GOOD MORNING, MY NAME IS ERVIN LEE AND I LIVE IN MINOT, ND. I WANT TO THANK SENATOR SINNER FOR INVITING ME TO THIS MEETING TODAY. OUR FAMILY LIVED IN THE SOURIS RIVER VALLEY. WE ARE CURRENTLY FIXING OUR HOME THAT WAS FLOODED IN 2011 AND PLAN TO MOVE BACK INTO OUR HOUSE THIS SUMMER.

OUR HOME IS LOCATED BETWEEN THE BNSF AND THE CANADIAN PACIFIC RAIL TRACKS IN MINOT. WE AND OTHER FAMILIES WHO LIVE BY THE RAIL TRACKS ARE CONCERNED ABOUT THE POTENTIAL FOR A DERAILMENT. WE WENT THROUGH THE CP DERAILMENT WHICH RELEASED ANYHDROUS AMMONIA THROUGHOUT THE VALLEY IN 2002.

WE NOW HAVE THE POTENTIAL FOR AN UNCONTROLLED FIRE FROM SUCH AN EVENT SUCH AS WHAT HAPPENED LAST YEAR IN CASSETLETON. LAST WEEK THE MINOT DAILY PUBLISHED AN ARTICLE WHICH SAID THE NUMBER OF RAIL CARS MOVING BAKKEN OIL WAS 400,000 IN 2013. THIS MEANS THAT APPROXIMATELY 3,700 UNIT TRAINS ARE PASSING THROUGH THE MAJOR CITIES AND TOWNS THAT ARE ON THE BNSF AND CP RAIL TRACKS, INCLUDING THOSE SHORT LINE RAIL ROADS.

I HAVE BECOME AWARE OF A NEW FIRE FIGHTING TEHCNOLOGY WHICH WHILE NOT REDUCING THE POTENTIAL FOR A DERAILMENT CAN SIGNIFICANTLY REDUCE THE DAMAGE CAUSED BY A RAIL CAR EXPLOSION. I WOULD LIKE THIS COMMITTEE TO USE ITS RESOURCES TO BRING THIS TECHNOLOGY TO THOSE FIRST RESPONDERS AND TO THOSE NORTH DAKOTA COMMUNITIES CURRENTLY BEING AFFECTED BY THE BAKKEN OIL PLAY.

THIS TECHNOLOGY WAS DEVELOPED BY MICHAEL RILEY OF BALTIMORE, MARYLAND. MIKE RILEY IS A SCIENTIST WHOSE PRIMARY BUSINESS FOCUS IS ON DEVELOPING MATERIALS AND PRODUCTS FOR THE CEMENT INDUSTRY AND SAFETY PROTECTION FROM FIRES.

MIKE'S FATHER WAS THE HEAD OF THE BALTIMORE FIRE DEPARTMENT AND SO MIKE GREW UP WITH A KEEN UNDERSTANDING OF THE RISKS AND DANGERS OF FIREFIGHTING. HE AND HIS ASSOCIATES HAVE DEVELOPED A NEW FIRE EXTINGUISHING TECHNOLOGY THAT

1. REDUCES THE PHYSICAL THREAT TO THOSE FIRST RESPONDERS ARRIVING AT A FIRE
2. ALLOWS FIRST RESPONDERS TO HAVE EQUIPMENT AVAILABLE TO FIGHT A FIRE FROM A SAFE DISTANCE WHILE SIMULTANEOUSLY USING A CHEMICAL AGENT THAT IS MORE EFFECTIVE THAN THE CURRENT CHEMICALS AVAILABLE TO FIGHT FIRES
3. IS COST EFFECTIVE
4. CAN PROVIDE ANOTHER TOOL TO FIGHT FIRES

I HAVE A SHORT PRESENTATION PREPARED BY MIKE RILELY TO INTRODUCE HIS TECHNOLOGY.

I APPRECIATE THIS OPPORTUNITY TO APPEAR BEFORE THIS COMMITTEE AND AM AVAILABLE FOR QUESTIONS.

