

DE FOIA Resource

From: Khanna, Meena *mkc*
Sent: Thursday, August 25, 2011 11:28 PM
To: Li, Yong; Thomas, George; Manoly, Kamal
Subject: FW: information on the closest recorded motion at a USGS instrument
Attachments: shakecast_report_nrc.pdf

Importance: High

FYI

From: Kammerer, Annie *AKS*
Sent: Thursday, August 25, 2011 11:20 PM
To: Khanna, Meena; Wilson, George
Cc: Munson, Clifford; Karas, Rebecca
Subject: information on the closest recorded motion at a USGS instrument

FYI. There has been no change in the USGS numbers. At this point, their map is not going to change.

One of the USGS instruments located 58km away from the epicenter registered a value near what was supposed to be the activation point for the annunciators that didn't sound (half the OBE or 6%). Ground motion decays rapidly with distance due to the energy radiating in 3 dimensions. There is also frictional loss (this loss is high in the west and low in the east, which is why people feel an earthquake so much further). I want them to explain how the motion at the plant equaled or lower than the recorded motion at a modern seismograph station 3 times further away from the epicenter.

Annie

Dr. Annie Kammerer, P.E.
US NRC/RES/DE
(301) 251-7695 Office
(b)(6) Mobile

AKS

From: David Wald [<mailto:wald@usgs.gov>]
Sent: Thursday, August 25, 2011 10:48 PM
To: Kammerer, Annie
Cc: Harley Benz
Subject: Re: request for your help

Annie,

Missed your calls; back to school night for my son. Man that went on for a long time.

I've attached the updated (latest) NRC ShakeCast report, which provides our *estimates* of shaking at the North Anna NPP:

Epi. Dist	MMI	PGA	PGV
18.08	VI	19.99%g	12.2568 cm/sec

For comparison, the closest recording in terms of epicentral distance that I know of is at 58 km: station CBN at the VA Corbin (Fredricksberg Obs). It recorded 5.8%g

I'd like to hear about their reported ground motions if you find out. If you need anything else from me, you can reach me as earlier as 7 am my time here in CO.

information in this record was deleted
in accordance with the Freedom of Information
Act, exemptions 6
FOIA-2011-0357

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David

David Wald, Ph.D.
U.S. Geological Survey, Golden, CO
wald@usgs.gov, (303) 273 8441

Adjunct Associate Professor of Geophysics
Colorado School of Mines

From: Annie Kammerer <Annie.Kammerer@nrc.gov>
Date: Thu, 25 Aug 2011 17:48:54 -0400
To: David Wald <wald@usgs.gov>, Harley Benz <benz@usgs.gov>
Subject: request for your help

Can one of you please call me? Thanks!

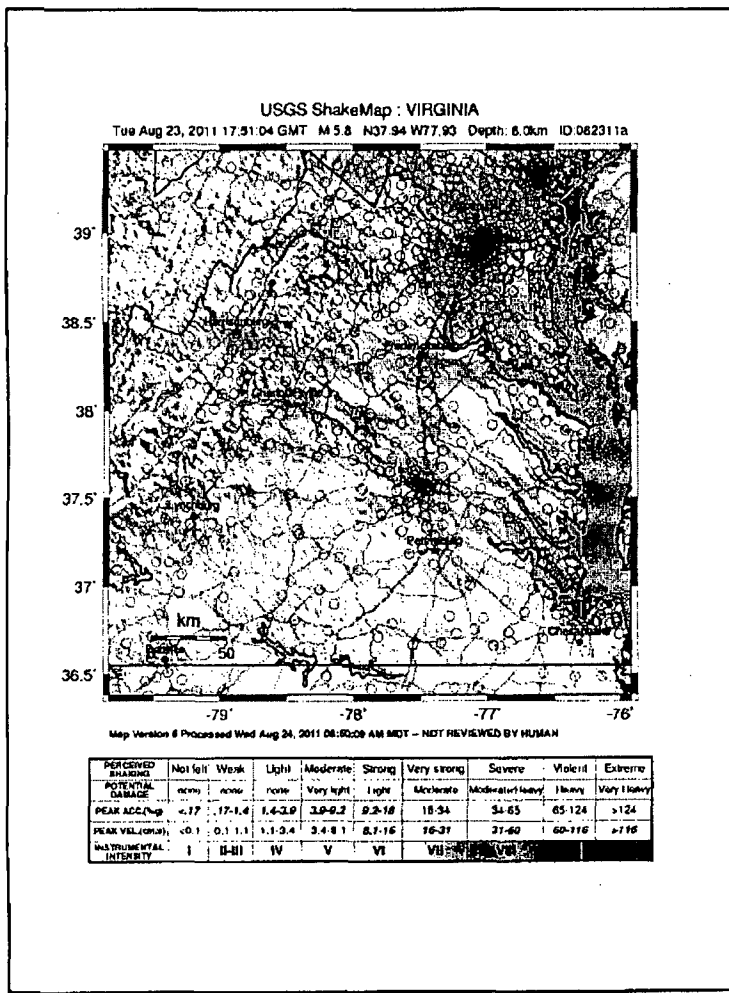
Dr. Annie Kammerer, P.E.
U. S. Nuclear Regulatory Commission
Office of Nuclear Regulatory Research
Division of Engineering
Washington DC, 20555
(301) 873-3923 Office
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EX-6

