Fermilab

Master Planning Task Force

July 19, 2011

Members

A	Pier Oddone	**A**	Bruce Chrisman	**A**	Steve Holmes	**P**	Greg Bock
A	Vicky White	**A**	Bob Kephart	**A**	Giorgio Apollinari	**P**	Mike Lindgren
A	Roger Dixon	**A**	Steve Wiesenthal	**P**	Randy Ortgiesen	**P**	Young-Kee Kim
A	Patricia McBride	**A**	Paul Czarapata	**P**	Peter Garbincius	**P**	Steve Dixon
A	Stuart Henderson						

Guests

G. VanZandbergen, C. Federowicz, R. Rameika, C. James, D. Bogert, C. Conger, R. Stanek, K. Yurkewicz, M. Bolinger, P. Carolan, P. Philip, E. Gottschalk, A. Harris,

A. U.S./India Discovery Science Agreement

It was noted that the U.S. Department of Energy and India's Department of Atomic Energy signed an Implementing Agreement on Discovery Science earlier in the week.

B. LAr Test Facility

G. Van Zandbergen (GVZ) and C. Federowicz presented the latest scheme for the Liquid Argon Test Facility (LArTF) including the architectural appearance. (presentation is attached). The following specific items were discussed:

1. The goal of the General Plant Project (GPP) is to award construction later this calendar year in order to be ready for the installation of planned experiments;
2. P. Garbincius suggested that the drawings indicate the Booster Neutrino beamline to better orientate the viewer;
3. An architectural objective of the LArTF design was to take cues from the existing MINOS Service Building, MiniBooNE Detector Enclosure and the NOvA Near Detector Surface Building. These cues included the circular massing, common materials such as brick and general arrangement. This was done to unify the site;
4. The support equipment (generators, transformers, air switches, etc..) are intended to be visible on the exterior rather than hidden. This is thought to be better aligned with the Wilson vision that support equipment is part of the science and should be visible. The arrange will reflect the circular scheme;
5. The support equipment will utilize the full range of the Fermilab color palette. This is intended to recall the original desire during the development of the lab, rather than the oft-used Marlin Blue;
6. It was noted that the Computer Room is not a data center, but is intended to house data acquisition equipment. This space will be accessible during operation of the detector;
7. There was concern over the possible addition of shielding blocks after the initial construction. This shielding is thought to be needed to range out low energy cosmic rays and could be barite. R. Rameika noted that the initial running would occur without any additional shielding. The concern expressed was that these blocks detract from the strong

circular scheme. It was recommended that the circular exterior walls could be extended upward the full height during the initial construction and the shielding could be added within this space. It was thought that this would make the installation of the shielding easier in the future;

8. The design status of the LArTF shows that the project is ~95% complete. The remaining schedule for the design work is:
    a. 2-3 week Comment and Compliance Review;
    b. Construction documents complete in August 2011;
    c. Issued for proposals in September 2011;
    d. Award construction in October 2011;
9. The schedule duration was determined by D. Bogert based on a photo review of the construction of the MiniBooNE detector enclosure;
10. It was noted that currently funding is uncertain. The construction documents should be issued with a "funding contingency" clause.

R. Rameika presented the overview of the MicroBooNE project (presentation is attached). The following specific items were discussed:

1. It was noted that this facility will be utilized by experiments other than MicroBooNE and as such is an independent facility;
2. Three (3) items drive the schedule for the MicroBooNE project:
    a. A facility that can house the detector;
    b. Procurement of the cryogenic vessel;
    c. Electronics.
3. Coordination between the LArTF GPP project and the MicroBooNE project is essential;

It was noted that the Master Planning Task Force felt that the design of the LArTF was acceptable and that design should continue, but that the issue of the shielding needed further study. Y. Kee-Kim noted that the design needed to be reviewed by P. Oddone.

