

WORLD METEOROLOGICAL ORGANIZATION

COMMISSION FOR BASIC SYSTEMS
EMERGENCY RESPONSE ACTIVITIES
CO-ORDINATION GROUP

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ITEM: 4

ENGLISH ONLY

OPERATIONAL PROCEDURES FOR IAEA NOTIFICATION OF THE WMO

(Submitted by I. Jacobsen, RTH, Offenbach)

Summary and purpose of document

The document discusses improvements in the procedures for notification and invites the meeting to consider the question of emergency classes and procedures for their notification.

Action proposed

The meeting is invited to consider the conclusions and recommendations provided in the document.

1. Decisions of the Beijing meeting

At the meeting in Beijing, China, 20-24 September 1999, it was decided:

- *“As regards WMO, the IAEA will notify the WMO Secretariat and the RTH Offenbach (Germany). The latter will notify the NMCs by means of the EMERCON message the GTS.”*
- *“The Meeting recalled and reconfirmed the established procedure as published in the WMO Manual on the GTS (WMO-Pub. No. 386), Attachment II-5, defined as warnings (W) in Table A and WMO Publication No. 9, Volume C, a list of abbreviated headers of GTS bulletins, by which the IAEA is, inter alia, requested to notify the RTH Offenbach. Upon receiving the notification information from the IAEA, the RTH Offenbach will send an EMERCON message on the GTS in the form of an alphanumeric bulletin. The bulletin will be in plain-text English language and globally distributed to the NMCs under the abbreviated heading WNXX 01 IAEA MMDDHH.”*
- *“The RTH Offenbach and the IAEA will collaborate in pre-arranging the practical aspects including the translation of the information given into the EMERCON message.”*

2. Drafting and test of procedures in 2000

2.1 Drafting of procedures

Based on discussions between Malcolm Crick (IAEA) and Ingo Jacobsen (RTH Offenbach) during the meeting in Beijing a paper on “Co-operative arrangements between WMO and IAEA on the Meteorological assessment support in a nuclear emergency” was drafted in 2001 which in abbreviated form became part of the “Joint Radiation Emergency Management Plan of the International Organisations¹” (IAEA, Vienna, 2000, published in December 2000). The “Joint Radiation Emergency Management Plan of the International Organisations” is part of a series of IAEA publications on Emergency Preparedness and Response including “Emergency Notification and Assistance – Technical Operations Manual” and “IAEA Emergency Response Network – ERNET”.

The basic principle of all papers is that four emergency classes are defined:

- (a) ALERT
- (b) SITE AREA EMERGENCY
- (c) GENERAL EMERGENCY
- (d) TRANSBOUNDARY EMERGENCY

There was an agreement in all versions of the draft of “Co-operative arrangements between WMO and IAEA on the Meteorological assessment support in a nuclear emergency” and the “Joint Radiation Emergency Management Plan of the International Organisations”

- that in case of an ALERT or a SITE AREA EMERGENCY RTH Offenbach will **not** send a notification message to all NMCs using GTS,
- that in case of a TRANSBOUNDARY EMERGENCY RTH Offenbach will send a notification message to all NMCs using GTS.

1 International Organisations: IAEA, FAO, Nuclear Energy Agency of the OECD, United Office für the Co-ordination of Humanitarian Affairs, WHO, WMO

According to the last version (No 6) of the draft of the “Co-operative arrangements between WMO and IAEA on the Meteorological assessment support in a nuclear emergency” from 2000 IAEA will decide in case of the GENERAL EMERGENCY whether the information should be sent to all NMSs using GTS.

This provision differs from those of the “Joint Radiation Emergency Management Plan of the International Organisations” which was published by the IAEA in December 2000 where a distribution to all NMSs is restricted to the case of a TRANSBOUNDARY EMERGENCY.

The question how to handle the case of a GENERAL EMERGENCY was discussed at the interim meeting on 13 and 14 March 2001 in Offenbach and will have to be discussed at the meeting in Washington DC.

2.2 Test of the transmission of IAEA messages by the RTH Offenbach

IAEA has developed the EMERCON reporting forms

- N-1 for the initial information,
- N-2 to provide additional information including the change of emergency classes,
- N-3 with follow up information on off-site measurements.

During 2000 the transformation of these forms into a GTS message was tested by IAEA and RTH Offenbach.

Only Form N-1 contains the information on the name and co-ordinates of the nuclear installation.

When the information of the IAEA starts with a lower emergency class which will not be transmitted to RSMCs and/or NMSs than the information contained in Form N-2 is insufficient to generate dispersion calculations due to missing information on the place of the event. This led to complications during the global exercise of 27 June 2000 (see 2.3). Even if the information on the name and the co-ordinates is added to the information of Form N-2 it may lead to complications as experienced during the JINEX 1 Test in 2001 (see 4.)

2.3 Global exercise of 27 June 2000

A report of the global exercise of June 2000 was produced by Chris Little, UK Meteorological Office (containing edited extracts from RTH Offenbach log and detailed comments from RTH Offenbach). The following specific recommendations were made:

- *“It is recommended that further work is needed to refine the working relationship between IAEA and RTH Offenbach and the use of standard request forms.”*
- *“When RTH Offenbach, or any other RSMC or NMS, receive a Met Alert, there is confusion as to whether it should be distributed generally. Providing they are infrequent (e.g. one or two per year), it is recommended they are sent to all RSMCs, but no NMSs, because the traffic is not great, the RSMCs are alerted, and no decision has to be made in RTH Offenbach. Other options, not recommended, are to transmit to all NMSs or keep message in RTH Offenbach..”*

From ANNEX G

Detailed comments from RTH Offenbach:

- IAEA contact numbers seemed not to be in operation from beginning of exercise.
- Faxes not of good legible quality. Offenbach photocopied them to improve legibility.
- RSMC Washington fax busy for at least 30 minutes.
- Emails between IAEA and RTH Offenbach not seamless, and require phone clarification.
- Basic information only in initial, not distributed, alert message.
- Faxes 2,3 did not contain full information. Required Offenbach to add from initial fax.
- Only third GTS message contained full and sufficient information.
- RTH Washington acknowledged reception by phone to Offenbach. RTH Montreal did not.
- Only RTHs Vienna and Beijing acknowledged reception.
- Messages returned from RTH Beijing were split and text case altered, causing extra work.
- Only Washington products arrived at Offenbach, via IAEA. Products from other RSMCs did arrive at Offenbach.
- RTH Offenbach informed RSMCs Washington & Montreal by fax. Other RSMCs by GTS.
- EER RSMC and IAEA processes need development.

