

HKIE GAS AND ENERGY DIVISION CUM IMECHE HONG KONG BRANCH
TECHNICAL VISIT TO GAS RECEIVING STATION IN
LAMMA POWER STATION EXTENSION OF HK ELECTRIC ON 19/1/2013



Reliability is always a top priority of HK Electric, the principle electricity power supplier in Hong Kong. In its Lamma Power Station, the combined cycle gas turbine power generation units, the single-shaft L9 and the two-in-one GT57, given their credential of lower emission level of pollutants such as sulphur dioxide and higher thermal efficiency, run on base load to minimise the environmental impact whilst generate electricity efficiently and reliably round-the-clock. Their fuel gas is liquefied natural gas (LNG) supplied by Guangdong Dapang LNG Terminal in the eastern coast of Shenzhen via a 20 kilometre long 20 inch bore submarine pipeline. The LNG lands at the Gas Receiving Station (GRS) on Lamma Power Station Extension, where it is filtered, metered, temperature adjusted and pressure regulated before fuelling L9 and GT57.

Originally, the fuel gas was handled by a common process train, comprising flow meter, water bath heater (WBH) and pressure regulating stream (PRS). This arrangement had an inherited shortfall; should the GRS be inadvertently tripped, gas supply to L9 and GT57 would be cut, tripping both units simultaneously. To avoid this and further enhance the operation reliability, HK Electric recently underwent an extensive modification on the GRS by segregating the common train to become two independent trains. Each train contains its own isolation valves, meters, filters, WBH and PRS, fuelling L9 and GT57 individually. In doing so, tripping of any train would only isolate the fuel gas supply of its associated unit, leaving its adjacent train unaffected. The higher reliability is therefore warranted.

On 19/1/2013, delegates of HKIE Gas and Energy Division (HKIE-EG) and IMechE Hong Kong Branch (IMechE-HKB) went into the GRS and visited the improved gas process infrastructure. Though the project was extensive in scope and complexity, by dedicated planning and intensive supervision, it managed to complete in 24 days, well within the extended annual outage of 28 days. Walking in the operating GRS, the delegates were given the first-hand information of the LNG process in a power generation environment. In fact, extraordinarily rarely non-operating personnel are given access to the live GRS, whereas the delegates were given exceptional permission to go into the GRS to see the facilities in operation at the closest distance.

HKIE-EG and IMechE-HKB thank HK Electric for its hospitality and supportiveness in making this special visit.

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