ISSC Extra Budgetary Project
ISSC External Event Notification System

Regional Workshop on Volcanic, Seismic, and Tsunami Hazard Assessment Related to NPP Siting Activities and Requirements
June 13-17, Jakarta, Indonesia

Ayhan Altinyollar
Department of Nuclear Safety and Security

INTERNATIONAL SEISMIC SAFETY CENTRE, NSNI/IAEA

IAEA
International Atomic Energy Agency

ISSC Extra Budgetary Project

Past and Current EBPs

- "Tsunami EBP" on Protection of Nuclear Power Plants against Tsunamis and Post Earthquake Considerations in the External Zone was started in April 2007 and finished in March 2010.
- "Seismic EBP" on Seismic Safety of Existing Nuclear Power Plants was started in September 2007 and finished in August 2010.
- Considering the Tsunami and Seismic EBPs were coming to the designated ends in 2010, a concept of new EBP (ISSC-EBP) was presented to the EBP participants in September 2009.

Past and Current EBPs

- After the consultations with the participants until December 2009, ISSC prepared a Note Verbal (NV) and Terms of Reference (ToR) for the ISSC-EBP. The NV was distributed to Member States on May 2010, and ToR was distributed in June 2010.


IAEA


Terms of Reference for Extrabudgetary Contributions to the ISSC

A. Introduction and Background

B. Organizational Aspects of the ISSC

B.1. Establishment of the ISSC

IAEA

Management of Current EBPs

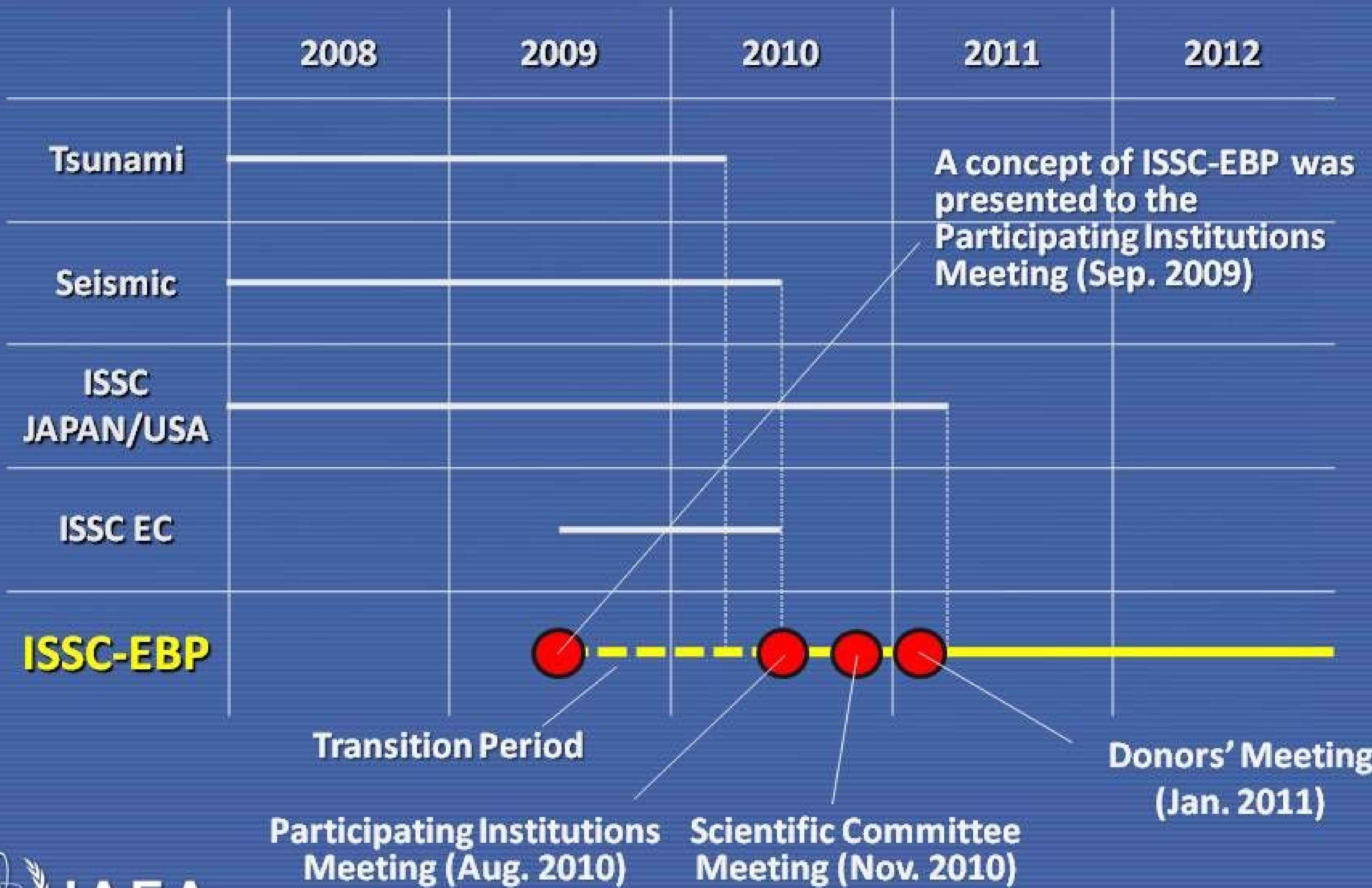
Participating Institution:

Any institution nominated by Member State or intergovernmental institution declaring its interest in participating in the ISSC's activities is considered as a Participating Institution.

Donor Institution:

Those Participating Institutions that declare their willingness to voluntarily contribute to the activities of the ISSC in the form of: (a) monetary, (b) provisions of cost-free experts, or (c) organization and financial support of training, exchange of information and/or capacity building activities, are considered as a Donor Institution.

