Investor Relations

Global Power EPC Company

KEPCO ENGINEERING & CONSTRUCTION COMPANY, INC.

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Company Overview

Korea's Leading Power Plant Engineering Company

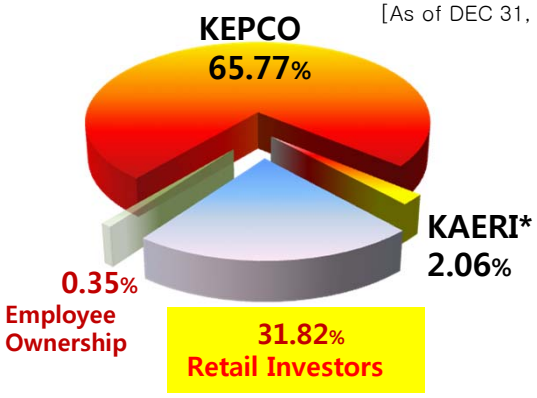
- Korea's leading provider of design and engineering for nuclear, thermal and hydro-electric plants with over 40 years of experience
- Current 100% market share in nuclear power plant design in Korea
- The world's most competitive engineering company specialized in the two sectors: A/E and NSSS
- Expanding its business to Thermal EPC, energy-related business, environment-friendly business, etc.

Corporate Information

CEO & President	Lee, Bae Soo • Former vice president, KEPS • Former advisor, Samsung Engineering
Foundation Date	October 1, 1975
Employees	2,386 (As of December 31, 2018)
Business Area	Power plant design & engineering, etc.

Ownership

[As of DEC 31, 2018]



* KAERI - Korea Atomic Energy Research Institute

IPO Information

Shares Outstanding *Common shares 100%	38,220,000
Listing Date	December 14, 2009
Offered Securities	7,644,000

Dividends

[Unit : KRW]

FY	2015	2016	2017	2018
Dividend Propensity*	25%	24%	40%	41%
Amount (per a share)	200	110	220	140

* Dividend Propensity – Dividend/Net Income *100

Business Overview

Business Area

• Design & Engineering

- Nuclear Power Plant
- Thermal Power Plant
- Combined Cycle Power Plant
- Cogeneration Power Plant

• O&M (Operations & Maintenance)

- Technology & Engineering Support for Operating Power Plants

• Energy Solution Package

- Funding
- Consulting
- Procurement
- Post-management

• Environmentally-friendly Biz

- FGD System / DeNOx System
- ESCO, Renewable Energy
- Water Pollution Control
- Wastewater Treatment Facilities

• National Project

- Government's task

Business Area – Design & Engineering

- All of the local nuclear power plants have been independently designed by KEPCO E&C since 1993
- Experiences of Coal fired/ CFBC Coal fired/ Combined Cycle/ Cogeneration Design

Major Project Experience

• Nuclear power/Reactor

Project	Project Period	Contract Amount (*)	Client
Shin-Kori #5,6	Apr '14 ~ Mar '22	4,167	KHNP
Shin-Hanul #3,4	Mar '16 ~ Dec `23	4,247	KHNP
UAE#1,2,3,4	Mar '10 ~ Dec '20	7,509	Kepco
SMART PPE BOP	June '06 ~ Feb '19	581	KAERI
Baraka Nuclear Power Plant LTEA	Jan '18 ~ Jan '31	3,400	Nawah Energy Company

Others

Project	Project Period	Contract Amount (*)	Client
APR 1400 NRC DC	Apr '14 ~ Mar '23	793	KHNP

(*) Unit : 100 million won.

