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Support for the IAEA Safeguards Activities in the ROK under COVID-19

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ABSTRACT

The World Health Organization (WHO) declared COVID-19 a Pandemic on March 11. Through this, economic damage has increased worldwide, and daily life itself has changed significantly, including policy changes in many countries and restrictions on movement. This naturally led to changes in IAEA safeguards activities and SSAC of IAEA member states. Under these circumstances, the ROK has made efforts from various perspectives to successfully carry out IAEA safeguards activities. In the early days of the Pandemic, there were various difficult situations such as travel restrictions and entry restrictions around the world under COVID-19, but the Korean government has cooperated closely with IAEA for the SG verification activities from the very early stage of the Pandemic to the present. As a result, total 104 SGs activities (95 inspections and 9 CAs) could be successfully performed in ROK.

Especially, in order to achieve the IAEA safeguards objectives, the ROK adjusted the operating schedule of domestic nuclear facilities and closely and actively cooperated with the IAEA so that IAEA inspections could be conducted in a timely manner. In addition, for the timely access to nuclear facilities, the Korean government has made efforts to successfully complete the IAEA inspection by conducting a lot of consultations with nuclear facilities.

1. INTRODUCTION

The World Health Organization (WHO) declared COVID-19 a global pandemic on March 11, 2020. We are experiencing significant changes in our lives from this unprecedented pandemic, including growing global economy damages, policy changes and travel restrictions worldwide, and more. We are establishing new orders against COVID-19 and this has led to the changes in IAEA safeguards and material accounting of IAEA Member States. The IAEA and Member States

continuously have devoted their efforts to minimize restraints in verification activities and successfully conduct the activities.

2. The IAEA's response to COVID-19

The IAEA Director General said to the Board of Governors that the safeguards implementation and supporting Member States relevant to COVID-19 are essential responsibilities of the IAEA and will continue the tasks in the face of the pandemic. The IAEA report with regard to COVID-19 pandemic passed the Board of Governors and has been released covering 1) support for IAEA Member States related to COVID-19, 2) status of IAEA safeguards implementation under the COVID-19 pandemic, and 3) nuclear and radioactive associated facilities and activities under the COVID-19 pandemic. To ensure its task continuity and access to information when in case of emergency, the IAEA has improved its continuity in tasks and restoration process. Furthermore, the IAEA launched an initiative for pandemics called Zoonotic Diseases Integrated Action (ZODIAC) project. The project applies nuclear and nuclear-derived techniques for integrated monitoring, surveillance, early detection and control of animal and zoonotic diseases in case of recurrence of such conditions and also established a global network that associates national laboratories. Moreover, in order to carry on safeguards implementation tasks, the IAEA prioritized the most critical activities in verification activities, set secured working-from-home systems, and others. Such efforts facilitated the implementation of legal obligations under the safeguards agreements and the development of relevant information.

Meanwhile, for the successful implementation of in-field verification activities, one of the most important aspects of verification, the IAEA leased a chartered plane for the first time and dispatched 78 inspectors and technical experts to 4 countries. Also, the IAEA conducted in-field inspections planned for 2020 by rescheduling tasks that could possibly be postponed and rearranging installations and maintenances of inspection equipment within a reasonable range. In terms of health and safety, the IAEA had difficulties early on in supplying personal protection equipment for inspectors due to the pandemic. However, it was able to continue its tasks thanks to the support and cooperation of Member States. As such, the IAEA was able to achieve its goals in a pandemic while meeting the aspects necessary for the implementation of IAEA safeguards, including travels, entry, departure, safety, and verification, through its own schemes and activities and cooperation of Member States.

3. The Republic of Korea's response to COVID-19

Rapid responses to COVID-19 were crucial in many corners in 2020. To fully implement safeguards such as support for IAEA inspection and national inspection, the Republic of Korea, thus, has developed measures to implement safeguards regulations in response to the COVID-19 pandemic. We, the Division of Safeguards at the Korea Institute of Nuclear Nonproliferation And Control (KINAC), have put the utmost effort through continuous communication and cooperation with the government and nuclear facilities to accomplish the IAEA safeguards verification objective. First of all, if we look at the trend of the most important proceedings of entry, travels, and departure of IAEA inspector to and from the Republic of Korea, overseas inbound arrivals are required to have a two-week quarantine period according to a domestic quarantine guideline. However, IAEA inspectors holding government official visas (A-2) are exempted from mandatory quarantine and classified to be managed apart. To be specific, at present, inspectors arriving the Republic of Korea move to temporary quarantine facilities to get COVID-19 test and are permitted to travel to destinations once they obtain negative test results immediately. In addition, active monitoring through self-check mobile application for 14 days and daily health check by the Korea Disease Control and Prevention Agency contacting through phone calls are performed. Regarding access to facilities, the access procedures agreed with nuclear facilities in early 2020 are being carefully followed: filling a health questionnaire, temperature screening, wearing a mask, and using hand sanitizer. Furthermore, as COVID-19 test result is required when departing, we provide a list of available hospitals in each region to prevent possible issues for inspectors to return.

