Person: Alexander Somov (somov@jlab.org) Status: Saved
ORG: PHALLD Date: 09/08/2020 10:42:52 AM

JSA
THOMAS JEFFERSON NATIONAL ACCELERATOR FACILITY
12000 Jefferson Avenue
Newport News, VA 23606
Phone: (757) 269-7100

Beam Schedule 105324

Experiment Title: ***Studying Short-Range Correlations with Real Photon Beams at GlueX***
ID: ***E12-19-003***

Experiment Hall

D

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

15 days out of 15.0

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.

We are requesting all PAC approved days

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

Collapse All

Appendix A

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)
0.7	1	Beam and detector commissioning, radiator 4x10-4 X0 diamond, beam current 140 nA
7	2	Production run on Carbon target, radiator 4x10-4 X0, 140 nA beam current
1.0	3	Install liquid D target, no beam, solenoid field switched off
0.5	4	Run with empty target, radiator 4x10-4 X0 diamond, beam current 140 nA
4.5	5	Production run on liquid D target, radiator 4x10-4 X0 diamond, beam current 140 nA
0.3	6	Switch to liquid He4 target
1	7	Production run on liquid He target, radiator 4x10-4 X0 diamond, beam current 140 nA

**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:

No special development time with beam is requested for this experiment. The experiment will be operated using three targets: Carbon target, LD target, and LHe4 target. The standard GlueX LH2 target cell will be used for liquid targets, with a special heat shield installed around the target cell. LHe target was used in the PrimEx experiment in Hall D. The solid C target will be designed and constructed by the Target group. The target will be installed (before we start the experiment) on already existing holder used in the PrimEx experiment.

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
1.0	3	Install liquid Deuterium target after phyiscs run on Carbon target, no beam, solenoid magnet filed switched off
0.3	6	Switch from liquid D to liquid He target, no beam

**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:**

1) The composite Carbon target consisting of eight foils (7 % R.L. in total) will be designed, fabricated, and installed by the Target group (according to Chris K., it will take about 8 weeks to design and fabricate the target). The target will be installed on the existing mounting and alignment base similar to that used for Be target in the Hall D PrimEx experiment.

2) The LHe4 target: Liquid Helium target has already been used in the PrimEx experiment in Hall D. The standard Hall D LH2 target and infrastructure will be used. The target will be surrounded by a 500 micron Al heat shield developed for the PrimEx D experiment.

The target group is responsible for installation of the targets. After installation, C target and LHe (LD) target cell will be aligned/surveyed by the JLab survey and alignment group.

Equipment to be Fabricated:***

The composite Carbon target will be designed and fabricated by the target group by the beginning of the experiment.

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

No pre-installation tests are required.

** 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	Carbon and liquid Deuterium (He4) target cell	0.7	Alignment group	0.3	JLab, alignment group
Electrical					
Mechanical					
Detector					
Target	Solid C target, liquid D and He4 targets	2.0	engineering/technician	1	JLab Target group, Hall D group
Beamline (including Radcon)					
Modifications to Standard Equip					
Slow Controls (EPICS)					

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
LHe4 target	Targer	1	technician	0.4	JLab, target group, Hall D technician

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.)

This experiment will not use polarized targets

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

Carbon target consisting of eight C foils will be placed in the center of the Hall D target before the beginning of the experiment. The target will be installed on the existing fixture (originally used for Be target of the PrimEx experiment). This target will be subsequently replaced by the LD/LHe4 targets.

The standard Hall D LH2 target cell and its infrastructure will be used for liquid He4 and D targets. To liquefy He4, the target cell will be surrounded by a 500 micron Al heat shield.

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

We have a preliminary plan with the Target group for three targets: C, LD, and LHe4. The target group will design and fabricate carbon foil target (it will require about 8 weeks to complete this task). The target will be installed in Hall D before we start the experiment.

Target cell for liquid targets will be installed after physics run on C target. LHe target has been successfully used in the PrimEx experiment in Hall D.

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):

1300

Rate Average (megabytes/second):

1200

Total Data Going to Media (gigabytes):

1400000

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

No change in DAQ

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

No change in control system

Appendix F

User Staffing Profile

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					
Construction					
Testing					
Commissioning					

Running	20				Collaborators of the SRC/CT experiment participating in taking shifts
Deinstallation					
Decommission					
Data	5				3 dedicated graduate students, 2 PostDocs (50 % time), researchers

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
There are no attachments

Signatures
There are no signatures