

Terragon Environmental Technologies

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MAGS Continuous Feed System development

The MAGS technology cleanly converts organic waste into usable thermal energy. Using gasification to breakdown organic compounds and high temperature quenching to eliminate polluting off gasses, MAGS has found a niche as a clean replacement technology for marine shipboard incinerators; which can be dangerous and extremely polluting.

The treatment of waste onboard marine vessels is highly organized. All waste is segregated and processed on board as much as possible. Ship managers have determined that the loading of the MAGS, on a per bag basis, is the single most time consuming and risk adverse step in their overall waste management systems. To eliminate this loading step, it has been proposed that the MAGS be interconnected directly to a waste briquetting machine and that a new feeding system be designed to accommodate this arrangement.

The loading system of the MAGS is currently designed to introduce a single, 80 liter garbage bag, into the gasification chamber at a time. The introduction of air with the bag requires that the gasification chamber be purged of combustible gasses before loading, to prevent unwanted ignition of gasses during the loading sequence. This requirement causes the overall processing rate of the MAGS to be significantly diminished. It is desired that the new feeding system be able to dose waste into the gasifier without requiring a significant amount of pre-purging.

The new loading system should bypass the current loading system and enter the gasifier directly. The new system must be compatible with gasifier operating conditions, (temperature and pressure). The effective size of the new opening shall be no more than 6" in diameter. The feeding of briquetted material shall be semi-continuous, automatic and capable of maintaining a near perfect vacuum seal. It shall also be required to have a sensor to determine the status of the feed material and quantity loaded.

Several available technologies could be adapted to solve this problem. A cost effective and reliable solution must be determined amongst the possible alternatives.

As an interim solution to begin testing with the clients, a top loading sluice gate has been installed onto the current loading system. This is shown in the attached layout drawings.

As of 21-01-12 13H05 no supervisor name or e-mail available