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COMISIÓN OCEANOGRÁFICA INTERGUBERNAMENTAL
МЕЖПРАВИТЕЛЬСТВЕННАЯ ОКЕАНОГРАФИЧЕСКАЯ КОМИССИЯ
اللجنة الدولية الحكومية لعلوم المحيطات
政府间海洋学委员会

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(Available in English, French and Spanish)

IOC/WWW/BA/ss
13 May 2011

To: ICG/PTWS Tsunami Warning Focal Points (TWFP) and
Tsunami National Contacts (TNC)
ICG/PTWS Chair and Vice-Chairs

cc: Official National Coordinating Body for liaison with the IOC Member States
Permanent Delegates/Observer Missions to UNESCO of IOC Member States
Directors of UNESCO and IOC Regional Offices in the Asia/Pacific Region
Regional Organizations cooperating with UNESCO/IOC: SOPAC, CPPS

Subject: PTWS Pacific-wide Tsunami Exercise "PacWave 11", 9-10 November 2011

At the XXIIIrd Session of the Intergovernmental Coordination Group for the Pacific Tsunami Warning and Mitigation System ICG/PTWS-XXIII held in Apia, Samoa, 16-18 February 2009, Member States reviewed Exercise Pacific Wave 2008 and its findings and recommendations. Acknowledging the common occurrence of large earthquakes in the Southwest Pacific and its ensuing tsunami hazard, and recognising exercises as a good vehicle to improve response readiness and publicise awareness of tsunamis, Member States recommended a third Pacific-wide tsunami exercise to especially assist Pacific Island Countries in better preparing for the next tsunami (Attachment I).

On 29 September 2009, just over seven months after the ICG/PTWS-XXIII, Samoa, American Samoa, and Tonga were hit by the largest deadly tsunami since the 1998 Sissano, Papua New Guinea event. Altogether, 192 lives were lost locally. This was followed five months later by the 27 February 2010 Chile tsunami where 124 lives were lost. And one year later, the Pacific and the world watched the 11 March 2011 Japan tsunami devastate the Honshu coastlines within 30 minutes claiming tens of thousands of lives.

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The three destructive tsunamis in three far-away Pacific sub-regions during the intersessional period serve as sober reminders to all of the need for every country to be prepared. This is especially true in the Pacific where tsunamis occur most often and local tsunamis can impact in minutes.

Exercise Pacific Wave 2011 (PacWave11, Attachment II) will be an important preparedness activity and we trust that you and your country authorities will support this exercise. This letter seeks to advise you of the planned exercise.

Exercise Aim and Objectives

The aim of the PacWave11 is to improve local and regional source tsunami warning and response capability in the Pacific. There are two main exercise objectives and a number of sub-objectives (Attachment II):

1. To validate understanding and use of new PTWS Experimental Products.
2. To validate the readiness of member states to respond to a local/regional source tsunami.

Experimental Products

In response to Recommendation ICG/PTWS-XXIII.1, Task Team on Enhancing Tsunami Warning Products, the PTWC has proposed new products based upon PTWC's improved capabilities in terms of its speed of response and growing ability to forecast impacts. The new products will be implemented through an experimental phase starting with PacWave11 and operationally in 2013 (Attachment II). Five levels of tsunami threat will be established, and supplemental products will be issued. The improvements will provide general guidance on the levels of impact, and are expected to greatly reduce the number of areas warned unnecessarily.

Date and Conduct of Multiple-Scenario Exercise

Exercise Pacific Wave 2011 (PacWave11) will take place from 9-10 November 2011. PacWave was originally planned for 2010, but was postponed in order to evaluate and consider its goals and outcomes in the aftermath of the 2010 Chile tsunami.

PacWave11 will simulate Pacific countries being placed into a Tsunami Warning situation, and require Member State decision-making, and steps taken to just prior to public notification. The exercise is not required to be conducted through to community level. The exercise may be played during the exercise dates in real time or the following days.

