

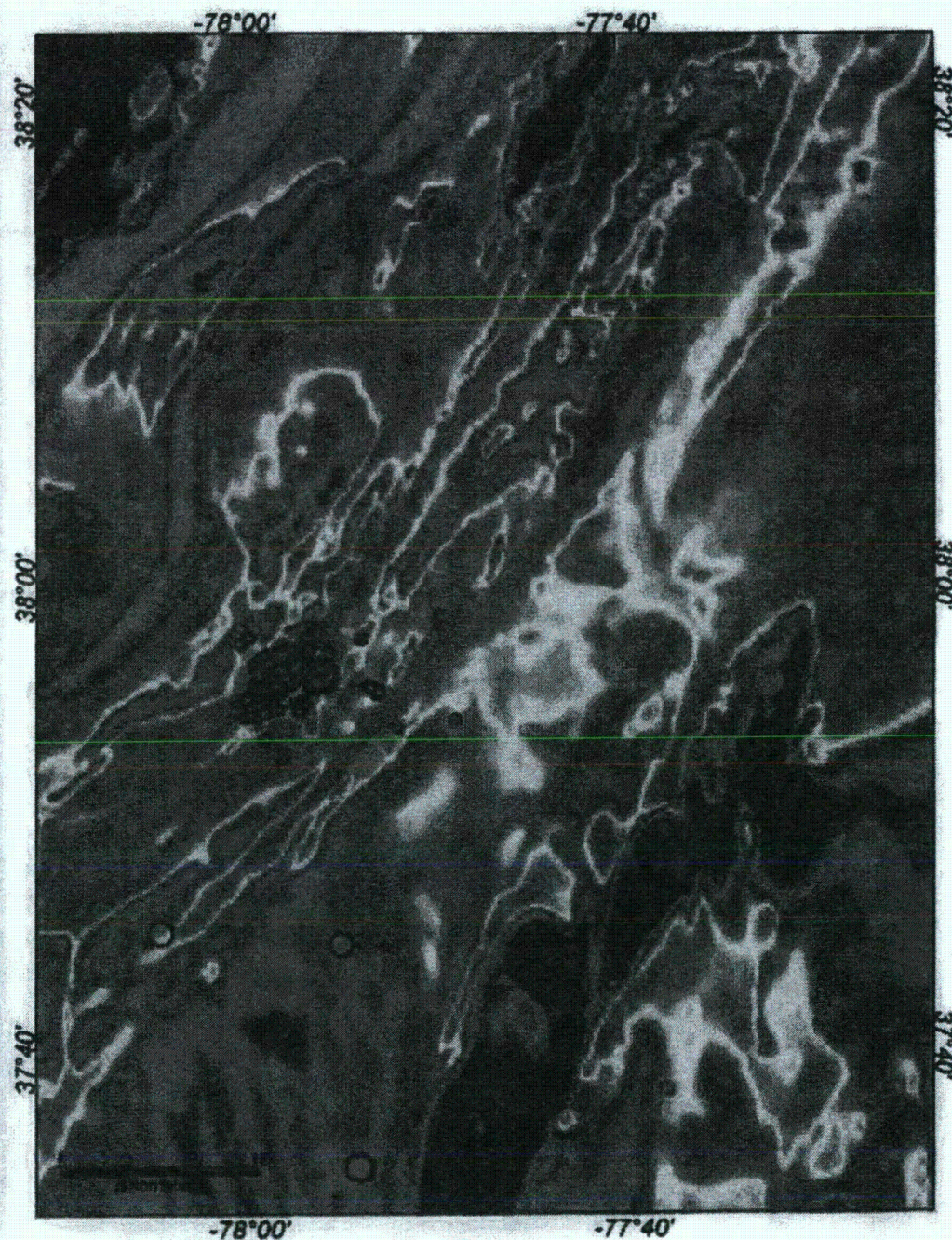
Christchurch NZ magnitude-6.1 earthquake



Aeromagnetic Data

Courtesy of Anji Shah,
USGS Denver

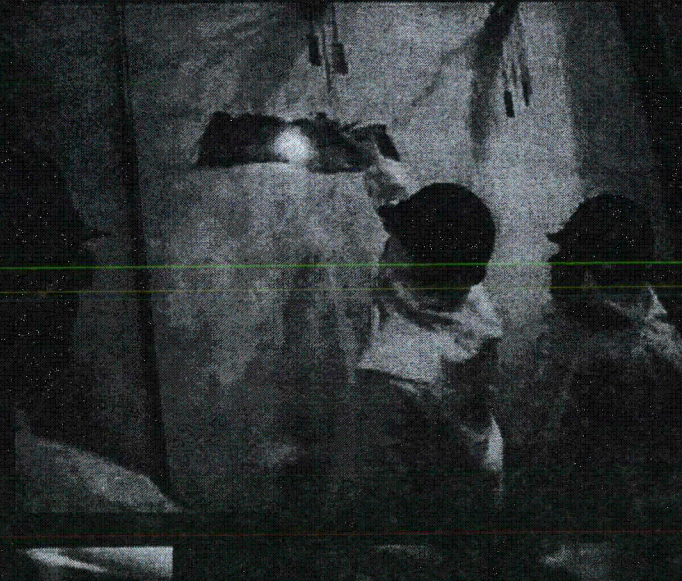
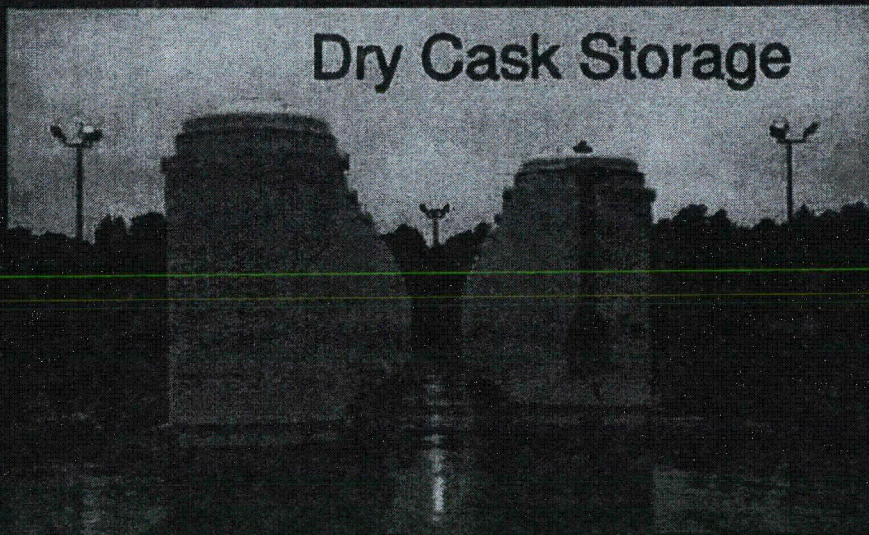
In preparation for
submittal to Geophysical
Research Letters



North Anna Nuclear Power Plant

- 11 miles from earthquake epicenter
- Peak acceleration estimated at 26%g
- Shaking caused transformer damage, resulting in loss of power and plant shutdown

Dry Cask Storage



An earthquake "big enough to make 117-ton canisters of spent fuel skitter a few inches on their storage pad" *NYTimes*

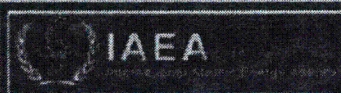
The Earth's crust in the
central and eastern
U.S. is stressed at
shallow depths, and



Herrmann et al, 2011



ShakeCast – automated damage estimates for critical facilities.



International Seismic Safety Centre

ShakeCast Report



Magnitude 5.9 - VIRGINIA

Time: 2011-08-23 17:51:03 GMT

Location: 37.97 N/ -77.97 W

Depth: 1.0 km

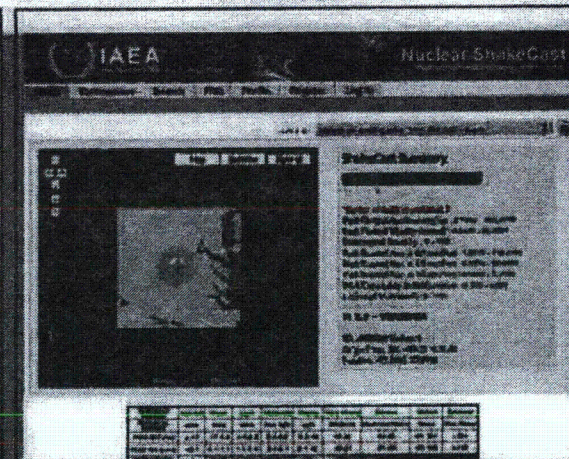
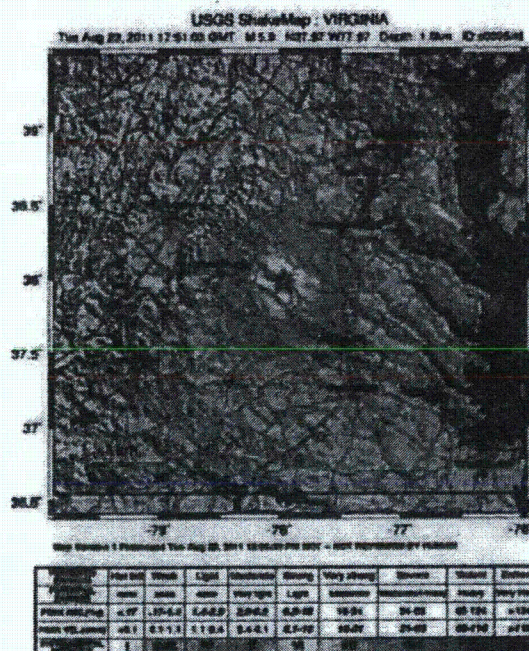
Version 1

Created: 2011-08-23 18:16:12 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 additional or more accurate earthquake information is reported or derived.



