

SAFEHOUSE

BY ELEMERA

BESPOKE SOLUTION EXTREME HEAT MITIGATION ENCLOSURES

Many of Australia's oil and gas projects are located in areas that experience very high summertime temperatures and humidity. The climate, combined with radiant and convective heat from process often makes for uncomfortable working conditions. Occasionally, heat produced from process can pose a serious risk to the health and safety of personnel. When this risk cannot be eliminated due to operational constraints, innovative engineered solutions can be the only answer.

THE CHALLENGE

The operator of a large LNG liquefaction facility on Australia's west coast was planning inspection work to investigate suspected corrosion issues on one of the facility's trim coolers during a turnaround event. The three LNG trains on the facility share a heating medium system which features two banks of adjacent trim coolers. During turnarounds, although one train is shut down, when one bank of trim coolers is isolated for inspection and maintenance, the adjacent bank remains running at increased load – emitting a large amount of heat. The air temperature in the area was measured at a peak of 128°C and an average of 80°C. This posed significant heat stress and heat injury risks to personnel.

OUR APPROACH

Safehouse was engaged to design, manufacture and install enclosures in four locations in the heat effected area. Extensive risk assessment, research and development and project planning was carried out by Safehouse's engineering team to design a solution that would protect personnel and allow the work to be carried out safely and efficiently during the turnaround.

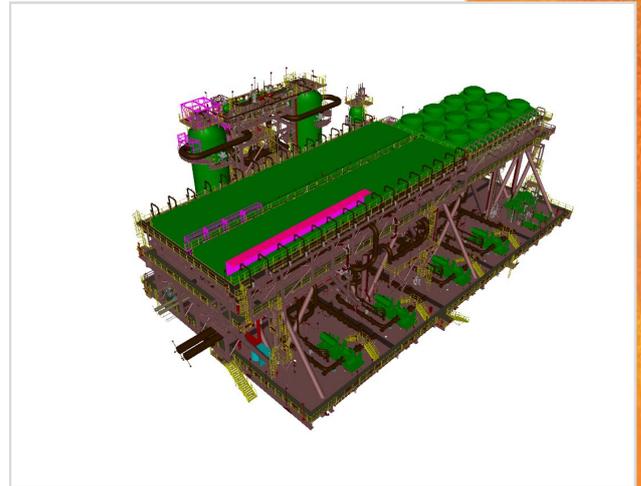
OUR SOLUTION

Safehouse designed and manufactured bespoke heat-mitigation enclosures with integrated lifting frames. The enclosures were constructed from high-performance fabrics and insulation materials to protect personnel from radiant and convective heat. Our IECEx certified portable air-conditioning units were deployed to reduce internal temperatures. The integrated certified lifting frames, with careful lift studies and planning allowed the enclosures to be crane lifted into position quickly and safely. In one location a cleverly designed castor system allowed the enclosures to be moved as work progressed. Safehouse also supplied IECEx lighting and ventilation equipment. Our expert technicians remained onsite for the duration of the project to monitor the enclosures and the well-being of the inspections team.

THE RESULTS

Despite a peak external temperature of 128°C and an average of 80°C, the bespoke heat-mitigation enclosures provided a safe and comfortable internal working environment, with an average internal temperature of 25°C. The project was completed without incident or injury, ahead of schedule.

The enclosures were retained by the operator, with a full installation manual and supporting documentation for use on future turnaround events.



STATISTICS

128°C

PEAK EXTERNAL
TEMPERATURE

80°C

AVERAGE EXTERNAL
TEMPERATURE

25°C

INTERNAL HABITAT
TEMPERATURE

0

HARM