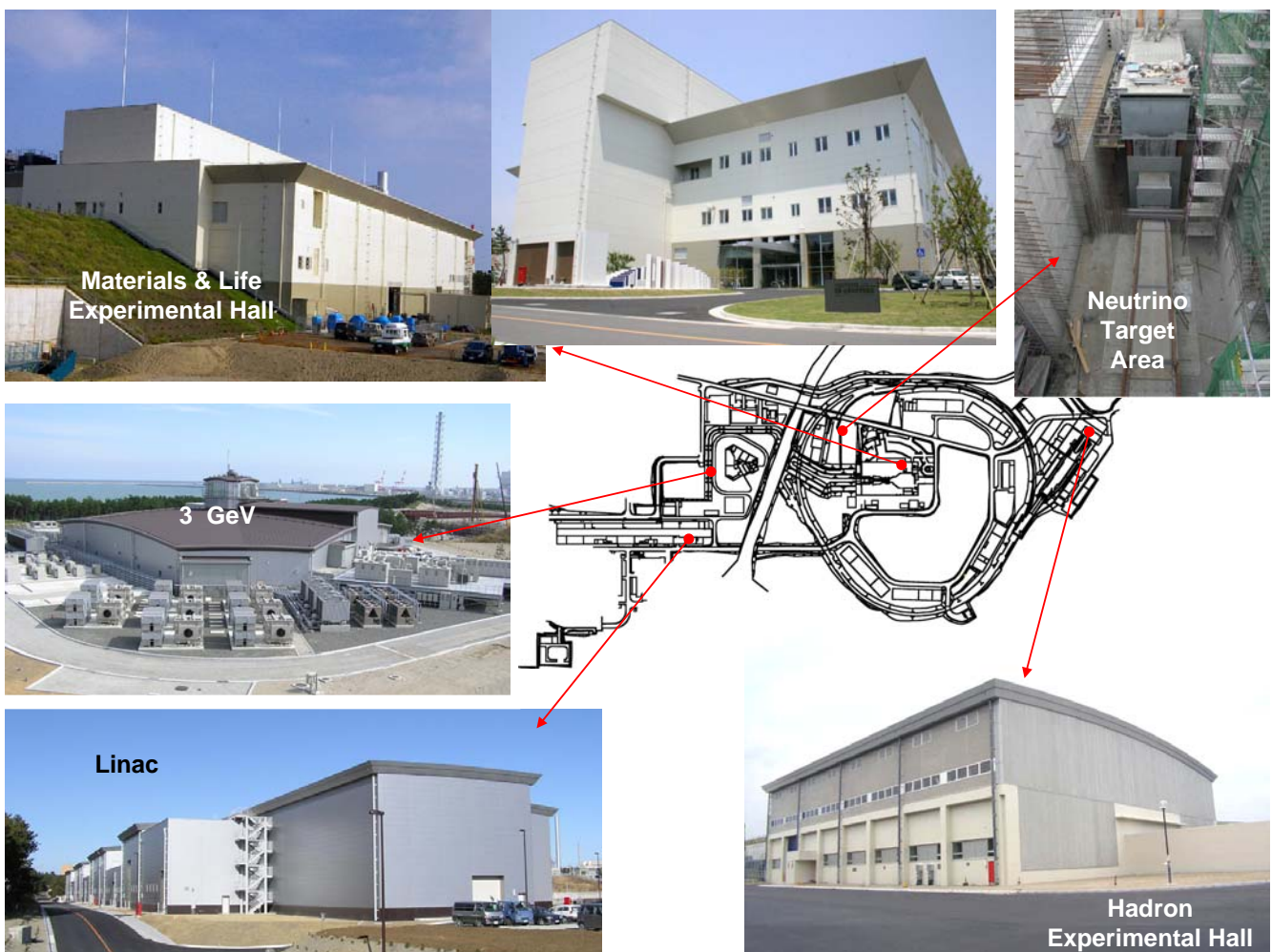


J-PARC Status

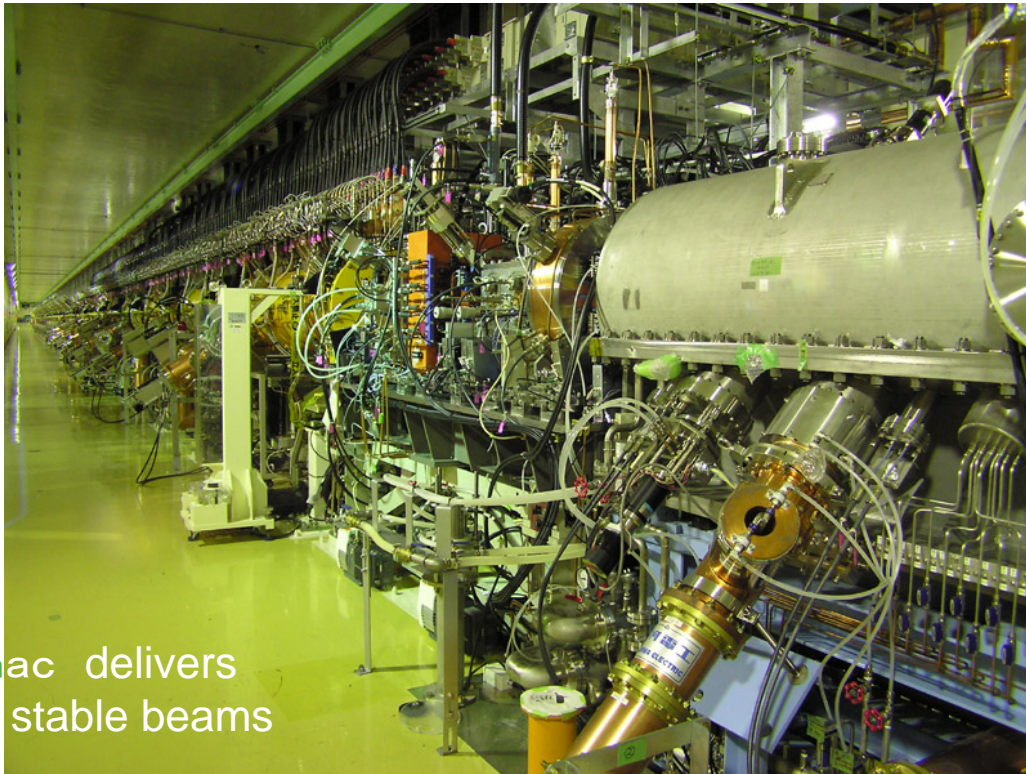
Shoji Nagamiya

Director, J-PARC Center at KEK/JAEA

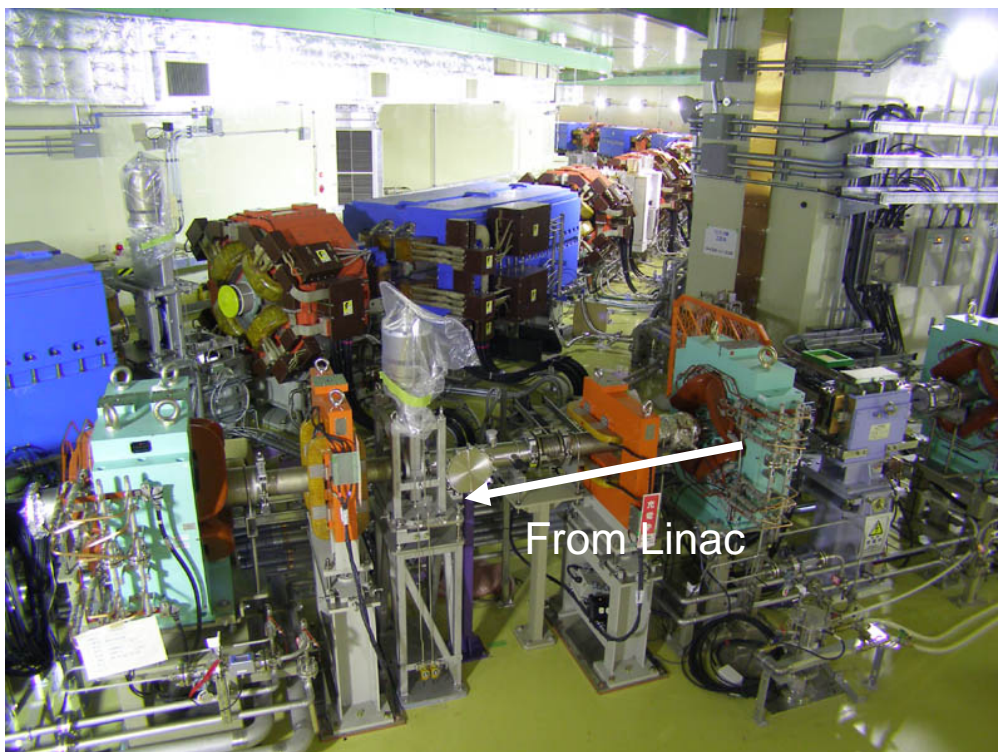
1



Linac delivers
very stable beams



3



4

3 GeV Ring

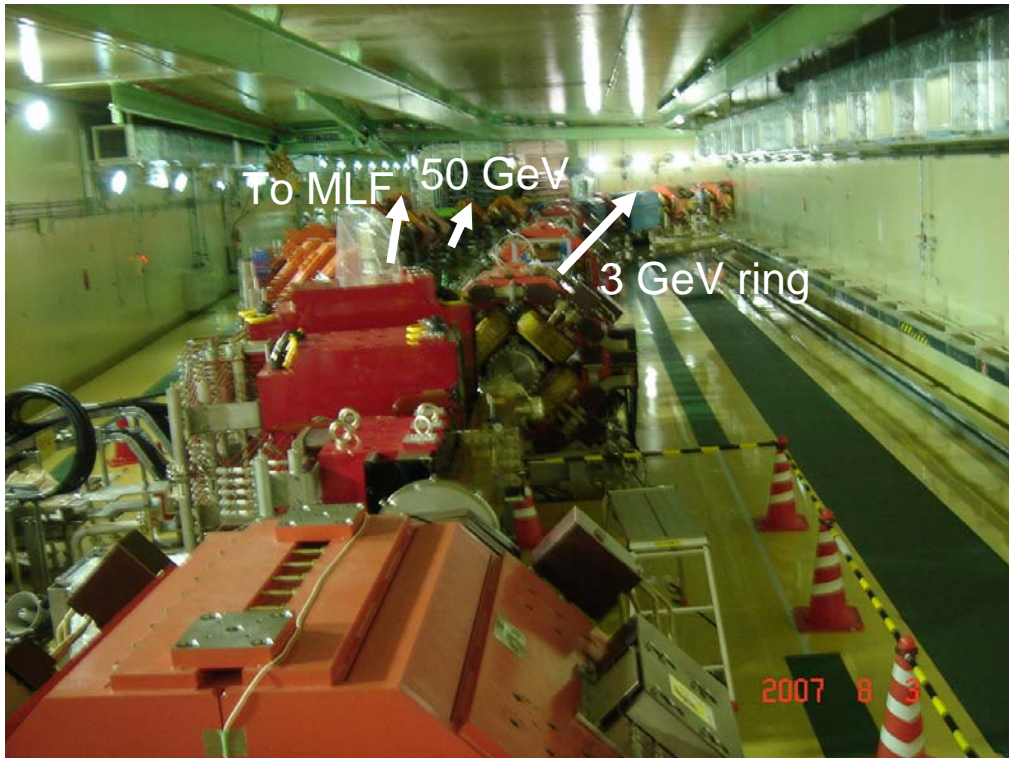


5

3 GeV RF Area



6

