



Agenda Item 6: Other business

SIGMET FOR ACCIDENTAL RELEASE OF RADIOACTIVE MATERIAL

(Presented by the Secretariat)

SUMMARY	
<p>This working paper presents the concern over the inclusion of issues related to the accidental release of radioactive material or the presence of radioactive clouds in SAM FIRs in ATS/MET Coordination Agreements. It also makes emphasis on the recommended procedures.</p>	
REFERENCES	
<ul style="list-style-type: none">• Annex 3 – <i>Meteorological service for international air navigation</i>• Doc 8896 <i>Manual of aeronautical meteorological practice</i>• Doc 9691 <i>Manual on volcanic ash, radioactive material and toxic chemical clouds</i>• Report of the Seventh Meeting of the International Airways Volcano Watch Operations Group (IAVWOPSG/7) Bangkok – Thailand• Draft report of the 2014 Meteorology Divisional Meeting (MET/DIV/14)	
ICAO strategic objectives:	<p><i>A - Safety</i> <i>B – Air navigation capacity and efficiency</i> <i>E – Environmental protection</i></p>

1. Background

1.1 ICAO Annex 3 introduced the requirement for the transmission of SIGMET messages for the accidental release of radioactive material as part of the information to be provided by the Meteorological Watch Offices of the States, as set forth in ICAO Doc 8896.

1.2 ICAO Doc 9691 presents draft guidelines on the procedures concerning information on the accidental release of radioactive material into the atmosphere.

1.3 The seventh meeting of the IAVWOPSG, held in Bangkok, Thailand in 2013, addressed the issue in relation to the possible functions of regional specialized meteorological centres of the World Meteorological Organization in case of a nuclear accident.

1.4 The 2014 Meteorology Divisional Meeting (MET/DIV/14) considered that the issue should be addressed under agenda item 2 given the hazards that could result from this situation.

2. Discussion

2.1 Amendment 72 to Annex 3 – Meteorological service for international air navigation, included the accidental release of radioactive material as one of the phenomena for which a SIGMET should be issued.

2.2 Concern over radioactive clouds emerged following the Chernobyl accident, in which a cloud of radioactive debris extended across international borders and caused difficulties to aircraft operations in neighbouring States, and alerted on the possible risk faced by aircraft en route to destinations along the path of said clouds.

2.3 The Meeting must take into account that the Air Navigation Commission, from the point of view of operations, considered that there were many similarities between the issues caused by radioactive clouds and those caused by volcanic ash. Accordingly, the International Airways Volcano Watch Operations Group (IAVWOPSG) was tasked with studying future procedures and guidelines.

2.4 It should be noted that Amendment 75 to Annex 3 introduced the requirement for a centre to report globally about the release of radioactive material. This report should include a material transport model. In order to facilitate the prompt and effective provision of information on the release of radioactive material into the atmosphere, as stipulated in Annex 3, paragraph 3.4.2, additional procedures have been defined. These additional procedures stipulate that the London volcanic ash advisory centre (VAAC) will be responsible for supplying information received from the International Atomic Energy Agency (IAEA) to the affected area control centres (ACCs). Subsequently, the ACCs will notify aircraft operating in the affected areas.

2.5 To this end, the London VAAC has a global database of 8-character AFTN addresses for immediate communication with the corresponding ACCs. The aforementioned database can be accessed at:

<http://www.icao.int/safety/meteorology/iavwopsg/Quick%20Launch%20Menu%20Documents/Nuclear%208-letter-code%20database.pdf>,

which is attached as Appendix A to this working paper.

2.6 The Meeting must study the possibility of a release of radioactive material into the atmosphere, considering that nuclear plants have been established in the SAM Region for power generation and research purposes.

2.7 The Meeting should consider that the MET/DIV/14 addressed the issue and recommended that an ICAO panel, in close collaboration with the WMO, develop provisions on this issue, in accordance with the Global Air Navigation Plan.

2.8 Furthermore, the MET panel has studied the issue, and based on assessments and studies, it has recommended the inclusion in amendment 78 to Annex 3 of a requirement for SIGMET and AIRMET messages to include a cylindrical description of the affected airspace. The proposed provision contained a note to assist meteorological watch offices in the provision of SIGMET messages for radioactive clouds, taking into account the recommendations of the International Atomic Energy Agency (IAEA). This proposal has been approved and currently appears as a standard procedure in the aforementioned Annex.