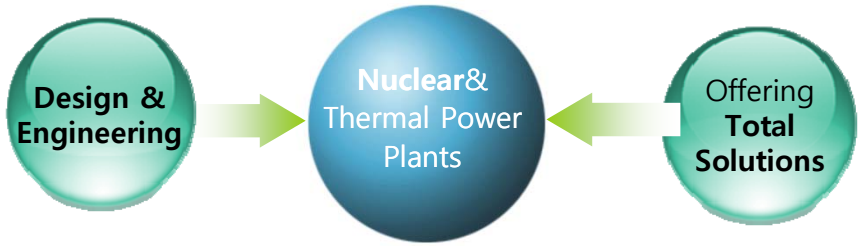
• Thermal power

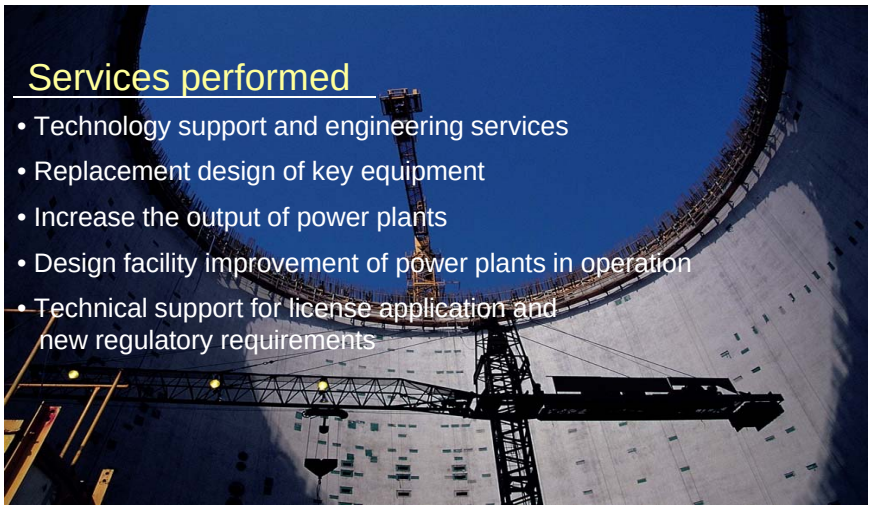
Project	Project Period	Contract Amount (*)	Client
Boryeong#4,5,6 Performance Improving	Nov '18~Mar '24	273	KMP
Shin-seocheon	June '14~Dec '19	668	KMP
Goseong Greenpower	May '14~Jan '22	884	SK E&C
Gangneung Anin	Feb '14~Sep '20	960	Samsung C&T
Taean #9,10	June '11~July '19	1,123	KWP

Business Area – O&M

Contribution to the Improvement of the Operating Power Plants' Operability, Efficiency and Safety

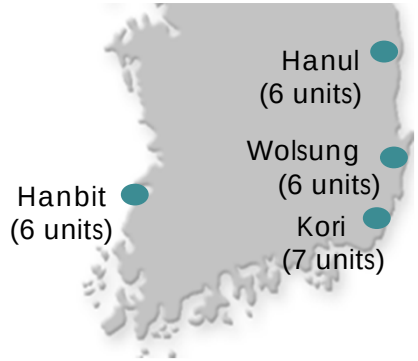
• O&M (Operations & Maintenance)





• Nuclear Power Plants in Operation in Korea

Reactor	Project	First Power	Design
APR 1400	Shin-Kori #3	2016	KEPCOE&C
OPR 1000+	Shin-Wolsung #1,2	2012 / 2015	KEPCOE&C
	Shin-Kori #1,2	2011 / 2012	KEPCOE&C
OPR 1000	Hanul #5,6	2004 / 2005	KEPCOE&C
	Hanbit #5,6	2002 / 2002	KEPCOE&C
	Hanul #3,4	1998 / 1999	KEPCOE&C
	Hanbit #3,4	1995 / 1996	KEPCOE&C-WEC
CANDU PHWR	Wolsung #3,4	1998 / 1999	AECL-KEPCOE&C
	Wolsung #2	1997	AECL-KEPCOE&C
	Wolsung #1	1983	AECL-CANATOM
PWR	Hanul #1,2	1988 / 1989	Framatome
	Hanbit #1,2	1986 / 1987	Bechtel-KEPCOE&C
	Kori #3,4	1985 / 1985	Bechtel-KEPCOE&C
	Kori #1,2	1978 / 1983	WEC-Gilbert



