

**Operational Readiness Clearance  
MicroBooNE DAQ rack at DAB Annex  
10/31/2012**

AUTHORIZATION TO PROCEED WITH THE UNATTENDED OPERATION of the MicroBooNE DAQ rack  
at DAB Annex

**REVIEWED AND APPROVED BY:**

**DATE**

*[Signature]*

11/11/2012

Particle Physics Division Head  
Comments/Exceptions:

*Gene McHugh 13747N*

Particle Physics Senior Safety Officer  
Comments/Exceptions:

*Gene McHugh 13747N*

Committee Chair  
Comments/Exceptions:

**Submitted By:**

*Y. Bagdasarian 6314N*

10.31.12

MicroBooNE Representative

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**10/31/2012**

**From:** Steve J Chappa  
**Sent:** Wednesday, October 31, 2012 12:40 PM  
**To:** Eric D McHugh  
**Cc:** Linda F Bagby; Leo Bellantoni  
**Subject:** MicroBooNE DAQ rack ORC

Hi Eric, Dr. Leo,

The ORC review for the MicroBooNE DAC rack was conducted this morning at 10:30. This ORC applies only to the one rack of equipment (left, next to the wall), located in DAB in the MicroBooNE test lab.

The review took into consideration the implementation of a smoke detector interlocks. This interlock is used to mitigate the electrical hazard that is due to a custom-built PCIe card that is plugged into one of the computer chassis. This PCIe card has no fusing on it and has insufficient PCB trace width to handle the available current in the event of a fault condition.

The components, interlock chassis, etc., were reviewed previously during an advisory review. The smoke interlock system has been thoroughly tested.

During the review, I found:

1) A note of caution: The AC power cords plug into raceway receptacles behind the racks. These plugs are situated so that they interfere somewhat with the clearance and working space behind the racks. If not careful, one can bump these plugs and partially dislodge them from the receptacle. Recommend that the cords from the plugs be provided strain relief to add some security for the plugs' connections. Also, if can be done, move the racks farther away from the rear wall, by about another foot, to add more clearance space.

2) The cords/cable/ dressing inside the rack looks OK.

3) There is no other custom-built equipment (other than that previously mentioned) installed. --OK

4) There is no HV or high current distribution implemented in this rack. --OK

Therefore, I can recommend that this installation (the DAQ rack) be issued the ORC.

Regards,  
Steve

**From:** Walter F Jaskierny  
**Sent:** Wednesday, October 31, 2012 1:15 PM  
**To:** Eric D McHugh  
**Subject:** Re: MicroBooNE DAQ rack ORC

Hello Eric,

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I did not see anything that I have an issue with that would prevent a ORC from being issued at this time.

Walter Jaskierny  
**From:** James L. Priest  
**Sent:** Wednesday, October 31, 2012 1:26 PM  
**To:** Leo Bellantoni  
**Cc:** Eric D McHugh  
**Subject:** Re: MicroBooNE DAQ rack ORC

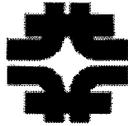
Just going to write up a separate recommendation but this will do. I see no issues at this time since the rack protection is used to mitigate the electrical hazard that is due to a custom-built PCIe card that is plugged into one of the computer chassis. Please have Linda notify the fire dept for a possible walkthrough of the area.

Jim

I see no issues  
Dr. James Priest PhD / MS119  
Senior Fire Strategist / Researcher  
ES&H Section  
Fermi National Accelerator Lab  
Office of Science/U.S. Department of Energy  
Managed by Fermi Research Alliance  
PO Box 500  
Batavia IL 60510  
Tel. 630-840-4283  
Cell. 312-636-6259  
Fax. 630-840-3390

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**10/31/2012**



Linda Bagby  
**Engineering Note**



Date: 10.24.2012  
Rev Date:

Project: MicroBooNE D0DAQ Test Stand ORC  
Doc. No: B102412\_Bagby\_D0DAQ\_TS

Subject: MicroBooNE D0DAQ Test Stand-DAQ Rack ORC Request  
Team members: D. Huffman, L. Bagby, E. Church.

**Introduction:**

The MicroBooNE collaboration has constructed an electronics test stand in room 313 of the D0 Assembly Building (DAB). This room is located next to the Hurricane Deck meeting room on the third floor of the building. The test stand consists of three electronics racks; DAQ, Readout, and Power. The collaboration requests an ORC review of the DAQ rack for unattended operation. The Readout rack and Power rack ORC reviews will be requested at a later time.



Figure 1: DAQ Rack

The DAQ rack contains the following commercially available equipment:

- 1 4U Opteron 6212 Storage Server (uboone-er-b)
- 1 3U Opteron 6212 Storage Server (uboone-seb-10)
- 1 2U Opteron Storage Server (uboone-seb-01)
- 2 Cisco Catalyst 2069G Network switch
- 1 KVM Switches
- 1 Netgear GS105 IPMI Switch
- 1 Dell computer
- 1 WTI NPS-8 Power Distribution Unit (PDU)
- 1 Pulizzi TPC115-8-CRL AC Distribution Box
- 1 Fan

The DAQ rack contains the following custom designed electronics:

- 3 Nexis designed PCIe cards, housed within the 2U Server
- 1 Fermilab designed Rack Protection System

