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***EASTERN REGION TSUNAMI PROGRAM***

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<signed>

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*The following Appendices will be incorporated into the [ER Tsunami Resource Page](#). They are included here for review purposes.*

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1. **Purpose.**

The Eastern Region (ER) tsunami program procedures are detailed in this document. These procedures provide guidance and policy to Eastern Region Warning and Forecast Offices (ER WFO) and River Forecast Centers (RFC) on the national tsunami warning system and procedures to be followed by ER WFOs in the event tsunami related products are issued by one of the national tsunami warning centers for the Atlantic Basin within the ER area of responsibility (AOR).

2. **Atlantic Coast Weather Forecast Office and River Forecast Center (RFC) Procedures.**

The West Coast/Alaska Tsunami Warning Center (WC/ATWC) monitors the Atlantic for seismic events and issues Tsunami Information, Warning or Watch products for the southern and eastern United States. Sections 2.4.1 and 2.4.2 describe the seismic and location criteria used by the WC/ATWC when issuing a Tsunami Warning, Tsunami Watch or Tsunami Information Bulletins. The WFOs disseminate this information on NOAA All Hazards Weather Radio (NWR) and provide updates to the local customers and partners throughout and after events. The RFCs provide support to their customers and WFOs.

2.1. **Communication.**

a. **Advanced Weather Interactive Processing System (AWIPS).** RFCs and WFOs will ensure all of the products listed in Section 2.2.a and Section 2.2.b are *alarmed* in AWIPS. In addition, they will ensure after all AWIPS build installations or system maintenance/recovery that the products are reconfigured to be alarmed.

b. **Contact logs.** Offices will receive numerous calls from the media, public, emergency managers, etc. during tsunami events. Log all calls received or initiated and also log all actions.

b. **Emergency Phones.** Emergency office cell and/or satellite phones should be easily accessible to and ready for use by all staff. Staff should be proficient in the use of emergency cell/satellite phones.

2.2 **WC/ATWC Products.**

a. **Warnings, Watches and Cancellation Messages.** The WC/ATWC issues

tsunami watches and tsunami warnings under the following World Meteorological Organization (WMO) Header and Product Identifiers (IDs):

WEXX20 PAAQ ANCTSUAT1 – Standard format product  
WEXX30 PAAQ ANCTSUATE – Public format product

These product IDs are also used to *cancel* a warning or a watch.

TSU = Tsunami Watch, Warning or Cancellation product.

The WC/ATWC will issue Tsunami Warnings and Watches using both the TSUAT1 and TSUATE products. The TSUAT1 product is a tabular formatted product that contains technical details of the tsunami including location, magnitude and forecasted arrival time(s). The TSUATE product is a narrative styled product that will contain the same warning/watch information as the TSUAT1 product, but presented in a less technical style suitable for the general public. Call to action and definitions will be included in the TSUATE product.

- b. Tsunami Information Statements. A Tsunami Information Statement is issued when no tsunami warning or watch is issued, and provides pertinent information after earthquakes in the region (particularly those which may have been felt near the coast or were large enough to attract media attention). Two separate types of products, (1) Tsunami Information Statement (TIB) and (2) Tsunami Seismic Information Statement (EQI), are issued depending on the strength (magnitude) of the earthquake. The WMO Header and Product IDs for Tsunami Information Statements are:

WEXX22 PAAQ ANCTIBAT1 – Standard format product ( $M \geq 6$ )  
WEXX32 PAAQ ANCTIBATE – Public format product ( $M \geq 6$ )  
SEX60 PAAQ ANCEQIAT1 – Used when  $M < 6$

M = Magnitude.

TIB = Tsunami Information Statement

EQIAT1 Product = Tsunami Seismic Information Statement

The WC/ATWC will issue Tsunami Information Statements using both the TIBAT1 and TIBATE products. The TIBAT1 product is a tabular formatted product that contains technical details of the tsunami including location, magnitude and forecasted arrival time(s). The TIBATE product is a narrative styled product that will contain the same information as the TIBAT1 product, but presented in a less technical style suitable for the general public.

- c. Follow up and Cancellation Messages. . WC/ATWC will issue follow-up statements every 30 minutes under the TSUAT1 and TSUATE products. If a tsunami is no longer expected, the WC/ATWC will issue a cancellation message under the same product IDs (TSUAT1 and TSUATE). There are no mandatory follow up messages for the EQI or TIB products.

