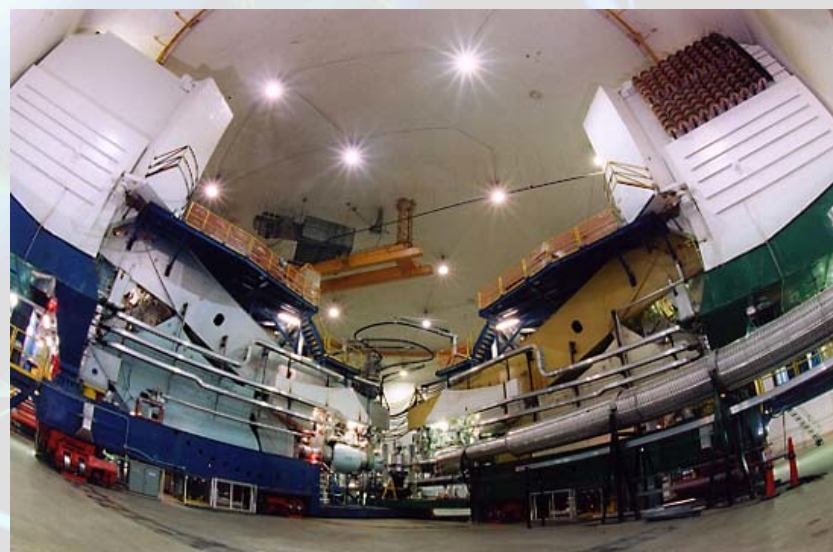
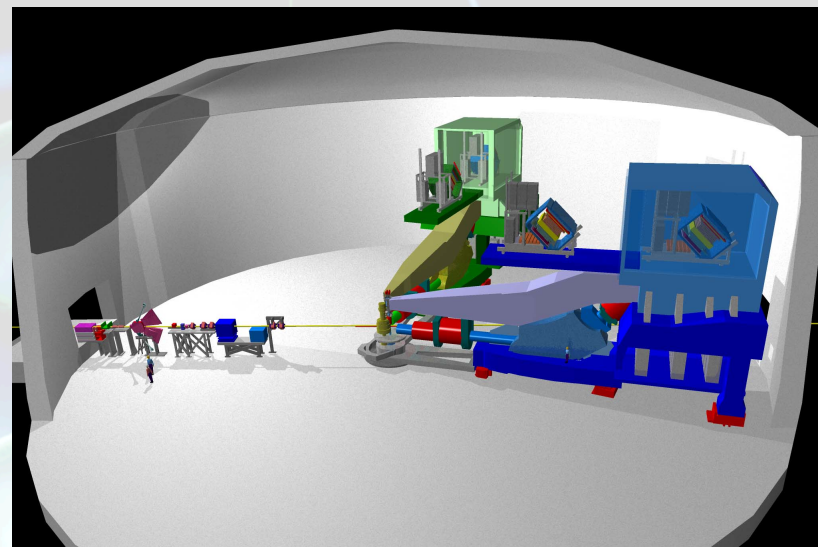
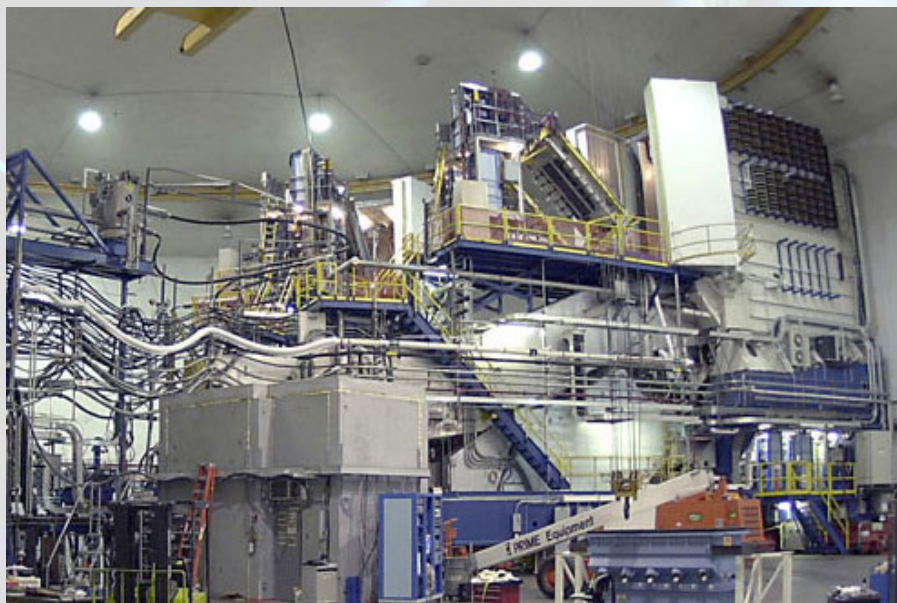