Recent significant earthquakes in the region

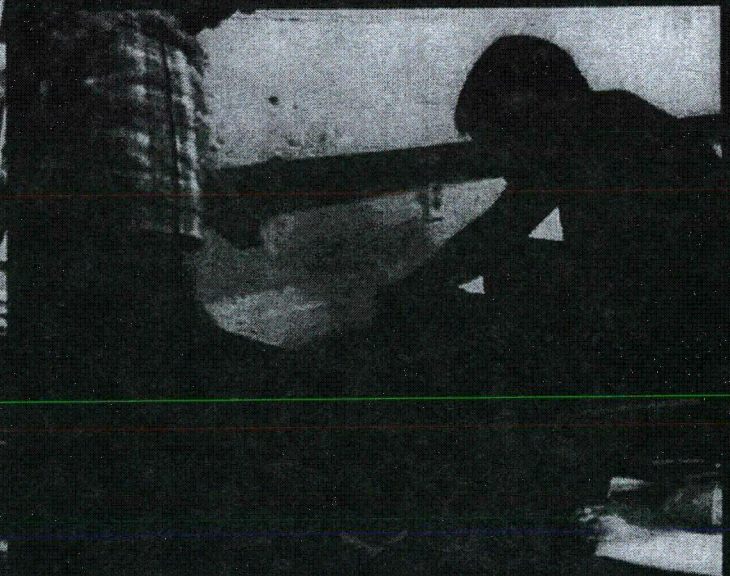
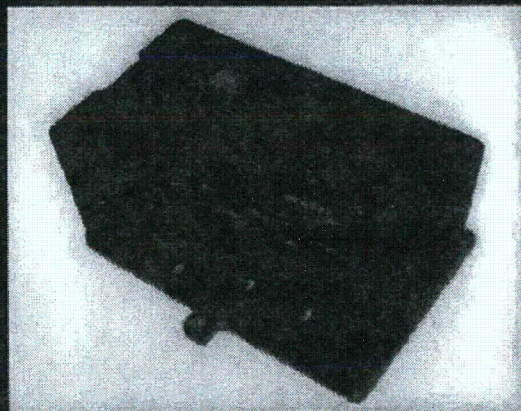
- M4.5 VIRGINIA at 12/9/2003 20:59
- M3.4 POTOMAC-SHENANDOAH REGION at 7/16/2010 9:04

FACILITY TYPE	FACILITY ID	FACILITY NAME	LATITUDE	LONGITUDE	DAMAGE LEVEL	MMI	PGA	PGV	PSA 03	PSA 10	PSA 30
NPP	USA 2	Calvert Cliffs	38.4319	-76.4424	GREEN	3.65	1.6502	0.8533	2.9624	0.8853	0.0974
NPP	USA 37	North Anna	38.0373	-77.7936	YELLOW	5.53	16.6639	6.5376	21.4418	5.1476	0.5304
NPP	USA 56	Savoy	37.1633	-76.6942	GREEN	3.65	1.6397	0.8496	2.9455	0.885	0.0971

NETQUAKES

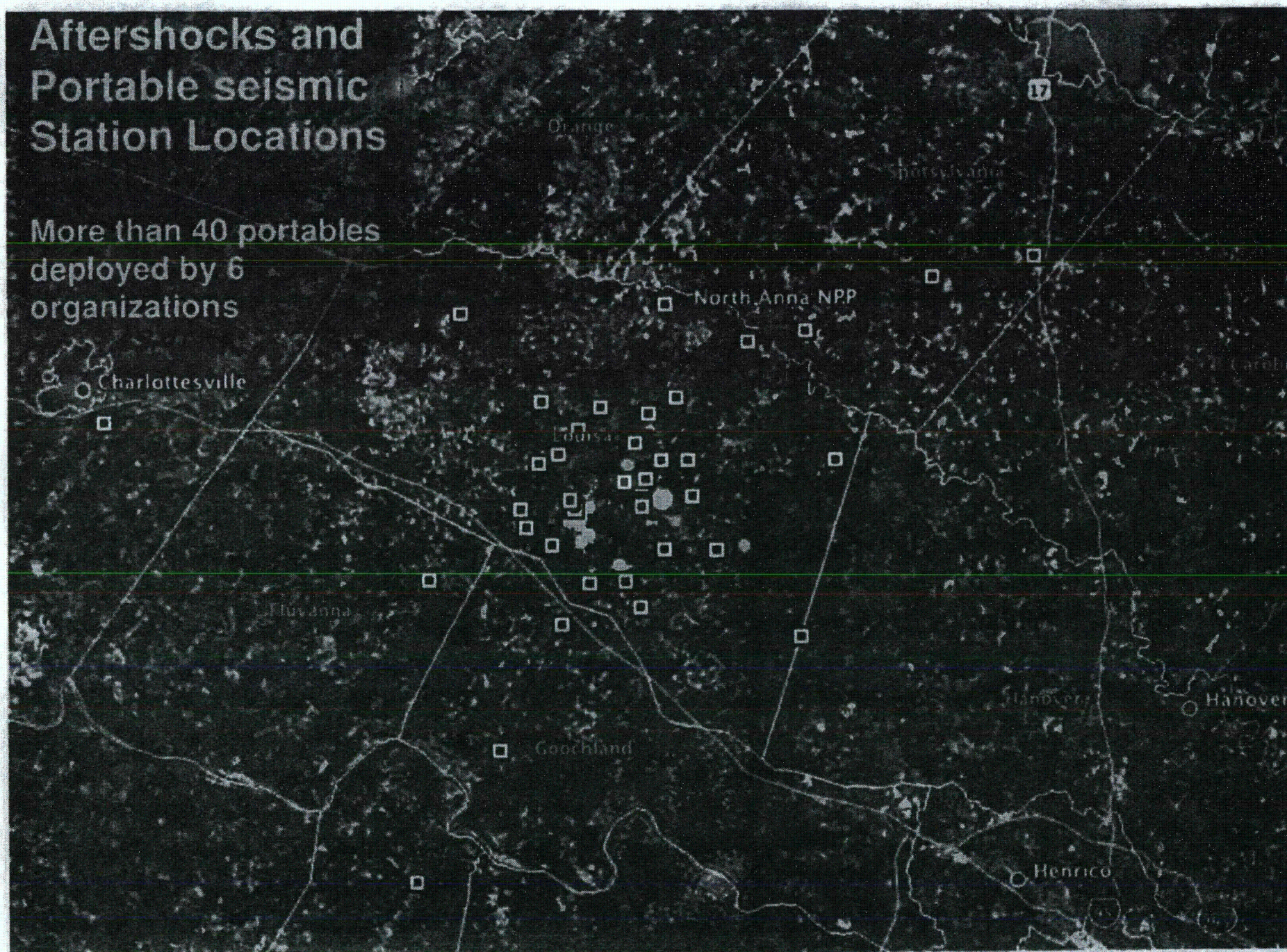
Low-cost, high-fidelity
strong-motion sensor
producing real-time
data for rapid analysis

New sites in
Washington:
--Cathedral
--USGS Reston
--U.S. Capitol
--others sought



