



July 7, 2010

Mr. Adam Richardson
President, N2 Towers, Inc.
Belleville, Ontario, Canada

Subject: Automatic detection and N2 Generator explosion suppression tests the week of May 24, 2010.

Dear Mr. Richardson,

This letter confirms that during the week of May 24, 2010 at the UTEC Energetic Materials testing facility ("UTEC"), located in Hallowell, Kansas the following performance characteristics were observed during the automatic detection and N2 Generator explosion suppression tests, which were conducted in the presence of representatives from Underwriters Laboratory's Inc. and the US Army (TARDEC). These tests were conducted in a 130 cubic foot Lexan test chamber, modeled after a similar test chamber used by the National Research Council of Canada (NRC) in 2007, "Study of Explosion Protection in a Small Compartment."

When an explosive fire was detected, a fire detection/discharge control system was programmed to give a delay of approximately 44 milliseconds. After this delay, the system activated either one 10 inch long N2 Generator or two 6 inch long by 6 inch diameter N2 Generators to extinguish the fire. Several different fire tests were conducted inside the test chamber, during which an air source supplied 85 psi air and gasoline to the dual fuel spray nozzle (re: NRC 2007) was blown across an electrical sparking ignition source to ignite an explosive fire ball within the test chamber. The test chamber's pressurized fuel spray nozzle was discharged for 2.2 seconds against the ignition source which was electrically energized for three seconds. Two tables follow, giving the parameters used for five automatic detection and N2 Generator explosion suppression tests conducted on May 26, 2010.

Tests 1 through 4 two 6" N2 Generators on May 26 were mounted in opposite diagonal corners of the test chamber, with the left side N2 Generator being in the adjacent corner from the explosive test torch. The N2 Generators were mounted vertically complete with N2 military diffusers, which have two single lines of discharge ports which cause the discharged N2 wind vorticity to travel from corner to corner in a plane parallel to the floor of the test chamber.

During test 1; the 6" N2 Generator closest to the test torch (left side) was activated first and the second N2 Generator (right side) was activated 390 milliseconds later. The explosive fire was extinguished but there was re-ignition during the extended 2.2 second fuel spray and 3 second energized sparking ignition source.

During tests 2, 3 and 4; the 6" N2 Generator furthest from the test torch (right side) was activated first and the second N2 Generator was activated only 100 milliseconds later (which is the total approximate discharge time for one N2 Generator). In tests 2, 3 and 4 the explosive fire was extinguished and there was no re-ignition of the extended 2.2 second fuel spray against the 3 second sparking ignition source.

During test 5; one 10 inch N2 Generator complete with N2 military diffuser was mounted horizontally near the ceiling panel opposite the test torch discharging towards the ceiling, traveling in along the hexagonal contour of the chamber; the explosive fire was extinguished and no re-ignition of the test occurred.

In the table below, the preset timed delay from fire detection until the first generator was fired is given under "Delay for 1st Generator." The next column gives the delay specified from the firing of the first generator until the second generator was fired. The time of extinguishment was determined from high-speed video taken from the time of detection until no flames are seen in the chamber. Tests 4 and 5 included two 1 foot diameter by 3 foot tall pieces of steel pipe mounted to the floor of the chamber to try and impede the effectiveness of the generated wind vorticity. Combined volume of the obstructions calculated to be 2.36 cubic feet.

Test Parameters For May 26th, 2010 Testing

Test No.	Description	Delay for 1 st Generator	Delay for 2 nd Generator	Time of Extinguishment	Re-ignition?
1	2 – 6 inch Generators	42 ms	390 ms	405 ms	Yes
2	2 – 6 inch Generators	44 ms	100 ms	185 ms	No
3	2 – 6 inch Generators	44 ms	100 ms	150 ms	No
4	2 – 6 inch Generators, with obstruction	44 ms	100 ms	160 ms	No
5	1 - 10 inch Generator, with obstruction	44 ms	n/a	215 ms	No

Test Results From May 26th, 2010 Testing

Test No.	Description	Noise Level	Booth Pressure	Minimum O ₂ Content	Maximum CO Content
1	2 – 6 inch Generators, 390ms delay	n/a	0.8 psi	15.2 %	1036 ppm
2	2 – 6 inch Generators, 100ms delay	139.5 dB	1.4 psi	15.6 %	840 ppm
3	2 – 6 inch Generators, 100ms delay	139.4 dB	n/a	15.3 %	910 ppm
4	2 – 6 inch Generators, with obstruction	139.6 dB	n/a	15.3 %	691 ppm
5	1 - 10 inch Generator, with obstruction	139.7 dB	1.5 psi	15.4 %	712 ppm

Unit activation during fire extinguishing tests does not give production of hydrogen fluoride decomposition gasses, due to the fact that there are no fluorine chemicals used in the production of the N2 Generator's propellant formulation.

During similar automatic detection and N2 Generator explosion suppression tests conducted at UTEC's Test facility Labs the week of January 25, 2010, a carbon dioxide level of ~500 parts per million was recorded and 5.93 mg per cubic meter of particulate matter was collected after activation inside the test chamber.

If you have any further questions or require any further information regarding the N2 Towers test data, please contact the undersigned.

Yours truly,



Gary Eck
Vice President
UTEC Corp, LLC