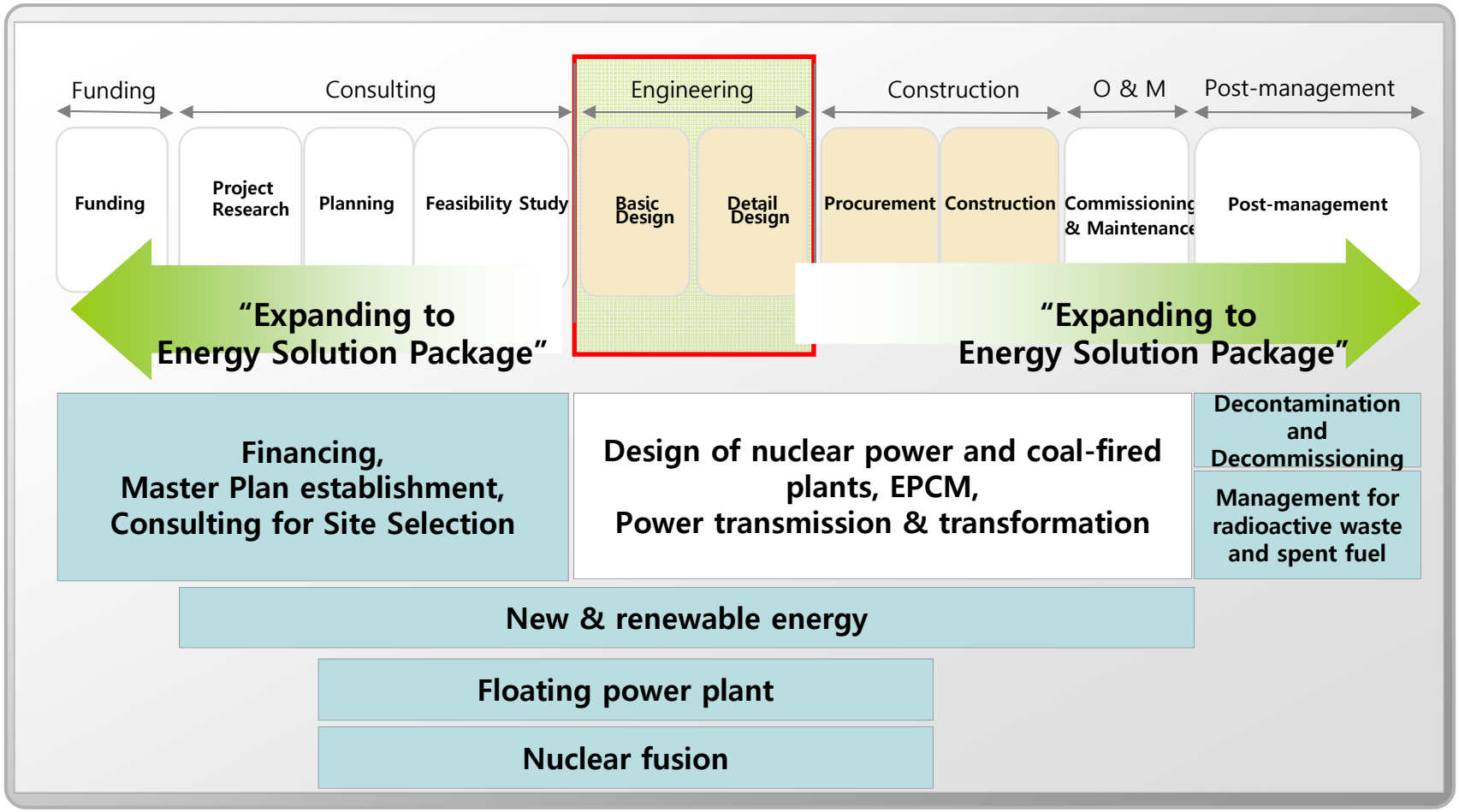
*The Uljin was renamed Hanul

*WEC – WestingHouse Electric.