Likewise, the Division of Safeguards prepared the Information Package to comply with travel and quarantine regulation which is considered another significant side along with verification. By sending the Package to the IAEA and the Nuclear Safety and Security Commission (NSSC), we immediately provide information such as changes in quarantine system between the Republic of Korea and the IAEA, notes to beware when they arrive and depart the country, and others, and contributed to the building of a prompt channel for cooperation between the NSSC and the IAEA.

Information package for COVID-19 in the ROK

As of 26. July

1

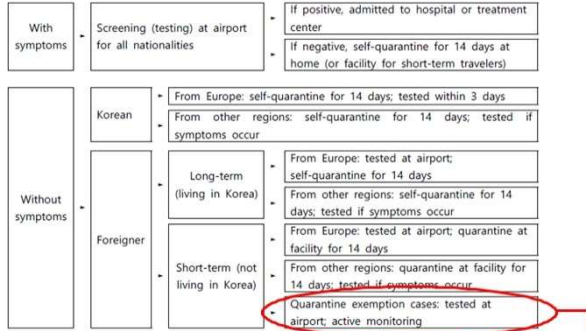
Fig.1 Information Package

This work is updated each time there is a change in the national quarantine policy and arrival procedures and is expected to be continued in 2021. The result has been of considerable assistance for IAEA inspectors in performing safeguards activities in the Republic of Korea, and the Head of Section expressed their gratitude several times during consultations with IAEA SGOA3. As of August, 2021, there have been 29 updates starting with the preparation in February 2020. Moreover, we are regularly in contact with various authorities such as the Korea Disease Control and Prevention Agency, the Ministry of Health and Welfare, the Ministry of Foreign Affairs, temporary COVID-19 testing facilities, airport quarantine station, nuclear facilities in order to prepare detailed and accurate information for the Package. The main content of the Package includes a special entry program, guidelines on levels of social distancing, mandatory mask-wearing, safeguards contact list, procedures to access each nuclear facility, testing facilities for departure, issues in the quarantine system, glossary, and others.

KCDC English Website; ncov.mohw.go.kr/en

Special Entry Procedure ; When arriving ROK Incheon airport, Koreans and foreign nationals have to **submit PCR test result within 72 hours as of departure day** and **receive temperature screening** and **fill out the Health Questionnaire** and Special Quarantine Declaration in accordance with the Special Entry Procedure. All travelers are **allowed to enter the nation after their contact information and address of residence in Korea is verified**. They are also required to **install "Self-Diagnosis App"** on their phones to **check of they show any COVID-19 symptoms on a daily basis for 14 days**. In addition, the list of incoming travelers is provided to each local government (city or province) in an effort to strengthen the monitoring system.

The Quarantine process for travelers from overseas



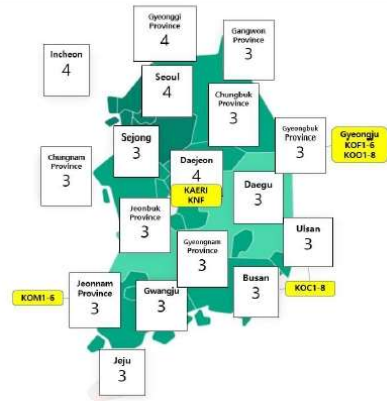
(A2 visa Quarantine exemption case) After PCR test at Incheon airport, the results will be provided through mobile text message as follow image.

- Symptomatic Passengers**
- All entrants from abroad (both Korean nationals and foreigners) will go

COVID-19 New Social distancing rules (from 1st, July, 2021)

- The ROK government announced on 23rd, July that the level 4 restrictions will be maintained in the greater Seoul area (Seoul, Gyeonggi Province and Incheon, 40 km west of the Capital) until August 8.
- In addition, on July 25, the government has decided to raise social distancing to level 3 for all regions outside the greater Seoul area for two weeks from July 27 to August 8.
- Especially, Daejeon mayor announced on July 25 that level 4 will apply for the same two week period starting on July 27.
- IAEA inspectors can freely use public transportation such as buses, taxis after arriving at Gyeongju or Shingyeongju Station.

Note: Regarding KNF PIV starting July 26, Please do not gather more than 3 people, especially at restaurants, cafes, etc. after 6 p.m.



<Social Distancing in the ROK; from 7.27. ~ 8.8.>

New Social distancing levels

New social distancing scheme

	Level 1	Level 2	Level 3	Level 4
Private Gatherings	- Not Specified	- Up to 8 persons	- Up to 4 persons	- Up to 2 persons
Publicly Used Facilities	- Not Specified	- Reducing usage rate - Entertainment facilities, etc., singing rooms, restaurants and cafes limited to 24:00	- Entertainment facilities, etc., singing rooms, restaurants, cafes and public bath businesses restricted to 22:00	- Expanding 22:00 restriction - Gatherings banned at dance clubs, nightclubs, dance pubs and street cart bars
Events	- Events of 500 people or more need to report in advance	- Events of 100 people or more prohibited	- Events of 50 people or more prohibited	- Events banned
Assemblies	- Assemblies of 500 people or more prohibited			- Prohibited except one-person protest

