Jefferson Lab

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12000 Jefferson Avenue
Newport News, VA 23606

HALL D SPECIFICATION

NO.: D0HX00-00-00-5001 Rev A

TITLE: Hall D Conduct Of Operations from BOD to Ready for beam

DATE: 22Nov11

By: Timothy Whitlatch

Checked:

Approved: 1/10/12
Title: Physics Div. ES&H/date

Approved: 1/10/12
Title: 12GeV APM/Date

Approved: 10 JAN 12
Title: Hall D Lead Eng/date

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Title: Physics Div. Director/date

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Title: 12Gev Safety Manager/date

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Title: Hall D Leader/Date

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Title: Hall D Work Coordinator/date

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REV.	ECO#	DESCRIPTION	BY	CHK	APP.	APP.	DATE
A		1. Replaced cover sheet for full signatures 2. Deleted Appendix A and all reference to Civil 3. Added Tagger area	TEW				

1. Purpose

As part of its mission, JLab provides the resources necessary for international collaborations of scientists to carry out basic research in nuclear physics and related disciplines. This research, and the work associated with installing the equipment necessary to do this research, must be conducted in a manner that ensures that environmental, safety, health and quality (ESH&Q) concerns are addressed at all times. The integration of ESH&Q activities into work planning and work activities, i.e. integrated safety management (ISM), supports the goals of the laboratory: obtaining the highest quality scientific results with efficient, safe, and environmentally responsible operation.

This document outlines how all workers will conduct their work in a safe and effective manner during the initial equipment installation period in Hall D (bldg 203), the Tagger Building (bldg 204), and a portion of the Tagger Service Building (bldg 200). Work in the Tagger Service Building is done under the supervision of Facilities Management and work performed in the Cryo Building (bldg 201) is supervised by the Accelerator Division. The time period covered is from Hall D Beneficial Occupancy to ready for beam. This includes the installation of the Hall D infrastructure and various components used to support the GlueX experiment. This document must be read, understood, signed, and its provisions followed by all persons involved in the installation.

It is important to note that JLab policy is "No activity is so important or urgent that our standards for safety, health, or environmental protection are compromised."

2. Personnel Training

All personnel involved in any Hall activities during this installation period are required to have successfully completed and be current in the following JLab safety training:

- ESH&Q Orientation (SAF 100),
- SAF800 General Employee Radiation Training (GERT) or higher
- SAF 103 Oxygen Deficiency Hazard
- SAF 113kd Hall D Conduct of Operations
- SAF113 Hall D Safety Awareness Walk-Through. (See Work Coordinator to arrange dates/times)

The Hall Safety Awareness Walk-Through for staff, users, or contractors will emphasize any hazards that are peculiar to the current installation. Once the walkthrough is complete, the work coordinator will report this and the individual will be given credit for the training. All personnel are required to inform the Hall Work Coordinator, or his designated alternate, of their planned tasks in the Hall before commencing the work.

In addition, personnel must familiarize themselves with the sections of the JLab ESH&Q Manual relevant for their work in the Hall. The JLab ESH&Q Manual

describes a process of hazard analysis, identification and installation of mitigating safety measures, and evaluation and documentation of their effectiveness for a particular task or set of tasks. Technical work documents, Operational Safety Procedures (OSPs), Temporary Operational Safety Procedures (TOSPs), etc.) can result. The JLab ESH&Q Manual is available at http://wwwold.jlab.org/ehs/ehsmanual/index.html. Copies of technical work documents are available from the Hall Work Coordinator.

Finally, JLab Lock, Tag and Try[1] training is required for all staff/users whenever there is the potential for someone to be injured by the unexpected start-up of equipment or by a release of stored energy during installation, maintenance, or service.

For needed training opportunities go to the Jefferson Lab Training website: http://www.jlab.org/div_dept/train/index.html

Within the options select (Click) "Monthly On - Campus Training Calendars" and or "Web Based Training" http://www.jlab.org/div_dept/train/webbasedtraining.html

3. Organization and Administration

Installation work is the responsibility of, and executed under the authority of, the Hall Leader. The following sections detail the Hall organization structure and interfaces to other JLab organizations during this phase of the installation. The organization chart for installation work is given in Figure 1.

3.1 Associate Project Manager (12 GeV Physics APM)

The APM has overall responsibility for execution of the hardware installation project including cost, schedule, and performance control for both Jefferson Lab and outside collaboration groups and appropriate funding agencies.