C. Process for Naming Projects and Buildings

K. Yurkewicz expressed a concern that the naming of projects and building can be inconsistent and confusing. After discussion, it was felt that there was a desire for a single body that selects names. At this time, no one body was identified for this purpose and it was felt that addition discussion is required.

D. Action Items from This Meeting

1. Follow up with shielding design for LArTF;
2. Follow up with P. Oddone with design approach for LArTF;

E. Previous Action Items

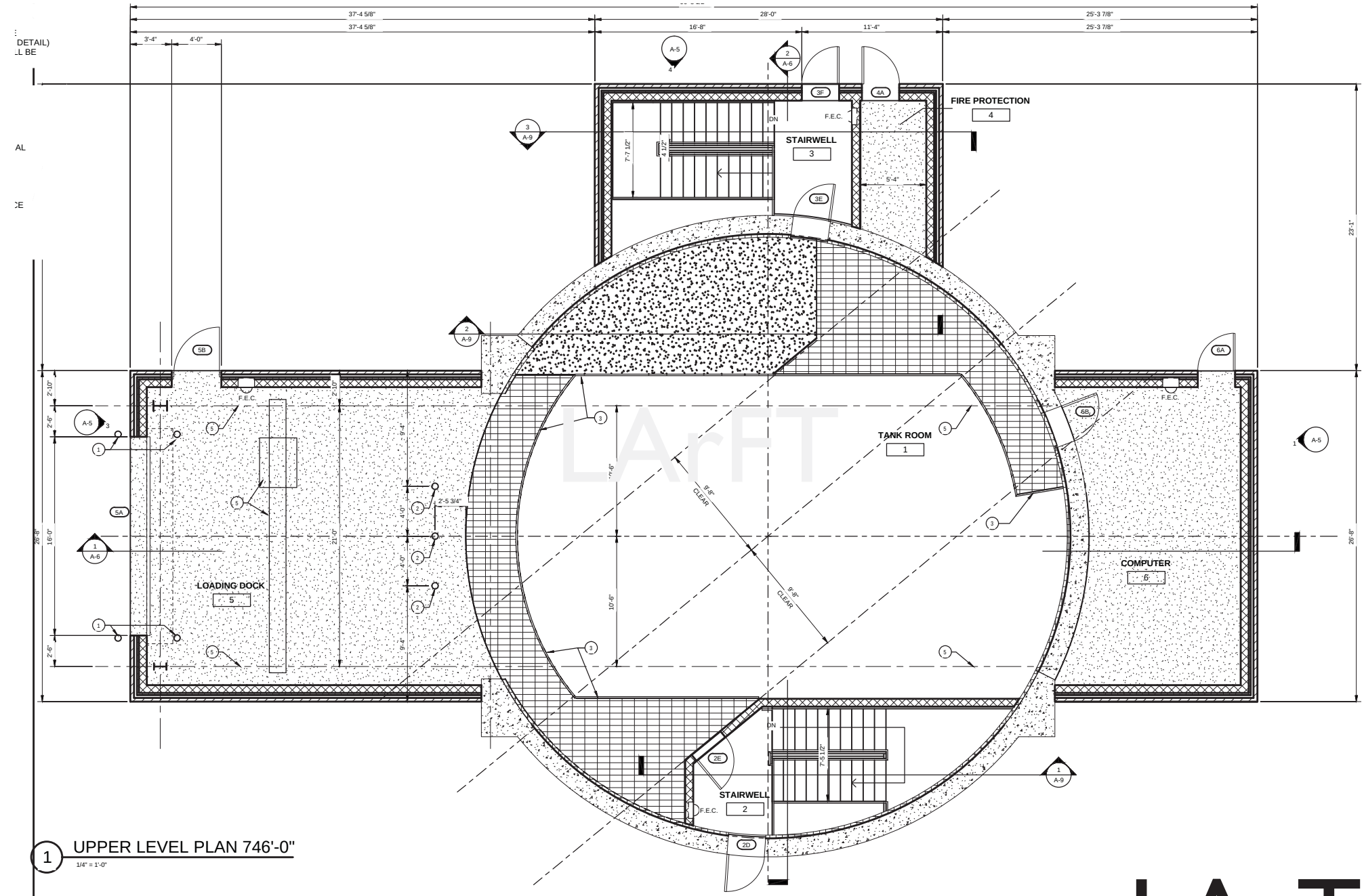
1. IARC Employee Entry. Decision needed after discussions with stakeholders
2. Muon Campus Color Palette: G. Van Zandbergen requested to develop a color/material scheme for the area that includes mu2e and G-2.
3. B. Kephart was requested to assess the environmental, safety and health requirements of the planned/expected use of the existing CDF building and their impact on visitors.
4. Decision on landlord of IARC.

