Muon Identifier Status

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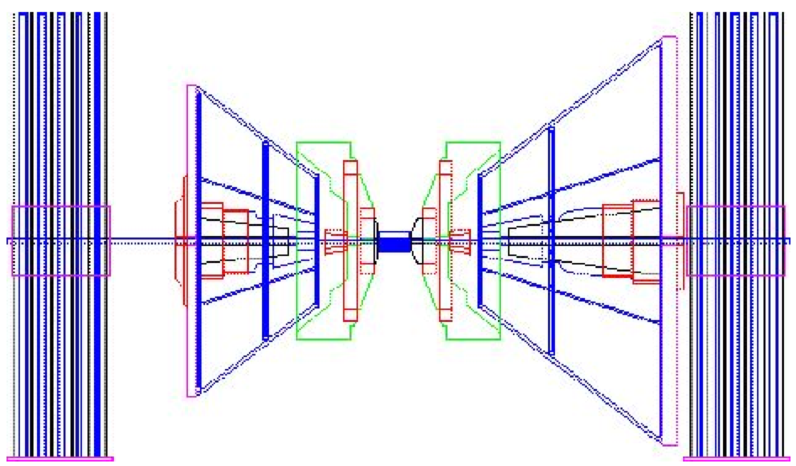
at
Iowa State University

