



## **A customized alternator at a high humidity, sand-laden location for demanding applications.**

PRECISION INDUSTRIES LLC PLANT ♦ UAE

### **PRECISION INDUSTRIES LLC CHOOSES NIDEC LEROY-SOMER ALTERNATOR FOR DG SET IN ONSHORE OIL & GAS INSTALLATION - ONSHORE PROJECT FOR OIL FIELD IN ABU DHABI, UAE.**

When UAE Dubai-based Precision Industries LLC (PI) won a bid for a very high capacity – 3000 kVA (Medium Voltage 3.3 KV) – generating set for a diversified and integrated group of energy companies in Abu Dhabi, it did not have to look far for the perfect alternator. As a leading manufacturer of Diesel Power Generating Sets, PI has been working with Nidec Leroy-Somer as an OEM for other projects, and instinctively knew they could rely on Nidec Leroy-Somer to supply the required alternator. Nidec Leroy-Somer is a French company who has more than 100 years of experience to manufacture high output industrial alternators, along with the supporting peripherals.

#### **Brief description about the project**

The project site – an onshore oil & gas installation – located in Abu Dhabi, UAE, has an ambient temperature

range up to 55°C and high humidity above than 95%, and is also marred by sandstorms.

The requirement was for three customized generating sets of varying power capacity with tight delivery schedules. Requirement as per project for Generating set: the power generation requirement for the largest of these three units is 3000 kVA Prime rated generating set with 10% over loading – a 3300V, 50Hz, IP55 alternator with a matching prime mover mounted in a totally enclosed, within customized heavy-duty enclosure (IP55).

The current and voltage transformers used in this generator are equipped with highly advanced protection including differential protection (Class PX), restricted earth fault protection and short circuit protection, advance Digital AVR, customized Terminal Boxes to accommodate oversized armored Power Cables.

## The Alternator

Engineers at Nidec Leroy-Somer studied the requisition for the customized alternator: LSA 56 BL75 / 4p 3000kVA 3.3KV 50Hz Class H/B at 55°C IP55 CACA totally enclosed machine with very special options.



After detailed deliberation all parties, we finalized the design. Once built, the alternator was subjected to the Factory Acceptance Test at the Nidec Leroy-Somer works in France, on a unique special test platform, where it is subjected to a closed loop test at full load.

The acceptance test was witnessed by customer representatives and other parties. The Nidec Leroy-Somer alternator was then shipped to UAE for the assembly of the generating set.

**“This alternator is not something that many companies can deliver. We are proud that Nidec Leroy-Somer is one of the few companies who can meet such stringent specifications for an alternator. This also applies to Precision Industries, who then took over the job and put in a lot of effort in integrating the alternator in the generator set. There is a huge amount of engineering that has gone into this project.”** says Nawar SHUBBAR of Nidec Leroy-Somer.

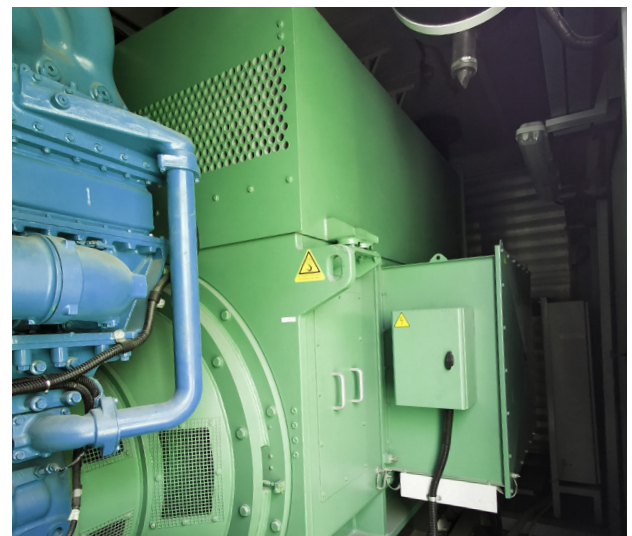


## The Generating set

PI went through complete process for Project Management that includes engine sizing and selection, alternator sizing, cooling system, containerization, fire detection and suppression and complete integration of control and protection systems.

The engine is equipped with after treatment for emission control with Selective Catalytic Reduction (SCR) system – an advanced active emissions control technology – as the customer insisted on emission control in view of environmental concerns.

The fully welded, totally enclosed Drop Over Type Enclosure – rated IP 55 on standby, and IP 44 in operation condition – with a dimensions (LxWxH) 16mx4mx4m has been designed and fabricated in-house by PI in UAE. The fire detection and suppression system are IG-541 inert gas protection system, which is a complete autonomous system without human intervention.



Complete Genset Control and Protection system with a local control panel located in the generator unit and a remote-control panel in the sub-station with an interface between the two, with connectivity with the SCADA system of the site was manufactured in house by PI. This system includes high end parameters for control, complex operation philosophy based on site requirement, High end protections with redundant serial communication and complete controls over the generator unit.

Precision Industries LLC is a specialized manufacturer of customized power generating sets for the Oil & Gas industry, Utility, Infrastructure, Telecom, Data Center and other vital governmental sectors, they are known for High End Engineering Capabilities and State of Art manufacturing process within region. This is a generator set with a very high-power rating – 3000kVA – equipped with a remote radiator and many other special features like the fire detection and suppression system as well as emissions control technology.

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