*AECL – Atomic Energy of Canada Limited

Business Area – Energy Solution Package

Expanding its business areas to the overall value chain, including pre- and post-management of power plants



Technology – Nuclear Power Plant

Korean Nuclear Power Plant Design Development

1990s - GEN. Ⅲ

OPR 1000
Optimized Power Reactor

- Improved Safety
- Improved Operability, Maintainability and Accessibility
- Hanbit Units 5,6
  Hanul Units 3~6

OPR+
Improved OPR

- Optimization of plant arrangement
- Optimization of system design and Equipment capacity
- Shin-Wolsong Units 1,2
  Shin-Kori Units 1,2

2010s - GEN. Ⅲ+

APR 1400
Advanced Power Reactor

- 1,400MW Class large capacity
- A Korean nuclear power reactor improved economic factor
- Shin-Kori Units 3,4
  Shin-Hanul Units 1,2
  BNPP(UAE) Units 1~4

SMART
System-integrated Modular Advanced Reactor

- 90MW
- Reactor, steam generator, pressurizer & coolant pumps integrated in one vessel

APR 1400
(For Europe, 2017.11)

APR 1400
(US NRC DC*, 2018.9)

2020s - GEN. IV

- **Under Development**

APR+
Improved APR

- 1,500MW
- New light water nuclear reactor

VHTR
Very High Temperature Reactor

SFR
Sodium Cooled Fast Reactor

- **The Competing Reactors**

France	USA	Japan	Russia
AREVA	WH-Toshiba	Mitsubishi	ASE
EPR1600	AP1000	APWR+	VVER-1500

※ All of the reactors in this box are PWR type reactors.

* US NRC DC: United States Nuclear Regulatory Commission Design Certification

Technology – Thermal Power Plant

Coal-Fired Power Plant Design Development

Standard Coal Fire Power Plant (1000MW)

- Ultra-supercritical, highly efficient
- 1,000MW class large capacity
- Development completed as at 2007

Samcheok 1,2
Goseong Hi 1,2
Gangneung Anin 1,2
Dangjin 9,10
Shin-Boryeong 1,2
Taean 9,10

Standard Coal Fire Power Plant (800MW)

- Improved heat efficiency through the increase of steam temperature
- 3D CAD model design

Yeonghung 1~4

Standard Coal Fire Power Plant (500MW)

- Use of supercritical pressure steam, highly efficient operation
- Environment-friendly design

Boryeong 3~8
Taean 1~8
Dangjin 1~8

Standard Coal Fire Power Plant (200MW)

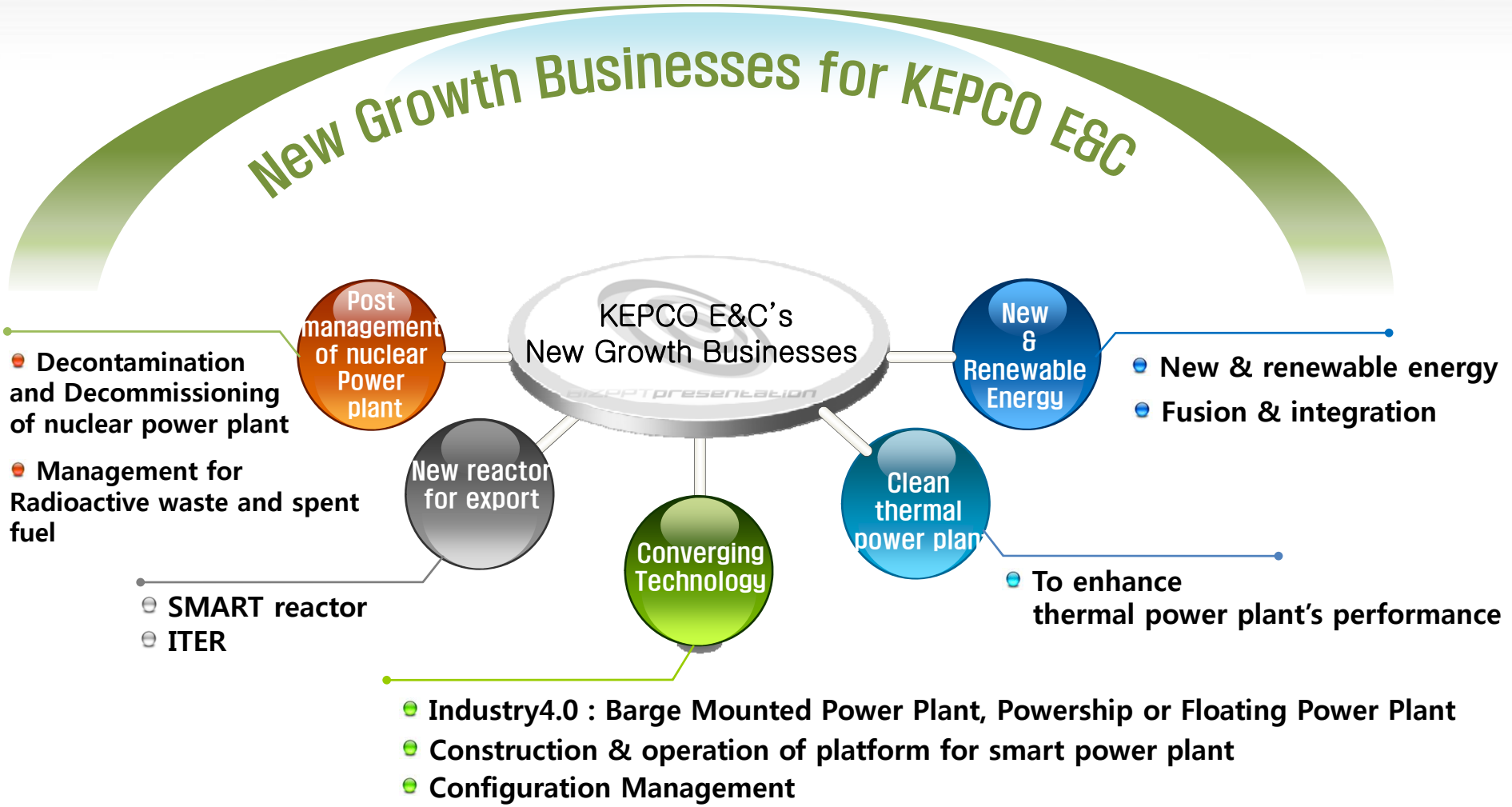
- Circulating fluidized bed boiler
- High compatibility of fuels

