

## LNG Plant

Customer: JFE Corporate

### Services Provided

- Process description
- Discussion on contaminant removal
- Process flow diagrams
- Heat and material balance
- Process data sheets
- Equipment sizes

### Benefits to Customer

- A process design package identifying key information for further engineering bases on an optimised technology selection and process optimisation exercise

### Project Description

- Japan Petroleum Exploration Company (JAPEX) intended to increase production of its existing LNG Plant in Hokkaido, Northern Japan from 150 tonnes per day (tpd) of LNG. JFE (formerly NKK) selected Costain to provide process design services for a new 200 tpd LNG plant as part of engineering of the complete expansion project.
- Costain previously supported NKK in a similar way on the first LNG train (Costain Ref. No. 3938 and 6152).
- The existing LNG plant uses a nitrogen expander cycle for LNG production. Compared with alternative processes, that use mixed refrigerant technology, this technology choice gives less equipment items, is simpler to build and operate, gives improved operability and flexibility, faster start-up and avoids the need for refrigerant storage.
- A nitrogen cycle process was specified and designed for the second LNG train but with the same gas turbine driver for nitrogen compression as used on the first train.
- Plant design had to be optimised around this machine and the need for mechanical refrigeration.
- Particular attention was given to the high levels of methanol and benzene in the plant feed gas.