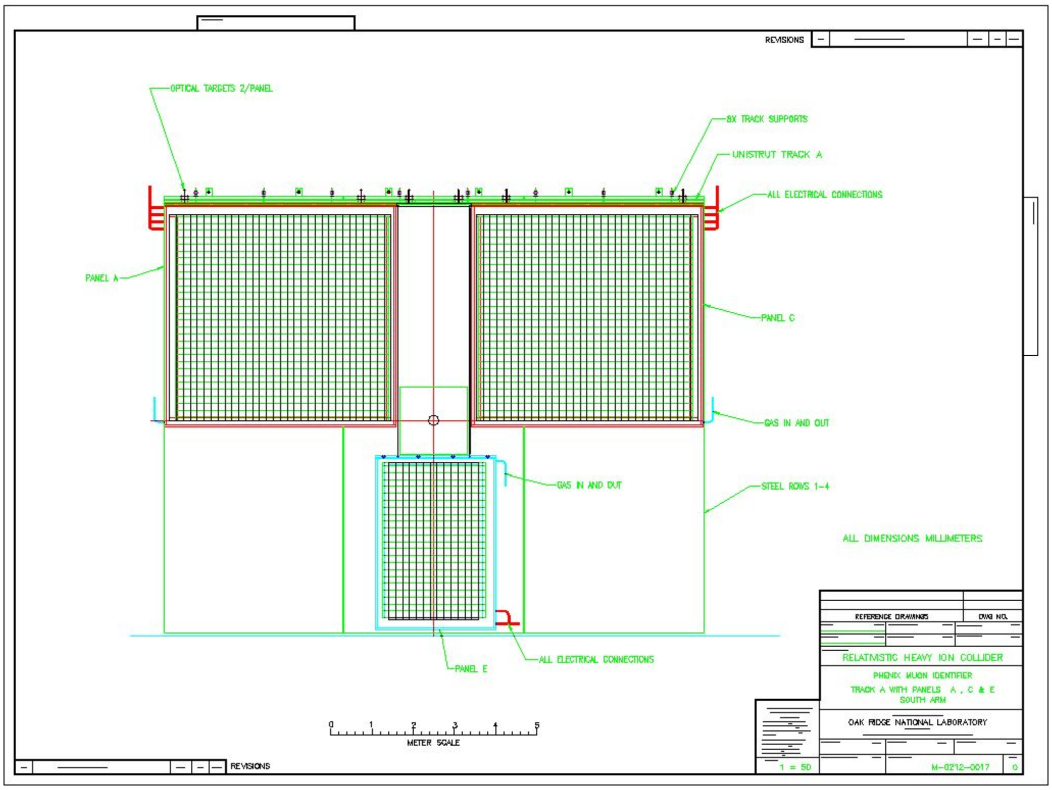
Outline

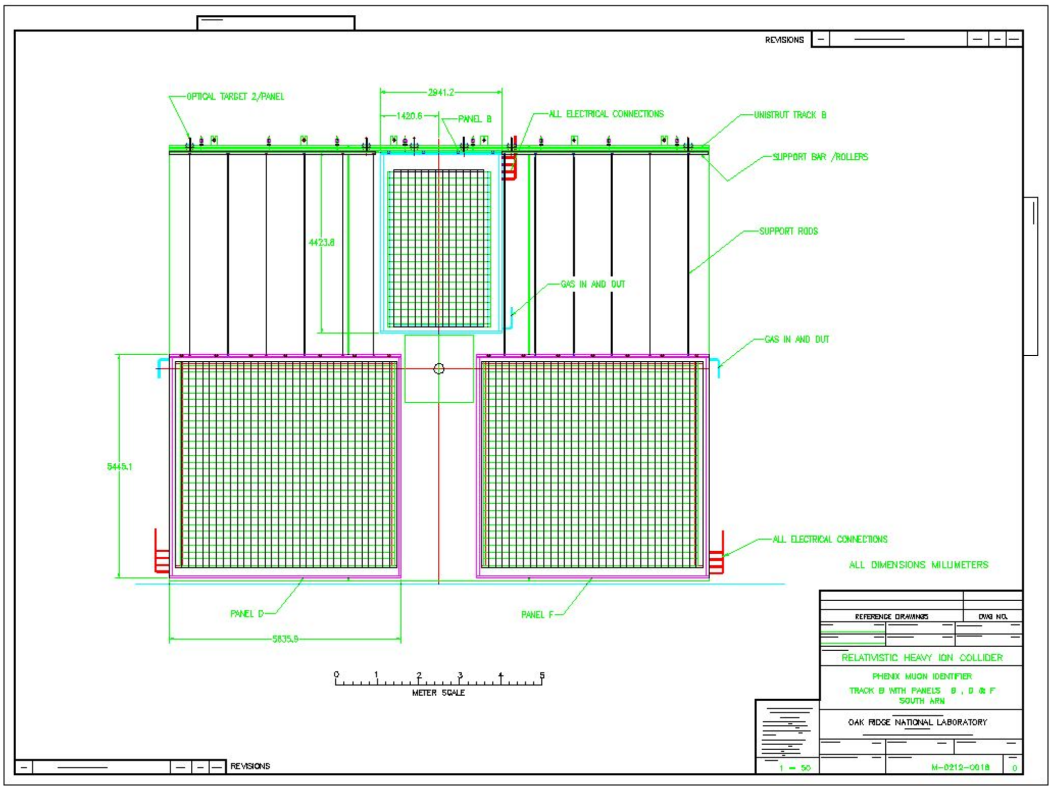
- Brief MuID Introduction
- Factory in Japan
- Factory at BNL
- Progress and Schedule
- Summary

Brief MuID Introduction

- Muon Identifier (MuID)
- North and South Arm and each one has Five layers
- One layer consists 6 panels (4 large and 2 small panel)
- 40 Large panels to be constructed at BNL factory
  - One panel: 118 horizontal (long) and 128 vertical (short) tubes
- 20 Small panels to be constructed in Japanese factory
  - One panel: 90 horizontal and 52 vertical tubes
- to be installed by the end of September
  Before shield wall comes




REVISIONS
OPTICAL TARGETS 2/PANEL
8X TRACK SUPPORTS
UNISTRUT TRACK A
ALL ELECTRICAL CONNECTIONS
PANEL A
PANEL C
GAS IN AND OUT
GAS IN AND OUT
STEEL ROWS 1–4
ALL DIMENSIONS MILLIMETERS
PANEL E
ALL ELECTRICAL CONNECTIONS
0 1 2 3 4 5
METER SCALE
REFERENCE DRAWINGS
DWG NO.
RELATIVISTIC HEAVY ION COLLIDER
PHENIX MUON IDENTIFIER
TRACK A WITH PANELS A , C & E
SOUTH ARM
OAK RIDGE NATIONAL LABORATORY
1 = 50
M–0212–0017
0
REVISIONS


REVISIONS
OPTICAL TARGET 2/PANEL
2941.2
1420.6
PANEL B
ALL ELECTRICAL CONNECTIONS
UNISTRUT TRACK B
SUPPORT BAR /ROLLERS
4423.8
SUPPORT RODS
GAS IN AND OUT
GAS IN AND OUT
5448.1
ALL ELECTRICAL CONNECTIONS
ALL DIMENSIONS MILLIMETERS
PANEL D
PANEL F
5835.9
0 1 2 3 4 5
METER SCALE
REFERENCE DRAWINGS
DWG NO.
RELATIVISTIC HEAVY ION COLLIDER
PHENIX MUON IDENTIFIER
TRACK B WITH PANELS B , D & F
SOUTH ARM
OAK RIDGE NATIONAL LABORATORY
1 = 50
M–0212–0018
0
REVISIONS

Japanese Factory

Factory located at KEK

- RIKEN, Kyoto, TITech and CIAE
  - A. Taketani (RIKEN) and H. En'yo (Kyoto) (Factory Manager)
  - T. Sakuma, E. Taniguchi, T.A. Shibata (TITech)
  - H. Sato, Y.Nakada, H. Torii, J. Tojo (Kyoto)
  - Y. Mao, Z. LI (CIAE/RIKEN)
  - Y. Watanabe (RIKEN)
  - Fink (Columbia Summer Student)

Japanese Factory Status

- Normal daily operation: 3-4 Physicists and 3 Technicians
- Tube QA — 200 to 240 tubes processed in a week
- To complete One Panel takes only 2-3 days!
  - It used to be 4 days. Production speed improving.
- The last panel to be completed in THIS WEEK!
- First 5 small panels arrived at BNL and Tested. All working fine!