F. Next Meeting

1. Agenda for the next meeting should include Recommendations from Mission Readiness Review by R. Ortgiesen which was moved from this meeting.

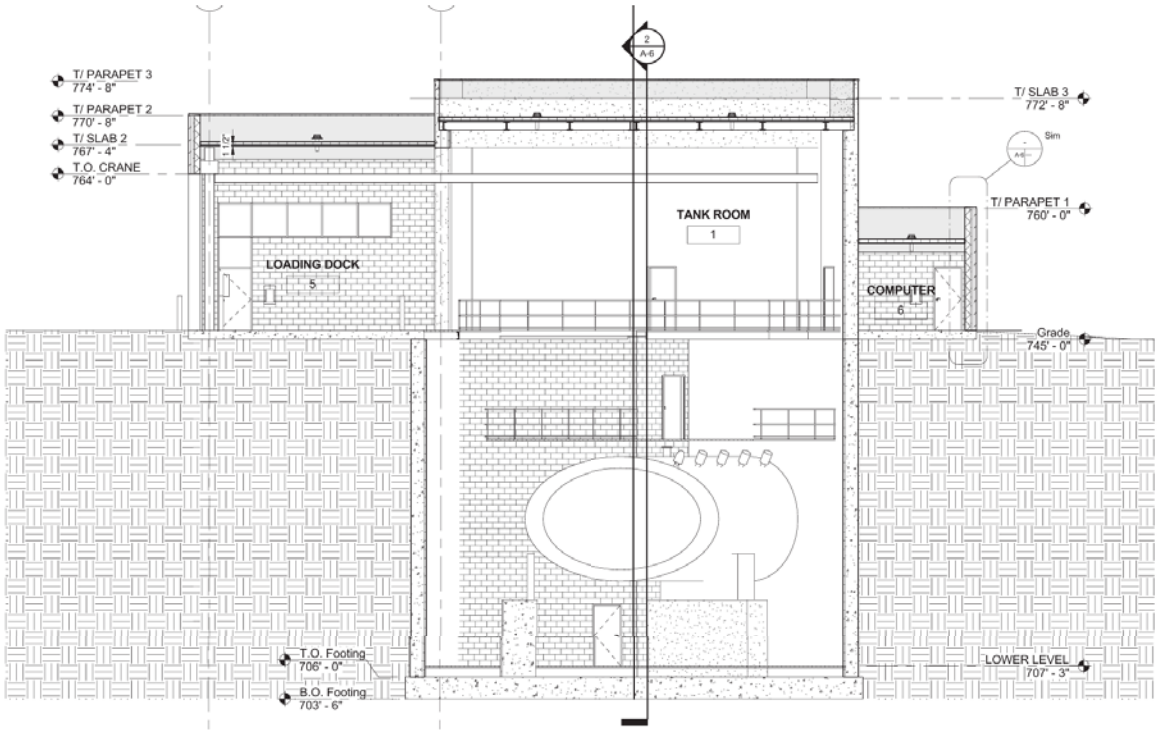

MINOS
NOVA NEAR
DETECTOR
LIQUID ARGONE
TEST FACILITY
LArTF


LArTF



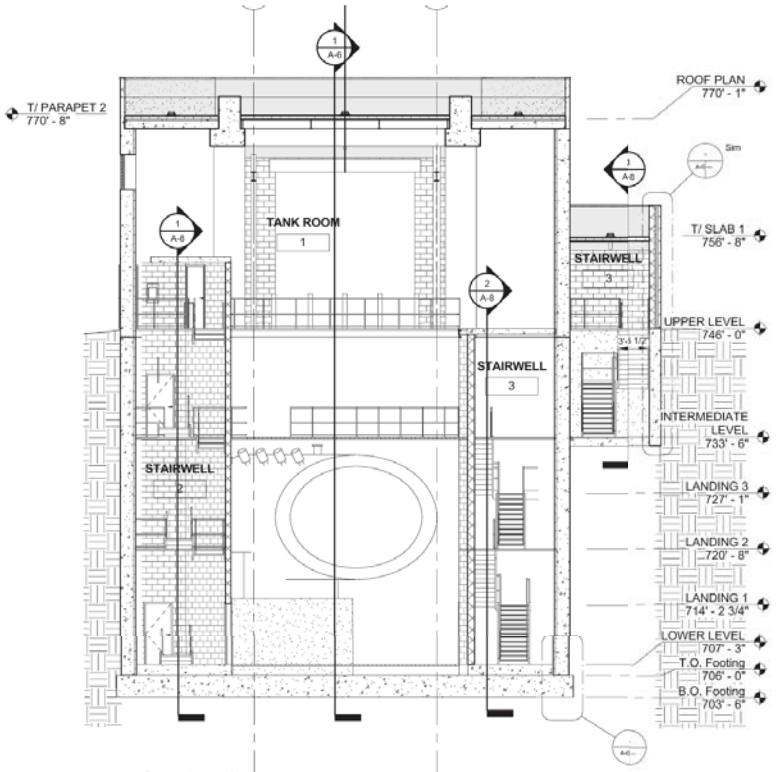
1 UPPER LEVEL PLAN 746'-0"

1/4" = 1'-0"



1 Section 1

1/8" = 1'-0"



