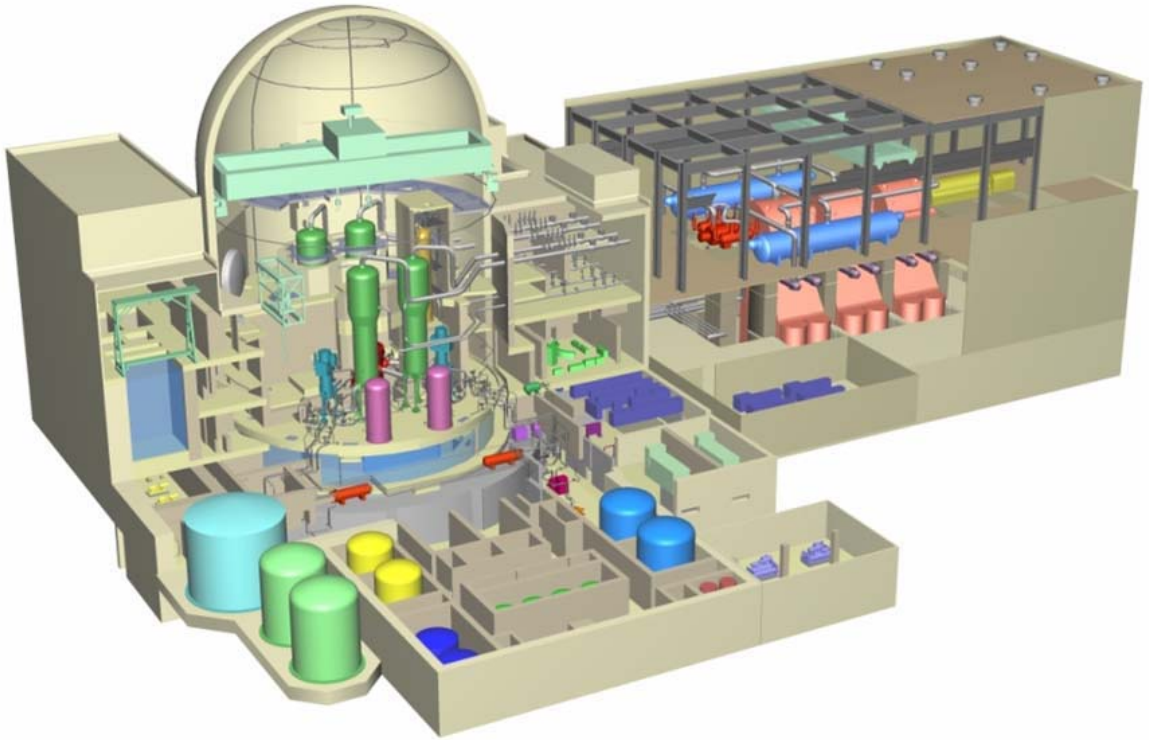
MITSUBISHI NUCLEAR ENERGY SYSTEMS, INC.

MITSUBISHI HEAVY INDUSTRIES, LTD.

US-APWR

MITSUBISHI US-APWR

Opening Remarks



June 29, 2007

CONTENTS

1. MHI Nuclear Organization and Experiences

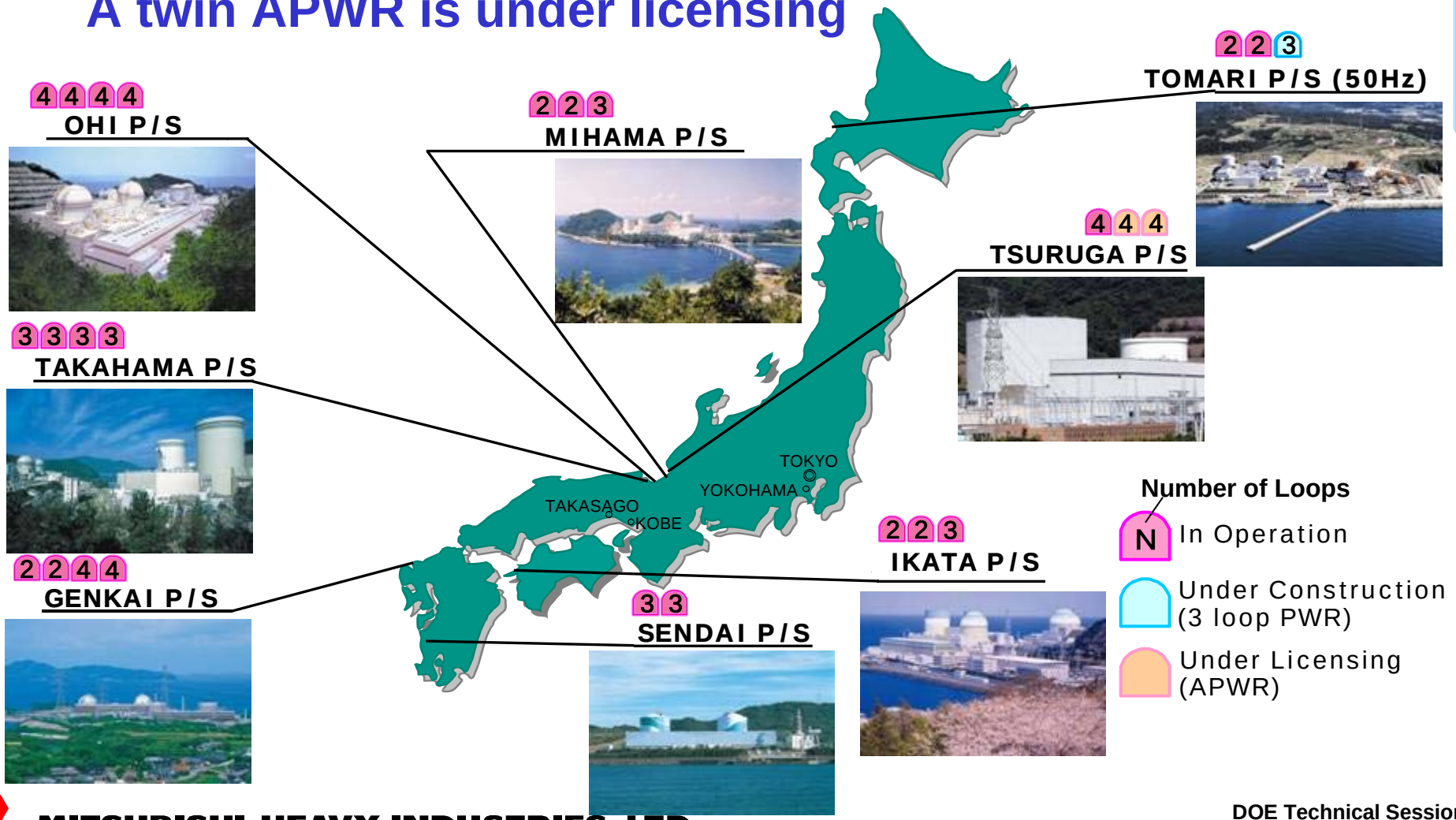
Mitsubishi: Experienced and Integrated Nuclear Plant Supplier