2.9 Likewise, Doc 9691 recommends that States should have national emergency procedures to respond to nuclear accidents occurring in the State or to clouds of radioactive material crossing their borders, and presents national and international recommended procedures, which are shown in Chapter 9 of said Manual.

2.10 In light of the above and in view of the most recent accident occurred in Fukushima, Japan, in April 2011, the Meeting could analyse the situation and formulate the following conclusion:

DRAFT

CONCLUSION XX/XX -

REVIEW OF THE PROCEDURE TO BE APPLIED IN CASES OF RADIOACTIVE CLOUDS OR ACCIDENTAL RELEASE OF RADIOACTIVE MATERIAL IN THE FIR

That the civil aviation authority and ATS authorities, in coordination with meteorological authorities and meteorological watch offices, review the procedures related to the production of SIGMETs in order to:

- a) Ensure that their ATS/MET cooperation agreements include the exchange of information on radioactive material in messages exchanged between ATS and MET units;
- b) Foresee training for ATS staff on procedures related to receiving information from the London VAAC concerning radioactive material;
- c) Coordinate with civil aviation authorities the inclusion of the accidental release of radioactive material or the presence of radioactive clouds in their contingency plans in those States that have not done it yet.

3. **Suggested action**

3.1 The Meeting is invited to:

- a) analyse and take note of the information presented in this working paper;
- b) consider approving the draft conclusion shown in item 2.11;
- c) review the information presented in Appendix A and, if any discrepancy is found, correct it and report it to the SAM Regional Office;
- d) take note of the procedures set forth in Doc 9691 *Manual on volcanic ash, radioactive material and toxic chemical clouds* in relation to the accidental release of radioactive material; and
- e) take any other action it may deem appropriate.

**GLOBAL DATABASE OF ACC AFTN 8-LETTER ADDRESSES
FOR THE NOTIFICATION BY VAAC LONDON CONCERNING THE RELEASE
OF RADIOACTIVE MATERIAL INTO THE ATMOSPHERE**

(as of 10 January 2014)