Recommendations from RTH Offenbach:

Improve communications between IAEA & RTH Offenbach as soon as possible by:

- Only one kind of form transmitted from IAEA to RTH Offenbach
- Extra information should be added to previous information before transmission, rather than sent separately
- The decision process for the distribution of information is too complex
- IAEA and RTH Offenbach should establish integrated email transmission with common character representations (e.g. ISO 8859-1 8 bit Western European/Latin-1)

Another exercise should then take place

3. Technical Meeting 13 and 14 March 2001

Following the recommendations of the report on the global exercise of 27 June 2000 an expert group members from IAEA, WMO and RTH Offenbach met on 13 and 14 March 2001 to refine the working relationships between IAEA and RTH Offenbach.

Participants were:

- Morrison Mlaki (WMO)
- Peter Chen (chair of the CG ERA)
- Frederic Chavaux (RSMC Toulouse)
- Günther Winkler (IAEA)
- Ingo Jacobsen (DWD, air pollution modelling)
- Walter Ott, Harald Dunke Hans Mayr (DWD, computer department)

- Thomas Steinkopff (DWD, radioactivity measurement and national communications)

3.1 *Communication between IAEA, RTH Offenbach, and the RSMCs and distribution of GTS messages*

The group discussed in detail the communication between the IAEA, RTH Offenbach, and the RSMCs and the distribution of GTS messages which were summarised into instructions for the operators at the RTH Offenbach (see English version in Annex I – original German).

The essential points are

- RTH Offenbach will get the IAEA messages for all emergency classes,
- RTH Offenbach will then distribute the information according to the emergency classes, (for details see ANNEX I)
- In case of a TRANSBOUNDARY EMERGENCY, IAEA will send an email, which can be automatically transformed into a GTS message.
- IAEA will write a programme that will add the information on the name and the location of the accident if the email is based on the EMERCON Form N-2.

In April the communication between IAEA and RTH Offenbach was tested including the sending and transformation of the email into a GTS message.

3.2 *Special case: GENERAL EMERGENCY*

There was a disagreement between IAEA and WMO on the distribution of messages and results in case of a GENERAL EMERGENCY.

According to the agreement in Beijing the IAEA may request meteorological transport model prediction from the lead RSMCs. IAEA intended to distribute these results to all States without informing the NMSs by sending a GTS message via RTH Offenbach. This may lead to a situation where the national focal points and the NMSs have a different state of information. Despite two telephone calls with the IAEA office a solution could not be found. As a compromise it was decided that the IAEA will not send the products of the RSMCs to all national focal points but only post them on their web-site.

4. **The JINEX 1 exercise**

The new procedures were used and tested during the JINEX 1 exercise

The main results concerning the communication between the IAEA, RTH Offenbach and the RSMCs are summarised in the questionnaire a1 (see ANNEX II).

At the end of the questionnaire the main comments of RTH Offenbach are summarised:

- On some fax cover sheets from IAEA local time was mixed with UTC,
- IAEA did not always send faxes directly to the lead RSMCs.
- RTH Offenbach had to phone twice to receive the email to include it into the GTS message.
- When RTH Offenbach phoned IAEA to start the confirmation dialogue necessary before sending out the GTS message the IAEA could not confirm the co-ordinates of the accident site. RTH Offenbach had to remind IAEA that they should look for message No. 1 because this information was only included in Form N-1 and not the follow-up Forms N-2.

Problems with getting the email from IAEA and confirming its content according to the draft of the “Co-operative arrangements between WMO and IAEA on the Meteorological assessment support in a nuclear emergency” and the instructions for the operators at the RTH Offenbach

18.05 UTC	Fax received at RTH Offenbach
18.47 UTC:	RTH Offenbach asks for email by phone
19.20 UTC:	RTH Offenbach asks again for email by phone
19.30 UTC:	IAEA asks RTH Offenbach for email address
19.38 UTC:	email received
about 19.50 UTC:	first attempt to get the confirmation of the content of the email from IAEA, IAEA could not confirm the co-ordinates because this information is only included in Form N-1 and not the follow-up Form N-2
20.05 UTC:	final phone call to IAEA to confirm the content of the email
20.10 UTC	dissemination the EMERCON Message via GTS

Thus it took more than 2 hours to produce and disseminate the GTS message!

5. Summary and conclusions

Since the meeting in Beijing, China, 20-24 September 1999, the communication process has been improved step-by-step by

- learning from the experience from the global exercise on 27 June 2000,
- drafting “Co-operative arrangements between WMO and IAEA on the Meteorological assessment support in a nuclear emergency”,
- convening a technical meeting on the communication process on 13 and 14 March 2001 in Offenbach,
- changing from fax to email communication to prepare the GTS message,
- drawing up detailed instructions for the operators at RTH Offenbach.

The JINEX 1 exercise showed that the procedures worked in general. But in several cases the build-in security mechanisms (phoning back to confirm the receipt of faxes or to send faxes both to RTH Offenbach and to the lead RSMCs) was not obeyed.

Compared with the global exercise on 27 June 2000 where the whole communication was based on faxes the sending of an email containing the information necessary to generate the GTS from IAEA to RTH Offenbach message (first used during the JINEX 1 exercise) has the potential to reduce the workload at the RTH Offenbach and avoid errors. On the other hand, the experience during JINEX 1 showed (see box in 4) that these double checking procedures may significantly delay the dissemination of the GTS message. Therefore, this part of the communication process definitely needs improvement.

