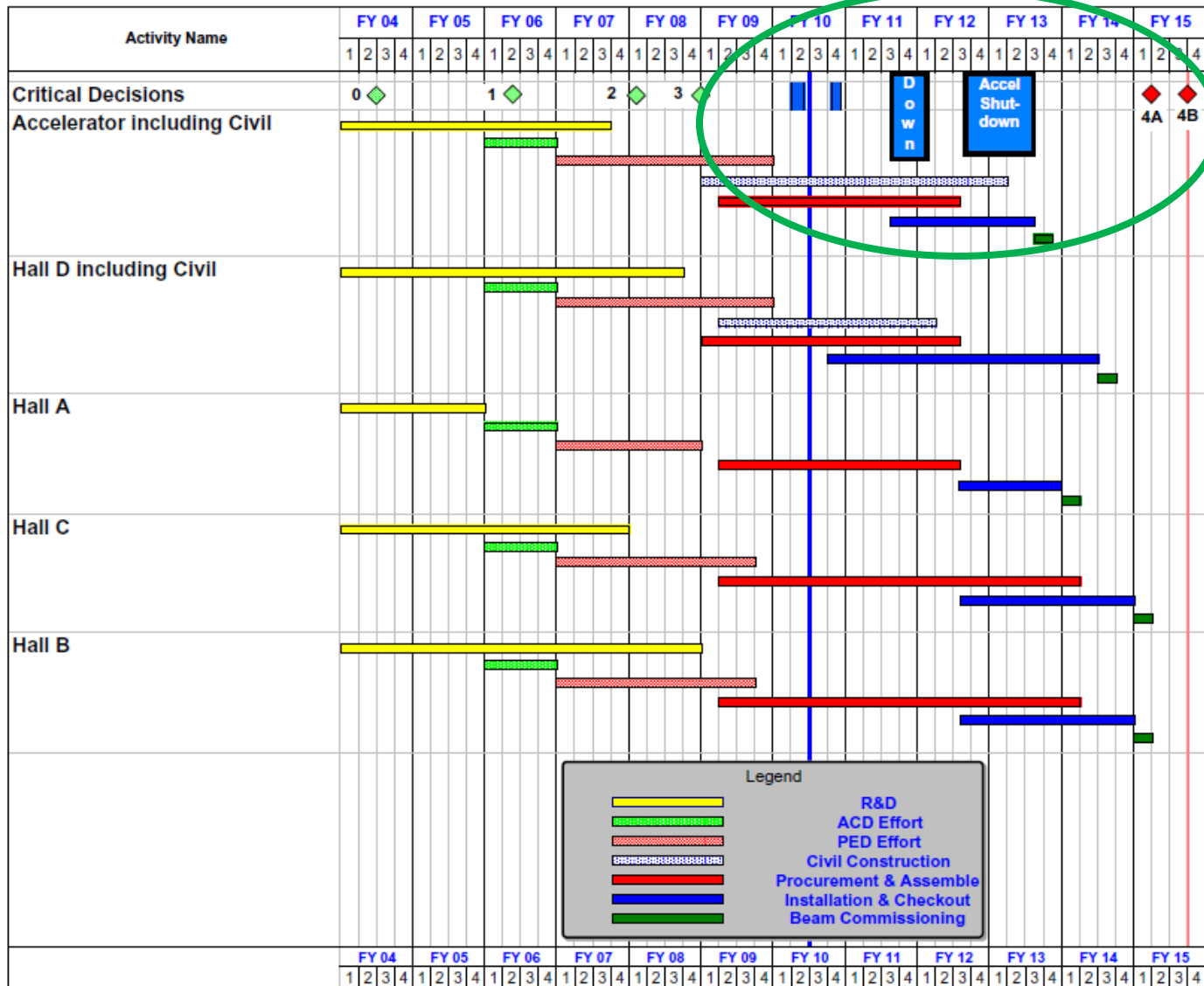
- Develop, Design, Fabricate, Install and Check-out
 - 10 Cryomodules (5 each linac)
 - Increase linac acceleration by 0.5 GV/linac
 - Average installed performance
 - 100 MV/cryomodule; < 300W @ 2K



