Incident Description

During routine testing of the high-speed abort gates in June, two similar incidents occurred where the devices failed to operate.

High-speed abort gates are designed to function with the fan in operation to divert sparks or burning material prior to entering the baghouse.

Inside of abort gate showing material build-up and activating spring assist

Incident #1

- Historically the abort gate testing has been completed with the main blower fans off
- During testing in June, the abort gate was tested with the fan in operation and the gate would not drop against the force of the fan
- The gate, sensor and upstream/downstream equipment was fully inspected with no issues detected
- The build-up of material between the abort gate and back blast damper was cleaned
- The magnet was releasing properly and springs were adjusted to the maximum tension with additional wedges added to increase the force. Despite the changes, the gate would still not drop against the force of the fan
- The contractor added 'pre-loaded helper springs' which finally permitted the gate to drop against the force of the fan

Incident #2

- During commissioning of a newly installed abort gate, the abort gate was tested with the blower fan in operation and the gate would not drop against the force of the fan
- The device was 'new' and no material build-up was present nor any other restrictions which could adversely affect the operation of the abort gate
- The high negative static pressure would not permit the gate to drop and the internal spring assist function required adjustment to force the gate to slam closed
- The size of the gate, airflow and static pressure are all key determinants in the required force of the spring assist function

Both critical deficiencies would not have been discovered if the abort gates had not been tested under 'live' conditions with the fans in operation

TESTING MUST ALWAYS BE COMPLETED WITH THE FAN IN OPERATION