

# Reduction of the Explosive Potential of Ammonium Nitrate by Coating with Low Cost, Coal Combustion Byproducts

## Minimizing Explosives

Despite its critical and beneficial role in agriculture, ammonium nitrate (AN) fertilizer has become a vehicle for spreading chaos and can pose an ominous threat to society when misused. It is often a weapon of choice for acts of terrorism due to its relatively low cost, ready availability, ease of assembly, and magnitude of destructive force.

The destructive power of (AN) fertilizer mixed with fuel oil has been graphically demonstrated in a number of malicious attacks from the Alfred P. Murrah Federal building in Oklahoma City to the Marriott Hotel in Jakarta.

A method to reduce the explosive character of ANFO would diminish its value as a weapon.

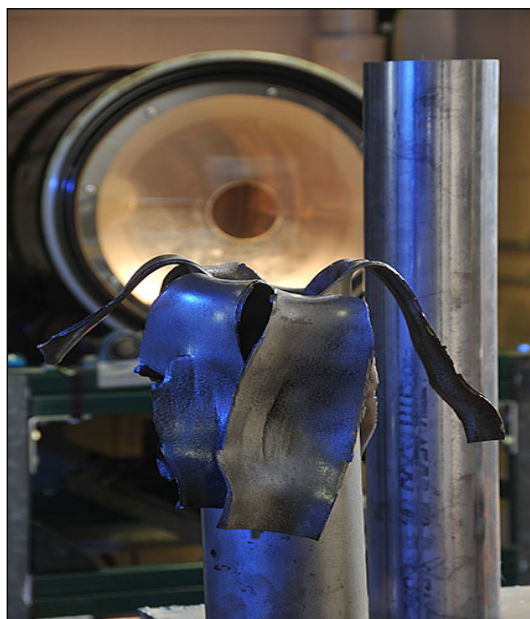
## A Solution in the Making

Dr. Darrell Taulbee with the Center for Applied Energy Research at the University of Kentucky demonstrated that the explosive potential of ammonium nitrate can be reduced by coating ammonium nitrate prills with inexpensive and agriculturally attractive, coal combustion by-products (CCBs) that are produced at coal-fired electric power plants.



## Project Progress

The primary objective of the project was met, in that it was demonstrated that coating ammonium nitrate fertilizer with coal combustion byproducts is an effective means of reducing the explosive potential of ammonium nitrate. The product resulting from this project, Fertisafe™, has received the Safety Act designation.



## Moving Forward

Market research and end-user surveys were conducted to determine overall size of the market based on current regulations and liability issues and pending legislation related to AN. While the research met all project goals, additional testing and cost analysis indicated that Fertisafe did not offer a significant competitive advantage over a new product offered by a private sector company. The project has been completed. Reports of the research results are available from NIHS.



To learn more about this project, contact: Jay Robinson, Program Manager, at [jay.robinson@hq.dhs.gov](mailto:jay.robinson@hq.dhs.gov) or Ewell Balltrip, NIHS, CEO at [eballtrip@thenihs.org](mailto:eballtrip@thenihs.org) 2015-01.1pager