Past and Current EBPs

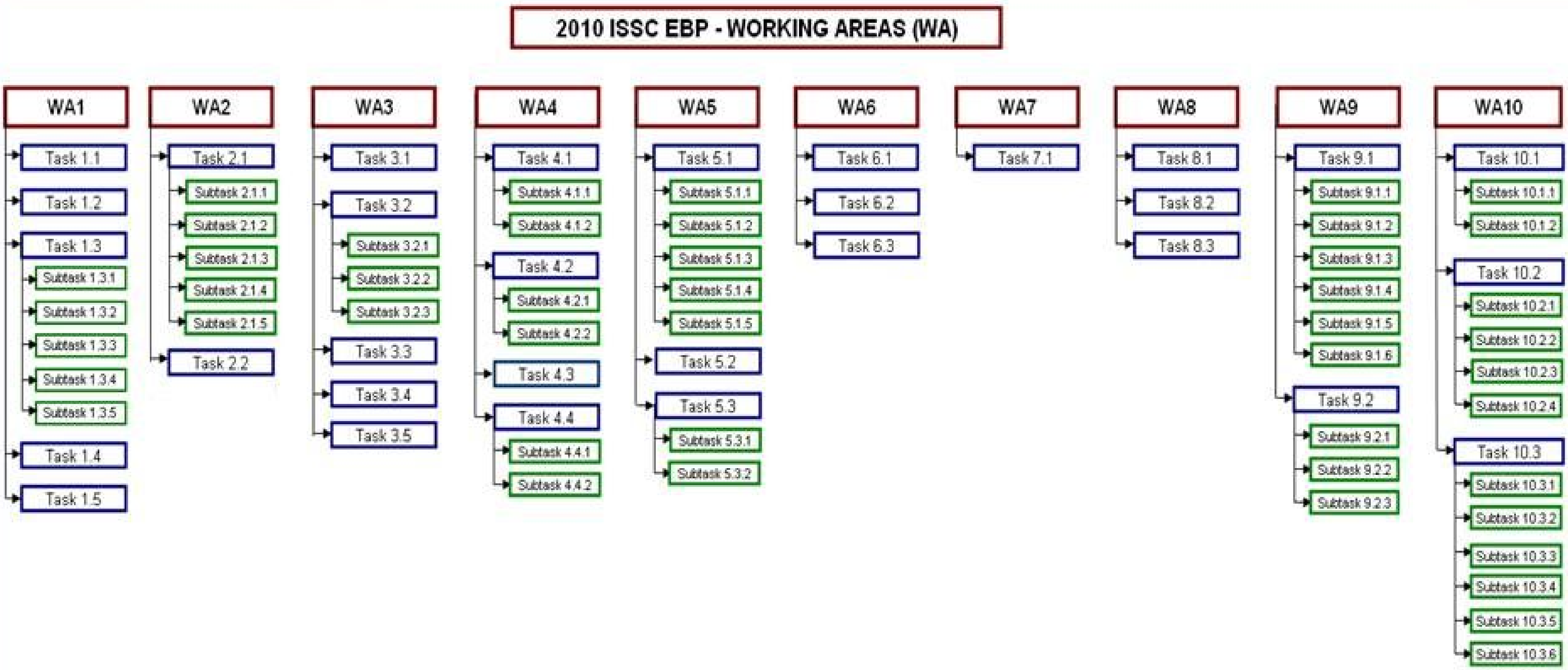


IAEA

Working Areas of ISSC-EBP

- WA1: Seismic Hazards
- WA2: Seismic Design and Qualification
- WA3: Seismic Safety Evaluation
- WA4: External Events Preparedness and Response
- WA5: Tsunami Hazards
- WA6: Volcanic Hazards
- WA7: Engineering Aspects of Protection against Sabotage
- WA8: Site Evaluation and External Events Safety Assessment
- WA9: Information and Notification System
- WA10: Public Communication, Dissemination of Lessons Learned and Capacity Building

Working Areas of ISSC-EBP



Working Areas of ISSC-EBP

Work Area	Working Group	Working Group Leader
WA1	WG1-1	JNES & USNRC
	WG1-2	JNES
	WG1-3	JNES
	WG1-4	JNES
	WG1-5	USNRC
	WG1-6	ISPRA
WA2	WG2-1	EDF
WA3	WG3-1	USNRC
	WG3-2	JNES & USNRC

WA4	WG4-1	TEPCO
WA5	WG5-1	JNES & USNRC
	WG5-2	JNES
WA6	WG6-1	USNRC
WA7	WG7-1	CNSC
WA8	WG8-1	USNRC
WA9	WG9-1	USNRC & JNES
WA10	WG10-1	JNES & ITER
10 Areas	17 Working Groups	

IAEA

Schedule of 2011-2012

Activities	2011						2012
	1-2	3-4	5-6	7-8	9-10	11-12	1-2
Participating Institutions Meeting							O
Scientific Committee Meeting							O
Donors' Meeting	O						O
WA1	Rearrange the meeting date						
WA2		WG 2-1					
WA3		WG 3-2	WG 3-1				
WA4	Rearrange the meeting date						
WA5	Rearrange the meeting date						
WA6		EM					
WA7		WG 7-1					
WA8							
WA9			WG 9-1				
WA10			WG 10-1				

The 2011 off the Pacific coast of Tohoku Earthquake occurred.

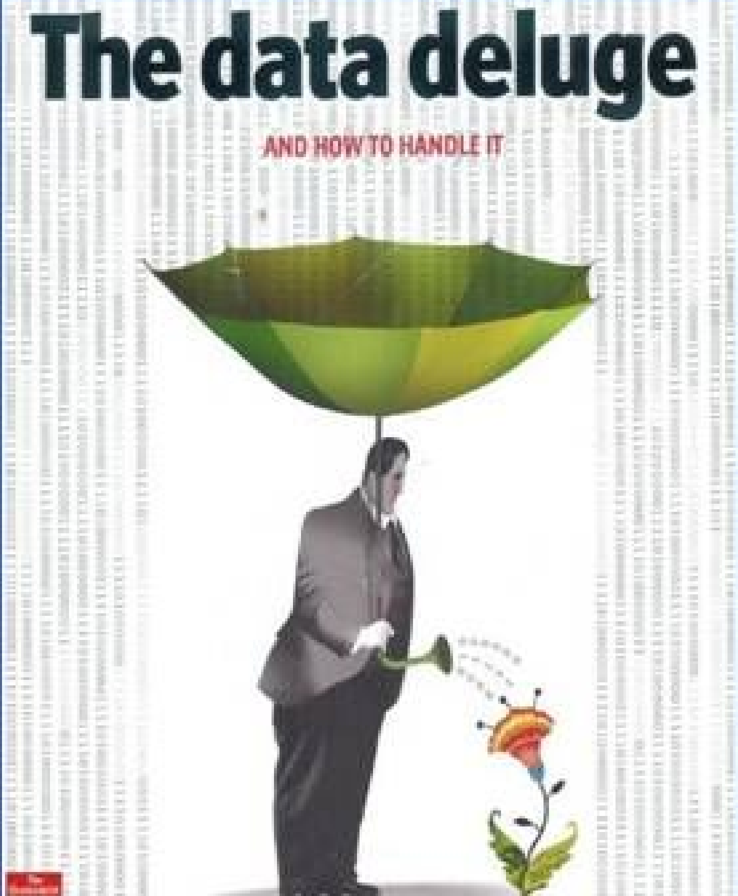
First WG meeting, objective and scope of the tasks/subtasks, deliverables and reports, schedule and experts have been discussed considering possible modification in task due to Fukushima Dai-ich event .

IAEA

WG: Working Group Members Meeting
EM: Expert meeting

ISSC External Event Notification System

TOO MUCH INFORMATION?



IAEA

ISSC External Event Notification System

"to be ONLINE" – "not to be ONLINE"

- To develop Notification System for Natural Phenomena Hazards to be aware what is going on in relation to natural disasters at world scale and to estimate which may be their effects in nuclear installations
- To inform IEC and the top level management
- The system is working for earthquake now.

The "External Event Notification System" is receiving, at near real time at the IAEA-ISSC, the information on the occurrence of earthquake at the world, estimate the affect of earthquake at operating NPP sites and, through a web based online system, notify ISSC Staff.

IAEA

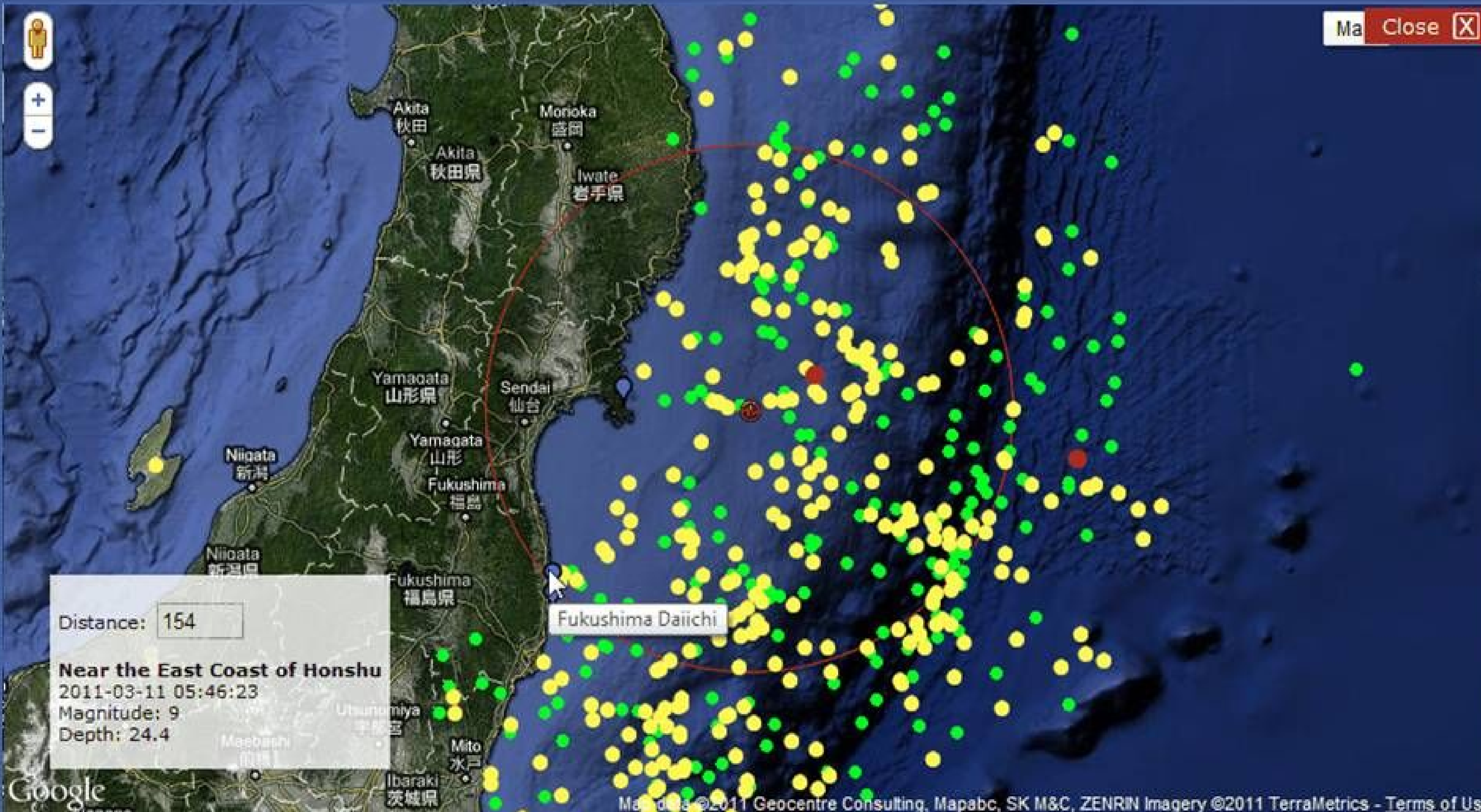
ISSC - EXTERNAL EVENTS NOTIFICATION SYSTEM