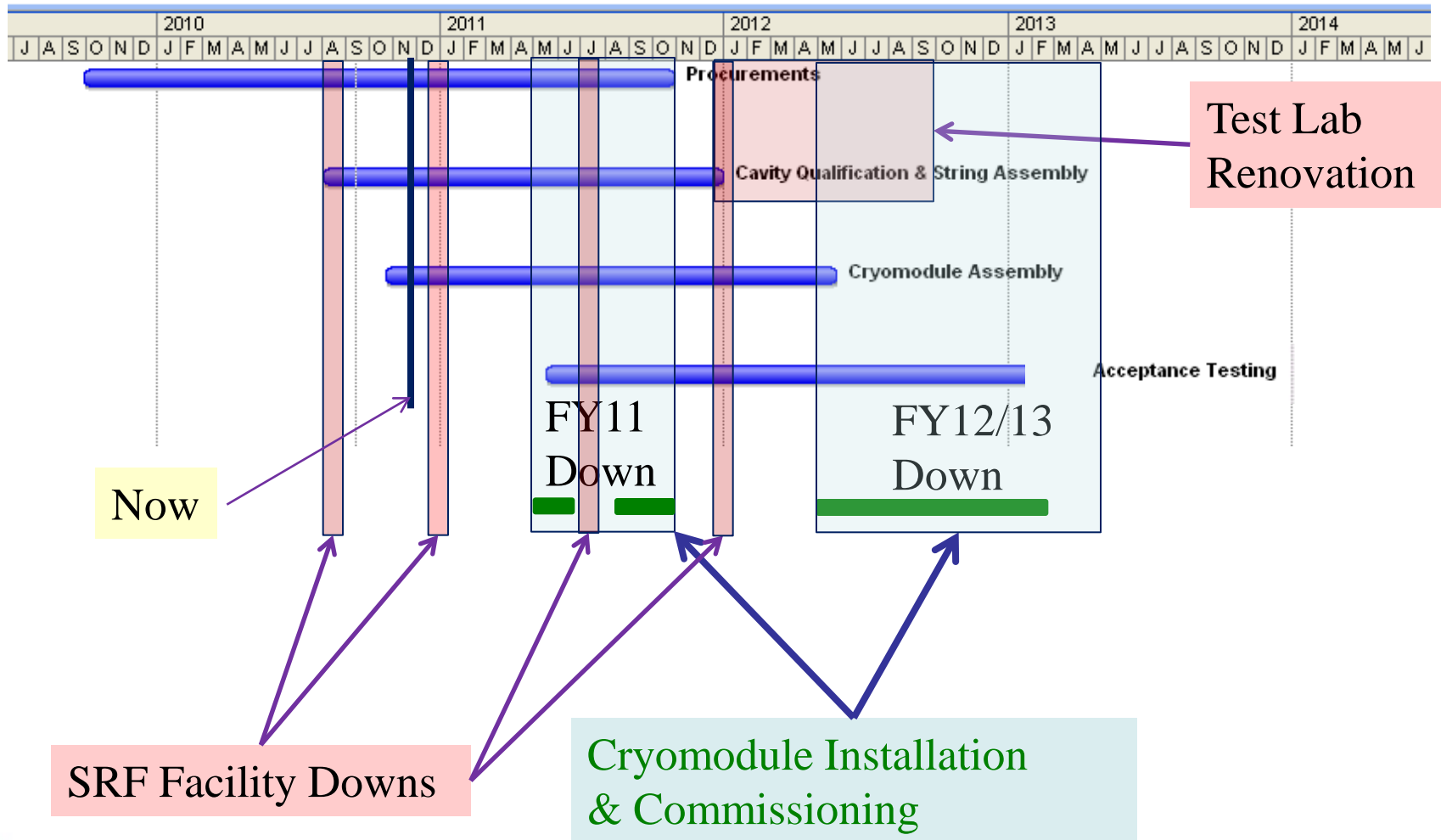
12 GeV CEBAF



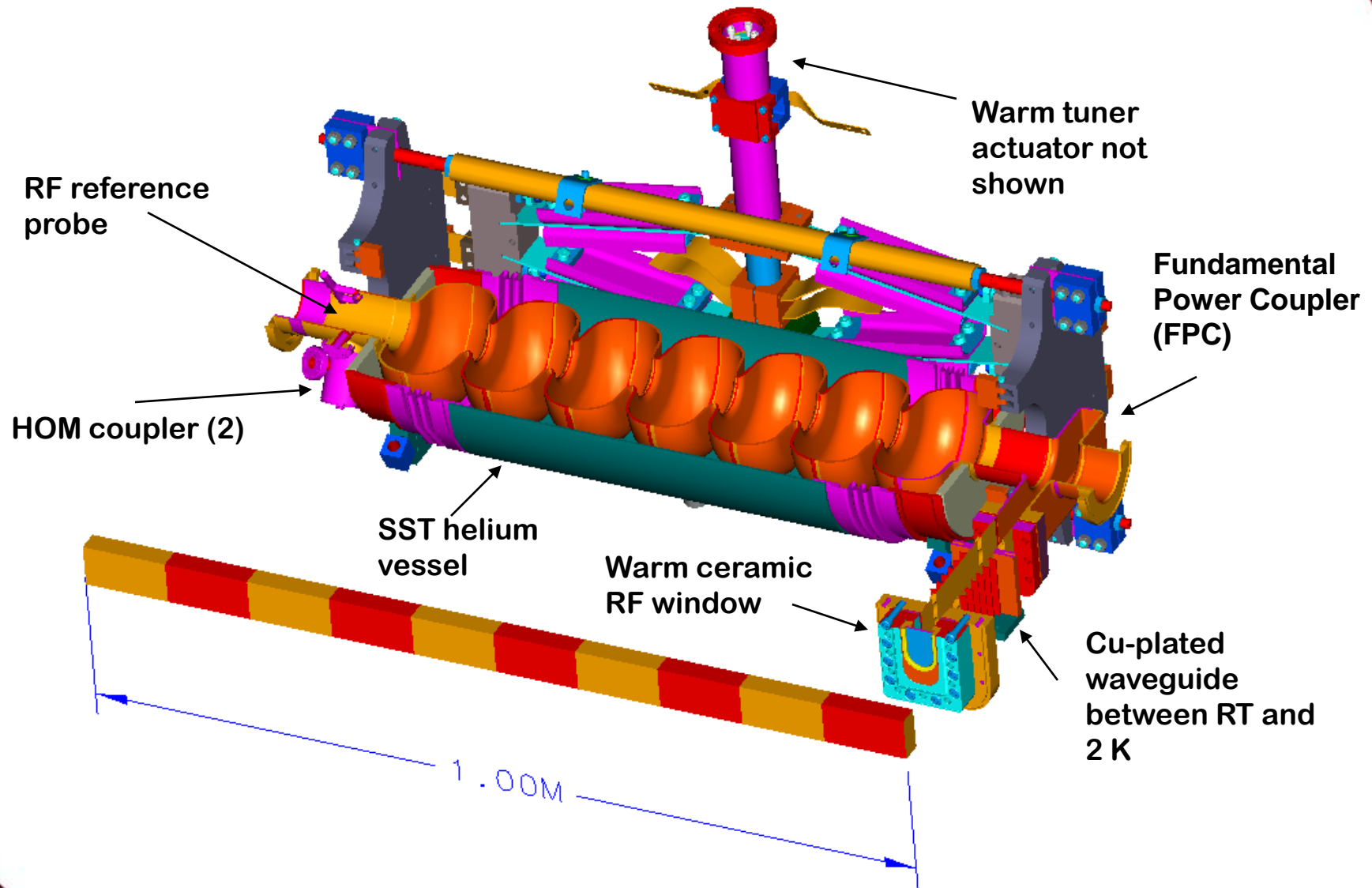
12 GeV UPGRADE SCHEDULE



Baseline Work Plan Coordinated with TEDF & SAD

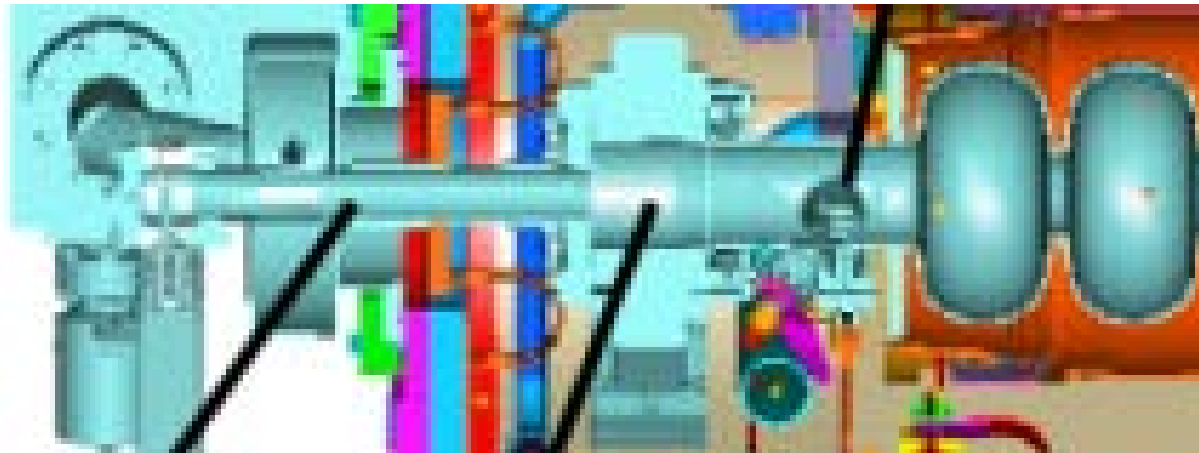


C100 Cryomodule Design - Cavity System



HOM Damping

- Analysis & Design - Marhauser & Wang
 - Incorporated Optimized Warm-to-Cold beam pipe transition