Mitsubishi has accumulated extensive experience in the supply of reliable products and services in the areas of:

- **PWR Nuclear Power Plants**
  - ✓ Design, Manufacture, Construction, Maintenance/Repair Services
- **Nuclear Fuel**
  - ✓ PWR Fuel, Advanced Reactor Fuel, Non-Fuel Core Components
- **Advanced Reactor Plants**
  - ✓ Fast Breeder Reactor, High Temperature Gas Cooled Reactor, Nuclear Fusion Reactor
- **Nuclear Fuel Cycle Equipment/Components**
  - ✓ Spent Fuel Reprocessing Facilities, Waste Disposal System Equipment, Radioactive Material Transport Cask, Uranium Enrichment Equipment

MHI PWR Construction Experience in Japan

- **Mitsubishi has constructed 23 PWR NPPs**
- **The 24th PWR plant is under construction**
  A twin APWR is under licensing

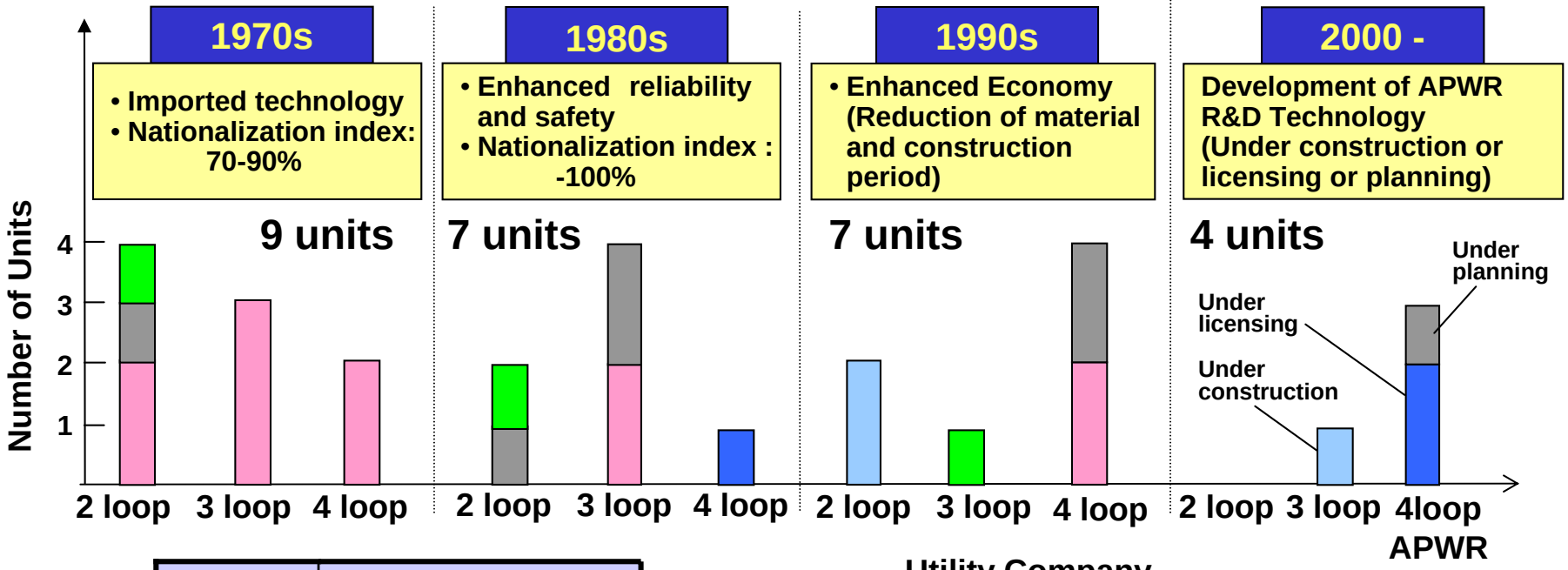


MITSUBISHI HEAVY INDUSTRIES, LTD.

Development of Mitsubishi PWR Technology

➢Mitsubishi has been continuously upgrading its designs and engineering from those imported

- ✓The first units for 2 Loop, 3 Loop and 4 Loop utilized technology transferred to Mitsubishi with final design collaboratively engineered
- ✓The following 19 were designed, manufactured, and constructed by Mitsubishi