Small Panel Schedule

- April 17: 1st Shipment left KEK
- May 19: 1st small panels arrived at BNL
- Week of June 7?: 3rd shipment left
- June 29: 2nd Shipment at NY
- Week of June 22th: The last panel completed
- July 10∼ : The last (4th) shipment depart Tokyo
- August 10: 4th shipment arrives at NY

Small Panel Shipment

from KEK to BNL

BNL Factory

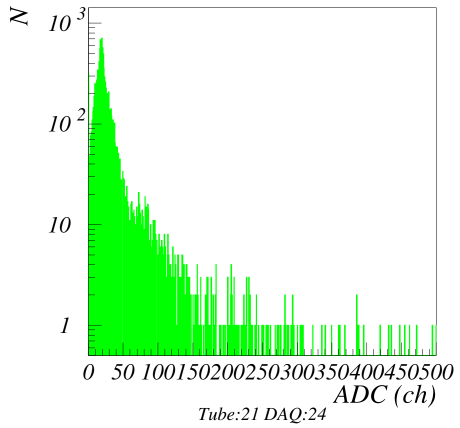
Factory located at Bldg.905

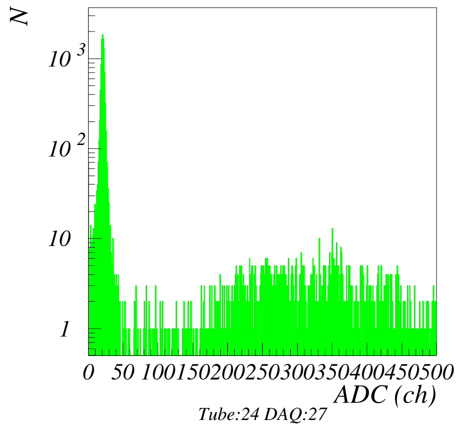
- BNL, CIAE, ORNL, RIKEN and SUNY
  - K. Read, K. Kurita, J. Tradesky
  - F. Bellaiche, V. Cianciolo, W. Tian, X.Liu, N. Hayashi
  - ORNL visitors
    Y. Efremenko, Y. Kamyshkov, T. Awes, P. Stankus, F. Plasil, G. Young, S. Mioduszewski
  - BNL technicians and Union workers (6+4...)
  - SUNY Students (~ 20)
- New Man Power safety trained by June 12
- Four Assemble Tables
- Panel production speed: 2 panels per week is possible
- Tube QA: 4 stacks per week is the goal, but largely depend on the initial Tube condition.

Tube QA at BNL

- One stack (shelf) contains 144 tubes
- QA area can accept 5 shelves
- Electrical, Gas Leak test
- 5 days HV conditioning at 4500 V with pure CO_2
- Check leakage current
- Cosmic muon test (ADC, efficiency, single count)

