

50 YEARS OF REFUELLING PROPELS DEFENCE TO NEW HEIGHTS

Introduction

With aircrafts purpose built for air combat, air mobility, aviation training, and intelligence, surveillance and reconnaissance, the Australian Defence Force protect the country's borders through strategic and operational-level analysis.

The Royal Australian Navy, Australian Army and Royal Australian Air Force make up the Australian Defence Force, and to ensure their respective aircrafts get lift off safely, refuelling trucks are the ground units to supply and support their flight. The Australian Defence Force implemented the JP157 Aviation Refuelling Vehicles Facilities (ARVF) Project to support the Capability Acquisition & Sustainment Group (CASG) replacement aviation refuelling tanker project.

Project Overview

With 107 aviation refuelling trucks required, the Australian Defence Force appointed Refuel International to provide them with 47 high capacity tankers, 43 medium capacity tankers and 17 hydrant dispensers across a two and a half year span.

Located in Sunshine, Victoria, Refuel International's aviation refuellers are designed for efficient and safe aircraft refuelling in port locations, transferring fuel into the aircraft via a pump, filter and metering systems.

Reliability, robustness and safety were at the forefront of these systems, so to ensure safe operation and quality longevity, Refuel International called upon NHP Electrical Engineering's assistance. Coincidentally, both local Australian companies have this year reached an impressive 50 years of operation in industry. With established reputations not only locally, both companies in some way have penetrated and leveraged off global innovations to strengthen the Australian market.

"Operational safety is our main priority when designing and manufacturing any system. Having a long standing and close working relationship with NHP, we knew they were the right choice to help us complete these systems with specific needs in a compact space as well as having stringent safety requirements," commented Refuel International's General Manager, Geoffrey Pinner.

NHP worked closely with Refuel International to design a modern and scalable control system that could easily be fit into various truck models within tight space constraints. Adding complexity to the design is the hazardous environment the systems must operate within with the potential for exposure to Aviation fuel.

The Solution

NHP manufactured the control system at their National Manufacturing and Distribution Centre to deliver a customer built system along with various loose supply items to reduce the customer installation time.

"NHP's ability to design and manufacture quality control systems locally and back it up with technical support instilled confidence throughout the duration of the project. Further elevating the convenience factor, NHP has extensive local stock holdings ensuing minimal delays and fast delivery of required products," Mr. Pinner continued.

Paramount to the design is a range of hazardous area equipment for maximum protection. Included in the solution was Intrinsically Safe barriers serving the purpose of limiting the input energy for devices in hazardous areas, allowing the integrity of the Intrinsically safe circuit to be maintained. Ideally paired with the corresponding barriers, are the Moflash Ex beacons which are easily customisable where local indication is necessary.

For overall truck safety, NHP implemented the Steute. Intrinsically Safe Proximity sensors acting as interlocks not allowing the unit to activate unless all devices are in a safe position. NHP's Hazardous Area Ex Junction boxes from Cortem were used for cable management with the units machined by the NHPEx workshop according to Refuel International's specifications.

"NHP supplies not only a range of Hazardous Area Equipment and a specialist team, but also, customer specific systems via our certified manufacturing and assembly workshop. In this workshop, accredited staff design, construct and inspect the range according to the requirements of IECEx certification. This allows for flexibility to produce custom solutions to suit Refuel International's requirements," said Andrew Ware, NHP's Automation Sales Supervisor.

Complementing the hazardous area devices and to provide seamless connectivity, NHP identified a need for connection products from Rockwell Automation, including Patchcords with integral connectors, Mini Distribution Boxes, power supplies and Safety Relays meeting safety standards and offering key functions to simplify installation and system complexity.

Through sound and efficient processes, Refuel International recently received a runners-up award from Defence Industry Australia for this project which was delivered 12 months ahead of schedule and under budget. This outstanding achievement has further secured a three year contract as the sole manufacturer for AirBP aviation refuelling vehicles.

The combined knowledge and expertise of the two local companies is what drove the success of this project. NHP are proud to have collaborated with Refuel International to contribute to the defence of Australia and ensure the components aligned with all safety requirements.



Project Fact File

Project: JP157 Aviation Refuelling Vehicles Facilities Project

Location: Melbourne, Victoria (Australia)

Details: NHP worked closely with Refuel International to design a modern and scalable control system that could easily fit into 107 aviation refuelling trucks for the Australian Defence Force

NHP Products/Services:

- Design and manufacturing
- A range of hazardous area products
- Cortem Hazardous Area Products
- Allen-Bradley® Products