

# DISCUSSION DRAFT

## Meeting Minutes of the Subcommittee on Disaster Reduction

6 May 2010, 10:00 a.m. to 12:00 p.m., White House Conference Center Lincoln Room

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*Italics indicate absent members. "T" indicate members participating via teleconference.*

### Officers

David Applegate (USGS), Chair  
*Margaret Davidson (NOAA), Vice-Chair*  
Dennis Wenger (NSF), Vice-Chair

### NSTC Liaison

Sarah Johnson (OSTP)

### Designated Representatives

**BLM** *Edwin Roberson*

*Daniel Lechefsky*

**CDC** *Mark Keim*

**DHS** Bruce Davis (T)

**DHS/FEMA** Deborah Ingram

**DHS/USCG** *Steven Cohen*

**DOD** *Al Johnson*

**DOE** *Patricia Hoffman*

**DOT** *Kelly Leone*

*Sheila Duwadi*

*Tim Schmidt*

**EOP/OSTP** *Sarah Johnson*

**EDA** *Audrey Clarke*

**EPA** Peter Jutro

Stephen Clark

**FERC** *Howard Wheeler*

**HUD** *David Engel*

**NASA** Andrea Donnellan

**NGA** *Stephen Homeyer*

Christy Crosiar

**NGB** *Daniel Bochicchio*

**NIH** Allen Dearry (T)

**NIST** *William Grosshandler*

Jack Hayes

**NOAA** *Margaret Davidson*

*Roger Pierce*

**NSF** Dennis Wenger

**OPHS** *Sven Rodenbeck*

**State** *Cari Enav*

*Fernando Echavarria*

**USACE** *Barbara J. Sotirin*

*Dimitra Syriopoulou*

**USAID** Sezin Tokar

**USDA** *TBD*

**USFS** *Carlos Rodriguez-*

*Franco*

**USGS** David Applegate

Paula Gori

### Other Attendees

**BLM** Nora Devoe

**EPA** Marcy Rockman

**FAA** Steven Albersheim

**FEMA** Mike Mahoney

**FERC** Pamela Romano (T)

**NASA** Michael Goodman

**NOAA** Nell Codner

Maria Honeycutt

Jeffrey Osiensky

Judson Stailey

Grace Swanson

**NSF** Robert O'Connor

**OSTP** Jerry Miller

**Smithsonian**

Sally Kuhn Sennert

**USAID** Gari Mayberry

Wayne Pennington

Nate Smith

**USGS** Marianne Guffanti

John Eichelberger

**Secretariat** Kate Cantrell

Ross Faith

### Agenda

- 10:00 Welcome and Introductions
- 10:05 Approval of April Meeting Minutes
- 10:10 Report from the Chair
- 10:25 Report from the Vice-Chairs
- 10:35 Report from the NSTC Liaison
- 10:45 Update on Long-Term Disaster Recovery
- 10:55 Presentation: Iceland Volcano Eruption
- 11:55 Close and Next Actions

### Handouts

- Agenda
- April Meeting Minutes
- SDR Calling Card
- Congressional Hazards Caucus Briefing Flyer
- Understanding Risk Conference Announcement

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## **I. Call to Order and Introductions**

Subcommittee on Disaster Reduction (SDR) Chair David Applegate (USGS) called the meeting to order at 10:04 a.m. and the participants introduced themselves.

## **II. Approval of April Meeting Minutes**

The April Meeting Minutes were approved with no changes.

## **III. Report from the Chair**

Applegate began the Report from the Chair by recapping the first meeting of the SDR Haiti-Chile Earthquakes Lessons Learned Working Group. During the meeting there was general consensus that since the earthquakes occurred in quick succession and therefore will be readily associated in the minds of many, the teachable moment would be most powerful when presented as a report contrasting the strikingly different outcomes of these events and underscoring the crucial lessons of mitigation and vulnerability. The group also reached agreement to structure the report along the lines of SDR's Grand Challenges for Disaster Reduction as a way of framing the lessons. Those interested in participating in the working group should email the Secretariat ([ross.faith@mantech.com](mailto:ross.faith@mantech.com)).