Aftershocks and Portable seismic Station Locations

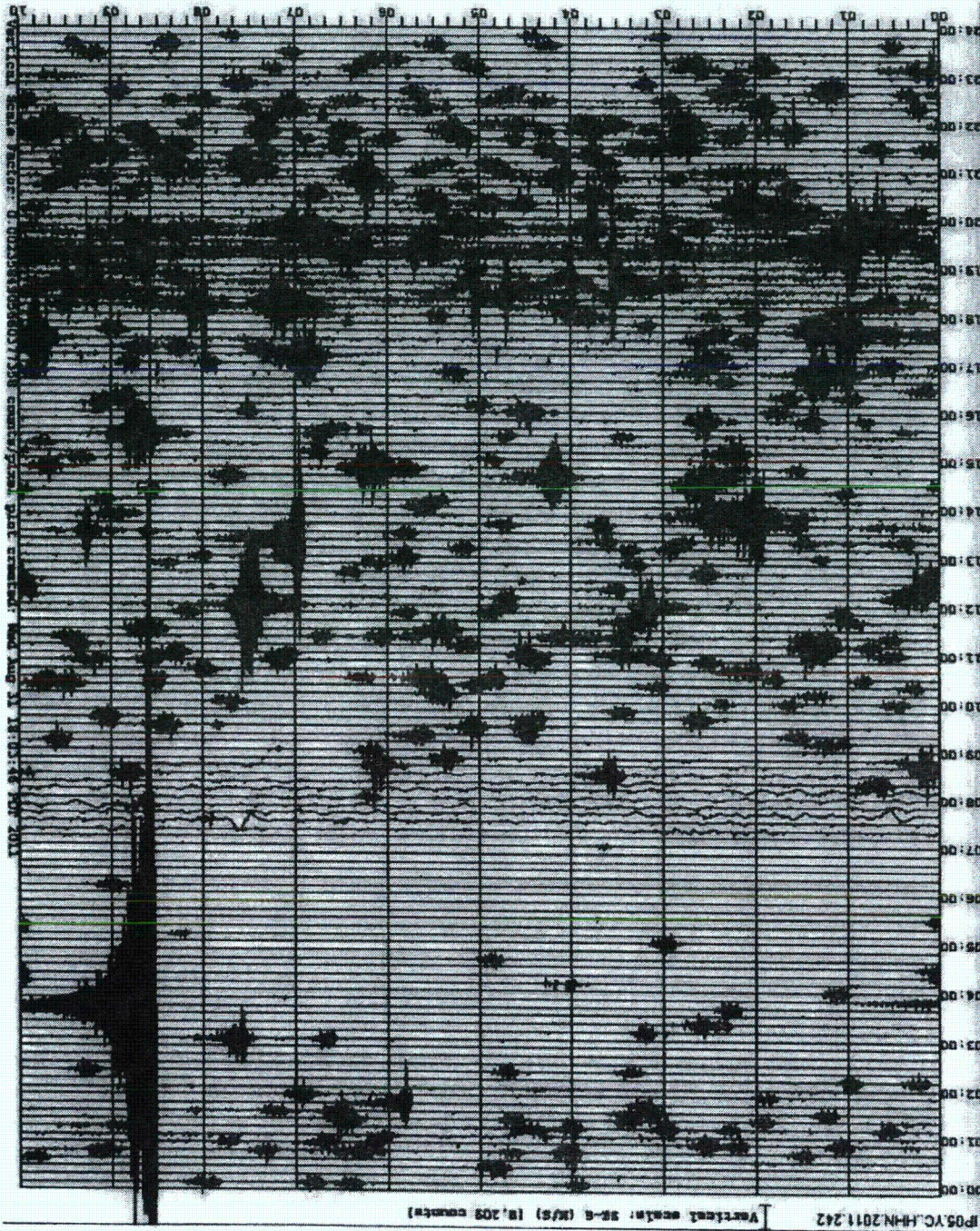
More than 40 portables
deployed by 6
organizations



Aftershocks recorded in epicentral area August 30, 2011



n hrp



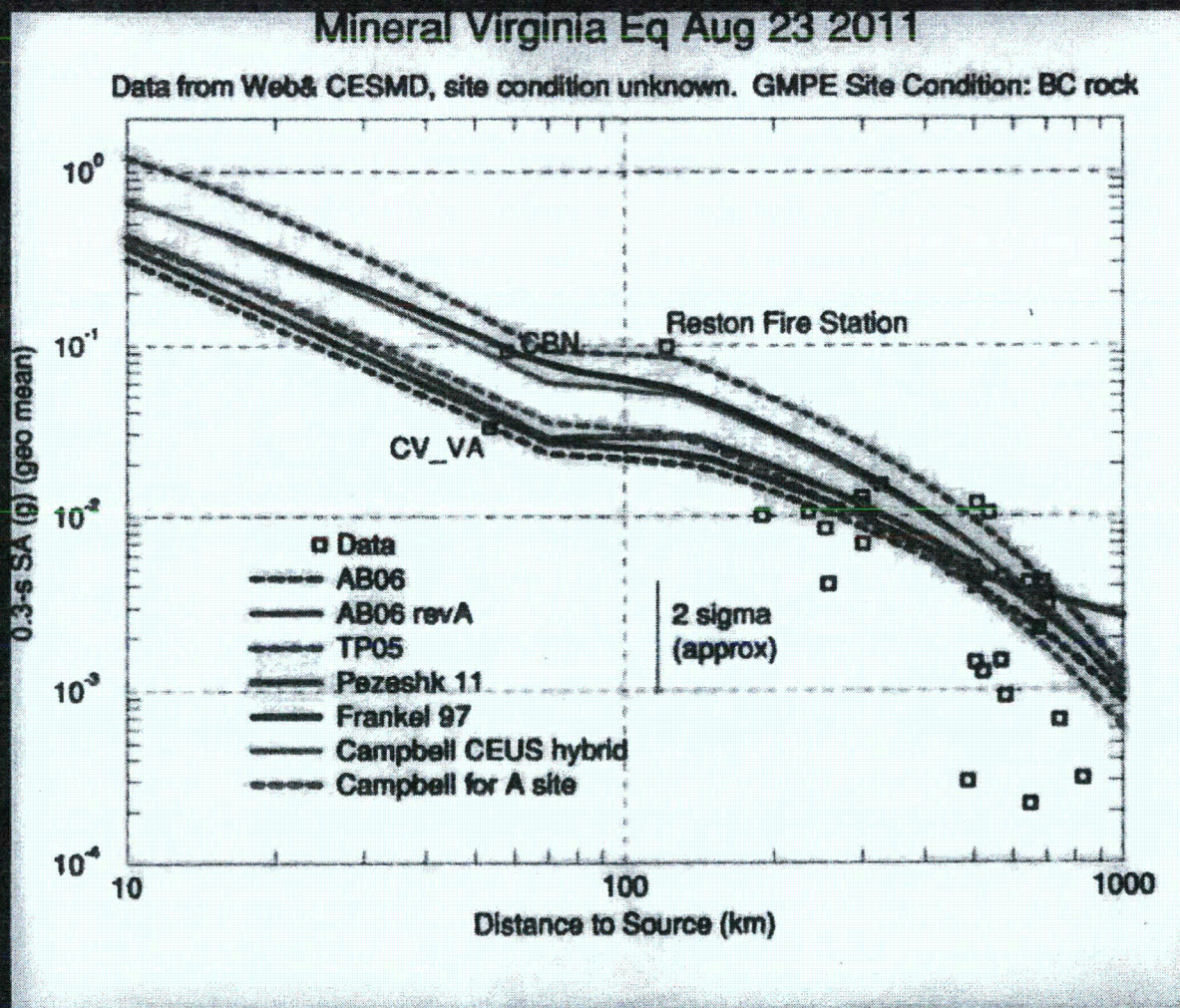
Aftershocks recorded in epicentral area

Most recent aftershock: M2.1 on 11/30/2011

date-time	lat	lon	depth	mag
8/23/11 17:51	37.93N	77.93W	6	
8/23/11 18:46	37.96N	77.92W	5	3.0
8/23/11 19:20	37.91N	78.00W	0	2.5
8/24/11 0:04	37.91N	77.89W	8	
8/24/11 4:45	37.92N	77.99W	5	3.3
8/25/11 5:07	37.94N	77.89W	5	
8/25/11 6:37	37.91N	77.96W	0	2.3
8/25/11 15:27	37.98N	77.83W	9	2.6
8/25/11 15:27	37.98N	77.83W	9	2.6
8/25/11 23:40	37.99N	77.91W	5	2.7
8/26/11 22:52	37.88N	77.93W	0	2.1
8/28/11 20:18	37.93N	77.97W	7	2.2
8/29/11 1:06	37.93N	77.98W	5	2.3
8/29/11 3:15	37.93N	77.98W	4	2.0
8/29/11 3:16	37.93N	77.99W	4	2.7
8/29/11 4:19	37.93N	77.98W	4	2.2
8/30/11 3:48	37.90N	77.97W	7	2.6
9/1/11 9:09	37.95N	77.88W	5	
9/5/11 16:54	37.94N	77.97W	5	2.5



Preliminary analysis of attenuation



Strong motion
record from
Reston, VA,
Firehouse #25,
(USGS NP2555)