	Number of Units
2 Loop	8
3 Loop	9
4 Loop	10

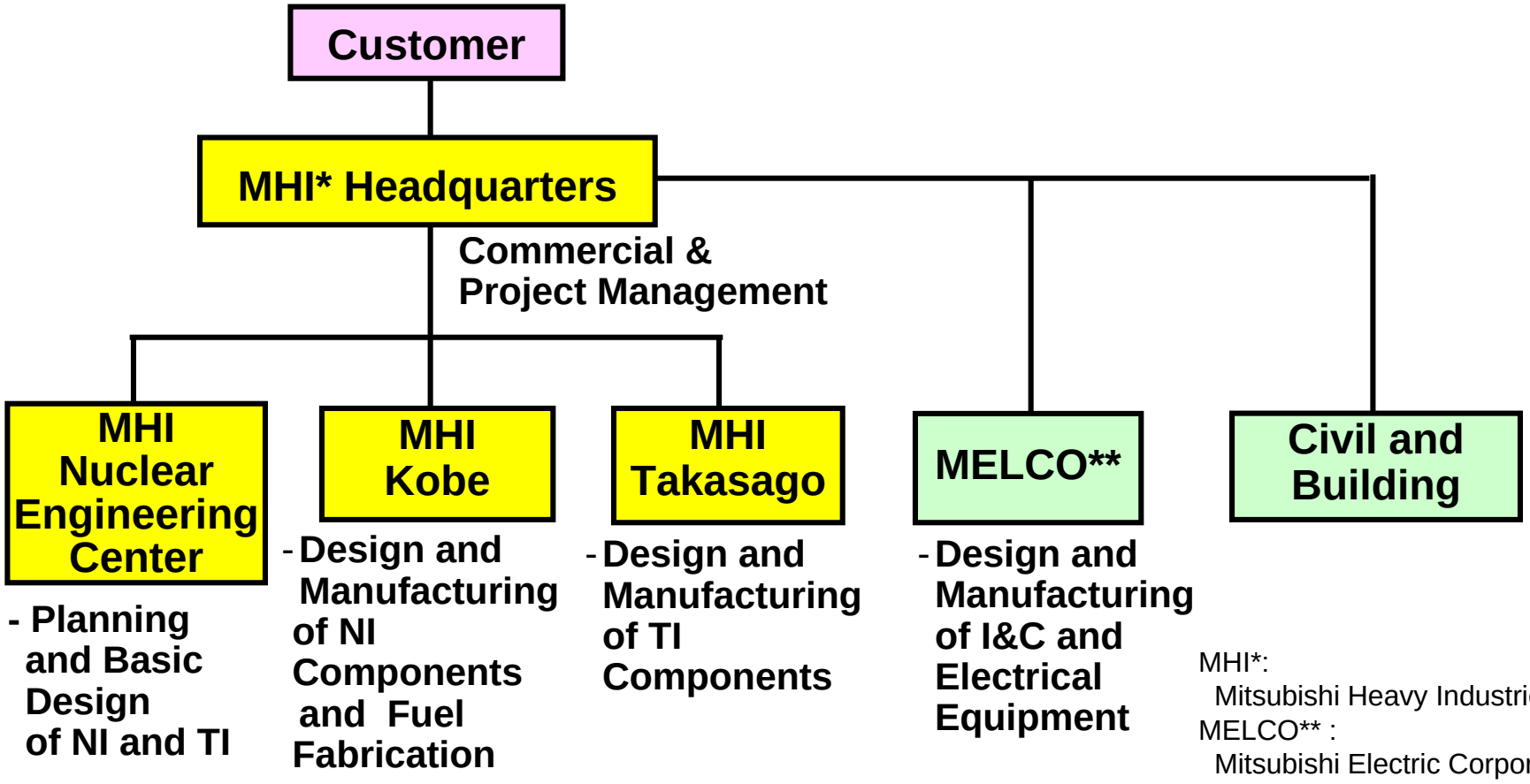
Utility Company

- : Japan Atomic Power
- : Hokkaido
- : Kansai
- : Shikoku
- : Kyusyu

Mitsubishi Nuclear Organization in Japan

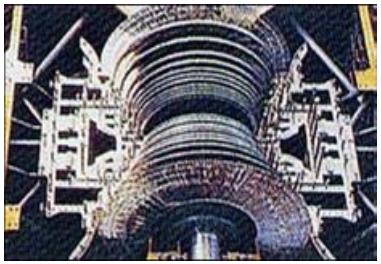
➢Capability to construct NPPs on a turn-key basis

- ✓ Responsible for the entire plant
- ✓ Utilize Enhanced Technology and Total Management Capability



MHI*:
Mitsubishi Heavy Industries
MELCO** :
Mitsubishi Electric Corporation

Mitsubishi Nuclear Organization



Turbine System Design and Manufacturing

Operator Training Services

Research & Development of nuclear fuels

Research & Development

Nuclear Fuel Manufacturing

Nuclear Steam Supply System Design and Manufacturing

Electrical Equipment Design and Manufacturing

Planning and basic design of nuclear plants

TSURUGA
TOKAI
TOKYO
TAKASAGO
KOBE

Takasago Machinery Works

Nuclear Power Training Center

Nuclear Development Corporation

Takasago R&D Center

Mitsubishi Nuclear Fuel

Nuclear Energy Systems Headquarters

Kobe Shipyard&Machinery Works

Mitsubishi Electric Corporation

Nuclear Energy Systems Engineering Center

MHI Nuclear Export Experience

Asia

	Plant	Delivery
Reactor Vessel	Qinshan I (CHINA)	1986
	Qinshan II #1 (CHINA)	1999
Rector Vessel Closure Head	KEDO #1 (KOREA)	Under Suspension
	KEDO #2 (KOREA)	Under Suspension
Reactor Coolant Pump	Qinshan II #1 (CHINA)	1999
	Qinshan II #2 (CHINA)	2001
	Qinshan II #3 (CHINA)	(2009)
	Qinshan II #4 (CHINA)	(2010)
Main Turbine	Taiwan 4 th Nuclear Power Station #1 (TAIWAN)	(2006)
	Taiwan 4 th Nuclear Power Station #2 (TAIWAN)	(2006)

America

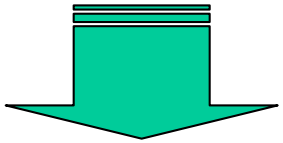
	Plant	Delivery
Reactor Vessel Closure Head	Surry #2	2003
	Kewaunee	2004
	Farley Unit #1	2004
	Farley Unit #2	2005
	H. B. Robinson	2005
	Millstone #2	2005
	Point Beach #1	2005
	Point Beach #2	2005
	Prairie Island #2	2005
	Prairie Island #1	2005
	Fort Calhoun	2006
	South Texas PJ#1	(2009)
	South Texas PJ#2	(2010)
	San Onofre #2	(2011)
	San Onofre #3	(2012)
Pzr	Fort Calhoun	2006
Steam Generator	Fort Calhoun	2006
	San Onofre #2	(2008)
	San Onofre #3	(2009)