2.3 Dissemination.

WC/ATWC will disseminate the TSU and TIB tsunami products for the Atlantic basin via all of the following methods. WC/ATWC will:

- read the product on National Warning System (NAWAS).
- send the product via National Airspace Data Interchange Network (NADIN2).
- NOAA Weather Wire Service (NWWS), Line225 (NWS Circuit and AWIPS feed), email, digital pagers, Quake Data Distribution System (QDDS), and post on WC/ATWC web site.
- Notify the Naval Meteorological and Oceanographic Center (NMOC).
- Notify the Pacific Tsunami Warning Center (PTWC).
- Notify the National Earthquake Information Center (NEIC).
- Notify the State Department Operations Center.

2.4 Procedural Thresholds.

If an earthquake is detected in the Atlantic basin (including the Gulf of Mexico), the WC/ATWC will issue a Tsunami Warning, Tsunami Watch or Tsunami Information Bulletin using the thresholds below (Note: “Atlantic coast” includes the coasts of eastern Canada):

2.4.1 Events Near the Atlantic Coast or Gulf of Mexico

**Determination of Product to be Issued by Earthquake Magnitude and Area of Occurrence**

<b>Magnitude</b>	<b>Area</b>	<b>Product</b>	<b>Product ID</b>
4.0-4.9	Within 50km of coast	Tsunami Seismic Information Statement	ANCEQIAT1
5.0-5.9	Within 500 km of coast	Tsunami Seismic Information Statement	ANCEQIAT1
6.0-6.75	Within approximately 500km of coast	Tsunami Information Statement	ANCTIBAT1 and ANCTIBATE
6.0+	Inland	Tsunami Information Statement	ANCTIBAT1 and ANCTIBATE
6.8-7.5	Atlantic coast	Fixed warning (350km)*	ANCTSUAT1 and ANCTSUATE
7.6-7.8	Atlantic coast	Fixed warning (1000km)*	ANCTSUAT1 and ANCTSUATE
>7.8	Atlantic coast	3 hour watch/3 hour warning**	ANCTSUAT1 and ANCTSUATE
> 6.7	Gulf of Mexico	Fixed warning for Gulf coast	ANCTSUAT1 and ANCTSUATE

\* “fixed warning (350 km/1000 km)” indicates that after an Atlantic coast earthquake in the magnitude range of 6.8-7.8, a Tsunami Warning will be issued to the next breakpoint beyond 350km/1000km in both directions along the coast. No watch will be issued, and the warning area will not be expanded unless conditions warrant.

\*\* Since earthquakes over magnitude 7.8 can trigger dangerous tsunamis outside the immediate source zone, an expanding warning is issued. “3 hour watch/3 hour warning” indicates that all regions within 3 hours travel time of the tsunami would be placed in the warned area. A Tsunami Watch is issued for the areas that may potentially be impacted by the wave in 3 to 6 hours. The Tsunami Warning and Watch areas will expand correspondingly in supplemental messages until the wave has been characterized well enough to cancel the warning, restrict it to certain areas, or expand it to the entire coast.

2.4.2 Other Atlantic Basin Regions

**Determination of Product to be Issued by Earthquake Magnitude and Area of Occurrence**

Magnitude	Area	Threat Level	Product
6.0-7.5 7.0-7.5	Caribbean Sea Other Atlantic regions	No Danger	ANCTIBAT1 and ANCTIBATE
> 7.5	Atlantic Basin (No potential danger to Area of Responsibility)	No Danger	ANCTIBAT1 and ANCTIBATE
> 7.5	Atlantic Basin (Potential danger to Area of Responsibility)	ETA dependent: Potential danger	ANCTIBAT1 or ANCTSUA1 and ATE product

2.5 Break Points.

In the tsunami watch/warning product, breakpoints along the coast are used to define the areal extent of the watch and/or warning. Below are the designated breakpoints used by the WC/ATWC for Eastern Region:

- Altamaha Sound, GA
- South Santee River, SC
- Surf City, NC
- Duck, NC
- Chesapeake Bay, New Port Comfort, VA
- Cape Henlopen, DE
- Sandy Hook, NJ
- Watch Hill, RI
- Merrimack River, MA
- Stonington, ME
- US/Canada Border

2.5.1 Refer to NWS 10-701, §1.2.9 for the complete listing of Atlantic tsunami watch/warning breakpoints.

2.6 WFO Procedures.

Coastal WFOs within the tsunami watch or warning area will follow the below procedures.