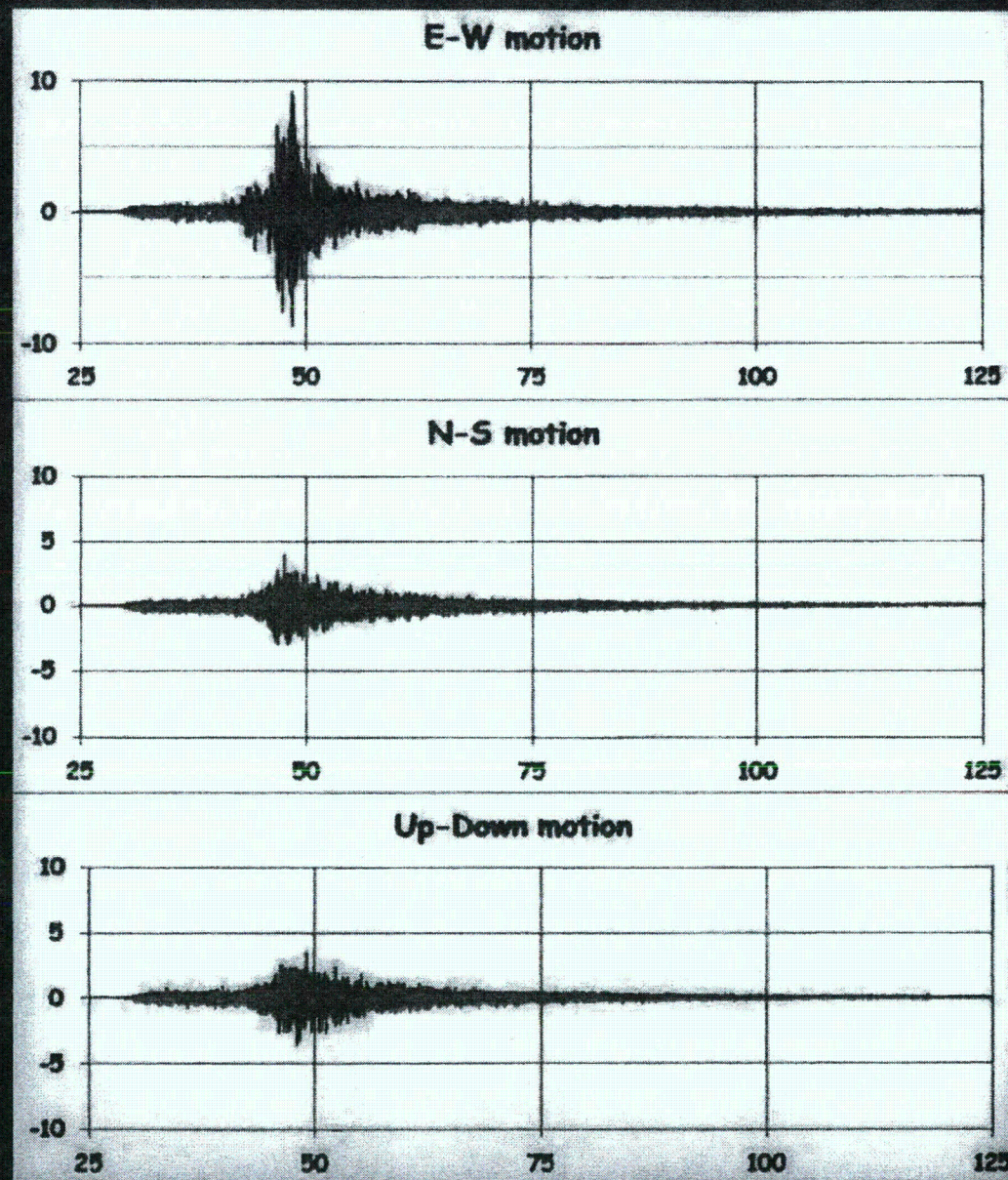
for

Mineral, VA,
Mw 5.8
earthquake on
Aug 23, 2011

(USGS Processing)

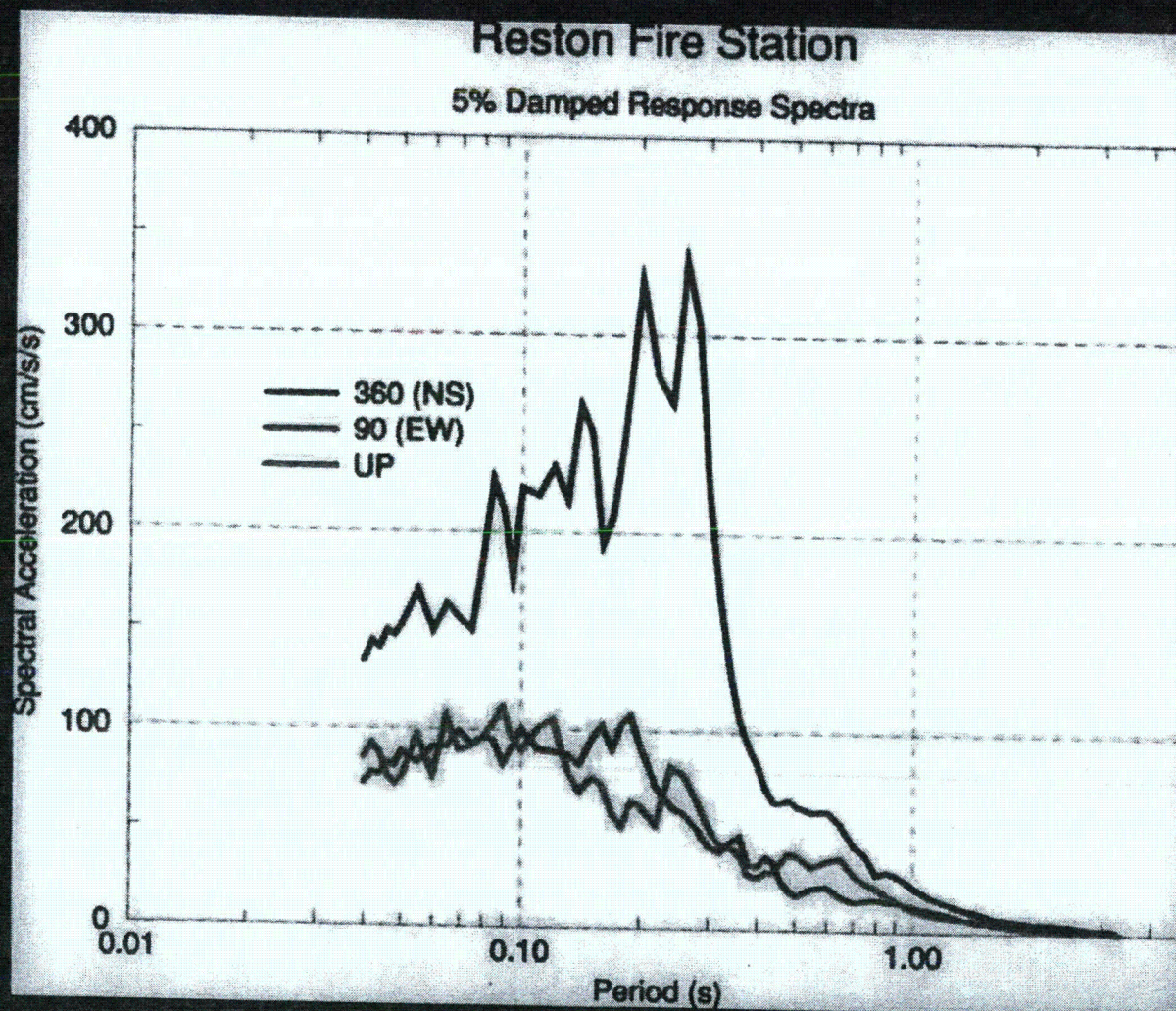


Acceleration, %g

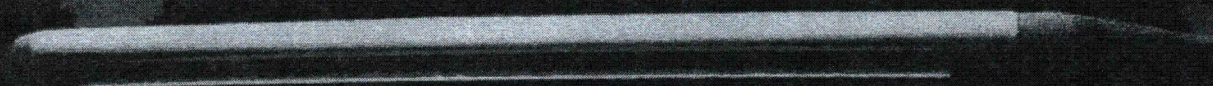


Time, sec

Evidence for site resonance in Reston, Virginia



In progress: Velocity Characterization
of seismic station sites that recorded
the larger events

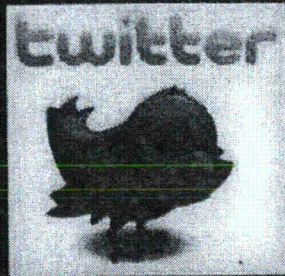


Additional investigations needed

- Broader site characterization
- Event relocations
- Geology
 - LiDAR
 - Aeromagnetic, gravity
 - Trenching
 - Geophysical profiling
- Geodesy
- Social aspects



Earthquake Tweets



This movie plots the tweets following the Virginia M5.8 earthquake. The timestamp was taken from the tweet metadata and the geocoding is mostly from the user's location string.

The propagating blue circle shows the position of the P-wave front and the propagating purple circle shows the position of the S-wave front.



From: Criscione, Lawrence
Sent: Tuesday, October 02, 2012 3:33 PM
To: Nicholson, Thomas
Subject: RES Seminar #99

Tommy,

Can I get the DVD, slides and background information for the Paleoflood RES Seminar (#99)?

Thanks,
Larry

From: McGee, Jim (HSGAC) [mailto:Jim_McGee@hsgac.senate.gov]
Sent: Tuesday, October 02, 2012 9:50 AM
To: Criscione, Lawrence
Subject: RE: GI 199 and Mineral, VA earthquake

Thanks. I couldn't get any of these links to work. I highlighted the topics that appear germane. Will try to track down those slides or DVD's, unless you have them.

Jim McGee
Professional Staff/Investigations
Senate Committee on Homeland Security and Governmental Affairs
202-224-2627

From: Criscione, Lawrence [mailto:Lawrence.Criscione@nrc.gov]
Sent: Monday, October 01, 2012 8:00 PM
To: McGee, Jim (HSGAC)
Subject: FW: GI 199 and Mineral, VA earthquake

Jim,

I meant to send this to you a couple of weeks ago, but accidentally sent it to Jon Ake, Marty Stutzke and Ben Beasley (I had "temporarily" put their names in the "To" line to copy down their email addresses).

