



SRB TECHNOLOGIES (CANADA) INC.

320-140 Boundary Road
Pembroke, Ontario, Canada, K8A 6W5
Tel.: (613) 732-0055
Fax: (613) 732-0056
E-Mail: sales@betalight.com
Web: www.betalight.com

FULL REPORT

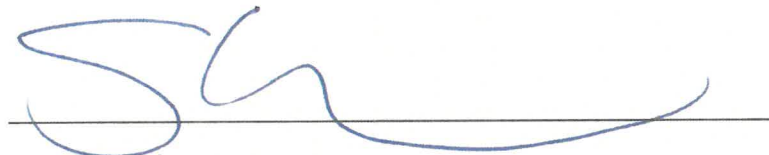
Implementation of Contingency Plan – February 19, 2021

Author:

A handwritten signature in black ink, appearing to read 'JMac', written over a horizontal line.

Jamie MacDonald
Manager of Health Physics & Regulatory Affairs

Accepted:

A handwritten signature in blue ink, appearing to read 'SLevesque', written over a horizontal line.

Stephane Levesque
President

Date Submitted: March 12, 2021

Submitted To: Lester Posada, Project Officer (CNSC)

UNPROTECTED

SRBT Full Report

Implementation of Contingency Plan – February 19, 2021

NOTE: This report is intended to fulfill the requirements associated with Clause 29 (2) of the *General Nuclear Safety and Control Regulations (GNSCR)*, in relation to the event where a contingency plan was implemented in response to a fire alarm at the SRB Technologies (Canada) Inc. facility on February 19, 2021.

(a) *The date, time and location of becoming aware of the situation;*

On February 19, 2021 at approximately 0745h, the fire alarm sounded at the SRBT facility in Pembroke, Ontario. All facility personnel were evacuated safely from the facility, and accounted for immediately at the muster point.

Within minutes, the Pembroke Fire Department (PFD) arrived at the facility, in line with contingency plans in the event of a fire alarm.

The activation and response of the PFD to the alarm represents the implementation of a contingency plan in accordance with our facility operating licence, as described in GNSCR 29 (1) (d).

(b) *A description of the situation and circumstances;*

The fire alarm panel point that was activated corresponded to the facility air compressor room; this room is on the northernmost corner of the building, and is only accessible via an external door.

It was noted soon after the alarm that the compressor had shut down automatically. Upon opening the door to this room to investigate, a lingering smoke was observed.

The responding fire firefighters checked the room and the area for any sign of fire or heat source, with none found.

It was determined that the source of smoke that activated the alarm was generated by a malfunction of the compressor, and that compressor automatic shutdown eliminated the source of the smoke.

The all clear was given at about 0800h, and personnel were allowed to return to work.

(c) *The probable cause of the situation;*

Diagnosis of the source of the alarm in consultation with the compressor service technician determined the following:

- It was identified that about three minutes prior to the alarm occurring, the facility experienced a very brief electrical power event (a second-long fluctuation / surge / brownout).
- The responding fire fighters also noted that they had experienced the same power event at the Fire Hall, and that their back up generators had automatically come on line just prior to receiving the alert for the alarm at SRBT.
- A review of the surveillance video in the compressor room clearly shows smoke emanating from the compressor shortly after the electrical event took place.
- The compressor service technician performed a function check of the compressor operation at around 0845h, and noted the unit to be fully functional.
- Upon understanding that a power event had taken place immediately prior to the alarm, the service technician diagnosed that the compressor had been on a 'load' cycle when the power event occurred, which could have caused the electric motor to experience a brief voltage drop,
- The cause of the smoke is hypothesized to have been associated with the electrical event taking place while the compressor was in the middle of a load cycle. A momentary 'brownout' caused a voltage drop on the motor under load conditions, likely leading to the generation of smoke from overheating as the motor recovered under load, and eventually an automatic safety trip on the compressor.

(d) *The effects on the environment, the health and safety of persons, and the maintenance of security that have resulted or may result from the situation;*

With respect to the SRBT facility, at no time was there any effect on the environment, the health and safety of persons, or the maintenance of security due to fire alarm or compressor malfunction.

(e) *The effective dose and equivalent dose of radiation received by any person as a result of the situation;*

There was no SRBT-associated dose of radiation received by any person as a result of the event.

(f) *The actions that the licensee has taken or proposes to take with respect to the situation.*

SRBT operating experience suggests that this was the first instance where this sequence of events took place, where a very brief power grid fluctuation and immediate recovery occurred simultaneous with the compressor under a load cycle.

The compressor functioned in accordance with its design by automatically tripping, but not before the generation of smoke in an amount sufficient to activate the alarm.

The alarm systems functioned in accordance with design, and the PFD arrival on site was within acceptable response times.

The compressor was function checked after the event by a qualified technician and deemed to be fully functional, and there have been no issues with its operation since the event took place.

Considering that all safety systems and processes functioned as expected, as well as the very small risk associated with the event, and the low probability of the event recurring in the future, we do not propose any additional actions beyond what has been already taken.

The preliminary report was made to CNSC staff by way of an email to the Project Officer on February 19, 2021. Later that day as part of CNSC staff acknowledgement of the preliminary report, it was noted that the event should have been reported via the Duty Officer as per the GNSCR and SRBT's *Regulatory Reporting Program*.

This was acknowledged as an error on the part of SRBT. A non-conformance report was raised to document this error and implement corrective actions internally.



Jamie MacDonald
Manager of Health Physics and Regulatory Affairs

MARCH 12/2021

Date