6. Recommendations

6.1 Recommendations from **RTH Offenbach** concerning the **content and transmission of information from IAEA to RTH Offenbach**

1. The IAEA should be asked to include the basic information (site of the accident) in each message (including follow-up information) and change their forms accordingly.
2. The IAEA should be asked to develop and implement a computer program to transform each message into an email which is then sent automatically to RTH Offenbach.
3. The communication between IAEA and WMO should be tested regularly:
 - each month between IAEA and RTH Offenbach,
 - every three months including the RSMCs.

6.2 Recommendations concerning **the emergency classes – especially GENERAL EMERGENCY** – from **DWD** as a NMS which is able and obliged by national legislation to perform transport calculations

In case of a GENERAL EMERGENCY the IAEA should neither post the results of the transport calculations of the RSMCs on their web-site nor send them to all national focal points unless the NMSs are prior informed by a GTS message and thus have the possibility to perform transport calculation on their own.

This recommendation is based on the following considerations:

(a) Co-operation between Organisations/institutions at the international and national level

It was repeatedly stressed that the co-operation between organisations/agencies at the international (WMO and IAEA) and national (NMSs and national focal points) levels is a prerequisite of a successful emergency response, and that it is the aim of the international organisations to further the co-operation at the national level. The meteorological organisations (WMO, NMSs) are able and have the task to provide a scientifically based interpretation of the results of transport calculations because only these organisations have the sufficient information on the current weather situation and the quality of numerical weather prediction and atmospheric transport models.

Therefore, a distribution of the results of the RSMCs either by posting them on the IAEA web-site or by sending them to all national focal points without giving the NMSs the chance to perform transport calculations on their own and/or to interpret them using their own knowledge of the current weather situation would neither further the co-operation on the national level nor make use of the meteorological experience of NMSs.

(b) Definition of the emergency classes GENERAL and TRANSBOUNDARY EMERGENCY

There are only minor differences in the description of the two emergency classes GENERAL EMERGENCY and TRANSBOUNDARY EMERGENCY with respect to atmospheric transport except that only the emergency class TRANSBOUNDARY EMERGENCY is identical with a formal notification according to the Convention on Early Notification of a Nuclear Accident. Whereas the GENERAL EMERGENCY is defined by “a substantial risk of an actual or projected core damage” the transboundary case is described by: “an event that has resulted or may result in transboundary radiological release of radioactive material leading to doses or food contamination that approach or exceed the international guidance for implementation of protective actions or restriction of food. This would include any accident with severe core damage and a large direct (unfiltered) release to the atmosphere.” In both cases warnings should be sent by “IAEA to States within 1000 km (nuclear power reactor) or 50 km (research reactor)”. In most parts of the world 1000 km definitely means transboundary, and even research reactors are in many cases placed in less than 50 km from the national borders. Additionally, the calculation of the atmospheric transport is a task of RSMCs at international and NMSs at national level.

If there is “a substantial risk of an actual or projected core damage” (GENERAL EMERGENCY) which may lead to a long range transport not only the national focal points but also NMSs should be informed (NMSs through a GTS message) to enable them to perform their own transport calculations and/or to give their scientific advice to their national focal points.

(c) Access of IAEA to basic products of the RSMCs

As agreed at the meeting in Beijing, the IAEA may ask the RSMCs to provide basic products without any restriction concerning emergency classes². The transport calculations of the RSMCs should enable a proper decision making at the IAEA. But it was never discussed that these products should be distributed internationally either by posting them on the IAEA web site or by sending them to the national focal points.

(d) Draft of co-operative arrangements between WMO and IAEA

The possibility to send a GTS message in case of a GENERAL EMERGENCY was contained in all draft versions (up to No. 6) of “Co-operative arrangements between WMO and IAEA on the Meteorological assessment support in a nuclear emergency” exchanged between IAEA and WMO in 2000. It disappeared in version No. 7 produced by the IAEA in early March just before the technical meeting on 13 and 14 March 2001 in Offenbach. Furthermore, according to the “Joint Radiation Emergency Management Plan of the International Organisations” published by the IAEA in December 2000 the IAEA will send “warning messages to the States within 1000 km (nuclear power reactor) or 50 km (research reactor), FAO, WHO, OCHA (and to EC if European Union Member States may be affected)” even in the cases of SITE AREA EMERGENCY and GENERAL EMERGENCY. WMO is mentioned only in the case of TRANSBOUNDARY EMERGENCY. Additionally, the distribution of RSMC products in case of a GENERAL EMERGENCY was first mentioned in

2 “The meeting considered a new requirement for cases where IAEA may request basic products to be provided only to IAEA [and not to the NMSs from the WMO RA] and recommended relevant changes to address the requirement.”

“2.2 When the Delegated Authority or the International Atomic Energy Agency (IAEA) makes the request to the appropriate RSMC, it must provide contact information and event related information as indicated on the “Request for WMO RSMC Support by Delegated Authority” form (referred to as the “Request Form”).”

the “Joint Radiation Emergency Management Plan of the International Organisations”.

For the meeting of the CBS CG ERA it is recommended

- to discuss the draft(s) of “Co-operative arrangements between WMO and IAEA on the Meteorological assessment support in a nuclear emergency” and the documents published by IAEA in December 2000 (especially the “Joint Radiation Emergency Management Plan of the International Organisations” and the “Emergency Notification and Assistance – Technical Operations Manual”) at the meeting of the CG ERA,
- to go back to the provisions of version No. 6 of the draft of “Co-operative arrangements between WMO and IAEA on the Meteorological assessment support in a nuclear emergency” which does not exclude that a GTS message is sent in case of GENERAL EMERGENCY and
- *(it there is no agreement to send GTS messages generally in case of GENERAL EMERGENCY)* to specify when a GTS message should be sent (in case of GENERAL EMERGENCY) and when the results of RSMCs can either be posted on the IAEA web site or transmitted to all States [NMSs should be informed in advance and should have enough time to perform their own transport calculations before RSMCs results are made public to national focal points.]

