

Policy Directions for Eco-friendly Nuclear Power Plant Decommissioning through Case Comparisons.

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1. Introduction

The issue of nuclear power plant decommissioning is an important national policy that can no longer be postponed, not only in Korea but also globally. In particular, Korea has a large number of nuclear power plants that are nearing their planned lifespan by 2030. Korea, which designed its planned lifespan to be 30 or 40 years, is in a position where it will have to shut down one nuclear power plant every year. Of course, if it reinforces its facilities and extends its lifespan, the shutdown period can be extended a little. However, in the end, nuclear power plants must be shut down and dismantled. The table1 shows the status of nuclear power plants that will reach the end of their planned lifespan by 2030.

Table 1: Nuclear power plants whose operating period expires by 2030 if continued operation is not considered.

	Commercial Operation	Design life	Plan Expiration	
Kori#2	1983	40	2023	2033
Kori#3	1984	40	2024	2034?
Kori#4	1985	40	2025	2035?
Hanbit#1	1985	40	2025	?
Hanbit#2	1986	40	2026	?
Hanul#1	1987	40	2027	?
Hanul#2	1988	40	2028	
Wolsong#2	1996	30	2026	?
Wolsong#3	1997	30	2027	?
Wolsong#4	1999	30	2029	

The introduction of environmentally friendly methods for nuclear power plant decommissioning is currently a global trend. However, considering the decommissioning cost and decommissioning period, it is not possible to insist on environmentally friendly methods. Globally, each country's decommissioning policy is influenced by its environment and financial resources. In particular, in the case of Korea, there are many things to consider, such as securing land and financial resources, and securing technology.

In nuclear power plant decommissioning, the cost issue is linked to the technology secured and the decommissioning period. For example, in a country

with a small land area like Korea, it is never economically advantageous. However, from an environmental perspective, natural pollution reduction methods are a good method. The decommissioning method varies depending on which aspect is considered more.

In this presentation, it will discuss how to establish an eco-friendly policy for nuclear power plant decommissioning in Korea. It will also discuss what factors should be considered when doing so.

2. Methods and Results

This chapter examines Korea's nuclear power plant decommissioning plans and reviews the current status of decommissioning overseas. Based on the international situation, it discusses policy directions for environmentally friendly nuclear decommissioning.

2.1 Korea status

As shown in Table 1, we examine the status of Korean nuclear power plants whose expected lifespan ends by 2030 and the status of life extension. We also discuss the plans being prepared based on this.

2.2 Situation in other countries.

We examine the current status of nuclear power plant decommissioning in other countries, including the United States, France, and Sweden. We also explore examples of the application of eco-friendly policies in these countries

2.3 Eco-friendly Dismantling

We compare currently used nuclear power plant decommissioning technologies with newly developed eco-friendly decommissioning technologies. We also discuss the policy decisions necessary to apply these eco-friendly technologies.

3. Conclusions

Understand the current readiness for nuclear power plant decommissioning in Korea and the applicability of eco-friendly decommissioning technologies. Through a comparative analysis of economic and environmental

aspects, we will discuss the most suitable approach for the Korean context. .

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