Europe

	Plant	Delivery
Reactor Vessel	Olkiluoto #3 (FINLAND)	(2006)
Reactor Vessel Closure Head	Ringhals #2 (SWEDEN)	1996
	Ringhals #3 (SWEDEN)	2004
	Ringhals #4 (SWEDEN)	2005
Steam Generator	Tihange #1 (BELGIUM)	1995
	Tihange #2 (BELGIUM)	2001
	Doel #2 (BELGIUM)	2004
	Unit F (FRANCE)	(2008)
	Unit G (FRANCE)	(2008)
Simulator	Novovoronezh Training Center (RUSSIA)	1996
Main Turbine	Vandellos #2 (SPAIN)	1999
	Krsko (SLOVENIA)	2006

Excellent Performance (1/2)

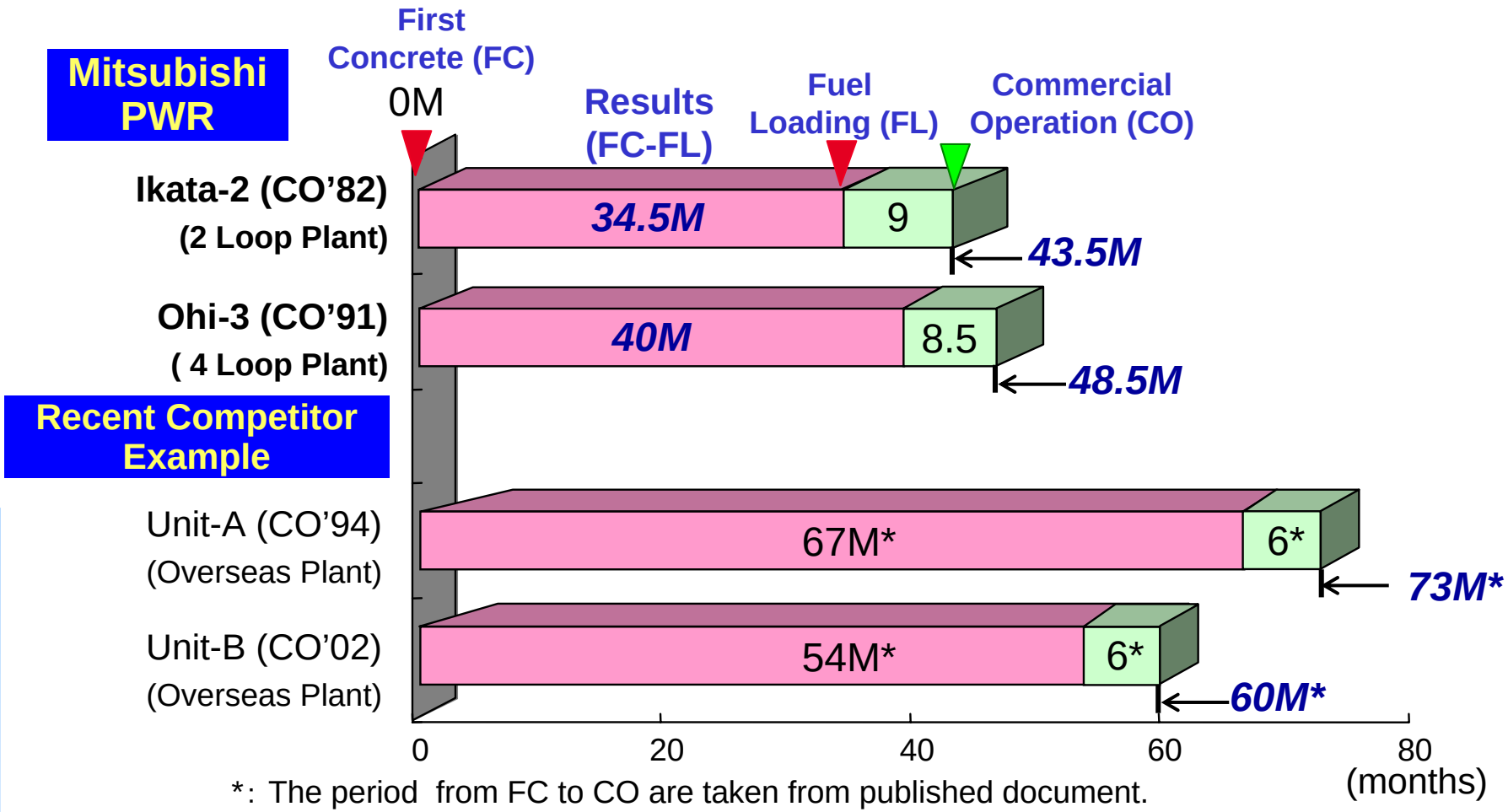
Leading Technology of PWR plant based on turn-key PWR plant construction experience



- **Excellent Construction Performance (Quality, Cost, and Delivery)**
  - ✓ **40 month construction period from first concrete to fuel loading, for Ohi Unit 3, the latest 4 loop PWR plant**
- **Excellent Reliability**
  - ✓ **Unscheduled Plant Shutdown**
    Less than 0.1 unscheduled shutdowns/year
  - ✓ **Low Fuel Leakage**
    Recent experience of no fuel leakage for 13 years

Excellent Performance (2/2)

➢Short Construction Period Experience of Mitsubishi PWR



*: The period from FC to CO are taken from published document. Breakdown periods are estimated from the standard start up and performance test period of 6 months.