ANNEX I

Original German

Procedures at RTH-Offenbach triggered by „Emergency Messages“ of the IAEA

General

Each action has to be documented in the journal with date and time:

- Incoming messages (faxes, emails, sender)
- Outgoing messages (faxes, emails, recipient)
- Phone calls (with whom, result)

1. Information about any incident from IAEA (fax and/or email)

- a) Check if there is marked an emergency class on the fax form
- b) If there is marked an emergency class then go to 3.
- c) If there is marked no emergency class it might be a mistake of the IAEA or the information of the end of an emergency situation
- d) If none is given call IAEA to ask for an explanation.

IAEA telephonenumber 0043 1 2600 22023.

If this phone is not answered call 0043 1 2632012

This number is always manned, so even in case the message is a fake you get to our 24h service, but in case of a real event this will bring you directly to the emergency response centre which will be manned.

2. Telephone call by IAEA

- a) In case of an „Transboundary Emergency (see 3.4) IAEA will ask if the fax and email have arrived at RTH-Offenbach
- b) If neither fax nor email has arrived (only in the case of a „Transboundary Emergency“ – see 3.4), IAEA should asked to send it again to RTH-Offenbach
- c) If the email has arrived which is meant to be disseminated via GTS the receipt of this email will be reported (only in the case of a „Transboundary emergency“ – see 3.4) and the process of checking the content according to 3.4g can be performed.

3. Actions according to the Emergency Classes of IAEA

<p>3.1 Emergency class „Alert“</p> <ul style="list-style-type: none">a) Journalb) No further action	<p>ALERT</p>
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<p>3.2 Emergency class „Site Area Emergency“</p> <ul style="list-style-type: none">a) Journalb) Identification of the „lead RSMCs“ (see annex 1)c) Information of the „lead RSMCs“ about the receipt of the fax of IAEA. Clarification if the „lead RSMCs“ have received the same faxd) Telephone call by IAEA: RTH-Offenbach confirms the receipt of the fax	<p>SITE AREA EMERGENCY</p>
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<p>3.3 Emergency class „General Emergency“</p> <ul style="list-style-type: none">a) Journalb) Identification of the „lead RSMCs“ (see annex 1)c) Information of the „lead RSMCs“ about the receipt of the fax of IAEA. Clarification if the „lead RSMCs“ have received the same fax.d) Informing the „lead RSMC“ that IAEA may demand default productse) Telephone call by IAEA: RTH-Offenbach confirms the receipt of the fax.	<p>GENERAL EMERGENCY</p>
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3.4 Emergency class „Transboundary Emergency“

- a) Journal
- b) Identification of the „lead RSMCs“ (see annex 1).
- c) The information of the „lead RSMCs“ about a „Transboundary Emergency“ via a telephone is a formal notification by IAEA according to the 'Early Notification Convention'.
- d) If there has been received also an email of IAEA then the content of the email has to be disseminated as an EMERCON-Message: Header WNXX 01 IAEA MMDDHH
- e) If there is only the fax available with the emergency class „Transboundary Emergency“ without the receipt of an email then the IAEA has to be phoned **(0043 1 2600 22023)** to ask for the transmission of the email
- f) If IAEA phones RTH-Offenbach to ask for the receipt of fax and email this has to be confirmed
- g) If fax and email are available RTH-Offenbach calls IAEA **(0043 1 2600 22023)** to start the

The RTH Offenbach operator confirms his understanding of each of the following: **(0043 1 2600 22023)** *(also in the German version original English text from the Co-operative arrangements between WMO and IAEA)*

- ⇒ whether this is a real event or an exercise;
- ⇒ emergency class: transboundary emergency
- ⇒ name and country of accident site;
- ⇒ geographical co-ordinates;
- ⇒ date and time of release (if known);
- ⇒ whether a release has started or is only yet possible;
- ⇒ that the information SHOULD be introduced to the GTS for distribution to NMCs
- ⇒ that the lead RSMCs are asked to generate default meteorological products, send them to the IAEA and may distribute them to NMCs.

**TRANS-
BOUNDARY
EMERGENCY**

- h) RTH-Offenbach disseminates the EMERCON Message via GTS
- i) Control of the transmission of the EMERCON-

4. Updates (fax and/or email)

- a) Journal
- b) Control of emergency class
- c) If there is for the first time the emergency class „Transboundary emergency“ marked go to “Transboundary emergency” under item 3.4
- d) If it is an update to an already “Transboundary emergency” and the “lead RSMCs” have been identified the procedure may be abbreviated. Check if essential information (name and country of accident site; geographical coordinates; date and time of release (if known)) are on the email.
- e) Phone the IAEA to get a confirmation of the number of this update.
- f) If no emergency class is marked IAEA has to be called via telephone to ask for information

5. Termination.

- a) Journal
- b) Telephone call to ask IAEA for the confirmation of the termination
- c) EMERCON-Message of RTH-Offenbach with the Header WNXX 01 IAEA MMDDHH
- d) EMERCON Message via GTS
- e) Control of the transmission of the EMERCON-Message (Receipt at DWD)
- f) Information of the „lead RSMCs“

Annex 1:

„Lead RSMCs“

WMO Regional Association	RSMCs
I Africa	Bracknell, Toulouse
II Asia	Beijing, Obninsk, Tokyo
III North America	Montreal, Washington
IV South America	Montreal, Washington
V Australia and Pacific	Melbourne, Montreal, Washington
VI Europe	Bracknell, Toulouse

RSMC BRACKNELL

UK Meteorological Office
London Road
BRACKNELL
Berkshire RG12 2SZ
UNITED KINGDOM
Business Contact: Mr Dave Smith
Tel: (44 1344) 854 914
Fax: (44 1344) 854 462
Email: dsmith@metoffice.gov.uk
Operational Contact (24 hours): Deputy
Chief Forecaster - Bracknell
Tel: (44 1344) 854 909 / 856 264
Fax: (44 1344) 854 919