Magnitude 5.8 - VIRGINIA
 Origin Time: 2011-08-23 17:51:04 GMT
 Latitude: 37.9360 Longitude: -77.9330

Version 6
 Created: 2011-08-24 15:11:29 GMT
 Depth: 6.0 km

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 additional or more accurate earthquake information is reported or derived.



U.S.NRC Nuclear ShakeCast
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Select an earthquake from the last 7 days

ShakeCast Summary

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Number of facilities evaluated: 3

Peak Ground Acceleration (%g): 1.41 - 62.46
 Peak Ground Velocity (cm/sec): 0.91 - 37.82
 Instrumental Intensity: III - VII
 Peak Spectral Acc. at 0.3 sec (%g): 1.31 - 81.39
 Peak Spectral Acc. at 1.0 sec (%g): 0.40 - 12.28
 Peak Spectral Acc. at 3.0 sec (%g): 0.04 - 1.18
 PGA Uncertainty in Std Deviation: 0.29 - 1.02
 Estimated V250 m/s: 0 - 744

M 5.8 - VIRGINIA

ID: 062311a Version: 6
 Origin Time: 2011-08-23 17:51:04
 Location: -77.933, 37.936

PERCEIVED SHAKING	Not felt	Weak	Light	Moderate	Strong	Very strong	Severe	Violent	Extreme
POTENTIAL DAMAGE	None	None	None	Very light	Light	Slight	Moderate/heavy	Heavy	Very Heavy
PEAK ACC (g)	<0.1	0.1-1.4	1.4-2.9	3.0-6.2	6.3-16	16-34	34-65	65-124	>124
PEAK VEL (cm/s)	<0.1	0.1-1.1	1.1-2.4	2.4-8.1	8.1-16	16-37	37-60	60-116	>116
INSTRUMENTAL INTENSITY	I	II-III	IV	V	VI	VII	VIII	IX	X

Recent significant earthquakes in the region

- M4.5 VIRGINIA at 12/9/2003 20:59

FACILITY TYPE	FACILITY ID	FACILITY NAME	DIST	LATITUDE	LONGITUDE	DAMAGE LEVEL	MMI	PGA	PGV	PSA03	PSA10	PSA30
NUCLEAR	USA37	North Anna	18.08	38.0573	-77.7956	YELLOW	VI	19.9918	12.2568	26.0078	5.9443	0.5989
NUCLEAR	USA8	Calvert Cliffs	141.73	38.4319	-76.4424	GREEN	V	6.8436	6.7083	3.5967	1.4285	0.1501
NUCLEAR	USA56	Surry	139.06	37.1633	-76.6942	GREEN	V	6.1296	6.5473	3.5591	1.4118	0.1482

* - MMI level may extend beyond map boundary; some facilities may not appear on the map due to space restriction