UL = Upper Limit

<i>Flight information region</i>	<i>Centre in charge</i>	<i>Location indicator</i>	<i>Flight information region</i>	<i>Centre in charge</i>	<i>Location indicator</i>
Accra FIR/UIR	Accra ACC Accra FIC	D G A C Z Q Z X D G F C	Biak –Jayapura Sector	Biak FSS Jayapura FSS	W A B Z W A J Z
Addis Ababa FIR	Addis Ababa ACC/FIC	H A A A Z Q Z X	Bishkek FIR	Bishkek ACC	U A F M Y M Y X
Adelaide	Adelaide ACC	Y M M M Z R Z X	Blagoveshchensk FIR	Blagoveshchensk ACC	U H B B Z R Z X
Aix-en-Provence (Marseille) FIC/ACC/UAC COM/CCER	Aix-en-Provence ACC	L F M M Z R Z X	Bodø FIC/OFIR	Bodø ATCC	E N O B Z R Z X
Aktobe FIR	Aktobe ACC	U A T T Z R Z X	Bogotá FIR/UIR	Bogotá ACC	S K E D Z Q Z X
Albuquerque FIR	Albuquerque ATCC	K Z A B Z Q Z X	Bordeaux FIC/ACC/UAC/CCER	Bordeaux ACC	L F B B Z R Z X
Alger FIR	Alger FIC	D A A A Z Q Z X	Boston FIR	Boston ATCC	K Z B W Z Q Z X
Almaty FIR	Almaty ACC	U A A A Z R Z X	Brasília FIR	Brasilia ACC	S B V S Z R Z X
Amazonica FIR	Amazonica ACC	S B A Z Z R Z X	Bratislava FIR	Bratislava ACC	L Z B B Z R Z X
Ambon	Ambon FSS	W A P Z	Brazzaville FIR	Brazzaville ACC/FIC	F C C C Z Q Z X
Amderma FIR	Amderma ACC	U L D D Z R Z X	Bremen FIR	German MET service	E D Z W Y M Y X
Amman FIR	Amman ACC/FIC	O J A C Z Q Z X O J A C Z R Z X	Brest FIC/ACC/UAC/CCT/CCER	Brest ACC	L F R R Y A T V
Amsterdam FIR	Amsterdam ACC/FIC	E H A A Z Q Z X	Brindisi FIR/UIR	Brindisi ACC Brindisi SCC	L I B B Z Q Z X L I B B Y W Y X
Anadyr FIR	Anadyr ACC	U H M A Z R Z X	Brisbane FIR	Brisbane ACC/FIC	Y B B B Z R Z X
Anchorage FIR/Oceanic FIR	Anchorage ATCC	P A Z A Z Q Z X	Brussels FIR (UL: FL 195)	Brussels (ACC-FIC)	E B B U Z G Z X
Ankara FIR	Ankara ACC/FIC	L T A A Z Q Z X	Brussels UIR (1)	Maastricht UAC	E D Y Y U Y X
Antananarivo FIR –Comores Sector (UL: FL 95)	Antananarivo ACC/FIC Moroni FIC	F M M I Z T Z X F M C H	București FIR	București FIC	L R B B Z Q Z S
Antofagasta FIR	Antofagasta ACC/FIC	S C F Z Z R Z X	Budapest FIR/UIR	Budapest ACC	L H B M Y M Y C
Arkhangelsk/Talagi FIR	Arkhangelsk/Talagi ACC	U L A A Z R Z X	Bujumbura FIR (2)	Bujumbura FIC	H B B A Z Q Z X
Ashgabat FIR	Ashgabat	U T A A	Cairns	Cairns ACC	Y B B B Z R Z X
Asmara FIR	Asmara ACC	H H A S Z Q Z X	Cairo FIR	Cairo ACC	H E C A Z Q Z X
