



## ISRAEL ELECTRIC CORPORATION RELIES ON GENCELL G5 TO ENSURE SOUTHERN POWER LINE OPERATIONS



"I can confirm that to date the G5 system installed at IEC BeerSheba thoroughly meets all functional requirements; the unit performs to spec and has satisfied our needs, raising no issues or problems."

**Yaacov Dahan, Senior Communications & Electronics Technician, IEC BeerSheba Southern Region.**

### BACKGROUND: ISRAEL ELECTRIC CORPORATION

A public and government-owned company, the Israel Electric Corporation (IEC) is responsible for the generation, transmission and transformation, distribution, supply and sale of electricity throughout Israel. As of 2018 IEC owned and operated 17 power stations with 61 generating units, with capacity of 13,335 MW servicing 2.8 million customers.

The BeerSheva Southern Region Operations Center, one of four such sites around the country, includes an Electronics and Communication Center whose responsibility is to oversee and supervise the performance of the high-voltage lines in the South from Kiryat Gat to Eilat; the **Center plays a critical role in monitoring and controlling the power lines' operations.**

### KEY CHALLENGES: SEEKING HIGHEST EFFICIENCY BACKUP

A failure of the backup power to the Communications Center supervising the high voltage lines could cause disruptions in the power supply to all the Southern region of Israel. To ensure that the mission-critical communications center operates continuously, traditionally the IEC Southern Operations Center maintained a standard 10kVA UPS device bolstered by 22 batteries with capacity of 15 Ah to ensure two-tiered, redundant backup power. When their old UPS malfunctioned and required replacement, IEC considered various backup power alternatives.

The batteries and battery charger solution required annual testing, occasional repairs and replacement of each battery every 5-6 years. During repairs of the batteries or the charger, the center had no backup, and stored indoors, they require ventilation. Looking for a backup solution that would offer **highest reliability** and **safety** at **reasonable cost**, IEC decided to consider the hydrogen fuel alternative.





## SOLUTION: ULTRA-RELIABILITY, LOWEST MAINTENANCE AND CONTINUOUS VISIBILITY INTO SYSTEM HEALTH

The IEC decided to test a deployment of the GenCell G5 long duration backup solution at the BeerSheva Operations Center. In 2015 a G5 unit accompanied by two cylinders of hydrogen was installed in an outdoor location at the site. GenCell collects data via cellular remote controller from the equipment which is analyzed by its proprietary IoT Remote Management software to track the system's health and performance and to alert IEC when hydrogen levels are low in order to enable them to promptly replace the cylinders.

When a power outage to the Communications center of any duration occurred, the G5 **automatically started up** and **provided a continuous steady flow of 220VAC power** until grid power resumed. To date the longest outage that occurred on site was an outage of 6 hours, during which time the G5 **kicked in immediately** and **supplied power continuously** until grid power was reinstated. Looking at the IEC performance reports from May 2015 – March 2019, the G5 was required to generate power during 24 separate instances Throughout this four-year period, the backup service performed **100% to spec with no quality issues**.

Because the G5 has been installed outdoors, there are no safety issues other than the requirement to display safety signage. The hydrogen cylinders have been installed in a simple enclosure to protect them from any impact of direct solar radiation or extreme weather. The unit is **failsafe** and **complies with all relevant safety and environmental standards**.

In parallel to the unit's initial installation, GenCell carried out gas supply system pressure tests and system performance verification tests. Once a year, maintenance procedures involving a variety of maintenance and functionality tests are carried out in accordance with the written GenCell maintenance manual to ensure system health.

The initial installation and implementation **have worked smoothly from the outset**; the IEC site engineers confirm that the pilot is **working to spec** and **providing satisfactory service** with no complaints. Throughout the implementation, GenCell's experienced support, supervision and R&D engineers have demonstrated **deep expertise** and provided **quality service**.

### KEY BENEFITS

- Ultra-reliable, flawless performance
- Inexpensive, available hydrogen fuel
- Reduced maintenance time, costs & efforts

### BENEFITS: REDUCED MAINTENANCE AND FLAWLESS PERFORMANCE

Since its installation, IEC have been fully satisfied with the G5's performance. The system to date has **performed flawlessly**. The fact that hydrogen is **inexpensive** and **easily available** is advantageous; moreover, eliminating the need to for a site visit by a technician to regularly check and replace batteries saves **time, cost** and **effort**. IEC have demonstrated the system to other branches within IEC who are considering additional installations, as well as to external parties.