

NATIONAL TSUNAMI WARNING SYSTEMS

September, 2014 – ITIC, PTWC

PURPOSE

Enable National Tsunami Warning System

MINIMUM REQUIREMENTS

Each Country should have

1. Knowledge of their tsunami hazard and risk
2. Ability to issue national tsunami warnings and activate emergency response
3. Prepared communities that know what to do when a destructive tsunami threatens

IMPLEMENTATION REQUIREMENTS

To meet each requirement, the following information, knowledge, capabilities, products, or other services are needed. Consider including provisions of US TsunamiReady Program as readiness milestones.

1. Knowledge of their tsunami hazard and risk

Hazard

- Historical Hazard: Historical event catalog – lists and maps
- Potential Hazard: Worst case or plausible scenario deep-ocean and inundation maps

Risk

- Identification of Critical Infrastructure at risk
- Identification of Coastal communities at risk

2. Ability to issue national tsunami warnings and activate emergency response

- Ability to assess national tsunami threat
- Ability to decide whether to issue national and/or state tsunami warnings based on the threat.
- Methods for disseminating warning and public safety advice
- Evacuation plans and procedures for night and day
- Ability to assess and decide when tsunami danger (waves) has ceased
- All-Clear procedures

3. Prepared communities that know what to do when a tsunami attacks

- Awareness materials, both general and country-customized
- Educational materials (schools)
- Evacuation Maps
- Routine Exercises and Drills
- Routine Stakeholder Coordination Meetings

TSUNAMI WARNING CENTER REQUIREMENTS

September, 2014 – ITIC, PTWC

PURPOSE

Stand up National Tsunami Warning Center (NTWC). The NTWC is responsible for issuing the Tsunami Alerts (Warning/Watch/Information messages).

BACKGROUND

On October 1, 2014, PTWC will cease providing Pacific countries with Tsunami Warning/ Watch alerts. Each country will then have to be responsible for issuing its own Watches/ Warnings based on PTWC forecast products (Threat Messages and Information Statements).

REQUIREMENTS

1. Ability to assess national tsunami threat. Threat assessment requires
 - a. Real-time monitoring of seismicity and tsunami sea levels around the Pacific
 - b. Determining expected arrival time and impact of tsunami waves on their coastsa. and b. can be carried out using the PTWC advice, and also supplemented by tools for self-monitoring and assessing.
2. Ability to issue national and/or state tsunami alerts (warning, watch, information, etc.) based on the threat. This includes message creation followed by rapid message dissemination to vulnerable communities or population sectors
3. Ability to assess and decide when the danger from tsunami waves has ceased. Data collected for 1. will be used for cancellation.

NEW PROCEDURES

1., 2., and 3. above require review and adjustment of existing tsunami warning standard operating procedures (SOPs) to implement new criteria, messages, and decision-making arrangements. The warning actions should be internal to the NTWC, in consultation with senior Government officials. In the event of a "strong or long" duration near source earthquake, the NTWC will have secured delegated authority to issue an immediate warning for a local tsunami. Once a Warning level has been decided, current procedures can be followed to provide warnings and evacuation actions to the public through redundant communications methods.

EXAMPLE - MINIMUM EQUIPMENT AND SOFTWARE

- A. 1. and 3. (monitor, assess threat, confirm severity) require purchase of 1 CPU and 2 displays for event monitoring and threat assessment. The larger the wall-mounted screens the better since more data can be shown in real-time
- B. Tsunami Warning Decision Support Tools to be loaded onto the CPU are:
 - earthquake monitoring software (CISN), sea level monitoring software (Tide Tool), travel time calculation (TTT), and tsunami historical database hazard searches. Alternative (redundant) methods for monitoring would be:
 - For earthquakes, monitoring the USGS web site, and/or receiving auto-notifications of earthquake information from various national and international sources, as well as country monitoring centers.
 - For tsunami monitoring, accessing the IOC Sea Level Monitoring web site, or other online sea level network data centers.
- C. Color printer. Color is required for graphical product hard copy to facilitate understandable communication of information during a tsunami event to government and non-government customers, and the public.
- D. Workflow software (input Message Templates, PTWC messages; output National messages) is needed to most effectively and reliably issue National messages based on PTWC information and decision support tools. In addition, MSOffice, Adobe Acrobat standard would be needed.