Astana FIR	Astana ACC	U A C C Z R Z X	Canarias FIR	Canarias FIC	G C C C Y F Y X
Asunción FIR/UIR	Asunción ACC/FIC	S G F A Z R Z X	Canarias UIR	Canarias UIC	G C C C Y M Y X
Athinaí FIR/Hellas UIR	Athinaí ACC/FIC Makedonia ACC/FIC	L G G G Z Q Z S L G M D	Casablanca FIR	Casablanca ACC	G M M M Z Q Z X
Atlanta FIR	Atlanta ATCC	K Z T L Z Q Z X	Cayenne	Cayenne (ACC-UAC-NOF)	S O O O
Atlantico FIR	Atlantico ACC	S B A O Z R Z X	Cenamer	Cenamer ACC/FIC	M H C C
Auckland Oceanic FIR	Auckland OAC	N Z Z O Z Q Z X	Central/American FIR/SRR	Central/America FIR/SRR	M H T G Z Q Z X
Baghdad FIR	Baghdad ACC (North of 3200N) Basrah ACC (South of 3200N)	O R B B O R M M	Changsha	Changsha ACC	Z G H A Y M Y X
Bahrain FIR/UIR	Bahrain ACC	O B B I N E M X	Chelyabinsk FIR	Chelyabinsk ACC	U S C C Z R Z X
Baku FIR	Baku ACC	U B B B Y M Y X	Chengdu	Chengdu ACC	Z U U U Y M Y X
Bali	Bali FSS	W A D Z	Chennai FIR	Chennai FIC	V O M M Z R Z X
Balikpapan	Balikpapan FSS	W A L Z	Chersky FIR	Chersky ACC	U E S S Z R Z X
Bangkok FIR	Bangkok ACC/FIC	V T B B Y P Y X	Chicago FIR	Chicago ATCC	K Z A U Z Q Z X
Banjarmasin	Banjarmasin FSS	W A O Z	Chisinau FIR	Chisinau ACC	L U K K Z Q Z X
Barcelona FIR	Barcelona FIC	L E C B Y F Y X	Chita/Kadala FIR	Chita/Kadala ACC	U I A A Z R Z X
Barcelona UIR	Barcelona UIC	L E C B Y M Y X	Chokurdakh FIR	Chokurdakh ACC	U E S O Z R Z X
Barnaúl FIR	Barnaúl ACC	U N B B Z R Z X	Chongqing	Chongqing ACC	Z U C K Y M Y X
Barranquilla FIR/UIR (UL: FL 200) (cf. Bogotá UIR)	Barranquilla ACC	S K E C Z Q Z X	Christchurch FIR	Christchurch ACC/FIC	N Z Z C Z Q Z X
Beijing FIR	Beijing ACC	Z B B B Y P Y X	Cleveland FIR	Cleveland ATCC	K Z O B Z Q Z X
Beira FIR	Beira ACC/FIC	F Q B E	Colombo FIR	Colombo FIC	V C C C
Beirut FIR	Beirut ACC	O L B B	Comodoro Rivadavia FIR	Comodoro Rivadavia ACC	S A E F Z R Z X
Beograd FIR/UIR	Beograd ACC	L Y B A Z R Z X	Congo Democratique FIR	Congo Democratique FIR	F Z Z A
			Córdoba FIR	Córdoba ACC	S A C F Z R Z X
			Curaçao FIR	Curaçao ACC/FIC	T N C F Z Q Z X
			Curitiba FIR	Curitiba ACC	S B C W Z R Z X
			Dakar FIR	Dakar FIR	G O O O Z Q Z X
			Dalian	Dalian ACC	Z Y T L Y M Y X
			Dam FIR	Dam ACC	O S T T
			Dar es-Salaam FIR/UIR	Dar es-Salaam ACC/FIC	H T D C Z Q Z X

