## Shell Internship - Project description

Contact [Mark.Broadfoot@shell.com](mailto:Mark.Broadfoot@shell.com) for more information.

<table>
<thead>
<tr>
<th>Estimated internship duration</th>
<th>12 weeks</th>
</tr>
</thead>
<tbody>
<tr>
<td>From (date)</td>
<td>May</td>
</tr>
<tr>
<td>To (date)</td>
<td>August</td>
</tr>
<tr>
<td>Location of internship</td>
<td>Houston, TX</td>
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<tr>
<td>Project title(s)</td>
<td>Onshore Gas Production Facility Design Catalogue Development</td>
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</tbody>
</table>

**Brief overview of project(s)**

Compilation/Creation of a best practice On-Shore gas HAZOP: develop a comprehensive list of Scenarios/controls and what is acceptable risk in a template that can be used for onshore gas facilities. This list of threats and controls can then be used as the justification to develop an onshore “RP-14C/OPOSSUM” document that would set safety system design requirements. This would also be the base work for detailed “DownStream” type bowties or equipment specific bowties.

Also develop a well documented modular SHEPHERD model for the standard onshore equipment (Wellheads, flowlines, separators, amine, glycol, tanks) that could be quickly rearranged and updated to determine risk contours for catalogue designs, and; a well document spacing chart for onshore that clearly links back to HSE consequences and models. A separation of HSE requirements from Asset protection requirements. This may be best accomplished with the current onshore spacing spreadsheet made easily updatable.

**Intern competencies/skills required**

Graduate engineering degree in progress preferred, process safety research background. Ability to communicate and work effectively with different groups. Must have self initiative to research and study up on onshore facilities, analysis methodologies and applications.
## Project Deliverable one
Compilation/Creation of a best practice On-Shore gas HAZOP: develop a comprehensive list of Scenarios/controls and what is acceptable risk in a template that can be used for onshore gas facilities. This list of threats and controls can then be used as the justification to develop an onshore “RP-14C/OPOSSUM” document that would set safety system design requirements. This would also be the base work for detailed “DownStream” type bowties or equipment specific bowties.

### Relevance to business
Part of the overall onshore catalogue design work being led by the Asset Integrity group - provides technical requirements of the module.

### Estimated time to complete
6 weeks

## Deliverable two
Also develop a well documented modular SHEPHERD model for the standard onshore equipment (Wellheads, flowlines, separators, amine, glycol, tanks) that could be quickly rearranged and updated to determine risk contours for catalogue designs, and; a well document spacing chart for onshore that clearly links back to HSE consequences and models. A separation of HSE requirements from Asset protection requirements. This may be best accomplished with the current onshore spacing spreadsheet made easily updatable.

### Relevance to business
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### Estimated time to complete
6 weeks

### Please indicate how the project(s) will:
- Allow candidates to independently manage their own area of responsibility in their preferred way of working, whilst still receiving management support

Candidate will have autonomy in data collection approach and development of the template and its format. Candidate will also be able to participate and be a part of the Shell TS Safety team.

- Allow candidates sufficient exposure to the Shell environment, by meeting and working with a variety of people

The candidate will be interfacing with people from various organizations within Shell (Production, Engineering, Environmental, Projects, and Consultants).

- Allow candidates freedom to incorporate their own ideas into their work

Candidate will have autonomy in data collection approach and development of the template and its format. Candidate will also be able to participate and be a part of the Shell TS Safety team.

- Enable candidates to put into practice and develop skills that they currently have, as well as those important in an organizational environment.

The candidate's engineering background will be a foundation for understanding process hazard analysis, onshore facility design as well as understanding the overall onshore business.