

**From:** Gura Cyril

**To:** [REDACTED]

**Cc:** [REDACTED]

**Subject:** FW: Valhalla Metro North Accident - Third Rail Power Issue?

**Date:** Monday, February 09, 2015 11:41:00 AM

Dear Mr. Mike Valenzano, the NTSB appreciates you taking your time to write us about your knowledge of substation operations. The NTSB is still gathering and evaluating all evidence and statements, and I would like to thank you for your interest in transportation safety.

However, the NTSB Power Group has reviewed your comments and have factually answered your questions within your email.

Looking at pictures of the accident I see the third rail feeder breakers did not clear (open) on the accident fault current.

The circuit breakers tripped ( "cleared" ) once the fault was detected.

The train was still live.

The last four cars of the train were powered by the undamaged third rail on the east side of the

train until the emergency kill by the Power Director was completed.

Considering the violent nature of the crash and separation of the third rail, verify Substation DC breaker settings for the 1-2 subs feeding the block.

There are two substations supplying power to this section of third rail. Relay settings have been

verified and confirmed by oscillography and SCADA.

Check the SCADA logs if they have them.

Yes, the SCADA logs are available and confirm the relay targets.

Hopefully that substation equipment is not outdated.

The substation was constructed in 1984. However, certain electrical components have been replaced. These include but not limited, to the DC switchgear line up and the SCADA control cabinet.

It can take up to 4,000 amps to trip a sub DC breaker.

The circuit breakers in the supplying substations are 8000 amp continuous rated.

Distance from the substaiton may also affect tripping capability.

Yes, the distance from the substations to the fault is a major factor in detecting and clearing faults.

Note: Newer PLC type Protection breakers might have seen the radical fault current occur as the car body contacted the 3rd rail and sent a trip signal to clear the rail.

The DC relays in both substations are solid state microprocessor based.

LIRR now is employing PLC based Pilot Wire tripping to help prevent this and reduce fire risk. The Utility industry has used this technology for over 20 years.

Metro North does not have transfer trip technology at any of its substations.

**From:** Hiller Michael

**Sent:** Monday, February 09, 2015 6:20 AM

**To:** Gura Cyril

**Subject:** FW: Valhalla Metro North Accident - Third Rail Power Issue?

As information.

**From:** Weiss Eric

**-Sent:** Wednesday, February 04, 2015 9:14 AM

**To:** Hiller Michael

**Subject:** FW: Valhalla Metro North Accident - Third Rail Power Issue?

Sent with Good [REDACTED]

-----Original Message-----

**From:** [REDACTED]

**Sent:** Wednesday, February 04, 2015 08:30 AM Eastern Standard Time

**To:** Weiss Eric

**Subject:** Valhalla Metro North Accident - Third Rail Power Issue?

Eric,

Pass this on to the Go Team. Looking at pictures of the accident I see the third rail feeder breakers did not clear (open) on the accident fault current.

The circuit breakers tripped ( "cleared" ) once the fault was detected.

The train was still live.

The last four cars of the train were powered by the undamaged third rail on the west side of the

train until the emergency kill by the Power Director was completed.

Considering the violent nature of the crash and separation of the third rail, verify Substation DC breaker settings for the 1-2 subs feeding the block.

There are two substations supplying power to this section of third rail. Relay settings have been

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Mike Valenzano

Electrical Engineer

Retired LIRR Power and Substations.

Former N'Grid SCADA / Power Engineer