Applegate noted that scheduled for 2:00 p.m. that afternoon on the Hill was a Congressional Natural Hazards Caucus briefing on the science and engineering response to the Jan. 12th earthquake in Haiti. He also noted that several of the briefing's speakers, including geophysicist Eric Calais (Purdue University), structural engineer Reginald DesRoches (Georgia Tech), and Brian Tucker (president and founder of GeoHazards International), had participated in the "Rebuilding for Resilience" workshop, which the SDR convened in March at the University of Miami Campus. The briefing flyer was included in Members' meeting packets.

The World Bank is hosting an upcoming conference on Understanding Risk on June 1-4, 2010 at its headquarters in Washington D.C. The conference is being sponsored by the Global Facility for Disaster Reduction and Recovery (GFDRR) and the Knowledge Strategy Group (KSG), in partnership with the Global Earthquake Model (GEM), the United Nations International Strategy for Disaster Reduction (UNISDR), and other organizations. The event is open to individuals from government agencies, research institutions, multilateral organizations, private sector firms, nongovernmental organizations (NGOs) and community-based organizations involved in disaster risk assessment. An online forum, including several topical discussion groups, has been set up to help set the stage for the conference and refine content to inform the individual sessions. Those interested can register for the conference and participant in the forum at <http://community.understandrisk.org/>.

Andrea Donnellan (NASA) announced that on July 8 at the Keck Center in Washington, DC, the Disasters Roundtable will host a workshop entitled: "From Reality 2010 to Vision 2020: Translating Remotely Sensed Data to Assets, Exposure, Damage, and Losses." This workshop is being organized as a follow-on activity to the NASA Earth Observing Missions Applications Workshop, which was held in February. Those interested in becoming involved in the July workshop are invited to contact Donnellan ([andrea.donnellan@jpl.nasa.gov](mailto:andrea.donnellan@jpl.nasa.gov)).

At the suggestion of Members, the Secretariat developed a one-pager highlighting the SDR's purpose and work – an informational "calling card" of sorts – for Members to distribute both inside and beyond their agencies. Members are invited to send comments and suggestions on the document to the Secretariat ([ross.faith@mantech.com](mailto:ross.faith@mantech.com)).

The group then turned to a discussion of the ongoing oil spill in the Gulf of Mexico. Peter Jutro (EPA) stated that the Environmental Protection Agency had activated an emergency operations

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center and issued an order to British Petroleum to stop subsurface use of the chemical dispersant Corexit until the environmental effects of its use in large quantities had been identified.

Applegate stated that in response to the spill the USGS National Wetlands Research Center in Lafayette, LA, had began focusing on conducting baseline studies of the Gulf Region before the slick makes landfall. These and similar studies will likely factor into future litigation concerning environmental damage caused by the spill.

Donnellan stated that NASA is mobilizing observation platforms in response to the spill. The agency was involved in discussions to determine the optimal UAVSAR observing strategy. Michael Goodman (NASA) stated that the agency began flying the Airborne Visible Infrared Imaging Spectrometer (AVIRIS) on NASA's ER-2 high altitude aircraft on 6 May 2010 as part of its response. The flights were expected to continue for at least two to three weeks.

Nell Codner (NOAA) stated that she would send a written update to the SDR later that day regarding NOAA's response. Grace Swanson (NOAA) stated that the International Charter on Space and Major Disasters had been activated.

Deb Ingram (FEMA) noted that the disaster was an unusual one for FEMA's attorneys. No Stafford Act declaration had been made yet.

Participating in the meeting from the Gulf Region via teleconference, Bruce Davis (DHS) stated that the oil spill was continual front page news in area newspapers. It seemed that some of the dispersant was washing up on barrier islands as an orange residue.