THANK YOU.

FIRE CONTROL TECHNIX, LLC

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fct

RAIL TANK CAR FLAME SUPPRESSION SYSTEM: A NEW TECHNOLOGY CONCEPT

fct

Background:

- **Companies have been working for over 30 years to replace Halon (damages the ozone layer)**
- **Replacements exist, but they require larger volumes of chemicals to extinguish the same size fire; they also take longer to extinguish the fire**
- **The longer they take, the more they generate a deadly decomposition product – hydrofluoric acid**

The need still exists for an agent to be as effective as Halon in terms of agent quantity and time to extinguish a fire

A BREAKTHROUGH APPROACH

- FCT developed a method to product nano-particles of a safe, non-toxic extinguishing agent

- This nano-particle, when added to commercially existing Halon replacement chemicals, was able to extinguish a fire a fast as Halon, and with LESS total extinguishing agent. Test were performed by the U.S. Army Fire Laboratory at the Aberdeen Test Center, MD

- The resultant product was produced (800 units for testing) under contract for the US Army for use in handheld fire extinguishers for military aircraft.
- These handheld units can also be used by local first responders (fire departments, police, highway patrol, ambulances, etc.)

- A new RFP is being issued to produce 15,000 of the handheld devices for the Army

- The new blend of nano-particle and extinguishing agent is called *Nano-X*

fct

Flame-out

Nano-X

A RADICALLY NEW DESIGN

- **In addition to the conventional handheld design, FCT has patented a radically new design that can be operated with no personnel or electronics.**
- **The new device, called Flame-Out, is a polymer tube filled with the Nano-X**
- **It operates under a very simple principal: extinguish the fire before it gets TOO BIG**
- **Simply described, Flame-Out is located at a source where a fire is most likely to occur (typically inside a piece of equipment)**
- **Once the fire ignites, the heat from the flame weakens the tube and it ruptures, spraying its agent rapidly into the fire**
- **Testing has been done on vehicles, airline transport containers, chemical hoods, and other small enclosures**
- **The devices used to accomplish this are compact: 36 inch length x 2 inch diameter**

fct

Flame-out

Nano-X

CAN THIS TECHNOLOGY BE SCALED TO MEET RAIL TANK CAR NEEDS?

- **Initial feasibility studies would be required**
- **Device design may be modified, or the current design could be placed in multiple units and multiple locations attached to the railroad car (external or internal)**
- **Testing would need to be done in conjunction with the railroad companies**
- **FCT would work with Federal, State, and local authorities to train**

  and integrate the technology for railroad safety

fct

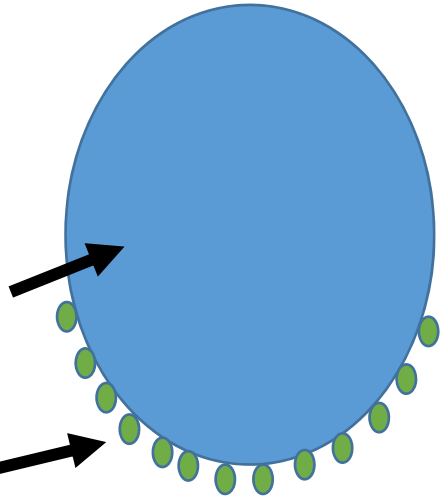
Flame-out

Nano-X

FLAME OUT TECHNOLOGY SIMULATION A TRUCK EXPLOSION

Hold cursor over photo, then press arrow to start video

CONCEPT FOR TANK CAR EXTINGUISHER DESIGN



- Attach tubes on external or internal walls

- Specific physical location and agent quantity will be determined from modeling and simulation studies

Future Design Efforts

- Low cost, pressurized tube extinguishers
  - pressurized nylon tube
  - pyrotechnic initiator
  - low profile for interior placement

- Fire extinguishing projectiles
  - extreme applications
  - high rise
  - soft, non-fragmenting rounds
  - launched into fire using conventional systems (tear gas grenade launcher, etc.)

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