- a. Appendices 2 and 3 are office procedure checklists to follow when tsunami related products are issued by the national tsunami warning center. These appendices are located on the [Eastern Region Tsunami Resource](#) page.

2.6.1 All Hazards NOAA Weather Radio (NWR) Activation.

a. If a Tsunami Watch or Tsunami Warning is issued for your area:

- 1) NWR Activation. When a Tsunami Watch or Tsunami Warning has been issued by WC/ATWC for your area, affected coastal WFOs will ***immediately*** activate the Emergency Alert System (EAS) and tone alert (both 1050HZ and SAME [Specific Area Message Encoding]) NWR Console Replacement System (CRS) for all affected NWR coastal transmitters and broadcast the tsunami information on NWR. The sample broadcast template listed in Appendix 3 should be used. Use information in the TSU product to fill in the template and then use the template as a broadcast script.

***Only tone alert*** the proper EAS codes on NWR. ***Do not*** issue them as a product from AWIPS. For example, do not issue a TSW product from AWIPS – only EAS activate the TSW EAS code on NWR.

- 2) EAS Codes. One of the following codes should be used for EAS dissemination:
  - (a) Civil Emergency Message (CEM) or
  - (b) Coastal Hazards Message (CFW), or
  - (c) Tsunami Warning message (TSW) [or Tsunami Watch message (TSA) if a Tsunami Watch was issued].

The choice of the above codes must be collaborated with your emergency management, state liaison offices and other partners to ensure their systems are configured to receive the EAS code. Note in your Station Duty Manual (SDM) which EAS code to activate NWR and which transmitters should be activated for tsunami information.

- 3) Special Weather Statements.

If a Tsunami Warning and/or Tsunami Watch is issued from WC/ATWC for the Atlantic Basin or the Gulf of Mexico, WFOs in the affected area should issue Special Weather Statements (SPS) every 30 minutes. These SPS's are intended to provide timely updates to our customers and partners while the tsunami warning/watch is in effect. In most cases the SPS will reemphasize what is in the WC/ATWC products, while adding additional local impact information such as flooding and any messages relayed by emergency managers. When a tsunami



warning or watch is cancelled, use the SPS to relay this information. Broadcast the SPS's on NWR.

- b. If a Tsunami Information Statement (TIB product) or Tsunami-related Seismic Information Statement (EQI product) is issued for your area:  
If the WC/ATWC issues a TIB or EQI product for your area, a tsunami is not expected. TIBs or EQIs do not need to be disseminated over NWR, however an earthquake in the local area may increase the amount of phone calls or activities at an office. Therefore, at forecaster discretion, a Public Information Statement (PNS) product may be disseminated on NWR to help address public questions regarding the earthquake. This may especially be needed during "felt" earthquake events.
  
- c. If a Tsunami Watch or Tsunami Warning is cancelled for your area:  
If the WC/ATWC cancels a Tsunami Watch or Warning, broadcast the information on NWR using the template in Appendix C. The choice to tone alert NWR cancellation messages must be collaborated with your partners. Note in your Station Duty Manual (SDM) if your office will tone alert NWR for cancelled tsunami watches or warnings.

2.7 Monthly Communication Tests

Monthly dissemination tests will be conducted for tsunami products. WC/ATWC will disseminate a test TIB and/or test TSU product roughly once a month to WFOs, FAA and Federal and State Emergency Managers.

2.7.1 Tsunami Acknowledgement Message

After receipt of the WC/ATWC tsunami test product(s), WFO's will respond immediately by disseminating a Tsunami Acknowledgement Message (TMA's) as below. Add "**THIS IS A TEST**" to the TMA product because some customers can receive the product and may get confused.

**Example of a TMA message sent back to WC/ATWC from a WFO:**

SEUS42 KCHS 231410  
TMACHS

**This is only a test.** (add)

WEXX20 PAAQ RCVD AT **231305** (this is the time you received the product, not the time the test message was transmitted)

WEXX22 PAAQ NOT RCVD

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2.8 Notification Procedures to Eastern Region Headquarters

- a. Notification to ERH of tsunami related events; including watches, advisories, warnings and information statements will follow Eastern Region Supplement - [\*Eastern Region Headquarters Significant Event/Notification Requirements and Procedures.\*](#)