Iarocci Tube ADC spectrum



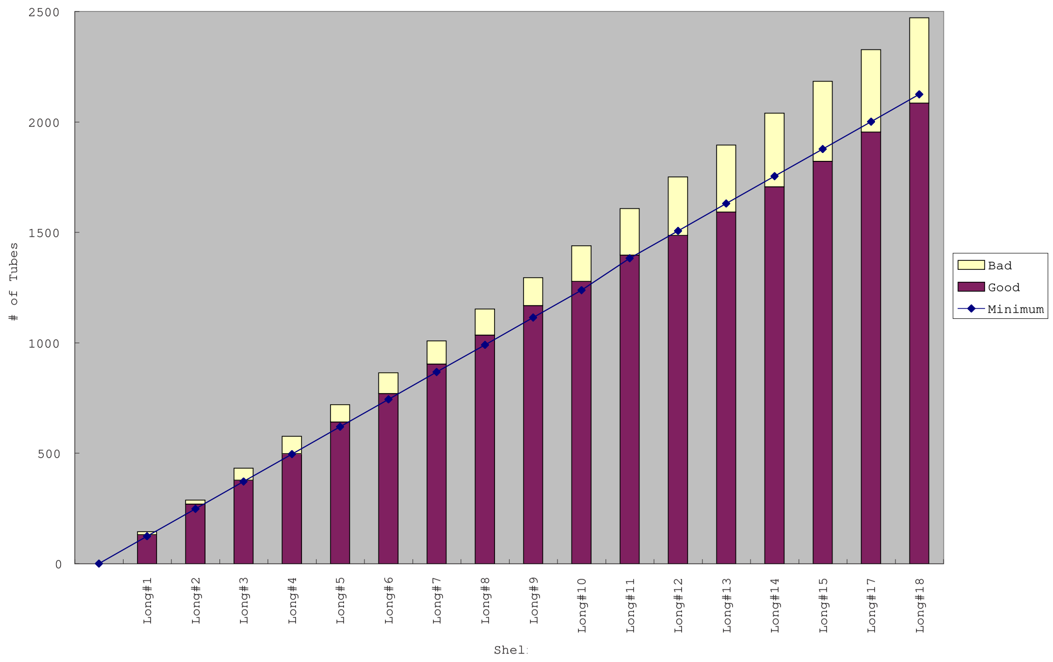


Tube QA Summary

- Current failure rate about 15%.
- Smaller R_{ac}: few tenth MΩ to few GΩ
  Mostly recovered after large volume of gas flow

Summary Long

QA Summary (Long Tube



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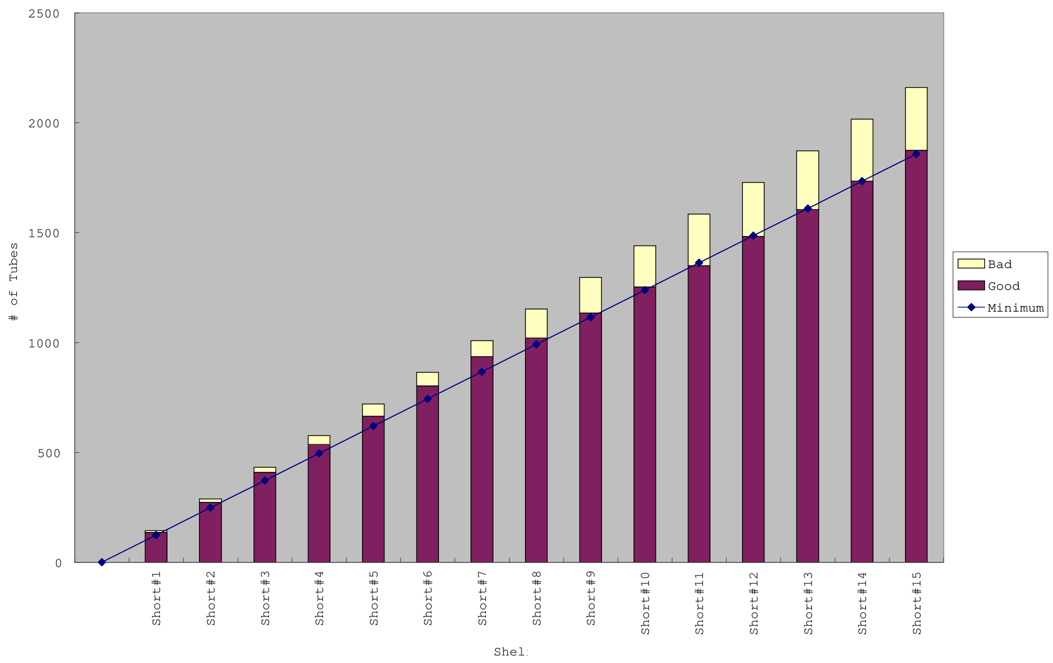
Summary Short