- Level 1** there is no cap on private gatherings, nor any restrictions on business operations such as curfews, but events involving 500 people or more are banned. Religious facilities such as churches will be obligated to limit the number congregants to half their total capacity, while people who have received at least one dose of a COVID-19 vaccine will be exempt from attendance limits.
- Level 2** up to **eight people** can attend private gatherings, and events can only be held with under 100 people. Restaurants, cafes, singing rooms, and nightlife venues such as clubs can operate until midnight. After Midnight only delivery or take-out is available at Restaurant and Cafes. Religious facilities can have people up to 30 percent of the capacity.
- Level 3** up to four people can attend private gatherings, and events are allowed up to 49 people. **After 10 p.m.**, nightlife venues (e.g. pub, bar, club) must close and **only delivery or take-out is available at Restaurants and Cafes**. Religious facilities can only fill up 20 percent of their capacity
- In the final **Level 4**, only up to **two people** can privately gather after 6 p.m. and up to 4 before 6 p.m., and all types of events will be prohibited. As for sports events no spectators will be allowed. **After 10 p.m.**, **only delivery or take-out is available at Restaurants and Cafes**. Nightclubs and bars that allow dancing will be forced to shut down.

Korean-English Glossary 50 for Infectious Disease Prevention and Control

	Korean	English	
주요 명칭	1 중앙재난안전대책본부	Central Disaster and Safety Countermeasure Headquarters	
	2 중앙사고수습본부	Central Disaster Management Headquarters	
	3 중앙방역대책본부	Central Disease Control Headquarters	
	4 감염병 예방 및 관리에 관한 법률	Infectious Disease Control and Prevention Act	
	5 감염병 예방 및 관리에 관한 법률 시행령	Enforcement Decree of the Infectious Disease Control and Prevention Act	
진단 검사	6 검사	testing / test	
	7 진단검사	diagnostic test	
	8 실험실 검사	laboratory (lab) test	
	9 실시간 RT-PCR assay	real-time RT-PCR assays	
	10 분자검역	isolation culture	
	11 검체 채취	specimen collection / sample collection	
	12 집단검사	pooled testing / pool testing / pooled-sample testing / sample pooling	
	예방 진료	13 선별진료소 (문진 + 검체채취단)	screening center / screening clinic / screening station
		14 드라이브스루 선별진료소	drive-through screening station
		15 워크스루 선별진료소	walk-through screening station
		16 공항개방형 선별진료소	open walk-through screening station (at airport)
17 확진자		confirmed case	
예방 조치 및 방역 조치	18 - 신규 확진자 (신규 문자)	new confirmed case / newly confirmed case	
	19 의심환자	suspected case / suspect case	
	20 밀접 접촉자 / 밀접한 접촉	close contact / come in close contact with	
	21 무증상자 (무증상 확진자)	asymptomatic case	
	22 재발성 사례	a case that tested positive again after discharge from isolation / a case that retested positive after recovery / "retested positive case" / "the positive case"	
	23 역학조사	epidemiological investigation	
	24 조사 중	under investigation	
	25 접촉자 추적조사	contact tracing	
	26 (은차) 격리차: 격리	isolation	
	27 (은차) 격리차: 격리	quarantine	
	28 - 격리 중	under isolation (quarantine) / in isolation (quarantine)	
	29 - 격리 해제	discharge from isolation / release from quarantine	
	30 자가격리 해제	home isolation / home quarantine / self-isolation / self-quarantine	
	31 자가격리 해제	release from home quarantine / release from home isolation / release from self-quarantine / release from self-isolation	
32 동향단절 격리 / 코호트 격리	cohort isolation		
33 능동감시	active monitoring		
34 국민안전병원	National Safe Hospitals		
35 생활치료센터	Living Treatment Centers /		

Fig.2 Major Contents of Information Package

In addition, we endeavored to prevent the possibility of transmission of the virus by minimizing in-field visits by national inspectors, and the task could be safely delivered by NPP site-resident inspectors. By scheduling verification tasks, nuclear facilities also have been a great help in achieving 100% of IAEA verification. As a result, in 2020, a total of 95 inspections were performed at the IAEA inspection, including Unannounced Inspections (UI) and Physical Inventory Verification (PIV) for which a total of 289 PDI (Person Day Inspection) inspection resources were used. 9 Complementary Accesses (CAs) were conducted under the Additional Protocol, such as checking information on the extension report of the Additional Protocol using 18 PDI inspection resources.

Conclusions

Despite the unprecedented condition, these efforts allowed the Republic of Korea to perform national inspection and IAEA inspections on nuclear facilities in time and receive a Satisfactory on Secure Communication from IAEA inspection after the COVID-19 outbreak. Moreover, the Broad Conclusion, which is the official approval of the absence of unreported nuclear activities, was accomplished. The Republic of Korea, during the COVID-19 pandemic, once again was able to demonstrate its nuclear transparency in the international community through rapid response and material accounting. The Republic of Korea will comply with quarantine guidelines in response to the prolonged COVID-19 in 2021 and actively support and make every utmost effort to carry out IAEA safeguards activities successfully.

REFERENCES

[1] <https://www.iaea.org/about/governance/board-of-governors>