(screen capture)

IAEA

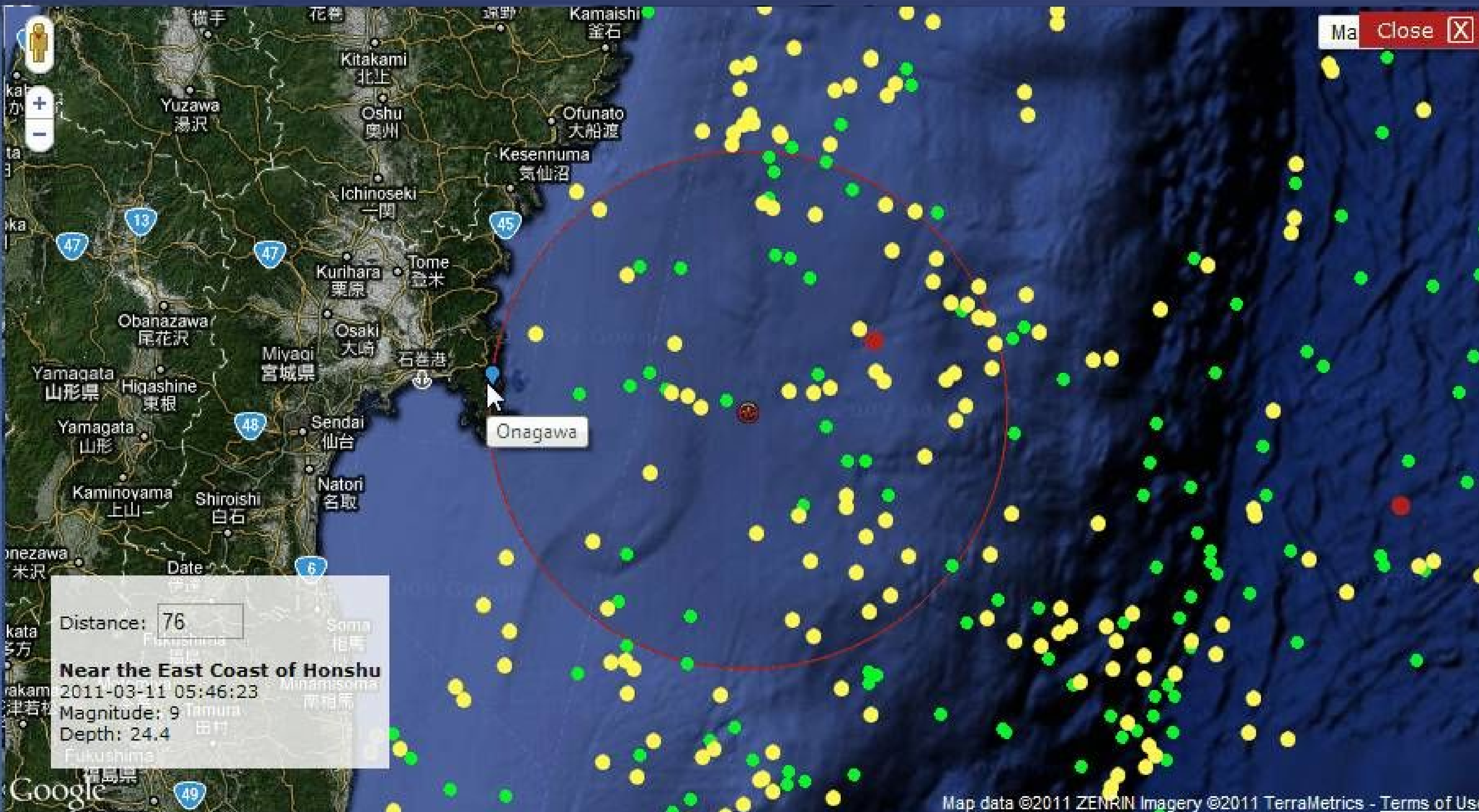
ISSC - EXTERNAL EVENTS NOTIFICATION SYSTEM

(screen capture)



ISSC - EXTERNAL EVENTS NOTIFICATION SYSTEM

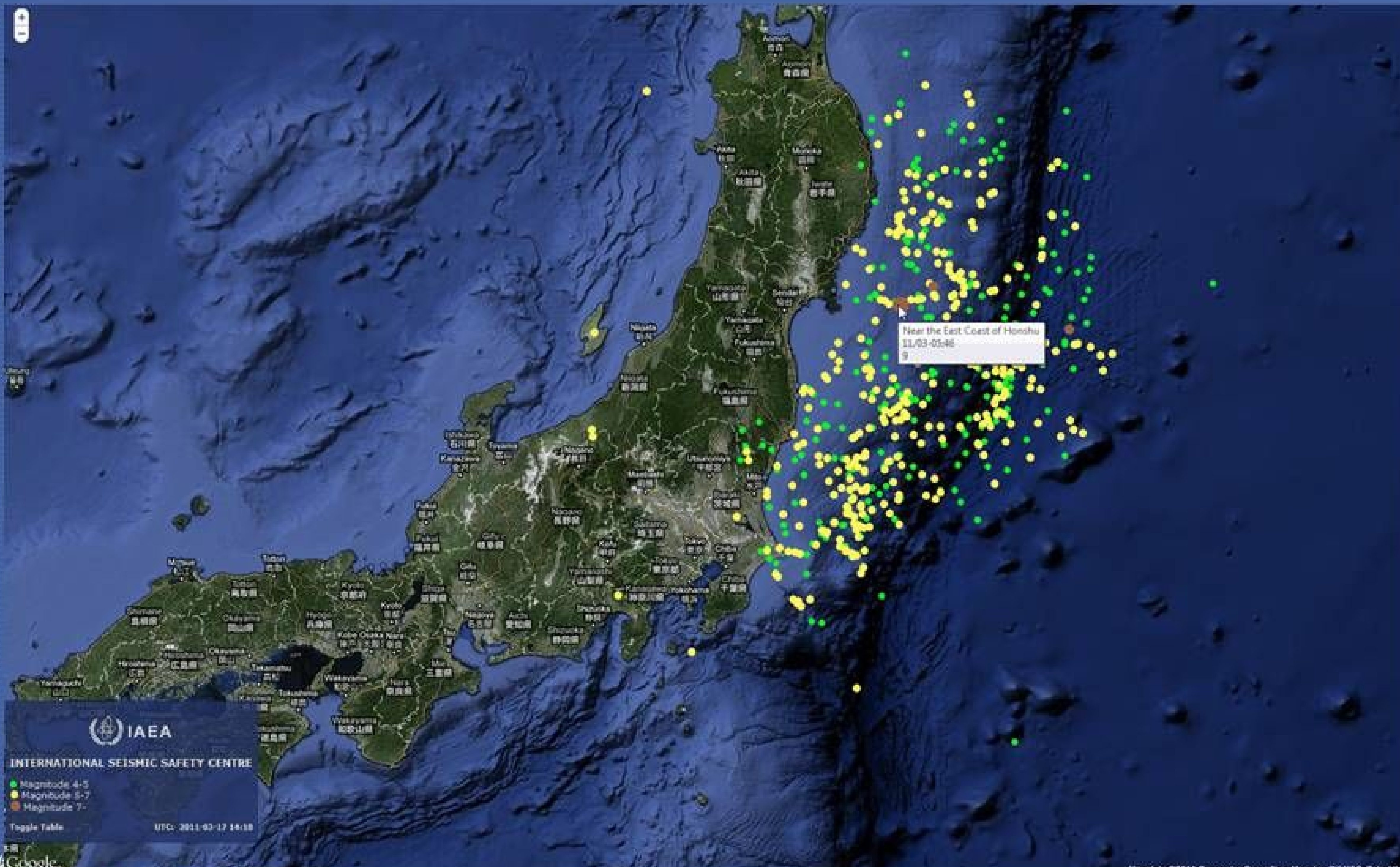
(screen capture)



