

A Study on Fast Track Nuclear Project Based on IAEA Guideline and Case of UAE

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1. Introduction

World nuclear industry is recently having dynamic period of change. Demand of nuclear power increased dramatically in 2000s, so called 'Nuclear Renaissance', but Fukushima accident (2011) chilled down the nuclear industry and increased the uncertainty of world nuclear power plant (NPP) demand. After Fukushima accident, each country gradually settled down their own plan of electricity and some countries, especially developing countries, were still eager to adopt nuclear power. China, India and USA (nuclear adopted countries) are planning tremendous number of NPPs to meet their increasing electricity demand and Saudi Arabia, Vietnam (nuclear adopting countries) are also planning to include nuclear power in their energy mix as a long-term plan.

Korea has exported 4 units of APR1400 to the UAE in December, 2009. Korea became sixth NPP supplier country and our economic feasibility and safety features were started to evaluate worldwide. Nuclear industries became a new driver of Korea's export and nuclear industries in Korea are now expecting another NPP export to Middle-eastern countries, including UAE and Saudi Arabia, based on the first-mover's advantage at the UAE.

In 2000s, five countries (Japan, USA, France, Russia and Korea), which are able to build NPP, focused on NPP export more than domestic construction. Global trend of world nuclear market changed rapidly, especially after NPP export to the UAE. By the global trend, hegemony of nuclear market migrated from supplier country to buyer country. Nuclear companies started cooperating rather than competing. Financing to developing countries become more important. Furthermore, Korea's winning strategy in UAE affected competitor countries a lot. Their strategy evolved and their competitiveness has improved much more than before. Now, Korea should plan advanced strategy for exporting additional NPPs with the consideration of new trend and evolved competitors before it is too late.

2. Discussion on IAEA Guideline

2.1 Pre-project Stage

2.2 Project Decision-making Stage

2.3 Plant Construction Stage

2.4 Plant Operation Stage

2.5 Plant Decommissioning Stage

3. Case of UAE Nuclear Project

4. Concept of Fast Track Nuclear Project

5. Conclusions

REFERENCES

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