Hall A Outlook

Thia Keppel



DVCS Collaboration Meeting
December 2013

Hall A Projected Experiment Schedule as of 12/2013

~no change

...available on Hall A wiki

	Spring	Fall	Spring	Fall	Spring	Fall	Spring
2014	DVCS -I/ GMp	DVCS - I/ GMp					
2015			DVCS - I/ GMp	$^3\text{H}/^3\text{He}$ (A_1^n)			
2016					(A_1^n) (APEX) (PREX) (CREX)	PREX (APEX) (CREX) (DVCS-II)	
2017							APEX (DVCS-II) (SBS)

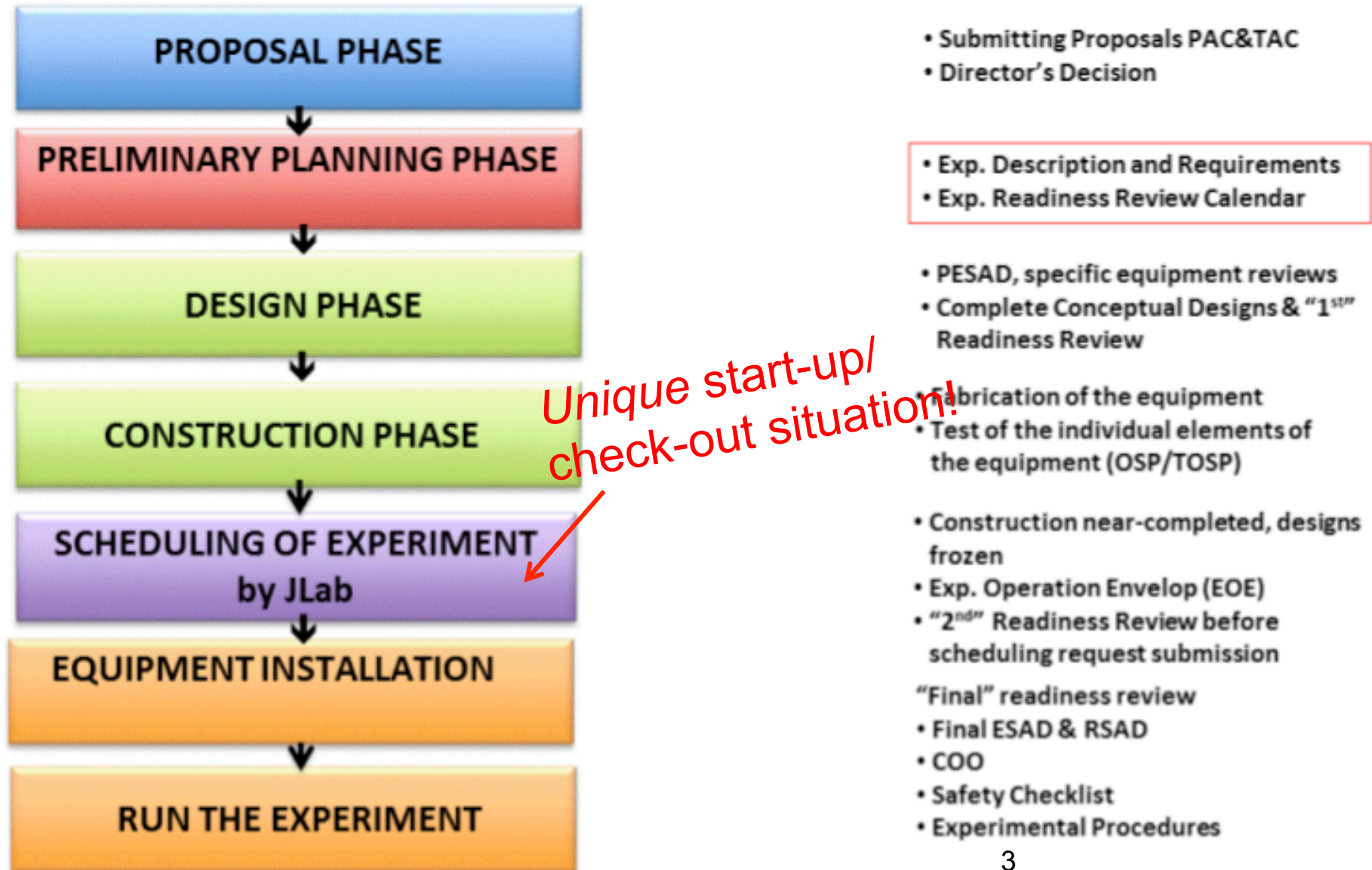
Experiments in parentheses represent potential schedule changes/
options – **Prioritization PAC will help (Bob's talk)!**