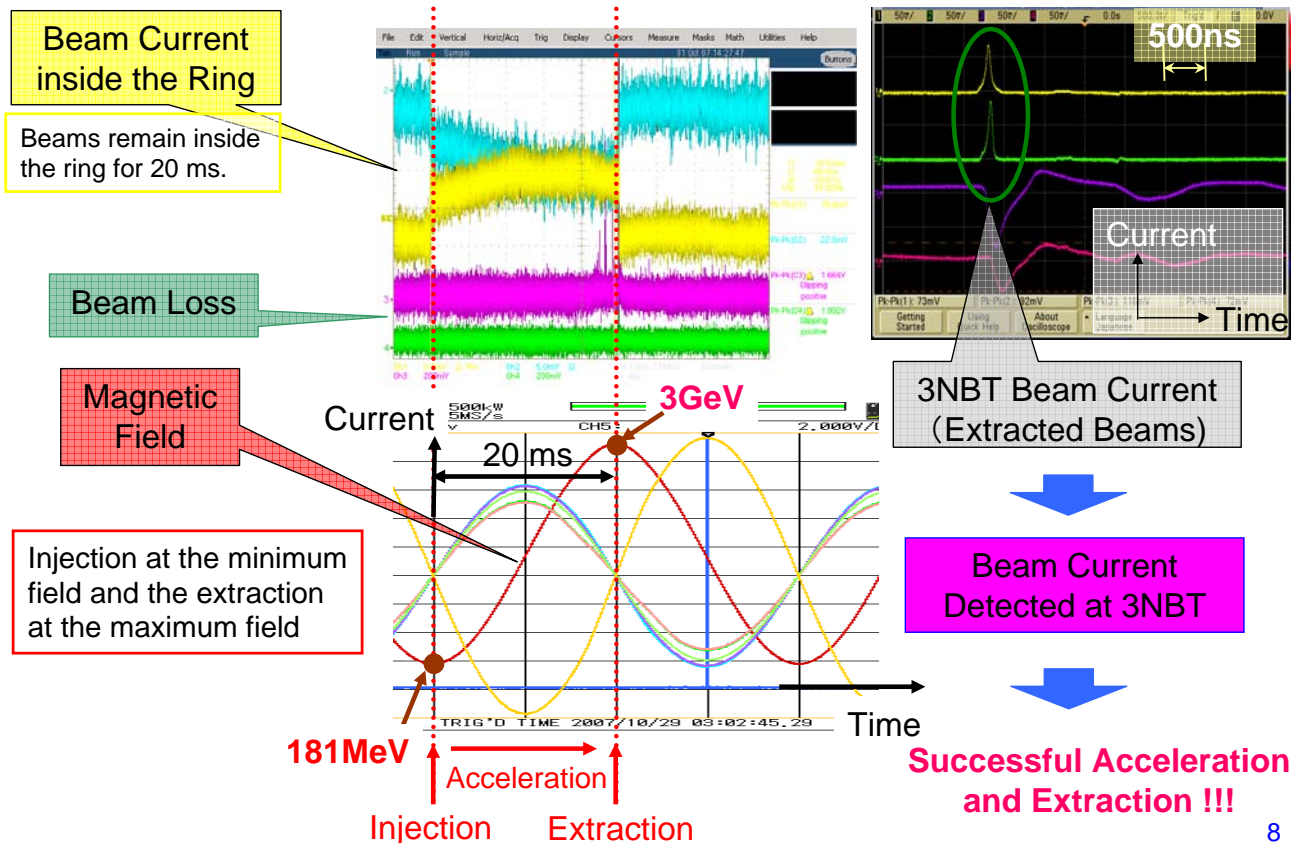


7



Acceleration and Extraction at 3 GeV

2007.10.31.14h03m23s



8

Success in 3 GeV Acceleration/Extraction



9

50 GeV Synchrotron Ring



10

MLF Building



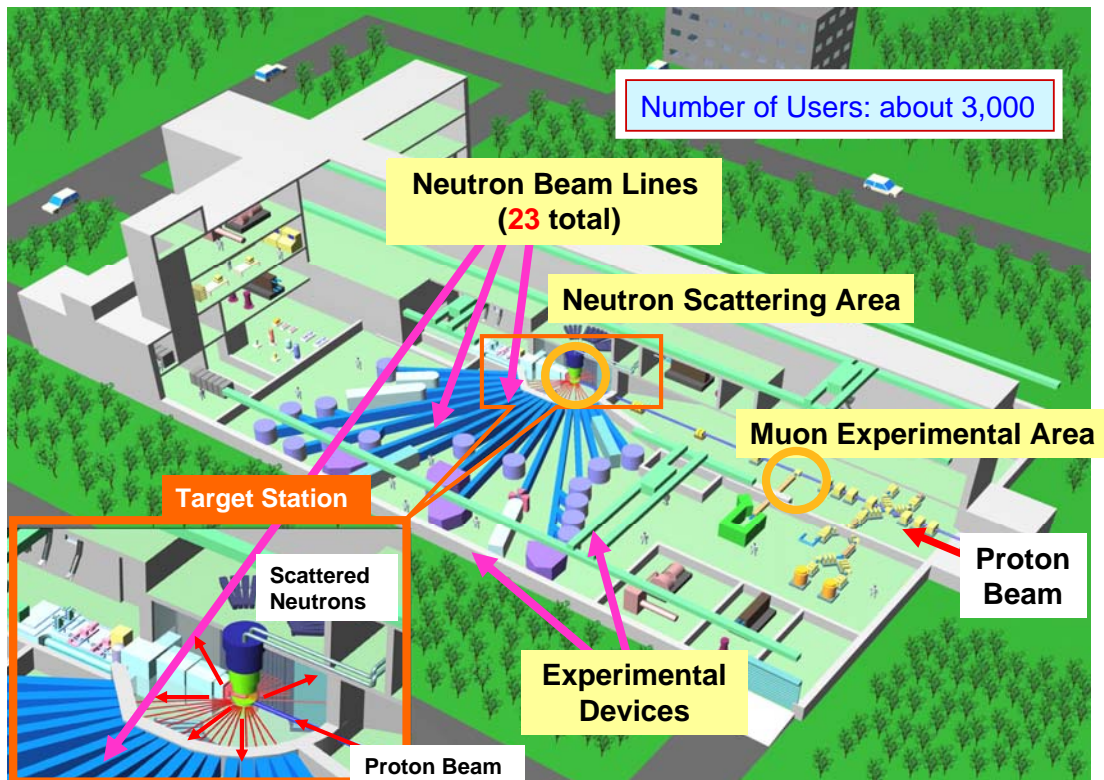
11

Completion of the MLF Building



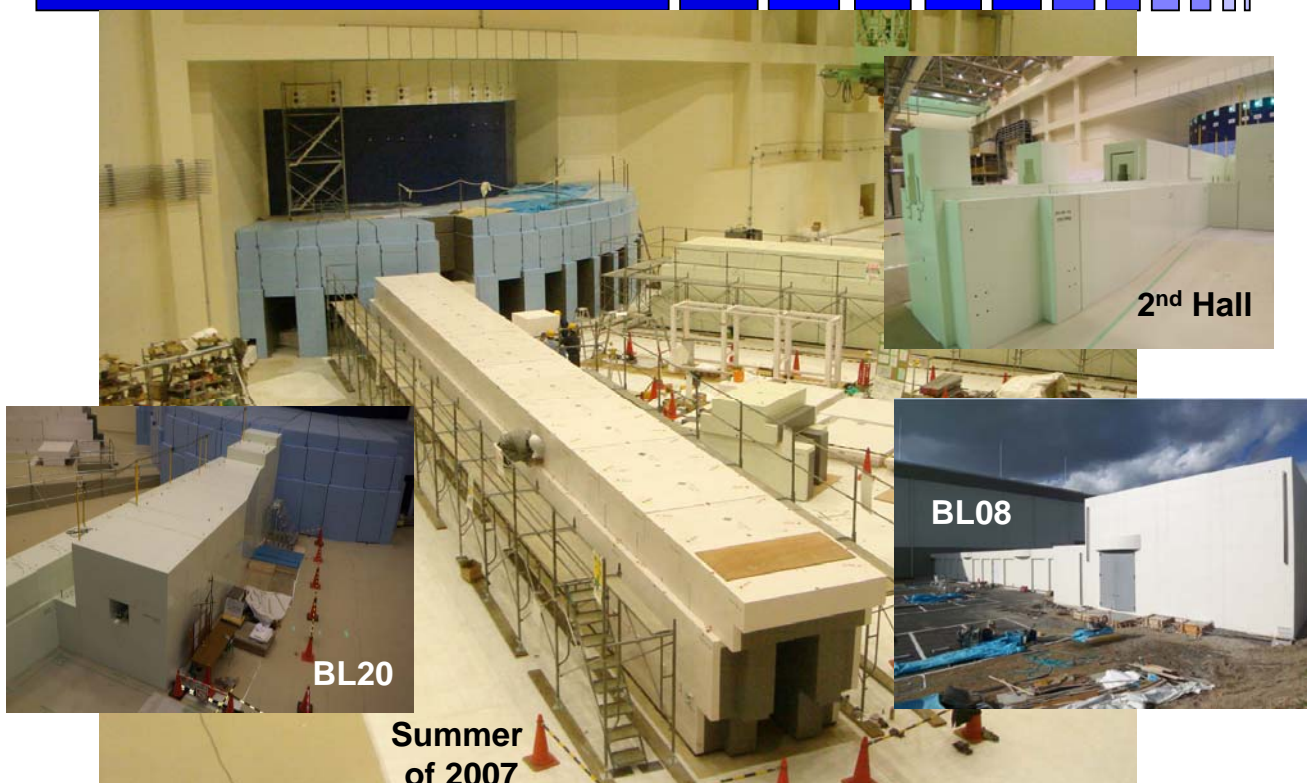
12

