

Welcome to KEK and Mandate to PAC

1. Budget for 2010
2. Fast extraction facility
3. Slow extraction facility
4. Muon facility at RCS
5. Mandate to this PAC
6. Possible allocation of FX/SX beam time

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JFY 2010 KEK budget

	JFY2009	JFY2010	
• Total Budget	300M\$	295M\$	↑ 1M\$
• J-PARC	65M\$	68M\$	↑ 3M\$
• B Factory	50M\$	45M\$	↓ 5M\$
• Intern. Collab.	10M\$	10M\$	↓ 0.5M\$
• Others			
• ‘KEKB facility Improvement’	0	6M\$	↑ 6M\$

June 2010, 100M\$ (over 3 years) for upgrade of KEKB has been allocated

Budget request for 2011

KEKB-upgrades

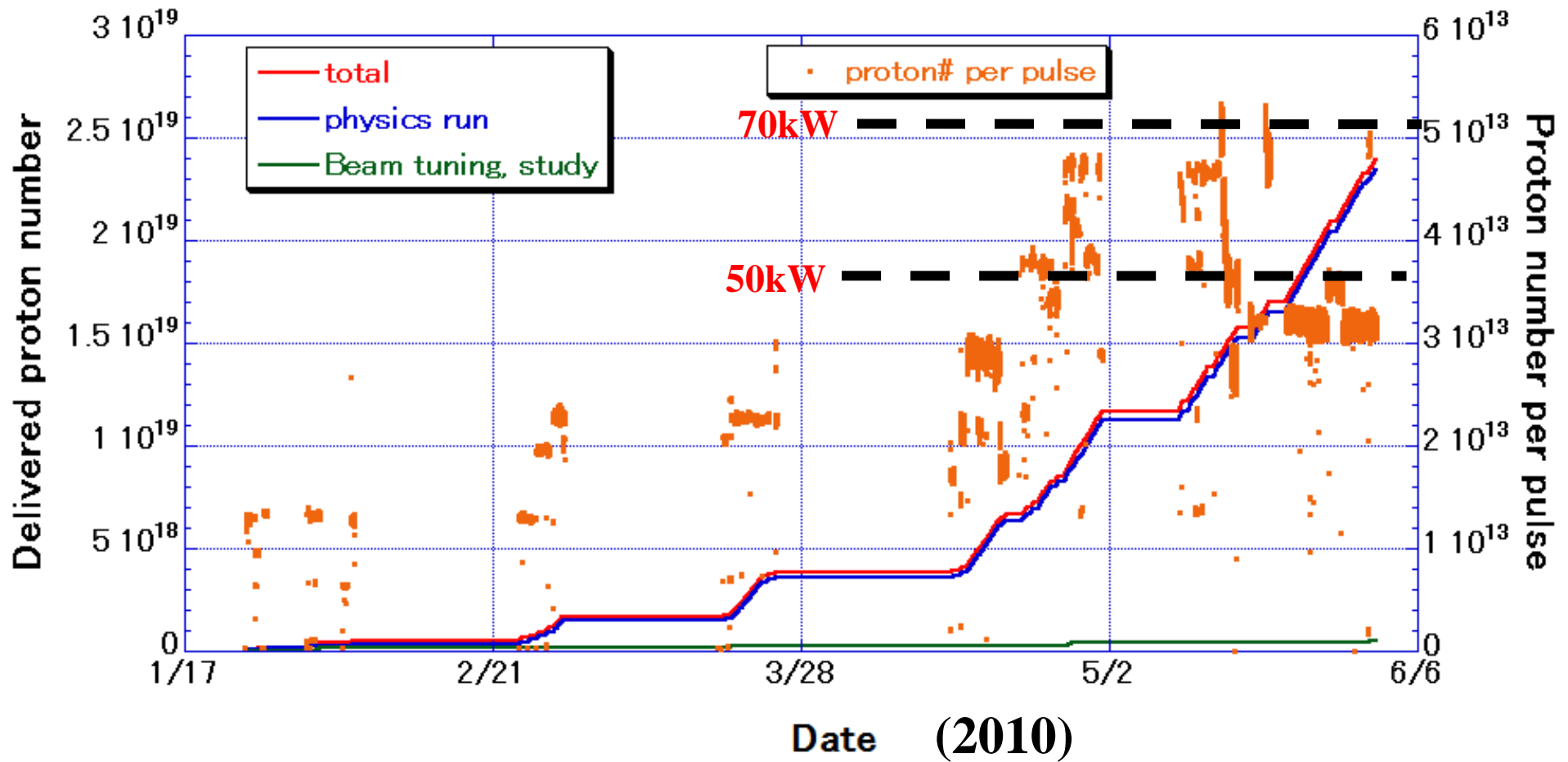
Ultra slow muon beam line at RCS

Improvements of MR

High momentum hadron beam line

Present status of the fast extraction

Started data taking for oscillation!



- **Delivered # of protons: 2.34×10^{19} (Jan-May)**
- **Continuous run @ ~50kW level**
- **Trial upto 100kW done**

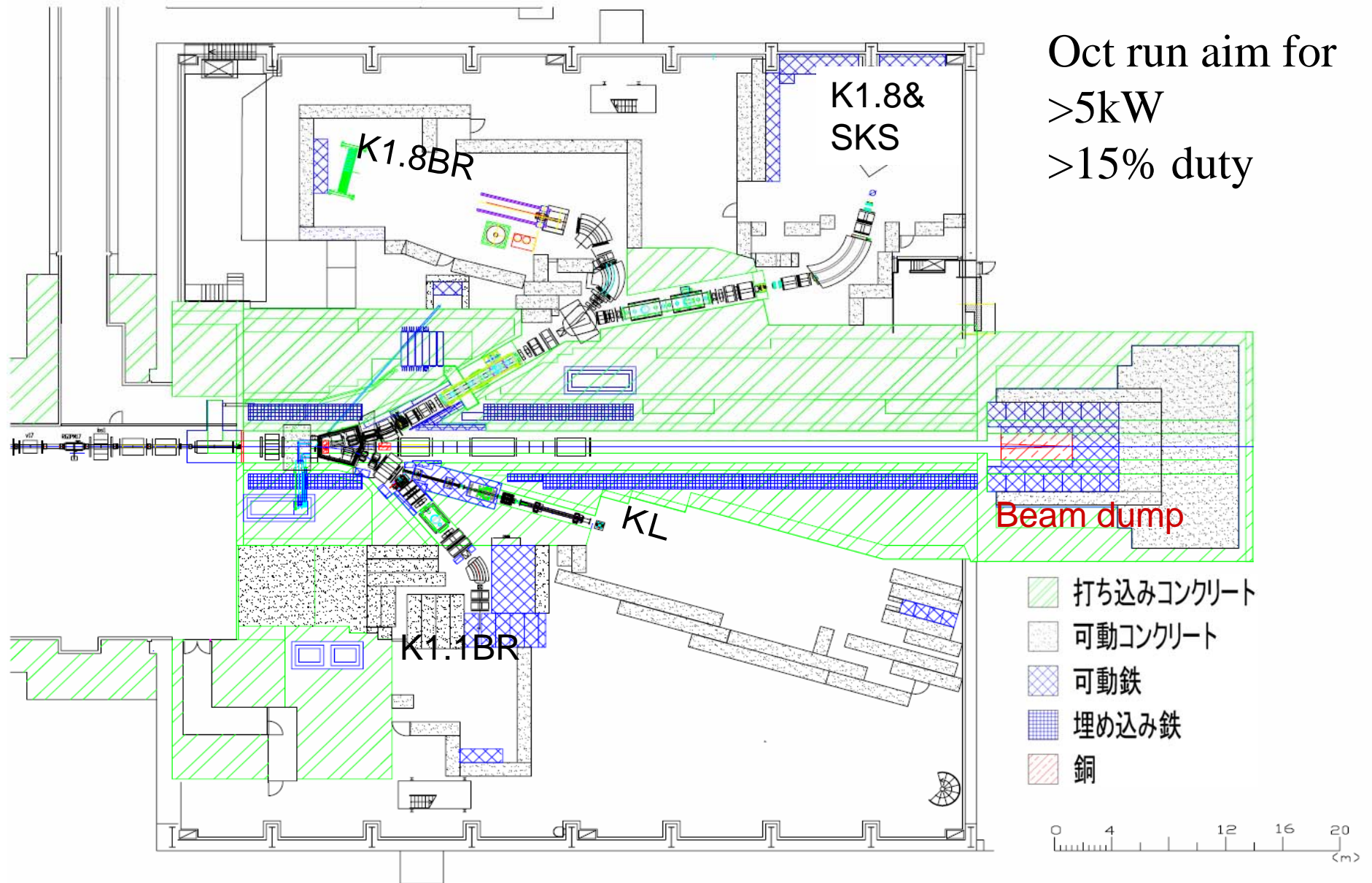
Beam loading in kicker limit the performance
- To be replaced with thermal consideration
- Fast enough rise time for 8 bunches operation

