



# Healthcare Risk Management®



## Blackout shows need for generator maintenance

When a blackout struck the northeastern United States recently, some hospitals encountered difficulties that offer a lesson for risk managers about issues that may be overlooked during your typical emergency planning sessions.

The big lesson? It's not enough to have a backup generator; you need a backup generator that *works*. And don't forget that the huge piece of equipment sucks down fuel as fast a college student at happy hour. Do you know how long your generator would run without a supply of fuel? Do you have contingency plans for getting that fuel to your facility, no matter what else might be going on in the community?

Most hospitals survived the relatively brief blackout without extraordinary difficulty, but about seven facilities in the New York City area had problems with their backup generators, says **Monica Mahaffey**, spokeswoman for the Hospital Association of New York State.

"We surveyed our 220 hospital members right after the blackout and most reported smooth operations going from power to generator, but they had a lot of problems with generators breaking down," she says. "They're old, and they overheated. One of our members said the generator was 20 years old and just broke down. I think of what most hospital equipment looked like 20 years ago and how much that equipment has been updated, then you think of a generator that old and trying to depend on it to run your hospital."

Bayley Seton Hospital in Staten Island, NY, reported a generator outage affecting the east wing of the hospital. That wing houses the psychiatric depart-

ment, including inpatient rooms and the psychiatric emergency department. The generator failed at 7 p.m.

The Office of Emergency Management and the city fire department helped bus 31 psychiatric patients to the nearby South Beach Psychiatric Center. **Jim McMahon**, a spokesman for Saint Vincent Catholic Medical Centers, which operates Bayley Seton, says the other 72 patients in the hospital were unaffected by the outage.

Two city buses transported the 31 patients to South Beach buses, and then returned them to Bayley Seton by the end of the night.

### *More patients when you have no power*

The breakdowns came at a time when hospitals were seeing a significant influx of patients, Mahaffey says. Though there was no increase in trauma patients, most hospitals in the blackout area experienced an increase of patients suffering from motor vehicle accidents caused by malfunctioning traffic lights, plus those suffering in the heat and people whose medical equipment would not work at home without electricity.

In addition to generator problems, hospitals reported communication difficulties when land lines and cell phone systems both went down.

"The lesson is that when it comes to emergency systems, we need to prepare for just about anything. Redundant communication systems were absolutely crucial," she says. "We need backups for our backups in terms of generators, phones, and everything else."

Most facilities were running only the most critical parts of their facilities on the backup generators, getting by without air conditioning or computer

support. Many nursing homes could not support their air conditioning systems on the back up generators and had to transfer residents to hospitals for cooling and emergency care.

### ***Gas-powered systems made cooling possible***

Some hospitals with advanced cooling equipment were able to maintain air conditioning through the blackout. Critical air conditioning services continued at New York's Jamaica Hospital Medical Center, a 387-bed community teaching hospital in Queens. When the power went off, the hospital relied on its two, 400-ton capacity, natural gas cooling units. **John N. Hatsopoulos**, chief executive officer of American Distributed Generation, which makes the cooling units, says hospitals learned that air conditioning is not always a luxury.

"When heat and humidity levels soar, air conditioning is not a luxury at health care facilities like Jamaica Hospital. It is a necessity," he says. "Every hospital is required by law to have emergency generators to run vital services when the power goes down, but electric chillers require amounts of power too taxing for most backup generators."

The company's Tecochill cooling units run primarily on natural gas, so they can continue to function during a power outage without jeopardizing other essential operations.

The Greater New York Hospital Association reports incidents of similar generator failures. Spokeswoman **Mary Johnson** says some facilities had trouble getting their generators on line and were saved only by the fact that power was restored within hours to some parts of the community. Before it was known how long the crisis would last, others realized that their fuel supply for the generator might not last as long as they needed it.

"There were a lot of close calls," she says. "One nursing home knew they were running low on fuel, and we were able to get that message to the right people. The big gridlock in the city slowed down the fuel delivery but they did get it in time to keep the generator running."