Materials & Life Experimental Facility



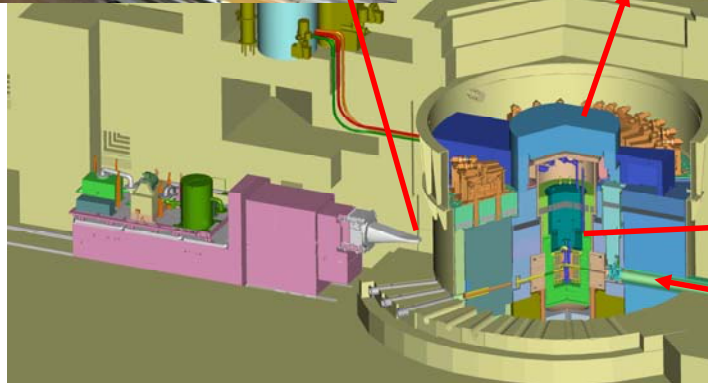
13

Neutron Beam Lines



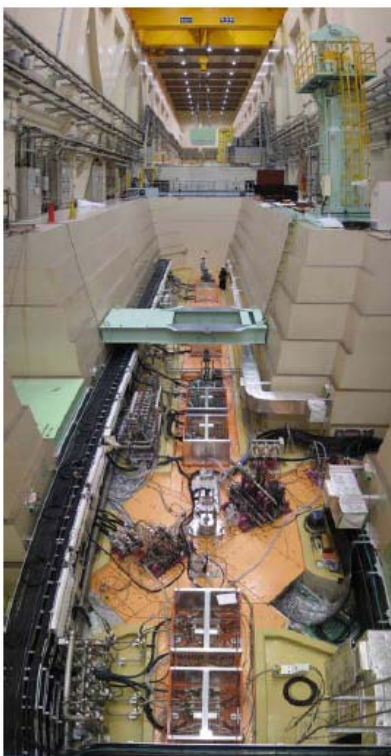
14

Neutron Source



15

Muon Beam Production Area



16

Hadron Hall in August 2007



Hadron Hall

Water/Air
Plants

Magnet PS Bldg.

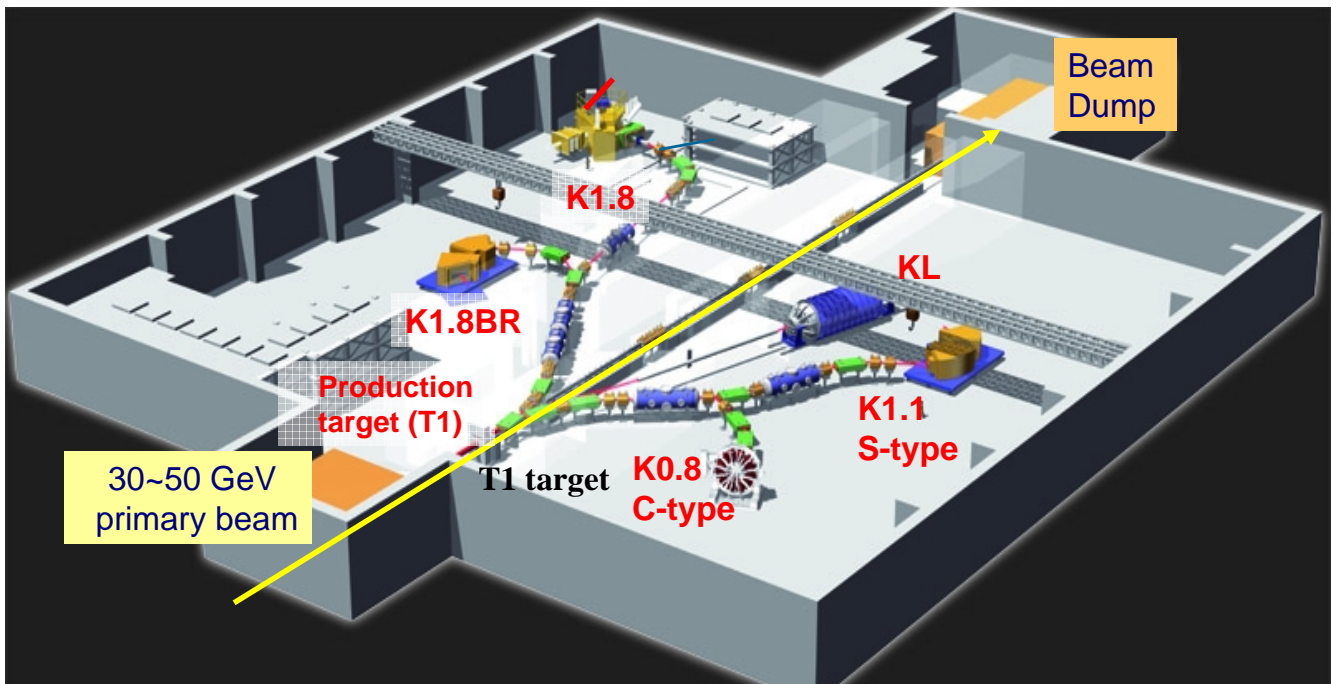
Electricity Bldg.



