FIRES HAPPEN

Nothing plays on the news better than a good fire. Roiling flames, billowing smoke, charged hose lines everywhere. Television reporters speculate with breathless urgency about neighborhood evacuations and the toxicity of the smoke. If they're resourceful, they'll get a tearful mother to hold her baby just so in the frame and weep her concerns that her family might be poisoned. With just the right spin, even a relatively minor incident can stay alive in the media for weeks, piquing the interest of zoning boards and environmental regulators.

Judging from the flood of news reports I've seen in the past few months, the recycling industry seems to be in a cycle of frequent fires. My e-mail inbox has begun to bulge with inquiries on what the industry can do about its "fire problem." In April, I delivered a presentation on fires at the ISRI convention in Las Vegas, and the ISRI Safety and Environmental Council meeting in May featured an hourlong session on fire prevention. The theme of those presentations boils down to one simple, declarative sentence: Scrapyard fires are inevitable. They're going to happen. Chemistry and physics will not be denied. Where combustible materials exist in the presence of oxygen and enough heat, they are going to ignite. As the fire burns, it generates more heat, which ignites more of the surrounding fuel. As the intensity grows, rising heat currents suck in ever-increasing amounts of air, which will make the fire burn even hotter. Before long, the fire is self-sustaining and potentially unstoppable.

The only way to extinguish a fire is to interrupt the chain reaction. That means removing the heat, the fuel, or the oxygen. After a certain tipping point in large pile fires, only one of those options is feasible: The fire puts itself out by consuming all of the fuel. That can take days or weeks.

Mother Nature is not a nice lady. Embrace her laws of physics and chemistry and truly ponder the fire potential in your yard. Think of the fuel load. There always will be *some* gasoline left in *some* fuel tanks. There will be old electric ovens in the pile that contain a sodium-potassium (NaK) paste that ignites spontaneously just in the presence of humidity. There will be piles of tires, metal turnings, and countless other commodities that love to burn. For heat sources, there are torches, electrical connections, metal-on-metal friction, incompatible chemistry, spontaneous combustion, and many others.

Fires. Are. Inevitable.

That doesn't mean you can't stack the odds in your favor, and it certainly doesn't mean *big* fires have to happen. In fact, the difference between a minor fire and a conflagration is largely in your hands. If you embrace fires as an inevitable part of recycling operations, then you also can embrace four simple principles that will keep little fires from becoming big:

1. Design your operations to limit the scope of a fire. A fire in the shredder pile is ugly, scary, and photogenic, but it doesn't become a big deal—let's be honest—until it spreads to something expensive. That's a good argument to keep all scrap piles away from buildings. It might be inconvenient for a fire to consume a pile of scrap, but it can be disastrous to your business—and your employees—if it consumes the office or break room. And when your material handling equipment isn't operating, keep it away from the scrap piles, too.

2. Maintain equipment and facilities. Moving parts create friction, and friction causes fires. Loose electrical connections create enough heat to start a fire. Fuels and oxidizers react spontaneously and explosively. When you're aware of potential sources of ignition, you can manage them through proper maintenance. And whatever you do, keep exits clear.

3. Call the fire department at the first sign of any fire. If you're going to have a chance of putting out your fire, you need to apply a lot of extinguishing agent (usually water) on the seat of the fire *before* it transitions to geometric, self-sustaining growth. Get the fire trucks on the road ASAP. You can always turn them around if you don't need them.

4. Embrace emergency responders as part of your team. The more they know about your operations, the faster they can respond to your emergencies. Invite them to your yard for a tour. Show them the stuff they shouldn't go near, where they shouldn't throw water, and the source of your water supply. Train them how to shut down and lock out the machines that might eat people. It might not hurt to invite a reporter to that orientation, too.

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