



FIELD OPERATIONS GUIDE

VOLCANIC ASHFALL

SAFETY CONCERNS

Background:

Clark County may be affected by the eruptions of a number of Northwest volcanoes. Ashfall is the main hazard we face locally.

Because of prevailing winds, most ashfalls that reach the county will be light, but accumulations of over four inches are possible in a worst-case combination of eruptive column size and wind direction. Such heavy ash amounts could produce disaster conditions, crippling transportation, utilities and communications, and collapsing some structures. Any airborne ash, regardless of accumulation amounts, can pose hazards to humans, animals, and machines.

Basic Information:

HEALTH: Volcanic ash is misnamed: it is actually a mixture of very fine fragments of rock, mineral grains, and volcanic glass. It is generally inert, but may be slightly acidic. It can range in size from 0-2 mm. Any ash particles are very abrasive, but the tiniest particles, <10 microns, are especially hazardous. Inhalation of these particles can cause serious airway problems. Those with compromised airways are at greater risk. Eye surfaces can be abraded by ash exposure, as can skin in extreme cases. Skin and eye irritation is possible even in lighter ashfalls. The best protection is simply to stay indoors and keep ash out.

DRIVING: Ash ingestion can ruin internal combustion engines. Dry ash on roadways can create traction problems similar to that caused by a layer of ice. Poor traction and/or limited visibility from airborne ash may make driving extremely hazardous.

STRUCTURES: Accumulated ash is extremely heavy. Some buildings may be in danger of collapse with an accumulation of four inches of DRY ash. Flat roofs are the most vulnerable. Water (from rain or flushing efforts) can increase ash weight exponentially. Ash should be kept from entering structures and machinery whenever possible. It can ruin computers, short out electrical equipment, and cause health hazards in otherwise safe areas.

PRIORITY ACTIONS

If an ashfall is predicted for our area:

- Close up station and vehicle windows, doors, etc. Shut off HVAC systems.
- Refer to station and department Disaster Plans.



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- Notify Duty Chief and PIO.
- Insure that your company members are each equipped with N95 masks, wildland goggles, and brush PPEs.

If significant ashfall is occurring:

- Do all of the above, plus:
- Coordinate response plan with your BC. Limit driving to emergency-only response, as in a snow or ice emergency.
- Keep tower/truck companies in quarters, except for working fires and other unavoidable responses. The greased aerial ladder surfaces will collect ash, which can compromise lubrication; ladder use should be strictly limited when airborne ash is present.
- Require that all members wear N95 masks and goggles when outside.
- Insure that all members use either full brush PPEs or full turnouts, with helmets or hats, when outside, and that these are removed when entering vehicles or buildings. This will keep skin exposure to a minimum, while limiting the transfer of ash to living areas.
- Prepare for possible power interruptions, radio transmission problems, as well as telephone system problems.
- Keep vehicle components free of ash accumulation (radiator, engine compartment surfaces, windshield, etc.) by use of brush or hose outside, with engine off, air filter cleaning or replacement, conducted in ash-free area of facility.

SPECIAL CONSIDERATIONS

- **Consider removing contact lenses** when airborne ash is present.
- **Do not use windshield wipers to clear ash.** Glass can be permanently scored whether or not washer fluid is used. Brush or rinse off ash.
- **Monitor depth of ash accumulation** on station roofs, gutters and other horizontal surfaces, and keep your BC apprised of conditions.
- **Do not create extra airborne ash during removal operations.** Dampen ash before scooping it from roofs or sidewalks. Flush with water only where weight and runoff considerations do not apply.
- **Plan ahead - handle ash only once.** It will not "melt away" like snow if it is left piled on the edges of roadways or sidewalks, and piles will have to be moved later to a permanent disposal location.
- **Limit demand on air filters; shut off motors at scenes** if not needed to pump or operate aerial.
- **Air filters may need to be replaced after very few miles of driving.** Monitor filter restriction indicators and/or vehicle performance.
- **Many injuries during ash events are caused by falls,** especially from roofs. Plan for increased EMS run volume during and after ashfall event.