Case Study
Chlorine gas protection

Technology for a Sustainable Future

Application

As part of a scheme to bring safe drinking water to 1.5 million people in Omdurman City, part of Greater Khartoum, Biwater International was appointed by the Government of Sudan to undertake a major turnkey design and construction project. Chlorine is the conventional means of water disinfection, so Biwater brought in ERG to design and manufacture the emergency gas scrubbing package for their plant.

System description

In the extremely unlikely event of a serious accidental chlorine leak from the storage cylinders on site, the ERG scrubber starts and rapidly neutralises the toxic gas, guaranteeing the safety of the workforce and surrounding population.

The scrubber fan is designed to extract the air from the chlorine drum storage room at a rate of 4 air changes per hour. Based on the design leakage rate, the room will be cleared of chlorine and safe to enter in 4 to 6 hours.

The scrubber sump tank stores enough caustic solution to deal with a worst-case scenario release of 1 tonne of chlorine. The packed tower scrubber reduces the chlorine discharge to atmosphere to <1.5ppm.

Equipment description

Sump tank and packed tower to counter a 1 tonne chlorine release, fabricated in cPVC, reinforced with Atlac 490 GRP for use in a tropical environment. Designed to BS4994 cat 1 with 80°C design temperature. System designed to fit within a standard shipping container for easy delivery anywhere in the world.

- Total installed height: <9.0m
- Installed power: <10kW
- Absorbed power, <7kW during emergency operation and weekly test, and nil at all other times
- Noise: <80 dB(A) at 1m
- Caustic fill / refill: approx 10m^3 of 10%w/w NaOH solution

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