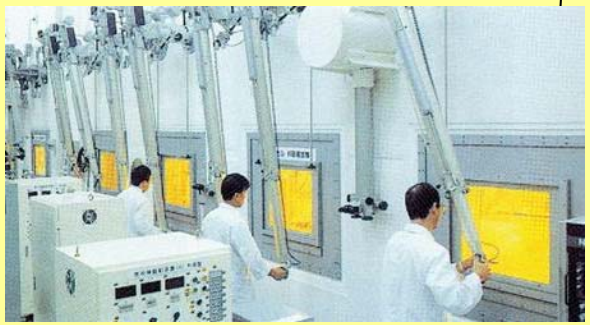
2. MHI Nuclear Technologies

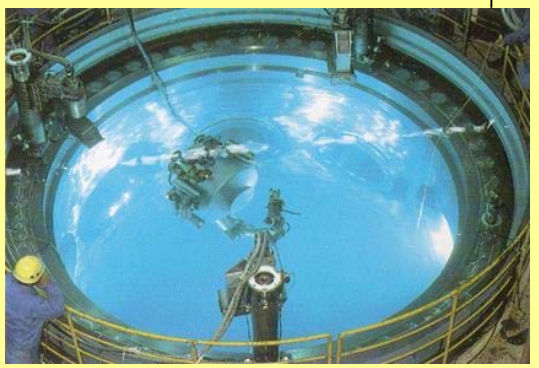
Mitsubishi's Consistent Design throughout Design/Construction/Maintenance Process

Note: Not in scale

Nuclear Power Plant Design and Construction Process

Planning | **Design** | **R & D** | **Manufacturing** | **Procurement** | **Construction** | **Maintenance**



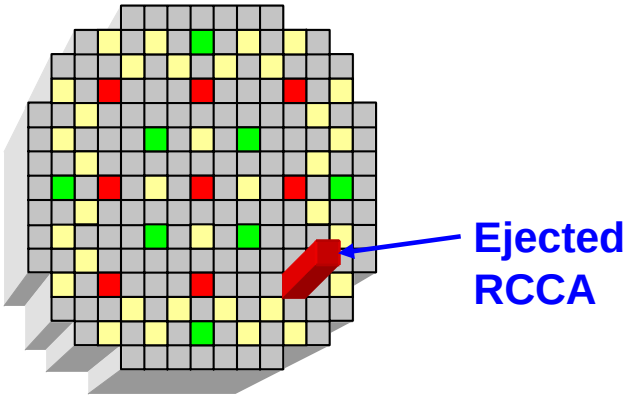


Design
- Core and Safety Analysis-

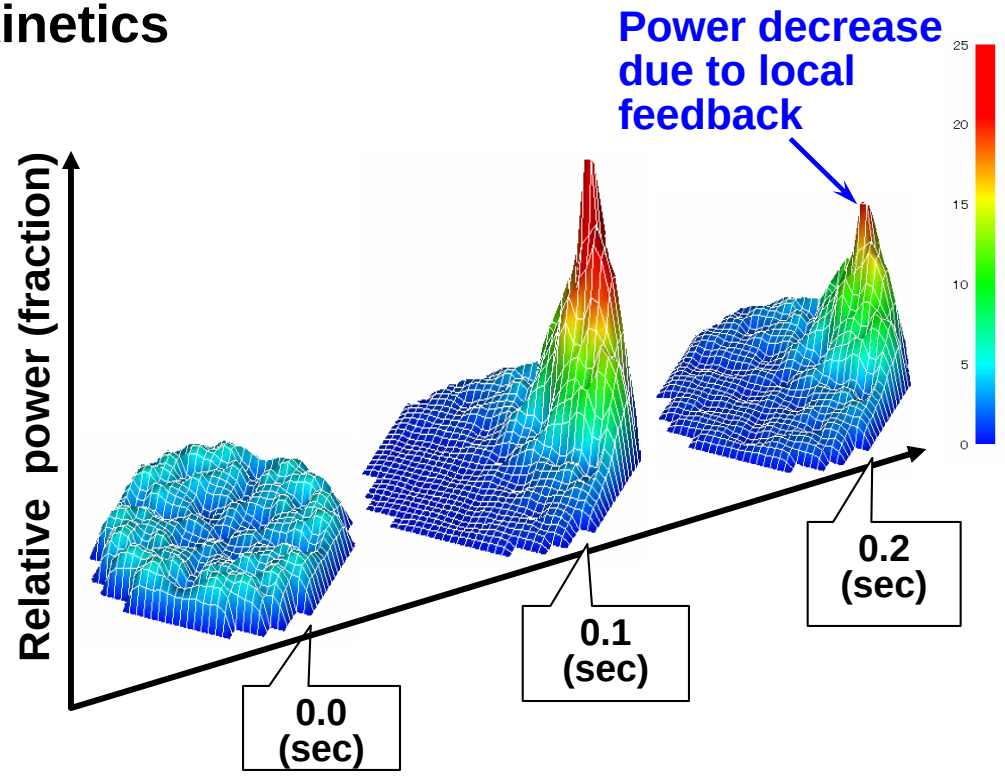
➢Mitsubishi has highly developed computational analysis technology and licensing capability

✓A sample of computational analysis results

- **Local power distribution analysis during rod ejection accident**
- **More realistic safety evaluation method applying 3-D core kinetics**

