SIEMENS
Ingenuity for life

Totally Integrated Power

A complete power supply solution

for KIA Motors in Mexico

Customer
KIA Motors

Location
Pesqueria, Nuevo Leon, Mexico

Project/system
Complete Totally Integrated Power project solution for KIA's new automotive plant, including the electrical distribution system and the protection and measurement system

Implementation period
- Order received: February 1, 2015
- Installation: May 1 – November 1, 2015

Scope of products and services
ANSI & IEC standardized products were used
- 91 medium-voltage switchgear type NXAIR in ten switchgear lineups
- 186 low-voltage type FC, about 50 3WL air circuit breakers (ACB), several UL Sentron MCCB, QP circuit breaker load centers and safety switches, 30 conforming switchboards, 38 medium-voltage cast resin transformers, 88 7SJ66 protection devices, 88 SIMEAS P855 in 4.16-kV and 13.8-kV switchgear

In July 2015, KIA Motors began distributing their cars in Mexico. In addition to establishing a close-knit network of car dealerships in the country's ten largest cities, KIA also built one of the biggest new plants 10 km from the municipality of Pesqueria in Nuevo Leon. The plant is scheduled to produce 300,000 cars within the first year of service and is the most modern of KIA's production facilities around the globe. The long-term production capacity planning calls for comprehensive planning and dimensioning in order to be prepared for future expansions. Totally Integrated Power is unique because it provides sophisticated planning, dimensioning and service as well as high-quality products from a single source.

The challenge: Complex requirements for a flexible, reliable, and efficient power supply solution

The plant in Pesqueria is not only one of the biggest and most modern; it is also the fastest greenfield project ever built in the history of KIA Motors. With the opening date set for May 2016, a fully integrated, reliable, and flexible electrical distribution system as well as a protection and measurement system had to be provided in just six months. In addition to this short delivery time, the plant's size and the customer's need for maximum flexibility made the project even more challenging.

KIA relies on a complete Totally Integrated Power solution

"Siemens S.A. Mexico performed with great commitment during the procurement, delivery, and installation phases. We would like to express our full satisfaction [...] in terms of quality and project implementation"

Kim Bo-hyun
Hyundai Engineering Mexico

Right from the start, precise and elaborate planning was necessary in order to design a power distribution system that could be easily adapted to changes in the production process. At the same time, the power supply system had to meet highest demands for reliability and energy efficiency in order to ensure safe and economic plant operation. And what's more, the multicultural background of the participating stakeholders located in Mexico, Korea, China, and Germany added extra challenges to the tough timing.

The solution:
Totally Integrated Power

Working with KIA, Siemens developed a comprehensive solution backed by the concept of Totally Integrated Power (TIP). In this case, it consists of both medium- and low-voltage technology in a consistent, fully coordinated system. The major benefit of this concept: It includes state-of-the-art technology as well as expert support for system planning. For large projects with a tight schedule like the new plant in Mexico, this concept is ideal for ensuring efficient project execution and a result that lives up to the highest standards. Everything was provided from a single source – from planning, delivery, and installation to commissioning.

The project's delivery scope included all power substation equipment for the electrical distribution system for the new KIA Motors plant in Mexico. In detail, the solution consists of 91 medium-voltage switchgear type NXAIR in 10 switchgear lineups, 186 low-voltage type FC, about 50 3WL air circuit breakers (ACB), several UL Sentron MCCB, QP circuit breaker load centers and safety switches, 30 conforming switchboards, 38 medium-voltage cast resin transformers, 88 7SJ66 protection devices, 88 SIMEAS P855 in 4.16-kV and 13.8-kV switchgear.

As mentioned before, one of the major challenges in addition to the tight schedule was the complex project environment. Close and continuous communication between Siemens Mexico and the partners in the German headquarters in Erlangen was the key to successful coordination throughout the entire project.

The benefits:
Reliable power distribution for efficient and flexible production

The complete Totally Integrated Power solution from Siemens sharpens KIA's competitive edge by enabling efficient production of cars and SUVs that will be sold in the Mexican and U.S. market. The protection and measurement devices ensure reliable plant operation, while the versatility and perfect interplay of the Siemens devices allow KIA to take maximum advantage of the state-of-the-art technology. Despite the tough timing and the stakeholders from all over the world, the close collaboration of all parties made this project an on-time success and affords KIA the highest flexibilty for future adaptions.