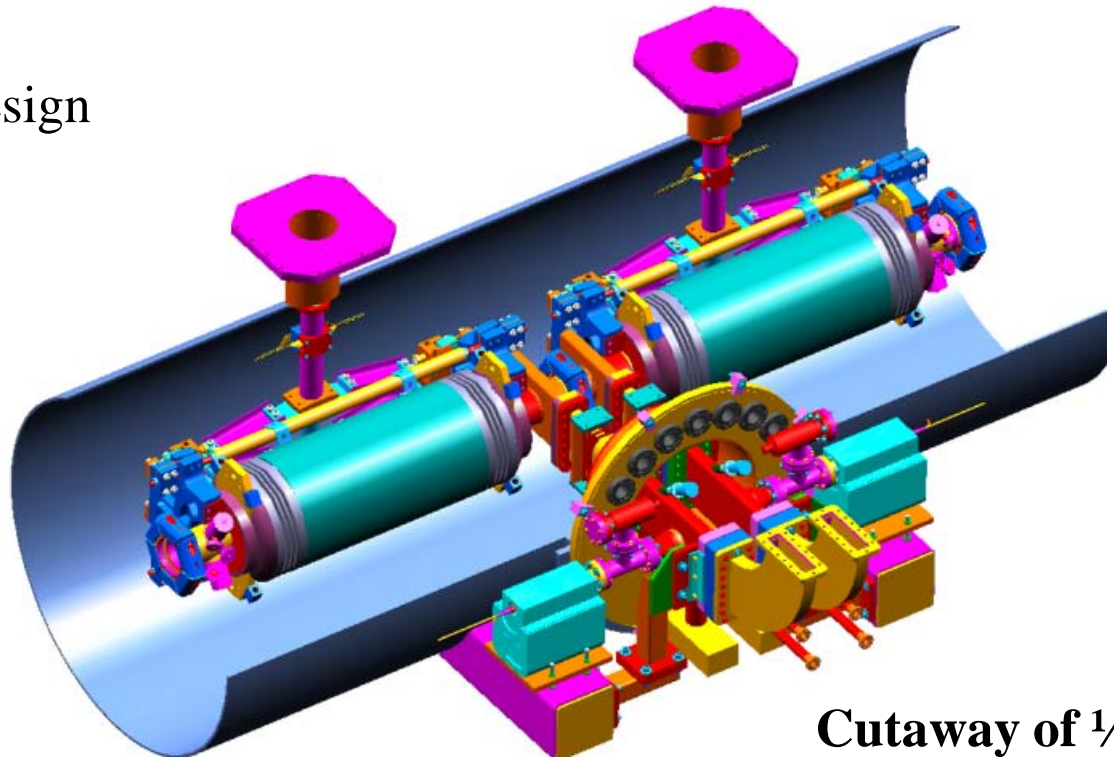


•

Validation of Design

Final design was tested in “1/4 cryomodule” which is referred to as the Horizontal Test-Bed (HTB)

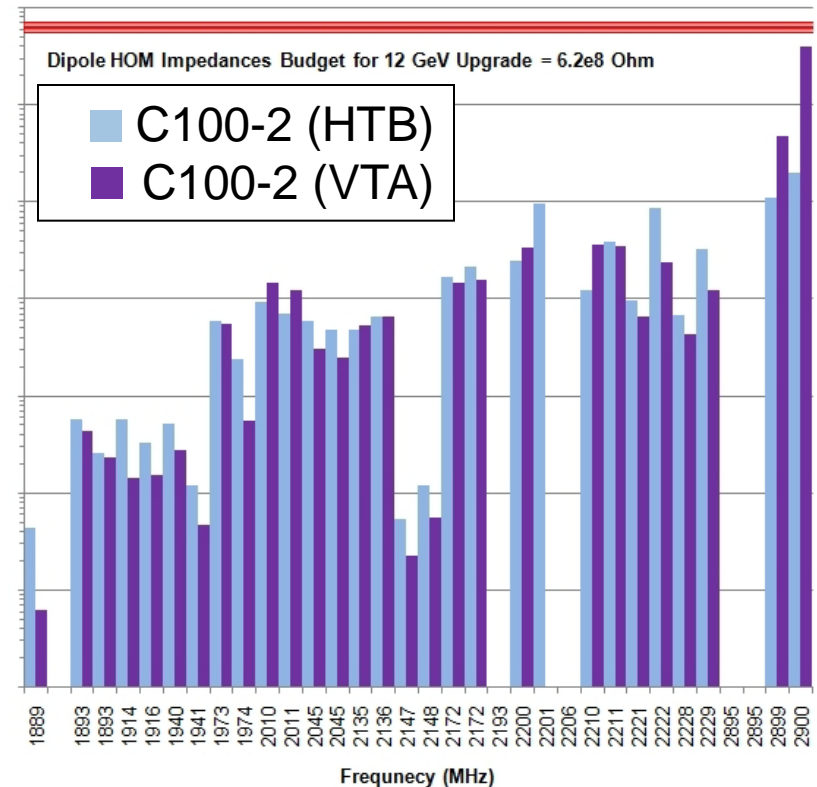
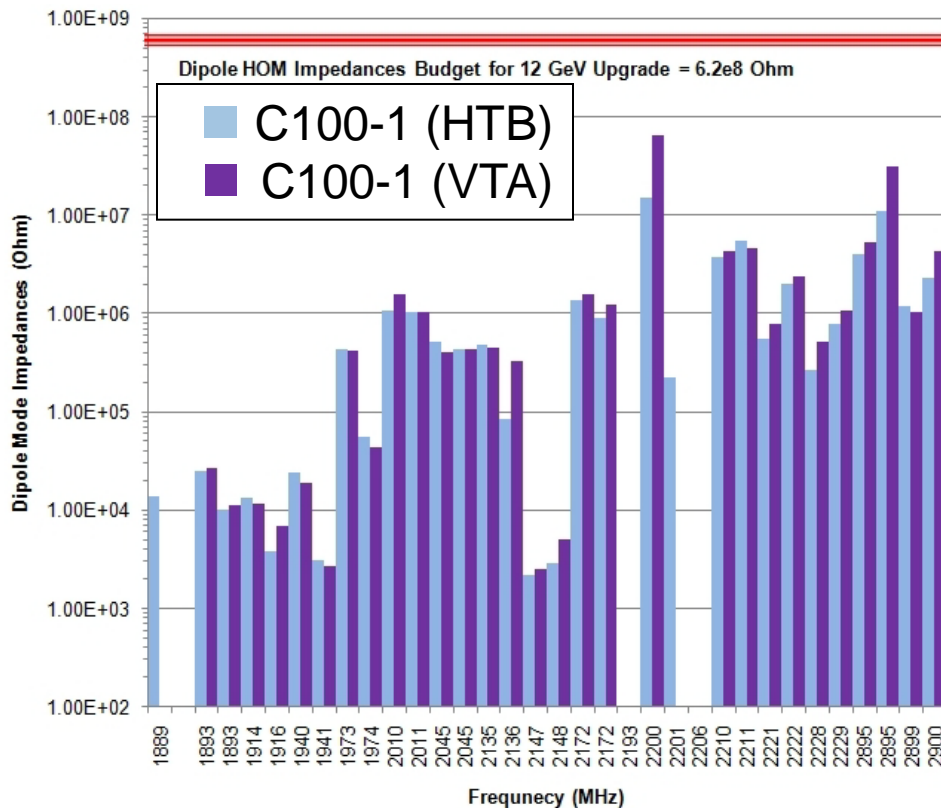
- Functional verification of design
 - Cell shape
 - End-group thermal
 - HOM couplers
 - Helium vessels
 - Tuners
 - Double rf windows