Johnson says most hospitals in the New York City area revamped their emergency plans after Sept. 11, 2001, and the blackout put many of those contingencies to the test. Many of the plans proved well conceived, but the crisis still revealed — in a relatively painless way — some of the surprises that can pop up even when you think you're ready for anything.

Some hospitals struggled with a lack of water and sewage services. One such hospital was Lock-

port (NY) Memorial Hospital. **Susan Wendler**, director of development and community relations, says the power went off about 5 p.m. and returned about 8:45 p.m. The hospital's generator provided backup power without difficulty, but the city of Lockport couldn't provide water pressure.

"That was the most serious thing for us to deal with. We couldn't use toilets and had to limit our overall water use to preserve our emergency supply of water," she says. "We had to divert our emergency department for a very short time while we were refilling the water supply to our radiology X-ray processor."

Even after most electrical services were restored, some found that they couldn't get steam generation for some time longer. That's a problem when you use steam to sterilize medical instruments.

"One of the last things to come back was steam power," Johnson says. "That was one final thing we were dealing with over Saturday and Sunday, even though power was coming back Friday night. Some hospitals had to ask for help from other hospitals in their systems to either borrow sterilized instruments or have their instruments sterilized at the other facility and brought across town."

### ***Radio and data collection system helped***

On a statewide level, Johnson says the hospital association's emergency planning also passed the test well. In 1999, when many feared disruptions caused by Y2K, the association installed a radio system specifically for communicating with member hospitals during an emergency. Ultimately it wasn't needed for Y2K, so it fell into disuse and was not operational during the crisis of Sept. 11. But in the emergency planning since then, the radio system was brought back on line.

"It was active on the day of the blackout and was very important," she says. "If the Office of Emergency Management needed to get a message to hospitals, we could do that. And hospitals could communicate with one another about their needs. Having that communication link definitely was one of the very important lessons learned for us."

The hospital association also activated its Hospital Emergency Response and Data System (HERDS) for the first time on the day of the blackout. HERDS is a computer system that allows hospital members to log on and provide the database with key information that the system operators deem important during that crisis.

"We asked hospitals during the blackout to fill in bed availability because some hospitals were

having trouble with generators," Johnson says. "If it became necessary to transfer patients, we wanted that data right away. We also were asking how their generators were performing and how much their emergency department volume was increasing."

Johnson also says local hospitals benefited from recent efforts to create an improved emergency contact directory after Sept. 11. The hospital association recently collected better information than it previously had for communicating with hospitals during an emergency.

"That was invaluable as our staff was making calls to see what hospitals might need," she says. "Our directory had more than the CEO's phone number and the public relations number. We had the number for the emergency operations center at the hospital, and a backup number for that center — very specific contacts."

At St. Barnabas Hospital in Bronx, NY, medical director **Jerry Balentine, DO**, says the emergency management team learned lessons even though "everything ran significantly better than I expected." The reason has less to do with all those post-Sept. 11 preparations than with the long forgotten Y2K planning.

"A lot of people give Sept. 11 credit for being ready for this blackout, but I think Y2K helped

a lot more. That was when we did the generator testing and actually took the hospital off-line one day to see how the generators worked."

Not all hospitals in the blackout area initiated their emergency plans, but St. Barnabas did because it is in a heavily populated area. Balentine made his way from a nearby ambulatory surgery center when the blackout started and found that staff had opened the emergency command center within 10 minutes of the power failure. One of the first priorities was getting more fuel for the generator.

"We were able to get extra diesel fuel because we didn't know how long the blackout would last. Our normal supply lasts about 24 hours, but we wanted to be ready for a longer period than that."

The hospital also initiated other emergency plans that prevented staff from leaving unless other staff arrived to replace them. Visitors were prohibited for security reasons. Hospital leaders met every two hours to assess the situation.

"My advice would be to run your disaster drills seriously. Make sure everyone knows about the plan, not just managers and department heads," he says. "The security officer who pushed the command center cart knew where to go; nobody had to tell him. Ancillary staff who answer the phones at the command center showed up and knew what they were supposed to do." ■