

COPELAND ZX CONDENSING UNITS

# Helps safeguard the vaccine cold chain

*Provincial immunization and cold storage construction project of China's Center for Disease Control and Prevention.*

## *Project background*

In 2019, the National Immunization Program set a goal of inoculating 90% of target of 35 million at the township level by the end of the year. To achieve this bold objective, the Center for Disease Control and Prevention needed to improve its cold chain. The local government of this province, with over 160 public health institutions, was mandated by the National Immunization Program to strengthen the transportation and storage of vaccines to help ensure the success of the vaccination rollout. This entailed expanding the cold chain capacity, and speeding up construction and installation of cold storage facilities.

During project implementation, Copeland and the contractor completed the installation and deployment of 215 medium-temperature and 72 low-temperature cold storage facilities within three months.

## *Challenges*

### **Strict temperature control**

The delicate nature of vaccines requires strict compliance in their handling and storage, as mandated by the Regulations on the Management of Vaccine Storage and Transportation. The project required medium-temperature cold storage of 2°C–8°C and low temperatures to be maintained at -25°C--20°C. Vaccines are temperature-sensitive products needing accurate and reliable refrigeration to maintain their potency.

### **Ease of maintenance**

To avoid vaccine spoilage, the project required a simple and uncomplicated system design that was easy to operate and maintain. Any disruptions to the cold chain could compromise the vaccines' efficacy.

## Project scale

The project involved a large number of cold storage facilities scattered across different construction sites. 215 medium temperature facilities and 72 low-temperature cold storage rooms needed to be completed within 3 months and 2 months, respectively, a huge undertaking for any contractor.



## Solution

Copeland ZX condensing units were chosen for this project. The proven reliability of Copeland scroll compressors with the advanced electronic controller and diagnostics greatly enhances its dependability. For redundancy, each facility kept a spare ZX condensing unit as a backup. ZX condensing units could quickly and easily be installed in case of emergency.

## Results

### Stability

Equipped with Copeland variable speed scroll technology, ZX condensing units ensure smooth system operation with fewer moving compressor parts and strong resistance to liquid floodback. Additionally, the core components were supplied by Copeland, which further ensured the system stability.

## Reliability

CoreSense diagnostics enable remote monitoring, ensuring the system is operating at optimum energy efficiency level with precise temperature control. Real-time monitoring helps avoid downtime by regular preventive maintenance. The project adopted a distributed refrigeration system by installing one unit and keeping one as backup, which greatly minimizes the impact of system downtimes. Contractors can easily plug and play replacements in case of emergencies.

## Quick match

Since launching nearly 20 years ago, Copeland condensing units have grown to over 70 models to meet various customer demands. Copeland has supplied more than 400 units since the implementation of this project, cementing its place as a leader for cold chain solutions.

## Customer feedback

All cold storage facilities that use Copeland units comply with relevant standards for vaccine storage. For almost a year after the completion of construction, Copeland units have exhibited high performance with zero failure, ensuring reliable operation of refrigeration systems and guaranteeing vaccine safety.



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