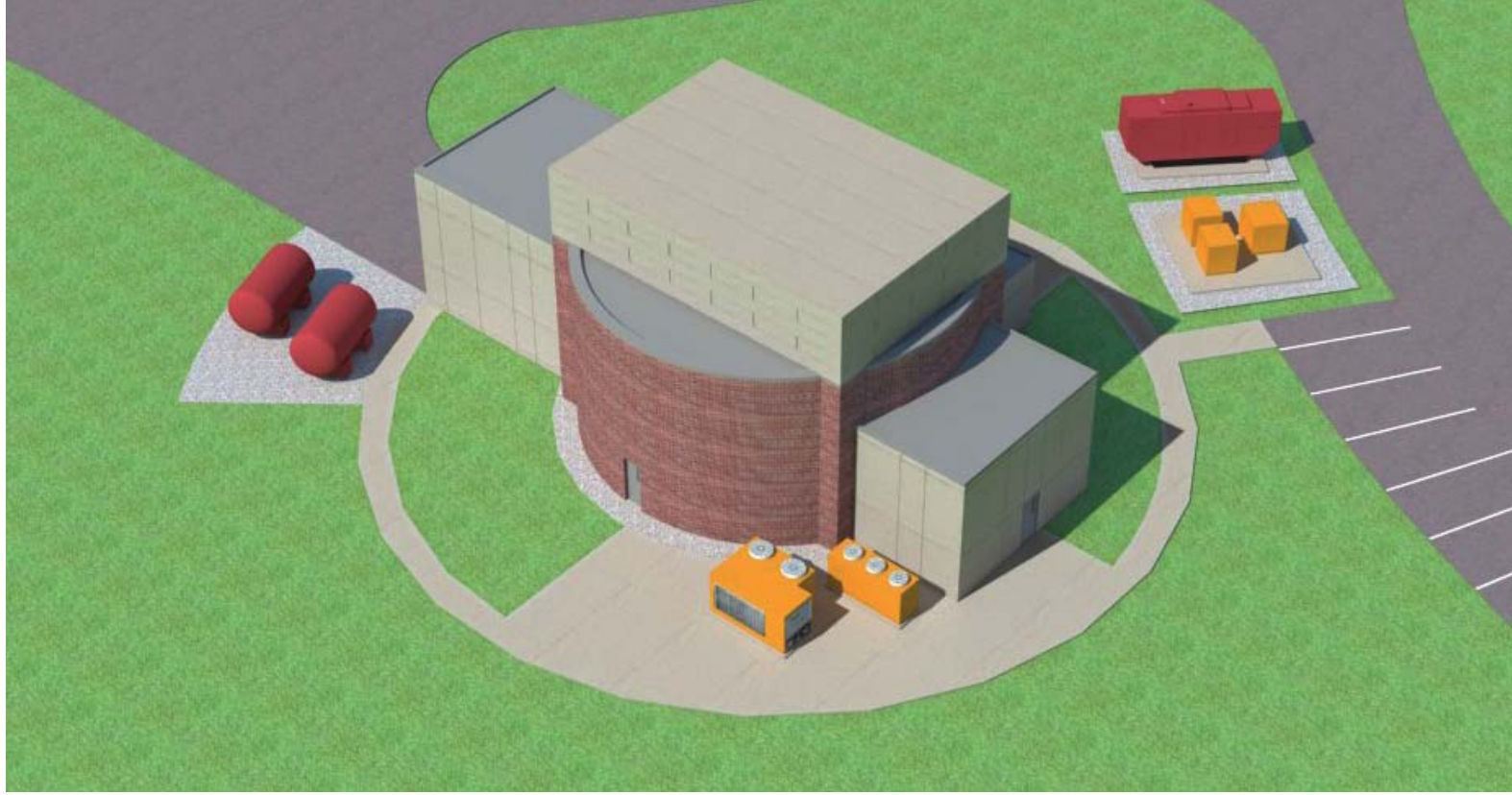
2 Section 2

1/8" = 1'-0"