In order to pull together an informal report for the White House Office of Science and Technology Policy, Applegate asked Members to send one or two paragraph summaries of their agencies' responses to the spill to him (applegate@usgs.gov) and the Secretariat (kate.cantrell@mantech.com).

#### **IV. Report from the Vice-Chairs**

SDR Vice-Chair Dennis Wenger (NSF) reported that the UN International Strategy for Disaster Reduction's Global Assessment was now underway. At a conference at Florida International University later in the week involved parties would be laying out the assessment's framework.

Applegate reported that the SDR was working with the Department of State to possibly support a meeting for a regional North American midterm review of progress on implementation of the Hyogo Framework. He stated that the review meeting could possibly be held in conjunction with a meeting to engage nongovernmental organizations (NGOs) that are involved in Haiti's reconstruction as a way to educate the organizations on related science and technology issues. As several NGOs had indicated in the past a desire to become involved in the U.S. National Platform to the ISDR, which is strictly a government body as currently formulated, this meeting could offer the NGOs some proximity to the process without establishing formal participation.

#### **V. Report from the NSTC Liaison**

Sarah Johnson (OSTP) stated that the *Grand Challenges for Disaster Reduction Space Weather Implementation Plan* was currently in the clearance cue at OSTP and would hopefully be approved by the June 3 SDR meeting.

Jerry Miller (OSTP) stated that the space weather community would be holding its annual conference in early June. The 2010 Space Weather Enterprise Forum is scheduled for June 8 at the National

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Press Club in Washington, DC. This year's forum theme is "Building an Informed and Resilient Society - The Decade Ahead." The forum will bring together a blended audience of 200 to 250 people, comprising space weather experts from both research and operations, space weather users from both the public and private sectors, academia, international representatives, and policymakers to raise awareness and share information on space weather. Forum information and registration is available at [http://www.nswp.gov/swef/swef\\_2010.html](http://www.nswp.gov/swef/swef_2010.html).

Johnson reported that efforts continue at OSTP to restructure the NSTC Committee on Environment and Natural Resources and noted that the SDR would probably not be going away.

## **VI. Update on Long-Term Disaster Recovery**

Deb Ingram (FEMA) reported briefly on the DHS-HUD joint effort to draft a National Disaster Recovery Framework (NDRF). She stated that the framework was presently being worked at high levels and that the last version contained strong language for moving to a new paradigm of community building, capacity building, and looking at hazard data. Ingram also stated that the current version of the document charges the SDR with several tasks relating to the development of standards for conducting systematic risk assessments. In response to a question from Wenger, Ingram stated that the framework does include good recognition of the need for capacity building focused on pre-event recovery planning.

## **VII. Presentation: Iceland Volcano Eruption**

USGS Volcanologist Marianne Guffanti offered Members began her presentation on Iceland's recent volcanic eruption. She stated that because of a few long-lived eruptions (e.g., Tungurahua in Ecuador & Soufriere Hills in Br. W. Indies) and many short-lived eruptions (e.g., in Alaska), volcanic ash is in the atmosphere at cruise levels almost every day, somewhere around the globe. The accepted global risk-mitigation practice has been to avoid aircraft transit through ash clouds.

The International Civil Aviation Organization created the Global Ash Avoidance Program to quickly communicate warning messages about explosive eruptions and the whereabouts of ash clouds to air-traffic controllers, dispatchers, and pilots so that aircraft can be routed to avoid ash-contaminated airspace. The program relies on a worldwide system of 9 Volcanic Ash Advisory Centers (VAAC) to provide information on volcano monitoring, ash cloud detection, forecast cloud dispersion, warning messages, and training and education. These centers have primary responsibility for detecting ash clouds and forecasting their movement in the atmosphere.