RSMC MONTREAL

Canadian Meteorological Centre (CMC)
Environment Canada
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DORVAL (Quebec)
Canada H9P 1J3
Business Contact: Mr Michel Jean
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Fax: (514) 421-4679
Email: michel.jean@ec.gc.ca
Operational Contact (24 hours): Shift
Supervisor
Tel: (514) 421-4635
Fax: (514) 421-4639

RSMC TOULOUSE

Météo-France
Service central d'exploitation de la
météorologie
42 Av. G. Coriolis
31057 TOULOUSE CEDEX
FRANCE
Business Contact: Mr Jean-Pierre
Bourdette
Tel: (33) 561 07 80 01
Fax: (33) 561 07 80 09
Email: jean-pierre.bourdette@meteo.fr
Operational Contact (24 hours): Chief
Forecaster - Toulouse
Tel: (33) 561 07 82 20;
if busy, use (33) 561 07 82 62
Fax: (33) 561 07 82 64; if busy, use (33)
561 07 82 32

RSMC WASHINGTON

National Oceanic and Atmospheric
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United States of America
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Fax: (301) 713-0119
Email: roland.draxler@noaa.gov
Operational Contact (24 hours):
Tel: (301) 763-8298
Fax: (301) 763-8592
Email: SDM@noaa.gov

RSMC MELBOURNE

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RSMC OBNINSK

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RSMC BEIJING

National Meteorological Centre
China Meteorological Administration
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Fax: (86 10) 6217 2909
Telex: 22094 FDSMA CN
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RSMC TOKYO

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ANNEX II**a.1 Questionnaire for RTH Offenbach****a.1.1 Warning Messages**

Questions	Message _1	Message _2	Message _3	Message _4
Time of receipt and identification of the messages and of its content under fax form				
Time of the receipt of the message by fax :	09.11	10.04	11.28	13.36
Message number as identified in the message itself or indicate "missing" :	Message N°1	Message N°2^{*)}	Message N°3	Message N°4
Was an emergency class marked (emergency class/no) :	ALERT	Site Emergency	Site Emergency	Site Emergency
Was the EMERCON message in the appropriate form (yes/no):	YES	YES	YES	YES
Have an IAEA explanation been needed to identify or understand the message form or content (yes/no ?) :	NO	NO	NO	NO
If yes at what time ?				
Exchange of information between RTH Offenbach and IAEA				
Did RTH Offenbach phoned to IAEA to confirm receipt of message (time of phone call/no) :	NO^{**)}	NO^{**)}	NO^{**)}	NO^{**)}
Did RTH Offenbach received a phone call from IAEA to ask him confirm the receipt of the fax (time of phone call/no) :	NO	NO	11.50^{***)}	NO
Exchange of information with RSMCs				
Did RTH Offenbach informed lead RSMCs of the fax receipt (time/no) :	NO	10.37	NO	NO
What RSMCs were informed by RTH Offenbach (Bracknell, Toulouse, other RSMC ?) :		Bracknell Toulouse		
Did lead RSMCs confirmed they had received the same fax (yes/no ?) :		NO		

Comments (messages not in the appropriate form, explanations needed on messages, ...) :

***) 1059 UTC receipt of additional fax to all JINEX 1 contact points**

*****) There were several phone calls between RTH Offenbach and IAEA, but not documented**

*****) RTH Offenbach confirmed receipt of message 1, 2, 3**

a.1.2 Initial notification Message and follow-up information (EMERCON messages for the transboundary emergency class) :

Questions	Message _1	Message _2	Message _3	Message _4
Time of receipt and identification of the message and of its content under fax form				
Time of the receipt by fax :	<i>09.11</i>	<i>10.04</i>	<i>11.28</i>	<i>13.36</i>
Message number as identified in the message itself or indicate "missing" :	<i>Message N°1</i>	<i>Message N°2*)</i>	<i>Message N°3</i>	<i>Message N°4</i>
Was the transboundary class properly marked (yes/no) :	<i>NO</i>	<i>NO</i>	<i>NO</i>	<i>NO</i>
Was the EMERCON message in the appropriate form (yes/no ?) :	<i>YES</i>	<i>YES</i>	<i>YES</i>	<i>YES</i>
Did RTH Offenbach checked message essential information (name and country of the accident site ; geographical co-ordinates ; date and time of release if known) (yes/no ?) :	<i>YES</i>	<i>YES</i>	<i>YES</i>	<i>YES</i>
Was this information fully understandable as given in the message (yes/no ?) :	<i>YES</i>	<i>YES</i>	<i>YES</i>	<i>YES</i>
Have an explanation been needed to identify or understand message form or content (yes/no ?) :	<i>NO</i>	<i>NO</i>	<i>NO</i>	<i>NO</i>
From who was it requested, give name and time (IAEA, Offenbach, WMO secretariat, other participant) ?				
Time of receipt and identification of the message and of its content under e-mail form				
Did RTH Offenbach received the EMERCON message as an e-mail (time of receipt/no) :	<i>NO</i>	<i>NO</i>	<i>NO</i>	<i>NO</i>
Was the EMERCON message in the appropriate form in the e-mail (yes/no ?) :				
Did RTH Offenbach checked message essential information in the e-mail (name and country of the accident site ; geographical co-ordinates ; date and time of release if known) (yes/no ?) :				
Was this information fully understandable (yes/no ?) :				