QA Summary (Short Tube



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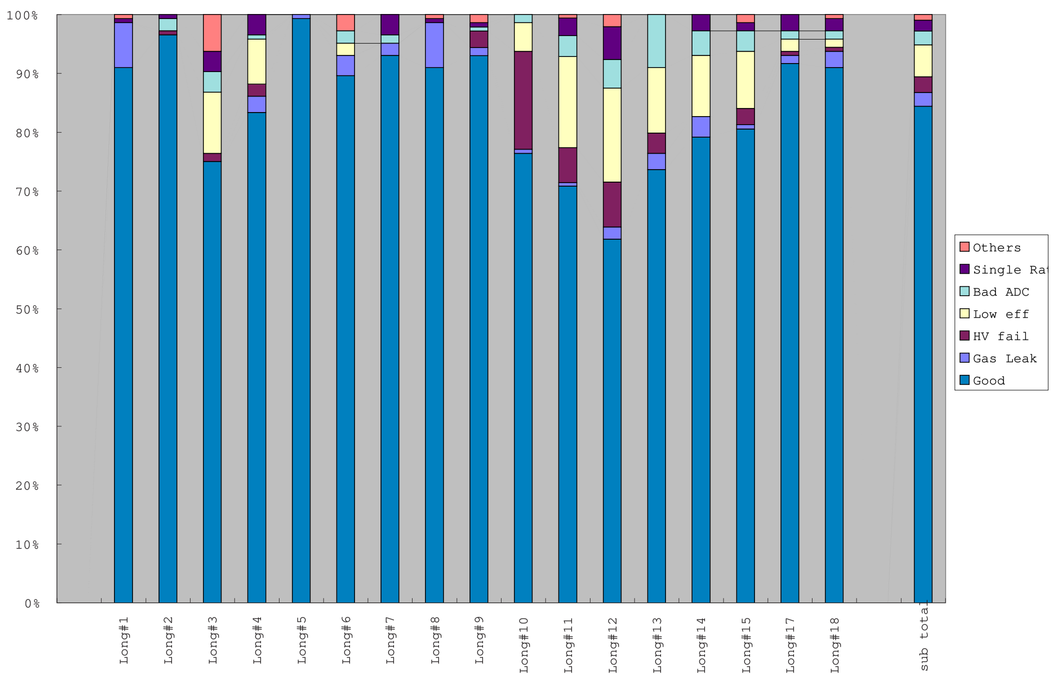
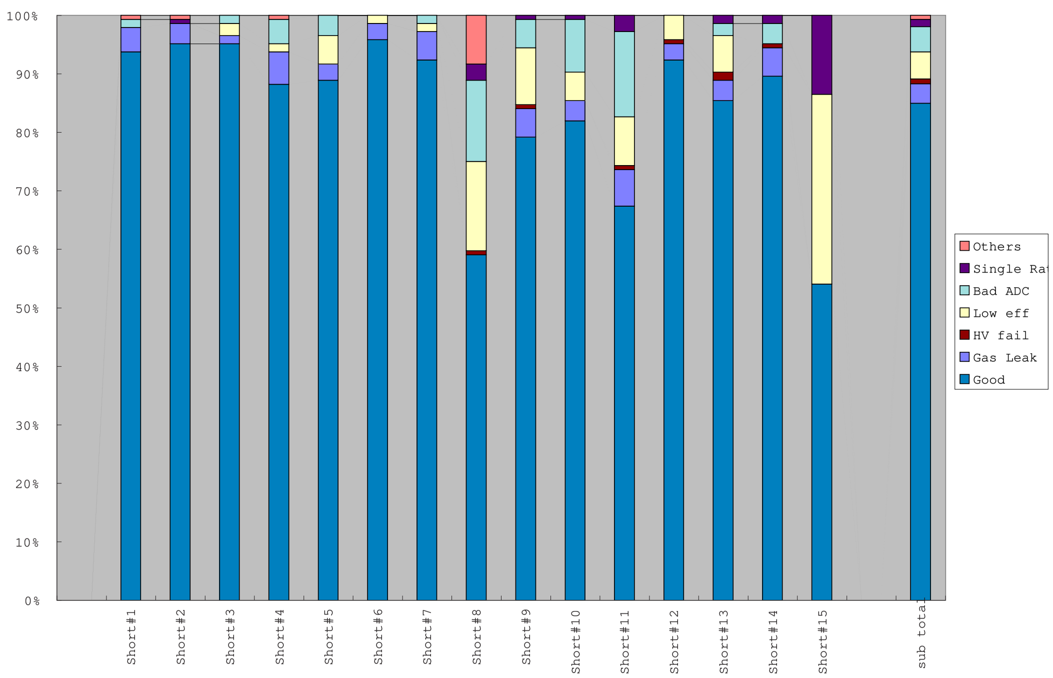
Graph5

QA Summary (Long)



