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 plan 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:

- **Tarpaulins / Plastic sheeting**
  - Sufficient quantities to cover vulnerable parts of aircraft grounded during the eruption, i.e. windshields, nose cones, engine intakes, wheel assemblies.
  - Further quantities to cover any machinery left outside.
- **Adhesive duct tape**
  - Sufficient quantities to secure plastic sheeting to aircraft/machinery, sealing all edges.
- **Spare parts for essential vehicles and machinery**
  - Air filters, oil filters, fuel filters, hydraulic fluids, seals, lubricants.
- **Cleaning supplies**
  - Additional brooms, vacuum cleaner bags, cleaning fluids.
- **Filtration / dust masks and goggles**
  - Sufficient masks for all involved staff for at least one week.
  - Sufficient goggles for workers cleaning up ash.
  - Adequate harnesses to secure workers to slippery roofs.
  - Prior to ashfall establish a tip site where ash may be dumped.

**RESPONSE**

Should an ash plume be generated that is likely to impact the airport, the following steps should be taken:

- **Reactivate**: Emergency teams, Business Continuity Plan and ensure health and safety issues are identified for all personnel.
- **Decide**: Fly aircraft out, cover aircraft.
  - Immediately confirm which aircraft are to remain grounded.
- **Grounded Aircraft**
  - Need to have vulnerable parts covered.
  - Immediately confirm which aircraft are to remain grounded.
  - Vulnerable parts include: windscreen, pitot tubes, nose cones, engine intakes, wheel assemblies.
  - Use plastic sheeting/tarpaulins and adhesive (duct) tape.
  - All flaps, spoilers etc should be fully closed.
  - If a significant ashfall is expected (> 5cm), anchor any aircraft to the ground at the nose that have:
    - engines at the tail.
    - large surface areas (i.e. horizontal stabilizers) at rear of aircraft.

**Infrastructure**

- Take extreme care due to slipperiness of ash.
- Use as few entries/exits as possible for buildings (reduces ash entrainment from outside).
- Cover electronic equipment inside buildings as fine ash may penetrate even closed buildings.
- Close buildings not essential for running the airport.
- Cover (where possible) intake fans or heat pump units on building exteriors.
- Do not use air-conditioning systems that pump in outside air.
- Damp volcanic ash may induce flashover on electrical components (causing failure and fire risk).
- Some use of systems that re-circulate interior air may be possible during ashfall (expect abrasion to fan blades, bearings etc).
- Clean roofs frequently during a long-term eruption to prevent ash accumulating (especially wide-span hangar-type roofs).

**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 mitigate corrosion.
- Consult volcanic ash response plan (where present) before beginning aircraft and airport clean-up.
- ensure correct procedures are followed.
- Ensure ash is disposed in appropriate/safe manner.
- Check navigation systems and friction test of the runway.

Further information on dealing with volcanic ash may be found in the following locations:
http://www.geonet.org.nz
http://www.ca.gov/ajp/