Questions	Message _1	Message _2	Message _3	Message _4
If the EMERCON message was an update of the initial notification, was the information given on the location of the incident/accident in the e-mail repeated, complete and coherent with the initial notification (yes/no ?) :				
Exchange of information between RTH Offenbach and IAEA				
Did RTH Offenbach phoned to IAEA to confirm receipt of the fax (time of phone call/no) :	<i>NO</i>	<i>NO</i>	<i>NO</i>	<i>NO</i>
Did RTH Offenbach phoned to IAEA to confirm receipt of the e-mail (time of phone call/no) :	<i>NO</i>	<i>NO</i>	<i>NO</i>	<i>NO</i>
Did RTH Offenbach received a phone call from IAEA to ask him confirm the receipt of the e-mail (time of phone call /no)	<i>NO</i>	<i>NO</i>	<i>NO</i>	<i>NO</i>
Did RTH Offenbach received a phone call from IAEA to ask him confirm the receipt of the fax (time of phone call/no)	<i>NO</i>	<i>NO</i>	<i>NO</i>	<i>NO</i>
Exchange of information with RSMCs				
Did RTH Offenbach informed lead RSMCs of fax receipt (yes/no) :	<i>NO</i>	<i>YES</i>	<i>NO</i>	<i>NO</i>
What RSMCs were informed by RTH Offenbach (Bracknell, Toulouse, other RSMC ?) :		<i>Bracknell Toulouse</i>		
Did lead RSMCs confirmed they had received the same fax (yes/no) :		<i>NO</i>		
Dissemination of the information on the GTS				
At what time did RTH Offenbach sent the EMERCON notification message on the GTS :				
At what time was it received at DWD :				

Comments (problems with message contents, messages not in the appropriate form, explanations needed on messages, ...) :

a.1 Questionnaire for RTH Offenbach

a.1.1 Warning Messages

Questions	Message _5	Message _6	Message _7	Message _8
Time of receipt and identification of the messages and of its content under fax form				
Time of the receipt of the message by fax :	<i>14.47</i>	<i>16.11</i>	<i>17.08</i>	<i>18.05</i>
Message number as identified in the message itself or indicate "missing" :	<i>Message N°5</i>	<i>Message N°6</i>	<i>Message N°7</i>	<i>Message N°8</i>
Was an emergency class marked (emergency class/no) :	<i>General Emergency</i>	<i>General Emergency</i>	<i>NO</i>	<i>Transboundary Emergency</i>
Was the EMERCON message in the appropriate form (yes/no):	<i>YES</i>	<i>YES</i>	<i>YES</i>	<i>YES</i>
Have an IAEA explanation been needed to identify or understand the message form or content (yes/no ?) :	<i>NO</i>	<i>NO</i>	<i>NO</i>	<i>NO</i>
If yes at what time ?				
Exchange of information between RTH Offenbach and IAEA				
Did RTH Offenbach phoned to IAEA to confirm receipt of message (time of phone call/no) :	<i>NO</i>	<i>NO</i>	<i>NO</i>	<i>NO</i>
Did RTH Offenbach received a phone call from IAEA to ask him confirm the receipt of the fax (time of phone call/no) :	<i>NO</i>	<i>NO</i>	<i>NO</i>	<i>NO</i>
Exchange of information with RSMCs				
Did RTH Offenbach informed lead RSMCs of the fax receipt (time/no) :	<i>15.39</i> <i>15.41</i>	<i>NO</i>	<i>NO</i>	<i>18.25</i> <i>18.35</i>
What RSMCs were informed by RTH Offenbach (Bracknell, Toulouse, other RSMC ?) :	<i>Bracknell</i> <i>Toulouse</i>			<i>Bracknell</i> <i>Toulouse</i>
Did lead RSMCs confirmed they had received the same fax (yes/no ?) :	<i>NO</i>			<i>NO</i>

Comments (messages not in the appropriate form, explanations needed on messages, ...) :

*16.11 UTC: Message No. 6 send to Bracknell because missing there
Concerning message No. 8:*

- *18.25 UTC: phone call to Bracknell, fax not received at Bracknell*
- *18.35 UTC: message send to Bracknell*
- *18.35 UTC: phone call to Toulouse, fax not received at Toulouse*
- *18.41 UTC: message send to Toulouse*

**a.1.2 Initial notification Message and follow-up information
(EMERCON messages for the transboundary emergency class) :**

Questions	Message _5	Message _6	Message _7	Message _8
Time of receipt and identification of the message and of its content under fax form				
Time of the receipt by fax :	14.47	16.11	17.08	18.05
Message number as identified in the message itself or indicate "missing" :	Message N°5	Message N°6	Message N°7	Message N°8
Was the transboundary class properly marked (yes/no) :	NO	NO	NO	YES
Was the EMERCON message in the appropriate form (yes/no ?) :	YES	YES	YES	YES
Did RTH Offenbach checked message essential information (name and country of the accident site ; geographical co-ordinates ; date and time of release if known) (yes/no ?) :	YES	YES	YES	YES
Was this information fully understandable as given in the message (yes/no ?) :	YES	YES	YES	YES
Have an explanation been needed to identify or understand message form or content (yes/no ?) :	NO	NO	NO	NO
From who was it requested, give name and time (IAEA, Offenbach, WMO secretariat, other participant) ?				
Time of receipt and identification of the message and of its content under e-mail form				
Did RTH Offenbach received the EMERCON message as an e-mail (time of receipt/no) :	NO	NO	NO	19.38
Was the EMERCON message in the appropriate form in the e-mail (yes/no ?) :				YES
Did RTH Offenbach checked message essential information in the e-mail (name and country of the accident site ; geographical co-ordinates ; date and time of release if known) (yes/no ?) :				YES
Was this information fully understandable (yes/no ?) :				YES