SBS

MOLLER,
SOLID...?....



READINESS REVIEW PROCESS - FLOWCHART



VII. Preparation for Running the Experiment

A. Submit documentation on personnel and procedures at least one month before the start of the experiment:

1. Submit final ESAD. ✓

2. Submit final [RSAD \(RSAD.html\)](#). ✓

3. Submit COO (Describe Experiment Responsibilities, Collaboration Organization, Operations Personnel, Training Required, etc. in a written Conduct of Operations Document (COO)). . ✓

4. Submit a Safety Check list.. ✓

5. Submit experimental procedures.. ✓

Very Near Future:

5. Submit HIERD (Hazard Identification and Emergency Response Document) – *under development (Physics, ESH&Q, Facilities – SAF110 Safety Walk-Thru!!)*

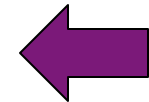
6. Submit experimental procedures.. ✓

(Note: The bulk of the experiment procedures will be in the form of an operations manual for the major experimental equipment that will be referenced by the COO.)

B. Pre-operation checkout of equipment installation and procedures by experiment collaboration can be done with work control documents. This serves to verify operability after installation and to review integration to the extent possible without the use of beam. ✓ (Hall A Operations Manual and OSPs for “new” equipment)

C. Jefferson Lab review of the safety of the installed equipment prior to its use with beam.

(This review will be carried out by Division Safety Officer in collaboration with subject matter experts, further EH&S Personnel, and the assigned Liaison Physicist, verifying conformance to the ESAD and checking functionality of safety aspects of the apparatus and items and issues specifically identified on the Experiment Installation Checklist by the RC review.)



December 9!

D. Experiment Readiness Clearance (ERC) issued by AD for Physics.

(Note: This will include a verification that all reviews are in place, as denoted in the Experiment Readiness Checklist. It also verifies that the experiment installation check has been completed, as documented on the Experiment Installation Checklist, and that all issues and concerns have been satisfactorily resolved, as detailed in the Issue/Concern Checklist.)



Conclusions

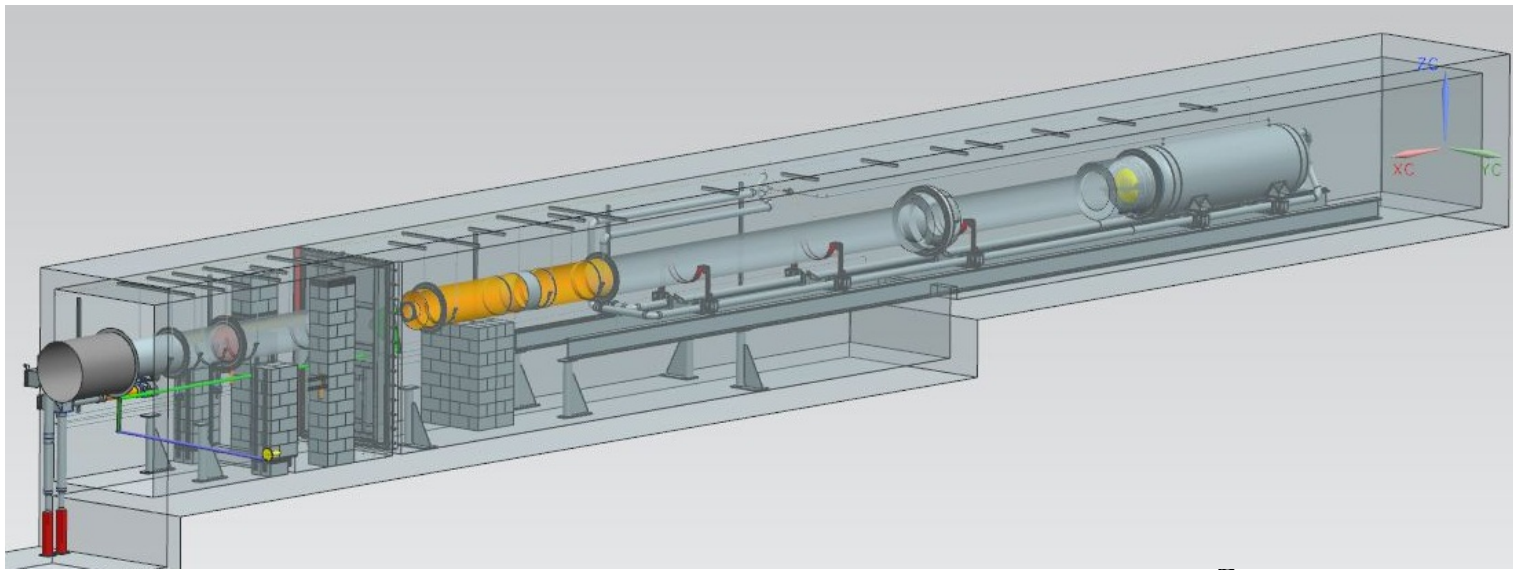
- On track for a successful ARR Phase 2 review at the end of January
- No show stoppers!

