Contract Number	4600010160
Contract Title	Provision of Integrated Maintenance and Project Services for Electrical and Instrument, Balance of Plant in Castle Peak Power Station (CPPS), and WE Station (2024-2029)
Project Location	Tuen Mun
Contract Type	NEC 4 Option C

Introduction

CLP Power Hong Kong Limited (CLP Power) operates a vertically integrated power supply business in Hong Kong, providing electricity with a world-class supply reliability of 99.999% to more than 80% of Hong Kong's population.

In this New Engineering Contract, ATAL is responsible for providing overall maintenance service for CLP Power within the Castle Peak Power Station (CPPS) and WE Station, including Regular Preventive Maintenance, Defect Rectification, Fault Repair, Minor Modification and Improvement Works. ATAL supplies manpower, supervision, equipment and materials to plan, schedule, implement and report on the service.

Castle Peak Power Station

This coal-fired power station, built in the 1980s. Apart from burning coal, it can burn natural gas or ultra low-sulphur diesel as backup fuels. To reduce power generation emissions, desulphurisation and nitrogen oxides reduction facilities are installed. It provides reliable and safe electricity to customers while improving air quality.

Landfill Gas Power Generation Units (WE Station)

It is Hong Kong's largest landfill gas power generation plant which comprises seven generation units with a total generation capacity of 14 megawatts (MW). Located at the West New Territories (WENT) Landfill, the units make use of the landfill gas produced locally for power generation and the power will be transmitted to CLP Power's electricity grid.

Performance and Outcomes

NEC's requirement to act in a "spirit of mutual trust and cooperation" has fostered a collaborative environment within the project team, driving towards a common goal. In line with NEC's principles of promoting innovation and flexibility, ATAL partners with CLP Power to not only meet its requirements but also adapt to evolving technologies, business functions, and operational volumes, striving for continuous improvement.

This project have achieved zero work accidents and lost-time injuries records, along with 100% work quality compliance at CLP Power's power plants. According to the latest annual NEC productivity outcomes, our team exceeded project's target by over 10%, reducing approximately 16,000 man-hours compared to the planned man-hours, and achieving cost savings of over HKD 1 million this year.

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Work Related Accidents
Zero lost-time injuries achieved through proactive safety measures

100%

Work Quality Compliance
Maintained reliable and safe power supply to Hong Kong

↑10%

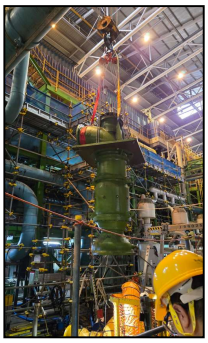
Productivity Improvement
Achieving goals more efficiently and effectively

1M

Hong Kong Dollar Cost Saving
Combining innovation and technology deployment

Collaborative Spirit

Caring for people is one of the core values of CLP Power. The health and safety of all parties is always a top priority. ATAL has been working closely with CLP Power to ensure safety at work by leveraging advanced technology.



Innovation and Technologies

3D Scanning Tool

To enhance the effectiveness and the accuracy of work planning, the project are applied with 3D Scanning Tool to aid and facilitate engineers and the safety team during planning stage. The scanning tool delivers high-quality scans of the site environment and produces stunning 3D models and virtual tours. For example, spending 30 minutes for site scanning for preparing larger scale replacement with overhead crane. This provides a visualised real situation, the project team can formulate method statement, lifting plan before work commencement. It assesses and mitigates work risk and identify potential Serious Injury and Fatality (SIF) risks.

Building Information Modelling (BIM)

By implementing an as-built BIM model for remote sites, enabling us to simulate high risk lifting activities, critical equipment replacement, complex or heavy duty lifting.

This simulation allows all stakeholders, including clients, subcontractors, and safety teams, to visually review workflows and raise any concerns or suggestions. By assisting with project planning and risk assessment, the impact on normal operations is minimised. This results in efficient, fast, safe, and reliable high-quality engineering.

Artificial Intelligence Cameras

Additionally, by utilising AI cameras for monitoring unsafe behaviours on site. These cameras not only verify that workers are properly equipped with safety helmets and reflective vests, but also detect if anyone is using a mobile phone while walking. Using a mobile phone in this manner may cause distractions and increase the risk of accidents. For this reason, an in-house rule has been established to prohibit such behaviour. The AI cameras can be customised to meet specific needs, enhancing their effectiveness. For ease of use, they also allow real-time monitoring through a mobile application, enabling supervisors to stay updated on site conditions. This implementation not only enhances safety but also improves overall security.

RFID Tools Management System

The system utilises RFID technology to automate the tracking and management of assets and tools. It enhances efficiency by providing real-time visibility, reducing manual effort, and minimising errors associated with traditional tracking methods. Additionally, it offers an easier way to monitor calibration records, rental status, and stock levels.

360° AI Camera

In light of a recent reverse collision incident in the industry, the project team have proactively installed 360° AI cameras on heavy-duty vehicles to enhance safety measures. These cameras provide crane operators with real-time alerts when individuals enter the danger zone, significantly improving safety protocols, and workers' awareness.

Smart Watch System

A smartwatch system integrated with a Centralised Management Platform (CMP) has implemented for monitoring frontline workers' conditions in remote site areas, in response to the Smart Site Safety System (4S) promoted by the Hong Kong Special Administrative Region Government. These smartwatches monitor vital signs and locations of frontline workers, and are equipped with a one-click SOS emergency alarm. This innovative approach can closely monitor health and safety of workers, especially in hot weather.

Through the application of new technologies, we are confident that we can further enhance service quality and improve work efficiency, create receptive communication, eventually achieving continuous improvement in overall performance.