Near future plan

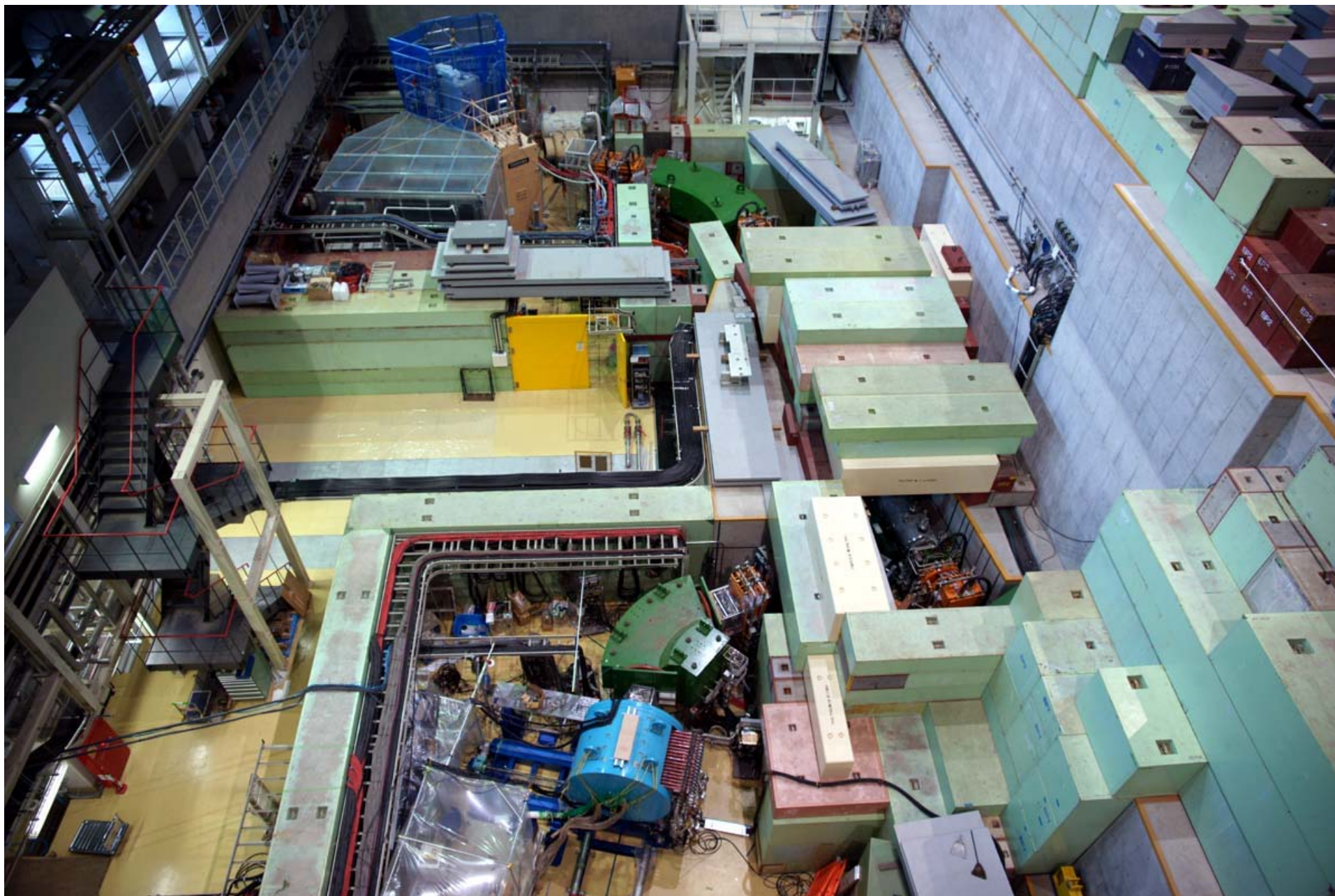
- Until end of June, 2010
 - ~50kW
- Jul – Fall, 2010 (Summer shutdown)
 - New Kicker magnets and power supply installation (6→8bunch)
 - Horn power supply replacement (Old K2K → New!)
 - Remaining ECAL installation
- After Nov. 2010
 - > 100kW toward design power
 - Ultimate beam power before LINAC upgrade?