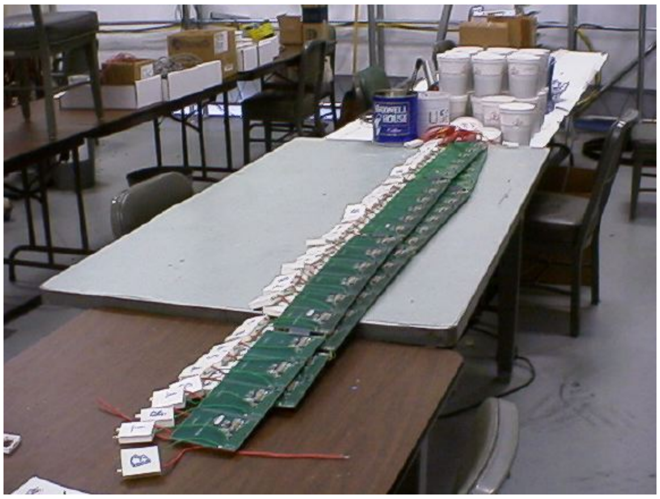
Graph6

QA Summary



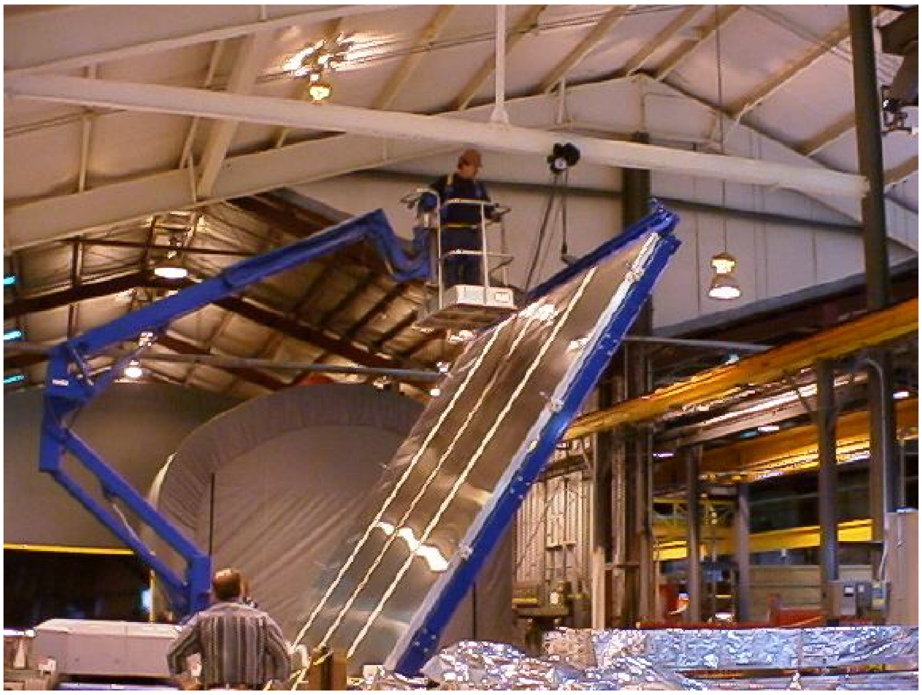
Panel Production

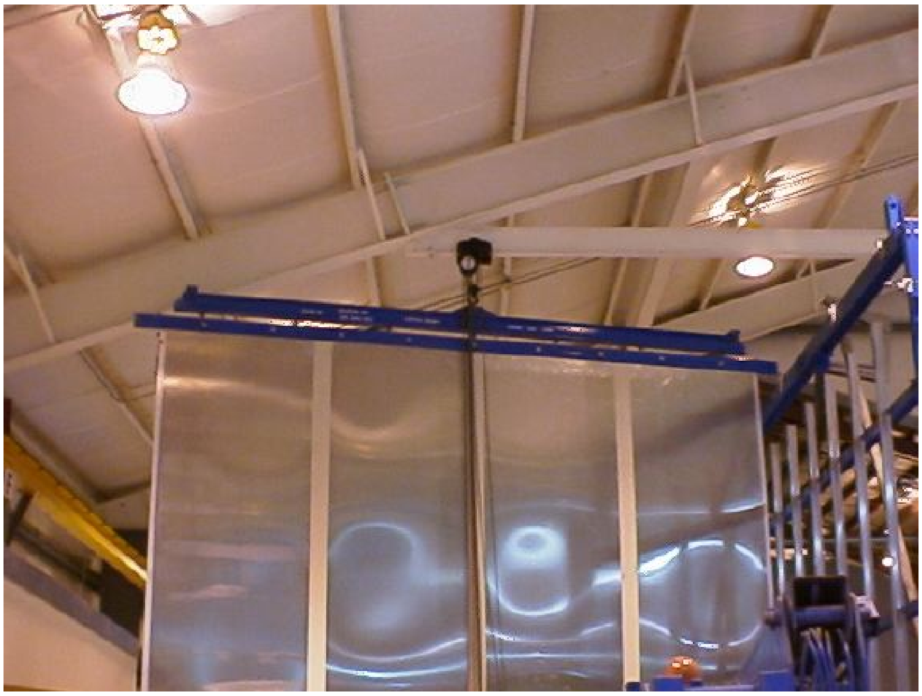
- Preamp, cable, HV connector preparation in advance



- Place tubes, gas connection, preamp installation

Panel Flip





Panel Shipment

- same as flipping panel
- put on a Dolly and move it inside the factory
- Transfer to a trailer
- Rigger transfer the panel to PEH

Small Panel Delivery & Installation Schedule

Small Panel Schedu

Reload cache for latest update.