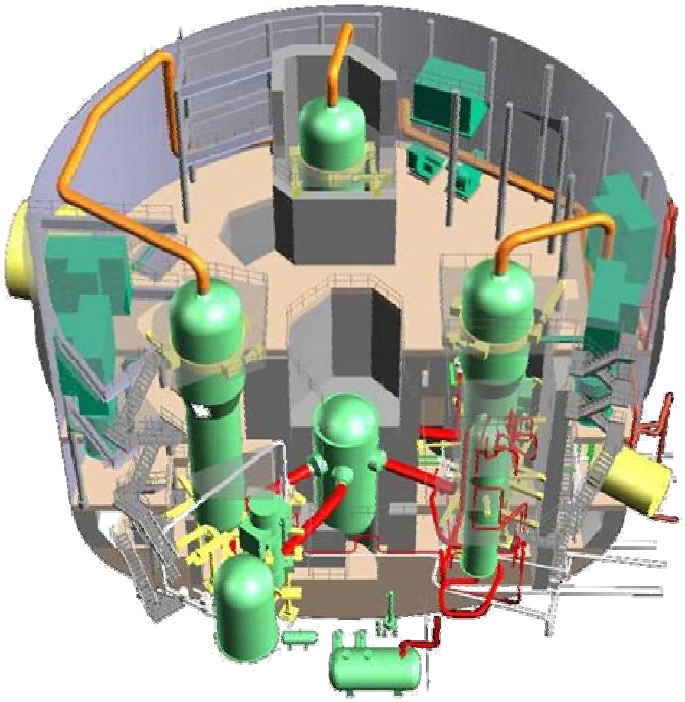


Control rod insertion pattern of 4 loop PWR plant

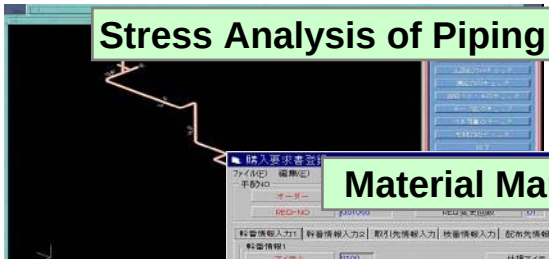


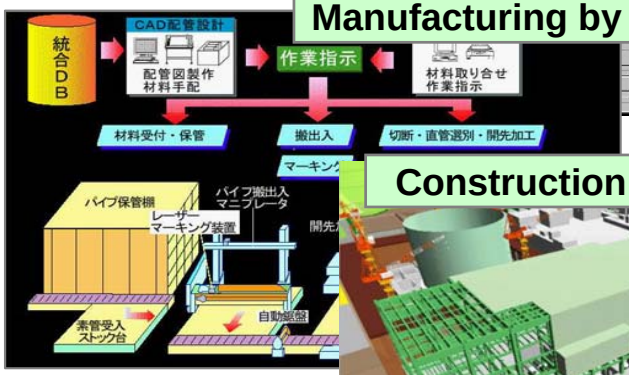
Design
- Plant Engineering -

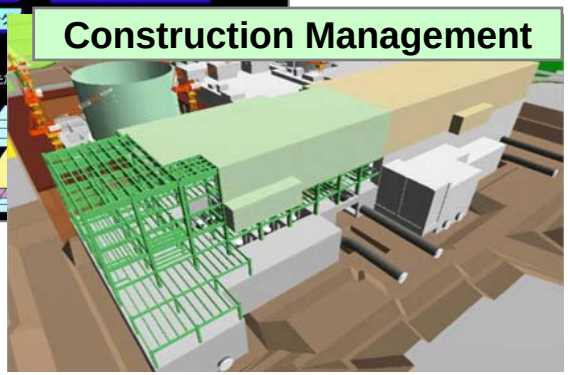
- **Mitsubishi streamlines all of its processes from initial basic design to manufacture/construction using Nuclear Plant Engineering Work and Integrated Management System (NUWINGS)**



Integrated Database





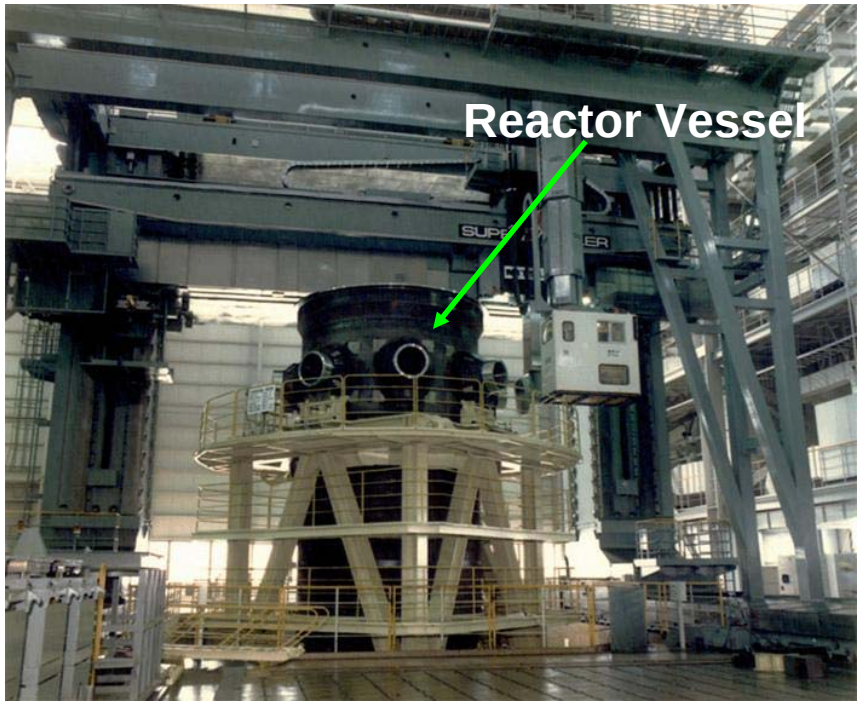


Manufacturing

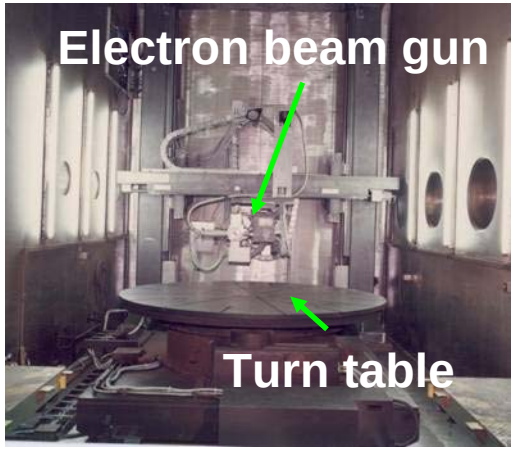
- **Mitsubishi encourages technical innovation and maintains its efforts to update its technologies at all times with high accuracy, efficiency, and reliability**

