

Implementation of the Enhanced Cooperation between the ROK and the IAEA

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1. Introduction

Enhanced co-operation (EC) between the ROK and the IAEA was first implemented after the signing in October 2001 of the Memorandum of Understanding (MOU) for Enhanced Cooperation on Safeguards Implementation at Light Water Reactors (LWRs) in the ROK. The Agency's remote monitoring scheme at LWRs commenced in conjunction with this MOU.

As a result of this MOU, the quarterly interim inspections for timely detection were performed "by an inspector from either the IAEA or the ROK SSAC or both organizations". When an IAEA inspector did not participate in an inspection, the ROK SSAC performed an inspection and sent their report to the Agency in the IAEA format together with operating and accounting records. The IAEA was preparing quarterly reports/90(a) Statement reflecting independent conclusions based on the RM C/S review and evaluation and data sent by ROK SSSAC. The enhanced cooperation regime at LWRs turned out to be a great success both in efficiency and effectiveness for the Agency during traditional safeguards implementation. After implementation of IS in 2008 (in particular ISP-2 approach at ROK's LWRs) the MOU scheme became obsolete.

The efforts to continue & expand co-operation within the framework of integrated safeguards and in the line with evolving safeguards implementation resulted in the finalization of the new EC arrangements signed on 14 June 2012 that cover all facilities and LOFs in the ROK (44 facilities and 2 LOFs in ROK).

These arrangements are expanded to all nuclear fuel cycle-related facilities, activities and nuclear material in the ROK, requiring full use of the SSAC [NSSC/KINAC] and avoiding unnecessary duplication (ref Article 31 of INFCIR/236) of the State's accounting and control activities. This is done without compromising the IAEA's ability to draw independent conclusions. The SSAC's role may include the conduct of activities as prescribed by the IAEA, and in accordance with procedures to be agreed upon by the Parties.

2. ROK-IAEA Enhanced Cooperation Arrangements (ECA)

2.1 ECA Mutual Benefits

There are many benefits for both parties from the ECA, as it:

- Recognizes the ROK SSAC's professionalism and capabilities,

- Efficiently uses the huge ROK SSAC resources in safeguards without compromising the Agency's ability to draw independent conclusions, through the conduct by the SSAC of activities as prescribed by the IAEA, and reporting of the SSAC findings,
- Increases efficiency for both parties through joint use of equipment,
- Reaffirms the ROK's practice of transparency in the implementation of safeguards (within the scope of its authority),
- Provides for financial support to the Agency by providing funding and/or in-kind support to procure, install, operate, maintain, dismantle and/or dispose of joint use equipment on a cost sharing basis.
- Contributes to and supports the Agency's training program including facilitating access to installations/facilities in the ROK, and use of new/modern nuclear training centers.
- Facilitates collaboration in a joint programme for the development and use of new safeguards technologies and approaches (e.g. safeguards for new type of facility like pyro-processing).
- Establishes principles of data sharing from safeguards equipment designated for joint use, in accordance with the Agency's policy/requirements.
- Supports co-operation on the voluntary procurement outreach programme.

2.2 Coordination Group for Enhanced Cooperation

Just after signing the ROK-IAEA ECA, a joint ROK-IAEA coordination group for enhanced cooperation (CGEC) was established, which is responsible for identifying, prioritizing and implementing prescribed SSAC actions in an agreeable manner.

The CGEC is responsible for:

Identification of specific tasks (including creation of subgroups for identified tasks) and timelines for their implementation under the agreed areas for cooperation set forth in the ECA:

1. Specific safeguards-relevant activities to be implemented by the NSSC/KINAC/facility operators as appropriate
2. Joint-use equipment:
 - ✓ Cost sharing, funding and in-kind services to support, procure, install, operate, maintain, dismantle and dispose of joint-use equipment
 - ✓ Authorisation/certification of IAEA/ROK joint use equipment
 - ✓ Data sharing and data authentication / encryption
3. Modalities of reporting to the IAEA of all relevant activities performed by the NSSC/KINAC/facility

operators as appropriate in the absence of the IAEA, including the results and findings arising therefrom

4. Training
5. New technology development relevant to safeguards

Afterwards, the ROK and the Agency held the 1st CGEC meeting on 22-23 October 2012 and agreed on the CGEC framework and TOR (terms of references). Both parties agreed on the prioritization of five identified areas as described in the TOR (prescribed SSAC activities, training, joint-use equipment, modalities of reporting to the IAEA of all relevant activities performed by the SSAC in the absence of the Agency).

By the beginning of 2018, the ROK and the Agency has held 12th CGEC meeting. In the fourth meeting in 2014, the unannounced inspection(UI) at LWRs and the UI is applied in earnest from 2016 through the rehearsal period and the UI workshops to promote the understanding. The application of UI at LWRs in the ROK has improved efficiency of the safeguards activities in the ROK. In particular, the technical activities of the Agency at LWRs in 2015 & 2016 have been reduced by 80% compared to 2014, when UI was not applied. Additionally, a list of prescribed SSAC activities at NPPs were discussed, including roaming camera concept at LWRs, and joint-use equipment list, SSAC tasking templates and provision of SSAC national inspection results.

In preparation for the forthcoming annual Joint Review Meeting (JRM) between ROK and the Agency in 2018 the following are being prepared:

- List of joint-use equipment and joint procedure
- List of SG-relevant activities to be performed by the ROK's SSAC
- Practical implementation of the roaming camera concept at LWRs in the ROK
- Training on C/S Identify joint-use equipment
- Procedures for reporting to the IAEA of ROK SSAC activities
- Task/Action Request/Approval template

In order to facilitate the work, the CGEC site on SG Portal for internal use was created and also shared portal site for all CGEC group co-ordinators and supporters (e.g. from OLA) was established.

The outcomes of the ECA will be reflected in the updated SLA for ROK (subject of internal approval at the Agency), in accordance with the draft SLA guide.

2.3 Mid- and Long Term Actions

1. Cost-sharing

- Purchase of joint-use equipment
- Installation of joint-use equipment
- Repair/maintenance/disposal of joint-use equipment
- Operating expenses like network costs

- In-kind services

2. Data Collection/Sharing and Information Analysis

- Supplement Agency's DA, ES, open source, and other data resources
- Sharing security cameras data (e.g. ACPF)
- Profile analysis for NFC-related companies/universities with ROK NFC footprint
- Np/Am reporting (not anymore voluntary) - routine
- Reporting the locations of exempted NM pursuant to Article 36(b) which are below the threshold specified in Article 37, in addition to information submitted pursuant to AP article 2.a (vii)(b)
- Provision of environmental data
- Provision of specific mine productions
- Provision of information regarding status/scope of relevant international agreements on nuclear cooperation

3. Conclusion

Enhanced Cooperation with the ROK SSAC has already resulted in benefits in terms of implementation AP measures, with ROK SSAC support and not being overall procedural, enhanced trainings for Agency inspectors as well as cooperation in remote monitoring scheme. Work on specifying the implementation of additional areas of cooperation is on-going smoothly and will soon make additional contributions to improving the effectiveness and efficiency of the Agency's SG in the ROK by working effectively with the SSAC, while fully maintaining the Agency's ability to draw independent conclusions.

REFERENCES

- [1] Memorandum of Understanding (MOU) between the IAEA and the MOST of the ROK for an Enhanced Cooperation on Safeguards Implementation at LWRs in the ROK, 2001
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- [3] 1st~12th Meeting Minutes of coordination group for Enhanced Cooperation, 2012~2018