Status slow extraction facility
'Hadron facility'

Hadron Hall July 2010



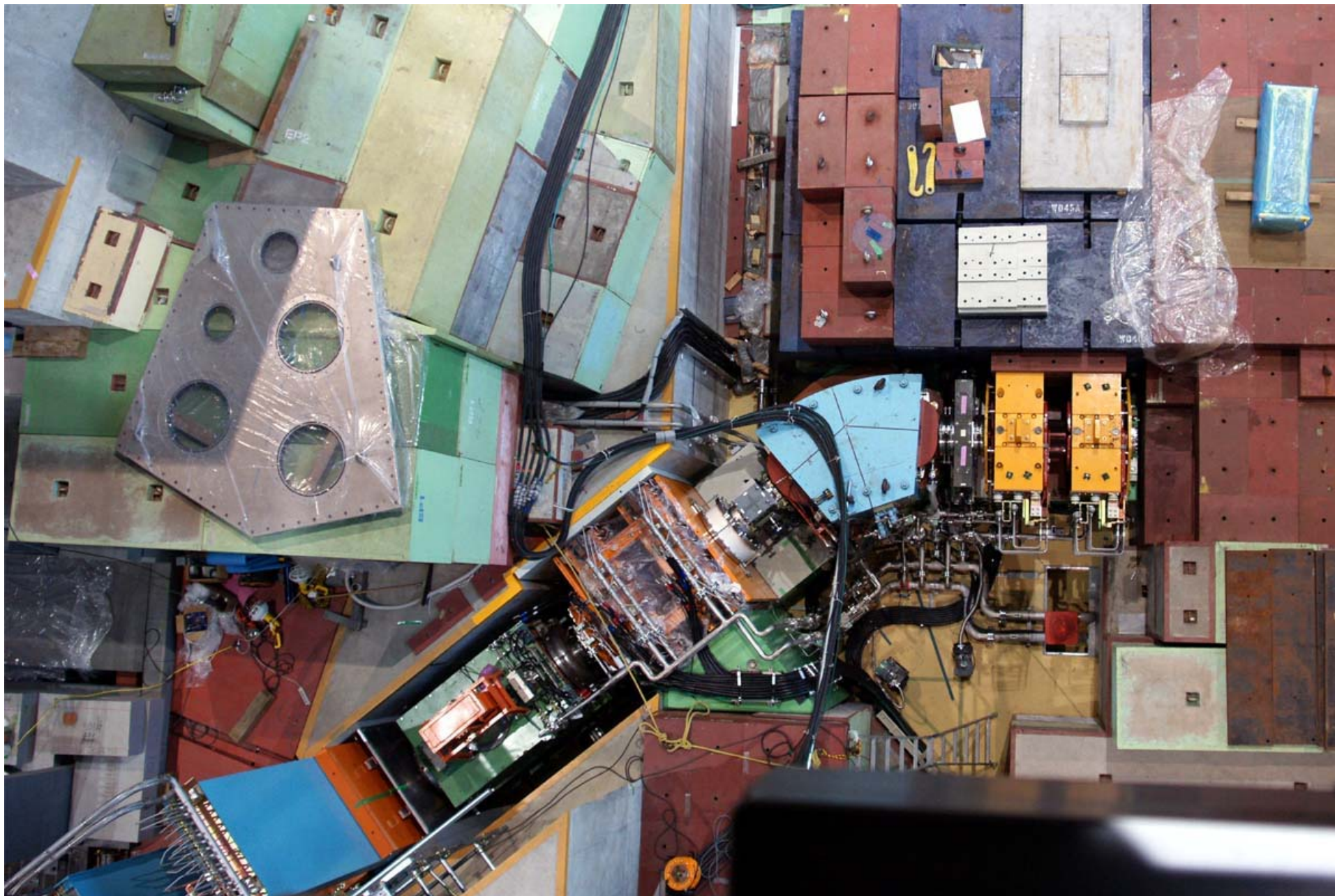
K1.8 & SKS, K1.8BR are ready



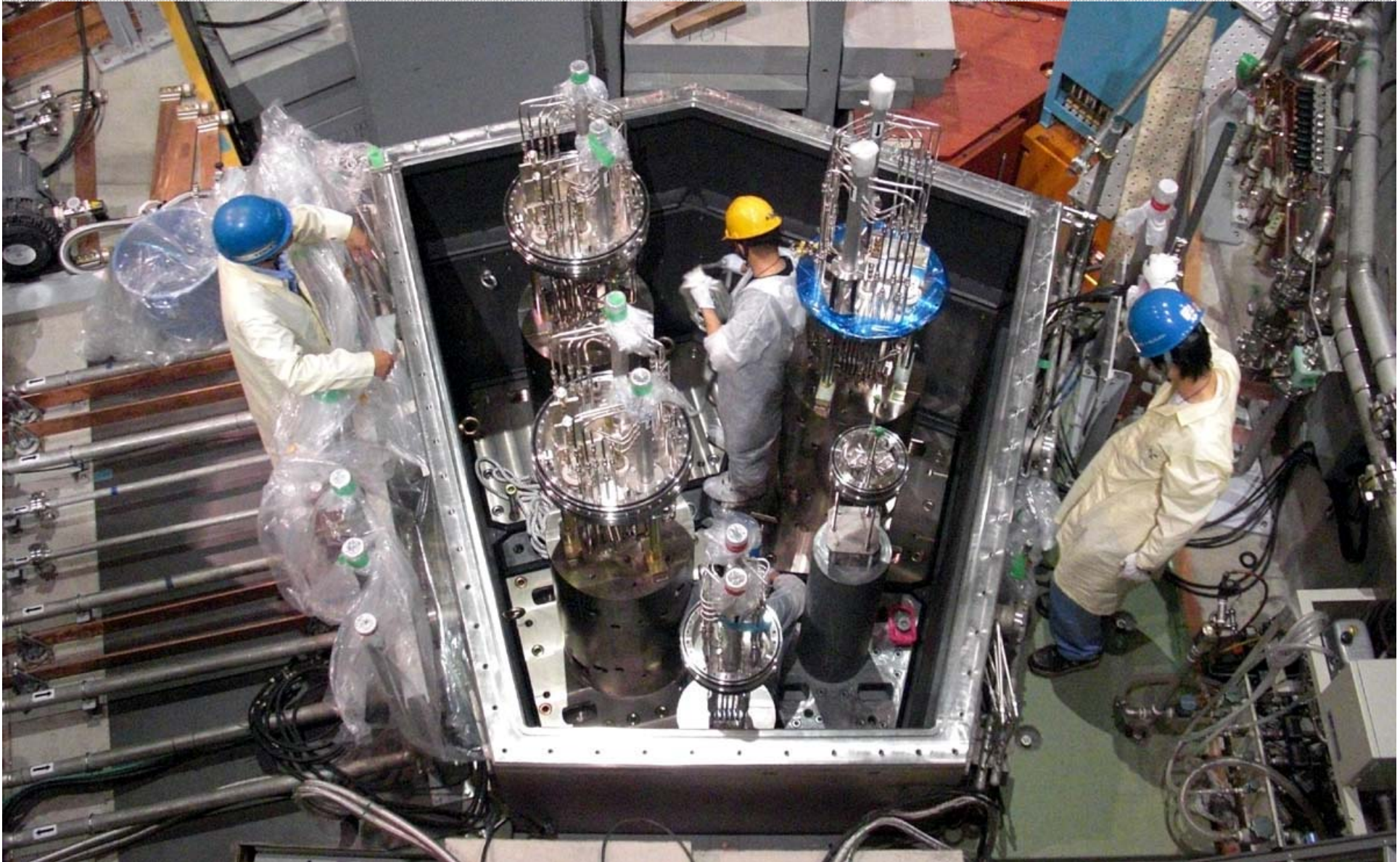