Anyways, at the very bottom of this email is a list of RES seminars. You might find #99, #102 and #112 interesting pertaining to dam failures, earthquakes and paleofloods.

Larry Criscione

From: Criscione, Lawrence
Sent: Friday, September 21, 2012 2:38 PM
To: Ake, Jon; Beasley, Benjamin; Stutzke, Martin
Subject: GI 199 and Mineral, VA earthquake

Jim,

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One of them was on the Mineral, VA Earthquake of August 23, 2011. It was given by Dr. Leith of the USGS. The NRC contact was Jon.Ake@nrc.gov, 301-251-7626. He could probably send you the seminar material.

Marty Stutzke (martin.stutzke@nrc.gov, 301-251-7614) was one of the chief scientists on GI 199 (the earthquake Generic Issue) if you have any questions about what was looked at and what the conclusions were. Ben Beasley (Benjamin.Beasley@nrc.gov, 301-251-7676) should be able to either tell you what the status of it is or direct you to a contact in the office assigned to implement it.


Larry










From: Perkins, Richard
Sent: Friday, September 21, 2012 2:19 PM
To: Criscione, Lawrence
Subject: RE: Info










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12/14/10
 Success and Failure: A Paradoxical Relationship
 Prof. Henry Petroski
 Duke University
 Nathan Siu
 DRA








Here's a copy of the RES Seminar Table through 2009 (if you can read this)

Seminar #114	09/19/12	Long-Term Research Program Overview	Robert Tregoning, Ph.D Michael B. Rubin, LTRP PM David W. Stroup, P.E Jacob Philip, P.E	
Seminar #113	08/08/12	The NRC and Social Media - What We're Doing, Why We're Doing It, and How You Can Get Involved [View Poster]	Holly Harrington - Office of Public Affairs	No DVD available for this seminar
Seminar #112	07/10/12	Dam Failure, Nuclear Power Plant Flooding, and the Outlook for Generic Issue 204 [View Slide 1] [View Slide 2] [view Slide 3]	Richard Perkins & Jacob Philip RES/DRA	
Seminar # 111	06/19/12	Training Range Environmental Evaluation and Characterization System (TREECS) Applications - [View Slide]	Billy E. Johnson, U.S. Army Corps of Engineers; Mark S. Dortch, MSD Inc., and Boris Faybishenko, Lawrence Berkeley National Laboratory Sponsored by Tom Nicholson, DRA/RES	No DVD available for this seminar
Seminar # 110	06/07/12	ASR Degradation of Concrete affecting Nuclear Power Plant Structures - [View Slide] [Presentation 1][Presentation 2]	Jason Weiss, Purdue University; Kenneth Snyder, NIST; and Fahim Sadek, NIST. Sponsored by Jacob Philip, ETB/DRA/RES	No DVD available for this seminar

Seminar # 109	06/06/12	Live webcast of Zirconium Fire Experiment on PWR Spent Fuel Pool Complete Loss of Coolant Accident	Ghani Zigh, RES/DSA	No DVD available for this seminar
Seminar #108	6/4/2012	State-of-the-Art Reactor Consequence Analyses (SOCRCA) RES Seminar - [View Slides]	Richard Chang, Jonathan Barr & Jason Schaperow (SOARCA Team)	
Seminar #107	5/21/2012	Health Physics Brown Bag 2012 Series: US Federal Agency Response to Fukushima Incident	Dr. Luis Benevides from NAVY, sponsored by Gladys Figueroa, RES/DSA/RPB	
Seminar #106	4/17/2012	Multi-Scale Assessment of Prediction Uncertainty in Coupled Reactive Transport Models Curtis Flyer Announcement	Gary P. Curtis(USGS) Ming Ye(FSU) Philip D. Meyer(PNNL) Steve Yabusaki(PNNL)	No DVD available for this seminar
Seminar #105	3/27/2012	Development of the Extremely Low Probability of Rupture (xLPR) Assessment Tool View Slides	Dave Rudland, RES/DE	
Seminar #104	2/13/12	The NRC's Simulator-based Human Performance Testing Program - Advancing Model Validity with Data	Amy D'Agostino & James Chang, RES/DRA	
Seminar #103	1/25/12	Computational Fluid Dynamics for Nuclear Safety Analysis	Christopher Boyd RES/DSA	
Seminar #102	12/13/11	The Mineral, VA Earthquake of August 23, 2011 [View poster] [view presentation]	Dr. William Leith, U.S. Geological Survey / Jon Ake, RES/DE/SGSEB	No DVD available for this seminar
Seminar #101	11/01/11	Lessons Learned from Investigations of Oil and Chemical Industry Events [View Presentation]	Mark Griffon Board Member U.S. Chemical Safety and Hazard Investigation Board	
Seminar #100	10/05/11	Investigations of Zirconium Fires during Spent Fuel Pool Loss of Coolant Accidents	Ghani Zigh RES/DSA	
Seminar #99	08/23/11	The Value of Paleoflood Information when Estimating Flood Risk [Slides] [Background Info 1] [Background Info 2]	Dr. Timothy Cohn, U.S. Geological Survey Thomas Nicholson DRA	
Seminar #98	07/11/11	Research Topics and Experiences on Safety Assessment Methods of Radioactive Materials (RAM) Containers German Federal Institute for Materials Research and Testing (BAM), Berlin, Germany	Dr. Frank Wille, "Requirements for Transport Packages after Interim Storage" Dr. Karsten Muller, "Recent Activities on Experimental Package and Component Testing at BAM" Mr. Gernar Eisenacher "Impact Limiter Modeling - An Approach for a Finite Element Material Model for Wood" Dr. Jose Pires,	

			RES/DE/SGSEB	
Seminar #97	06/21/11	Assuring Durable Concrete: Chemical Degradation Processes and Modeling Service Life - [View Slides]	Dr. Kenneth A. Snyder National Institute of Standards and Technology Jacob Philip, DRA/ETB	
Seminar #96	04/28/11	Chernobyl 25th Anniversary <u>1. Mike Weber's Introduction</u> <u>2. Dr. Brian Sheron's Presentation</u> <u>3. Dr. Frank Congel's Presentation</u> <u>4. Dr. John Boice's Presentation</u>	Dr. Brian Sheron, RES Frank Congel, Former NRC Employee Dr. John Boice, IEI	
Seminar #95	04/19/11	A Probabilistic Risk Assessment View of Consequential Steam Generator Tube Rupture [View Slides]	Selim Sancaktar, RES/DRA/PRAB	No DVD available for this seminar
Seminar #94	02/22/11	Radiation Epidemiology Past Studies and Future Opportunities [View Poster]	Dr. John Boice, Medicine at Vanderbilt University School of Medicine and Scientific Director of the International Epidemiology Institute (IEI) / Stephanie Bush- Goddard, RES/DSA/HEB	
Seminar #93	02/15/11	American Society of Mechanical Engineers [View Slides]	Rick Swayne, ASME Carol Moyer, RES/DE/CMB	
Seminar #92	01/20/11	Weather and Hydrologic Extremes in a Non-stationary Climate with Implications for Managing Critical Infrastructures and Key Resources Presentation Slides	Dr. Auroop Ganguly (ORNL) Joe Kanney (RES/DRA/ETB) Tom Nicholson (RES/DRA)	
Seminar #91	01/12/11	Field and Modeling Studies to Assess Radionuclide Transport in the Subsurface	Dr. Andy Ward, Senior Research Scientist, Pacific Northwest National Laboratory Tom Nicholson (RES/DRA)	
Seminar #90	12/14/10	Success and Failure: A Paradoxical Relationship	Prof. Henry Petroski Duke University Nathan Siu DRA	
Seminar #89	11/10/2010	Zirconium in the Nuclear Industry - [View Slides]	Patrick Raynaud DSA / FSTB	
Seminar #88	10/20/2010	ASME Codes and Standards: History, Content, Development, and Endorsement	Carol Moyer & Gary Stevens, RES/DE	No DVD available for this seminar
Seminar #87	09/23/2010	Seismic-related Generic Issue (GI-199) Safety / Risk Assessment Methods and Results - [Detail] [view Slides]	Marty Stutzke (RES/DRA) Jon Ake (RES/DE/SGSEB) Lauren Killian (RES/DRA/OEGIB)	