Completion of the Hadron Hall Building

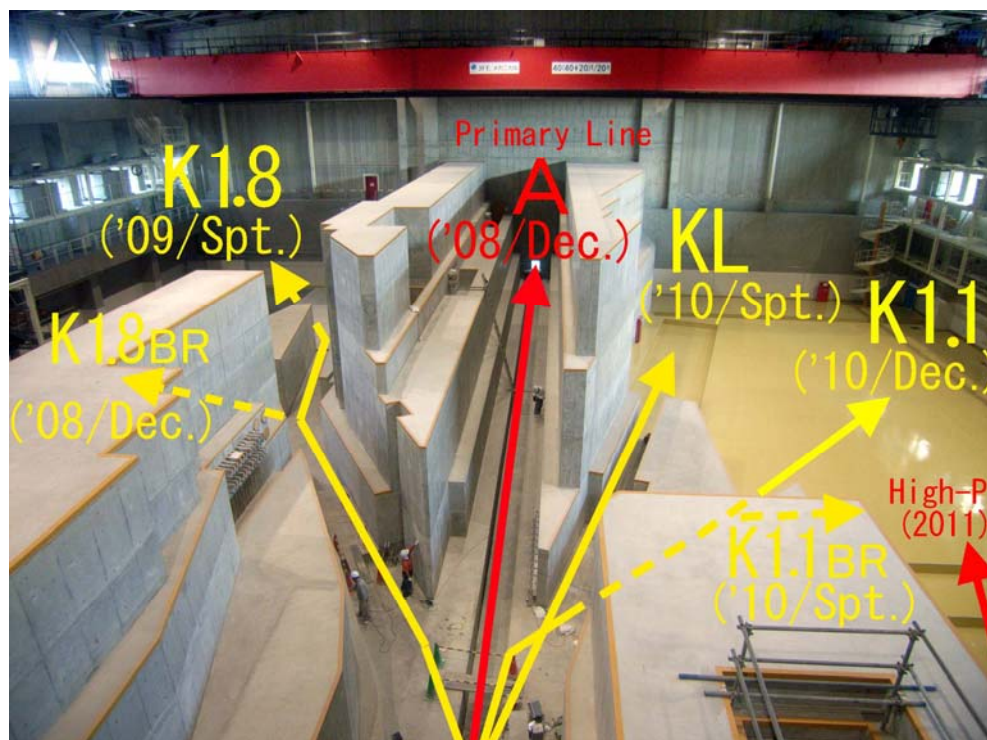


Hadron Experimental Hall

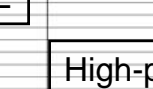
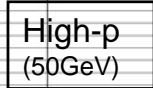


19

Original Plan for Beamlines

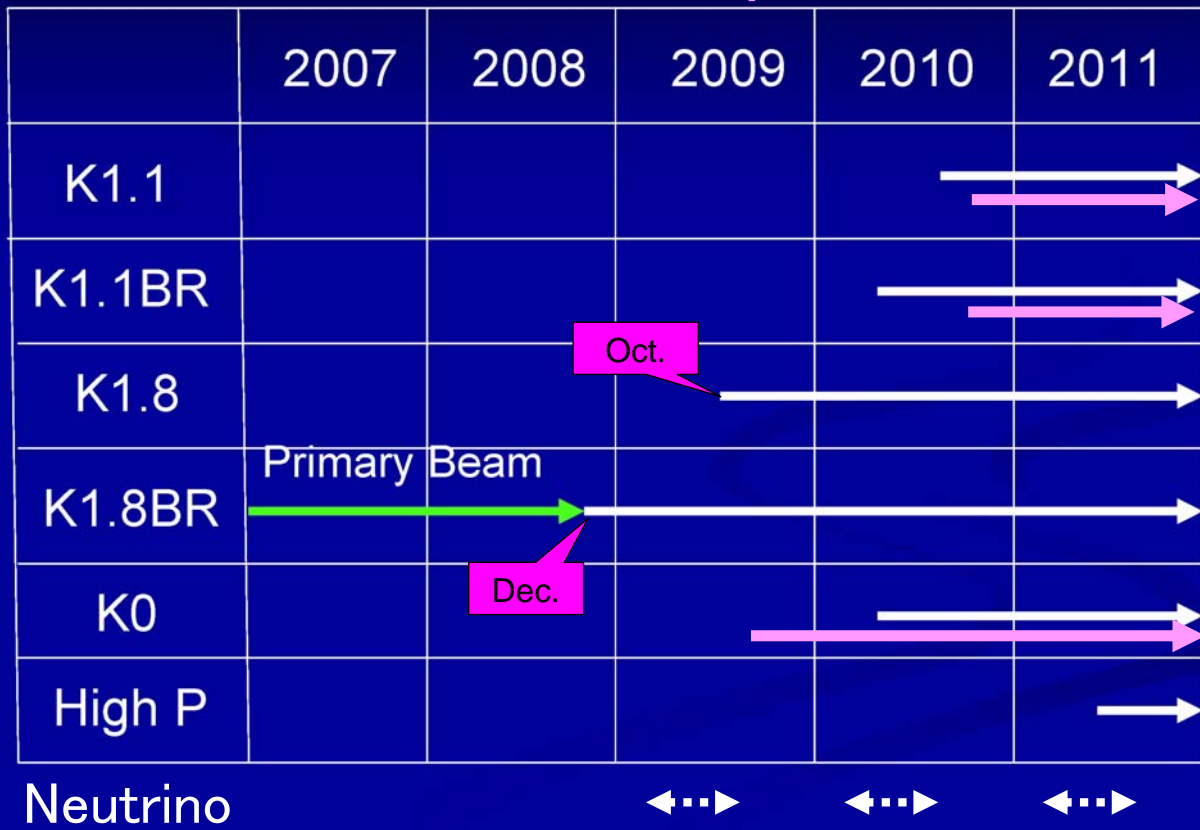


20

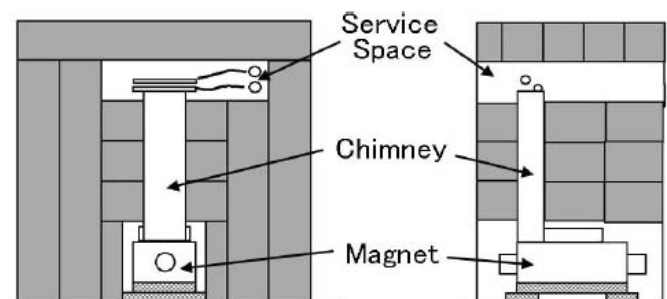


A possible Schedule of Beam Delivery

Updated

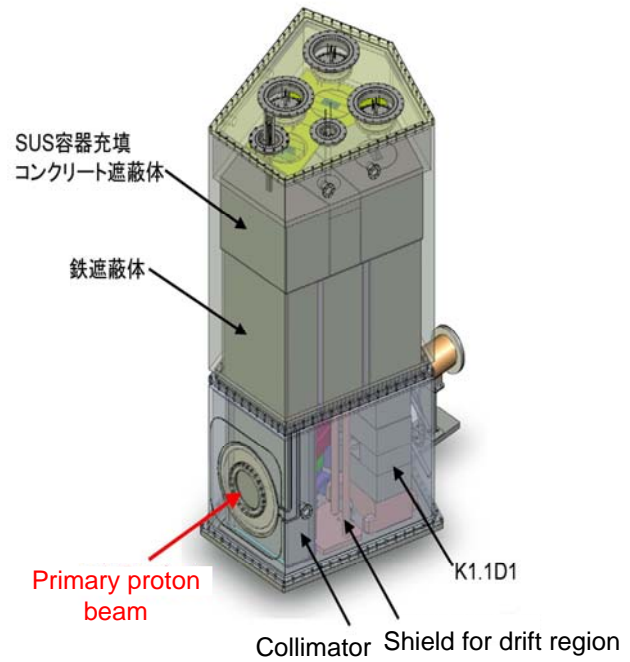


Hadron Hall Construction (1)