IAEA

ISSC - EXTERNAL EVENTS NOTIFICATION SYSTEM

(screen capture)



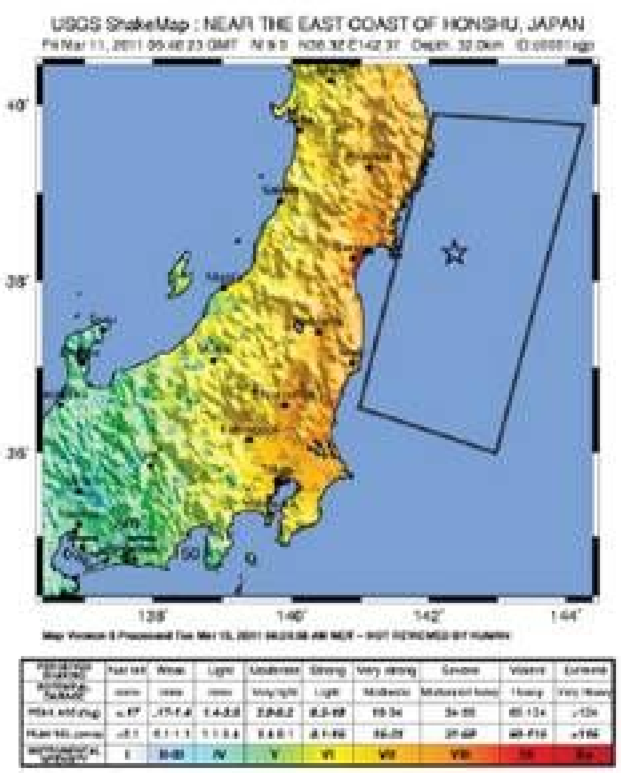
ISSC External Event Notification System

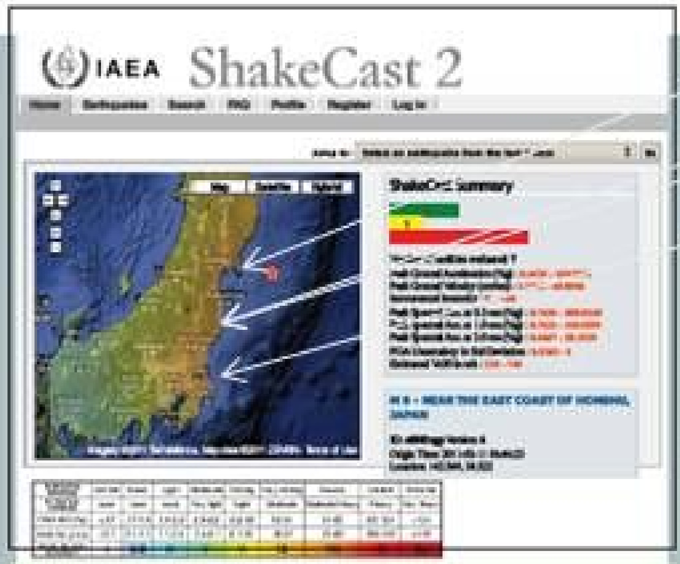
NUCLEAR SHAKECAST

IAEA.org International Atomic Energy Agency — **ShakeCast Report** — USGS science for a changing world

Magnitude 9.0 - NEAR THE EAST COAST OF HONSHU, JAPAN — **Version 6**
Time: 2011-03-11 05:46:23 GMT — Created: 2011-03-15 15:17:02 GMT
Location: 38.32 N/ 142.37 E — For more information and latest version see
Depth: 32.0 km — http://earthquake.usgs.gov/shakemap

These results are from an automated system and users should consider the preliminary nature of this information when making decisions relating to public safety. ShakeCast results are often updated as addtional or more accurate earthquake information is reported or derived.





Recent significant earthquakes in the region

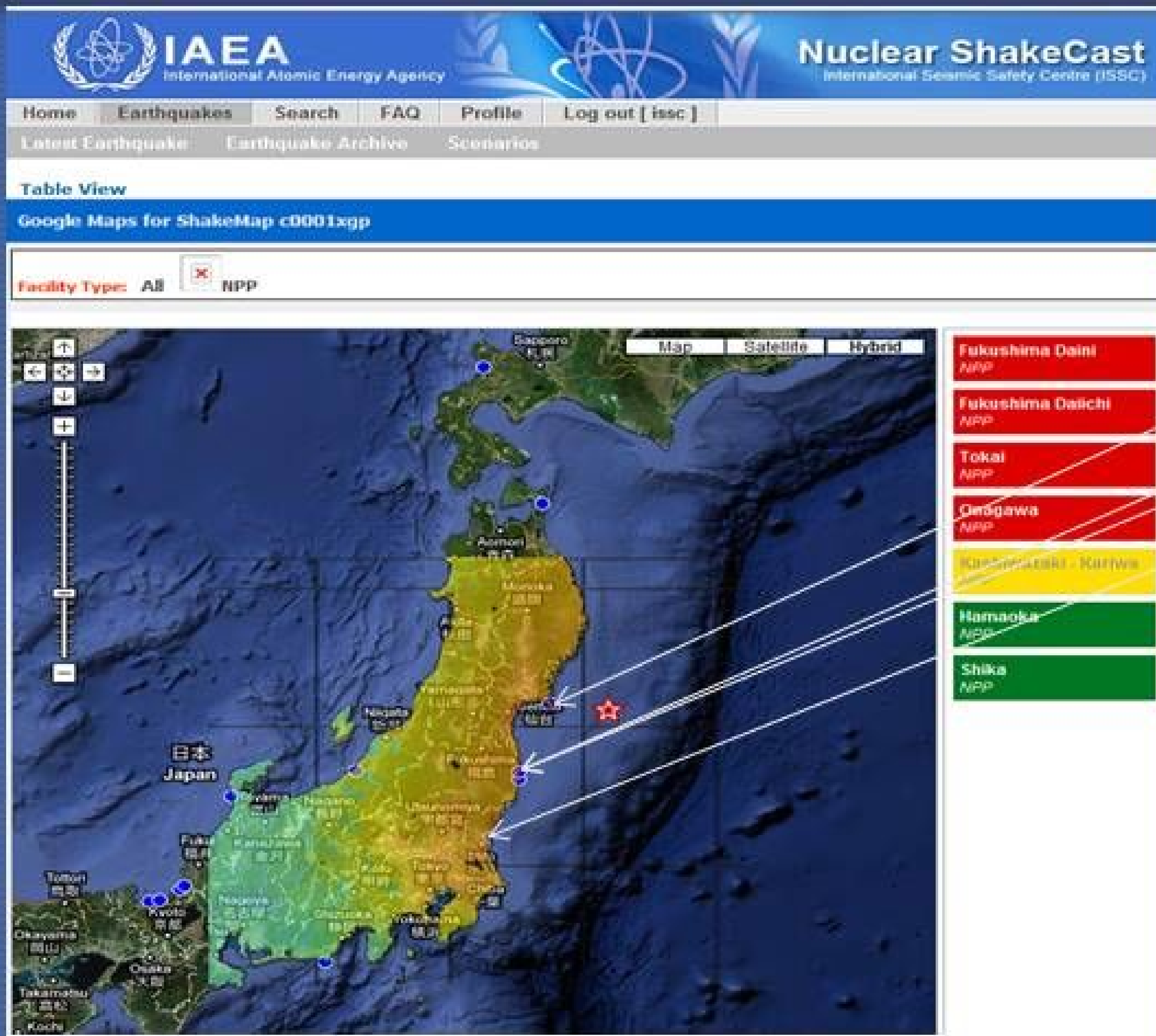
- M7.7 Miyagi-Oki, Japan at 6/12/1978 8:14
- M7.4 NEAR THE EAST COAST OF HONSHU, JAPAN at 11/1/1989 18:25
- M7.2 Miyagi-Oki, Japan at 8/16/2005 2:46
- M7 NEAR THE EAST COAST OF HONSHU, JAPAN at 1/18/1981 18:11
- M7 Miyagi-Oki, Japan at 5/26/2003 9:24