PacWave11 will involve multiple scenarios to enable Member States the opportunity to select a regional/local source event. The exercise scenarios will include the following:

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- Kamchatka (Kuril-Kamchatka Trench)
- Ryukyu Islands (Nansei-Shoto Trench)
- Philippines - South China Sea (Manila Trench)
- Philippines - Pacific Ocean (Philippines Trench)
- Vanuatu (New Hebrides Trench)
- Northern Chile (Peru-Chile Trench)
- Ecuador (Colombia – Ecuador Trench)
- Central America (Middle America Trench)
- Aleutian Islands (Aleutian Trench)

A PacWave 11 Exercise Manual will be distributed in August with further details on the scenarios as well as the text of simulated “Exercise Start Messages” from PTWC, WC/ATWC and NWPTAC and how participating countries should access following messages.

How to Plan, Conduct and Evaluate Tsunami Exercises Guideline

Available in July each country should decide and design its own national exercise that commences after receiving the initial “Exercise Start Message” from the international warning centers. A “How to Plan, Conduct and Evaluate Pacific Wave Exercises Guideline” is under development and will be disseminated in early July to aid countries further in developing and designing the exercise at a national and/or provincial level.

PacWave 11 National Contact Nomination

Member States are strongly encouraged to participate. In order to ensure the commitment of participating countries is fully coordinated, we seek your nomination of National Contact for PacWave11 with whom we will communicate about planning of the exercise. The designated PacWave11 National Contact will be expected to confirm the accuracy of existing points of contact for the receipt and dissemination of tsunami warnings downstream from the national tsunami warning center. The designated PacWave11 National Contact will also be responsible for coordinating input to the exercise evaluation tool, which will be circulated as part of the Exercise Pacific Wave 2011 Exercise Manual.

I would be grateful if you could provide the details of your National Contact for PacWave11 by 10 June 2011 to the ICG/PTWS Technical Secretary through email (b.aliaga@unesco.org, cc to l.kong@unesco.org). You are also encouraged to further disseminate copies of this letter to appropriate organizations and authorities within your country.

Yours sincerely,

[signed]

Wendy Watson-Wright
Assistant Director-General
UNESCO
Executive Secretary IOC

Attachments:

Recommendation ICG/PTWS-XXIII.2 PTWS Exercises
Exercise Pacific Wave 2011 Guidance

Attachment I
Recommendation ICG/PTWS-XXIII.2
PTWS EXERCISES

The Intergovernmental Coordination Group for the Pacific Tsunami Warning and Mitigation System,

Recognizing that the PTWS requires regular testing and review,

Understanding that simulating scenarios and learning lessons from exercises is an effective way to improve preparedness,

Acknowledging the preliminary results of the Exercise Pacific Wave 08 (PACWAVE08) presented at the ICG/PTWS-XXIII meeting,

Realising that conducting the PACWAVE08 in real time allowed for better visualization of the tsunami propagation, and as a result, actions were taken,

Noting that participating countries disseminated exercise information to emergency services for immediate actions,

Noting that there were communications problems that arose in reaching the farthest islands within some island countries,

Recognising that the exercise was a good vehicle to publicize awareness of tsunami preparedness,

Recognizing the continuing challenges to and opportunities for more effective tsunami early warning demonstrated by PACWAVE08,

Recommends that a third end-to-end tsunami exercise be carried out during October 2010,

Encourages the conduct of separate regional exercises that take into account regional tsunami hazards as well as regional challenges and synergies regarding tsunami preparedness, warning and response.

Decides that a Task Team be formed under Working Group 2 with the following Terms of Reference:

- (i) Review the PACWAVE08 evaluation report.
- (ii) Identify lessons learned and develop recommendations based on the PACWAVE08 evaluation and submit recommendations to the PTWS Steering Committee.
- (iii) Design and carry out a third end-to-end Pacific-wide exercise with the following characteristics:

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- a. The exercise will take place preferably in the fourth quarter of 2010.
- b. The exercise scenario be a major tsunami originating in the Central South Pacific (e.g., Tonga-Kermadec) to complement previous scenarios in other places.
- c. The exercise date be finalized by the Task Team and the exercise announced to Member States at least 180 days in advance of the exercise date.
- d. The exercise manual including instructions to Member States regarding their participation and the evaluation instrument be prepared with content and structure similar to what was prepared for the previous two Pacific-wide exercises, but taking into account lessons learned and any need to collect additional information.
- e. The exercise manual be distributed to Member States at least 90 days in advance of the exercise date.
- f. Participating Member States be asked to complete and return the evaluation instrument no more than 90 days following the exercise.
- g. The exercise be played out in real time.
- h. The exercise is considered as a way to test new products from the international TWCs including graphical products.

