

A **42 year old male** employee was **struck by** falling product while operating an AGV (automated guided vehicle). This employer produces block, sliced, and shredded cheese products.

The victim worked second shift at the site as an AGV operator. Automated Guided Vehicles (AGV) are used in the warehouse to pull product from the assembly line (palletizer) and transfer these pallets to the storage rack system in the warehouse. The AGVs also pull product from the storage racks and stage them on the floor for shipping.

On August 24, 2021, the victim was injured as he attempted to reset a fault on AGV #3 that had stopped in row 9, bay 58, level 4 of the DC warehouse. It was explained that when an AGV shows a fault, the machine stops where it is and what it is doing until the fault is reset. According to fault codes pulled from AGV #3 at the time of the incident, the fault code stopping AGV #3 appeared as a "TC Hold Sec". The code showed because the pallet being raised by AGV #3 did not clear a portion of the racking system and one of the AGV sensors thought something was blocking the pallet's progress into the racking system.

When the victim arrived at AGV #3, it appears he placed the machine in the manual mode and proceeded to manually place the pallet in the racking system. It was stated that manual mode is normally used when a fault or code occurs and the operator needs to move the fork assembly to clear the fault or code.

There is a monitor in place on the front side of the interface control panel of the AGV. This camera system allows an operator to see the location of forks and/ or product when the unit is placed in manual mode. When the AGV is placed into the manual mode, a portion of the sensors on the lift are overridden giving the operator full control of the system. Some of the sensors that are overridden are the ones that sense when the path of the forks and/ or product on the forks are blocked. The main reason the camera and screen were installed on the lift is to allow the operator to see more clearly when working the forks at elevated heights. This camera only shows in real time and does not save a record of what is shown.

These the "black box" was pulled from AGV #3. The "black box" provided codes and sensor readings from the AGV, along with times in which each code appeared. It is assumed that sometime during the task of placing the pallet into the racking system, contact was made between the AGV and the racking system on level 5 damaging the cross brace which caused approximately 23 cases of cheese to fall on the victim.

**Citation(s) as Originally Issued**

A complete inspection was conducted at the accident scene. Some of the items cited may not directly relate to the fatality.

**Citation 1 Item 1**

**Type of Violation: Serious**

**\$5000**

**29 CFR 1910.178(l)(2)(ii):** Training did not consist of a combination of formal instruction (e.g., lecture, discussion, interactive computer learning, video tape, written material), practical training (demonstrations performed by the trainer and practical exercises performed by the trainee) and evaluation of the operator's performance in the workplace.

In that AGV training only consisted of the review of the AGV SOP and the trainee observing a seasoned operator operating an AGV. Practical exercises performed by the trainee and an evaluation of operator performance were not conducted.



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