FACILITY_TYPE	FACILITY_ID	FACILITY_NAME	LATITUDE	LONGITUDE	DAMAGE_LEVEL	MMI	PGA	PGV	PSA03	PSA10	PSA30
NPP	JPN1	Fukushima Daiichi	37.4215	141.034	RED	7.89	29.9945	39.7688	73.9132	34.8917	8.9206
NPP	JPN2	Fukushima Daini	37.3163	141.025	RED	7.91	30.3404	40.1696	74.7332	35.2437	9.0034
NPP	JPN4	Hamaoka	34.6242	138.14	GREEN	5.11	7.0887	10.4263	18.6049	9.1478	2.6616
NPP	JPN7	Kashiwazaki - Kariwa	37.4317	138.598	YELLOW	6.17	11.7488	16.101	30.2905	14.23	3.9519
NPP	JPN10	Onagawa	38.3998	141.501	RED	7.56	39.9538	31.9343	76.0167	30.3847	7.1956

76km Onagawa
163km Fukushima Daini
154km Fukushima Daiichi
259km Tokai

ISSC External Event Notification System

NUCLEAR SHAKECAST



PERCEIVED SHAKING	Not felt	Weak	Light	Moderate	Strong	Very strong	Severe	Violent	Extreme
POTENTIAL DAMAGE	none	none	none	Very light	Light	Moderate	Moderate/Heavy	Heavy	Very Heavy
PEAK ACC.(%g)	<.17	.17-1.4	1.4-3.9	3.9-9.2	9.2-18	18-34	34-65	65-124	>124
PEAK VEL.(cm/s)	<0.1	0.1-1.1	1.1-3.4	3.4-8.1	8.1-16	16-31	31-60	60-116	>116
INSTRUMENTAL INTENSITY	I	II-III	IV	V	VI	VII	VIII	IX	X+

76km Onagawa
163km Fukushima Daini
154km Fukushima Daiichi
259km Tokai

IAEA

ISSC External Event Notification System

NUCLEAR SHAKECAST

International Seismic Safety Centre

ShakeCast Report

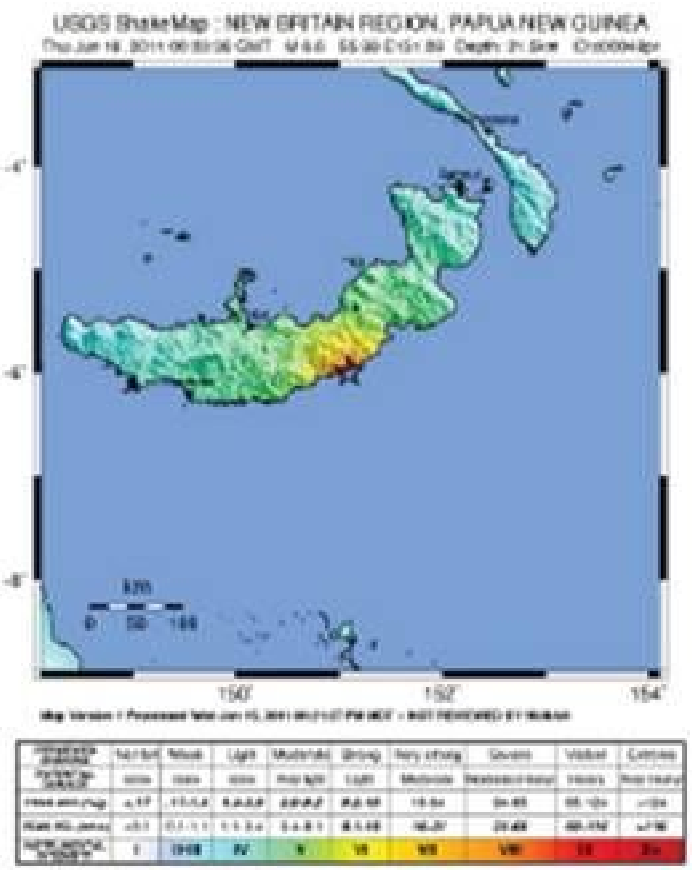
Magnitude 6.6 - NEW BRITAIN REGION, PAPUA NEW GUINEA — **Version 1**

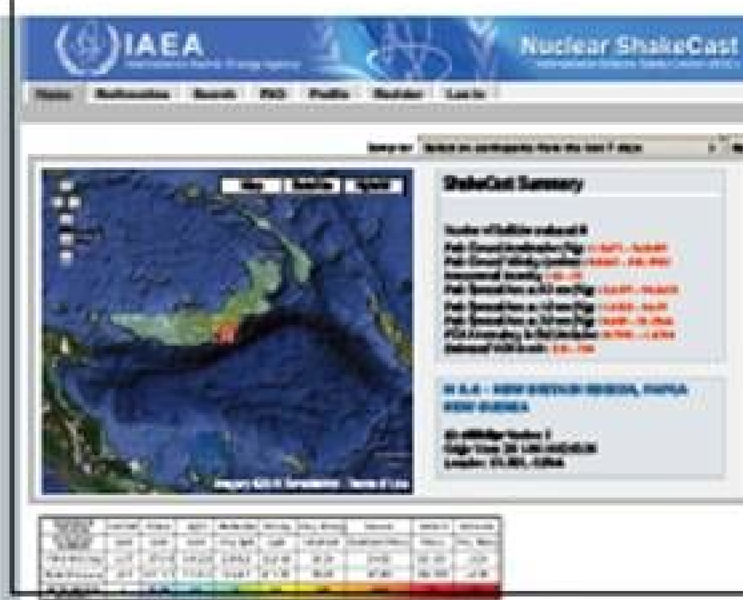
Time: 2011-06-16 00:03:36 GMT — Created: 2011-06-16 00:29:10 GMT

Location: -5.99 S/ 151.10 E — For more information and latest version see

Depth: 21.5 km — http://nuclearshakecast.iaea.org

These results are from an automated system and users should consider the preliminary nature of this information when making decisions relating to public safety. ShakeCast results are often updated as addtional or more accurate earthquake information is reported or derived.





