Fatal 6 - Explosion at an asphalt plant

WHAT HAPPENED

Changes to the production process at an asphalt plant and a faulty isolator valve allowed fuel to enter the aggregate bucket elevator via the pneumatic system.

Contact with the hot aggregate resulted in a build up of flammable gases, which ignited when the plant burner started up, causing an explosion; the explosion was sufficient to blow the top of the tower some distance and cause extensive damage to the tower casing. If anyone had been hit by this, it would have caused a serious injury or fatality.

Note: Changes to the original system design, potentially dating back 30 years, did not consider the danger of back pressure in the fuel system. A subsequent change a few months before the incident meant fuel was being delivered at a higher pressure, which allowed it to enter the air system.



LEARNING POINTS / ACTIONS TAKEN

Key Points

- The original design change to eliminate manually adding fuel to the system was flawed.
- The potential effects of further changes to the system were not fully considered.
- A faulty isolation valve allowed fuel to continue to enter the system after it was turned off.

Learning Points

This could have been avoided through effective management of change and robust inspection and defect reporting of all safety critical equipment.

Key Review Points

- Ensure an effective management of change process is followed.
- Effective equipment inspections that includes all safety critical valves
- Encourage defect reporting and ensure action is taken promptly.

LOCATION:	**ASPHALT/COATING PLANT**	**ALERT STATUS:**	**Normal**
ACTIVITY:	**PRODUCTION AND PROCESSING**	**DATE ISSUED:**	**21/01/2020 12:43:48**
SUB ACTIVITY:	**ASPHALT & COATED STONE**	**INCIDENT No:**	**01544**