LArTF

LArTF

LArTF



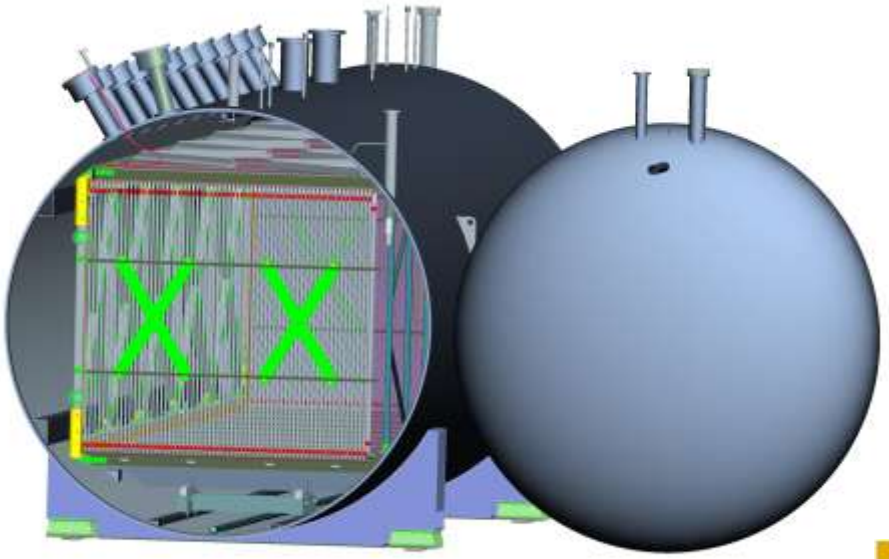
LArTF

LArTF

Slides from MPTF

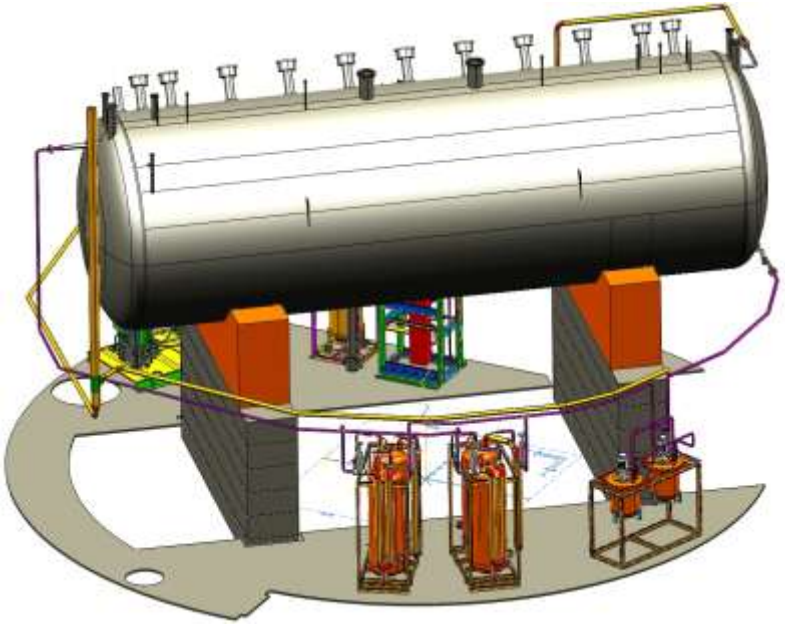
G. Rameika

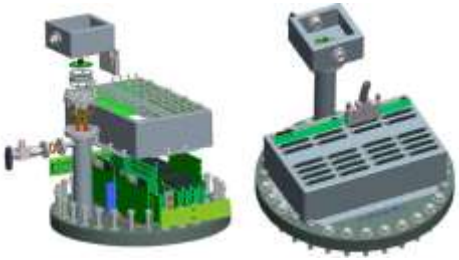
What?