Chimney type Magnet

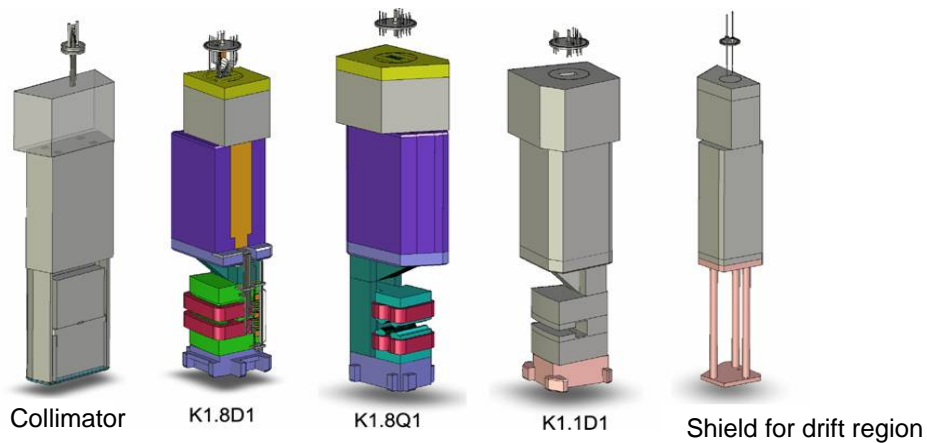
Hadron Hall Construction (2)



Main Vacuum Box

25

Hadron Hall Construction (3)



Collimator arrived

26

Hadron Hall Construction (4)



Iron blocks for radiation shield (fabricated by Energy Solutions Co. (previously called the Duratek))

27

T2K Collaboration



> 350 members from 12 Countries

Japan, US, Canada, France, UK, Switzerland, Poland,
Korea, Russia, Spain, Italy, Germany

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Fast Extraction Line for Neutrinos



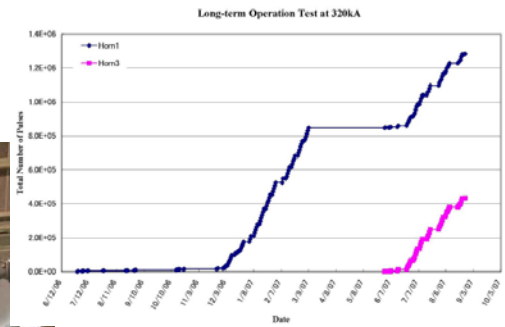
29

Superconducting Magnet



30

Test for a Horn





Upstream Decay Volume Area
in the Construction Days

Downstream Decay
Volume Area

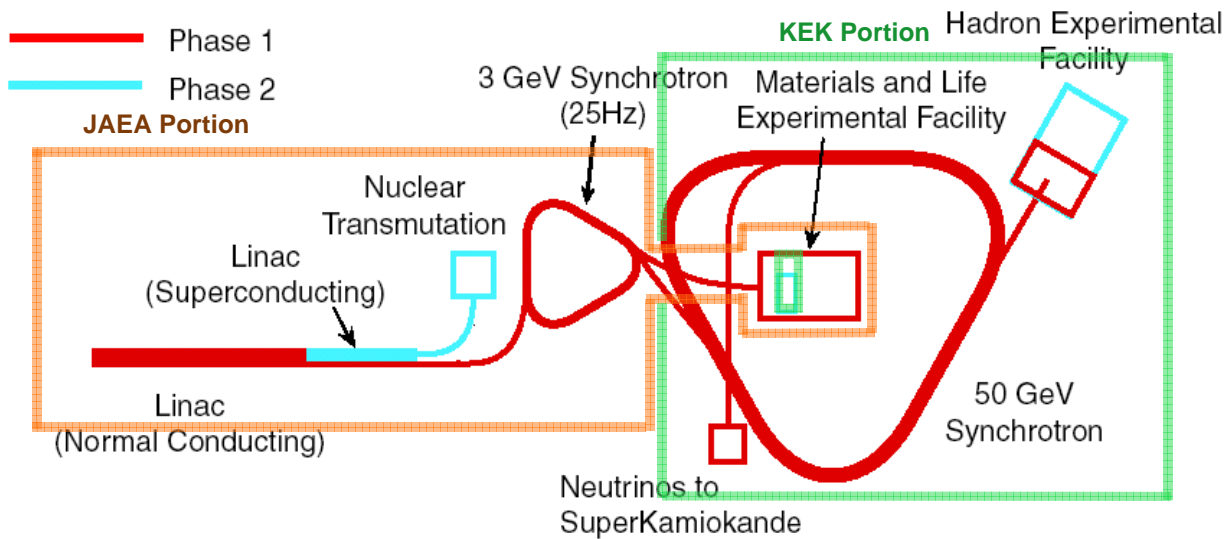


33



34

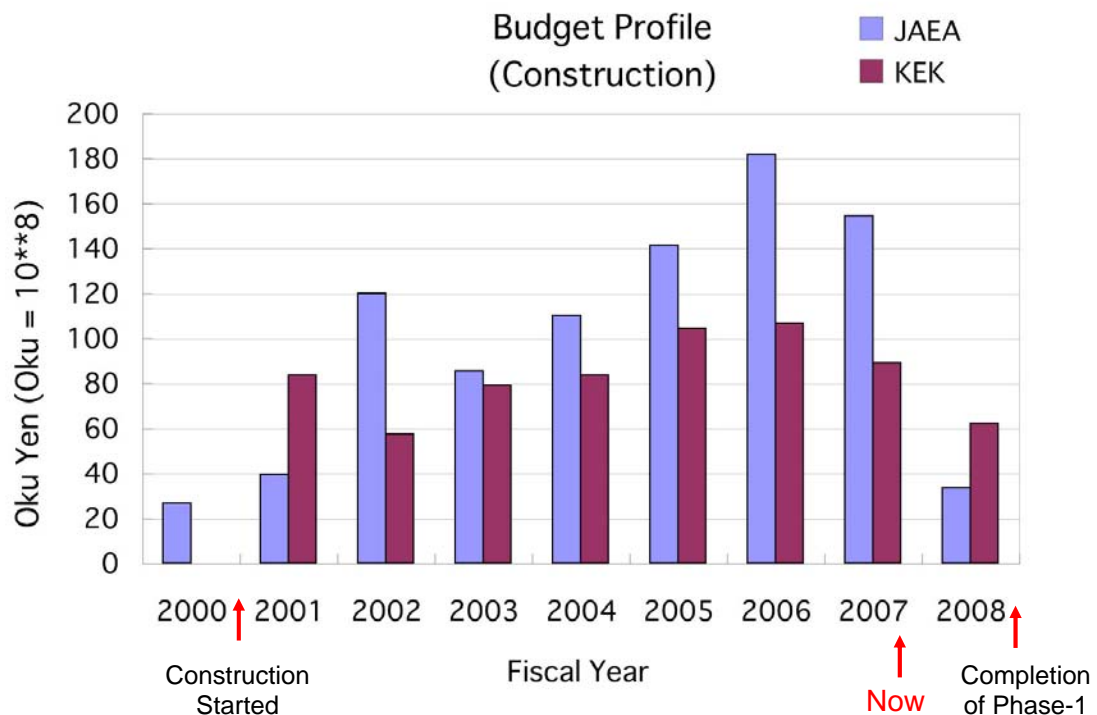
Phase 1 and Phase 2



- Phase 1 + Phase 2 = 1,890 Oku Yen (= \$1.89 billions if \$1 = 100 Yen).
- Phase 1 = 1,527 Oku Yen (= \$1.5 billions) for ~8 years.
- JAEA: 860 Oku Yen (56%), KEK: 667 Oku Yen (44%).