6000 ton Hot press forming

Super large Multi- functional NC- machine "Super Miller"

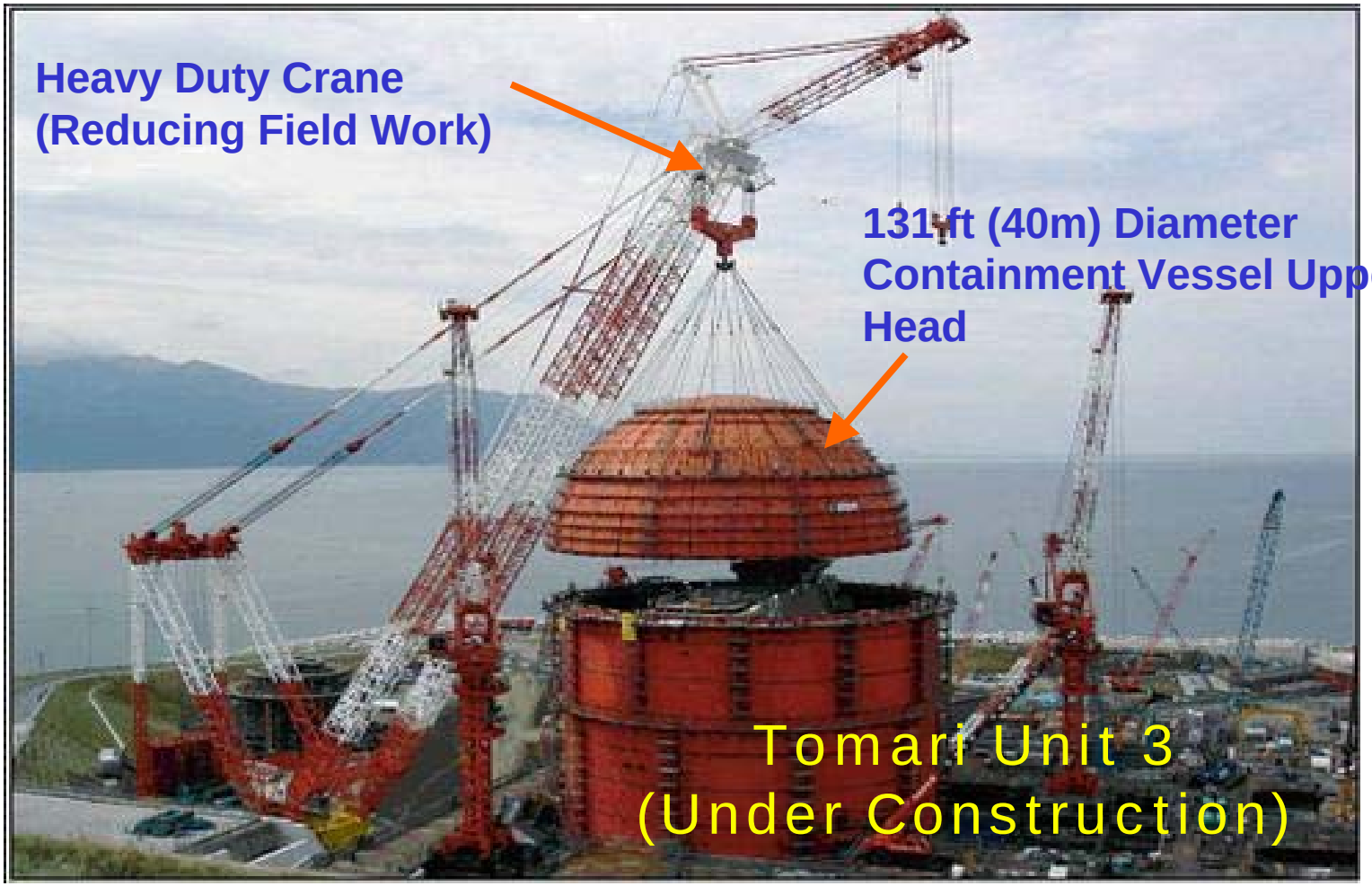


150kW Electron beam welding machine



Construction

- **Mitsubishi has introduced and demonstrated advanced construction methods resulting in both reduced construction schedules and reduced cost**



Operation and Maintenance

- **MHI has supplied 23 Plants in Japan**
- **MHI also has been providing the Maintenance Services**
- **MHI has provided a wide variety of Maintenance Services**

Comp.	Region	Inspection	Mitigation	Repair & Replacement	
Reactor Vessel	Nozzle safe-end	-UT -ECT	-Water jet peening -Alloy 690 cladding	Welding repair by alloy 690	Spool piece replacement

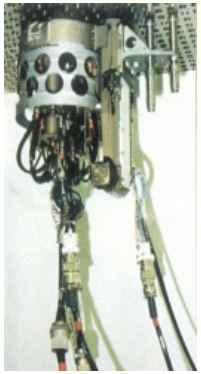
Comp.	Region	Inspection	Mitigation	Repair & Replacement	
Reactor Vessel	BMI nozzle Base metal	ECT UT(TOFD:Sizing)	Water jet peening	Drilled repair for ID	BMI replacement
				Cap repair	
	BMI nozzle J-weld	VT ECT	Water jet peening	Cap repair	

Comp.	Region	Inspection	Mitigation	Repair & Replacement
Steam Generator	Nozzle safe-end	-UT (inside) -ECT	-Shot peening	Spool piece & elbow replacement

Comp.	Region	Inspection	Mitigation	Repair & Replacement
Pressuri-zer	Nozzle safe-end	UT	L-SIP *1	Spool piece replacement -St[illegible] -sp[illegible] -sa[illegible]

: Already applied : Already developed : Under [illegible]

*1 L-SIP: outer surface irradiated Laser Stress Improvement Process



Replacement Service

- **Even after the plant has been installed, Mitsubishi keeps watch over its equipment with the rich experience and advanced technology which has been developed to ensure smooth operation**

