Jefferson Lab PAC 33

Proposal Cover Sheet

Experimental Hall:	**C**
Days Requested for Approval:	**28**

This document must be received by close of business Wednesday, June 20, 2007 at:

Jefferson Lab
User/International Liaison
Mail Stop 12H5
12000 Jefferson Ave.
Newport News, Va 23606

Proposal Title:

Investigation of the Role of Nuclear Medium Modifications in the $^4He(\vec{e},e'\vec{p})^3$H Reaction in Hall C

Proposal Physics Goals:

Indicate any Experiments that have physics goals similar to those in your proposal.

Approved Conditionally approved, and/or Deferred Experiment(s) or proposals.

Contact person:

Name :	Steffen Strauch
Institution :	University of South Carolina
Address :	Dept of Physics & Astronomy
Address :	
City, State, ZIP/Country :	Columbia, SC 29208
Phone :	803-777-8197
Fax :	
Email :	strauch@physics.sc.edu

Spokespersons:

1. Ed Brash
2. Garth Huber
3. Ron Ransome
4. Steffen Strauch
5.
6.
7.
8.

Contact person:

Recipient Date :	
By :	

LAB RESOURCES LIST

Jlab Proposal No. : Date

List below significant resources - both in equipment and human - that you are requesting from Jefferson Lab in support of mounting and executing the proposed experiment. Do not include item 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

New Support Structures

New Software

Major Equipment

Magnets :

Power Supplies:

Targets:
6cm cryogenic targets

Detectors:
HMS FPP

Electronics:

Computer Hardware:

Other:

Other:

BEAM REQUIREMENTS LIST

Jlab Proposal No. : **Date :**

Hall: C **Anticipated Run Date** **PAC Approved Days:**

Spokesperson: Steffen Strauch **Phone:** 803-777-8197

Email: strauch@physics.sc.edu **Hall Liaison:**

List all combinations of anticipated targets and beam considerations required to execute the experiment. (This list will form the primary basis for the Radiation Safety Assessment 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/cm2)	Est. Beam-On Time for cond. No. (hours)
1	1400	70	Polarized Beam	4He	461	46
2	1400	15	Polarized Beam	2H	1002	2
3	1400	4.5	Polarized Beam	1H	440	6
4	1850	100	Polarized Beam	4He	461	117
5	1850	40	Polarized Beam	2H	1002	2
6	1850	15	Polarized Beam	1H	440	7
7	2500	100	Polarized Beam	4He	461	83
8	2500	100	Polarized Beam	2H	1002	12
9	2500	100	Polarized Beam	1H	440	16
10	3000	100	Polarized Beam	4He	461	225
11	3000	100	Polarized Beam	2H	1002	38
12		30		Al Dummy Target	520	

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 :**

Check all items for which there is an anticipated need.

Cryogenics
- [x] beamline magnets
- [x] analysis magnets
- [ ] target magnets

type:
flow rate:
capacity:

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

Radioactive/Hazardous Materials
List any radioactive or hazardous/toxic materials planned for use:

Pressure Vessels
- [ ] inside diameter
- [ ] operating pressure
- [ ] window material
- [ ] window thickness

Flammable Gas or Liquids
type:
flow rate:
capacity:

Drift Containers
type:
flow rate:
capacity:

Other Target Materials
- [ ] Beryllium (Be)
- [ ] Lithium (Li)
- [ ] Mercury (Hg)
- [ ] Lead (Pb)
- [ ] Tungsten (W)
- [ ] Uranium (U)
- [ ] *Helium (3He)
- [ ] Other (List below)

1H,2H,4He Cryotargets
Aluminum Dummy Target
Carbon-12 Optics Target

Special Target Materials
- [ ] *Helium (3He)
- [x] Deuterium

Vacuum Vessels
- [ ] inside diameter
- [ ] operating pressure
- [ ] window material
- [ ] window thickness

Radioactive Sources
- [ ] permanent installation
- [ ] temporary use

type:
strength:

Large Mech. Structure/System
- [ ] lisfting 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)
- [ ] PCB's
- [ ] methane
- [ ] TMAE
- [ ] TEA
- [ ] photographic developers
- [ ] other (list below)

General

Experiment Class
- [ ] Base Equipment
- [x] Temp. Mod. to Base Equip.
- [ ] Permanent Mod to Base Equipment
- [ ] Major New Apparatus

Other:
HMS FPP

Data:

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Spokesperson: Steffen Strauch **Experimental Hall:**

Raw Data Expected

Silo/Mass Storage (Tape): 0.6TB

Amount of Simulated Data Expected (TB): 0.5

Amount of Raw Data Expected (TB) 0.5

Amount of Processed Data Expected: 0.1

Online Storage (Disk) Required (TB): 1.5

Imported Data Expected from Offsite Institutions:0

Exported Data Expected to Offsite Locations: 2

Computing:

Simulation Requirements (SPEC CINT2000 hrs): 10,000

Production (Replay, Analysis, Cooking) Requirements (SPEC CINT2000 hrs): 10,000

Other Requirements
Please add any additional information that will be useful 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.