Seminar #86	07/23/2010	Risk and Uncertainty in Dam Safety [View Detail 1] [View Detail 2] [View Detail 3]	Professor Gregory B. Baecher University of Maryland, College Park/ Thomas Nicholson, RES/DRA	No DVD available for this seminar
Seminar #85	07/19/2010	The Evolution of Radiation Protection: From Erythema to Genetic Risks to Risks of Cancer [View Slides]	Charles Meinhold / Terry Brock, RES/DSA/HEB	
Seminar #84	07/12/2010	Advanced Control Room Human Factors [View Slides]	Jing Xing & Stephen Flegen RES/ DRA/HFRB	No DVD available for this seminar
Seminar #83	06/17/2010	Severe Accident Response for Steam Generator Tubing [View Slides]	Saurin Majumdar, ANL	No DVD available for this seminar
Seminar #82	06/17/2010	Lean Six Sigma on Internal Contracting	Mary Muessle, PMDA	No DVD available for this seminar
Seminar #81	05/13/2010	Overview of the Electric, Power Research Institute Organizational and Program Structure and Its Relationship to the Industry's Materials Initiative	David Modeen / hosted by DE, David Rudland	
Seminar #80	04/29/2010	Lessons Learned in Detecting, Monitoring, Modeling, and Remediating Radioactive Groundwater Contamination at Brookhaven National Laboratory... [Handout]	Dr. William Gunther, Dr. Mike Hauptmann, and Dr. Terry Sullivan / hosted by DRA Thomas Nicholson	
Seminar #79	04/15/2010	Human-Rating of Space Systems - [View Slides]	<u>Mr. Bryan O'Connor</u> , Chief, Office of Safety and Mission Assurance, NASA	No DVD available for this seminar
Seminar #78	03/26/2010	Browns Ferry Seminar	Jack Lewis & Felix Gonzalez, DRA Dr.	
Seminar #77	03/25/2010	Fundamentals of Structural Dynamics - [View Slides]	Dr. Abhinav Gupta	No DVD available for this seminar
Seminar #76	02/23/2010	Recent United States Geological Survey (USGS) Research on Seismic Hazards and Ground Motions in the Eastern U.S.	Dr. Paul Spudich, USGS colleagues & Jon Ake, DE	
Seminar #75	01/21/2010	Improving the State-of-the-Art in Severe Accident Analysis [View Slides]	Richard Lee	No DVD available for this seminar
Seminar #74	01/05/2010	State of the Practice of Seismic Hazard Analysis: From the Good to the Bad	Dr. Norman Abrahamson	
Seminar #73	12/10/2009	Experimental Basis for Modification of Cladding Embrittlement Criteria	Michelle Flanagan	
Seminar #72	11/30/2009	Pressurized Thermal Shock	Mark Kirk	
Seminar #71	10/26/2009	Health Effects as a Function of Dose Rate Delivered [View Slides]	Dr. Jacquelyn Yanch, MIT	No DVD available for this seminar
Seminar #70	09/11/2009	THE COLLAPSE OF WORLD TRADE CENTER 7- THE FORGOTTEN BUILDING OF 9/11	<u>Dr. Therese McAllister</u> National Institute of Standards and Technology (NIST)	
Seminar #69	09/08/2009	Geophysical Surveys Supporting Analysis of Contaminant Transport through Fractures	Dr. John Williams, USGS [View Bio]	

		[View Slides]		
Seminar #68	08/24/2009	Safety and Regulatory Perspectives on Protective Coatings for Nuclear Facilities [View Slides]	Bruce Lin, RES/DE/MEEB	
Seminar #67	07/21/2009	Performance of Engineered Covers for Waste Disposal with Implications for PA [View Slides]	Professor Craig Benson, University of Wisconsin [View Bio]	
Seminar #66	05/11/2009	The Spent Nuclear Fuel Burnup Credit Research	John Wagner, ORNL	
Seminar #65	05/07/2009	2009 William B. Joyner Memorial Lecture, entitled "Earthquakes, Seismic Hazard, and Performance-Based Design"	Dr. Robin McGuire	
Seminar #64	04/24/2009	Modeling Uranium Behavior during In-Situ Bioremediation	Steven Yabusaki, Pacific Northwest National Laboratory	No DVD available for this seminar
Seminar #63	04/22/2009	Screening Methods for Estimating Storm-Surge Levels and Severity	Dr. Donald Resio US Army Corps of Engineers	
Seminar #62	03/25/2009	The Accident at Three Mile Island - 30th Anniversary A Look Back: Preserving the Institutional Memory March 25, 2009 [Details] - [Poster] - [View Presentations]	Brian Sherron Edward Frederick Harold Denton Gary Holahan	Please Contact Amy Bonaccorso
Seminar #61	02/10/2009	Perspectives on HTGR Safety and Design Considerations [View Slides]	Dr. Kenneth Stroh (VP, Sentech Inc. and Retired Guest Scientist, LANL)	
Seminar #60	01/21/2009	Modeling of the Dynamics of the Nucleation and Growth of Cracks Initiated due to Stress in Materials	Dr. Appajosula Rao, Material Engineer, DE/CMB	

From: Criscione, Lawrence
Sent: Friday, September 21, 2012 3:09 PM
To: Perkins, Richard
Subject: RE: Info

It was really about how engineering lessons learned are forgotten over time, but the guy giving it used bridge design as his basis. It was in 2010 or 2011. I'm not certain it was a RES seminar. It was in the same auditorium as our seminars and I know I went to it with Kauffman so I assume it was a seminar. Do other offices do seminars?

From: Perkins, Richard
Sent: Friday, September 21, 2012 1:53 PM
To: Criscione, Lawrence
Subject: Info

Energy Daily did a front page story today on FERC standing up a new office. You should take a look at that if you haven't.

I just sent the info on paleofloods (previous e-mail). Let me know if you don't get it.

I don't recall the brief about bridge failure. Anything to help me find it? Didn't see it in the RES seminar list (or I didn't recognize it as bridge failure related).

Richard H. Perkins, P.E.
Nuclear Regulatory Commission
Office of Nuclear Regulatory Research
Division of Risk Analysis
Operating Experience and Generic Issues Branch
Phone - 301/251-7479

From: Perkins, Richard
Sent: Tuesday, October 02, 2012 3:48 PM
To: Criscione, Lawrence
Cc: Philip, Jacob
Subject: RE: Seminar #112

I have a DVD you can have. I can download the slides and e-mail them to you.

From: Criscione, Lawrence
Sent: Tuesday, October 02, 2012 3:28 PM
To: Perkins, Richard; Philip, Jacob
Subject: Seminar #112

Rich/Jake,

Can I get the slide shows and DVD for the Generic Issue 204 RES Seminar (#112)?

Thanks,
Larry

From: McGee, Jim (HSGAC) [mailto:Jim_McGee@hsgac.senate.gov]
Sent: Tuesday, October 02, 2012 9:50 AM
To: Criscione, Lawrence
Subject: RE: GI 199 and Mineral, VA earthquake

Thanks. I couldn't get any of these links to work. I highlighted the topics that appear germane. Will try to track down those slides or DVD's, unless you have them.

Jim McGee
Professional Staff/Investigations
Senate Committee on Homeland Security and Governmental Affairs
202-224-2627

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Sent: Monday, October 01, 2012 8:00 PM
To: McGee, Jim (HSGAC)
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From: Criscione, Lawrence
Sent: Friday, September 21, 2012 2:38 PM
To: Ake, Jon; Beasley, Benjamin; Stutzke, Martin
Subject: GI 199 and Mineral, VA earthquake

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From: Perkins, Richard
Sent: Friday, September 21, 2012 2:19 PM
To: Criscione, Lawrence
Subject: RE: Info

I found this, but there are no slides available. It was recorded.










12/14/10










Success and Failure: A Paradoxical Relationship
Prof. Henry Petroski
Duke University
Nathan Siu
DRA

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Seminar #113	08/08/12	The NRC and Social Media – What We're Doing, Why We're Doing It, and How You Can Get Involved [View Poster]	Holly Harrington – Office of Public Affairs	No DVD available for this seminar
Seminar #112	07/10/12	Dam Failure, Nuclear Power Plant Flooding, and the Outlook for Generic Issue 204 [View Slide 1] [View Slide 2] [View Slide 3]	Richard Perkins & Jacob Philip RES/DRA	

