

Lessons Learnt – LL206

Uncontrolled Air Blowout



be mindful
be present
be safe

Incident	Description		
Event Date: 25/05/2021	Time: 15:10	Location: HEN-MPE-STR 243	NP Ref. / External Ref.: INV # 7989 ; Maximo: 131621
What Happened:	<p>A contractor was on site to perform grillage repair works. They had constructed a pipeline approximately 230m from the position of the compressor to the tower for pumping concrete into the foundations. Once the concrete pouring was completed the contractor began the Air Blowout process to clear the lines. With approximately 100m of line to go the operator of the compressor noticed the employee that was walking the line was moving faster and immediately began dumping air to slow the flow down.</p> <p>Unfortunately, it was not enough to stop the stored energy and product in the hose. The hose became uncontrollable; the two employees at the foundation end tried to remove themselves from the area in, in doing so one of them tripped and hit his head on the formwork sustaining a minor cut to his head (figure 1)</p> <div data-bbox="459 1077 1393 1736" data-label="Image"> </div> <p>Figure 1: Re-enactment photo where IP was when he struck his head on the steel formwork trying to get away from the hose.</p>		

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<p>Why it happened</p>	 <p>Figure 2: Photo of 3-inch bleed valve onsite</p> <p><i>Design – Inadequate design/setup for the pump and blowout procedure resulting in exposure to hazards</i></p> <ul style="list-style-type: none"> • Air dump valve was inadequate for the pump and blowout process. The valve was 3 inches and should have been 5 inches. This would have likely prevented the build-up of stored pressure (figure 2) • The length of pipeline needed to be reduced to reduce the stored energy factor • A better system of clearing one slump of concrete before introducing next slump should have been done in 3 stages instead of the 2. • The contractor walking the line was able to communicate with the employee at the foundation end, but the operator of the compressor could only monitor visually, he did not have any radio contact.
<p>The important things you should remember about this:</p>	<ul style="list-style-type: none"> • Pumping at this distance (230m) was at the upper end of the pumping system capacity • Because the pumping distance was over 200m water is usually used to blow/clean out the line with the water recovered by a slurry truck system. Due to the steepness of the slope a slurry truck system was not available. • In this instance a hole should have been dug with the excavator to dispose of the concrete slurry, and the concrete hose secured to the excavator bucket to avoid people coming into the capacity with the vibrating end of the pipe.
<p>What you must do in the future OR What will happen next:</p>	<p>Risk Management</p> <p>Although the highest risk of the day was recorded on the risk assessment and discussed with the team on site at the time, the pump operator who arrived later on did not sign on to the risk assessment.</p> <p>The highest risk of the day was the blowout process. The crew should have stopped, discussed required controls and ensured they were in place prior to proceeding.</p>
<p>SM-EI Reference / Hazard Register ID:</p>	<p>Concrete Pumping Health and Safety Guidelines NZ – Section 5 Operation</p> <ul style="list-style-type: none"> • The hose-hand should be able to communicate with the pump operator at a distance • If compressed air is used to clean the pipeline; the following safety precautions apply; <ul style="list-style-type: none"> ○ The air entry point to the pipeline is to be fitted with <ul style="list-style-type: none"> ○ A large diameter discharge air ball valve, to allow de-pressurisation (venting) of the line before removal ○ A pressure gauge, to show the air pressure in the pipeline.
<p>Contact Person:</p>	<p>Janine Wagstaff – Senior HSQE Advisor – Northpower Transmission</p>

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