ORT Braude College
30. June 2015

Re: TurboGen from Turbine Technologies, LTD.

About a half of electrical energy in Israel is currently generated by gas-fired turbo-generators (mostly combined cycle). The traditional combination of fossil fired power boilers with steam turbine and generator has lost its dominance in Israel and elsewhere in the world. The new technology has to be brought to the electrical engineering education. This is a unique opportunity for ORT Braude College to be the first in Israel (Possibly in the world) to give undergraduate electrical engineering students some hands-on experience with real gas-fired turbo-generators, before they graduate.

The TurboGen from Turbine Technologies is the only one we have found in the world that combines a gas-fired turbine directly with a three-phase electrical generator. Single phase generators are useless in teaching real power generation in a country. Our communication with the supplier has revealed that we need to, and can, develop their electrical side much further to study relevant electricity supply problems.

For that we need to establish and maintain a close co-operation with the manufacturer of this equipment. Turbine Technologies will assist us with deep technical questions and will approve modifications to the original equipment without losing their manufacturer’s warranty – if we buy this equipment from them.

There is at least one local Israeli business that will import practically any laboratory equipment from practically anywhere in the world, for a fee. In the case of TurboGen, this vendor has not been able to answer any of our technical questions and therefore cannot be regarded as a supplier of the equipment, service and expertise for the academic purposes in our laboratory.

The required infrastructure is as follows (from the user manual of Turbine Technologies):
- ELECTRICAL SERVICE: 120/240 VAC, Single Phase, 50/60 Hz, 20 Amps Breaker Protected.
- COMPRESSED AIR: Air Pressure 100 – 120 psi (690 – 830 kPa) sustained. Minimum internal line diameter 0.25 inch (0.64 cm)
- FUEL: Jet A, A-1, B, JP-4, 5, 8; Kerosene, Diesel, Fuel Oil #1 or #2
- OIL: MIL-PRF-23699F-STD (aeroshell 500, BP/Ekxon 2380)
- ADEQUATE VENTILATION: Air Intake, Exit and Combustion Gases
- ADEQUATE CLEARANCE to allow operator access to all four sides of unit, RECOMMENDED 60 inches (152 cm) on all sides. Existing fire and Safety Codes may prevail.

We request a shed on the 4th floor terrace of the EM building.

Professor Ed. Ettinger
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