Seminar # 111	06/19/12	Training Range Environmental Evaluation and Characterization System (TREECS) Applications - [View Slide]	Billy E. Johnson, U.S. Army Corps of Engineers; Mark S. Dortch, MSD Inc., and Boris Faybishenko, Lawrence Berkeley National Laboratory Sponsored by Tom Nicholson, DRA/RES	No DVD available for this seminar
Seminar # 110	06/07/12	ASR Degradation of Concrete affecting Nuclear Power Plant Structures - [View Slide] [Presentation 1][Presentation 2]	Jason Weiss, Purdue University; Kenneth Snyder, NIST; and Fahim Sadek, NIST. Sponsored by Jacob Philip, ETB/DRA/RES	No DVD available for this seminar
Seminar # 109	06/06/12	Live webcast of Zirconium Fire Experiment on PWR Spent Fuel Pool Complete Loss of Coolant Accident	Ghani Zigh, RES/DSA	No DVD available for this seminar
Seminar #106	6/4/2012	State-of-the-Art Reactor Consequence Analyses (SOCRCA) RES Seminar - [View Slides]	Richard Chang, Jonathan Barr & Jason Schaperow (SOARCA Team)	DVD
Seminar #107	5/21/2012	Health Physics Brown Bag 2012 Series: US Federal Agency Response to Fukushima Incident	Dr. Luis Benavides from NAVY, sponsored by Gladys Figueroa, RES/DSA/RPB	DVD
Seminar #106	4/17/2012	Multi-Scale Assessment of Prediction Uncertainty in Coupled Reactive Transport Models <u>Curtis Fiver Announcement</u>	Gary P. Curtis(USGS) Ming Ye(FSU) Philip D. Meyer(PNNL) Steve Yabusaki(PNNL)	No DVD available for this seminar
Seminar #105	3/27/2012	Development of the Extremely Low Probability of Rupture (xLPR) Assessment Tool <u>View Slides</u>	Dave Rudland, RES/DE	DVD
Seminar #104	2/13/12	The NRC's Simulator-based Human Performance Testing Program - Advancing Model Validity with Data	Amy D'Agostino & James Chang, RES/DRA	DVD
Seminar #103	1/25/12	Computational Fluid Dynamics for Nuclear Safety Analysis	Christopher Boyd RES/DSA	DVD
Seminar #102	12/13/11	The Mineral, VA Earthquake of August 23, 2011 <u>[view poster]</u> <u>[view presentation]</u>	Dr. William Leith, U.S. Geological Survey / Jon Ake, RES/DE/SGSEB	No DVD available for this seminar
Seminar #101	11/01/11	Lessons Learned from Investigations of Oil and Chemical Industry Events <u>[View Presentation]</u>	Mark Griffon Board Member U.S. Chemical Safety and Hazard Investigation Board	DVD
Seminar #100	10/05/11	Investigations of Zirconium Fires during Spent Fuel Pool Loss of Coolant Accidents	Ghani Zigh RES/DSA	DVD
Seminar #99	08/23/11	The Value of Paleoflood Information when Estimating Flood Risk [Slides] <u>[Background Info 1]</u> <u>[Background Info 2]</u>	Dr. Timothy Cohn, U.S. Geological Survey Thomas Nicholson DRA	DVD

Seminar #98	07/11/11	Research Topics and Experiences on Safety Assessment Methods of Radioactive Materials (RAM) Containers German Federal Institute for Materials Research and Testing (BAM) . Berlin, Germany	Dr. Frank Wille, "Requirements for Transport Packages after Interim Storage" Dr. Karsten Muller, "Recent Activities on Experimental Package and Component Testing at BAM" Mr. Gernar Eisenacher "Impact Limiter Modeling - An Approach for a Finite Element Material Model for Wood" Dr. Jose Pires, RES/DE/SGSEB	
Seminar #97	08/21/11	Assuring Durable Concrete: Chemical Degradation Processes and Modeling Service Life - [View Slides]	Dr. Kenneth A. Snyder National Institute of Standards and Technology Jacob Philip, DRA/ETB	
Seminar #96	04/26/11	Chernobyl 25th Anniversary <u>1. Mike Weber's Introduction</u> <u>2. Dr. Brian Sheron's Presentation</u> <u>3. Dr. Frank Congel's Presentation</u> <u>4. Dr. John Boice's Presentation</u>	Dr. Brian Sheron, RES Frank Congel, Former NRC Employee Dr. John Boice, IEI	
Seminar #95	04/19/11	A Probabilistic Risk Assessment View of Consequential Steam Generator Tube Rupture [View Slides]	Selim Sancaktar, RES/DRA/PRAB	No DVD available for this seminar
Seminar #94	02/22/11	Radiation Epidemiology Past Studies and Future Opportunities [View Poster]	Dr. John Boice, Medicine at Vanderbilt University School of Medicine and Scientific Director of the International Epidemiology Institute (IEI) / Stephanie Bush-Goddard, RES/DSA/HEB	
Seminar #93	02/15/11	American Society of Mechanical Engineers [View Slides]	Rick Swayne, ASME Carol Moyer, RES/DE/CMB	
Seminar #92	01/20/11	Weather and Hydrologic Extremes in a Non-stationary Climate with Implications for Managing Critical Infrastructures and Key Resources Presentation Slides	Dr. Auroop Ganguly(ORNL) Joe Kanney (RES/DRA/ETB) Tom Nicholson (RES/DRA)	
Seminar #91	01/12/11	Field and Modeling Studies to Assess Radionuclide Transport in the Subsurface	Dr. Andy Ward, Senior Research Scientist, Pacific Northwest National Laboratory Tom Nicholson (RES/DRA)	
Seminar #90	12/14/10	Success and Failure: A Paradoxical Relationship	Prof. Henry Petroski Duke University Nathan Siu DRA	
Seminar #89	11/10/2010	Zirconium in the Nuclear Industry - [View Slides]	Patrick Raynaud DSA / FSTB	
Seminar #88	10/20/2010	ASME Codes and Standards: History, Content, Development, and Endorsement	Carol Moyer & Gary Stevens, RES/DE	No DVD available for this seminar

Seminar #87	09/23/2010	Seismic-related Generic Issue (GI-199) Safety/Risk Assessment Methods and Results - [Detail] [View Slides]	Marty Stutzke (RES/DRA) Jon Ake (RES/DE/SGSEB) Lauren Killian (RES/DRA/OEGIB)	
Seminar #86	07/23/2010	Risk and Uncertainty in Dam Safety [View Detail 1] [View Detail 2] [View Detail 3]	Professor Gregory B. Baecher University of Maryland, College Park/ Thomas Nicholson, RES/DRA	No DVD available for this seminar
Seminar #85	07/19/2010	The Evolution of Radiation Protection: From Erythema to Genetic Risks to Risks of Cancer [View Slides]	Charles Meinhold / Terry Brock, RES/DSA/HEB	
Seminar #84	07/12/2010	Advanced Control Room Human Factors [View Slides]	Jing Xing & Stephen Flegen RES/ DRA/HFRB	No DVD available for this seminar
Seminar #83	06/17/2010	Severe Accident Response for Steam Generator Tubing [View Slides]	Saurin Majumdar, ANL	No DVD available for this seminar
Seminar #82	06/17/2010	Lean Six Sigma on Internal Contracting	Mary Muesle, PMDA	No DVD available for this seminar
Seminar #81	05/13/2010	Overview of the Electric, Power Research Institute Organizational and Program Structure and its Relationship to the Industry's Materials Initiative	David Modeen / hosted by DE, David Rudland	
Seminar #80	04/29/2010	Lessons Learned in Detecting, Monitoring, Modeling, and Remediating Radioactive Groundwater Contamination at Brookhaven National Laboratory... [Handout]	Dr. William Gunther, Dr. Mike Hauptmann, and Dr. Terry Sullivan / hosted by DRA Thomas Nicholson	
Seminar #79	04/15/2010	Human-Rating of Space Systems - [View Slides]	Mr. Bryan O'Connor, Chief, Office of Safety and Mission Assurance, NASA	No DVD available for this seminar
Seminar #78	03/26/2010	Browns Ferry Seminar	Jack Lewis & Felix Gonzalez, DRA Dr.	
Seminar #77	03/25/2010	Fundamentals of Structural Dynamics - [View Slides]	Dr. Abhinav Gupta	No DVD available for this seminar
Seminar #76	02/23/2010	Recent United States Geological Survey (USGS) Research on Seismic Hazards and Ground Motions in the Eastern U.S.	Dr. Paul Spudich, USGS colleagues & Jon Ake, DE	
Seminar #75	01/21/2010	Improving the State-of-the-Art in Severe Accident Analysis [View Slides]	Richard Lee	No DVD available for this seminar
Seminar #74	01/05/2010	State of the Practice of Seismic Hazard Analysis: From the Good to the Bad	Dr. Norman Abrahamson	
Seminar #73	12/10/2009	Experimental Basis for Modification of Cladding Embrittlement Criteria	Michelle Fianagan	
Seminar #72	11/30/2009	Pressurized Thermal Shock	Mark Kirk	
Seminar #71	10/26/2009	Health Effects as a Function of Dose Rate Delivered [View Slides]	Dr. Jacquelyn Yench, MIT	No DVD available for this seminar

Seminar #70	09/11/2009	THE COLLAPSE OF WORLD TRADE CENTER 7- THE FORGOTTEN BUILDING OF 9/11	<u>Dr. Therese McAllister</u> National Institute of Standards and Technology (NIST)	
Seminar #69	09/08/2009	Geophysical Surveys Supporting Analysis of Contaminant Transport through Fractures [View Slides]	Dr. John Williams, USGS [View Bio]	
Seminar #68	08/24/2009	Safety and Regulatory Perspectives on Protective Coatings for Nuclear Facilities [View Slides]	Bruce Lin, RES/DE/MEEB	
Seminar #67	07/21/2009	Performance of Engineered Covers for Waste Disposal with Implications for PA [View Slides]	Professor Craig Benson, University of Wisconsin [View Bio]	
Seminar #66	05/11/2009	The Spent Nuclear Fuel Burnup Credit Research	John Wagner, ORNL	
Seminar #65	05/07/2009	2009 William B. Joyner Memorial Lecture, entitled "Earthquakes, Seismic Hazard, and Performance-Based Design"	Dr. Robin McGuire	
Seminar #64	04/24/2009	Modeling Uranium Behavior during In-Situ Bioremediation	Steven Yabusaki, Pacific Northwest National Laboratory	No DVD available for this seminar
Seminar #63	04/22/2009	Screening Methods for Estimating Storm-Surge Levels and Severity	Dr. Donald Resio US Army Corps of Engineers	
Seminar #62	03/25/2009	The Accident at Three Mile Island - 30th Anniversary A Look Back: Preserving the Institutional Memory March 25, 2009 [Details] - [Poster] - [View Presentations]	Brian Sherron Edward Frederick Harold Denton Gary Holahan	Please Contact Amy Bonaccorso
Seminar #61	02/10/2009	Perspectives on HTGR Safety and Design Considerations [View Slides]	Dr. Kenneth Stroh (VP, Sentech Inc. and Retired Guest Scientist, LANL)	
Seminar #60	01/21/2009	Modeling of the Dynamics of the Nucleation and Growth of Cracks Initiated due to Stress in Materials	Dr. Appajosula Rao, Material Engineer, DE/CMB	

From: Criscione, Lawrence
Sent: Friday, September 21, 2012 3:09 PM
To: Perkins, Richard
Subject: RE: Info

It was really about how engineering lessons learned are forgotten over time, but the guy giving it used bridge design as his basis. It was in 2010 or 2011. I'm not certain it was a RES seminar. It was in the same auditorium as our seminars and I know I went to it with Kauffman so I assume it was a seminar. Do other offices do seminars?