Cryostat containing a TPC and array of PMTs, electronics, cables..

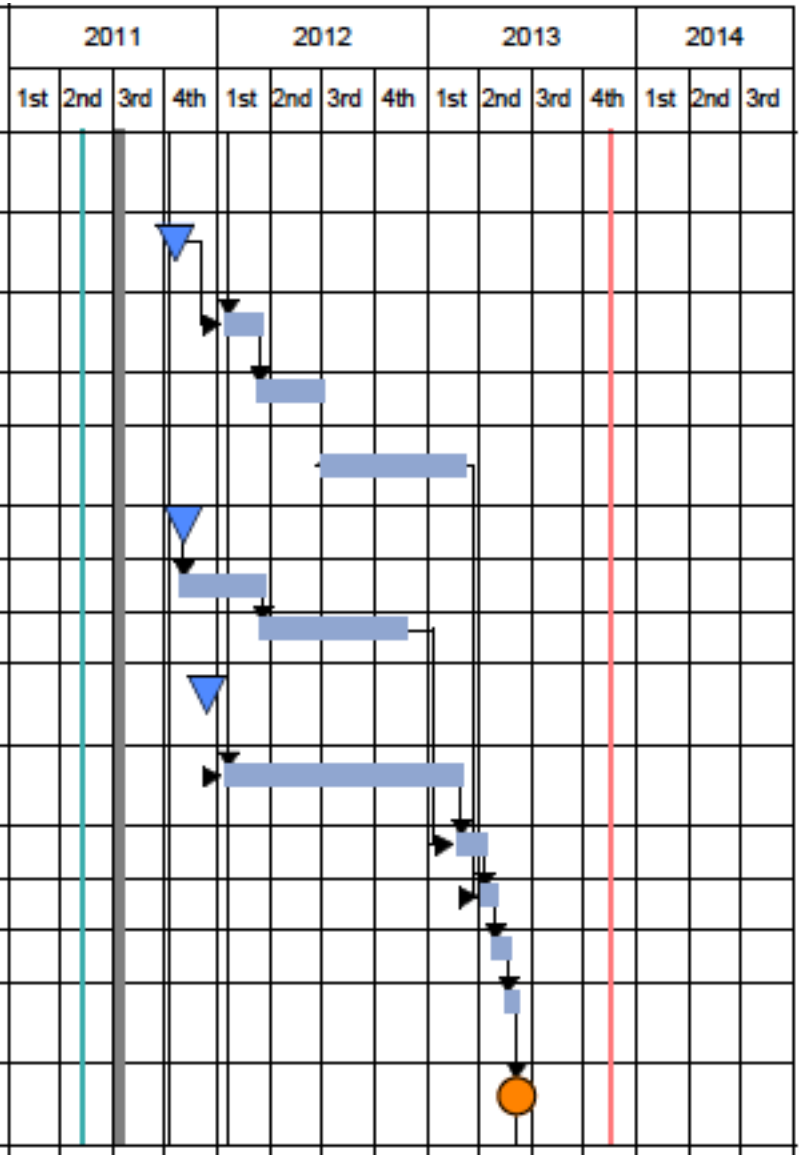
Cryostat installed in enclosure with equipment for cool down, filling and purification



