

Analysis of Regulatory Technology Support Status Using Milestone Approach for Supporting Establishment of National Safeguards Systems in the Middle East Region

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1. Introduction

Recently, Saudi Arabia addressed their willingness to develop nuclear weapons under certain condition, which have been heightened tensions regarding nuclear proliferation over the of the Middle East region. As a result, bilateral cooperation for establishing national safeguards system of the states which are willing to build nuclear power plants has become significantly important ever before in terms of setting preventing mechanism of nuclear proliferation in the Middle East. This paper will describe the results of analysis of regulatory technology support status using milestone approach for supporting establishment of national safeguards systems in the Middle East Region.

2. The Detailed Analysis of Safeguards-Related Needs through a Milestone Approach to Establishment of National Safeguards System

From early November 2010 to November 2017, the regulatory technology support activities, largely within the framework of the Technical Meeting and the Annual Meeting, to the UAE for establishing national nuclear safeguards system were conducted by ROK as follows.

Table 1. Specific Items of Regulatory technology support [3]

No	Items
1	Establishing process of SSAC
2	National inspection
3	Education and Training
	Safeguards Implementation of ROK
	- Legal framework
	- Cooperation system with IAEA
	- Experience on reporting to IAEA
4	- Experience on reporting to IAEA by mailbox
	- Experience on unannounced inspection (UI)
	- ROK National LOF Web Management System
	- Experience on reviewing documents and inspection

For providing more systematic support to the beneficiary countries, the analysis was conducted by using the tool named milestone approach [1, 2]. The results of mapping the existing infrastructure milestones in the areas of safeguards regulatory technology with the existing demand from the Middle East countries are as follows:

In the early stages (Milestone 1) of the UAE, Saudi Arabia, and Jordan, three countries also asked for regulatory technology in connection with the establishment of legal framework and regulatory body. In most cases, regulatory technology support will be tailored to identify the needs of the beneficiary countries. In the case of Saudi Arabia, they already prepared legislation proposal to the government in assistance with technical cooperation with other agencies such as STUK in Finland. In this case, ROK would rather provide technical support

regarding making regulatory implementation guides for safeguards inspection.

In addition, in early cooperation, it is the most important issue to let beneficiary countries recognize the necessity of the obligation demanded by international community. For example, if beneficiary countries signed CSA with IAEA under the NPT, the country is obliged to establish SSAC.

Analysis of existing regulatory technology support cases indicates that the beneficiary countries mainly focused on establishing their legal system, regulatory framework and sharing implementation status and procedure. In this regard, beneficiary countries will be more satisfied if the right regulatory technology is provided by following milestone and conducting needs survey to the beneficiary countries.

The UAE completed an agreement for commercial reactor in 2009, for Jordan signed agreement for research reactor in 2009, for commercial reactor in 2013.

In the case of UAE, the operation of the first BARAKAH nuclear plant is imminent, while in Saudi Arabia, the site selection process for smart nuclear power plants is still underway. Jordan also has a plan to operate the first nuclear power plant around 2021. Therefore, this three-stage milestone will need to be applied to the UAE.

In 2017, the international transportation of nuclear fresh fuel for Barakah NPP was carried out, and the recent agenda of the Technical Meeting and Annual Meeting with UAE/FANR, regulatory infrastructure such as the establishment of the legal framework and SSAC has been remarkably improved.

In addition, the UAE is eager to share their experience and support regulatory technology to its neighbor countries in the Middle East. It is a very desirable model in terms of not only strengthening international nuclear non-proliferation regime but also UAE provide their own experience to other

countries, especially neighbor countries in the Middle East, which will solidify nuclear non-proliferation regime in the region.

3. Conclusion

ROK should continue to play an important role in strengthening international nuclear non-proliferation regime with interest in countries that want to introduce nuclear power programs such as Saudi Arabia in the Middle East region. Starting with Belarus, Turkey, Lithuania, Bangladesh, Jordan, Poland, Egypt, Bahrain and Yemen are actively considering introducing nuclear power program, which could be biggest threat and challenge to international society. The milestone approach will be used as very useful tool for analyzing national status of readiness and delivering regulatory technology to these countries for establishing national safeguards system, which result in facilitating peaceful use of nuclear energy.

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