The APM will refer issues significantly affecting installation cost, schedule, or scope to the 12 GeV Project Manager and the Physics Division Associate Director.

3.2 Spokesperson(s)

If the installation work is associated with a specific experiment, the Spokesperson has overall responsibility for ensuring that the installation meets the experimental goals. This includes oversight of the physics program and its scope, and overall coordination of the experiment as well as overall management of the collaboration. The Spokesperson acts on behalf of the collaboration in interactions with JLab management, the JLab Program Advisory Committee, and with the funding agencies. The Spokesperson chairs the Executive Committee, if applicable within the experiment management plan. The Spokesperson also ensures that regular progress reports are given at collaboration meetings and at bi-weekly Hall D meetings.

[1] The ESH&Q Manual provides Lockout/Tagout, Try information in Chapter 6110

3.3 12GeV Integration Engineer

The role of the 12GeV Integration Engineer is to provide integration between the Accelerator, Engineering, Facilities Management and Logistics, Environmental

Health & Safety and Quality, and Physics components of the 12 GeV Upgrade Project. This person will pay special attention to work that interfaces between the responsibilities of the various groups.

The 12GeV Integration Engineer works closely with key staff in all divisions and has overall responsibility for ensuring any issues between different interfaces are resolved.

3.4 Hall Leader

The Hall Leader is a JLab Staff Member who is designated by the 12Gev project and Physics division and is responsible for ensuring that the goals of the installation are met. The Hall Leader will ensure that the 12GeV project and Physics Division are aware of all pertinent issues. The Hall Leader shall promote an environment in which the highest safety standards are maintained. The functions of the Hall Leader are to:

- Be responsible to the 12 GeV Upgrade Project, through the 12 GeV Associate Project Manager for the design, construction, assembly, installation and commissioning of all Hall D systems, subsystems and components, as specified in the Work Breakdown Structure (WBS) Dictionary for WBS element 1.5
- Define the installation requirements appropriate for the goals of the experiment.
- Supervise project Physicists and the Lead Engineer
- Ensure all required manpower and funds for the installation are in place.
- Ensure Collaboration requirements are met.
- Inform the APM and Physics Division Director of any major problems encountered.
- Act as the intermediate point of contact to keep the collaboration aware of the status of the installation.

3.5 Hall Work Coordinator

The Hall Work Coordinator (HWC) is the primary contact for all installation work in the Hall. The Hall Work Coordinator's job is to coordinate activities in the Hall so that work can take place smoothly and safely and to insure that multiple activities do not interfere with each other. The responsibilities of the Hall Work Coordinator are to:

- Act as the single point of contact for any issues, concerns or items encountered in the installation work, and find solutions in conjunction with the Hall engineers and designers and physics staff.
- Supervise Hall technicians and contractors.
- Develop the installation plan (in conjunction with the Hall Lead Engineer) and track the progress of the installation work with appropriate tool, e.g. FastTrack or Microsoft Projects.
- Enter any cross divisional work into appropriate work list, e.g.

ATLis.

- Ensure that the complete installation schedule is up-to-date. This task is done in coordination with the Hall Lead Engineer.
- Consult with the Hall Engineer as necessary and others as appropriate on any modifications to the mechanical installations.
- Coordinate and schedule any activities in order to optimize productivity within the constraints created by ensuring safe working conditions. This will be done on an as needed basis in a short meeting with representatives of the various groups working in the Hall.
- Ensure that workers are properly trained, are familiar with all significant hazards, and are aware of all applicable work control documents associated with the project, prior to authorizing them to enter the Hall for the purpose of executing installation work.
- Act as the Safety warden for the Hall and Tagger building and ensure an alternate person is assigned.
- Be available by cell-phone/pager at all times. (If temporarily unavailable the Hall Work Coordinator must appoint a qualified Hall staff member as his designate. The name of such designate should be clearly posted at the Hall entrance.)
- Report, in coordination with Hall Lead Engineer, on the progress of the installation in bi-weekly Hall meeting run by the Hall leader.

3.6 Hall Lead Engineer

The Hall Lead Engineer, responsible to the Hall D Leader, is the central contact person for all design and engineering projects both before and during the actual installation. It is the responsibility of the Hall Engineer to:

- Supervise the Engineering and design staff and the Hall Work Coordinator.
- Provide all engineering resources necessary to ensure that detectors and other instruments are designed and constructed to achieve the performance needed to reach their defined physics goals.
- Arrange, in consultation with the Hall Leader, a review of the conceptual, preliminary and final designs of major-scale construction and installation projects.
- Report on the progress of the design and engineering projects in bi-weekly Hall meetings run by the Hall Leader.
- Assign, one or more members of the engineering/design staff to be the responsible engineer or designer, for any experiment installation project in the Hall.

