Basic Information

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National Tsunami Warning Centre

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E-mail Address: 
Telephone Number: 
Fax Number: 
Emergency Telephone Number: 
Emergency Fax Number: 
Cellular Phone: 

3. Tsunami Advisor:

Name: Sun Cheon PARK
4. Tsunami Standard Operating Procedures for a Local Tsunami

Procedures for dealing with local and distant tsunami are provided in the National Earthquake Center of the Korea Meteorological Administration (KMA). The recent earthquake and tsunami information in and around Korea are available on the web at:

http://web.kma.go.kr/eng/weather/earthquake/intro.jsp

KMA operates the seismic network with 127 seismometers in Korea, identifying tsunamigenic events in the immediate source area and disseminating tsunami warning/watch to the key national emergency management agency, the news media and local authorities via SMS, MMS, FAX, e-mail and computer message communication. For this purpose it maintains a 24/7 duty system.

No local Tsunami Warning/Watch was issued by KMA during the intersessional period.

5. Tsunami Standard Operating Procedures for a Distant Tsunami

As part of the international collaboration with USA and Japan, KMA is exchanging tsunami information with the Pacific Tsunami Warning Center (PTWC) and the Northwestern Pacific Tsunami Advisory Center (NWPTAC) operated by the Japan Meteorological Agency (JMA). Their information is very helpful for KMA to make a decision on distant tsunamis.

To monitor the seismic events and the tsunamis in the regional area, KMA keeps continuing watching the seismic wave and sea level signals around the coast of Japan. It has exchanged with the JMA and the National Research Institute for Earth Science and Disaster Prevention of Japan (NIED) in real time in order to mitigate tsunami disaster in Korea and Japan. KMA has preceded the agreement to enlarge the seismic data exchange with the China Earthquake Administration (CEA) as well.

The National Earthquake Center of KMA is responsible for issuing the tsunami advisory or warning based on the information of the preliminary epicenter and magnitude of earthquakes. It would disseminate the tsunami information, which includes the earthquake information and the arrival
time and height of the tsunami expected along the local coast. A chief weather forecaster could call a TV broadcasting room for requesting emergency tsunami news.

The national emergency management agency disseminates the tsunami information to local authorities and the civil defense and disaster system, following its own procedures, requesting active local public alerting and evacuating.

To confirm the tsunami, KMA would analyze sea level data at tidal stations near the epicenter. Local meteorological agencies will monitor the sea level variations to confirm the arrival or retrieval of tsunami and report it to the headquarters of KMA.

5.1 Criteria
The thresholds for issuing national tsunami advisory or warning in Korea are as follows:

<table>
<thead>
<tr>
<th>Template</th>
<th>Thresholds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advisory</td>
<td>Expected tsunami height ≈ 0.5 meter – 1.0 meter and Earthquake Magnitude ≥ 7.0</td>
</tr>
<tr>
<td>Warning</td>
<td>Expected tsunami height ≥ 1.0 meter and Earthquake Magnitude ≥ 7.0</td>
</tr>
</tbody>
</table>

6. National Sea-Level Network:
The Korea Hydrographic and Oceanographic Administration (KHOA) has been operating 42 tidal stations (Figure 1) around Korea, whose data are newly updated every one minute through its website (http://www.khoa.go.kr/koofs/eng/observation/obs_real_map.asp)

KMA operates one sea-level monitoring system and one ocean bottom seismograph (OBS) and bottom pressure recorder (BPR) on Ulleung-Island, located about 130km from the eastern coast, in the sea between Korea and Japan.
<table>
<thead>
<tr>
<th>No.</th>
<th>Station Name</th>
<th>WGS84 (N, E)</th>
<th>On time (yr.mm)</th>
<th>No.</th>
<th>Station Name</th>
<th>WGS84 (N, E)</th>
<th>On time (yr.mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ganghwa Grand Bridge</td>
<td>37.7319 126.5222</td>
<td>2006.12</td>
<td>22</td>
<td>Chujado</td>
<td>33.9619 126.3003</td>
<td>1983.10</td>
</tr>
<tr>
<td>2</td>
<td>Yeongjong Grand Bridge</td>
<td>37.5456 126.5844</td>
<td>2009.12</td>
<td>23</td>
<td>Jeju</td>
<td>33.5275 126.5431</td>
<td>1964.01</td>
</tr>
<tr>
<td>3</td>
<td>Incheon</td>
<td>37.4519 126.5922</td>
<td>1959.06</td>
<td>24</td>
<td>Moseulpo</td>
<td>33.2144 126.2511</td>
<td>2003.12</td>
</tr>
<tr>
<td>4</td>
<td>Anshan</td>
<td>37.1919 126.6472</td>
<td>2002.1</td>
<td>25</td>
<td>Seogwipo</td>
<td>33.2400 126.5617</td>
<td>1985.01</td>
</tr>
<tr>
<td>5</td>
<td>Gureopdo</td>
<td>37.1944 125.9950</td>
<td>2008.11</td>
<td>26</td>
<td>Seongsanpo</td>
<td>33.4747 126.9275</td>
<td>1985.01</td>
</tr>
<tr>
<td>6</td>
<td>Pyeongtaek</td>
<td>36.9669 126.8228</td>
<td>1999.11</td>
<td>27</td>
<td>Wando</td>
<td>34.3158 126.7594</td>
<td>1983.1</td>
</tr>
<tr>
<td>7</td>
<td>Daesan</td>
<td>37.0075 126.3528</td>
<td>2002.12</td>
<td>28</td>
<td>Goheung</td>
<td>34.4808 127.3425</td>
<td>2005.1</td>
</tr>
<tr>
<td>8</td>
<td>Anheung</td>
<td>36.6736 126.1319</td>
<td>1986.10</td>
<td>29</td>
<td>Geomundo</td>
<td>34.0286 127.3075</td>
<td>1982.1</td>
</tr>
<tr>
<td>9</td>
<td>Boryeong</td>
<td>36.4067 126.4858</td>
<td>1986.09</td>
<td>30</td>
<td>Yeosu</td>
<td>34.7472 127.7658</td>
<td>1965.2</td>
</tr>
<tr>
<td>10</td>
<td>Janghang</td>
<td>36.0069 126.6875</td>
<td>2004.01</td>
<td>31</td>
<td>Gwangyang</td>
<td>34.9039 127.7547</td>
<td>2010.9</td>
</tr>
<tr>
<td>11</td>
<td>Gunsan (Outer Port)</td>
<td>35.9756 126.5631</td>
<td>1980.03</td>
<td>32</td>
<td>Tongyeong</td>
<td>34.8278 128.4347</td>
<td>1976.2</td>
</tr>
<tr>
<td>13</td>
<td>Wido</td>
<td>35.6181 126.3017</td>
<td>1985.01</td>
<td>34</td>
<td>Geojedo</td>
<td>34.8017 128.6992</td>
<td>2006.1</td>
</tr>
<tr>
<td>14</td>
<td>Yeonggwang</td>
<td>35.4261 126.4206</td>
<td>2001.10</td>
<td>35</td>
<td>Gadeokdo</td>
<td>35.0242 128.8108</td>
<td>1977.1</td>
</tr>
</tbody>
</table>

