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JSA

THOMAS JEFFERSON NATIONAL ACCELERATOR FACILITY

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Phone: (757) 269-7100

Beam Schedule 89513

Experiment Title: *Exclusive Deeply Virtual Compton and Neutral Pion Cross-Section Measurements in Hall C*

ID: *E12-13-010*

Experiment Hall

C

How many days out of the PAC-approved runtime for your experiment is included in this request?

88.0 days out of 53.0

Explain your request. This explanation should be able to guide the scheduling committee. Outline if only a fraction of the PAC-approved runtime is requested. Identify any constraints on the scheduling of your experiments (e.g. periods when members of the collaboration have prior commitments that would exclude their participation, or times when critical apparatus will not be available): Type your answer in the space provided below or attach a document in the attachments section at the bottom of this form.

The request includes the 53 days of approved time for run group E12-13-010 & E12-13-007 plus 35 days of approved jeopardy time from E12-06-114 transferred from Hall A to Hall C by PAC47.

Associated Experiments

Note: Use this section to link other experiments

Directions: To add an associated experiment click the Add Experiment button. An auto complete text field will appear where you can type the experiment. Select the auto complete item that matches the experiment typed

Linked Experiments

E12-13-007

E12-06-114

Collapse All

Proposed Commissioning and Run Schedule

Enter data in preferred time sequence for energies, current, targets, beam conditions, etc, for the entire Run Plan including commissioning. Under "Special Requirements" below, note all critical scheduling needs, e.g., a certain set of energies must be run before another set, etc.

NOTE: INDICATE ALL MAJOR EQUIPMENT CHANGES, BREAKS, OR MAINTENANCE DAYS, ETC. ON SEPARATE LINES.

Days	Setup Number from Radiation Budget Form	Tag No. Special Requirements (including any variance from standard beam conditions)
4	9	Experiments require polarized beam to measure beam asymmetries, but not necessarily fully longitudinal and absolute knowledge of beam polarization is at the level of a few % only
20	1	
11	2	
1	3	
9	13	
4	14	
1	11	
6	6	
1	8	
1	7	
13	12	
9	15	
1	10	
6	4	
1	5	

**Assume 100% efficiency for accelerator and experimental operations. ** Provide setup numbers as indicated on the Radiation Budget Form. The sum of the run days must be = the PAC-approved days. Consult Accelerator Liaison Physicist H. Areti for current beam capabilities.*

Appendix B

Proposed Apparatus or Beam Development Run Schedule

Fill in one of these forms for each proposed development activity. Enter data in preferred time sequence for energies, current, targets, beam conditions, etc, for the entire Development Run. Under "Special Requirements" below, note all critical scheduling needs, e.g., a certain set of energies must be run before another set, etc.

Identify the goals of the development run and indicate the experiment(s) for which the proposed run is relevant:

NOTE: INDICATE ALL MAJOR EQUIPMENT CHANGES, BREAKS, INSTALLATION OR SETUP, OR MAINTENANCE DAYS, ETC. ON SEPARATE LINES.

Days	Setup Number** from Radiation Budget Form	Special Requirements Include any variance from standard beam conditions, special developmental setups, special beamline or experimental equipment, and associated setup and installation times in the hall, etc
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**Assume 100% efficiency for accelerator and experimental operations. ** Provide setup numbers as indicated on the Radiation Budget Form*

Appendix C

Pre-Installation Requirements

For all changes, additions, and enhancements to the standard* equipment (including detector systems) and for new equipment, identify for each area listed below the following specific items: who will be doing the work (User/J Lab staff/contractor); the manweeks required for the work; when the work will be done; and the work location.

Engineering and Design:**

NPS Mechanical structures. Design underway by JLab staff.

Equipment to be Fabricated:***

NPS calorimeter and sweeping magnet. Work is underway by both the NPS Collaboration (users) and JLab staff. Expected completion is end of 2020.

Pre-Installation Tests: (Identify any developmental activities with or without beam, associated with the equipment changes. Indicate locations.)

- Test of sweeping magnet and calorimeter outside the Hall. Possible locations: Test Lab, EEL, Experimental Staging.
- NPS magnet test will require also some testing time in Hall C, where only the maximum power can be achieved.