K1.1BR, KL will be ready by fall



K1.1BR being constructed

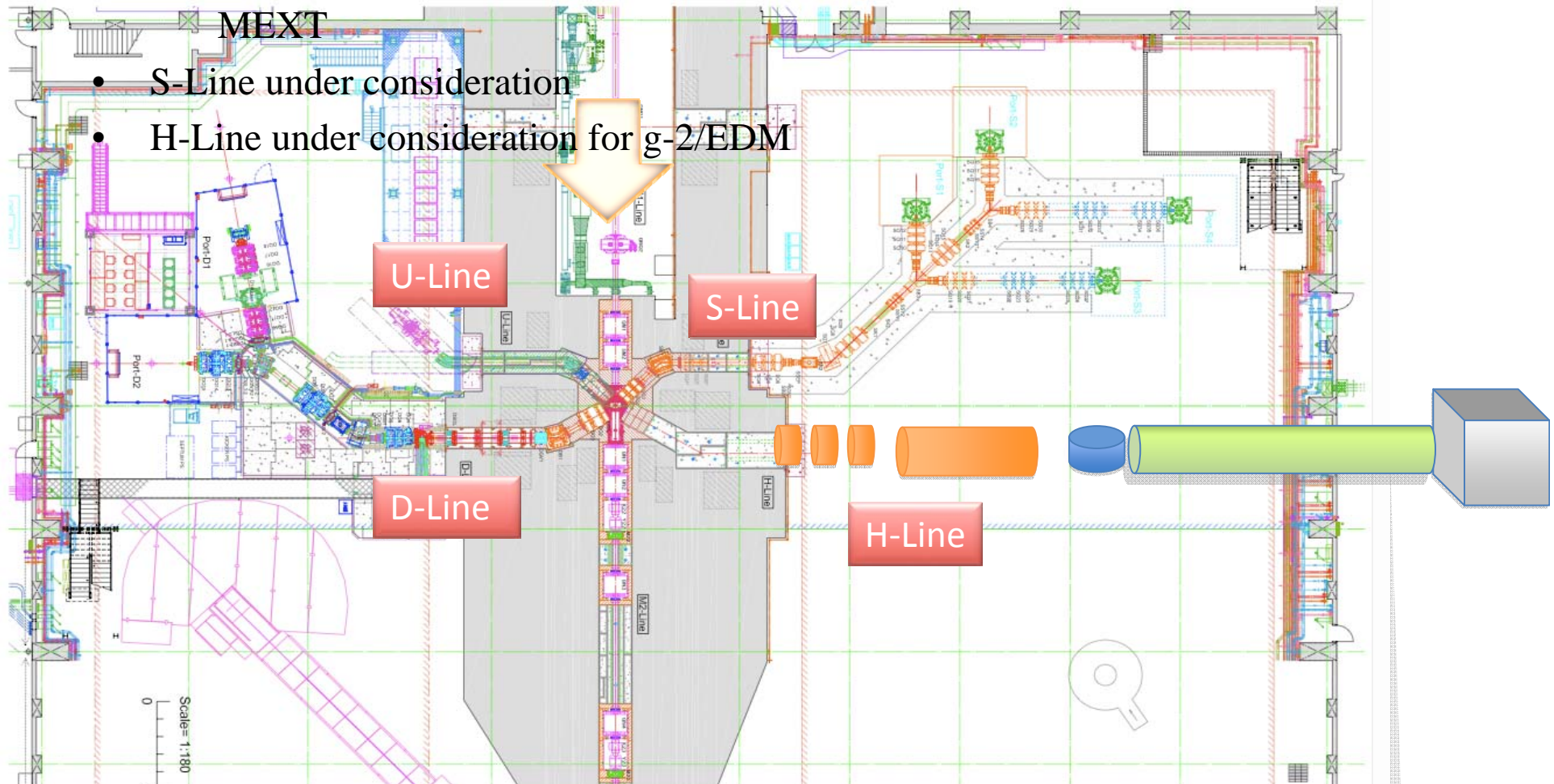


The most upstream region



Muon Facility at MLF

- D-Line completed ; produced the first PRL from J-PARC
- U-Line (Ultra-slow Muon Beam)
 - construction started by discretionary budget by Director General
 - Remaining cost is listed as the high priority item from KEK budget request to