Recent significant earthquakes in the region

- M8 PAPUA NEW GUINEA at 11/16/2000 4:54
- M7.8 NEW BRITAIN REGION, PAPUA NEW GUINEA at 11/17/2000 21:01
- M7.3 NEW BRITAIN REGION, PAPUA NEW GUINEA at 10/16/1987 20:48
- M7.2 PAPUA NEW GUINEA at 5/10/1985 15:35
- M7.2 NEW BRITAIN REGION, PAPUA NEW GUINEA at 7/3/1985 4:36

IAEA

ISSC External Event Notification System

NUCLEAR SHAKECAST

International Seismic Safety Centre

ShakeCast Report

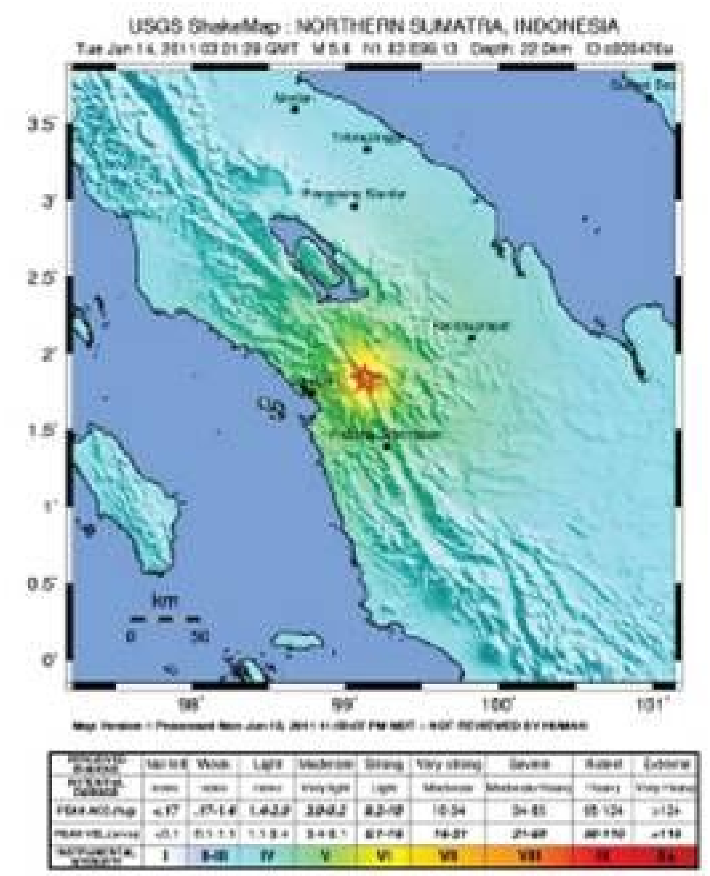
Magnitude 5.6 - NORTHERN SUMATRA, INDONESIA — **Version 1**

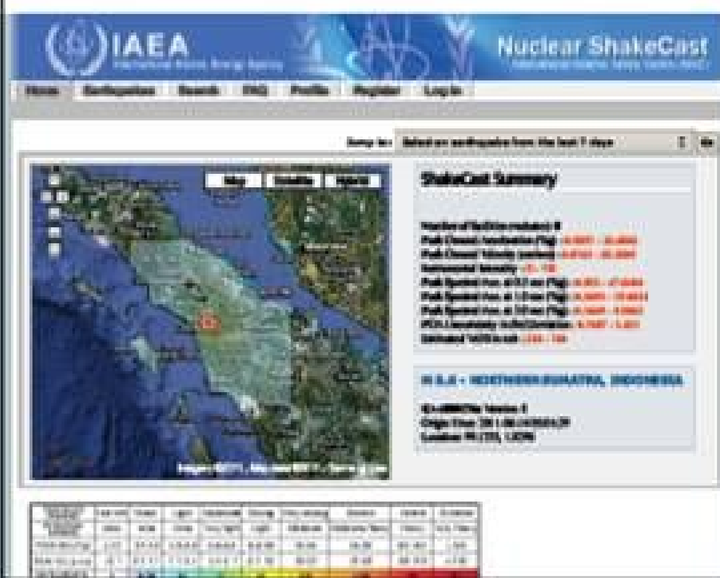
Time: 2011-06-14 03:01:29 GMT — Created: 2011-06-14 06:01:46 GMT

Location: 1.83 N/ 99.13 E — For more information and latest version see

Depth: 22.0 km — http://nuclearshakecast.iaea.org

These results are from an automated system and users should consider the preliminary nature of this information when making decisions relating to public safety. ShakeCast results are often updated as addtional or more accurate earthquake information is reported or derived.





Recent significant earthquakes in the region

- M7.1 NIAS REGION, INDONESIA at 11/17/1984 6:49
- M6.9 NIAS REGION, INDONESIA at 12/4/1974 3:07
- M6.7 NIAS REGION, INDONESIA at 5/14/2005 5:05
- M6.4 INDONESIA at 4/25/1987 19:22
- M6.4 NIAS REGION, INDONESIA at 4/16/2005 16:38

FACILITY TYPE	FACILITY ID	FACILITY NAME	LATITUDE	LONGITUDE	DAMAGE LEVEL	MMI	PGA	PGV	PSA03	PSA10	PSA30

IAEA

ISSC External Event Notification System

NUCLEAR SHAKECAST

IAEA.org International Atomic Energy Agency

International Seismic Safety Centre

ShakeCast Report

USGS science for a changing world

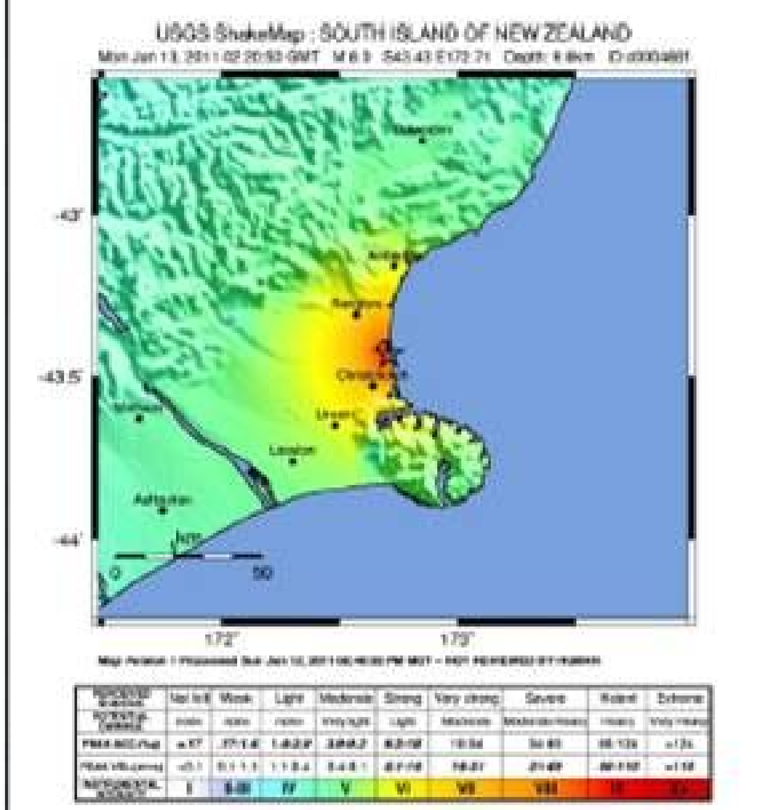
Magnitude 6.0 - SOUTH ISLAND OF NEW ZEALAND — **Version 1**

Time: 2011-06-13 02:20:50 GMT — Created: 2011-06-13 02:45:01 GMT

Location: -43.43 S/ 172.71 E — For more information and latest version see

Depth: 9.6 km — http://nuclearshakecast.iaea.org

These results are from an automated system and users should consider the preliminary nature of this information when making decisions relating to public safety. ShakeCast results are often updated as addtional or more accurate earthquake information is reported or derived.