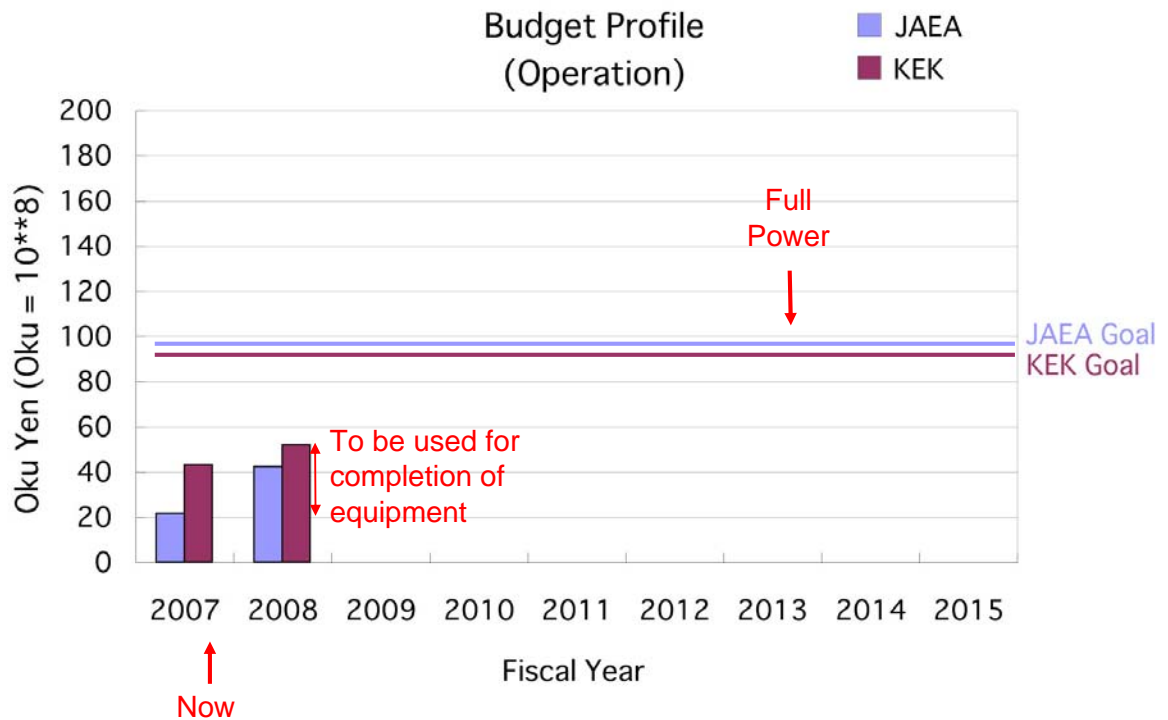
35

Construction Budget



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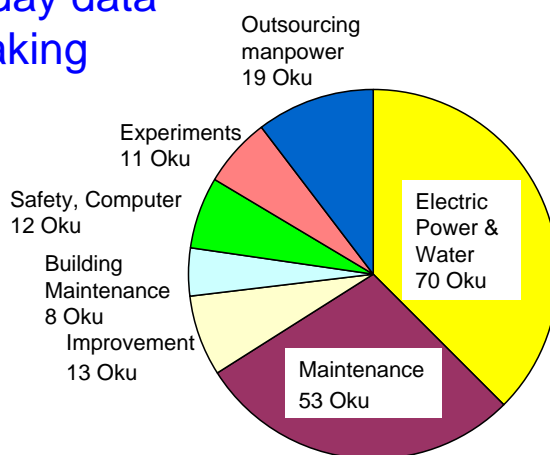
Operational Budget



37

Operational Cost of J-PARC

200 day data taking



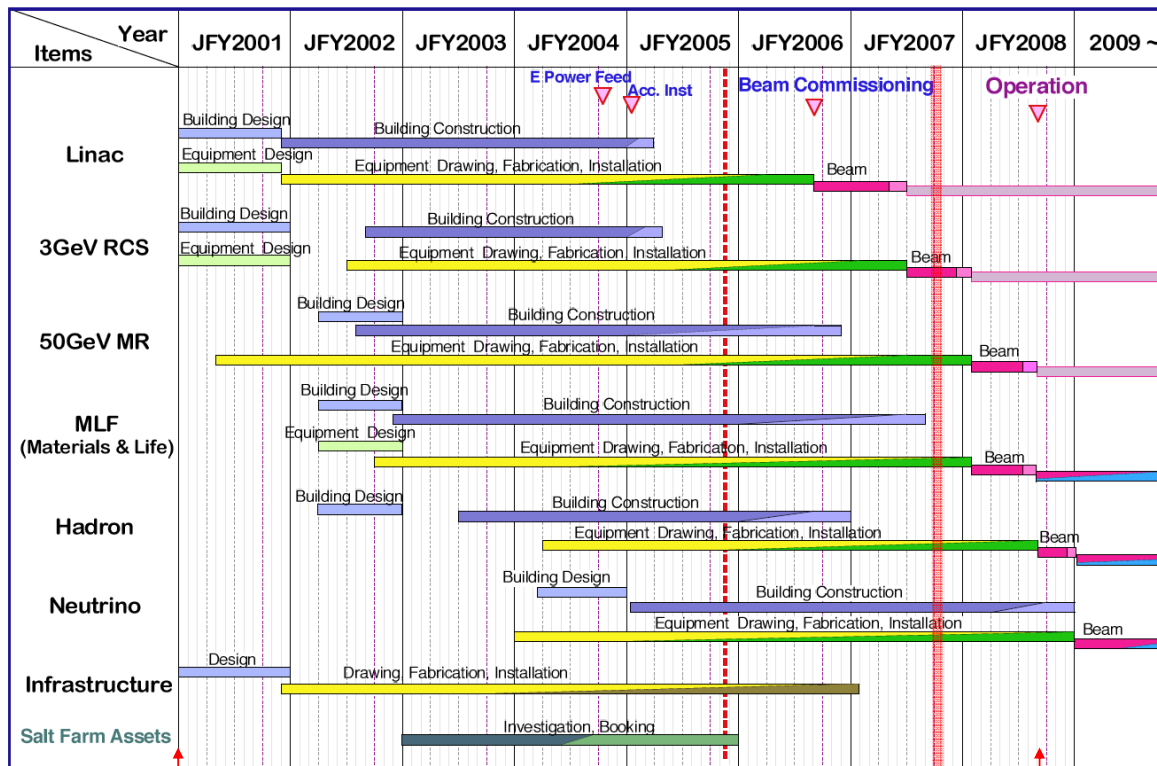
Total: 187 Oku Yen
(Other personnel's: About 30 Oku Yen)

The Review Committee understood the reason why this budget is needed. However, an effort to reduce the cost was also recommended.

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J-PARC Construction Schedule

Feb. 27 2006



Construction Start

Time when this schedule was created

NOW

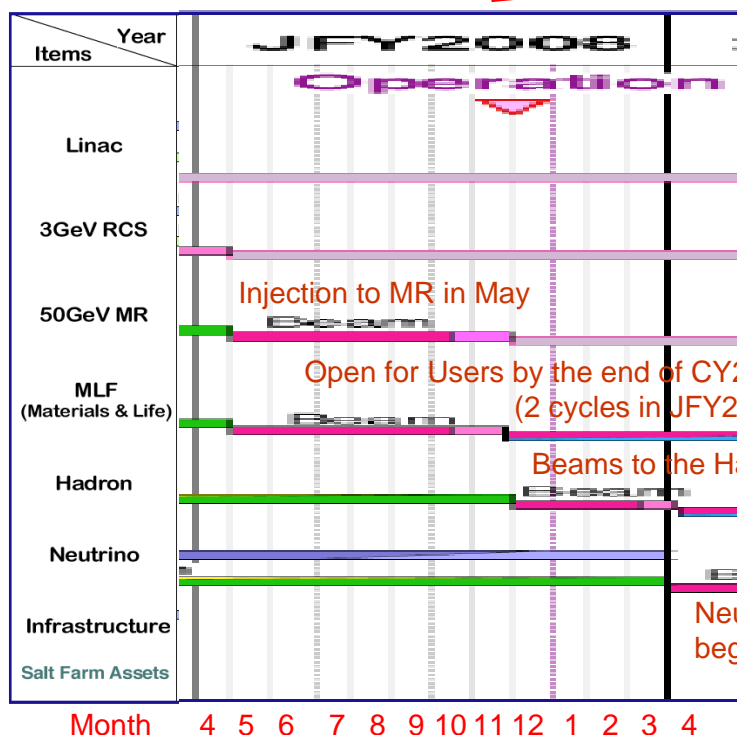
Facility Operation

39



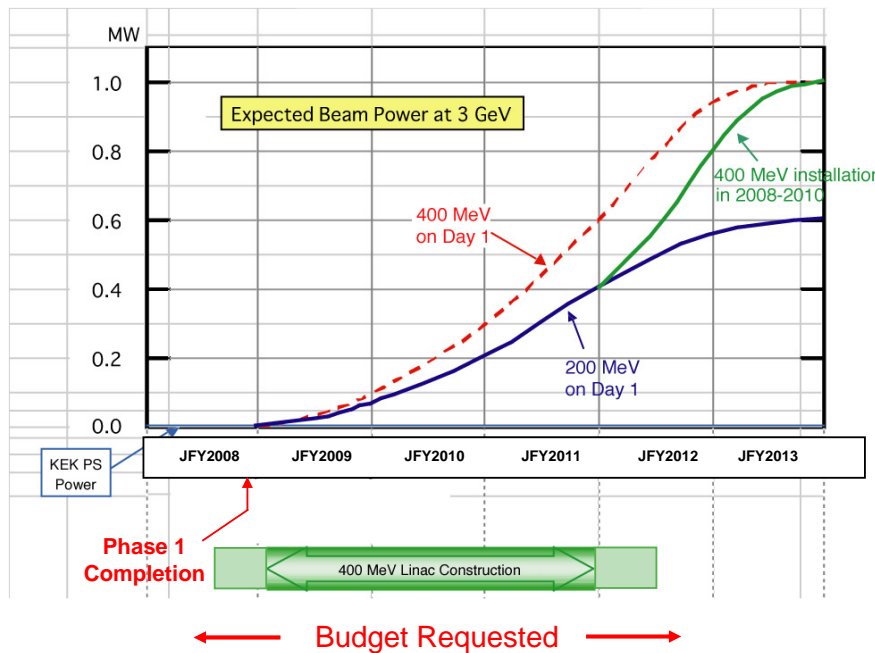
Plan for JFY2008

J-PARC Construction Schedule



40

Linac Energy Recovery



The Review Committee recommended strongly to start the energy recovery immediately after the completion of Phase 1.