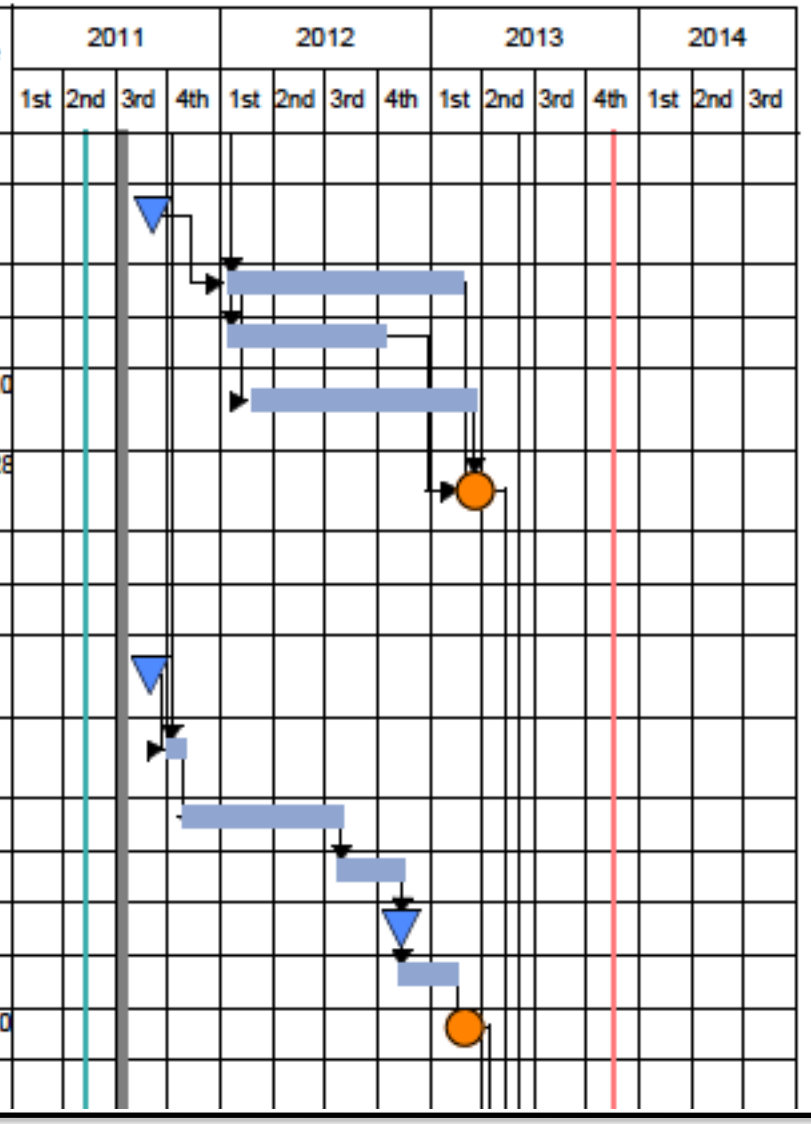


Readout racks and DAQ

	Activity Name	Duration (Work Weeks)	Start Date	Finish Date	Predecessors
8	Detector Fabrication and Assembly				
9	Cryostat Vessel Design Complete	0.00	10/17/11	10/17/11	
10	Post and Award bid package for cryostat	8.00	1/17/12	3/12/12	2, 9
11	Vendor design work	16.00	3/13/12	7/2/12	10
12	Cryostat Fabrication and Delivery	35.30	7/3/12	3/6/13	11
13	TPC Design Complete	0.00	11/1/11	11/1/11	
14	TPC Parts Fabrication	20.00	11/1/11	3/19/12	13
15	TPC Assembly at D0	35.50	3/20/12	11/22/12	14
16	Front end electronics ready for production	0.00	12/15/11	12/15/11	
17	Front-end (cold) electronics production and testing	58.30	1/17/12	2/27/13	2, 16
18	Electronics installed on TPC	6.30	2/27/13	4/11/13	15, 17
19	TPC installed into vessel	2.40	4/12/13	4/29/13	12, 18
20	PMT's installed in vessel	3.00	4/30/13	5/20/13	19
21	Vessel end-cap installed and pressure test	2.00	5/21/13	6/3/13	20
22	Detectors Assembly and Testing Complete	0.00	6/3/13	6/3/13	21



	Activity Name	Duration (Work Weeks)	Start Date	Finish Date	Predecessors
24	Cryogenic System				
25	Long lead bid packages complete	0.00	9/1/11	9/1/11	
26	Procure Heat Exchangers	58.00	1/17/12	2/25/13	2, 25
27	Procure Pumps	38.00	1/17/12	10/8/12	26SS
28	Fabrication , Pre-assembly and Testing	55.00	2/28/12	3/18/13	26SS+6.0
29	Cryogenic system ready for installation	0.00	3/18/13	3/18/13	26, 27, 28
30					
