CLOSED SAMPLING OF BENZENE ON BOARD A CHEMICAL TANKER

Cargo involved: Benzene
Incident type: chief officer and deckhand engaged in “closed sampling”
Incident consequence: long term health risk
Information: two crew engaged in sampling with two independent cargo surveyors
Involvement: chemical tanker discharging at own terminal

What has happened?

Before discharging would be allowed, samples were drafted from all tanks containing this particular cargo by means of the closed sampling device. The analysis returned a cargo which was outside specifications. Since the parcel had been determined within spec upon departure loadport, the independent surveyors suspected the closed sampler to have been culprit in rendering the samples off spec.

A second series of samples needed to be taken after the closed sampling device had been thoroughly cleaned and inspected. Once done, all measures were taken to initiate a second sampling of the cargo.

The chief officer returned to the deck area and joined the independent cargo surveyors and the deckhand. The cargo surveyors wore their appropriate PPE, including breathing protection. The chief officer wore working coveralls, a helmet and safety shoes; the deckhand was equally dressed up. The chief officer was still weary about the cleanliness of the closed sampling device, and decided on the spot to rinse the device with cargo, which would be disposed of. He drew a sample, in closed mode respecting all precautions proper to the device. Then he breached all rules by emptying this volume in an open bucket placed between his feet.

A full PPE matrix was available on board, clearly stating the particular condition of protective equipment to be worn as a strict minimum for toxic cargoes. The crewman conducting the above, was the chief officer, who not only has direct access to the SMS, but also should lead by example.
What is the cause?
Being driven by quality care rather than safety of live and environment.

Potential reactions.
The chief officer exposed himself and the deckhand to direct contact with BENZENE vapours, far beyond the threshold, by not being protected with chemical suit, gloves, breathing protection etc as clearly described in ship's SMS.

Lessons Learnt.
1) high ranking officer should be driven by operational safety rather than an absolute need to discharge cargo
2) the deckhand should be schooled to react to the clear breach in company procedures / personal protection; regardless if a senior officer is in the lead during the unsafe act
3) the two independent cargo surveyors should react to the clear breach to best industry practice whilst witnessing first hand what was going on; regardless if the unsafe act is conducted by ship's personnel
4) the closed sampling devices and / or closed sampling procedures currently available give rise to quality issues
5) the pre-operational meeting has proven to be inefficient if at all existant

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