**Cutaway of 1/4
Cryomodule
(HTB)**

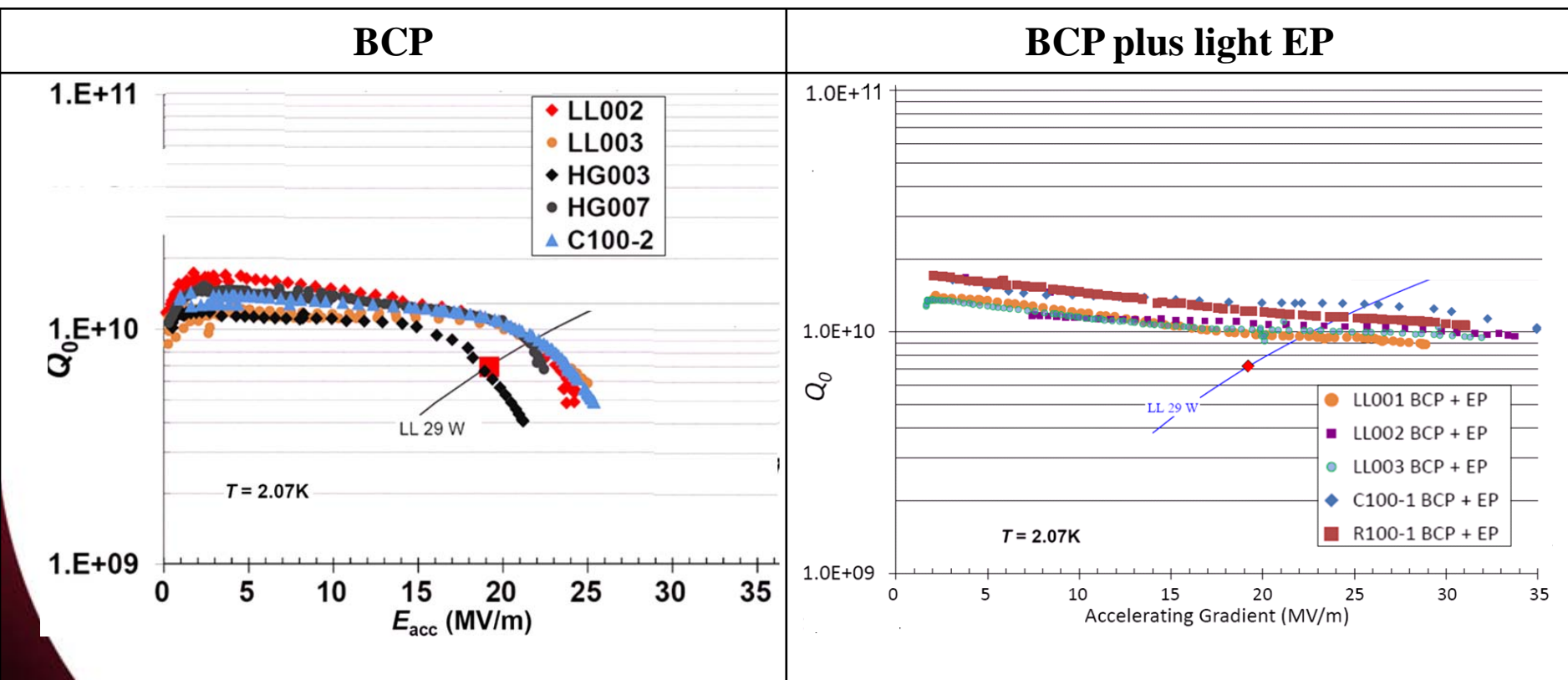
Results from HTB & VTA Tests

- Re-confirmed HOM damping meets specification
- Agreement between HTB and VTA



Electro-Polishing (EP) Included in C100 Cavity Processing

- The EP process has proven to be very effective with regard to lowering the rf heat load at 2K. (Higher Q_0)
- Improvement at higher gradients is substantial



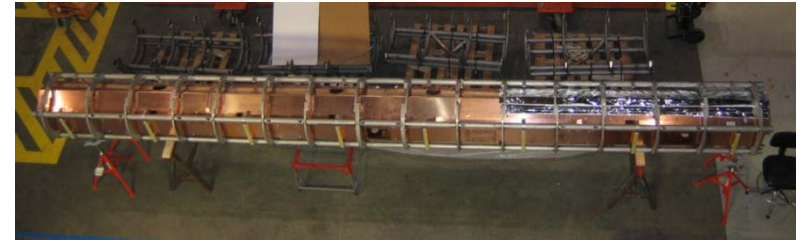
Cryomodule Procurement Status

•Cryomodule Procurement Status

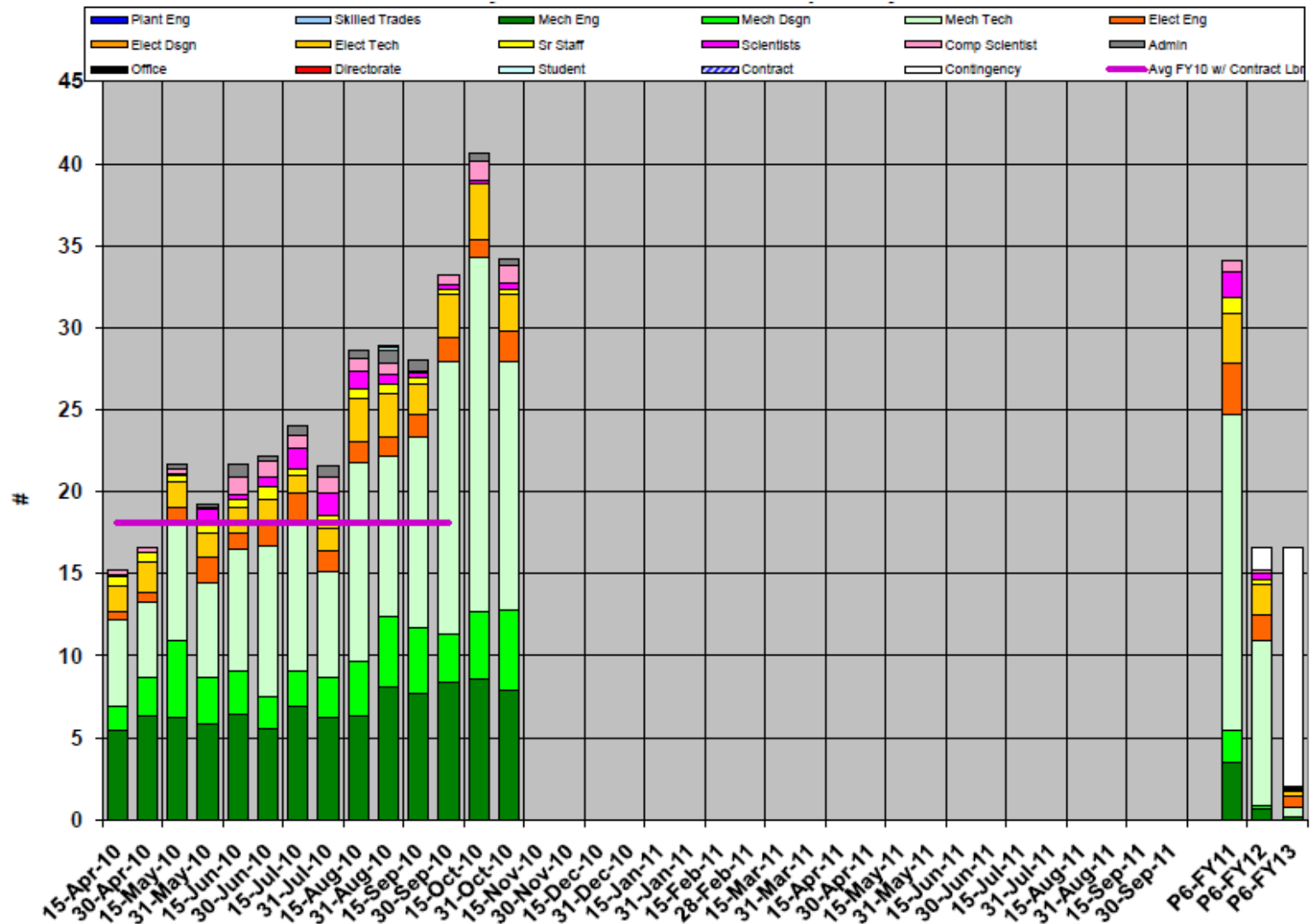
- Cavities: 46/86 received
- Waveguides: 55/88 received
- Helium Vessels: 16/90 received
- Space Frames: 3/10 received
- Tuners:
 - Cold Complete
 - Warm - First Article received
- Helium Headers: Complete
- Thermal Shield: 7/10 received
- Magnetic Shield:
 - Cold – 4/10 Received
 - Warm – First article due December
- Vacuum Vessel 3/10 received
- End Cans 3/10 received