Recent significant earthquakes in the region

- M7.2 Inangahua, New Zealand at 5/23/1968 17:24
- M6.7 Arthurs Pass, New Zealand at 6/18/1994 3:25
- M6.1 Cape Campbell, New Zealand at 1/18/1977 5:41
- M6.1 Cass, New Zealand at 11/24/1995 6:18
- M6 Lake Tennyson, New Zealand at 2/10/1990 3:27

FACILITY TYPE	FACILITY ID	FACILITY NAME	LATITUDE	LONGITUDE	DAMAGE LEVEL	MMI	PGA	PGV	PSA03	PSA10	PSA30

IAEA

ISSC External Event Notification System

NUCLEAR SHAKECAST

International Seismic Safety Centre

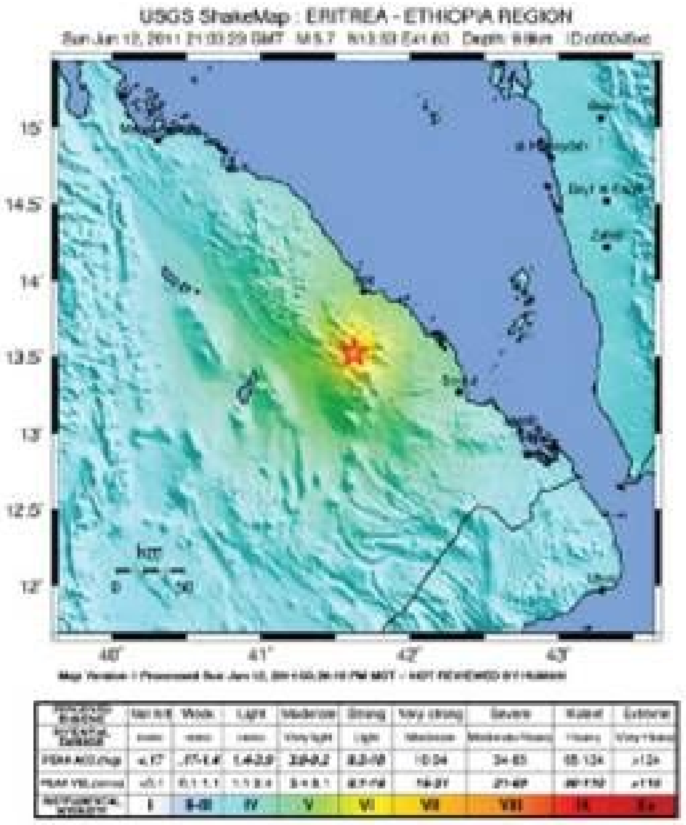
ShakeCast Report

Magnitude 5.7 - ERITREA - ETHIOPIA REGION **Version 1**

Time: 2011-06-12 21:03:23 GMT
Location: 13.53 N/ 41.63 E
Depth: 9.9 km

Created: 2011-06-12 21:25:40 GMT
For more information and latest version see
http://nuclearshakecast.iaea.org

These results are from an automated system and users should consider the preliminary nature of this information when making decisions relating to public safety. ShakeCast results are often updated as addtional or more accurate earthquake information is reported or derived.



Recent significant earthquakes in the region

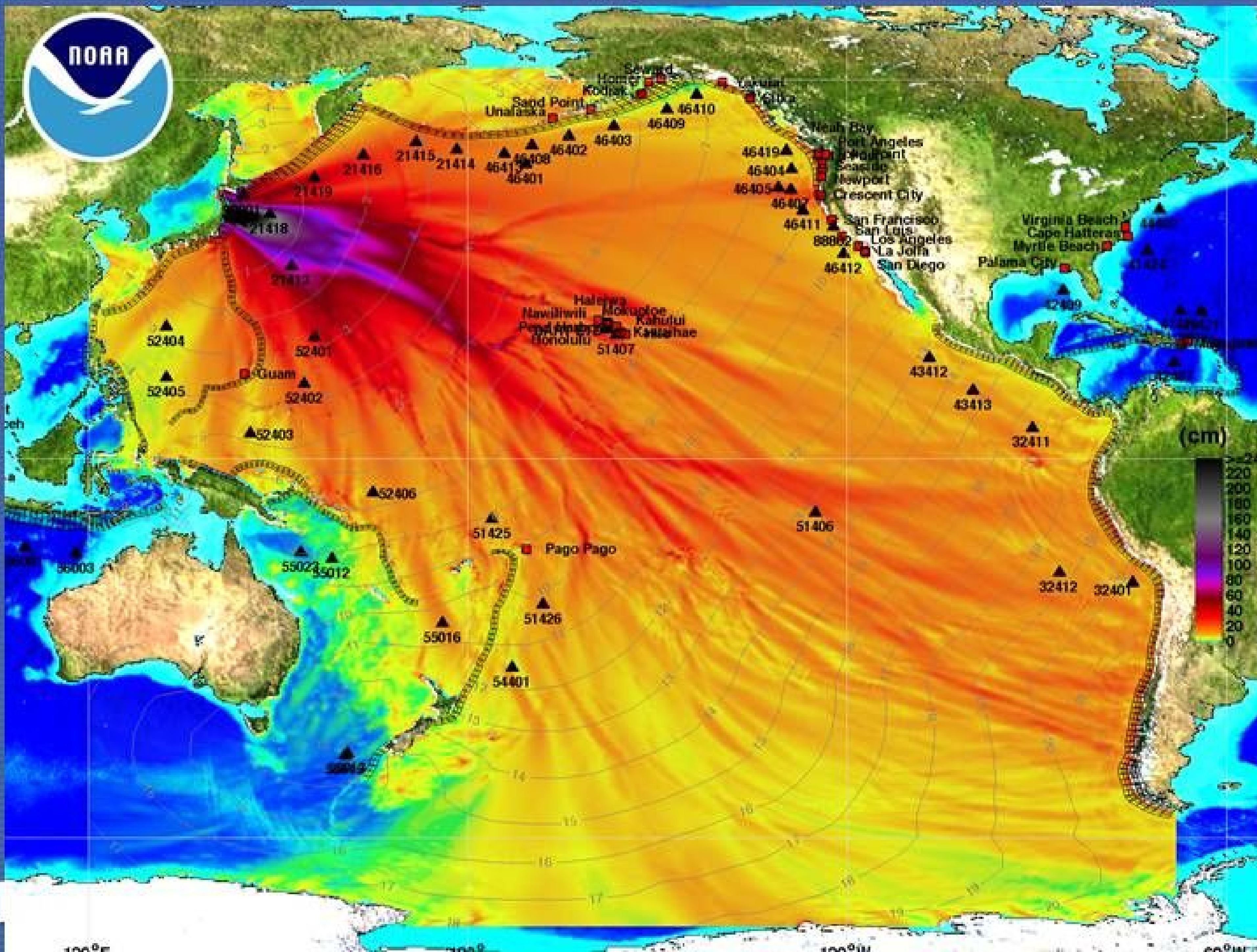
- M6.5 DJIBOUTI at 8/20/1989 11:16
- M6.5 ETHIOPIA at 8/20/1989 11:17
- M6.4 ETHIOPIA at 8/21/1989 1:09
- M6.2 DJIBOUTI at 3/5/1992 8:55
- M6.1 ETHIOPIA at 8/20/1989 11:46

