

Challenges of New National Organization for Radioactive Waste Management in Korea

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Management Corporation

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Radwaste Management Policy and Status in Korea



Overview of KRMC



Status of LILW Repository Construction



Challenges and Measures of New Organization

Nuclear Power Program in Korea



Status of LILW Storage

<As of Dec. 2009 / unit: Drum>

Site		Capacity	Current
NPPs	Kori	50,200	40,387
	Yonggwang	23,300	20,776
	Wolsong	9,000	9,304
	Ulchin	17,400	16,290
	Sub-Total	99,900	86,757
KRMC(RI Waste Storage)		9,750	4,459
Korea Atomic Energy Research Institute		16,018	14,132
Korea Nuclear Fuel		8,900	6,833
TOTAL		134,568	112,181

Status of Spent Nuclear Fuel Storage

- ◆ Spent Nuclear Fuels are stored temporarily at four NPP sites until 2016 as recommended by AEC in Dec. 2004

<As of Dec. 2009 / unit: t U>

Site		Number of NPP	Capacity	Current
NPPs	Kori	4	2,253	1,762
	Yonggwang	6	2,686	1,704
	Ulchin	6	2,328	1,401
	Wolsong	4	9,440	5,893
TOTAL			16,707	10,760

National Policy for Radwaste Management

decided by AEC (Sep. 1998)

Basic Principles

- Control by the government
- Top priority on safety
- Minimization of waste generation
- 'Polluters pay' principle
- Transparency in policy

Experiences of LILW Disposal Site Selection

- **Nine attempts from 1986 had failed**
 - Five times by MOST/KAERI (1986~1996)
 - Four times by MOCIE/KHNP (1997~2004)
- **Adoption of New Site Selection Approaches**
 - Residents' vote / No SF facilities / Supports to the local community
- **Gyeongju-city selected by the residents' vote in four provinces (Nov. 2, 2005)**

The consent rate of four provinces

Gyeongju-city : 89.5%,	Gunsan-city : 84.4%,
Youngdok-county : 79.3%,	Pohang-city : 67.5%

- **'Gyeongju-city' designated as a LILW disposal facility site by the government (Jan. 2, 2006)**

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Background & Mission of KRMC

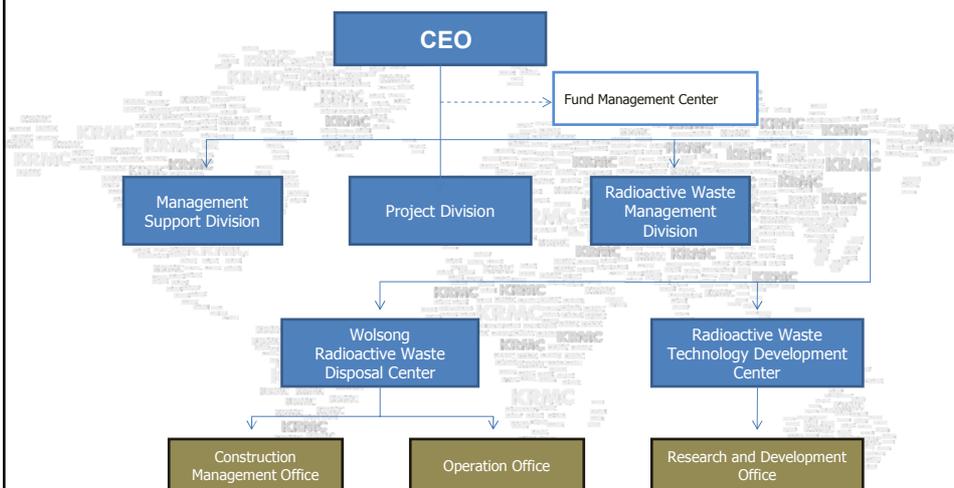
Background

- The need for establishment of new independent organization and the government funds
 - Legislation of the Radioactive Waste Management Act (March 2008)
 - Establishment of the Korea Radioactive Waste Management Corporation(KRMC) in Jan. 2009

Mission

- Transport and Disposal of Low and Intermediate Level Wastes
- Transport, Interim Storage and Disposal of Spent Fuel
- Research and Development on Radioactive Waste Management
- Implementation of Radioactive Waste Management Fund

Organization (Employees : 247)



On-going Efforts

- 1st stage Operation of Wolsong LILW Disposal Center in 2012
- Preparation for the 2nd Stage Construction of Wolsong LILW Disposal Center
- Spent Fuel Management Policy and Preparation for Interim Storage
- R&D on Radioactive Waste Management including Spent Fuel
- International Cooperation

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Project Milestone



Status of LILW Disposal Facility Construction

- **Location**
 - Bonggil-ri, Yangbuk-myun, Gyeongju-city (near Wolsong NPP site)
- **Site Area**
 - 2,130,104 m²
- **Capacity**
 - 100,000 Drums for the 1st Stage (Final Capacity : Total 800,000 Drums)
- **Disposal Method**
 - Underground Silo Type / 80m~130m below sea level(1st Stage)
- **Construction Duration**
 - Jan. 2006 ~ Dec. 2012 (1st Stage)

A bird's - eye View of Wolsong LILW Disposal Fac



Surface Facility

- Receipt & Storage Building : inspection & interim storage
- Radwaste Treatment Building : RI waste treatment, repacking
- Utility Service Building etc.



Underground Facility

- Operation Tunnel : Transportation of radioactive waste
- Construction Tunnel : Transportation of construction equipment and materials
- Shaft : Entrance for workers
- Silo : Final disposal of radioactive waste

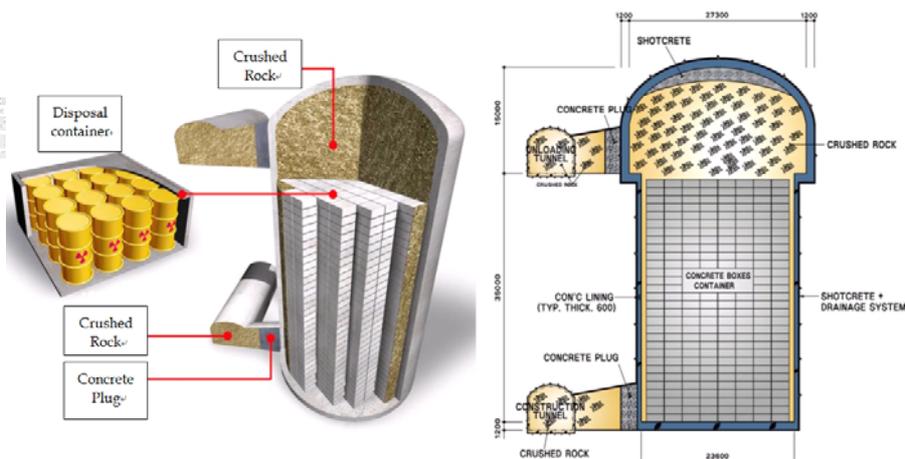


[Portal]



[Shaft Entrance]

Underground Silo



Transport Ship - HJ CHEONGJEONGNURI

<Apr. 15, 2009>



SPECIFICATIONS

- Length : 78.6 M
- Width : 15.8 M
- Gross Tonnage : 2,600 Ton
- D.W.T : 1,365 Ton
 - * D.W.T : Dead Weight Tonnage
- Speed : 12.0 Knots
- Engine : Diesel × 2(1632 HP × 2)
- Capacity : Max. 1,520 Drums

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