

**International Conference on Occupational Radiation Protection:  
Strengthening Radiation Protection of Workers –Twenty Years of Progress  
and the Way Forward**

Contribution ID: 223

Type: **Poster**

## **Regulatory status and current issues for optimization of occupational radiation protection for commercial aircrew in Republic of Korea**

With much economic development around the world, the commercial air transport business is expanding for international trade and travel. Accordingly, the flight time at high altitudes of commercial aircrew is increasing, and the exposure dose of cosmic radiation tends to increase. In recent UNSCEAR and national survey reports, the average exposure dose of cosmic radiation of flight crews is about 2 mSv, which is higher than that of occupational radiation of other radiation workers. Hence, optimization of cosmic radiation protection for commercial aircrews is emerging as important issue globally.

In this background, 'regulatory status and current issues for the optimization of occupational radiation protection of Korean commercial aircrew' are reviewed in this study. Since cosmic radiation-related research has been mainly conducted from the perspective of space/astronomical physics and cosmic meteorology, this study is mainly focused on the perspective and role of the government and regulatory authorities in charge of radiological safety regulation for flight crew members.

IAEA safety standards related to the protection of cosmic radiation due to the performance of duties of aircrews are the GSR Part 3 requirements (2014) and the GSG-7 guides (2018). The IAEA GSR Part 3 classify and manage cosmic radiation exposure of aircrews as existing exposure situations, and present related requirements. In this study, the requirements associated to "optimization" of cosmic radiation protection for aircrews are summarized into the five main factors.

The Act for the protection of cosmic radiation protection for Korean aircrews is the 『Act on Protective Action Guidelines against Radiation in the Natural Environment』. In this law, Article 18 presents the safety management requirements for cosmic radiation. The main regulatory requirements related to "optimization" of cosmic radiation protection for aircrews are summarized based on the factors extracted from the IAEA safety standards in this study.

In accordance with Article 23 of the Act, regulatory authorities conduct annual investigation and analysis of the actual state of safety management of air transport operators, and publish annual report. In this study, the latest three-year (2018-2020) reports were analysed and summarized based on the "optimization" factors of cosmic radiation protection.

In Republic of Korea, the outbreak of leukaemia and claims for industrial accidents by a former aircrew of a Korean airline in 2018 were widely reported in the media. It became a big social issue and the problems and responses were discussed at the National Assembly and government. These can be broadly divided into technical issues, regulatory agency issues, and safety management issues. Recent responses for each problem raised are summarized.

In this study, the current status and issues of regulations in Korea related to the optimization of the cosmic radiation protection for aircrews were overviewed. It is considered that Korean regulatory standards and activities are established and operated to comply with the IAEA safety standards. However, it is thought that it is necessary to upgrade the regulatory technology and refine the related guidelines in detail for the evaluation and measurement of cosmic radiation to response to domestic issues.

### **Speakers email**

k732hgy@kins.re.kr

### **Speakers affiliation**

Korea Institute of Nuclear Safety

### **Name of Member State/Organization**

Republic of Korea

**Primary author:** Mr HAN, Giyoung (Korea Institute of Nuclear Safety)

**Co-authors:** Mr KIM, Daejin (Korea Institute of Nuclear Safety); Ms KIM, Jiyoung (Korea Institute of Nuclear Safety); Dr JEONG, Gyuhan (Korea Institute of Nuclear Safety)

**Presenter:** Mr HAN, Giyoung (Korea Institute of Nuclear Safety)

**Session Classification:** Session 7. Occupational radiation protection in the workplaces involving exposure to naturally occurring radioactive material, radon, and cosmic rays

**Track Classification:** 5. Occupational radiation protection in the workplaces involving exposure to naturally occurring radioactive material, radon and cosmic rays