the Naledi3d Factory
Industrial safety – safe ammonia offloading (2005)

Purpose: Mining is a very hazardous working environment and safety regulations are rigorously enforced. Significant resources are allocated to safety awareness training to help mining teams better understand the consequences of unsafe actions, where unsafe practices can lead to fatalities. VR is a powerful tool to visually demonstrate the consequence of incorrect behaviour and, in this simulation, the correct process to offload ammonia from road-tankers to tank-storage is shown, along with a number of potential hazards.

Partner:	
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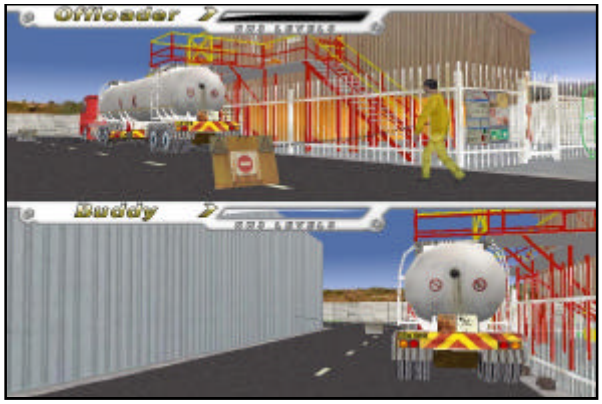
In a Nutshell:
The simulation teaches offloaders the correct process to follow when offloading ammonia from the road-tanker to the tank-storage area by having them perform (in the safety of a VR world) the correct sequence of steps that must be followed. The simulation also highlights selected potential hazards that may occur.

The hazards:
There are a number of dangers when offloading ammonia and some some are shown in the simulation, e.g. how to prevent, and the consequences of, a major spill; how to discharge static electricity before connecting pipes; preventing a pressure release into the offloading lines that may result in gasket, pipe or hose failure due to pipe hammering; and inspecting lines after pressurisation to check for leaks, preventing gas or liquid release that may lead to environmental pollution or human exposure.



Interactive safety awareness:
The user can walk around the simulation and perform the 84 defined tasks involved in transferring the ammonia from the truck to tank storage within a realistic environment. Elements include a road tanker, storage tanks, pipes, valves, safety signage, etc. The simulation monitors the user's actions for mistakes and flags them together with information on how to prevent the relevant hazardous situation from occurring. Should the user be unsure of the next step to follow, he can access a help menu for more information. The simulation utilises a split-screen / dual-view where the user has to operate both characters involved to complete the task.

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