The KLM encounter (4 engine flameout) in 1989 focused the mission of the Alaska Volcano Observatory on ash hazards to aviation. In the U.S., 5 volcano observatories monitor approximately 60 volcanoes. The Observatories assign AVIATION COLOR CODES that rank the activity level at each volcano. The Observatories issue notifications of activity to the public and affected groups, including new specially formatted message called VONA – Volcano Observatory Notice for Aviation - aimed at aviation users.

Forecasts of ash-cloud movement depend critically on the characteristics of an eruption, information which is typically provided by Volcano Observatories. Parameters such as plume height, eruption rate or erupted mass, duration, grain-size distribution, and mass distribution with altitude must be assigned immediately when an eruption is detected. But often there may be few data/observations to constrain these parameters. The better instrumented and studied the eruption – and the better the collaboration between Volcano Observatories and VAAC – the better the forecast of ash movement.

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Turning specifically to the Eyjafjallajokull eruption, Guffanti stated that the monitoring and community linkages that Icelanders had in place before the eruption allowed them to successfully evacuate people and animals from the acute flood hazard zone. Similar proactive readiness – for both ground and aviation hazards – is the goal of the NVEWS initiative (National Volcano Early Warning System) that SDR has endorsed.

Eyjafjallajokull poses a moderate hazard, but an enormous risk as it has the ability to shut down the world's busiest air routes. As a result of the long shutdown of European airspace, there is intense interest in defining a "safe" threshold concentration of ash that an aircraft can fly through without significant damage. Defining this threshold is a complex challenge involving three critical questions:

- What are the ash concentrations in the cloud in space and time? (*a question for scientists*)
- What are the tolerances of the engines under various conditions? (*a question for engine manufacturers*)
- How is a particular aircraft being flown on a particular flight? (*a question for the airlines*)

In response to the Eyjafjallajokull eruption, the ICAO has created an International Volcanic Ash Task Force (IVATF), which in close coordination with existing expert groups, will take on the following tasks:

- Evaluation of the Icelandic eruption;
- Revision of guidance on volcanic ash contingency plans;
- Review of operational response to volcanic ash encounter;
- Development of ash concentration thresholds;
- Improvement of ash detection systems;
- Review of notification and warning for volcanic ash;
- Improvement and harmonization of dispersion models; and
- Improvement of visual volcanic ash advisory centre (VAAC) products.

Steven R. Albersheim of the Federal Aviation Administration's (FAA's) Volcanic Ash Program presented next. Albersheim also is the U.S. member to ICAO International Airways Volcano Watch Operations Group (IAVWOPSG). The volcanic ash program needs to be sufficient to provide information to support Air Traffic Flow Management, Dispatchers, and Flight Crews decision-making to:

- Avoid ash
- Mitigate impact on overall operations short of total closure of airspace

Factors that need to be addressed include:

- Pre-eruptions, watch and warning capabilities
- Alert messages/collaborative decision-making/ensemble modeling
- Composition of ash cloud and its characteristics
- Quality observations that define height, location, density in time and space
- Engine and Air Frame tolerance to ash if ash cloud traversed

The FAA has an active program that defines National practices and procedures and partners with NOAA/NWS/NESDIS, USGS, DOD, NASA, and Smithsonian. FAA also has a small research program (\$1.6 M over 8 years) focused on model enhancement.

Internationally, the FAA acts as U.S. lead to the ICAO and World Meteorological Organization (WMO) for volcanic ash issues. The U.S. has two Volcanic Ash Advisory Centers: one in Anchorage which covers Alaska FIR, and another in Washington which supports Oakland & NY FIR, CONUS, Gulf of Mexico, Caribbean, Central America and 10 deg S for South America.