From: Perkins, Richard
Sent: Friday, September 21, 2012 1:53 PM
To: Criscione, Lawrence
Subject: Info

Energy Daily did a front page story today on FERC standing up a new office. You should take a look at that if you haven't.

I just sent the info on paleofloods (previous e-mail). Let me know if you don't get it.

I don't recall the brief about bridge failure. Anything to help me find it? Didn't see it in the RES seminar list (or I didn't recognize it as bridge failure related).

Richard H. Perkins, P.E.
Nuclear Regulatory Commission
Office of Nuclear Regulatory Research
Division of Risk Analysis

Operating Experience and Generic Issues Branch
Phone - 301/251-7479

From: Telson, Ross
Sent: Tuesday, October 02, 2012 10:04 PM
To: Criscione, Lawrence
Cc: King, Mark; Perkins, Richard
Subject: RE: FOIA Appeals

Lawrence,

Thanks for your openness and for sharing your experiences. You'll get no arguments from me. Personally I have had only had one experience with the NCP (Compromising ECCS & Containment Cooling Train Independence via Common Sump Strainer) and was, likewise, not impressed.

Ross

From: Criscione, Lawrence
Sent: Tuesday, October 02, 2012 3:25 PM
To: Telson, Ross
Cc: King, Mark; Perkins, Richard
Subject: RE: FOIA Appeals

I agree with what you say below, but in addition to (a) and (b) reasons for not doing the NCP or DPO, I would submit a (c): Loss of faith in those processes.

I have personally done a NCP ([ML110420293](#)), I have personally submitted several FOIA Appeals, I have submitted four 10CFR2.206 petitions, as a utility employee I submitted six allegations, as an NRC employee I have approached the OIG on two occasions, and I have attended multiple Open Door meetings with office directors and commissioners: Leeds, Zimmerman, Collins, Weber, Virgilio, Ostendorff and Jaczko. None of our processes work the way they are touted. If an issue is awkward or embarrassing, our drive is to find a way to bureaucratically dismiss the problem instead of working to address it. Don't get me wrong – we do a lot of things right. But once we get beyond the blatant, the unopposed, or the procedural, our processes break down. We are too often afraid of relying on our technical expertise and making subjective judgment calls. For some reason, as a society we can subjectively decide murder cases yet must dismiss cases of corporate wrongdoing unless the evidence is 100% objective.

We all know Oconee needs a flood wall. Yet after six years no one can give me a hard and fast date as to when it will be installed. Subjectively, I would say we are failing in this arena. And subjectively, it is clear to me that Duke Energy is behaving in a manner which is anathema to nuclear safety. But unless this issue is allowed to see the light of day in the news media or a Congressional committee hearing, three years from now we will still not have a flood wall. Melanie Galloway's NCP, Jeff Mitman's NCP, and three reactors melting down in Japan have not moved this issue along – I don't see how a DPO or NCP from me would do any better.

I believe our Safety Conscious Work Environment is excellent. But there is more to Safety Culture than SCWE. At the end of the day, nothing can make up for timid leadership.

"Human experience show that people, not organizations or management systems, get things done."

From: Telson, Ross
Sent: Tuesday, October 02, 2012 3:02 PM
To: Criscione, Lawrence

Cc: King, Mark; Perkins, Richard
Subject: RE: FOIA Appeals

Thanks Lawrence,

Fortunately, if an NRC employee is aware of the course of action the agency is contemplating (not limited to FOIA redaction nor to its legal restrictions) and disagrees with that course, (s)he has other avenues for recourse including but not limited to the non-concurrence process. If (s)he only becomes aware *after* the decision has been made and promulgated, the differing professional opinion process (also not limited to FOIA redaction nor to its legal restrictions) is another available recourse.

Unfortunately, whether an employee feels sufficiently (a) informed and convinced that we're on the wrong path and (b) secure in his/her position, job performance, credibility, and / or his/her workplace safety culture to exercise these (or other) options that (s)he will speak out without fear of reprisal... is quite another matter. Clearly it is a matter with which, this year in particular, we have been visibly and publically struggling at organizational levels all the way up to the Chairman.

The (glass half full) good news is that we are *still* struggling (which is much better and more promising than having given up).



Ross Telson (301) 415-2256
NRR Div. of Inspection & Regional Support
Reactor Inspection Branch (IRIB)
Off. - O 7C7; M.S. - O 7C2A

From: Criscione, Lawrence
Sent: Tuesday, October 02, 2012 1:55 PM
To: King, Mark; Telson, Ross; Perkins, Richard
Subject: FW: FOIA Appeals

See response below. If, as an NRC employee, you believe your product is unjustly being withheld from the public during the FOIA process, you cannot address it through the FOIA appeals process.

From: Hirsch, Patricia
Sent: Tuesday, October 02, 2012 12:16 PM
To: Criscione, Lawrence
Cc: Roth(OGC), David
Subject: RE: FOIA Appeals

Lawrence—

David Roth forwarded your email to me for response.
You are correct that only a requestor has the legal right to appeal a response to a FOIA request.
If you have questions about FOIA policy or practice here at NRC, please contact Donna Sealing, the agency's FOIA Officer.

Pat Hirsch
Assistant General Counsel for Legal Counsel,
Legislation and Special Projects

Alternate Agency Ethics Official
Office of General Counsel
Nuclear Regulatory Commission
Mail Stop O-15 D21
301-415-0563



From: Cristione, Lawrence
Sent: Monday, October 01, 2012 9:18 PM
To: Roth(OGC), David
Cc: Telson, Ross; King, Mark; Perkins, Richard; 'Paul@times.org'
Subject: FOIA Appeals

David,

On January 4, 2012, Paul Koberstein of Cascadia Times submitted a FOIA Request for:

On page 28 of the report, "Recommendations for Enhancing Nuclear Reactor Safety in the 21st Century," the NRC states: "In August 2010, the NRC initiated a proposed generic issue (GI) regarding flooding of nuclear power plant sites following upstream dam failures. The staff evaluation of this issue is ongoing."

I seek copies of all documents pertaining to this ongoing staff evaluation.

Mr. Koberstein's incoming request was designated FOIA/PA Request 2012-106 and can be found at:

<http://pbadupws.nrc.gov/docs/ML1200/ML12005A074.pdf>

In his request Mr. Koberstein asked for "Expedited Processing".

Six months later, we "expeditiously" closed Mr. Koberstein's request by providing him ONE document: a highly redacted copy of the GI-204 Screening Report. Our July 2, 2012 response to Mr. Koberstein can be found at:

<http://pbadupws.nrc.gov/docs/ML1218/ML12188A241.pdf>

In our response we notified him that he had 30 days to appeal.

At the suggestion of Mark King, I reviewed the FOIA appeal process at:

<http://www.nrc.gov/reading-rm/foia/foia-request.html - appeals>

From reading our guidance, it appears to me that only Mr. Koberstein can submit an appeal. Am I reading the guidance correctly, or can anyone (e.g. me) submit an appeal to Paul Koberstein's FOIA/PA response?

I personally do not believe we answered Mr. Koberstein's response correctly. For starters, he clearly requested "*all documents pertaining to this ongoing staff evaluation*". I am not an attorney, but my understanding of the Freedom of Information Act is that we should have at least provided him all the NRC documents listed as references on pp. 37-41 of the GI-204 screening report, or provided exemptions for any document which could not be released. The GI-204 screening report is clearly not "all documents" when it lists 4½ pages of references.

Furthermore, like Richard Perkins I do not agree with the exemptions given for the redactions made to the GI-204 Screening Report. Specifically, I believe we are mischaracterizing the redactions as security concerns in order to prevent the release of embarrassing and/or awkward information.

The 30-day window for Mr. Koberstein to appeal his FOIA/PA response has long past. What I would like to know from OGC is: am I allowed, at this late date, to appeal the response we provided to Mr. Koberstein under FOIA/PA request 2012-106?

Thank you,
Larry Criscione