



TOTAL

COMMITTED TO BETTER ENERGY

EXTREME WEATHER EVENTS: WIND-BLOWN STRUCTURES AT TOTAL E&P BORNEO SITES




Brunei Industrial Group

11th November 2015

3 HIGH POTENTIAL INCIDENTS DUE TO STRONG WINDS...

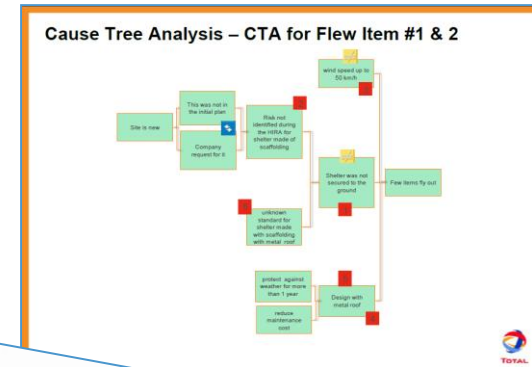
Date	Location	Details	Evidence
7 th July 2014	Flash Gas Compressor Shelter Roof, OPP, Lumut	During heavy rain and gusty winds two roof sheets (roughly 50cm x 400cm and 8 kg) were dislodged from the Flash Gas Compressor shelter roof (12m high). The roof sheets landed 30 meters away without hitting anybody.	 
28 th July 2014	PTSC <u>Muara</u> Fabrication Yard, <u>Muara</u>	Shelter in area 2 collapsed and cover of electrical panel in Area 1 flew off due to strong winds.	 
9 th October 2014	MLS Temporary Construction Facility, OPP, Lumut	The roofs of 2 <u>Portacabin</u> offices at zone 23 were blown off. The roof sheets landed between the boundary fence and temporary offices.	 

IMMEDIATE FINDINGS & ACTIONS

Location	Key finding	Immediate Actions	
Flash Gas Compressor Shelter Roof, OPP, Lumut	Damaged roof clips	<p>All roof fixings inspected</p> <p>Additional fixings put in place (screw-fixed not clips) in the same way as top of roof.</p>	
PTSC <u>Muara Fabrication Yard, <u>Muara</u></u>	<p>Temporary shelter not securely anchored to ground</p> <p>Risk not identified in HIRA (Hazard identification Risk Assessment)</p> <p>No design standard for shelter with metal sheeted roof</p>	<p>All temporary shelters properly anchored</p> <p>Bolts fastened on panel covers and <u>Genset</u> metal roof sheets</p> <p>Design of existing structures reviewed and modified as required</p>	
MLS Temporary Construction Facility, OPP, Lumut	Design of the temporary <u>portacabin</u> did not consider strong winds	<p>Design of existing structures reviewed and modified as required</p> <p><u>Portacabins</u> removed</p>	

INVESTIGATIONS & BOARD OF ENQUIRY (BOE)

- Cause Tree Analyses (CTA) undertaken for all 3 incidents
- Total E&P Company Rule for activating BOE:
 - Any accident with a real severity of 4 or 5, involving one or more fatalities to either Company or Contractor personnel.
 - Any other significant incident or accident with a potential severity of 4 or more as defined by the Affiliate management
- Board of Enquiry members:
 - Operations Manager
 - MLS Project Manager
 - HSE Manager
 - HSE Superintendent
- Final BOE report is approved by General Manager



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BOARD OF ENQUIRY

BOARD OF ENQUIRY REPORT:
3 HIGH POTENTIAL INCIDENTS – DISLODGED
TEMPORARY SHELTERS & ROOF MATERIALS IN
EXTREME WEATHER CONDITIONS
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BOARD OF ENQUIRY REPORT:
THREE HIGH POTENTIAL INCIDENTS – DISLODGED
TEMPORARY SHELTERS AND ROOF MATERIALS IN EXTREME
WEATHER CONDITIONS

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	MLS Project Manager	

FURTHER PREVENTIVE MEASURES FROM BOE

- Learning from all incidents shared at site HSE meetings
- Inventory of all permanent buildings and inspection plan for all permanent structures
- Inventory and inspection plan for all temporary structures
- Further modifications / design changes made as necessary
- All new temporary shelters inspected and signed-off by Site Manager / Company Site Representative before use
- Severe weather warnings: Forecast and alerts communicated daily with sites
- Development of Adverse Weather Guideline.



 TOTAL E&P BORNEO S.V. TOTAL E&P DEEP OFFSHORE BORNEO S.V.		ADVERSE WEATHER GUIDELINE	
HEALTH, SAFETY & ENVIRONMENT		Reference no : L2-HSE-STD-04.01	
		Date : 10 June 2015	Page 1 of 17

ADVERSE WEATHER GUIDELINE (ONSHORE)		
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Rev 0	JUNE 2015	Created
Revision #	Date	Notes

Prepared by	Reviewed by	Approved by
ORIGINAL SIGNED	ORIGINAL SIGNED	ORIGINAL SIGNED
Vig JANATH Senior Safety Engineer	Michael DALE HSE Manager	Yves GROSJEAN General Manager

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A FURTHER TEST? 10TH JULY 2015

THE
**BRUNEI
TIMES**

STRONG winds brought by Typhoon Chan-hom ripped the roofs from many houses in Brunei and left numerous fallen trees in its wake, blocking roads, disrupting power lines and plunging many villages into darkness.



No impact at Total's sites



KEY MESSAGES

- Risk Assessment
- Design
- Regular inspections & housekeeping
- Communication & Awareness
- Weather forecasts / warnings



Thank you