•Cryomodule Assembly

- First cavity-string due December

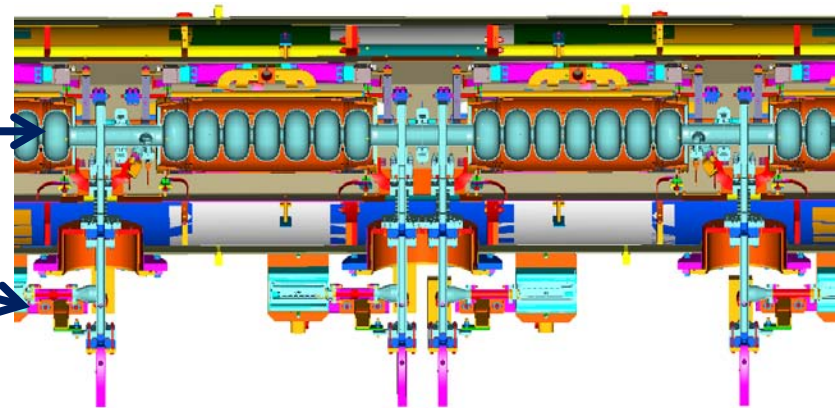


12 GeV Cryomodules FY10/11 FTEs



Look Ahead

- Wrap-up Procurements
 - QA Receiving inspections and logistics
 - Subcontract management of final details
- Begin Assembly
 - Cavity String Assembly
 - First String Dec 2010
 - Cryomodule Assembly
 - Acceptance Testing
 - Installation & Check-out



Accelerator All Hands Meeting

Six Month Down Planning

November 30 2010

Fulvia Pilat

The Challenge

Six-month shut-down (6MSD) → first long term interruption of operations (Mid May to Mid November 2011) to start installation for the 12 GeV Upgrade

Twelve month shut-down to start in 2012 to complete 12 GeV installation

CHALLENGE:

- Huge scope of work during the 6MSD lab wide (will qualify...)
- CEBAF must work in 6 GeV configuration immediately after the 6MSD to allow completion of the 6 GeV physics program (including Qweak)

Aerial View of Accelerator Nov. 2010





Lab-wide integration

The Laboratory management response to the challenge has been to create a **structure to provide lab-wide integration** during the **preparation** phase and through the **duration** of the 6MSD

Implementation:

- Appointment of a **Lab-wide 6MSD Coordinator** (Previously known as 6MSD Czar/Czarina....☺) reporting directly to Mont. **Project structure** with PM support.
- Creation of a **6MSD Team**, with representation from all area of the Laboratory having work planned in the 6MSD, responsible now to **prepare** and later to **overview** the 6MSD

Status

- **Team** assembled in September 2010
- Weekly **meetings** since October 1st
- Identified and updating of **Scope of Work**
- Identified and updating **List of Issues**
- Produced **6MSD Integrated Schedule** (from 12 GeV P6)
- Created a **6MSD WEB page** (under PM page)
- Working presently on issues requiring immediate attention and on **resource allocation** (RPM, ES&H, Facilities)

The 6MSD Team

- 6MSD Coordinator
 - 6 GeV Accelerator, Maintenance
 - 6 GeV Physics
 - 12 GeV Accelerator
 - 12 GeV Integration
 - 12 GeV Civil
 - FEL
 - Engineering
 - Facilities, TEDF
 - ES&H
 - PM
- Schedule
- WEB page, support

Fulvia Pilat
Steve Suhring
Rolf Ent, Javier Gomez
Leigh Harwood
Diane Napier
Rebecca Yasky
Bob Legg
Will Oren
Rusty Sprouse
Keith Welch
Lyn Wells
Jim Gordon, Pat Collins
Christine Hummel

Scope of Work - 1

6 GeV Accelerator

- Accelerator [Maintenance](#) jobs (ATLis Tasks)
- [Positron source](#), installation, test with beam
- [PSS upgrade](#) for new SLinac RF zones, testing and certifications

6 GeV Physics

Hall A

- Installation of [G2P](#) experiment
- Polarized target and infrastructure work by Hall A & users
- Beam line chicane (Eng. & Acc. Divisions)

Hall B

- HDice target on pivot (before 6-month shutdown)

Hall C

- Possible re-work needed for [QWeak](#) (impact unknown)
- (Partial) [SOS](#) removal work in Hall C

Scope of Work - 2

12 GeV Civil

- Tunnel connection at the Hall D site
- LCW upgrades at the North and South Access Buildings
- 2 new penetrations into the existing Accelerator Tunnel
- Installation of green wall on top of tunnel extension

12 GeV Accelerator

Baseline – Upstairs

- Complete 2 RF zone installation plus 8 partially complete
- Install CHL compressors, cold box, instrumentation and controls
- PSS for SL ready for operation of new zones

Baseline – Downstairs

- Remove, refurbish, measure and install 112 dipoles in Arc 2,4,6,8
- Install Arc 10 (28 dipoles and 27 girders)
- Install and checkout 2 new cryomodules
- Cryomodule test with beam

Stretch

- Remove, refurbish, measure and install 64 dipoles in Arc 7 and 9
- Install and checkout 1 additional cryomodules.

