



*International Civil Aviation Organization*

**SIXTH MEETING OF THE ASIA/PACIFIC METEOROLOGICAL SERVICES WORKING GROUP (MET/S WG/6)**

Bangkok, Thailand, 9 – 11 March 2016

**Agenda Item 2: SIGMET and (volcanic ash and tropical cyclone) advisory information (including SIGMET tests)**

**THE ASIA/PACIFIC REGIONAL GUIDANCE ON THE ISSUANCE OF SIGMET FOR RADIOACTIVE CLOUD**

(Presented by the Rapporteur, MET/S WG, Ad Hoc Group)

**SUMMARY**

This paper discusses the guidance on the issuance of SIGMET for radioactive clouds.

**1. INTRODUCTION**

1.1 At the fourth meeting of the Meteorological Hazards Task Force (MET/H TF/4), held in Beijing, China from 19-21 March 2014, following a survey of the present capabilities of Asia/Pacific States to prepare and issue SIGMETs for radioactive clouds, it was agreed to form an ad-hoc group comprising China (Rapporteur), Hong Kong-China and Japan to develop guidance for possible inclusion in the Regional SIGMET Guide on the issuance of SIGMET for radioactive cloud.

1.2 A draft regional guidance material on the issuance of SIGMET for radioactive clouds was prepared by the ad-hoc group and presented at the fifth meeting of the Meteorological Hazards Task Force (MET/H TF/5), held in Seoul, Republic of Korea from 18-20 March 2015. Subsequently the following Decision was formulated:

**Decision 5/3 – Regional guidance material: SIGMET for radioactive clouds**

That, in order to enhance the regional guidance material on SIGMET for radioactive clouds, additional comments be sought from the MET/H TF with respect to the draft guidance material provided in IP/3, and the draft guidance be revised and developed further as necessary, before submission for review by MET SG/19 and consideration of further action.

1.3 After gathering comments from the MET/H TF members, the draft regional guidance material was presented at the nineteenth meeting of the Meteorological Sub Group (MET/SG/19), held in Bangkok, Thailand from 3-6 August 2015. The meeting adopted the following Decision:

**Decision 19/20 — Regional guidance on SIGMET (radioactive cloud)**

That,

- a) MET SG members who are members of the METP, be invited to forward the draft guideline on the issuance of SIGMET for radioactive cloud to the METP at the earliest opportunity for further consideration; and
- b) The ad hoc group be invited to continue work on Regional guidance material based on the work done so far.

1.4 The draft guidance materials were presented in to the First Meeting of the Meteorology Panel (METP) Meteorological Information and Service Development Working Group (WG-MISD) held in Washington D.C., U.S.A., from 16 to 19 November 2015. The meeting noted the development of the interim guideline.

1.5 This paper provides an update about the consideration of the draft guidance.

**2. DISCUSSION**

2.1 For the draft guidance presented in MET/H TF/5: if local radiological authority is available, the SIGMET area should be consistent with the intervention area of the local authority. If there is no local authority, (a) during the initial release of radioactive material into the atmosphere, a SIGMET area of 30 km (16nm) centered on the location of the release be adopted; and (b) after EER products are available, the SIGMET should be based on the EER products using a threshold of 0.1 $\mu$ Sv/h.

2.2 The 30 km area is based on Memo/64 dated 29 Jul 2014 as prepared by the IAVWOPSG Secretary. It has been discussed for some time within the aviation community and the radiological experts, and this may be generally acceptable as far as the initial release of the radioactivity materials is concerned.

2.3 For the threshold of 0.1 $\mu$ Sv/h, it is based on the experience of Fukushima nuclear power plant incident in March 2011 and the discussion in IAVWOPSG/6-WP/17. However, there is not yet general consensus in the various technical expert teams on the threshold value and it may need some more time for further deliberation of the matter. As a comparison, it has been estimated annual natural background doses of humans worldwide to average 2.4 mSv, with a typical range of 1–10 mSv (i.e. 0.114 to 1.14 $\mu$ Sv/h). The average dose rate for long-haul (e.g. trans-Atlantic) flights is about 4  $\mu$ Sv/h. Moreover, there are inherent uncertainties with the EER products, and it is difficult to obtain appropriate parameters, such as rate and height of blowout which are important for the prediction of the transport.

2.4 It is understood that an ad hoc working group comprising ICAO, WMO and IAEA would develop the guidance for global adoption within a year's time frame. It may be prudent to wait for the development of this global guidance before a regional guidance on SIGMET issuance is to be formulated.

**3. ACTION BY THE MEETING**

3.1 The meeting is invited to:

- a) note the information in this paper;
- b) discuss with way forward with the guidance.

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