Slide directly from Experimental Readiness Review Close-out – things to do, but overall good news!

More to come, though...
Accelerator Readiness Review
(DOE, external) in January

Hall A Base Equipment Checkout Conditions for Spring Run

- Run anticipated late March 2014 for 1-4 weeks
 - 12 GeV milestone 3 pass > 2 GeV pulsed beam delivery (*see Jay's talk!*)
 - planning for some checkout run time at higher (CW) current
 - beam ~40% at 6.6 GeV, ~60% around 5.4 GeV to avoid trips
 - accelerator performance and operations budget dependent
- Beam dump upgrade planned for Summer 2014 limits activation
 - agreed on 5 μ Amp limit (other than *maybe* one short test for cryotarget) and thin targets, 1%, 2% Carbon, 15 cm hydrogen



Hall Base Equipment Checkout Activities for Spring Run

	LEFT-TO-RIGHT INCREASING PERCEIVED LEVEL OF DEMAND											
	BPM and Beamline Transport including polarimeters	Raster	Beam Charge Measurement (Unser + BCM calibration)	Beam Energy Measurement (Full Arc)	HRS Spectrometer, Detector Checkout	Cryotarget Checkout	Moller Polarimetry	Beam Charge Measurement ("Ag" calo only) - not likely to use	Beam Energy Measurement (Spectrometers)	Compton Polarimetry**	Beam Energy Measurement (Single Hall Spin Dance)	First Run Physics (GMP and/or DVCS)
Point of Contact	Yves	Bob	Javier	Doug	Bogdan, John	Jian-ping	Javier	Doug	Doug, Bogdan	Sirish	Doug	Bogdan, Alexandre
BEAM PARAMETER												
Current Range	~5 - I _{max} uA	any	0 - I _{max} **** uA	~5uA*	2 - 10 or more uAmps	5, 20 - 80 or more uAmps	0.2-1uA CW	< 5uA	10 or more uAmps*	1-80 uA	> 5uA*/***	5, 20 - 50 or more uAmps
Duty Factor	pulsed/CW	CW	CW	CW**	CW	CW	pulsed/CW	CW	CW	pulsed/CW	CW	CW
Energy Range	any	any	any	any	any	6 - 11 GeV	1.1, 4.4/6.6, 11 GeV*	power limited, up to ~2 GeV only	1 - 4.4 GeV	2.2 - 11*	any	6 - 11 GeV
Polarization	N/A	N/A	N/A	N/A	N/A	N/A	polarized	N/A	N/A	polarized	polarized	50, 70 - 100%
Spot size	N/A	N/A	N/A	N/A	N/A	raster required	N/A	N/A	N/A	80 um @ CIP	N/A	N/A

blue = initial checkout only, minimal utility

* energy lock required

** pulsed or CW for non-invasive, CW for invasive (high precision)

*** relative Compton polarimetry required at the ~1% level, Moller in addition preferred

**** lower max currents translate to increased systematic uncertainty

** Compton polarimetry ALSO requires (i) Compton chicane orbit lock, and (ii) beam (halo) background <1000 Hz/uA in photon detector.

- Some activities can happen in parallel
- Highly dependent on beam conditions
- See Luke's talk!