Figure 1: KHOA’s Tidal stations.
7. Information on Tsunami Occurrences

No any kind of tsunami was recorded on the coast of Korea during the intersessional period.

8. Web sites (URLs) of national tsunami-related web sites

The Korea Meteorological Administration is responsible to issue and disseminate an earthquake and tsunami warning and information. Its web site is http://www.kma.go.kr/

SUMMARY

KMA has been reinforcing the national seismic network by introducing broadband seismometers and has been training for the preparedness of using simulated tsunamis annually.

There will be presently 187 seismic stations on the Korea Seismic Network with installed by KMA additional 10 stations by the end of this year.

The numbers of 42 sea-level stations are currently maintained by the Korea Hydrographic and Oceanographic Administration (KHOA), whose data are updated in every minute on its public web site. KHOA has a plan to set up three stations by this year.

Anti-disaster drills, organized by the Central Disaster and Safety Countermeasures Headquarter and regional countermeasure offices, are being carried out based on possible disaster scenarios. They would be periodically held on May.

No tsunami was recorded on the coast of Korea during the intersessional period.

NARRATIVE
A. Earthquake Monitoring and Sea-Level Network of Korea

KMA would be strengthening tsunami countermeasures with quickly detecting the earthquake signals and analyzing them on the denser seismic network around the Korea Peninsular.

There are presently 177 seismic stations on the Korea Seismological Network with installed additional 14 stations by KMA during the intersessional period. In addition, all of observed data are being exchanged for seismic research with other related institutions of Korea.

Permanent sea-level network station data, observed by the Korea Hydrographic and Oceanographic Administration (KHOA), is available in graphical and tabular format for one day at http://www.khoa.go.kr/koofs/eng/observation/obs_real_map.asp

B. Earthquake and Tsunami Preparedness Drill

KMA has been working to assure the promptness and accuracy of the announcements of tsunami information, since detailed and rapid tsunami information for people residing in the possible areas of tsunami inundation is essential to mitigate tsunami hazards. For this reason, KMA has been executing simulated tsunami preparedness drills to evaluate the tsunami warning and notification system every two months.

In the drills, KMA analyzes the magnitude and location of a virtual tsunamigenic earthquake as quickly as possible, and reports this information to the organizations concerned. After that, KMA collects the returned messages from the organizations and analyzes them.

C. International Cooperation

KMA is currently exchanging tsunami information with the Pacific Tsunami Warning Center (PTWC) and the Northwestern Pacific Tsunami Advisory Center (NWPTAC) as part of the international collaboration. When a large earthquake occurs outside Korea, KMA informs PTWC and JMA of the P-wave arrival times of the event, recorded in its seismic network of Korea, through the Global Telecommunication System and e-mail. KMA then receives information on the event as well as on tsunami generated by the event from PTWC and JMA.

The observed seismic data is being exchanged in real time between KMA and JMA (and NIED) to rapidly analyze the earthquakes and tsunamis around the northwestern area of the Pacific.

For the purpose of improving accuracy in analysis of tsunamis, KMA signed the MoU with the Comprehensive Nuclear Test Ban Treaty Organization (CTBTO) in Vienna, Austria on 31 October,
regarding earthquake data exchange and cooperation in technology exchange. According to the MoU, data of seven seismic array stations from the Russia, Japan, Thailand, Mongolia, and Kazakhstan is providing to KMA for monitoring the seismic activities around the Korea.