<i>Flight information region</i>	<i>Centre in charge</i>	<i>Location indicator</i>	<i>Flight information region</i>	<i>Centre in charge</i>	<i>Location indicator</i>
Darwin	Darwin ACC	YBBBZRZX	Jakarta Sector UIR	Jakarta UIC	WIIZ
Delhi FIR	Delhi ACC/FIC	VIDPZRZX	Jayapura	Jayapura FSS	WAJZ
Denver FIR	Denver ATCC	KZDVZQZX	Jeddah FIR	Jeddah ACC	OEDJDMYF
Dhaka FIR	Dhaka FIC	VGFR	Jinan	Jinan ACC	ZSJNYMYX
Dushanbe FIR	Dushanbe ACC	UTDDZRZX	Johannesburg FIR	Johannesburg ACC	FAJAZQZX
	Khudzhand ACC	UTDLZRZX			
	Dushanbe ATFM	UTDDZDZX			
Edmonton FIR	Edmonton ACC	CZEGZQZX	Kabul FIR	Kabul ACC/FIC	OAKX
Emirates FIR	Emirates ACC	OMAEYAYX	Kalingrad FIR	Kalingrad ACC	UMKKZRZX
Entebbe FIR	Entebbe ACC	HUECZQZX	Kano FIR	Kano ACC/FIC	DNKKZQZX
Eurocontrol CFMU	European Central Flow Management Unit (CFMU) Main	EUCHZMFP	Kansas City FIR	Kansas City ATCC	KZKCZQZX
Eurocontrol CFMU	European Central Flow Management Unit (CFMU) Backup	EUCBZMFP	Karachi FIR	Karachi FIC	OPKR
Ezeiza (BA) FIR	Ezeiza (BA) FIR	SAEF	Kathmandu FIR	Kathmandu ACC	VNKTZRZX
Ezeiza FIR	Ezeiza ACC/FIR	SAEFZRZX	Kazan FIR	Kazan ACC	UWKDZRZX
Finland FIR	Tampere ACC	EFESZQZX	Khabarovsk FIR	Khabarovsk/Novy ACC	UHHRZRZX
Fort Worth FIR	Fort Worth ATCC	KZFWZQZX	Khanty-Mansiysk FIR	Khanty-Mansiysk ACC	USHHRZRZX
Fukuoka FIR	Fukuoka/JCAB Air Traffic Management Center, AFTN/AMHS COM Center	RJJJ	Khartoum FIR	Khartoum FIC	HSSSZQZX
Gaborone FIR	Gaborone ACC	FBGRZRZX	Kigali FIR (UL: FL 245)	Kigali FIC	HRYZRQZX
Gander FIR	Gander ACC	CZQXZQZX	Kingston FIR/UIR	Kingston ACC	MKJKZQZX
Georgetown FIR/SRR	Georgetown FIR/SRR	SYGCZQZX	Kinshasa FIR	Kinshasa FIC	FZZAZQZX
Gigansk FIR	Gigansk ACC	UEVVZRZX	Kirov FIR	Kirov ACC	USKKZRZX
Guam	Guam ACC	PGUMZRZX	København FIR	København	EKZZMOMO
Guangzhou FIR	Guangzhou ACC	ZGGGYMYX	Kolkata FIR	Kolkata FIC	VEZZZRZX
Guayaquil FIR	Guayaquil ACC	SEGUZQZX	Kota Kinabalu FIR	Kota Kinabalu FIC	WBF CZQZX
Guillin	Guillin ACC	ZGKLYMYX	Kotlas FIR	Kotlas ACC	ULKKZRZX
Habana FIR	Habana ACC/UIR/CTA	MUFHZQZX	Krasnoyarsk FIR	Krasnoyarsk/Yemelyanovo ACC	UNKLRZRZX
Hailar	Hailar ACC	ZBLAYMYX	Tura ACC	Tura ACC	UNITZRZX
Hannover UIR	German MET service	EDZWYMYX	Kuala Lumpur FIR	Kuala Lumpur ACC/FIC	WMFCZQZX
Hanoi	Hanoi ACC	VVNBZRZX	Kunming FIR	Kunming ACC	ZPPPYMYX
Harare FIR	Harare FIC	FVHAZQZX	Kupang	Kupang FSS	WATZ
Harbin	Harbin ACC	ZYHBYMYX	Kurgan FIR	Kurgan ACC	USUZRZX
Hefei	Hefei ACC	ZSOFYMYX	Kuwait FIR	Kuwait ACC (Kuwait CTA)	OKBKZQZX
Hobart	Hobart ACC	YMMZRZX	Lahore FIR	Lahore FIC	OPLR
Ho-Chi-Minh	Ho-Chi-Minh FIC	VVTSZRZX	Langen FIR	German MET service	EDZWYMYX
Hohhot	Hohhot ACC	ZBHMYMYX	Lanzhou FIR	Lanzhou ACC	ZLLYMYX
Hong Kong FIR	Hong Kong ACC	VHHHZQZA	La Paz FIR	La Paz ACC	SLLPZRZX
Honiara	Honiara ACC	AGGGZQZX	Lusaka FIR	Lusaka ACC	FLFIZQZX
Honolulu FIR	Honolulu ATCC	PHZHZRZX	Lima FIR/UIR	Lima ACC	SPIMZQZX
Houston FIR/Oceanic FIR	Houston ATCC	KZHUZQZX	Lisboa FIR/UIR	Lisboa ACC	LPPCZQZX
Incheon FIR	Incheon ACC	RKRZRQZX	Ljubljana FIR	Ljubljana ACC	LJLAZQZX
Indianapolis FIR	Indianapolis ATCC	KZIDZQZX	London FIR (civil)	London ACC (civil)	EGTTZRZO
Irkutsk FIR	Irkutsk ACC	UIIIRZX	Los Angeles FIR	Los Angeles ATCC	KZLAZQZX
Isla de Pascua FIR	Isla de Pascua ACC/FIC	SCIZ	Luanda FIR/UIR	Luanda ACC/FIC	FNANZAZX
Istanbul FIR	Istanbul ACC/FIC	LTBBZQZX	Lusaka FIR	Lusaka FIC	FLFIZQZX
Jacksonville FIR	Jacksonville ATCC	KZJXZQZX	Maastricht	Maastricht UAC	EDYYNAXX
Jakarta	Jakarta FIC	WIIFZQZX	Madrid FIR	Madrid FIC	LECMYFYX
			Madrid UIR	Madrid UIC	LECMYMYX
			Magadan/Sokol FIR	Magadan/Sokol ACC	UHMMZRZX
				Keperveyem ACC	UHMKZRZX
				Petropavlovsk-Kamchatsky ACC	UHPPZRZX
				Markovo ACC	UHMOZRZX
				Milkovo ACC	UHPMZRZX
				Omolon ACC	UHMNZRZX
				Ossora ACC	UHPDZRZX
				Ust-Kamchatsk ACC	UHPKZRZX
			Maiquetia FIR/UIR	Maiquetia ACC	SVZMZQZX
			Male AACC/FIC	Male AACC/FIC	VRMFGZX
			Malmö FIR	Malmö ACC	ESMMZRZX