FACILITY TYPE	FACILITY ID	FACILITY NAME	LATITUDE	LONGITUDE	DAMAGE LEVEL	MMI	PGA	PGV	PSA03	PSA10	PSA30

ISSC External Event Notification System

NUCLEAR TSUNAMICAST

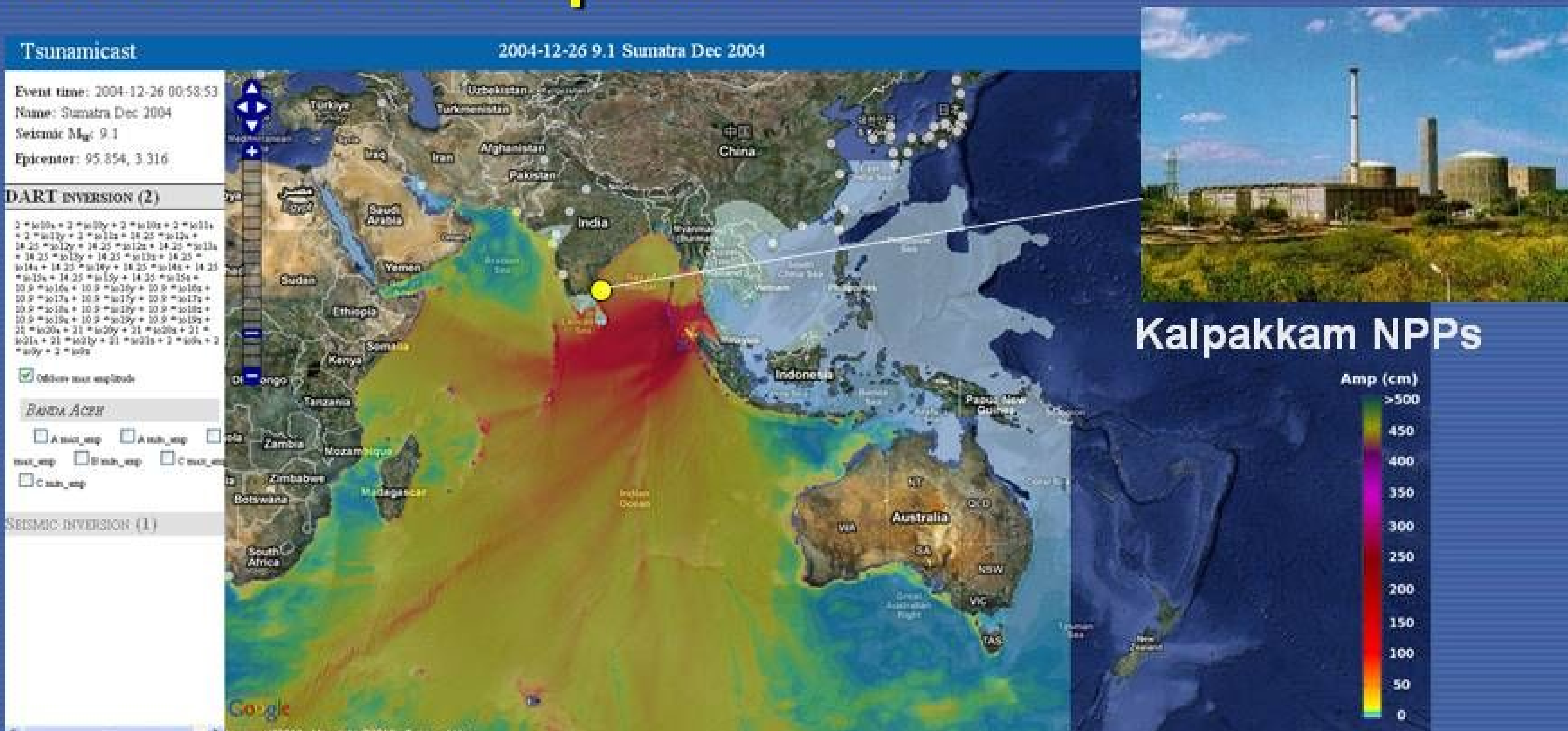
Tohoku Earthquake, Japan – 11.03.2011



ISSC External Event Notification System

NUCLEAR TSUNAMICAST

The Kalpakkam Nuclear Power Plant in India was inundated due to **the Sumatra earthquake** in Dec. 2004.



Kalpakkam NPPs

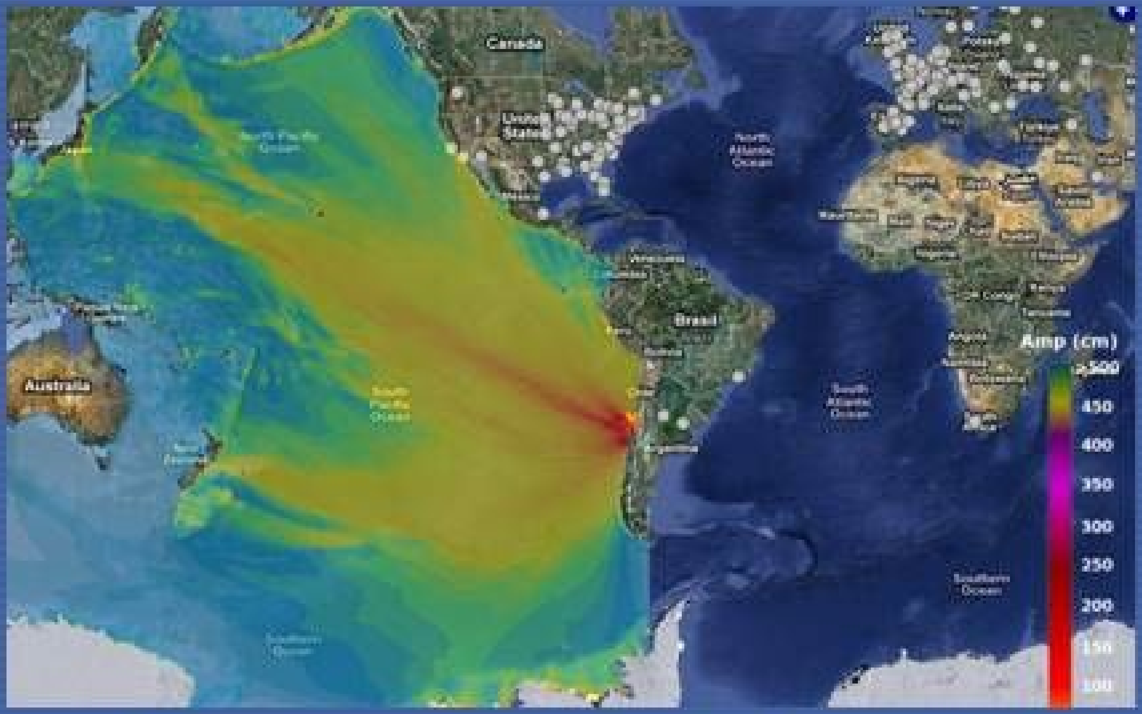
Wave height distributions of Sumatra earthquake's tsunami from Tsunami Cast (26, Dec, 2004)

IAEA

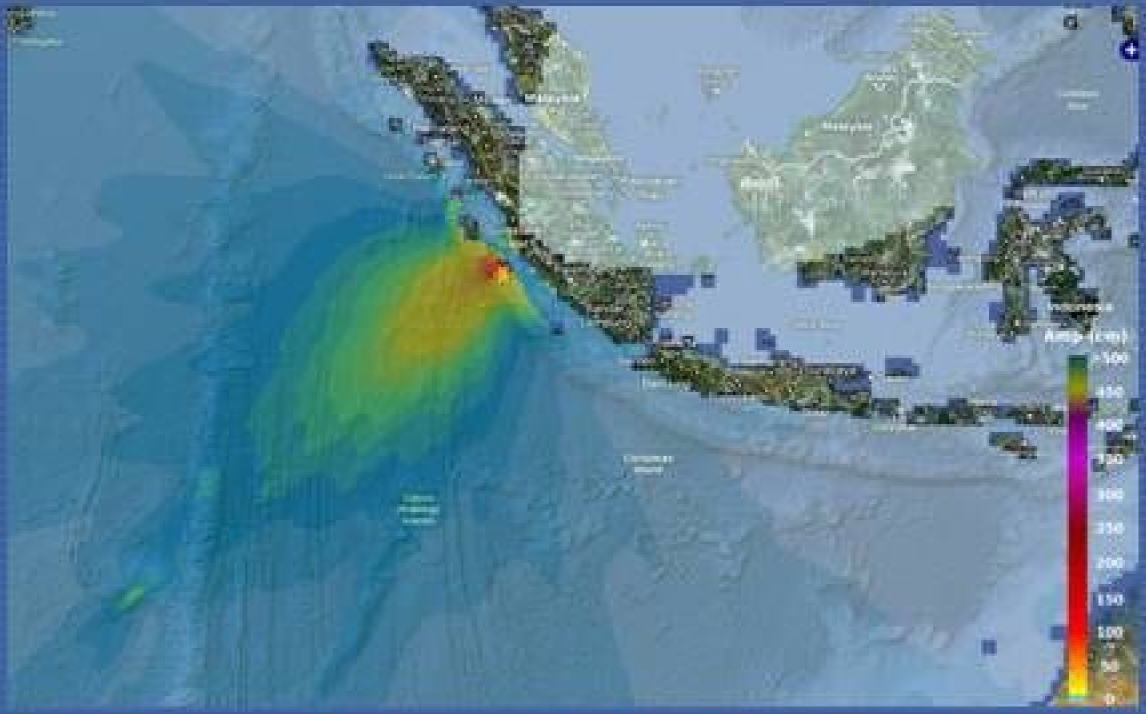
ISSC External Event Notification System

NUCLEAR TSUNAMICAST

Chile earthquake and Indonesia earthquake



Chile earthquake's tsunami
(27. Feb. 2010)



Indonesia earthquake's tsunami
(25. Oct, 2010)

Wave height distributions from Tsunami Cast

IAEA

Thank you for your attention

A.Altinyollar@iaea.org

IAEA