



## Power Generation

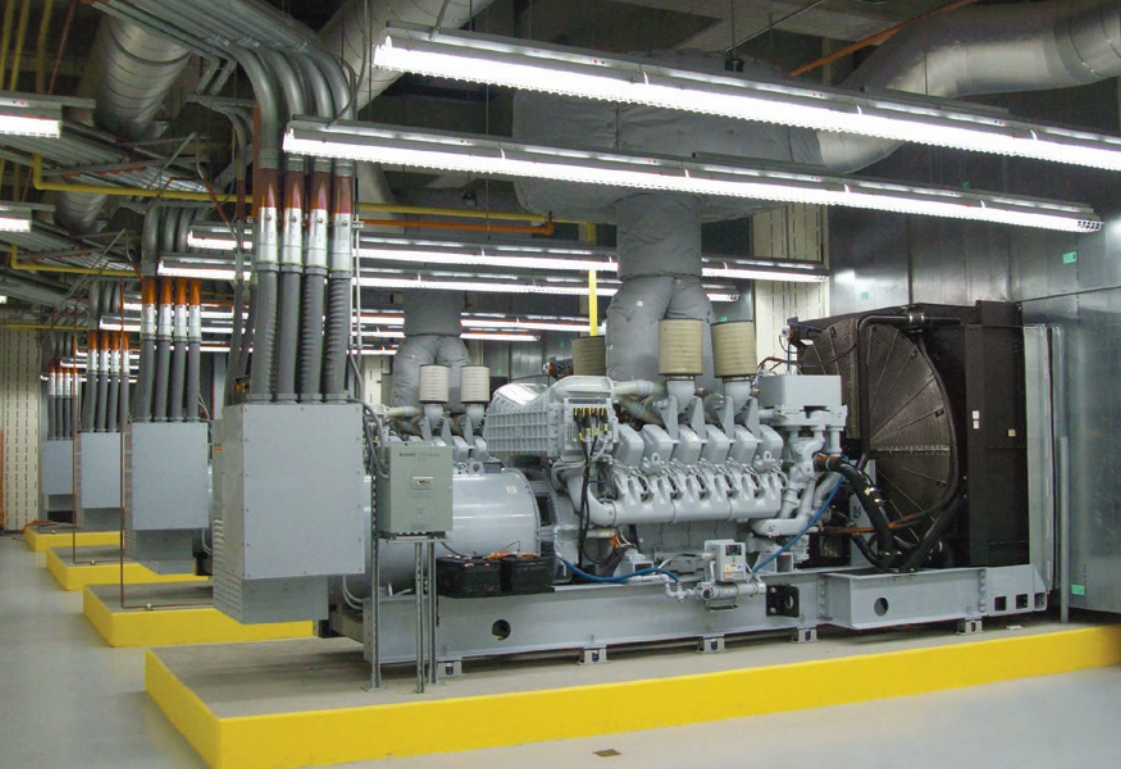
# FLORIDA'S HALIFAX HEALTH RELIES ON STANDBY POWER SYSTEM FROM ROLLS-ROYCE

**Who** Halifax Health Medical Center  
**What** 6 MW MTU standby power system  
**Where** Daytona Beach, Florida, USA

**Halifax Health is the largest medical center in East Central Florida, with 944 beds and 500 physicians representing 46 specialties. Founded as a small community hospital in 1928, it has steadily expanded over the decades, and is now consistently ranked in the top 5 percent of all medical centers in the country in clinical outcomes.**

When Halifax Health added the new 10-story France Tower to the campus for inpatient and emergency treatment, it selected a 6 MW MTU standby power system from Rolls-Royce and local MTU distributor Stewart & Stevenson FDDA.

Named in honor of the Bill France family, owners of Daytona-based NASCAR, the France Tower contains one of the largest operating rooms on the East Coast in addition to a central energy plant that houses the new standby generators, boilers and chillers.



---

The 6 MW emergency backup system supplies all of the power for the 10-story France Tower, which includes inpatient and emergency facilities.

Having a reliable standby power system is not only required by code, but is necessary as a practical matter, because this area of coastal Florida is hit frequently by hurricanes and thunderstorms that cause disruptions in grid power.