Replacement of Lower Reactor Internals

Ikata Unit 1

Replacement of Steam Generator

Ikata Unit 2

Improvements in reliability and extension of plant life

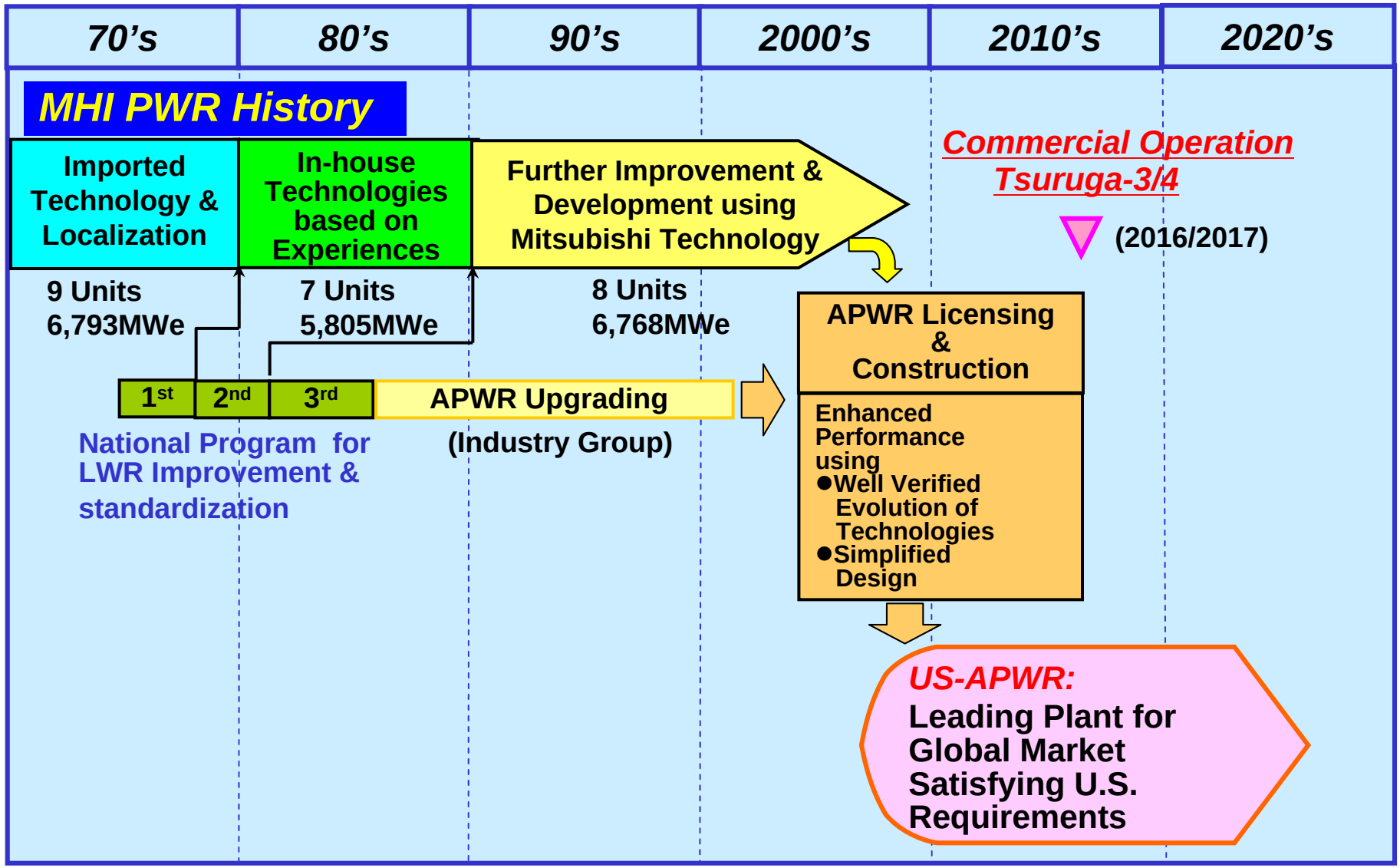
Replacement of Main Control Board

Genkai Units 1&2
After replacement

Improvements in operability Advanced Main Control

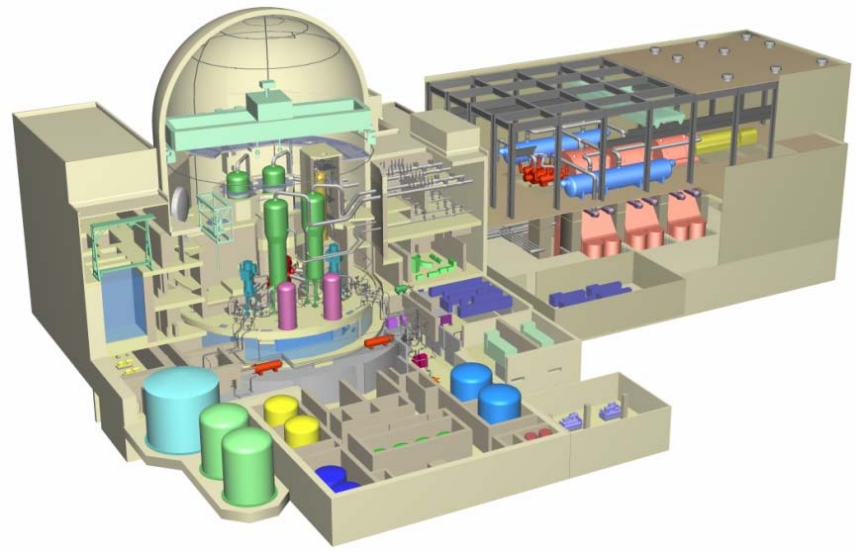
3. US-APWR Deployment

Inheritance and Improvement of Technologies



Deployment of US-APWR

- **Providing the world's largest class NPPs to meet the U.S. electrical demand and requirement**
- **Contributing to safe & stable power supply for U.S. network utilizing MHI's experience of NPP construction and verified advanced technologies**



1,700MWe Class Output

39% Thermal Efficiency

Enhanced Safety and Reliability