Current Activities in Hall (preparations for DVCS/ G_M^p)

- Beamline
 - Compton Polarimeter: under vacuum, still need to install detector, work on optics: will try to thread beam through, maybe get some test data
 - Moller Polarimeter: room temp ready to go, test in Spring run, superconducting upgrade in works
 - BCMs, BPMs, Unser, preparations for Spring (see Sasha's talk)
 - Raster: additional coil in, new electronics to be installed
 - Arc Energy: need to install new NMR in 9th dipole, measurement planned for Spring run
- Cryotarget
 - + Swing Arm for Spectrometer Optics
 - Scattering Chamber + Extension
- Detectors
 - HRS repairs and upgrades
 - » Shower, Cerenkov, additional tracking plane
 - » DAQ and cosmic testing
 - DVCS Calorimeter Shielding + Stand, cable mobility
- HRS Cooldown to start January 2, 2014!

*NOT a
comprehensive list*

*LOTS of room for
help!!*

*DVCS collaboration
meeting at ODU
Thursday, Friday*



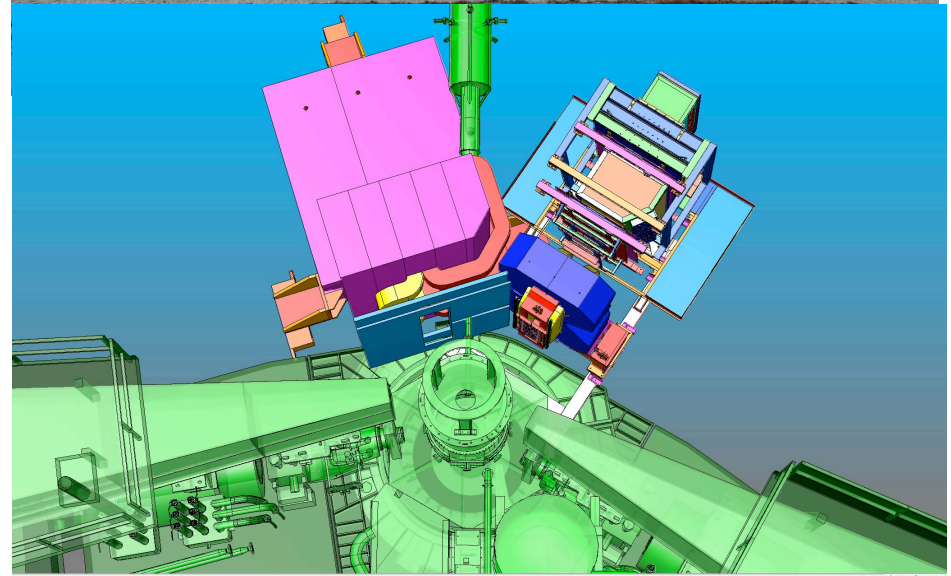
....and beyond...

- ^3H target design and venting in preparation for 2015/2016 experiments
- BigBite
 - Assembly in test lab started
 - New/modified Cerenkov(s)
- PREX
 - Pb targets purchased
 - Shielding design
 - Polarimetry
- New septum magnet designed for APEX
 - Internal E&D review, to be purchased by collaboration
- Polarized ^3He target improvements and continued development
 - Convection, new lasers, metal windows, double cell...
- MOLLER Experiment internal experiment design and costing update in preparation for possible DOE science review early 2014
 - All but beamline complete
- SoLID Experiment just submitted draft CDR to Physics Division as first step for early 2014 Director's Review
 - Working with Cornell to move solenoid in 2016
 - Hall A E&D coordinating to make a planning trip

*also NOT a
comprehensive list*

SBS

- Project started October 2013
- First Annual Review November 4,5, 2013
 - Some recommendations, but overall positive and on track
- Spectrometer work at Jlab
 - Power Supply ordered
 - 48D48 magnet shipped from BNL
 - Working on support, stand and motion
- GEM order placed to UVA
 - Pre-R&D complete
- Coordinate detector – new!
- HCAL Hadron calorimeter
 - Scintillator ordered from FNAL
- DAQ/tracking/electronics....
 - Test lab



Summary

- Hall A will have first beam time starting in 3-4 months!
 - Successful experimental readiness review
- Many experiments, many parallel efforts
- There is a lot of activity and a lot of work to do - the collaboration is encouraged to take on projects, send students, send postdocs,....
- Exciting times – *12 GeV beam is on the way!*

