

Lightning Protection

Are we safe on a Drilling Rig during a Lightning Storm?



Storm season is upon us in Oklahoma, As well as across the Country and when I see Lightning in the distance and and feel the Thunder rattle the Rig, The instant question that jumps into my mind is "**Am I protected from these Lightning strikes?**" In Oklahoma our News Stations have all the latest equipment and technology to predict and understand these storms so I sent the following email to all 3 Major Stations and their Meterologists. Not surprisingly the only response came

from Gary England with KWTN 9 in Oklahoma City. He has been Oklahomas most revered authority on storms for as far back as I can remember. What follows is the basic text of the email;

Hi Gary, My name is Curtis *** . I have a website for Oilfield Workers and want to write a Safety Meeting over being safe on the Rig during Thunderstorms. We have all always been told we are safe in cars because we are not grounded. well, on a Rig, with several miles of Drill Pipe in the ground, we are definitely grounded! We don't usually stop for storms, The entire Rig is iron and we always worry when the lightning starts striking around us! Can you shed some light on this subject for all of us?**

Gary Englad responded that he was directing the question to his Meterologist Carrie Rose for research and that I could expect an answer back in a few days. In a week I received a response and was really impressed at the obvious research that went into the answer and the understanding showed for what it is we do. I think you will be also.



Hi Curtis, You are right, the Oil Rigs are grounded. The problem is that much of the exposed surface of it that the workers touch is metal. The workers need to get as far away from touching the metal surfaces as possible. Another example similar to this is a highway overpass. The overpass has metal in it and it is grounded. If struck, the lightning will likely safely pass to the ground. However, you can't touch the metal parts of the

overpass if you are seeking shelter underneath it. Move as far away from the metal parts (like the girders), stay on dry surfaces. So for you guys, I don't know if it would be effective to build "Safe Spots" all over the rig which are not metal. Maybe enclosed safe rooms the guys can go to when there is lightning. Protective suits and gloves might provide sufficient protection if they must continue touching and standing on the metal, but I'm not sure how feasible that option is for you. Your car example you mentioned is good, but you're inside the car, not outside it like you would be on the Rig, and that's what helps keep you safe; the lightning is conducted around you. When you're on the rig, you're outside touching the metal, making you a part of the conducting system (like if you stuck your finger in the ignition key inside the car, or sit on the hood of the car outside). Even though the rig is well-grounded, lightning discharges do not always follow the path into the ground. The lightning can fan out along the surface of the ground as well, which is dangerous for anyone working outside at the time of the strike. You can increase your protection against this happening by using radial conductors buried just below the ground surface, extending about 30 feet from the bottoms of the Oil Rig Conductor. So basically, if you're on the Rig touching metal, or even near the Rig exposed to the open, you are at risk. If you're touching the grounded metal, you are a conductor along with the metal. I hope this information helps, but you guys are really in a difficult situation. The safest advice is to stop working on the Rig and seek shelter inside a building or car (not touching metal surfaces in the car!). But I also understand the economic demands on the business. If you remain on the rig touching metal, you're taking your chances. Please do not hesitate to contact me if you have any further questions, or if I may be of any assistance.

Regards,

Carrie Rose,
Meteorologist

News 9 Weather Producer



The answer above brings up as many questions as it addresses, But with this information several things I can do to provide myself with additional protection come to mind. My next pair of Redwing work boots will be equipped with soles used by those of Electricians. I will be finding a thick rubber mat like those we use on the Rig floor, for inside the Doghouse for myself and my hands to stand on during a Lightning storm. I will be bringing my Derrickhand down a little sooner during a Severe Thunderstorm, But most importantly, I will be contacting My our Safety Director as to guidelines to follow during a Lightning Storm. I encourage you to do the same.

For more information about working in Severe Weather I would contact KWTV 9, Their banner above is a direct link to their website. As for me "When Severe Weather Threatens, I will stay tuned to Gary England and KWTV 9, I know they will keep me advised"

Special Thanks to Carrie Underwood and Gary England.



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