<i>Flight information region</i>	<i>Centre in charge</i>	<i>Location indicator</i>	<i>Flight information region</i>	<i>Centre in charge</i>	<i>Location indicator</i>
Malta FIR	Malta ACC	L M M M Y M Y A	Oakland FIR/Oceanic FIR	Oakland ATCC	P A Z A Z R Z X
Manado	Manado FSS	W A M Z	Oceanico Mazatlan FIR	Oceanico Mazatlan ACC	M M F O
Manila FIR	Manila ACC	R P H I Z R Z X	Omsk FIR	Omsk ACC	U N O O Z R Z X
Mauritius FIR	Mauritius FIC	F I M M Z Q Z X	Orenburg/Tsentralny FIR	Orenburg/Tsentralny ACC	U W O O Z R Z X
Mazatlán Oceanic FIR/UIR	Mazatlán ACC/FIC	M M F O Z Q Z X			
Medan	Medan FSS	W I M Z			
Melbourne FIR	Melbourne ACC/FIC	Y M M M Z R Z X	Palembang	Palembang FSS	W I P Z
Memphis FIR	Memphis ATCC	K Z M E Z Q Z X	Panamá FIR	Panamá ACC	M P Z L Z Q Z X
Mendoza FIR	Mendoza ACC	S A M F Z R Z X	Paramaribo FIR/UIR	Paramaribo ACC	S M P M Z R Z X
Merauke Sector	Merauke Sector (FSS)	W A K Z	Paris FIC/ACC/UAC/CCER	Paris ACC	L F F F Z R Z X
Mexico FIR/UIR	Mexico ACC/FIC	M M F R Z Q Z X	Penza FIR	Penza ACC	U W P P Z R Z X
Miami FIR/Oceanic FIR	Miami ATCC	K Z M A Z Q Z X	Perm FIR	Perm ACC	U S P P Z R Z X
Milano FIR/UIR	Milano ACC/FIC	L I M M Z Q Z X	Perth	Perth ACC	Y M M M Z R Z X
	Milano SCC	L I M M Y W Y X	Pevek FIR	Pevek ACC	U H M P Z R Z X
	Padova ACC	L I P P Z Q Z X	Phnom-Penh	Phnom-Penh ACC	V D P P Z R Z X
	Padova SCC	L I P W Y M Y X	Piarco FIR	Piarco ACC	T T Z P Z Q Z X
Minneapolis FIR	Minneapolis ATCC	K Z M P Z Q Z X	Poliarny FIR	Poliarny ACC	U E R P Z R Z X
Minsk FIR	Minsk ACC	U M M V Z R Z X	Pongyang	Pongyang ACC	
Mirny FIR	Mirny ACC	U E R R Z R Z X	Pontianak	Pontianak FSS	W I O Z
Mogadishu FIR	Mogadishu FIC	H C S M Z Q Z X	Port-au-Prince FIR	Port-au-Prince FIC	M T E G Z Q Z X
Moncton Centre	Moncton Centre ACC	C Z Q M Z Q Z X	Port Moresby FIR	Port Moresby FIC	A Y P M Z R Z X
Monterrey FIR/UIR	Monterrey ACC/FIC	M M T Y Z Q Z X	Praha FIR	Praha ACC	L K A A Z Q Z R
Montevideo FIR	Montevideo ACC	S U E O Z Q Z X	Puerto Montt FIR	Puerto Montt ACC/FIC	S C T Z Z R Z X
Montreal FIR	Montreal ACC	C Z U L Z Q Z X	Punta Arenas FIR	Punta Arenas ACC/FIC	S C C Z Z R Z X
Moscow FIR	Moscow ACC	U U W V Z Q Z X	Pyongyang FIR	Pyongyang ACC	Z K K P
	Moscow Main ATM Center	U U U W Z D Z X			
	Russian Zonal ATFM Centres	U U Z Z D Z X			
Mumbai	Mumbai FIC	V A B B Z R Z X	Qingdao	Qingdao ACC	Z S Q C Y M Y X