31	Experiment Building				
32	Building design and bid package complete	0.00	8/30/11	8/30/11	
33	Award bid, notice-to-proceed,mobilization	4.00	10/3/11	10/28/11	3, 32
34	Enclosure Construction - part 1	39.00	10/31/11	7/27/12	33
35	Enclosure Construction - part 2	15.00	7/30/12	11/9/12	34
36	B.O. of Enclosure	0.00	11/9/12	11/9/12	35
37	Enclosure Outfitting	14.00	11/12/12	2/15/13	36
38	Enclosure ready for detector	0.00	3/1/13	3/1/13	37FS+2.0
39					



	Activity Name	Duration (Work Weeks)	Start Date	Finish Date	Predecessors	2011				2012				2013				2014		
						1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd
40	Detector & System Installation																			
41	Install vessel	0.55	6/4/13	6/6/13	22, 38															
42	Insulate vessel	5.00	6/6/13	7/11/13	41															
43	Install platform and cable trays	2.00	7/11/13	7/25/13	42															
44	Install and test cryo system	14.00	7/11/13	10/17/13	29, 42															
45	Install and test electronics	6.40	7/25/13	9/9/13	43															
46	Installation and testing complete	0.00	10/17/13	10/17/13	44, 45															
47	ORC for detector	2.00	10/17/13	10/31/13	46															
48	Cryo safetey approval for filling	4.00	10/17/13	11/14/13	46															
49	Project ready for CD4	0.00	11/14/13	11/14/13	47, 48															

With building start in October, Detector assembly drives the installation date;
Installation time is driven by the cryo installation