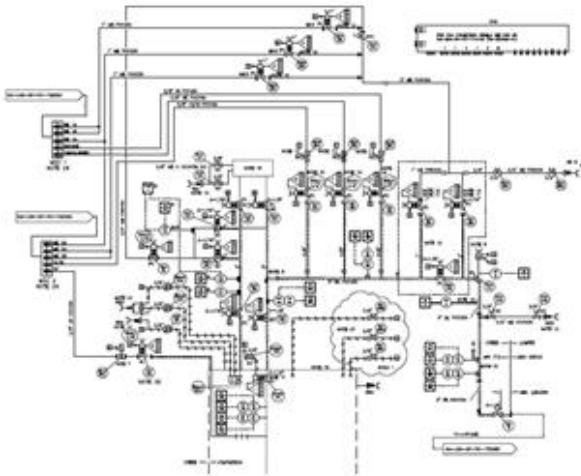


## HAZOP Reviews

- Facilitated HAZOP sessions
- Provision of specialists skills
- Full recording and reporting

Optimus has completed several major HAZOP reviews on behalf of dutyholders for operating assets from subsea facilities to topsides hydrocarbon and utility systems for entire installations. These HAZOPs were completed over 6-9 month period for each asset.



The aim of these re-HAZOPs has been to update the hazard and operability reviews for each of the facilities to take account of the effect of cumulative changes since the original design or previous HAZOP was conducted.

The programme of HAZOPs was carried out to suit the availability of technical and operations personnel and were completed on-time and within budget in each case.

Optimus provided:

- Experienced HAZOP Facilitator and Loss Prevention Professionals
- Experienced Senior Engineers to fully record each session
- Independent Process Engineers to provide robust challenge to the design
- Other discipline specialists (such as rotating equipment engineers) when required
- HAZOP meeting facilities – meeting room, internet access, catering, projector, etc

Reviewing the installation comprehensively and systematically by HAZOP study will establish whether process & utility systems will perform in a safe manner under all foreseeable scenarios and modes of operation, including process upset, start-up and shutdown. The HAZOPs also identify:

- Omissions in procedures / maintenance / inspection / verification,
- Degradation of safeguards over time,
- Changes in mode of use of the facilities,
- 'Step' changes that have not been formally identified and managed
- Lack of compliance with the client's Integrity Management System.

HAZOP records of actions can be tracked and closed out efficiently and improvements to facilities can be readily identified. The reports provide detailed records that can be reviewed, revised or updated more easily. Quality was maintained throughout the HAZOP programme by ensuring that the right blend of skills and experience were present for every session. Optimus maintained continuity of personnel by making available sufficient facilitators and scribes to allow for preparation and reporting in parallel with the working sessions.

