

Lessons Learned



Date/Time: 21 August 2010 – 2030 hrs

Location: Peak Fire, Beckwourth, CA

Narrative: At approximately 1830 21 August 2010, the Tahoe and Plumas National Forests responded to a vegetation fire in the Beckwourth, CA area. Upon arrival at scene resources initiated a standard anchor and flank attack on a fast, wind-driven fire in grass and sage. A combination of mobile attack with the Type 3 engines and line construction with the dozer quickly contained the fire at 6 acres. Mop up operations started immediately after initial containment. Resources on scene included 2 chief officers, 2 patrols, 7 Type 3 engines, 1 Type 2IA crew, 1 Type 6 engine, 1 water tender, and 1 dozer.

At approximately 2030 hours, the Operations Section Chief (OSC) was notified by the Division Supervisor (DIVS) of the fire burning in an unknown material that had a strange smell, unusual fire activity, and was causing some minor respiratory irritation. The DIVS informed the IC that there was approximately 30 firefighters exposed to the material and that the material was located at the downwind portion of the fire. All firefighters were removed from the area of concern. An ALS ambulance was requested to assess the exposed firefighters for respiratory distress. The Chief of the local cooperating fire department, who is a mobile intensive care nurse, heard the resource order and offered his assistance. Upon his arrival he was assigned as an emergency medical services (EMS) Group Leader and managed the medical checkout of all the exposed firefighters. A total of 37 firefighters were examined by the EMS group. The examination included vital signs, auditory lung assessment, and a concise patient interview as well as a patient medical history. None of the examinations revealed any signs or symptoms outside of normal limits.

It was then decided that all of the exposed firefighters would receive a medical review at the local hospital (Eastern Plumas Hospital) the following day. All of the exposed firefighters were briefed on signs and symptoms associated with respiratory distress and actions they should take if they were experiencing them. All exposed firefighters were examined the next day and all of them were found to be asymptomatic.

During the field medical examinations, the landowner was contacted and it was determined that wood fly ash from the local co-generation plant had been applied to the specific location approximately 4-5 years ago as a soil amendment. Documentation of the material was delivered from the local co-generation plant the next morning which included a Job Safety Analysis, Material Safety Data Sheet, and a Fly Ash Chemical Analysis Report.

Wood Fly Ash is a byproduct of burning wood material in an energy generating plant to create steam which drives turbines. The fly ash is a chemically inert material that with excessive occupational, uncontrolled inhalation may cause lung disease. The material is extremely fine, dark black in color and readily disperses with any mechanical agitation or wind. The area involved in the Peak Fire was approximately a quarter acre in size and varied from 1 to 2 feet deep. After the area had been burned, the fly ash exhibited the ability to glow when stepped on and would glow when agitated in the air.

The following morning, the fly ash area of the fire was found to be holding a high level of residual heat in relation to the rest of the fire. It was found to be slightly hydrophobic and with its rapid aerial dispersion with mechanical agitation, we did not want to actively stir the area while applying water.

We utilized 3 water tenders, 2 type three engines, a portable tank and a sprinkler system to apply high volumes of foam and water to saturate the area. After review of the Job Safety Analysis, Material Safety Data Sheet, and a Fly Ash Chemical Analysis Report (provided by Sierra Pacific Industries, Inc.), our mitigation measures included keeping all firefighters upwind of the water application area. As an additional precautionary measure, SCBA's were made available in the event that a prolonged exposure was unavoidable. All firefighters were also advised to shower and clean clothing every night.

Lessons Learned:

- **Upon recognition of fly ash application areas, minimize exposure to personnel by keeping out of the area and upwind.**
- **If possible prevent fire from burning into fly ash application areas.**
- **Have application areas pre-identified to pre-plan suppression operations by working with local co-generation facilities to identify application areas.**
- **Use of an Emergency Medical Services coordinator facilitated the evaluation of exposed firefighters and aided in the determination of the personnel needing further treatment while allowing for incident operations to continue.**
- **Always expect the unexpected and be mindful that there may be an unidentified hazard on the incident that no one is aware of.**