Questions	Message _5	Message _6	Message _7	Message _8
If the EMERCON message was an update of the initial notification, was the information given on the location of the incident/accident in the e-mail repeated, complete and coherent with the initial notification (yes/no ?) :				
Exchange of information between RTH Offenbach and IAEA				
Did RTH Offenbach phoned to IAEA to confirm receipt of the fax (time of phone call/no) :	<i>NO</i>	<i>NO</i>	<i>NO</i>	<i>See comment</i>
Did RTH Offenbach phoned to IAEA to confirm receipt of the e-mail (time of phone call/no) :	<i>NO</i>	<i>NO</i>	<i>NO</i>	<i>20.05</i>
Did RTH Offenbach received a phone call from IAEA to ask him confirm the receipt of the e-mail (time of phone call /no)	<i>NO</i>	<i>NO</i>	<i>NO</i>	<i>NO</i>
Did RTH Offenbach received a phone call from IAEA to ask him confirm the receipt of the fax (time of phone call/no)	<i>NO</i>	<i>NO</i>	<i>NO</i>	<i>NO</i>
Exchange of information with RSMCs				
Did RTH Offenbach informed lead RSMCs of fax receipt (yes/no) :	<i>NO</i>	<i>YES</i>	<i>NO</i>	<i>YES</i>
What RSMCs were informed by RTH Offenbach (Bracknell, Toulouse, other RSMC ?) :	<i>Bracknell Toulouse</i>			<i>Bracknell Toulouse</i>
Did lead RSMCs confirmed they had received the same fax (yes/no) :	<i>NO</i>			
Dissemination of the information on the GTS				
At what time did RTH Offenbach sent the EMERCON notification message on the GTS :				<i>20.10</i>
At what time was it received at DWD :				<i>20.10</i>

Comments (problems with message contents, messages not in the appropriate form, explanations needed on messages, ...) :

- 18.47 UTC: RTH Offenbach asks for email by phone*
19.20 UTC: RTH Offenbach asks again for email by phone
19.30 UTC: IAEA asks RTH Offenbach for email address
19.38 UTC: email received
about 19.50 UTC: first attempt to get the confirmation of the content of the email from IAEA, IAEA could not confirm the co-ordinates because this information is only included in Form N-1 and not the follow-up Form N-2
20.05 UTC: final phone call to IAEA to confirm the content of the email

a.1 Questionnaire for RTH Offenbach

a.1.1 Warning Messages

Questions	Message _9	Message _10	Message _11	Message _12
Time of receipt and identification of the messages and of its content under fax form				
Time of the receipt of the message by fax :	<i>22.47^{*)}</i>	<i>23.21</i>	<i>23.35^{**)}</i>	<i>23.35</i>
Message number as identified in the message itself or indicate "missing" :	<i>Message N°9</i>	<i>Message N°10</i>	<i>Message N°11</i>	<i>Message N°12</i>
Was an emergency class marked (emergency class/no) :	<i>NO</i>	<i>NO</i>	<i>Transboundary Emergency</i>	<i>Transboundary Emergency</i>
Was the EMERCON message in the appropriate form (yes/no):	<i>YES</i>	<i>YES</i>	<i>YES</i>	<i>YES</i>
Have an IAEA explanation been needed to identify or understand the message form or content (yes/no ?) :	<i>NO</i>	<i>NO</i>	<i>NO</i>	<i>NO</i>
If yes at what time ?				
Exchange of information between RTH Offenbach and IAEA				
Did RTH Offenbach phoned to IAEA to confirm receipt of message (time of phone call/no) :	<i>NO</i>	<i>NO</i>	<i>NO</i>	<i>NO</i>
Did RTH Offenbach received a phone call from IAEA to ask him confirm the receipt of the fax (time of phone call/no) :	<i>NO</i>	<i>NO</i>	<i>NO</i>	<i>NO</i>
Exchange of information with RSMCs				
Did RTH Offenbach informed lead RSMCs of the fax receipt (time/no) :	<i>NO</i>	<i>NO</i>	<i>NO</i>	<i>NO</i>
What RSMCs were informed by RTH Offenbach (Bracknell, Toulouse, other RSMC ?) :				
Did lead RSMCs confirmed they had received the same fax (yes/no ?) :				

Comments (messages not in the appropriate form, explanations needed on messages, ...) :

**) IAEA confirms: exercise will continue (some member states regarded termination at 20.00 UTC*

****) received by email at 23.20 UTC*

a.1.2 Initial notification Message and follow-up information (EMERCON messages for the transboundary emergency class) :

Questions	Message _9	Message _10	Message _11	Message _12
Time of receipt and identification of the message and of its content under fax form				
Time of the receipt by fax :	<i>22.47</i>	<i>23.21</i>	<i>23.35</i>	<i>23.35</i>
Message number as identified in the message itself or indicate "missing" :	<i>Message N°9</i>	<i>Message N°10</i>	<i>Message N°11</i>	<i>Message N°12</i>
Was the transboundary class properly marked (yes/no) :	<i>NO</i>	<i>NO</i>	<i>YES</i>	<i>YES</i>
Was the EMERCON message in the appropriate form (yes/no ?) :	<i>YES</i>	<i>YES</i>	<i>YES</i>	<i>YES</i>
Did RTH Offenbach checked message essential information (name and country of the accident site ; geographical co-ordinates ; date and time of release if known) (yes/no ?) :	<i>YES</i>	<i>YES</i>	<i>YES</i>	<i>YES</i>
Was this information fully understandable as given in the message (yes/no ?) :	<i>YES</i>	<i>YES</i>	<i>YES</i>	<i>YES</i>
Have an explanation been needed to identify or understand message form or content (yes/no ?) :	<i>NO</i>	<i>NO</i>	<i>NO</i>	<i>NO</i>
From who was it requested, give name and time (IAEA, Offenbach, WMO secretariat, other participant) ?				
Time of receipt and identification of the message and of its content under e-mail form				
Did RTH Offenbach received the EMERCON message as an e-mail (time of receipt/no) :	<i>NO</i>	<i>NO</i>	<i>23.20</i>	<i>NO</i>
Was the EMERCON message in the appropriate form in the e-mail (yes/no ?) :			<i>YES</i>	
Did RTH Offenbach checked message essential information in the e-mail (name and country of the accident site ; geographical co-ordinates ; date and time of release if known) (yes/no ?) :			<i>YES</i>	
Was this information fully understandable (yes/no ?) :			<i>YES</i>	