** See the Hall leader for a list and description of standard equipment. ** Complete requirements must be provided for equipment requiring JLab engineering and design. *** Complete drawings must be provided for equipment to be fabricated by JLab*

INSTALLATION REQUIREMENTS

For each item below, identify days to complete installation, type of manpower (i.e. welder, electrician, programmer, etc.), manweeks of effort for each subsystem, and the man effort (User/J Lab staff/contractor).

	Equipment to be installed	Time (days) (Assuming 100% efficient operation)	Type of Manpower	Man-Weeks of Effort	User/JLab Staff/Contractor
Alignment	NPS calorimeter and sweeping magnet	15	Alignment group	4	JLab staff
Electrical	NPS magnet power supply		Hall C techs		JLab staff
Mechanical	NPS support structure and small angle beam pipe	50	Hall C techs		JLab staff
Collaboration and Halls A/C					

Detector	NPS	10	Spectrometer Support Group		JLab staff
Target	Standard cryotarget (LH2, 15cm) and solid targets ladder		Target group		JLab staff
Beamline (including Radcon)					
Modifications to Standard Equip					
Slow Controls (EPICS)	Magnet and calorimeter controls	5	Programmer		User+JLab staff
Other					

DECOMMISSIONING and DEINSTALLATION

List all items requiring decommissioning and/or deinstallation following your experiment. For each item indicate type of manpower (lift operator, welder, electrician, etc.), man-weeks of effort for each subsystem, and the man effort (User/J Lab staff/contractor).

Equipment to be removed	Equipment Location	Time (days) (Assuming 100% efficient operation)	Type of Manpower	Man-Weeks of Effort	User/JLab Staff/Contractor
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Obtain hall leader's concurrence that the information in this Appendix is understood and adequate for schedule planning

Appendix D

Target Systems

For polarized targets, describe plans for irradiation activities. (Include in the proposed commissioning and run schedule all appropriate irradiation activities.)

Describe any changes and/or modifications to standard cryogenic targets.

Add installation and setup plans developed in coordination with C. Keith using the Appendix B format.

Appendix E

Data Acquisition

Indicate the anticipated data acquisition rates (peak and averages) as well as the anticipated total data going to media.

Data Acquisition Rate Peak (megabytes/second):

Rate Average (megabytes/second):

Total Data Going to Media (gigabytes):

Indicate the proposed modifications to the data acquisition system. Include a schedule of developmental activities identifying who is doing the work.

- Dedicated VTP/F250 FADC trigger and firmware development: request submitted to the FE group at JLab.

Indicate the proposed modifications to the controls system. Include a schedule of developmental activities identifying who is doing the work.

- Calorimeter LED control board development and fabrication: request submitted to the FE group at JLab.
- Read-out and control of fans, sensors, etc for calorimeter and magnet: the NPS collaboration will do the work (during 2020).

Appendix F

User Staffing Profile

For each phase of the experiment (design, construction, testing, commissioning, running

For each phase of the experiment (design, construction, testing, commissioning, running, deinstallation, and data reduction and analysis), indicate the number of onsite FTE users you anticipate, the incremental office and laboratory space required (i.e., space not already provided to collaboration members), and your desired location.

	Collaboration FTEs at JLab	Storage Space	Laboratory Space	How long is space needed?	Comments
Design					Completed
Construction	5-7		200-400 sq feet with crane access. Air conditioned, relatively clean area (no clean room needed).	1 year	Expected in 2020
Testing	5-7		Same as above	6 months	Expected in 2021
Commissioning	10		Hall C	2 weeks	
Running	10				
Deinstallation	5-7		Hall C	2 weeks	
Decommission	5-7	200 sq feet with crane access. Air conditioned, relatively clean area (no clean room needed).		Unknown	
Data	N/A	Tape	50 TB at JLab	10 years	

If you require new office space, you need to contact the User Liaison Office at 757.269.6388 or users@jlab.org for additional information

Attachments

E12-13-007_1page_summary.pdf
rad_budget_NPS.pdf
E12-06-114.pdf
E12-13-010.pdf

Signatures

There are no signatures