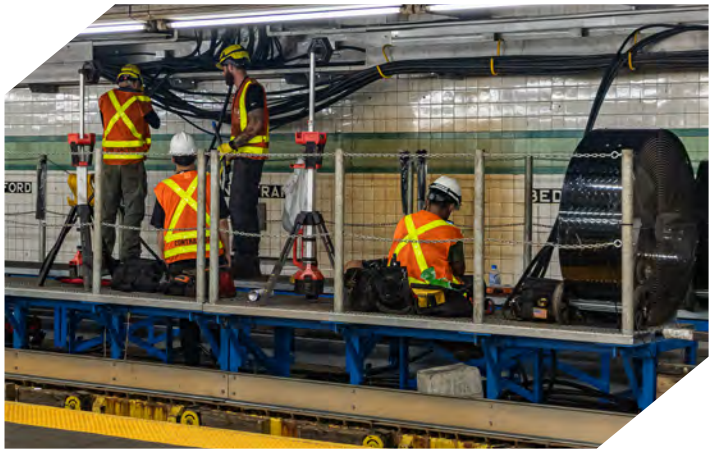
Inside THE RAIL
From NASA's Confidential Close Call Reporting System
ISSUE 34 OCTOBER 2026

Staying Grounded: *Railroad Electrician Close Calls*

Railroad Electricians inspect, maintain, and repair electrical equipment on locomotives, passenger and freight cars, bridges, and buildings. Their responsibilities span both high and low voltage systems, covering overhead and underground wiring, switch heaters, transformers, and outdoor substation apparatus. Throughout their work, they ensure full compliance with railroad safety regulations, the National Electrical Code (NEC), and workplace electrical safety standards. By installing and repairing the electrical systems that power locomotives, signaling, and power distribution equipment, Electricians play a vital role in keeping rail operations safe, reliable, and efficient.



Electricians also operate in a wide range of environments, often facing demanding conditions, elevated work areas, and confined spaces. Their schedules can include nonstandard workweeks, over-time, and emergency call responses on holidays and weekends. Electricians' work is considered safety-sensitive and requires protective equipment such as boots, glasses, and hearing protection.

This quarter, Inside the Rail highlights stories that showcase the courage, dedication, and character of our Electricians. Their bold actions, commitment to excellence, and meaningful results inspire us all. Take a moment to reflect on their accomplishments, recognize their dedication, and appreciate the unique talents and qualities each Electrician brings.

Details Matter

In a split-second, what began as a normal car movement in the shop rapidly became an incident that put several employees in harm's way. This Electrician provides a reminder of why clear communication and following processes matter every day.

■ *Two cars needed to be cut and spotted in the Shop for inspection on Track X. Mechanical Foreman X gave assignments for everyone on the cut and spot. He didn't mention that Car A had bad order shunts. When there are bad shunts on a car, we don't power the car with the Pole for movement. Electrician X put the Pole on Car A. While moving it, a huge explosion occurred above him followed by a big blue ball of sparks that landed on him, Electrician Y, and Electrician Z. I went right away to see if they were okay. Mechanical Foreman X wasn't present for [the] move and it's his responsibility to be there anytime rolling stock is moved in the Shop. After checking up on my Co-workers, I called Mechanical Foreman Y over the radio so he could go to where the explosion occurred. I was the only Employee with a radio because we don't have enough…*

C³RS Expert Analyst's Callback Summary:

…The reporter mentioned Mechanical Foreman X was busy with other work and instructed the Crew to move the cars and make the cut so the cars could be serviced. The reporter noted Mechanical Foreman X has all the information as to why cars are in the shop and what repairs are required, which is why Mechanical Foreman X is required to be present when cars are moved. The reporter stated cars with bad order shunts cannot be moved with the pole because they ground the connection and overload the circuit. The reporter mentioned other shops use an off-track car mover to switch cars, which is safer and avoids having to subject employees to using the pole to connect to the high voltage wires. The reporter believes employee safety is being compromised in order to get cars in and out of the shop quicker. The reporter also feels that if processes are not changed or strictly followed, someone will get hurt.