München FIR	German MET service	E D Z W Y M Y X			
Murmansk FIR	Murmansk ACC	U L M M Z R Z X			
Muscat FIR	Muscat ACC	O O M M Z Q Z X	Recife FIR	Recife ACC	S B R E Z R Z X
Mys Kamenny FIR	Kamenny Mys ACC	U S T K Z R Z X	Reims FIC/ACC/UAC/CCER	Reims ACC	L F E E Z R Z X
Mys Shmidta FIR	Mys Shmidta ACC	U H M I Z R Z X	Resistencia FIR	Resistencia ACC	S I R R Z R Z X
			Reykjavik FIR	Reykjavik ACC/FIC (7)	B I R D Z Q Z X
			Rhein UIR	German MET service	E D Z W Y M Y X
Nadi FIR	Nadi ACC/FIC	N F F F	Riga FIR	Riga ACC	E V R R N M E X
-New Caledonia Sector (Up to: 9 500 ft/FL 245)	Noumea La Tontouta APP	N W W W	Roberts FIR	Roberts FIC	G L R B Z Q Z X
Nadi FIR	Nadi ACC/FIC	N F F F Z R Z X	Rochambeau FIR (UL: FL 200) (cf. Zanderij UIR)	Rochambeau FIC	S O O O Z Q Z X
-Port Vila Sector (Up to: FL 245)	Port Vila APP	N V V V	Roma FIR/UIR	Roma ACC	L I R R Z Q Z X
Naha	Naha ACC		Roma SCC		L I R R Y W Y X
Nairobi FIR	Nairobi ACC/FIC	H K N A Z Q Z X	Rostov-na-Donu FIR	Rostov-na-Donu ACC	U R R V Z Q Z X
Nanchang	Nanchang ACC	Z S C N Y M Y X			
Nanjing	Nanjing ACC	Z S N J Y M Y X			
Nanning	Nanning ACC	Z G N N Y M Y X	Salekhard FIR	Salekhard ACC	U S D D Z R Z X
N'Djamena FIR	N'Djamena FIC	F T T T Z Q Z X	Sal Oceanic FIR/UIR	Sal ACC	G V S C Z Q Z X
Nepal FIR (cf. Kathmandu FIR)			Salt Lake City FIR	Salt Lake City ATCC	K Z L C Z Q Z X
Nerungrí/Chulman FIR	Nerungrí/Chulman ACC	U E L L Z R Z X	Samara/Kurumoch FIR	Samara/Kurumoch ACC	U W W W Z R Z X
New York FIR	New York ACC	K Z N Y Z Q Z X			
New York FIR/Oceanic FIR	New York ATCC	K Z W Y Z Q Z X	Samarkand FIR	Samarkand ACC	U T S S Z Q S Z
Niamey FIR	Niamey FIC/ACC	D R R R Z Q Z X	Sanaa FIR	Sanaa ACC	O Y S N Z Q Z X
Nicosia FIR	Nicosia ACC/FIC	L C C C Z Q Z X	San Juan FIR	San Juan ATCC	T J Z S Z Q Z X
Norilsk FIR	Norilsk ACC	U O O O Z R Z X	Sankt-Peterburg FIR	Sankt-Peterburg ACC	U L L L Z R Z X
Norway FIR	Bodo ATCC	E N B D Z R Z X			
	Oslo ATCC	E N O S Z R Z X			
	Stavanger ATCC	E N S V Z R Z X	Santa María FIR	Santa María OAC/FIC	L P P O Z O Z X
Novosibirsk/Tolmachevo FIR	Novosibirsk/Tolmachevo ACC	U N N T Z R Z X	Santiago	Santiago (STGO.) ACC	S C E L Z R Z X
Nukus FIR	Nukus ACC	U T N N Z Q Z S	Santo Domingo FIR	Santo Domingo FIR/UIR	M D C S Z Q Z X
Nyurba FIR	Nyurba ACC	U E N N Z R Z X	Sanya FIR	Sanya ACC	Z J S Y Y M Y X
			Saporo	Saporo ACC	