Legend Explanations

Small Panel #	Planned Port Tokyo	Planned Port NY	Serial No.	Planned Install	Actual Location	Actual Installed
1	04/20/98	05/18/98	E01	06/22/98	E	
2	04/20/98	05/18/98	E02	06/24/98	E	
3	04/20/98	05/18/98	E03	06/24/98	E	
4	04/20/98	05/18/98	E04	06/26/98	E	
5	04/20/98	05/18/98	B01	06/26/98	B	
6	06/02/98	07/03/98	E05	07/22/98	E	
7	06/02/98	07/03/98	E06	07/24/98	E	
8	06/02/98	07/03/98	E07	07/24/98	E	
9	06/02/98	07/03/98	E08	07/26/98	E	
10	06/02/98	07/03/98	B02	07/26/98	B	
11	06/17/98	07/13/98	E09	07/31/98	E	
12	06/17/98	07/13/98	E10	08/04/98	E	
13	06/17/98	07/13/98	B03	08/04/98	B	
14	06/17/98	07/13/98	B04	08/06/98	B	
15	06/17/98	07/13/98	B05	08/06/98	B	
16	07/15/98	08/10/98	B06	08/26/98	B	
17	07/15/98	08/10/98	B07	08/26/98	B	
18	07/15/98	08/10/98	B08	08/28/98	B	
19	07/15/98	08/10/98	B09	08/28/98	B	
20	07/15/98	08/10/98	B10	09/02/98	B	

Legend Explanations:

"Actual Location" is three characters indicating installed position: [AR
Small Panel Letters = B, E:

A	B	C
D	E	F

View From IP

Explanation of nomenclature.
Drawing of gaps.

Last update 5/21/98 by Ken Read.

Large Panel Production & Installation Schedule

1998 N 6 20 œ y j œ sched_large.html Page:

Large Panel Schedule

Reload cache for latest update.

Legend Explanations

Large Panel Schedule

Large Panel #	Table	Planned Side 1	Planned Side 2	Actual Side 1	Actual Side 2	Serial Number	Planned Install	Actual Location	Actual Installed
1	1	04/21/98	04/27/98	03/20/98	04/08/98	A01	04/14/98	N2A	05/04/98
2	3	04/24/98	04/30/98	04/06/98	04/24/98	A02	04/28/98	N3A	04/30/98
3	2	04/28/98	05/04/98	04/09/98	04/25/98	A03	04/30/98	N1A	05/07/98
4	4	05/02/98	05/08/98	05/06/98	05/09/98	D01	05/29/98	N5D	06/03/98
5	3	05/04/98	05/09/98	05/05/98	05/12/98	A04	05/14/98	N5A	05/14/98
6	1	05/09/98	05/15/98	05/12/98	05/15/98	A05	05/18/98	N4A	05/18/98
7	2	05/12/98	05/16/98	05/14/98	05/19/98	A06	05/20/98	S1C	05/20/98
8	3	05/16/98	05/23/98	05/22/98	05/25/98	A07	05/27/98	S2C	05/28/98
9	1	05/18/98	05/26/98	05/24/98	05/28/98	A08	06/01/98	S3C	06/09/98
10	2	05/23/98	05/29/98	05/26/98	06/03/98	A09	06/03/98	S4C	06/11/98
11	3	05/24/98	05/29/98	06/03/98	06/10/98	D02	06/05/98	N2D	06/19/98
12	4	05/30/98	06/05/98	06/15/98	06/19/98	A10	06/09/98	S5C	
13	1	06/02/98	06/09/98	06/17/98	06/22/98	D03	06/11/98		
14	2	06/06/98	06/12/98			D04	06/16/98		
15	3	06/07/98	06/12/98			D05	06/18/98		
16		06/13/98	06/19/98				06/23/98		
17		06/16/98	06/23/98				06/25/98		
18		06/19/98	06/26/98				06/30/98		
19		06/21/98	06/26/98				07/02/98		
20		06/27/98	07/07/98				07/07/98		
21		06/30/98	07/08/98				07/09/98		
22		07/07/98	07/13/98				07/14/98		
23		07/08/98	07/13/98				07/16/98		
24		07/14/98	07/18/98				07/21/98		
25		07/16/98	07/22/98				07/23/98		
26		07/20/98	07/25/98				07/28/98		
27		07/21/98	07/25/98				07/30/98		
28		07/27/98	08/01/98				08/04/98		
29		07/29/98	08/04/98				08/06/98		
30		08/02/98	08/07/98				08/11/98		
31		08/03/98	08/08/98				08/13/98		
32		08/09/98	08/15/98				08/18/98		
33		08/12/98	08/18/98				08/20/98		
34		08/15/98	08/21/98				08/25/98		
35		08/17/98	08/22/98				08/27/98		
36		08/22/98	08/29/98				09/01/98		
37		08/25/98	08/31/98				09/03/98		
38		08/30/98	09/04/98				09/08/98		
39		08/31/98	09/05/98				09/10/98		
40		09/06/98	09/11/98				09/14/98		

