



# Learning from incidents

## ACTION ALERT

### Tubing String Ejected from Well

Alert: VPW/3/2010

Business: Global Wells

FIM: 511147

Date: August 2010

#### Target Audience

Shell Global Wells community - target audience is all wells staff and contractors.

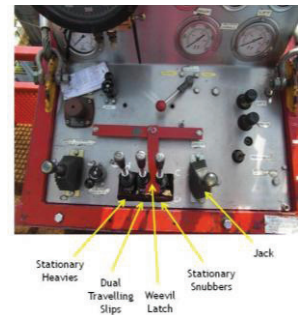
#### What Happened: Non Injurious Incident

During snubbing operations of a velocity string into a live well, the string was ejected from the well and landed vertically 4m from the hydraulic workover (HWO) tower. The pipe penetrated the heli-deck side netting, passed through two grating decks, struck a structural member and main deck plating and then ruptured a methanol injection flange outlet on the gas export pipeline, which resulted in an uncontrolled gas release.

#### Why it Happened:

A combination of factors caused loss of control over the tubing:

- Failure to grip pipe in the stationary snubber slips.
- Failure to check weight transfer from travelling to stationary snubber slips.
- Opening of travelling slips resulted in pipe release and tubing ejection.



#### Lessons Learned:

- The Hydraulic Work-over Snubbing Unit controls used (weevil latch controls) were not fail safe. Equipment design did not prevent operator having both slips partially open while in transition for a short time when pipe load is low (<4500lb).
- The investigation identified systemic failures in the management of HWO snubbing units by contractor. Major gaps were identified in equipment maintenance, operating procedures, competence assurance and supervision.
- Defined competency requirements for safety critical positions were not adhered to in the selection of the team. Verification of personnel competency was not conducted by Shell supervision.

#### Actions Required:

- 1) **Design of Snubbing Unit controls to incorporate fail safe interlock system** – share incident alert with staff and service companies supplying snubbing units. Confirm contracted units have (electro/hydraulic) fail safe control systems with interlocks in place for slips. Adopt the attached acceptance criteria prior to operation of any snubbing units. Remove from service units which do not meet this criteria.

**Who: Regional Wells Managers / Due Date: September 15<sup>th</sup> 2010**

- 2) **Competency Verification of contractor staff:**

Competency verification for contractor staff to be assessed and reported daily on the Rig or Site daily report by the DSV or CWI Supervisor

Pre mobilization checks to be conducted by Contract User to confirm competency of the individuals being supplied to the worksite for all contractor staff.

**Who: Well Delivery Managers / Due Date: September 15<sup>th</sup> 2010.**



## Goal Zero: Zero injuries, Zero fatalities

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Acceptance criteria (minimum standards) to be confirmed by operating teams for the continued use or before initiating use of a snubbing unit (HWO).

### Equipment - Design and Maintenance

- HWO equipment shall incorporate design features such that a positive, measureable and recordable transfer of load can be made between slips.
- HWO equipment shall be designed with (electro/hydraulic) interlock(s) that will not allow accidental release of pipe, at any time, in either heavy or light mode of operation.
- Ergonomic features shall be considered in relation to visual confirmation of slip function, load transfer and with respect to dropped object protection.
- Design of the tubular guides shall be well specific and relate to the geometry of well control equipment and tubing being installed.
- Bypass of the interlock(s) to enable operations such as running BHA assemblies shall be possible, but controlled by PTW, adequate procedure and supervision.
- All hardware must be OEM as per Pressure Control Manual EP2002-1500.

### Documentation

- Technical documentation for all equipment, including design and component specifications, maintenance procedures and operating procedures, shall be current and controlled by the contract technical specification document.
- All relevant documentation shall be available at the well-site.

### Procedures

- Detailed operating procedures shall be supplied by contractor, which are suitable for the intended purpose as defined by Shell's Statement of Requirements (SoR) and well operating conditions, and clearly define the following parameters;
- Hydraulic system pressure settings, for both the jacking and BOP systems, encompassing rationale linked to well pressures, tubing dimensions and grade.
  - Detailed instructions for safe operation of HWO controls.
  - Detailed instructions, including calculations, for controlling tubing in the transition zone from light to heavy mode.
  - Guidelines and limitations on the equipment capabilities.
  - Procedure for selection of pipe guide sizes.
  - Procedures for preventative maintenance during operational deployment.

### Personnel and Competency

- The contractor shall have a competency system to assess and record the training, knowledge and experience levels of HWO personnel. This system shall be used as the primary mechanism for selecting personnel for roles and activities.
- There shall be clearly defined competency thresholds for all responsible crew roles.
- Shell Contract User and Contractor to confirm crew competency meets contract requirements prior to and during and snubbing job.

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**Goal Zero: Zero injuries, Zero fatalities**

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