Volcanic Impacts Study Group

Overview

2007 National Lifelines Forum
October 2007

Objectives

- Facilitate knowledge about the impacts of volcanic hazards on lifelines and mitigation options
- Support research
- Assist lifelines assess research applicability
- Facilitate reconnaissance investigations and advocate for lifelines representation
- National focal point for volcanic impacts research
VisG – Annual Seminar

- Annual Seminar
  - Bringing researchers and lifelines together
  - Identify research directions
  - Student workshop

Recent Research on Volcanic Hazards and Risk

VisG Annual Seminar
Wednesday, 7 November 2007

- Volcanic impacts research – update
- Resources on the web
- Exercise Ruamoko
- Self-evaluation of Lifelines response plans
- Scientific Advisory Group meeting
AELG / VISG projects

- Volcanic Ash Review – impacts on lifeline services and collection/disposal issues (2001)
  - ARC study on disposal sites
- Volcanic Ash Impacts Reconnaissance Investigation (2002)
  - Watercare
- Volcanic Ash and Wastewater (2006/07)
- Volcanic Ash and Airports (2006/7)
- Volcanic Ash and Roads (2007/8)

VOLCANIC ERUPTION
Recommended Actions for Airports

Reduction
Develop a Volcanic Hazard Management Plan
Ensure this includes designated ash disposal sites
Maintain Volcanic Hazard Management Plan
- Regularly review zone to ensure it is up to date
Conduct regular exercises and training

Readiness
If warning is given that an eruption may occur, ensure stocks of the following equipment are available:
- Tarpaulin (Plastic sheeting)
- Sufficient quantities to cover vulnerable parts of aircraft grounded during the eruption.
  - windows, nose cone, engine intake, wheel assemblies
  - Further quantities to cover any machinery left outside
- Adhesive tape (duct tape)
  - Sufficient quantities to secure plastic sheeting to aircraft machinery, covering all engines
- Spare parts for essential vehicles & machinery
  - Air filters, oil filters, hydraulic fluids, sean, lubricants
- Cleaning supplies
  - Anti-static cloths, vacuum cleaner bags, cleaning fluids
- Filtration/dust masks & goggles
  - Sufficient masks for all avized staff for at least one week
  - Sufficient goggles for workers cleaning up ash
- Adequate harnesses to secure workers to slippery roofs
- Prior to arrival establish who elsewhere ash may be dumped

Response
Situation ash plane be generated that is likely to impact the airport/airfield the following steps should be taken:
- Activate Emergency Team, Business Continuity Plan and where appropriate safety issues are identified for either personnel,
  - Evacuate all personnel, close aircraft.
- Grounded Aircraft
  - Need to have vulnerable parts covered. Immediately confirm which aircrafts are to remain grounded.
  - Vulnerable parts include windows, pitot tubes, nose cone, engine intakes, wheel assemblies
  - Use plastic sheeting/tape and adhesive (duct) tape
  - All steps, spotters, etc should be fully closed
  - If significant rainfall is expected (or forecast), another aircraft to be ground if the nose has engines at the rear
  - Large surface areas (i.e. horizontal stabilizers) at rear of aircraft

Infrastructure
- Use as few external doors as possible for buildings (reduces ash contamination from outside)
- Cover electronic equipment inside buildings as fine ash may penetrate even closed buildings
  - Close buildings not essential for running the airport
  - Cover areas susceptible (inlets fans, heat pumps, etc.) in building exteriors
  - Do not use air-conditioning systems that pump out outside air
  - Store vulnerable ash in wet pulp or wet pulp as sucks moisture from electrical components (causing failures and fire risk)
  - Some use of mirrors, fans, etc. outside buildings may be possible during activity (routed, adaption to fan blades, bearings etc.)
  - Clean roofs frequently during a large eruption to prevent ash accumulating (especially with open hangar-type roofs)
- Take extreme care due to slipperiness of ash

Recovery
- Volcanic ash is highly abrasive and can be extremely corrosive
  - Take this into account when cleaning (especially aircraft)
  - Clean aircraft as quickly as possible to reduce contamination
  - Consult volcanic ash response plans before beginning aircraft and airport clean-up
  - Aeronautical procedures are followed
- Ensure ash is disposed of appropriately after minor

Further information on dealing with volcanic ash may be found in the following locations:
- [http://www.ash.org.co](http://www.ash.org.co)
- [http://www.ash.org.co/beta.html](http://www.ash.org.co/beta.html)