Scope of Work - 3

12 GeV Physics

- No 12 GeV scope of work in Halls A B C, only Hall D
- Test of solenoid modules at the TestLab, November 2010 to August 2011

FEL

- FEL plan is to run as user facility for BES throughout the shutdown
- Installation of R100 cryomodule in FEL? Time scale May-June 2010

Facilities

TEDF

- Construction of TED and Test Lab Addition will be underway.
- Should be complete at the end of the down
- TED and Test Lab Addition system commissioning
- SURA Road & Onnes not open to traffic
- Removing Test Lab materials prior to the down
- Relocating Injector Test to EEL

Scope of Work - 4

Facilities

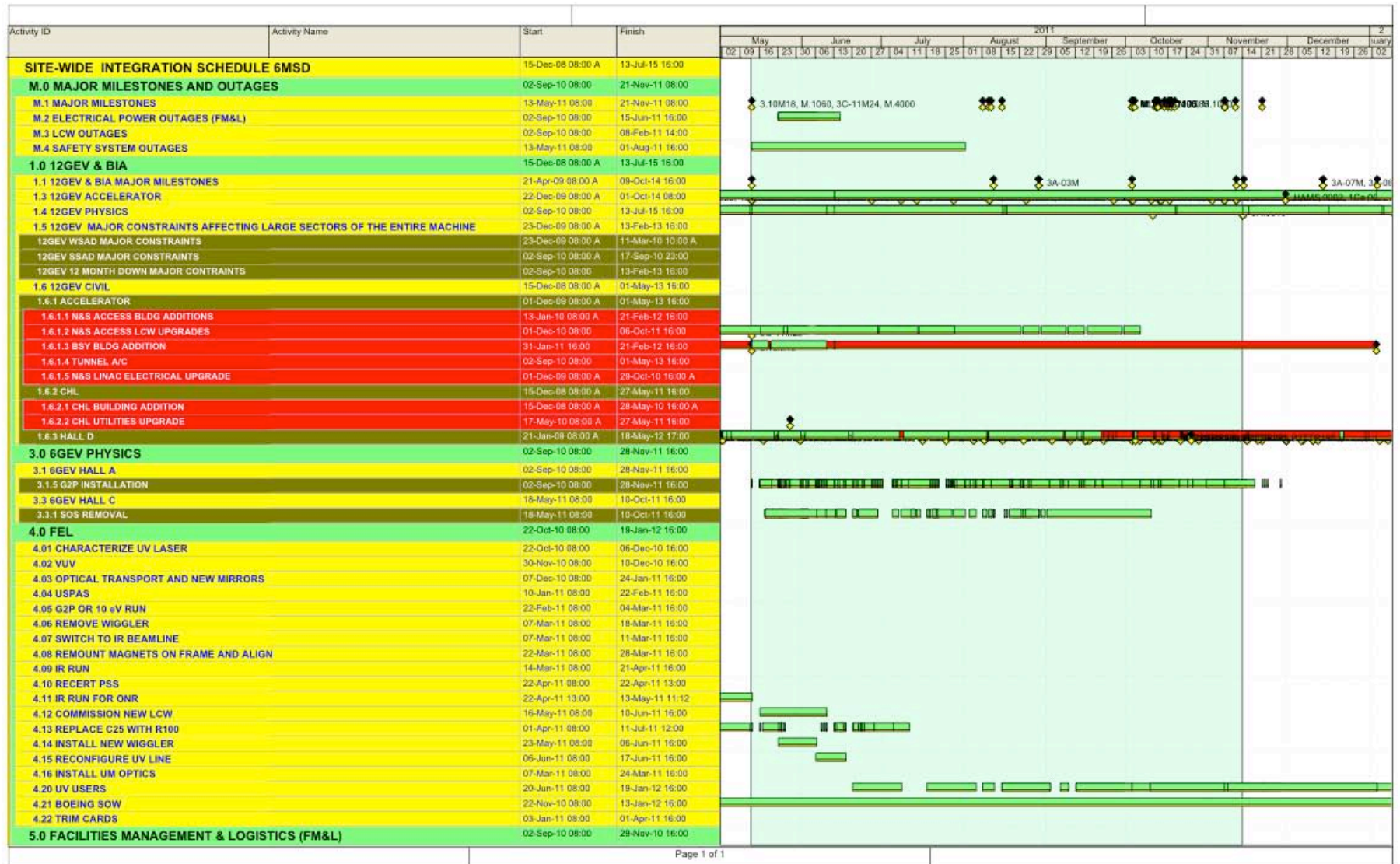
Maintenance

- Accelerator Down [Maintenance](#)
- Accelerator Site [Transformers](#)
- 40 MVA Vacuum Breaker
- Cooling Tower Maintenance
- Flush fire suppression ring header in Hall C
- Design Hall B dome fire suppression system
- Repair Hall C Beam Dump Sump

- Tunnel Penetration Repair (Prototype)
- MCC A/C & Roofing Replacement
- [New South Access LCW System Construction](#) (Serving FEL)
- Repair FEL Stairwell Leaks
- Access Control System Replacement

The Integrated Schedule

D. Napier
P. Collins
JJ. Gordon

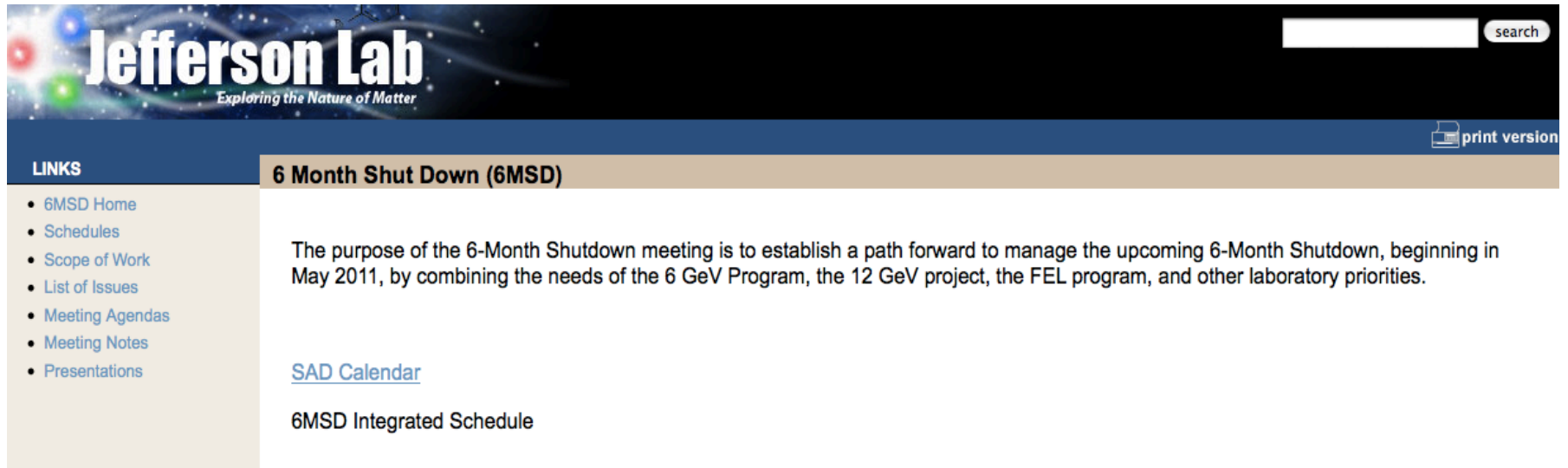


Resources

Complete scope of work, and schedule → identify resources

- Integrated schedule will be continuously reviewed by all [project leaders](#) for consistency and prioritization
- Engineering resources are already being reviewed and will continue to be so with the help of a new mechanism ([RPM, Resource Prioritization Meeting](#) just being set up by W. Oren and A. Freyberger)

6MSD Web page



The screenshot shows the Jefferson Lab website header with the logo "Jefferson Lab Exploring the Nature of Matter". A search bar is in the top right. Below the header is a "LINKS" sidebar with a list of links: 6MSD Home, Schedules, Scope of Work, List of Issues, Meeting Agendas, Meeting Notes, and Presentations. The main content area is titled "6 Month Shut Down (6MSD)" and contains a paragraph about the purpose of the 6-Month Shutdown meeting, a link to the "SAD Calendar", and a link to the "6MSD Integrated Schedule". A "print version" link is also visible in the top right of the main content area.