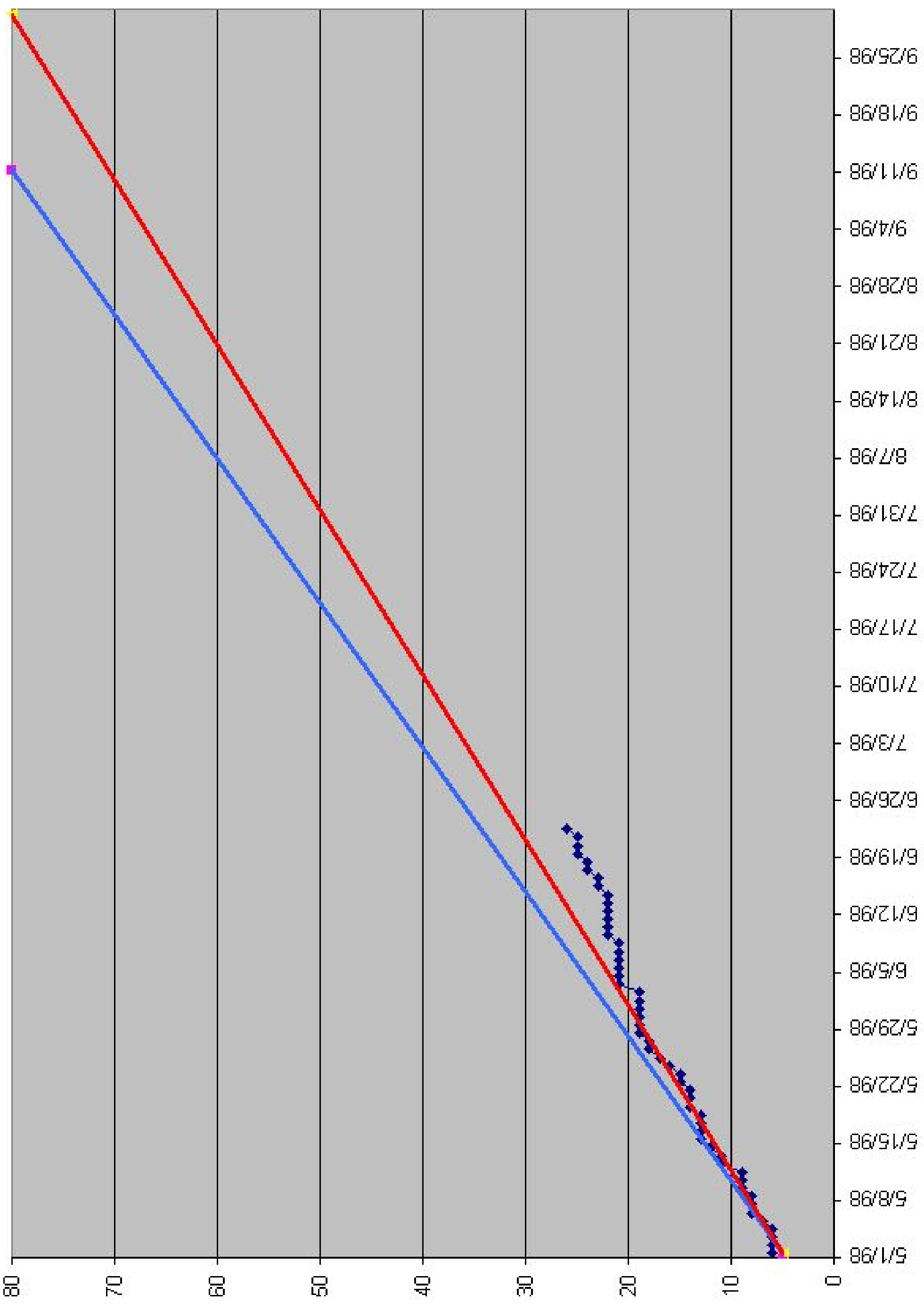
Legend Explanations:

"Planned Side" refers to scheduled date of *completion* half of a large panel.
"Actual Side" refers to actual date of *completion* half of a large panel.
"Actual Location" is three characters indicating installed position: [ARM: N/S][GAP: 1-5][PA
Large Panel Letters = A, C, D, F:

A	B	C
D	E	F

http://www.rhic.bnl.gov/phenix/WWW/muon/muid/muid/sched/sched_large.html

Large Panel Progress Chart



Small Problems

Concerns

- Lower panel installation
  - when?
  - cam follower problem — during 1st lower panel installation
- Leg anchor came out
  - when?
  - Table#2 was out of service
  - Electric Chain hoists don't margin...
  - It will be fixed soon (by putting adhesive)
- Parts
  - Enough GOOD Iarocci Tube?
    1000 additional delivery under planning
  - Cover Plate Sheets ... need to be counted
  - HV connectors ... 3000 missing?
  - Man Power after summer

Installation Schedule

Panel QA at PEH

Other than MuID Mechanics?

MuID Status Summary

- 20 Small panels production almost completed
  - 5 panels already at BNL
  - 5+5 panels on the sea and the last 5 panels to be shipped soon
- 11 Large panels already installed at PEH
  - 9 upper panels and 2 lower panels
- Tube QA: close to the halfway
  - 18 Long and 15 Short tube shelves completed