

## Partridge Raleigh Oilfield Explosion and Fire

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<https://www.csb.gov/partridge-raleigh-oilfield-explosion-and-fire/>

### Activity

Partridge-Raleigh oilfield in Raleigh, Mississippi contracted Stringer's Oilfield Services with the project of relocating three of the four oil production tanks, which were located on the Partridge property. These four tanks were set up in a straight line about four feet apart, where the workers were going to do the tank connection. These oil tanks were large ranging from 15 to 20 feet tall and 12.5 feet in diameter. The contents inside the tanks included hydrocarbons, ethyl benzene, xylene, toluene, and naphthalene fumes. On June 5, 2006, four contractors began work on the tanks to complete piping connections between the tanks.

### Hazard

The hydrocarbons present inside the tank are flammable.

### Preventive Actions and Safeguards

Ensure safe work practices are in place when dealing with any work with the oil production tanks.

### Contingency Plan/ Mitigating Actions

Check the surrounding conditions are workable and safe.

### Initiating Event

Three of the workers climbed on top of the tanks and positioning a ladder between two of the tanks trying to create a makeshift scaffold. The worker, who was performing the welding, attached his safety harness to the top of one of the tanks and situated himself on a ladder. In order to connect the tanks by piping, the welder had to weld a pipe fitting onto the side of one tank before attaching a short length of pipe to the fitting and to the open-ended pipe on the adjacent tank.

### Incident

The workers were unaware of the flammable hydrocarbon vapor that was venting from the open-ended piping of the tank. As soon as the welder began welding, the vapors ignited immediately. The fire flashed back into the tank, which two of the workers were holding the ladder and flashed into the third tank. The flash fires in the tank caused a rise in pressure, which caused the two tanks to have their tops blow off. The three contractors on top were thrown by the force of the explosion which in their death. The welder survived and only suffered a broken ankle and hip, all because he was wearing a safety harness.

### Lessons Learned

Unsafe work practices directly contributed to the severity of this accident. The workers

should have been aware of the possible vapors being released from the open pipe and should have isolated it or capped the end. Also the ladder should not have been used in place of a scaffold. Instead of properly checking for flammable vapor, they checked by using dangerous practice called flashing which involves inserting the welding torch into the tank's hatch to check if all vapor is removed. It imperative to be following safe work practices and be checking properly for flammable vapors to ensure all conditions are safe to be working in.