3.7 Project Engineers and Designers

A Project Engineer or Designer is a member of the Hall

engineering/design group who is selected by the Hall Leader and the Hall Lead Engineer to assist the Hall Work Coordinator during installation. Normally, these are people who have been involved with the specific Hall projects during the early designs, under the supervision of the Hall Lead Engineer. The responsibilities of the Project Engineers and Designers include:

- Providing the Hall Work Coordinator with all information related to the design, assembly and installation drawings for the installation work.
- Being available as needed to interact with the Hall Work Coordinator to directly incorporate modifications to these designs or drawings.
- Keeping the Hall Lead Engineer informed, and using him/her as a source of technical information, for any large modifications.
- Keeping both the general and detailed drawing and 3D model Hall databases up-to-date and reflecting the actual situation in the Hall.
- Doing *in situ* measurements in case hardware has to be altered before final installations in the Hall, and incorporating the measured modifications in the general Hall drawing and 3D model database.

3.8 Users and Contractors

Users and Contractors are persons whose supervisor is not a Hall staff member. Users often have a member of the Hall physics staff as local sponsor, contractors often have a member of the Hall technical staff as the subcontracting officer's technical representative (SOTR). During an installation, all users and contractors are under the direct daily supervision of the Hall Work Coordinator for any of their activities within the Hall. Users should use responsible Hall Physicist as their contact with the Hall Work Coordinator.

The responsibilities of each user or contractor are to:

- Keep all their training up-to-date.
- Read the entries posted at the safety bulletin board at the entrance to the Hall and be aware of changes in goals, operating parameters, and new documentation.
- Obtain the approval of the Hall Work Coordinator, in advance, for any desired activities in the Hall. Perform equipment installation or tests in a safe and efficient manner.

4. Operating Procedures

4.1 Work Routines

Due to the large scale of the installation work, many different groups will be involved. These are:

1. Hall technical staff, under the direct supervision of the Hall Work Coordinator

2. Hall physics staff

3. University user groups

4. University-supported technical personnel responsible for major pieces of equipment

5. Contractors

6. Engineering, Accelerator, RADCON, Administration, Facilities and Logistics and Physics Division support groups.

The standard procedure for work during installation has been identified in the previous pages, with the Hall Work Coordinator (HWC) the final authorizing agent for all work in the Hall and Tagger buildings. The HWC is responsible for establishing and communicating conditions of work in the Hall.

The mode of operations for requests for work and plans to do work by outside groups are further detailed in the following Sections.

4.2 Site Access

Before entering Hall D or Tagger building, contact the HWC to determine what work is going on at that time and what actions are necessary. As a minimum, proper work clothes, a hard hat and closed toe shoes are standard PPE. This may be waived on a case-by-case basis by the HWC depending on the individual task and other activities in the Hall.

All personnel entering the Hall must sign in and out on the board posted in the truck ramp.

The emergency evacuation plan is posted on the wall in the truck ramp. This must be read and understood before entering the Hall.

4.3 Collaboration Request for Laboratory Resources

A collaboration may request, in writing, additional services from other laboratory divisions through the Hall Leader. Some requests may require that an OSP, or TOSP be developed.

4.4 Infrastructure Installation

During installation of the Hall infrastructure and associated equipment into the Hall, changes may be required from the initial design. All installations must be well documented as it may affect the site boundary radiation dose and the production of airborne radioactivity, and may affect beam operations. Personnel performing beam line or infrastructure installation shall adhere to the following rules:

1. Obtain the approval of the Hall Work Coordinator or designate before initiating any work.

2. All installations must be per approved JLAB drawings or sketches signed by the Hall Lead Engineer or designee. If any changes are required, the Hall Lead Engineer or designee must approve the changes. This may be done verbally to get keep the work going but must be documented as soon as possible. The responsible physicists must be consulted and the control documents must be updated.