Flooded Tracks, Rising Risks

This Electrician highlights the importance of assessing weather-related risks before work begins.

■ *I was asked to perform a Calendar Day Mechanical Inspection during an extreme weather condition that caused heavy flooding in the train yard. Water levels in the yard caused multiple tracks and Electrified Rail to be submerged. The storm also caused limited visibility due to the rain and high winds.*

C³RS Expert Analyst's Callback Summary:

The reporter, an Electrician, stated there was no concern from Management about the weather conditions. It was noted by the reporter that the water was two feet deep in some locations. The reporter disclosed that some Mechanical Department employees were conducting inspections on train components that were underwater. The reporter feels that Management was not looking out for the safety of the employees. The reporter is very thankful that no employees were injured during this storm. With all the work going on that day, the reporter did not have the opportunity to talk with Management about the work conditions.

Grounding Gone Wrong

This Crew described a routine grounding task that turned into a serious close call when a breaker believed to be de-energized sparked during ground application.

■ *…Foreman X got orders to test dead and ground 10 breakers from [the] Electric Traction Manager. Ground flags were applied to the cabinets. Those were opened and portable grounds placed in front of them. Prior to grounding the proximity tester was verified working with the test box at 240v then Electrician Y tested those cabinets at 25kv. The proximity tester never rang in the cabinets. The proximity tester was then verified again at 240v with the test box. Electrician Y grounded five cabinets. I grounded the next five. When applying the portable ground at the final cabinet there was a spark. It was still energized.*

C³RS Expert Analyst's Callback Summary:

The reporter, an Electrician, stated Foreman X received the switch order for testing from the Electric Traction Manager and when copying the order, the wrong breaker to be tested was given. The reporter followed the instruction from Foreman X and complied with company policy and procedures.

Uneven Lift, Uneasy Crew

These Electricians discuss an unsafe practice during a routine HVAC replacement. This close call reinforces the need to stop work when defective equipment creates unsafe lifting conditions.

■ *During the [Job] Safety Briefing, I was assigned to replace an HVAC unit with two other Electricians. As we began disassembling and removing the unit with the crane, my coworker noticed that one of the four wire rope slings lacked tension. This was concerning because it had been a previous issue that we were told had been resolved. Later, we discovered that three slings had been replaced, but one had not. Upon further inspection, we noticed that the old sling was not the same length as the others and showed significant signs of wear and tear, including kinks and bent supports. We informed our Mechanical Foreman about this issue…but there were no substitutes in stock. Once reported, our Supervisor came to the shop floor to verify the situation and help find a solution to complete the work. After attempting several adjustments to the rack attached to the crane to ensure all four cables had proper tension, we managed to lift the unit. However, it was at an unsafe angle for installation back onto the rail car....*

C³RS Expert Analyst's Callback Summary:

The reporter, an Electrician, stated one of the crane's cables needed to be replaced and was reported to Supervision. It was also disclosed that all four cables were reported for replacement over a week ago. The Electrician mentioned that cables had been out of compliance for almost a week and employees were using the cables during that time frame. The Electrician added that the work should have stopped when one of the cables was determined to be out of compliance. The Electrician further explained that the Supervisor felt it was safe to use the crane and cables. The one remaining cable was replaced the next day.

Did You Know?

NASA C³RS has mobile friendly report forms so you can submit your report from your mobile device! Also, when you submit a C³RS report, a NASA C³RS Expert Analyst may call you to get more information or to better understand the safety issues you are sharing. It is very important that you return our call as soon as possible so that your identification (ID) strip (sent by the U.S. Mail) can be returned to you quickly.

The incoming call on your phone will not say NASA, but will be from **area code 650 or 217**. Remember, the more information you include in your report, the faster the ID strip can be returned to you!

Report Intake By Craft January through September 2026	
Transportation	3,464
Engineering	168
Mechanical	157

C³RS
Inside The Rail
Issue 34
October 2026
https://c3rs.arc.nasa.gov

Monthly Report Intake Previous 3 Months	
July	488
August	490
September	433