Questions	Message _9	Message _10	Message _11	Message _12
If the EMERCON message was an update of the initial notification, was the information given on the location of the incident/accident in the e-mail repeated, complete and coherent with the initial notification (yes/no ?) :				
Exchange of information between RTH Offenbach and IAEA				
Did RTH Offenbach phoned to IAEA to confirm receipt of the fax (time of phone call/no) :	<i>NO</i>	<i>NO</i>	<i>NO</i>	<i>NO</i>
Did RTH Offenbach phoned to IAEA to confirm receipt of the e-mail (time of phone call/no) :	<i>NO</i>	<i>NO</i>	<i>NO</i>	<i>NO</i>
Did RTH Offenbach received a phone call from IAEA to ask him confirm the receipt of the e-mail (time of phone call /no)	<i>NO</i>	<i>NO</i>	<i>NO</i>	<i>NO</i>
Did RTH Offenbach received a phone call from IAEA to ask him confirm the receipt of the fax (time of phone call/no)	<i>NO</i>	<i>NO</i>	<i>NO</i>	<i>NO</i>
Exchange of information with RSMCs				
Did RTH Offenbach informed lead RSMCs of fax receipt (yes/no) :	<i>NO</i>	<i>NO</i>	<i>NO</i>	<i>NO</i>
What RSMCs were informed by RTH Offenbach (Bracknell, Toulouse, other RSMC ?) :				
Did lead RSMCs confirmed they had received the same fax (yes/no) :				
Dissemination of the information on the GTS				
At what time did RTH Offenbach sent the EMERCON notification message on the GTS :			<i>23.10</i>	
At what time was it received at DWD :			<i>23.10</i>	

Comments (problems with message contents, messages not in the appropriate form, explanations needed on messages, ...) :

a.1 Questionnaire for RTH Offenbach

a.1.1 Warning Messages

Questions	Message _13	Message _	Message _	Message _
Time of receipt and identification of the messages and of its content under fax form				
Time of the receipt of the message by fax :	02.27			
Message number as identified in the message itself or indicate "missing" :	Message N°13			
Was an emergency class marked (emergency class/no) :	NO			
Was the EMERCON message in the appropriate form (yes/no):	YES			
Have an IAEA explanation been needed to identify or understand the message form or content (yes/no ?) :	NO			
If yes at what time ?				
Exchange of information between RTH Offenbach and IAEA				
Did RTH Offenbach phoned to IAEA to confirm receipt of message (time of phone call/no) :	02.30			
Did RTH Offenbach received a phone call from IAEA to ask him confirm the receipt of the fax (time of phone call/no) :	NO			
Exchange of information with RSMCs				
Did RTH Offenbach informed lead RSMCs of the fax receipt (time/no) :	NO			
What RSMCs were informed by RTH Offenbach (Bracknell, Toulouse, other RSMC ?) :				
Did lead RSMCs confirmed they had received the same fax (yes/no ?) :				

a.1.2 Initial notification Message and follow-up information (EMERCON messages for the transboundary emergency class) :

Questions	Message _13	Message _	Message _	Message _
Time of receipt and identification of the message and of its content under fax form				
Time of the receipt by fax :	02.27			
Message number as identified in the message itself or indicate "missing" :	Message N°13			
Was the transboundary class properly marked (yes/no) :	NO			
Was the EMERCON message in the appropriate form (yes/no ?) :	YES			
Did RTH Offenbach checked message essential information (name and country of the accident site ; geographical co-ordinates ; date and time of release if known) (yes/no ?) :	YES			
Was this information fully understandable as given in the message (yes/no ?) :	YES			
Have an explanation been needed to identify or understand message form or content (yes/no ?) :	NO			
From who was it requested, give name and time (IAEA, Offenbach, WMO secretariat, other participant) ?				
Time of receipt and identification of the message and of its content under e-mail form				
Did RTH Offenbach received the EMERCON message as an e-mail (time of receipt/no) :	02.30			
Was the EMERCON message in the appropriate form in the e-mail (yes/no ?) :	YES			
Did RTH Offenbach checked message essential information in the e-mail (name and country of the accident site ; geographical co-ordinates ; date and time of release if known) (yes/no ?) :	YES			
Was this information fully understandable (yes/no ?) :	YES			

Questions	Message _13
If the EMERCON message was an update of the initial notification, was the information given on the location of the incident/accident in the e-mail repeated, complete and coherent with the initial notification (yes/no ?) :	YES
Exchange of information between RTH Offenbach and IAEA	
Did RTH Offenbach phoned to IAEA to confirm receipt of the fax (time of phone call/no) :	02.30
Did RTH Offenbach phoned to IAEA to confirm receipt of the e-mail (time of phone call/no) :	NO
Did RTH Offenbach received a phone call from IAEA to ask him confirm the receipt of the e-mail (time of phone call /no)	NO
Did RTH Offenbach received a phone call from IAEA to ask him confirm the receipt of the fax (time of phone call/no)	NO
Exchange of information with RSMCs	
Did RTH Offenbach informed lead RSMCs of fax receipt (yes/no) :	NO
What RSMCs were informed by RTH Offenbach (Bracknell, Toulouse, other RSMC ?) :	
Did lead RSMCs confirmed they had received the same fax (yes/no) :	
Dissemination of the information on the GTS	
At what time did RTH Offenbach sent the EMERCON notification message on the GTS :	02.34
At what time was it received at DWD :	02.34

General comments and summary

- ***On some fax cover sheets from IAEA local time was mixed with UTC, i.e. Message Number 7: time on the fax cover sheet: 18:54 UTC, time of arrival at RTH Offenbach: 16:57 UTC. This will mean that the message was generated at 16:54 UTC.***
- ***IAEA did not always send faxes directly to the lead RSMCs.***
- ***RTH Offenbach had to phone twice to receive the email to include it into the GTS message.***
- ***When RTH Offenbach phoned IAEA to start the confirmation dialogue necessary before sending out the GTS message the IAEA could not confirm the coordinates of the accident site. RTH Offenbach had to remind IAEA that they should look for message No. 1 because this information was only included in Form N-1 and not the follow-up Forms N-2.***

Comments (problems with message contents, messages not in the appropriate form, explanations needed on messages, ...) :