Attachment II
Exercise Pacific Wave 2011 Guidance

Exercise Aim and Objectives:

The aim of the Exercise Pacific Wave (PacWave11) is to improve local and regional source tsunami warning and response capability in the Pacific. There are two exercise objectives with a number of sub objectives (see Annex II):

- 1) To validate understanding and use of new PTWS Experimental Products.
 - Utilise and evaluate PTWC experimental products, including forecast models and other science information, for timely national hazard assessment.
 - Validate the process for issuance of tsunami advice from the PTWC and JMA/NWPTAC and WC/ATWC.
 - Validate the process for receipt of tsunami advice by PTWS Tsunami Warning Focal Points.
- 2) To validate the readiness of member states to respond to a local/regional source tsunami.
 - Validate the operational readiness of each national tsunami warning centre (NTWC). (or similar in-country function) and the National Disaster Management Office (NDMO).
 - Validate that the dissemination of warnings and information/advice by NTWC to relevant in-country agencies and the public is accurate and timely.
 - Validate the organisational decision-making process about public warnings and evacuations.
 - Validate the methods used to notify and instruct the public.
 - Validate the elapsed time until the public would be notified and instructed/advised.

Experimental Products:

Recommendation ICG/PTWS-XXIII.1 established a Task Team on Enhancing Tsunami Warning Products under PTWS Working Group 2 (WG 2, Detection, Warning and Dissemination) to:

- review current capabilities,
- obtain customer feedback,
- consider best practices,
- develop recommendations to improve existing or create new products, and
- improve dissemination for more effective, functional, and timely delivery.

At the Task Team 1 March 2011 meeting, the Director of PTWC proposed new products based upon PTWC's improved capabilities in terms of its speed of response and growing ability to forecast impacts, and these were approved by WG 2.

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Further discussion took place at the PTWC-JMA Coordination meeting 11-13 April, with an agreement to the following changes in an experimental phase starting with PacWave11, and be operationally ready in 2013 (see ICG/PTWS-XXIV Working Documents for Task Team report).

- PTWC will lower its current initial warning advice threshold from magnitude 7.6 to magnitude 7.1 in order to provide some advance notice of potential local tsunamis.
- PTWC will begin using tsunami forecast models to classify the level of threat for sections of coast around the Pacific. Five levels of tsunami threat or potential threat will be established, and supplemental products will be issued.

While the predictive capabilities of the forecast models are not perfect, they should be accurate enough to greatly reduce the number of areas warned unnecessarily, while also providing general guidance on the expected levels of impact to areas that are threatened.

Conduct of Multiple-Scenario Exercise:

Exercise Pacific Wave 2011 (PacWave11) will simulate Pacific countries being placed into a Tsunami Warning situation, and require Member State decision-making, and steps taken to just prior to public notification. These steps may be played during the exercise dates in real time or the following days.

In each scenario, the simulated tsunami will propagate in real time across the Pacific. An initial "Exercise Start Message" will be issued by the Pacific Tsunami Warning Center (PTWC), the Northwest Pacific Tsunami Advisory Center (NWPTAC), and the West Coast/Alaska Tsunami Warning Center (WC/ATWC). Subsequent bulletins will be made available on the PacWave11 website and referred to in the PacWave11 Exercise Manual.

The PacWave 11 Exercise Manual will be distributed in August with further details on the scenarios as well as the text of simulated "Exercise Start Messages" from PTWC, WC/ATWC and NWPTAC.

A key point is that the exercise is not required to be conducted through to community level. Rather, the aim is to exercise the operational lines of communication within the PTWS without disrupting or alarming individual citizens. Member countries will, however, be encouraged to exercise, evaluate and report back on communication and decision making within a warning situation down to the level just prior to public notification.

Despite this, you will note that there remains an option to exercise further levels of communication, such as public broadcasts and sirens, and provide relevant feedback during exercise evaluation. This activity is regarded as optional.

Due care should be taken so as not to inadvertently alarm the public, and a conservative approach is recommended.