## Notifiable incident

| Incident ID        | <u>5400</u>                             |
|--------------------|---|
| Duty holder:       | Shell Australia Pty Ltd                 |
| Facility/Activity: | Prelude FLNG                            |
| Facility type:     | Floating liquefied natural gas facility |

| Incident details                                 |  |
|--|--|
| Division   | Occupational Health and Safety   |
| Notification type                                | Incident   |
| Incident date                                    | 10/05/2018 07:35 AM (WST)  |
| Notification date                                | 10/05/2018 08:21 AM (WST)  |
| NOPSEMA response date                            | 10/05/2018 08:44 AM (WST)  |
| Received by                                      |  |
| Nearest state                                    | WA   |
| Initial category type<br>(based on notification) | Other  |
| Initial category<br>(based on notification)      | Information provided to NOPSEMA  |
| 3 Day report received                            | 11/05/2018   |
| Final report received                            | 14/06/2018   |
| All required data received                       | 14/06/2018   |
| Final category type<br>(based on final report)   | Dangerous Occurrence   |
| Final category<br>(based on final report)        | Other kind needing immediate investigation   |
| Brief description                                | OHS-INFO-Berthing Trials- Towline Failure  |
| Location   |  |
| Subtype/s  | Other  |
| Summary<br>(at notification)                     | Operator advised that during berthing trials with a LNG Carrier (Gallina) a towing line connected to an infield support vessel parted. This resulted in the berthing operation being aborted and the Gallina moved outside the facility safety zone. |
|  | At the time of the incident, the tanker was on the final approach approx. 50 metres off the facility.  |

| <b>Details</b><br>(from final report) | Operator advised that during berthing trials with a LNG Carrier (Gallina) a towing line connected to an infield support vessel parted. This resulted in the berthing operation being aborted and the Gallina moved outside the facility safety zone.  |
|---------------------------------------|---|
|                                       | At the time of the incident, the tanker was on the final approach approx. 50 metres off the facility.   |
|                                       | During Berthing Operations of the LNG Carrier Gallina to Prelude FLNG facility, the Aft towline parted between the Aft ISV (Tug) and the Gallina. The berthing operation was immediately stopped following the parted line. The operation was being performed by an aft and fwd ISV with a third ISV on standby in location. The below timeline is for the Aft ISV. |
|                                       | 0550 The Aft ISV connected a towline to the Gallina outside of the Prelude FLNG Safety Zone by attaching its forward towline to the centre lead aft on the Gallina.   |
|                                       | 0630 The ISV's and Gallina received permission from the Prelude FLNG to enter the Prelude 1500m   |
|                                       | Safety zone.<br>0650 The Aft ISV was requested to move to Starboard beam of tanker, and shortened the towline up<br>to 50m.   |
|                                       | During this time the pilot requested the Aft ISV to come up to quarter power and stop at different stages.  |
|                                       | 0732 The pilot (TTL) on the Gallina requested the Aft ISV to come up to quarter power, and as the power was brought up, the towline parted. The pilot was immediately notified. 0733 The Aft ISV commenced retrieving the towline.  |
|                                       | 0734 The towline was pulled on board the Aft ISV.<br>0735 The ISV turned around and made fast the aft towline, and stood by the Gallina, whilst the pilot<br>immediately moved the Gallina clear to outside the Prelude FLNG Safety Zone under her own engines.<br>0746 Berthing operations ceased.   |
|                                       | Due to design of the towline there was no snap back on either vessel. Further, adequate procedures and controls were in place to exclude people from snap back areas and there was no risk to personal at any time.   |
| Immediate cause/s                     | The towline, which had a stretcher between two sections of dyneema, was cow-hitched together.<br>When the parted section was examined, it was found to not have sufficient protective cover to<br>prevent the abrasive dyneema from cutting through the stretcher, resulting in the failure of the<br>towline.  |
| Root cause/s                          | HPD - MGMT SYS - Stds, policies, admin controls not used - SPAC comm NI, HPD - QUALITY CONTROL - QC NI - inspection techniques NI   |
| Root cause description                | The towline was not assembled as per the OEM supplied drawing for a cow hitch connection. There was no Delta-web chafe protection on the stretcher and pennant eyes. A) Instructions to vessel were not clear e.g. used stretcher with memory used. Inadequate QA/QC checks   |

| Duty inspector recommendation |                                    |
|-------------------------------|------------------------------------|
| Date                          | 03/05/2018                         |
| Duty inspector                |                                    |
| Recommendation                | Do not conduct Major Investigation |
| Reasoning                     | Not applicable                     |
| Supporting considerations     |                                    |

| Major investigation decision |                                    |
|------------------------------|------------------------------------|
| Date                         | 10/05/2018                         |
| Decision                     | Do not conduct Major Investigation |
| Reasoning                    | Not applicable                     |
| Supporting considerations    |                                    |

| Non-major investigation review and recommendation |             |
|---|-------------|
| Date  | 10/05/2018  |
| Inspector   |             |
| Risk gap  | Moderate    |
| Type of standard                                  | Established |
| Initial strategy                                  | Investigate |
|   | 1           |

| Recommended follow up strategy |  |
|--------------------------------|--|
| Recommended strategy           | Investigate                                  |
| Supporting considerations      | Root cause of line failure to be determined. |

| Non-major investigation decision |                           |
|----------------------------------|---------------------------|
| Date                             | 10/05/2018                |
| RoN                              |                           |
| RoN review result                | Agree with recommendation |
| Strategy decision                | Investigate               |
| Supporting considerations        |                           |
| Associated inspection            | ·                         |
| Inspection ID                    | 1797                      |

| Rur | Runsheet entries |  |
|-----|------------------|--|
| 1   | Event date       | 10/05/2018 03:10 PM                    |
|     | Event            | Incident updated to OKNI at request of |