Jefferson Lab
Exploring the Nature of Matter

search

print version

LINKS

- 6MSD Home
- Schedules
- Scope of Work
- List of Issues
- Meeting Agendas
- Meeting Notes
- Presentations

6 Month Shut Down (6MSD)

The purpose of the 6-Month Shutdown meeting is to establish a path forward to manage the upcoming 6-Month Shutdown, beginning in May 2011, by combining the needs of the 6 GeV Program, the 12 GeV project, the FEL program, and other laboratory priorities.

[SAD Calendar](#)

[6MSD Integrated Schedule](#)

http://www.jlab.org/div_dept/directorate/proj_mgmt/6msd/index.html

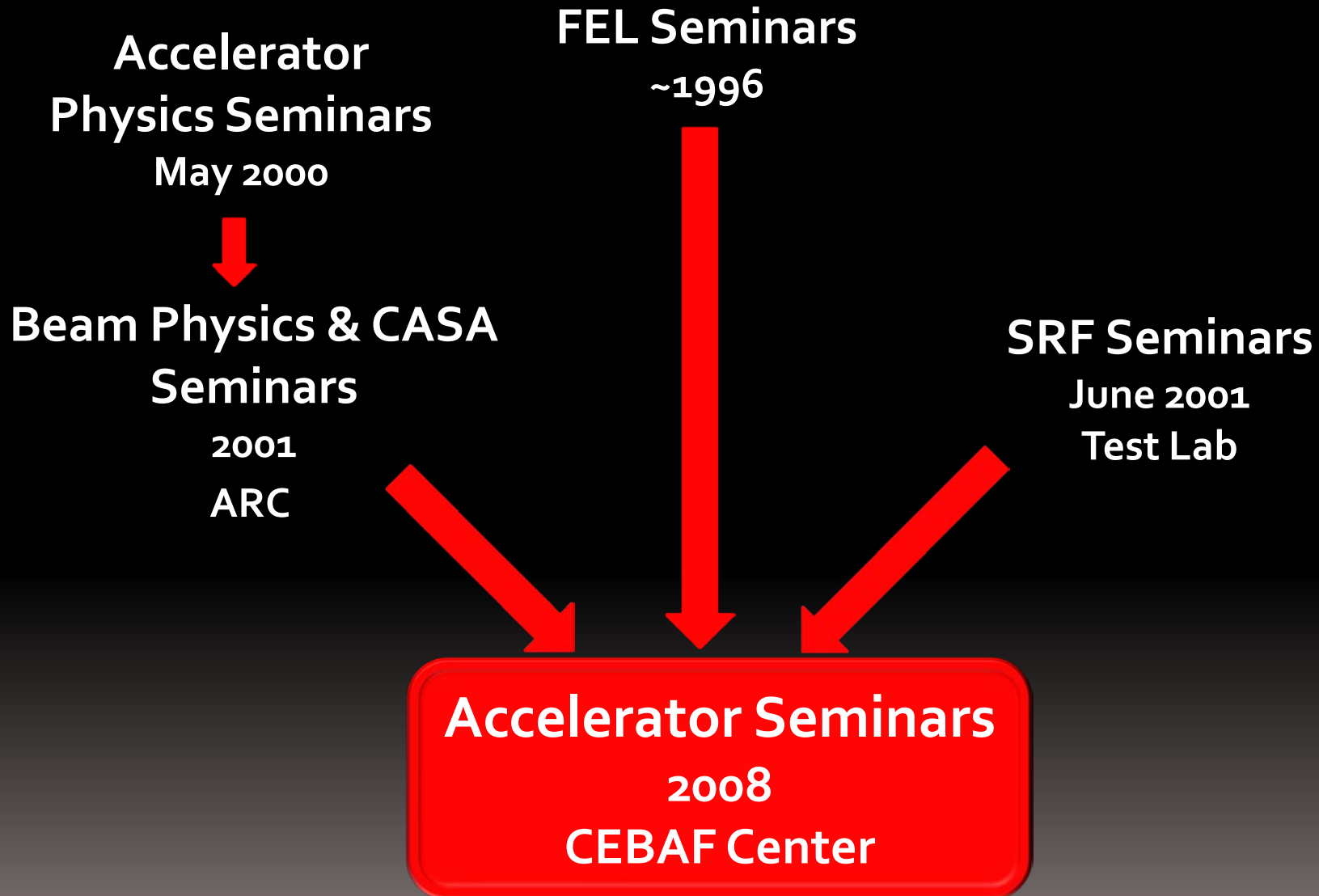
ASK for your collaboration: please review the scope of work and related issues and bring to my attention other activities planned for The 6MSD if not listed.

ACCELERATOR SEMINARS

A-M Valente-Feliciano

A. Bogacz, G. Williams, J. Grames, C. Garcia-Hernandez

HISTORY



Organization

Accelerator Seminar Committee appointed
by Andrew Hutton & George Neil:

Co-Chairs: Alex Bogacz & Anne-Marie Valente

Members: Carlos Hernandez-Garcia, Joe Grames & Gwyn Williams

Administrative assistant: Audrey Nichols Barron

Beginning in January 2011, Accelerator Seminars will be scheduled weekly on
Thursdays from 11:00 a.m. - 12:00 p.m.

Seminar notifications:

- E-mail distribution to the entire Accelerator Division
- Scheduling in JLab calendar, please e-mail Audrey (anichols@jlab.org) to be added to the list
- Posting by the Administrative assistants in the other divisions

Scheduling a seminar

All speakers are invited by the Accelerator Seminar committee

We are open to all of your suggestions for speakers from JLab and other Institutions.

We take advantage as much as possible of the visit of our colleagues from other institutions to provide a wide variety of speakers and subjects.

The seminar scheduling is relatively flexible

However....

If you are hosting visitors and would like to propose a seminar, please notify the committee as much in advance as possible.

Invited speakers

Since 2009, we have a (modest) budget to cover the expenses of speakers that come exclusively for an Accelerator Seminar. If the speaker's visit has other objectives, other funds should be used.

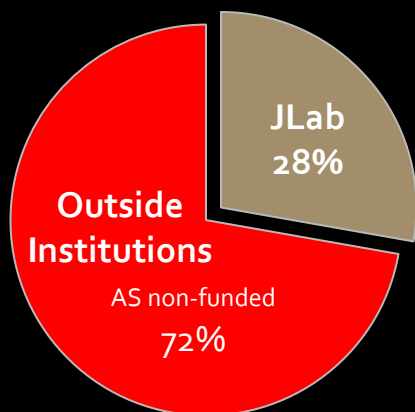
We would like to maintain a balance in the choice of invited speakers so all the Accelerator & FEL departments are equitably represented in the choice of subjects.

If you have any suggestion, please contact one of the committee members who will submit it to the whole committee for approval.