JFY2008: 1.5 Oku Yen for "Linac Recovery #1" approved.

JFY2009 budget request for "Linac Energy Recovery #2 for 4 years" is planned.

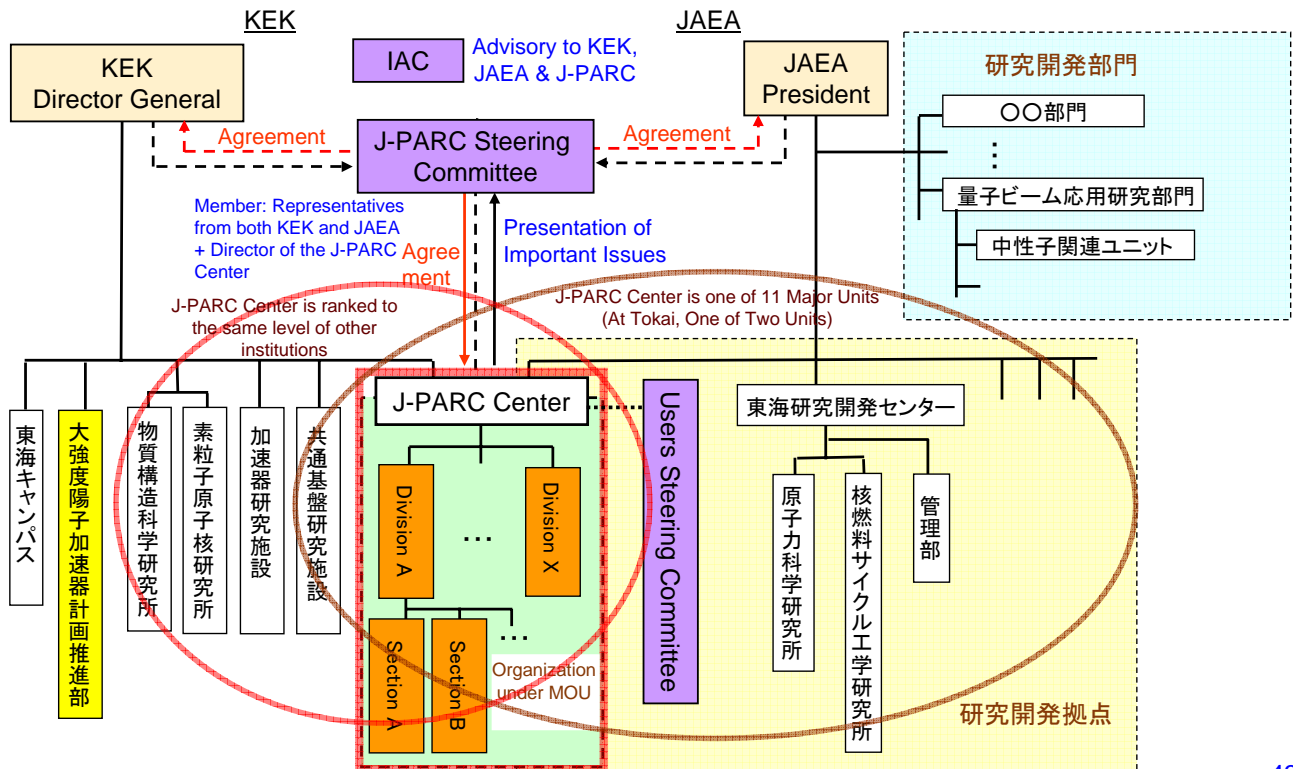
41

Achievement and Issues

- Construction: Almost on schedule.
 - Successful operation at 3 GeV.
 - Construction budget is reasonable.
 - Two experimental halls (Hadron, Materials & Life) were completed.
 - The next major milestone is an injection and an extraction at the 50 GeV MR.
- The operational budget in JFY2008 is about 1/2 of the full amount needed for the operation of J-PARC.
 - Good news: Can accept neutron users for 2 full cycles (1 cycle \doteq 1 month). Finally, the first experiment will start within 2008.
 - Major issues in 2008:
 - Create mechanisms of how to increase an operational fund for the J-PARC (Need intense discussions with KEK, JAEA, and MEXT).
 - Much more economical methods of operation in order to reduce the required budget (A working group was started within the J-PARC Center.).

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J-PARC Center & Two Organizations



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Users Steering Committee

Users Steering Committee

2007/11/20

Area	NAME	Affiliation	Mail Address
High Energy	T. Nakaya	Kyoto Univ.	tnakaya@scphys.kyoto-u.ac.jp
	T. Yamanaka	Osaka Univ.	taku@hep.sci.osaka-u.ac.jp
	S. Komamiya	Tokyo Univ.	sachio@icepp.s.u.-tokyo.ac.jp
Nuclear Physics	K. Nishikawa	J-PARC Center / KEK	keichiko.nishikawa@kek.jp
	H. Tamura	Tohoku Univ.	tamura@lambda.phys.tohoku.ac.jp
	T. Nagae	Kyoto Univ.	nagae@scphys.kyoto-u.ac.jp
Hadron Users Assoc.	H. Sakai	Tokyo Univ.	sakai@phys.s.u.-tokyo.ac.jp
	N. Saito	J-PARC Center / KEK	nachito.saito@kek.jp
	K. Nakazawa	Gifu Univ.	nakazawa@phys.s.u.-tokyo.ac.jp
Neutron	T. Kanaya	Kyoto Univ.	kanaya@sci.kyoto-u.ac.jp
	M. Sato	Yokohama City Univ.	msato@tsurumi.yokohama-cu.ac.jp
	K. Yamada	Tohoku Univ.	kyamada@imr.tohoku.ac.jp
Muon	H. Yoshizawa	Tokyo Univ.	yoshi@isspu-tokyo.ac.jp
	Y. Fujii	JAEA	fujii.yasuhiko@jaea.go.jp
	N. Nishida	Tokyo Inst. Tech.	nishida@ltp.phys.titech.ac.jp
MLF Users Assoc.	E. Torikai	Yamanashi Univ.	et@yamanashi.ac.jp
	K. Nishiyama	J-PARC Center / KEK	kusuo.nishiyama@kek.jp
	T. Fukunaga	Kyoto Univ.	tfuku@rii.kyoto-u.ac.jp
Industries	T. Iwasaki	Tohoku Univ.	tomohiko.iwasaki@qse.tohoku.ac.jp
	Y. Kiyanagi	Hokkaido Univ.	kiyanagi@ce.eng.hokudai.ac.jp
	Y. Fukushima	Toyota	e0463@toa.tytlabs.co.jp
Ibaraki Pref.	K. Nishijima	Mochida	kazumi@mochida.co.jp
	S. Kamei	Mitsubishi soken	skamei@mri.co.jp
	M. Hayashi	Ibaraki Pref.	m.hayashi@pref.ibaraki.lg.jp
Observer	M. Nozaki	INPC-Assoc. Director at KEK	mitsuaki.nozaki@kek.jp
	S. Ikeda	IMS-Assoc. Director at KEK	susumu.ikeda@kek.jp
	J. Sugiyama	Toyota	e0589@mosk.tytlabs.co.jp

- New members were elected in November of 2007.
- Representatives from four communities are included.
- Roadmap of the future J-PARC will be discussed at this committee.

- Discussion items by this committee were re-identified.
- The committee will start intense discussions from February about future plans of the J-PARC.