Mandate for this PAC

- Evaluation of the progress of experiments, which use beam in the immediate future
 - Muon task force and COMET (esp., extinction factor measurements)
 - T2K
 - K1.1 BR beam line commissioning
 - P32 (LAr R&D)
 - E19 (Penta quark search) first experiment to run after accelerator commissioning in Oct. 2010
 - E17 (Kaonic $^3\text{He } 3d \rightarrow 2p$ X-rays)
 - E14 (KL $\pi\nu\nu$)

- Seeking second stage approval
 - E27 : Search for a nuclear \bar{K} bound state \bar{K} -pp in the $d(p^+, \bar{K}^+)$ reaction
- New/resubmitted proposals
 - P36 : Measurement of $\Gamma(K \rightarrow e \nu)/\Gamma(K \rightarrow \mu \nu)$
 - P26 : ω mass modification in $A(\pi^-, n) \omega$ reaction
 - P02 : Study of Exotic Multiquark States
 - P29 : Study of in medium mass modification for ϕ meson
- Progress reports
 - P33 : Measurement of Neutron Electric Dipole Moment
 - P34 : Measurement of the Muon $g-2$ and Electric Dipole Moment

Possible beam time allocation

7. RECOMMENDATIONS FOR BEAM TIME ASSIGNMENT FOR THE PERIOD FROM JANUARY, 2010 TO JUNE, 2011

From Jan.10 PAC

Taking these points into account, the following guidelines are recommended.

- The overall priority should go to the T2K experiment and as much beam as possible should be delivered. During this period, slow extracted beam should be scheduled including a run in the month of October 2010 and another one-month run before June 2011. The detailed running scenario for spring 2011 should be decided after seeing the progress of the T2K experiment and the quality of the slow extracted beam.
- As for the beam time sharing between the E17 and E19 experiments, the PAC considers that the E19 has priority to complete the first phase of their program.
- The platinum production target should be used for most of this period unless the KOTO experiment has a special request for short periods of running with the nickel target.
- Close discussions with the accelerator group should be made focusing on increasing the physics beam time by optimizing machine study and maintenance periods during the run.

The situation of the accelerator is rapidly changing so that the PAC will update the recommendation at the following meetings. Feedback and suggestions from the JPNC will be very valuable for assessing the run during this period.

Proposed schedule of fall 2010

JPNC July 12

Plan after 2010 summer shut down

Oct 12- Oct 27	Accelerator study 12 hours/day for 14 days probably not continuous beam
Oct 12 - Oct 28	SX 12 hours /day for 14 days
Nov 4	Accelerator tuning
Nov 4 - Nov 15	SX 24 hours/day for 14 days
Nov 16-	FX one month for SX before June 2011

Constraints :

- Need January FX run for government inspection
- K1.8 SKS need 1 month to be ready for beam
- •bunched SX for extinction measurement (K1.1BR or K1.8BR)

Another constraints of slow extraction

- To accept high intensity beam (~50kW for example), need more work. This requires opening shielding around target region (presently there is no space to do it)
 - Remote maintenance system of various items in the target region, (vacuum frange etc.)
 - water cooled Pt target will be ready to be installed in the summer
- These works are scheduled in the summer 2011
- Want to cool down the area before June
- Want to start the work in May, if possible

- Slow extraction in October 2010 will show us what we expect in near future.
- Fast extraction status
- The best time for the slow extraction in March (to be decided at Jan 2011 PAC and require 2 months notice to be ready)

Possible beam allocation

- 2010
 - mid Oct – mid Nov Accelerator tuning + Slow extraction
 - mid. Nov. – Feb. Fast extraction
- 2011
 - One month slow extraction running out of March to June will
be decided at 2011 Jan. PAC