<i>Flight information region</i>	<i>Centre in charge</i>	<i>Location indicator</i>	<i>Flight information region</i>	<i>Centre in charge</i>	<i>Location indicator</i>
Sarajevo FIR/UIR	Sarajevo ACC	LDZOZQZX	Ufa FIR	Ufa ACC	UWUURZX
Scottish FIR/UIR (civil)	Scottish ACC (civil)	EGPXZRZA	Ujung Pandang	Ujung Pandang FIC	WAAAZRZX
Seattle FIR	Seattle ATCC	KZSEZQZX	Ujung Pandang	Ujung Pandang FIC	WAAZ
Sevilla FIR	Sevilla ACC	LECSYFYX	Ulan-Bator	Ulan-Bator ACC	
		LECSYMYF	Urumqi FIR	Urumqi ACC	ZWWWYMYX
Seychelles FIR	Seychelles ACC	FSSSZQZX	Ust-Khairyzovozov FIR	Ust-Khairyzovozov FIR	UHPURZX
Shanghai FIR	Shanghai ACC	ZSSSYMYX			
Shannon FIR/UIR	Shannon ACC/UACC	EISNZQZX	Vancouver FIR	Vancouver ACC	CZVRZQZX
Shanwick Oceanic FIR	Shanwick OAC	EGGXZRZO	Velikiye Luki FIR	Velikiye Luki ACC	ULOLZRZX
Shenyang FIR	Shenyang ACC	ZYTXMYX	Vilnius FIR	Vilnius ACC	EYVLZRZX
Shymkent FIR	Shymkent ACC	UAIIZRZX	Vladivostok/Knevichi FIR	Vladivostok/Knevichi ACC	UHWWRZX
Singapore FIR	Singapore ACC/FIC	WSJCZRZX	Vologda FIR	Vologda ACC	ULWWRZX
Sofia FIR	Sofia ACC/FIC	LBSRZRZX	Vorkuta FIR	Vorkuta ACC	UUYWRZX
Søndrestrom FIR (cf. Gander Oceanic FIR and Reykjavík FIR)	Kangerlussuaq	BGSFYFTD			
Stockholm FIR	Stockholm ACC	ESOSZRZX	Washington FIR	Washington ATCC	KZDCZQZX
Surabaya FIR (cf. Bali FIR)			Wien FIR	Wien ACC/FIC	LOVVZRZX
Surgut FIR	Surgut ACC	USRRZRZX	Winnipeg FIR	Winnipeg ACC	CZWGZQZX
Sweden FIR/UIR	Sweden ACC	ESAAZQZX	Wuhan FIR	Wuhan ACC	ZHHHYMYX
Switzerland FIR/UIC	Geneva ACC	LSAGZRZX			
	Zurich ACC	LSAZZRZX	Xiamen	Xiamen ACC	ZSAMMYX
Sydney	Sydney	YMMZRZX	Xi'an	Xi'an ACC	ZLXYMYX
Sykyvkar FIR	Sykyvkar ACC	UUYZRZX			
			Yakutsk FIR	Yakutsk ACC	UEEEZRZX
Tahiti	Tahiti ACC	NTTTZQZX		Olekminsk ACC	UEMOZRZX
Taipei/Aviation MET	Taipei FIC	RCTPYMYX	-Mandalay Sector	Mandalay FIC (6)	VYMD
Taipei FIR	Taipei ACC	RCAAZQZX	Yangon	Yangon ACC	VYFZRZX
Taiyuan	Taiyuan ACC	ZBYNYMYX	Yekaterinburg/Koltsovo FIR	Yekaterinburg/Koltsovo ACC	USSSZRZX
Tallin FIR	Tallin ACC, RCC, FIR	EETTZRZX		Magnitogorsk ACC	USCMZRZX
Tashkent/Yuzhny FIR	Tashkent/Yuzhny ACC	UTTTZRZX	Yemen		OYSCZQZX
Tbilisi FIR	Tbilisi ACC	UGGGZRZX	Yerevan FIR	Yerevan ACC	UDDDRZX
Tegucigalpa/Toncontin Intl FIR	Tegucigalpa/Toncontin ACC	MHTCZQZX	Yuzhno-Sakhalinsk FIR	Yuzhno-Sakhalinsk ACC	UHSSZRZX
Tehran FIR	Tehran ACC, FIC, FIR	OIIIX			
Tel-Aviv FIR	Tel-Aviv ACC/FIC	LLLLZRZX	Zagreb FIR/UIR	Zagreb ACC	LDZOZQZX
Tiksi FIR	Tiksi ACC	UESTZRZX	Zyryanka FIR	Zyryanka ACC	UESURZX
Tirana FIR/FIC/ACC/SAR	Tirana FIR/FIC/ACC/SAR	LAAAZQZX	Zhuhai FIR	Zhuhai ACC	ZGJD
Toronto FIR	Toronto ACC	CZYZZQZX			
Tokyo	Tokyo ACC	RGAAZMYX			
Townsville	Townsville ACC	YBBBZRZX			
Tunis FIR	Tunis FIC	DTTCZQZX			
Turkhansk FIR	Turkhansk ACC	UOTZRZX			
Tyoply Klyuch FIR	Tyoply Klyuch ACC	UEMHZRZX			
Tyumen/Roschino FIR	Tark-Sale ACC	USDSZRZX			
	Tyumen ACC	USTRZRZX			

The information concerning ACC AFTN addresses contained in this database has been kindly provided by ICAO States. The purpose of this database is to assist VAAC London in the process of direct notification of ACCs regarding the release of radioactive material into the atmosphere. Any errors or omissions should be brought to the attention of the corresponding Regional Offices or to the Secretary of the IAVWOPSG.