Tonghae 1,2
Yongwol 3

• **Dangjin #1~4- World Best Project Awarded**
<US, Power Engineering, 2001>

• **Boryeong #3,4 – World Best Project Awarded**
<US, Electric Power International,1996>

Focus on 10 core businesses in 5 areas



Nuclear power plans – Small Units & Others

• SMART export plan

▫ **SMART - Integral type reactor**
- steam generator, pressurizer, and coolant pump are all integrated into one vessel.

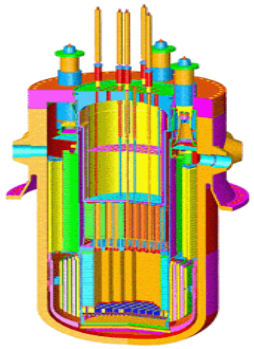
▫ 90MW of electricity output, 40,000ton/day of desalination capacity
- can supply a city with a population of 100,000

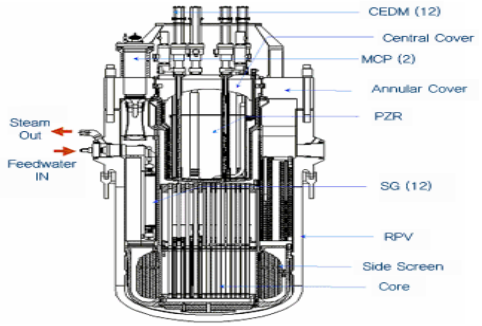
▫ Year 2012 : Acquired SDA(standard design approval) in Korea. (the first SDA as integral type reactor in the world)

▫ Year 2013 : Cooperation agreement with Saudi Arabia on the introduction of SMART in Saudi Arabia

▫ Year 2015 : Signed a deal to jointly invest in studying the prospect of building at least two SMART in Saudi Arabia

▫ Year 2017 : Performing PPE(Pre-Project Engineeing) to build two SMARTs in Saudi Arabia





• Participation in the international project – ITER

▫ International Thermonuclear Experimental Reactor(ITER) Project

▫ 7 countries that run the project – EU, U.S., Russia, China, Japan, India and South Korea

▫ Total amount of orders KEPCO E&C has received : 57.3 KRW bn. (expecting more orders)

Nuclear power plans – Decommissioning

• Decommissioning

▫ The oldest reactors in Korea

Plant	Commercial operation	Planned close	
KORI #1	1978	2017	license extended 2007 → 2017
Wolsung #1	1983	2012	license extended 2012 → 2022
KORI #2	1983	2023	
KORI #3	1985	2024	
KORI #4	1986	2025	

- Kori-1, the first nuclear power plant in Korea, is scheduled to become the first reactor to go dormant.
  - it had 30-year lifespan expired in 2007, but gained approval of additional 10-year operation.
- The Korean government announced in June, 2015 that the development of the 17 decommissioning techniques that have yet to be finished would be completed by 2021.

