Are You Ready for April Showers?

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So where do you start? If your facility was flooded, you have more than a simple moisture issue. Obviously there are many steps ahead of cleaning and drying out the electrical systems (such as debris removal and facility renovation) but let's suppose you are ready to clean the electrical connections and components.

Start by removing all covers, and open boxes and doors to allow fresh air to circulate. The electricity must be shut off (de-energized), and lockout/tagout procedures should be enforced. If your facility has experienced a flood, large amounts of dirt and soil could have seeped into the electrical boxes. Remove this material using a general purpose, heavy-duty, metal-safe, water-based cleaner and plenty of fresh water. This may seem like the wrong thing to do since this is electrical equipment, but remember that water brought the soil in, thus fresh water and a bit of detergent is the best way to get it out. Using a soft brush, scrub all electrical connections, then flush with copious amounts of fresh water. Inspect for cleanliness and repeat if necessary. Don't worry about the water; we will remove any remaining water in the next step. Complete the cleaning step using a quality contact cleaner to remove any remaining oily films or grease on the electronic parts. Or, if there is no dirt and debris in the electronics box, skip the water /detergent step and simply apply the contact cleaner to remove light oils and greases. If you are unsure of the chemical sensitivity of your electronic or electrical components, use a plastic-safe cleaner to prevent damage.

Note: If there are heavy oil residues or sludge present, a general purpose water-based cleaner may not work. In this case, choose a solvent cleaner that will attack the oily grime, yet will not attack the plastic components. As a precaution, you should test it on similar plastics outside the electrical box to ensure compatibility, looking for cracking, hazing, or melting of the plastic. If you see any of these happening, do not use this product. Call your MRO chemical supplier to ask for their assistance in selecting the right product for the job. Once you have selected a safe product to use, apply it liberally to purge the grease and oils from the electrical

components.

Step #2 – Displace Water/Moisture

OK, the dirt and contaminants are gone, but you probably have moisture left in the circuits, connections, and crevices. To remove this moisture, spray a moisture displacing solvent onto circuits and components to flush out the remaining moisture. Be sure that this product is plastic-safe. Again, your MRO chemical supplier can assist you in selecting the correct product. Not only should the product you choose displace moisture, it should also provide a degree of short term corrosion protection for the metal components and should dry leaving little or no residue behind.

Don't be stingy with the solvent; you want to be sure all moisture residue is removed. Depending on the evaporation rate of the solvent, you may need to allow the components to air dry overnight. Also, now is a good time to inspect the system for things like frayed connections or damaged wiring, and repair these issues while the system is down.

Step #3 – Protection & Lubrication

Your electrical system is now clean, dry, and repaired, so why not protect it? You can choose between two options.

Option #1: Use a quality electrical grade, easy to remove, oil-based lubricant for short term corrosion protection against moisture. Again, don't be stingy. Apply this liberally to seal out moisture. Be sure to apply the product at various angles to ensure adequate coverage of all critical electrical parts.

Option #2: Apply a high grade dielectric grease for longer periods of protection. Dielectric grease is designed to resist/repel moisture and provide lubrication. Since it is composed of a gelled silicone material, it will repel water and lubricate without damaging sensitive electrical plastic components. You can find these types of products in three types of packaging: Cartridges, small tubes, and aerosols. Cartridges are best for high volume applications; the down side is a short shelf life once it is opened. If you use dielectric grease sparingly, select the small squeeze tube package. For normal maintenance and to ensure adequate coverage, use an aerosol can of dielectric grease. It is easier to apply and has a virtually unlimited shelf life. Most aerosol dielectric greases go on wet then set up after a few minutes. This feature allows the product to flow into all tiny crevices and spaces where cartridge and squeeze tube greases just cannot go.

Finally, seal the electrical box. Apply a small quantity of clear RTV Silicone material around the box edges to form a waterproof seal. Be sure to place a blob in the inlet hole where the wiring enters the box as well. The RTV Silicone will form a solid gasket and/or plug, which will prevent water from entering the box. RTV Silicone is perfect for this application because it remains flexible at a wide range of temperatures, adheres to nearly any substrate, and is resistant to vibration. If you need to open the box, a sharp razor knife will easily cut through the RTV Silicone.

So there you have it. March winds bring April showers and April showers mean moisture. Take the necessary steps to preserve and protect your critical electrical connections now before your facility faces flood conditions. And if your facility is not located in a flood zone? You never know when a pipe will burst, a roof will leak, or the overhead sprinkler will go off. Take the time to protect your crucial electrical connections today and save yourself a headache tomorrow.

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