C33 Landfill Operations and Vehicle Rearward Visibility Hazards: A Case Study

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After attending this presentation, attendees will learn some of the hazards involved in landfill operations to include those involved with vehicle visibility issues and other hazards created by the lack of adequate procedures and training.

This presentation will impact the forensic science community by presenting a case study of a largely unreported or under reported industrial hazard situation.

An active "landfill face" is perhaps one of the more hazardous work environments in industry wherein workers and industrial vehicles share the same work space. The active landfill face is a work environment whose topography is continually and continuously changing. Mounds of debris and garbage are delivered and dumped by waste hauler trucks on the landfill face or tipping area as directed by the "waste spotter" or just "spotter." Additionally numerous large noisy earth moving vehicles also under the direction of the spotter are active on the landfill face to both move the debris and to pack it down. The subject track loader which weighs more than 29 tons is a large machine and because of its size will present visibility limitations to the operator especially when travelling in reverse. This is significant given that it is known and foreseeable that these vehicles will travel in reverse approximately 50% of the time during normal operational conditions.

The case study reviewed herein, involves a track loader commonly referred to as a bulldozer working on an active landfill face and travelling in reverse wherein the bulldozer driver was inadequately trained. Additionally, the bulldozer back-up alarm while installed and operating was mounted behind portions of the grill support structure. There was closed circuit TV system provided with the bulldozer to guide the operator while travelling in reverse. The accident occurred while the bulldozer was travelling in reverse over a hillock of debris striking the spotter and amputating both his legs. Although having a back-up alarm its effectiveness was considerably diminished given the loud ambient noise generated by the vehicle's large diesel engine and the blocked mounting location of the back-up alarm.

Given that the spotter works in an especially hazardous environment it is imperative that any landfill operation provide the spotter with a detailed work description and thorough training. In this case study there were no written procedures in place and no training provided for the spotter. Therefore, there were no procedures or any training in place for the spotter and the bulldozer operator to communicate as to their location and intended movement. Even though the landfill operation had a person identified as the landfill's safety director, the person so identified admitted that he had no training in safety, that he was not really responsible for safety and that indeed there was no knowledgeable individual in the company responsible for safety at the landfill operation at the time of the accident. This situation is especially egregious when noting that the subject bulldozer was with an optional "waste handler" package, a configuration that was specifically designed for use in sanitary landfills and other waste handling situations. Therefore at the time of sale, the track loader manufacturer knew of the intended use of the bulldozer and that it would be travelling backwards approximately 50% of the time and when travelling in reverse the vehicle operator would have limited visibility of the vehicle's immediate surroundings. Assessments of the vehicle visibility was made by the manufacturer on the basis of purely humanistic subjective and static driver evaluations without taking into account the dynamic visibility issues arising with the vehicle travelling in reverse on the crowded and busy active landfill face. The subject bulldozer was not equipped with any of the commercially available in-cab camera systems nor even any outside mirrors to mitigate against the vehicles rearward visibility limitations.

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