Phase 2 for J-PARC will be discussed first at this Committee

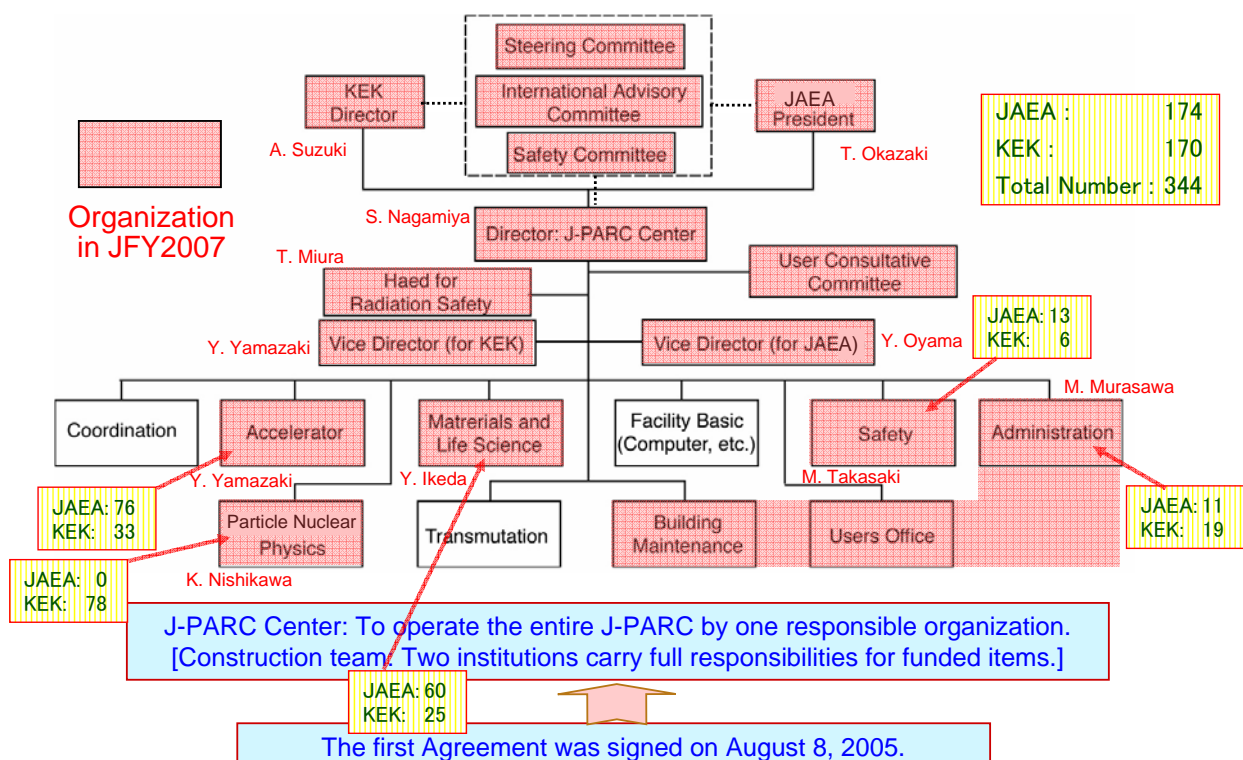
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Major Upgrades under Discussions

- Neutrons and Muons
 - Neutron equipments: How to fill the 23 beamlines (so far about ten were funded).
 - Muon equipments: Among four beamlines, only one will be in operation in 2008. Others have to be funded.
- Hadrons
 - Must construct several kaon beamlines plus a primary beamline.
 - Hadron hall expansion: Necessary to accommodate many user groups.
 - Any future possibilities recommended from PAC.
- Neutrinos
 - Power upgrade.
 - The 2 km detector for T2K.
- Nuclear Transmutation
 - The major item for Phase 2.
- Others
 - Energy upgrade to 50 GeV.
 - Third extraction line?

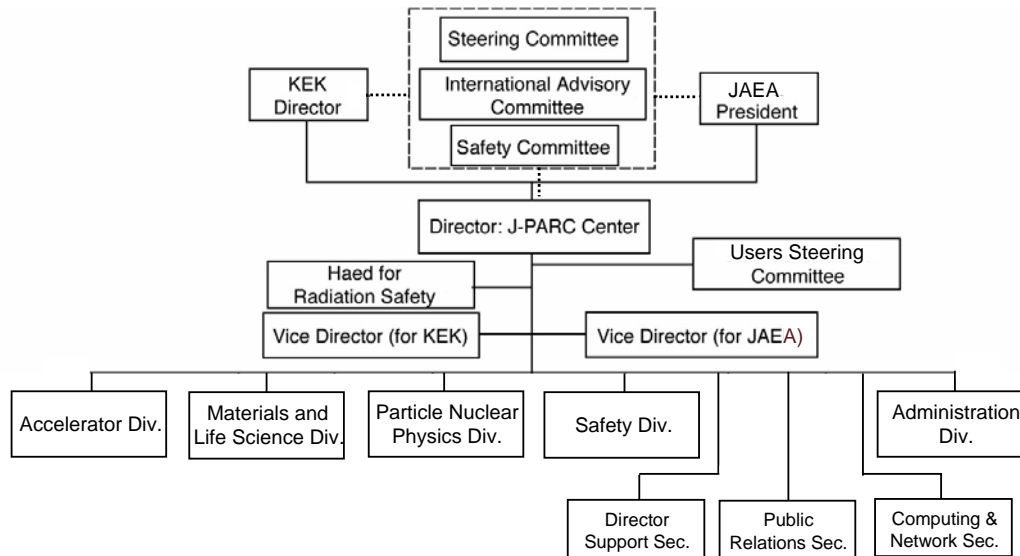
45

J-PARC Center in April of 2007



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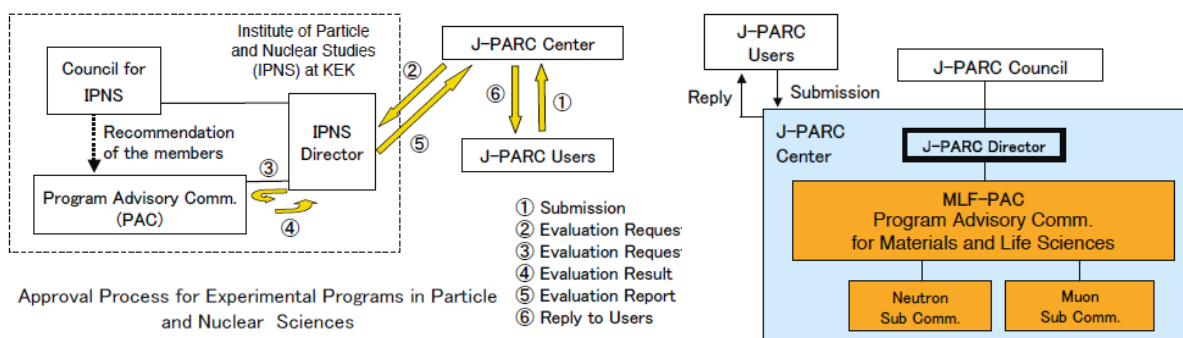
J-PARC Center planned in April of 2008



About 400 people will join the J-PARC Center.

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J-PARC PAC System and Beamtime Charge



PAC for Particle & Nuclear Proposals

PAC for Materials & Life Proposals

Category	Organization	Handling Charge	Beamtime Charge	Additional Charge
Academic	J-PARC/MLF	No cost	No cost	For Special Items
	JAEA	10,300 Yen	Close to zero	For Special Items
	KEK	No cost	No cost	For Special Items
No Publications	J-PARC/MLF	No cost	Charged	For Special Items
	JAEA	10,300 Yen	Charged	For Special Items
	KEK	No cost	Charged	For Special Items

Beamtime Charge

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Office Space, Lodging, New Gate, etc.



Office Space

- NTT: Ibaraki Prefecture will purchase it. KEK (plus JAEA) will rent and/or purchase a part of the space. A few 100 can be accommodated.
- This area will be used for the Users Office.

New Lodging

- 30 rooms with kitchens plus 16 rooms exist. We are negotiating with JAEA to be available to J-PARC.
- Hotel plan near the Tokai Station.

Gate

- New Gate and New Access Road will be planned for the J-PARC.

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Users Office



J-PARCユーザーズオフィス周辺



J-PARCユーザーズオフィスの地図

- Services in preparation: Lodging, restaurant ticket, computer network, radiation safety, medical care arrangement, library, bicycle, rental car, sports facilities, important laws, nearby stores, etc.

50

■ News during the Past Half a Year

- Construction for both equipments and facilities: Almost on schedule.
 - 3 GeV acceleration and extraction succeeded !!!
- MLF Hall and Hadron Hall were completed.
 - Celebration for three areas: neutron, muon, hadron
- A new "Users Steering Committee" started.
- The Users Office started its operation.
- Operational fund for JFY2008 was funded, to allow 2 cycle operation for MLF users and an experimental run for K1.8BR.

■ Issues

- How to grow an operational fund
- How to grow the organizational structure (KEK is underway for reorganization).
- Linac energy recovery: Need another negotiation for JFY2009.
- Mechanisms for an easier access by industries.
- Internationalization of the J-PARC Project.

■ Hadron Hall

- K0 and K1.1: J-PARC Center plans to complete both.
- Phase 2 expansion: Evaluation be needed by the communities, primarily at a new Users Steering Committee (+ PAC, if many proposals arrived).