#### **Utility power outages are common in Florida**

“Summertime thunderstorms regularly wreak havoc with our local utility due to lightning strikes, but these outages tend to be of short duration,” says James Sawyer, electrical supervisor, Halifax Health. “However, there’s always the threat of bigger storms. In 2004, Hurricane Charley was a Category 4 storm that took out the entire grid, forcing us to run on standby power systems in older parts of the medical center campus from midnight until about 6:00 a.m. the next day.” As testimony to the constantly looming danger, the new France Tower has been constructed to withstand a Category 5 storm, Sawyer says. “I’ve been at Halifax for 30 years, and haven’t found anything that Mother Nature can do that I can’t get around, refeed and get the power going. I have a very high comfort level with the MTU units. No matter the type of power outage, we are there for the patient.”

---

*“I’ve been at Halifax for 30 years, and haven’t found anything that Mother Nature can do that I can’t get around, refeed and get the power going. I have a very high comfort level with these units.”*

**James Sawyer**  
Electrical supervisor, Halifax Health

---

While there have been several standby power systems installed in the medical center as it has grown over the years, those systems are sized to provide only emergency power for operating rooms and intensive care units and for egress lighting to meet life-safety codes. The older standby generators weren’t sized with the capacity to power the HVAC systems. Since current codes require patient evacuation if an area is without air conditioning for longer than 36 hours (a real possibility during a severe hurricane), Halifax Health officials sized the new 6 MW MTU power system to supply all the loads in the new tower, including the HVAC.

#### **System features four paralleled generator sets**

The power system for the France Tower consists of four 1,500 kW MTU generator sets operating in parallel for a total capacity of 6 MW. The generator sets are powered by the EPA Tier 2 MTU 12V4000 engine, noted for its high fuel efficiency and ability to accept full rated load in one step. The electrical loads are prioritized and segmented by up to eight automatic transfer switches per generator set. When an outage occurs, all four generator sets start and assume the load when they are up to speed, in about 10 seconds. If the control system detects that only two generator sets are needed to supply the loads, one generator will shut down in order to economize on fuel, according to Sawyer.

Fuel tanks containing 64,000 gallons of fuel can supply the standby power system for more than four days at a 75 percent load.

Throughout the medical campus are various uninterruptible power supply (UPS) systems to supply power immediately after an outage while the standby generators start. Sawyer says the largest UPS systems supply the medical center’s data center and operating theaters. In addition to the standby power system and multiple UPS systems, Halifax Health has dual utility feeds from separate substations in case there is a transmission problem with just one line.

### Maintenance promotes reliability

Due to the size of the medical center and the number of multiple power systems to maintain, Sawyer has a team of electricians who take care of all the normal generator maintenance. This includes routine oil and filter changes and weekly generator set exercise.

The generators are exercised manually every week to make sure the batteries are operating at peak level. "Every other week, we transfer load using a different automatic transfer switch (ATS) to make sure that each individual switch operates correctly.

"We have quarterly services performed by MTU distributor Stewart & Stevenson FDDA," says Sawyer. "The distributor also performs the annual service checks, which include bringing in a load bank to load the generator to do a four-hour test. With the load bank, we ensure that the generators are loaded to at least 30 percent of their nameplate rating to prevent unburned fuel from building up in the exhaust."

### Past relationship with local distributor is an important factor

Stewart & Stevenson FDDA has been involved with sales, service and repair on several of the older existing standby power systems in other parts of the medical center. That made the selection of an MTU power system an easy choice. "The MTU distributor has been outstanding in his promptness and repairs," says Sawyer. "When the bids went out for the France Tower installation, my recommendation was to go with MTU. That also allowed us to standardize as much as possible with existing ATS, breakers and panels."

"We worked closely with Rolls-Royce's regional Power Systems office and engineers to prepare the best solution for Halifax's emergency requirements," says Len Hernandez, account manager, Stewart & Stevenson FDDA. "Our project team coordinated the manufacturing and testing of the MTU generator sets, switchgear and auxiliary equipment to ensure an on-time completion of the hospital's power system."

Expansion at busy Halifax Health is continuing, and the new central energy plant has room for an additional standby generator set. In the meantime, Sawyer and his team are making sure that all the critical loads in the medical center are backed up with reliable standby power, no matter what the Florida weather sends their way.



---

The new central energy plant houses four 1,500 kW generator sets, with room for one more.

---

Rolls-Royce provides world-class power solutions and complete lifecycle support under our product and solution brand MTU. Through digitalization and electrification, we strive to develop drive and power generation solutions that are even cleaner and smarter and thus provide answers to the challenges posed by the rapidly growing societal demands for energy and mobility. We deliver and service comprehensive, powerful and reliable systems, based on both gas and diesel engines, as well as electrified hybrid systems. These clean and technologically advanced solutions serve our customers in the marine and infrastructure sectors worldwide.