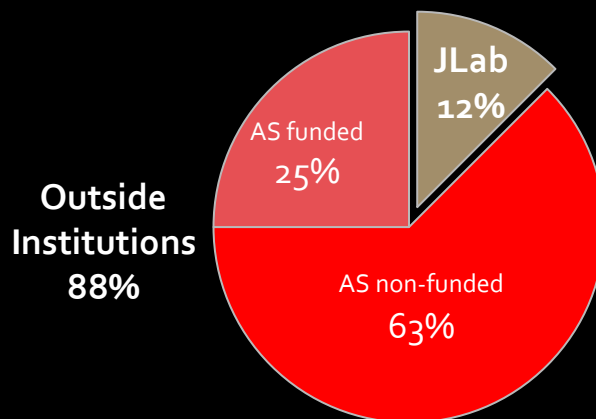
No travel expenses will be paid without the committee's approval.

Some numbers...

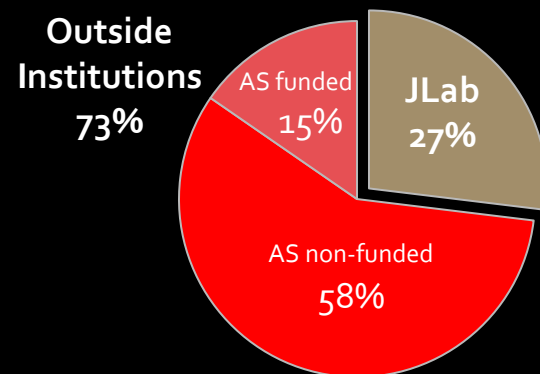
2008



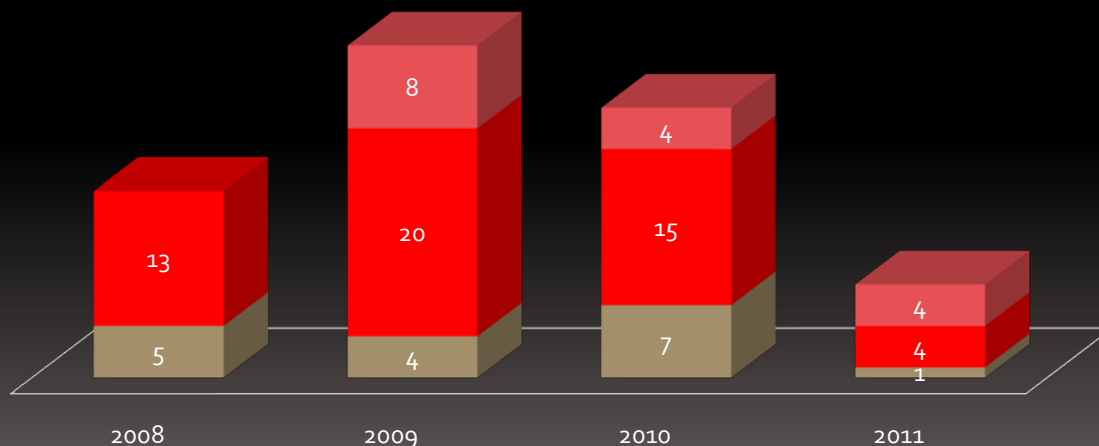
2009



2010



AS= Accelerator Seminar



JLab

Outside Institutions - AS non-funded

Outside Institutions - AS funded

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Resources

- Meetings & Conferences
- **Accelerator Seminars**
- CERN Beam Physics Seminars
- JLab Publications
- JACOW

Accelerator Seminars

print version

Accelerator Seminar Committee:
Co-Chairs: [Anne-Marie Valente](#) and [Alex Bogacz](#)
Members: [Carlos Hernandez- Garcia](#), [Joe Grames](#) and [Gwyn Williams](#)

Beginning in January 2011, Accelerator Seminars will be scheduled weekly on Thursday's from 11:00 a.m. - 12:00 p.m.
If you would like to schedule a seminar, please contact [Anne-Marie Valente](#) or [Alex Bogacz](#) for approval.

TITLE: Pre-Boosters Design Studies for the Medium Energy Electron Ion Collider at JLab

SPEAKER: Shashikant Manikonda, Argonne National Laboratory

DATE: Thursday, December 2, 2010

TIME: 3:30 p.m.

PLACE: CEBAF Center, F113

ABSTRACT: Electron Light Ion Collider (ELIC) is envisioned as a future upgrade of CEBAF at JLab. The Medium-Energy Electron Ion Collider (MEIC), which has scaled down parameters of the ELIC is being considered as an intermediate goal to be achieved in the near term. A figure-8 shaped pre-booster ring is one of the main components of MEIC. Design studies are currently underway at Argonne in collaboration with JLab to provide an optimized design meeting all the requirements. In this talk we will present the status of the design work as well as discuss the new simulation tools and techniques developed for the purpose.

Archives:

- [2010](#)
- [2009](#)
- [2008](#)
- [2007](#)
- [2006](#)
- [2005](#)
- [2004](#)
- [2003](#)
- [2002](#)
- [2001](#)

12000 Jefferson Avenue, Newport News, VA 23606
Phone: (757) 269-7575 Fax: (757) 269-6039

contact [Audrey N. Barron](#)
updated November 29, 2010

Accelerator Seminars - All-hands Meeting - 11/30/2010

<http://www.jlab.org/accel/seminars.html>

Resources

- Meetings & Conferences
- Accelerator Seminars**
- CASA Beam Physics Seminars
- JLab Publications
- JACOW

Accelerator Seminars

Accelerator Seminar Committee:
Co-Chairs: Anne-Marie Valente & Max Bogacz

- Meetings & Conferences
- Accelerator Seminars**
- CASA Beam Physics

TITLE: Pre-Boosters Design

SPEAKER: Shashikant Manik

DATE: Thursday, December 2, 2010

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- 2002
- 2001

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- CASA Beam Physics Seminars
- JLab Publications
- JACOW

Accelerator Seminars

Begin

TITLE: Pre-Boosters Design Studies for the Medium Energy Electron Ion Collider (MEIC)

SPEAKER: Shashikant Manikonda, Argonne National Laboratory

DATE: Thursday, December 2, 2010

TIME: 3:30 p.m.

PLACE: CEBAF Center, F113

ABSTRACT: Electron Light Ion Collider (ELIC) is envisioned as a major goal to be achieved in the near term. A figure-8 shaped pre-accelerator is required. In this talk we will present the status of the design studies for the ELIC, which has scaled down parameters of the ELIC is being considered as an intermediate design studies are currently underway at Argonne in collaboration with JLab to provide an optimized design meeting all the requirements developed for the purpose.

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- 2004
- 2003
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- 2001

Seminar Committee:
Chair: [Anne-Marie Valente](#) and [Alex Bogacz](#)
Members: [Garcia](#), [Joe Grames](#) and [Gwyn Williams](#)
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12000 Jefferson Avenue, Newport News, VA 23606
Phone: (757) 269-7575 Fax: (757) 269-6099

contact [Audrey N. Barron](#)
updated November 29, 2010

Accelerator Seminars - All-hands Meeting - 11/20/2010

http://www.jlab.org/accel/seminars.html

☆ ☆ ☆ ☆ ☆

Thank you in advance

For your suggestions for speakers
and subjects

For your attendance