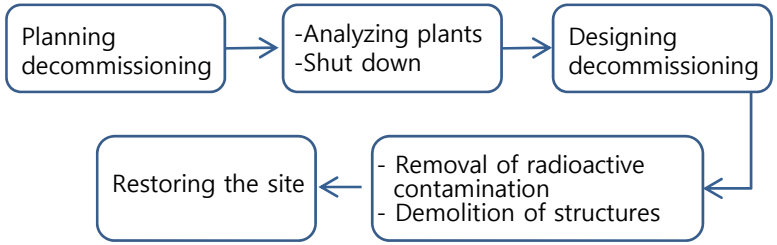
• Decommissioning?

- series of various follow-up processes upon the completion of operation regarding nuclear power plant facilitates.

• Minimization of radioactive contamination from facilities after decontamination and decommissioning.

• Republic of Korea and UK have strengthen cooperation in the research on nuclear decommissioning.

• Decommissioning Flow



Nuclear power plans – Configuration Management

Application of Configuration Management

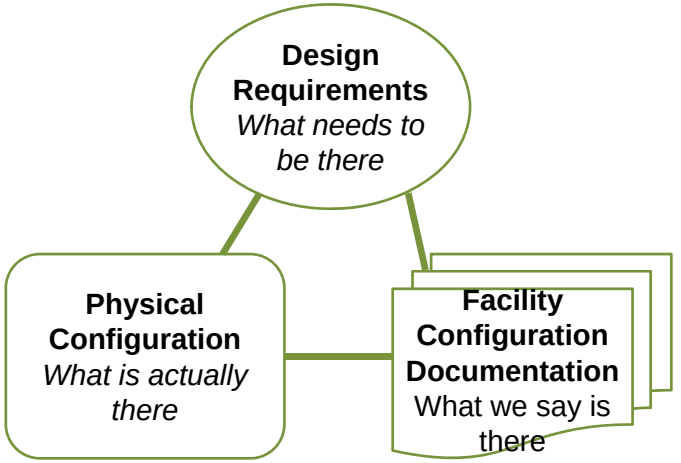
• Need of Configuration Management for prevention of critical accident

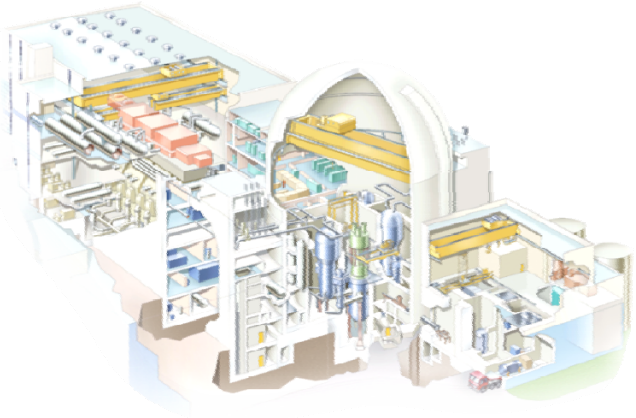
Situation	Purpose	Project
• 25~29% of accidents in nuclear plants relating with error of Configuration Management • Satisfaction of regulatory requirements	• IT-basis establishment of Configuration Management • Maintaining consistency between structure, systems and components • Assurance of that operational information consistent with design requirments is available	• Project : Establishment of system of Configuration Management for Shin-kori #5,6 • Contract Period : 2019.1 ~ 2023.10 • Contract Amount : KRW 27.1billion

• Definition

Configuration Management

Definition. The process of identifying and documenting the characteristics of a facility's structure, systems and components (SSCs) (including computer systems and software) and of ensuring that consistency is maintained between the design requirements, physical configuration and facility configuration and documentation.






200MW CFBC Power Plant Cutaway
Site plan key