International Civil Aviation Organization

THE THIRD MEETING OF ASIA/PACIFIC METEOROLOGICAL HAZARDS TASK FORCE (MET/H TF/3)

Bangkok, Thailand, 13 – 15 March 2013

Agenda Item 2 a): Monitor the developments of IAVWOPSG and METWSG with reference to guidance on radioactive cloud and Tsunami

TERMINATION OF RADIOACTIVE CLOUD SIGMET ON FUKUSHIMA INCIDENT

(Presented by Japan)

SUMMARY

The Japan Meteorological Agency (JMA) terminated the issuance of radioactive cloud SIGMET at 15UTC on 5th February 2013. This paper introduces the information on termination of radioactive cloud SIGMET.

1. INTRODUCTION

1.1 The Japan Meteorological Agency started to issue radioactive cloud SIGMET (R-SIGMET) at 0610UTC, 17th March 2011 in response to the accident of the Fukushima Daiichi nuclear power plant.

1.2 At the beginning, the area of the SIGMET was within 30 km radius of Fukushima Daiichi nuclear power plant according to the indoor evacuation area for inhabitants declared by the Japanese government, which was the only credible source of danger at that time. The area was in consistent with the no-fly zone issued by the Japan Civil Aviation Bureau (JCAB).

1.3 On 31st May 2011, JMA changed the area to 20 km radius of the plant at the same time as JCAB reduced the no-fly zone based on consultation with the Nuclear Safety Institute. On 25th February 2012, the region of R-SIGMET was reduced again to 3km radius of the plant according to the result of air dose rate monitoring conducted by the Japan Atomic Energy Agency (JAEA).

1.4 JMA reported the detail and problems regarding to issuance of R-SIGMET in IP50 of CNS/MET SG/16.

2. THE CIRCUMSTANCES OF THE TERMINATION OF R-SIGMET

2.1 JAEA conducted the radiation monitoring within no-fly zone by an unmanned helicopter at the end of 2012. According to this monitoring, the maximum value of the estimated ambient dose rate at an altitude of 5000ft (1500 m) from the ground was a 0.1 micro Sv per hour.

2.2 The International Commission on Radiological Protection (ICRP) recommends limiting artificial irradiation of the public to an average of 1 mSv per year. Even if an aircraft takes flight at 5000ft over Fukushima Daiichi nuclear power plant 1000 hours a year, which is the maximum flight time permitted per year, the dose of the aircraft is less than 1mSv.

2.3 As the safety higher than 5000ft has been ensured, JCAB changed no-fly zone to less than 5000ft within 3km radius of the plant at 15UTC on 5th February 2013.

2.4 According to ANNEX3, SIGMET shall be issued "concerning the occurrence and/or expected occurrence of specified en-route weather phenomena, which may affect the safety of aircraft operations and of the development of those phenomena in time and space". At a specific air route which is within 3km radius to Fukushima Daiichi nuclear power plant, the minimum fight level is set to more than 5000ft. From the monitoring conducted by JAEA, the safety on an air route has been ensured. Therefore, JMA ended the issuance of R-SIGMET at the same time of change of no-fly zone.

3. LESSONS LEARNED FROM ACTUAL ISSUANCE OF R-SIGMET

3.1 From the lessons of actual issuance of SIGMET for radioactive clouds, following points should be considered and involved to the guidelines.

3.2 SIGMET information is issued when specified en-route phenomena which may affect the safety of aircraft operations occur or is expected to occur. However, effects of radioactive material on aircraft operation, thus the criteria for the issuance of SIGMET are not clear.

3.3 Uncertainty of EER products should be recognized. Sometimes it is difficult to obtain appropriate parameters. Especially the parameters with regard to the emission such as rate of blowout, height of blowout are important for the prediction of the transport but difficult to obtain.

3.4 Each country has its original policy for the disaster prevention against the nuclear emergency. The SIGMET information should be consistent with the action taken by the each government, otherwise the inconsistency may cause significant disturbance.

3.5 For the national disaster prevention against the nuclear emergency, smaller domain compared with the scale of weather phenomena or too complex domain which cannot be expressed by simple polygon may be required.

3.6 In the current status, because there is no useful technique for the forecast of the atmospheric transport of the radioactive cloud due to the lack of source term information, there would be no choice but using unchanged area for the SIGMET information. The period of validity of SIGMET information may be too short.

4. ACTION BY THE MEETING

4.1 The meeting is invited to note the information contained in this paper.

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