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National Weather Service Volcanic Ash Program Manager Jeff Osieny (NOAA) spoke about the agency's involvement, which includes several parts of NOAA, including:

- NESDIS (Satellite imagery resources – top and horizontal extent of cloud)
- Washington and Anchorage VAACs (detection/tracking, forecasting)
- NWS/OAR (modeling -- HYSPLIT volcanic ash dispersion)
- Meteorological Watch Offices (Aviation Warnings for Volcanic Ash – SIGMETs)
  - NWS/NCEP Aviation Weather Center
  - NWS Weather Forecast Office Honolulu
  - NWS Alaska Aviation Weather Unit
- OFCM WG/VA
  - Interagency Volcanic Ash Plans
    - Alaska
    - Northern Marianas
    - Pacific Northwest (in process)
    - Hawaii (planned)
    - Caribbean (planned)

NOAA coordinates activities related to WMO through the Commission on Aeronautical Meteorology (CAeM). It is currently working on a joint working paper to be presented at the WMO in Geneva in June 2010 to identify gaps related to the Icelandic eruption. NOAA has a standing working group to ICAO and 4 members to the IAVWOPSG to:

- Provide guidance and advice to the operation of the International Volcano Airways Watch
- Participate in the newly formed IAVTF (Task Force)

In response to the Eyjafjallajokull eruption, NOAA stood up a Volcanic Ash Working Group on April 26 to identify gaps and provide recommendations to enhance:

- Ash dispersion modeling
- Remote sensing
- VAAC operations

## VIII. Adjournment

The meeting adjourned at 12:15 p.m.

## IX. Future Meetings

The SDR meets on the first Thursday of every month from 10 a.m. to 12 p.m. unless otherwise noted.

\*Note: The SDR's 2010 meetings are scheduled to be held at the White House Conference Center.

June 3, 2010

September 2, 2010

November 4, 2010

July 1, 2010

October 7, 2010

December 2, 2010

August 5, 2010

## X. Agenda Items and Other Communications with the Subcommittee

Please send proposed agenda items and any other items intended for distribution to the full Subcommittee to Ross Faith (ross.fait@mantech.com).

## XI. Contact Information

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## SDR Leadership

David Applegate	Chair	703-648-6714	applegate@usgs.gov
Margaret Davidson	Vice Chair	843-740-1220	margaret.davidson@noaa.gov
Dennis Wenger	Vice Chair	703-292-8606	dwenger@nsf.gov

## Secretariat

Ross Faith	703-388-0308	Ross.Faith@ManTech.com
Kate Cantrell	703-485-8053	Kate.Cantrell@ManTech.com

## XII. Summary of May Actions

Action	Lead	By When
Send Dave (applegate@usgs.gov) and the Secretariat (kate.cantrell@mantech.com) one paragraph agency S&T response to the BP Oil Spill.	SDR Members	Friday, May 7
Let Ross (ross.faith@mantech.com) know if you have any comments or feedback regarding the development of a new "calling card" document.	SDR Members	Friday, May 21
Let Dave (applegate@usgs.gov) know if your agency would be interested in giving a short presentation at the June SDR meeting on the BP Oil Spill.	SDR Members	Tuesday, June 1
Let Ross (ross.faith@mantech.com) know if you are interested in participating in an ad hoc Haiti-Chile Lessons Learned Working Group.	SDR Members	ASAP
Let Ross (ross.faith@mantech.com) know if you are interested in participating in an ad hoc SDR International Working Group.	SDR Members	ASAP
Email Glenn Bethel (Glenn.Bethel@fas.usda.gov) if you would like to receive updates on sources providing data on the BP Oil Spill.	SDR Members	Standing
Send Sezin Tokar your ".gov" e-mail address to receive USG-only updates from USAID on global disaster response activities. (stokar@usaid.gov)	SDR Members	Standing
Contact Ross to receive copies of the Grand Challenges for Disaster Reduction Implementation Plan packets or CD. (ross.faith@mantech.com)	SDR Members	Standing
Let Dave or Ross know how you use the implementation plans, including when you link to the plans from your agency websites. Send Ross or Dave additional distribution suggestions, including relevant contact information. (ross.faith@mantech.com)	SDR Members	Standing