3. Enter work activity details into the appropriate work list (HDList, ATLis).

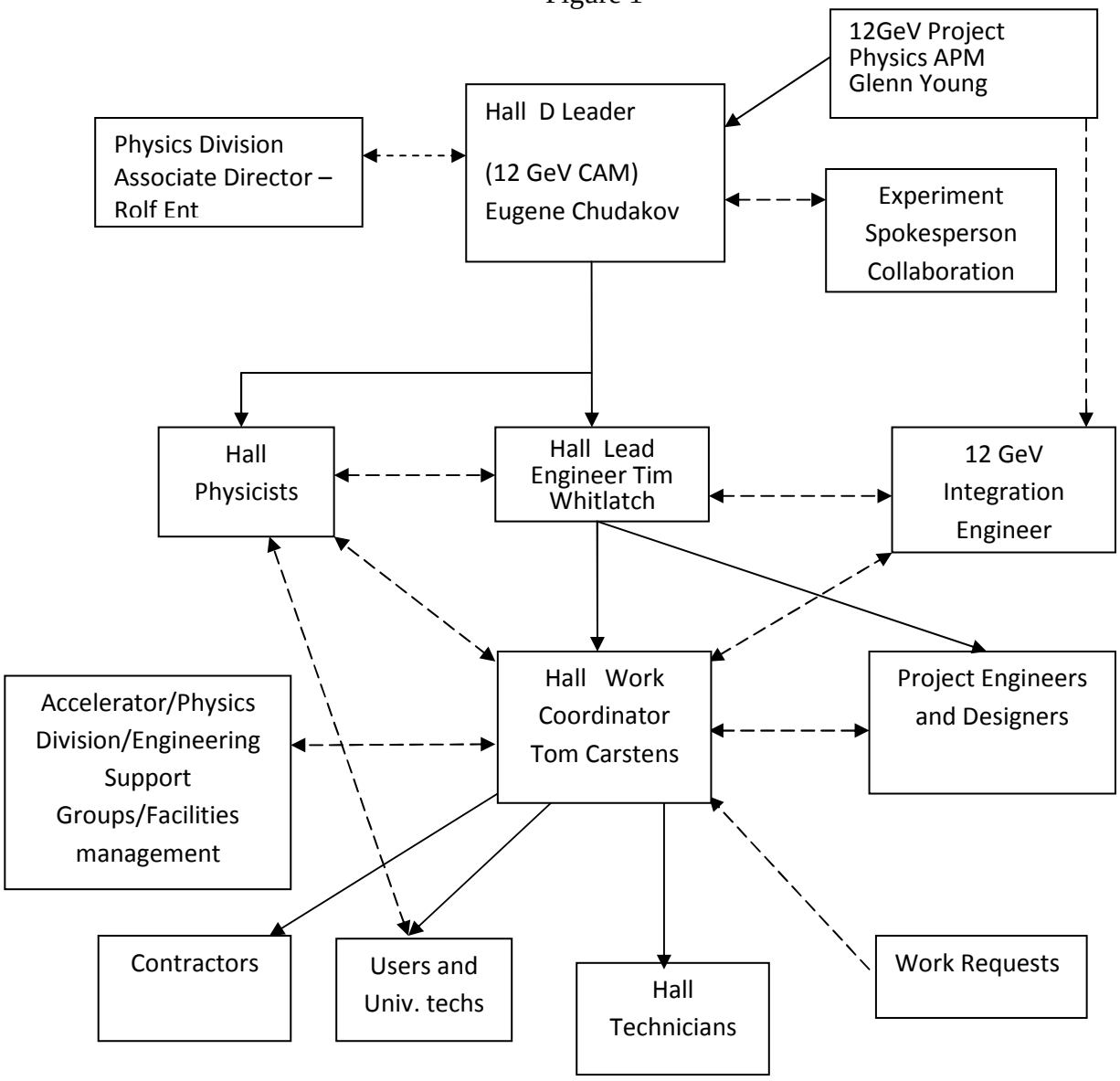
4. All JLAB ESH&Q requirements must be satisfied.

4.5 Scheduling of Work by Outside Groups

The Hall Work Coordinator is the single point of contact for any work by outside support groups (survey and alignment, plant services, air conditioning, etc.). To effectively schedule this work, Hall Leader, Hall Lead Engineer and the Hall Work Coordinator will concur on task scheduling.

The HWC and the Hall Lead Engineer will meet as needed to plan the scheduled work and develop appropriate work control documents, educational or other safety measures (such as trained and authorized escorts) that may be needed.

Figure 1



Dashed lines represent communication relationships
Solid lines represent supervisory relationships

To complete Hall D safety requirements, you must now schedule a safety walk-thru.
Email carstens@jlab.org with the following Subject:
"I certify I have read and understand Hall D work rules and request an appointment for the walk-thru"