BEAM REQUIREMENTS LIST

JLab Proposal No.: _____ Date: 6/24/10

Hall: A Anticipated Run Date: _____ PAC Approved Days: _____

Spokesperson: Gerassimos Petratos
Hall Liaison: _____
Phone: (330) 672-5408
E-mail: gpetrato@kent.edu

List all combinations of anticipated targets and beam conditions required to execute the experiment. (This list will form the primary basis for the Radiation Safety Assesment Document (RSAD) calculations that must be performed for each experiment.)

Condition No.	Beam Energy (MeV)	Mean Beam Current (μA)	Polarization and Other Special Requirements (e.g., time structure)	Target Material (use multiple rows for complex targets — e.g., w/windows)	Material Thickness (mg/cm^2)	Est. Beam-On Time for Cond. No. (hours)
1A	3300	24	none	Al	246.9	7.7
1B	3300	24	none	3H	81.2	4.4
1C	3300	24	none	3He	133.2	3.3
2A	4400	24	none	Al	246.9	73.7
2B	4400	24	none	3H	81.2	48.4
2C	4400	24	none	3He	133.2	25.3
3A	5500	24	none	Al	246.9	165
3B	5500	24	none	3H	81.2	110
3C	5500	24	none	3He	133.2	55
4A	6600	24	none	Al	246.9	31.9
4B	6600	24	none	3H	81.2	19.8
4C	6600	24	none	3He	133.2	12.1

The beam energies, E_{Beam}, available are: $E_{Beam} = N \times E_{Linac}$ where N = 1, 2, 3, 4, or 5. $E_{Linac} = 800$ MeV, i.e., available E_{Beam} are 800, 1600, 2400, 3200, and 4000 MeV. Other energies should be arranged with the Hall Leader before listing.

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Condition No.	Beam Energy (MeV)	Mean Beam Current (μA)	Polarization and Other Special Requirements (e.g., time structure)	Target Material (use multiple rows for complex targets — e.g., w/windows)	Material Thickness (mg/cm^2)	Est. Beam-On Time for Cond. No. (hours)
5A	7700	24	none	Al	246.9	13.2
5B	7700	24	none	3H	81.2	7.7
5C	7700	24	none	3He	133.2	5.5
6A	8800	24	none	Al	246.9	5.5
6B	8800	24	none	3H	81.2	3.3
6C	8800	24	none	3He	133.2	2.2
7A	11000	24	none	Al	246.9	698.5
7B	11000	24	none	2H	134.4	192.5
7C	11000	24	none	3H	81.2	330
7D	11000	24	none	3He	133.2	176

The beam energies, E_{Beam}, available are: $E_{Beam} = N \times E_{Linac}$ where N = 1, 2, 3, 4, or 5. E_{Linac} = 800 MeV, i.e., available E_{Beam} are 800, 1600, 2400, 3200, and 4000 MeV. Other energies should be arranged with the Hall Leader before listing.

HAZARD IDENTIFICATION CHECKLIST

JLab Proposal No.: _____ Date : 6/24/10

(For JLab U/I Liaison Office use only.)

Check all items for which there is an anticipated need.

Cryogenics
- ☐ beamline magnets
- ☐ analysis magnets
- ☐ target
  - type: _____
  - flow rate: _____
  - capacity: _____

Electrical Equipment
- ☐ cryo/electrical devices
- ☐ capacitor banks
- ☐ high voltage
- ☐ exposed equipment

Radioactive/Hazardous Materials

List any radioactive or hazadorous/ toxic materials planned for use:

3H target

Pressure Vessels
- ☐ inside diameter
- ☐ operating pressure
- ☐ window material
- ☐ window thickness

Flammable Gas or Liquids
- type: _____
- flow rate: _____
- capacity: _____

Other Target Materials
- ☐ Beryllium (Be)
- ☐ Lithium (Li)
- ☐ Mercury (Hg)
- ☐ Lead (Pb)
- ☐ Tungsten (W)
- ☐ Uranium (U)
- ☐ Other (list below)

Special Target Materials
- ☑ * Helium (^{3}He)
- ☑ Deuterium

Drift Chambers
- type: _____
- flow rate: _____
- capacity: _____

Vacuum Vessels
- ☐ inside diameter
- ☐ operating pressure
- ☐ window material
- ☐ window thickness

Radioactive Sources
- ☐ permanent installation
- ☐ temporary use
- type: _____
- strength: _____

Large Mech. Structure/System
- ☐ lifting devices
- ☐ motion controllers
- ☐ scaffolding or
- ☐ elevated platforms

Lasers
- type: _____
- wattage: _____
- class: _____

Installation:
- ☐ permanent
- ☐ temporary

Use:
- ☐ calibration
- ☐ alignment

Hazardous Materials
- ☐ cyanide plating materials
- ☐ scintillation oil (from)
- ☐ PCBs
- ☐ methane
- ☐ TMAE
- ☐ TEA
- ☐ photographic developers
- ☐ other (list below)

General

Experiment Class:
- ☑ Base Equipment
- ☐ Temp. Mod. to Base Equip.
- ☐ Permanent Mod. to Base Equipment
- ☐ Major New Apparatus

Other: _____

LAB RESOURCES LIST

JLab Proposal No.: _____ Date 6/24/10

(For JLab ULO use only.)

List below significant resources — both equipment and human — that you are requesting from Jefferson Lab in support of mounting and executing the proposed experiment. Do not include items that will be routinely supplied to all running experiments such as the base equipment for the hall and technical support for routine operation, installation, and maintenance.

Major Installations *(either your equip. or new equip. requested from JLab)*

_____

_____

_____

_____

_____

New Support Structures: _____

_____

_____

_____

Data Acquisition/Reduction

Computing Resources: _____

_____

_____

_____

New Software: _____

_____

_____

_____

Major Equipment

Magnets: _____

_____

Power Supplies: _____

_____

Targets: 40 cm long, room temp, 2H, 3H and 3He targets

Detectors: _____

_____

Electronics: _____

_____

Computer Hardware: _____

_____

Other: _____

_____

Other:

_____

_____

_____

_____

Date: 6/24/10
Exp. #: _____

Offline Computing Requirements

Proposal Title:

Measurement of the F2n/F2p, d/u Ratios and A=3 EMC Effect in Deep Inelastic Electron Scattering Off the Tritium and Helium Mirror Nuclei

Spokesperson: Gerassimos Petratos Experimental Hall: A

Data:

Silo/Mass Storage (Tape):

Amount of Simulated Data Expected (TB): _____

Amount of Raw Data Expected (TB): 0.6

Amount of Processed Data Expected (TB): _____

Online Storage (Disk) Required (TB): _____

Imported Data Expected from Offsite Locations (TB): _____

Exported Data Expected to Offsite Locations (TB): _____

Computing:

Simulation Requirements (SPEC CINT2000 hrs): _____

Production (Replay, Analysis, Cooking) Requirements (SPEC CINT2000 hrs): _____

Other Requirements:

Please add any additional information that will be useful information for JLab's Information Technology group regarding unique configurations or that may require additional resources and/or coordination. Please indicate if possible what fraction of these resources will be provided by collaborating institutions and how much is expected to be provided by JLab.

_____

_____

_____

_____