Written by Heinz P. Bloch, P.E. Contributing Editor
Monday, 01 January 2007 00:00

Oil skimming capabilities enhance oil/water separating…

Fig. 1. Oil/water separator BEFORE oil skimmer enhancement

Power generation facilities depend on oil/water separators to separate oil from wastewater. Such equipment, however, usually is not going to be particularly effi cient when it comes to removing oil once it has been separated from the waste stream. Traditionally, the separator industry has either used overfl ow skimmer pipes or weirs, or has depended upon an outside removal fi rm to pump off the oil. While they are inexpensive to use, skim pipes/weirs have inherent problems in that oil is always left on the surface of the separator. Oil removal services are effective in removing the layer of oil, but they can be expensive. In addition, because they are needed on a continuous basis, oil removal services are an ongoing expense.

Difficult problems

When oil is not continuously removed from the surface of an oil/water separator, several problems occur:

- Heavy rain or water fl ow can exceed the design of the separator and wash out the oil buildup.
- Failure to remove the oil causes excessive oil buildup, which increases the chance for the oil to escape and reduces the area of the separation chamber.
- The oil layer prevents oxygen from reaching the water, allowing anaerobic bacteria to grow, thus plugging the separator plates and leading to foul odors.
- As the level is lowered for certain maintenance procedures, or as components are lifted out, the tank walls and interior components become completely oil-coated. Also, if the unit is completely drained, residual oil will escape into the outlet piping and be released downstream upon refi lling the separator when bringing the system back on-line.
- The oil layer makes visual inspection of the coalescer and components very diffi cult, if not

impossible.

Innovative solutions

Dave Goding, president of Mercer International, an oil/water separator manufacturer based in Mendham, NJ, chose to take a proactive approach in solving these problems for his customers, many of which are in the power gen market. Mercer already had solved a number of their problems with the gravitydisplacement Compliance Master™ separator, which features fi eld-adjustable coalescer plates.

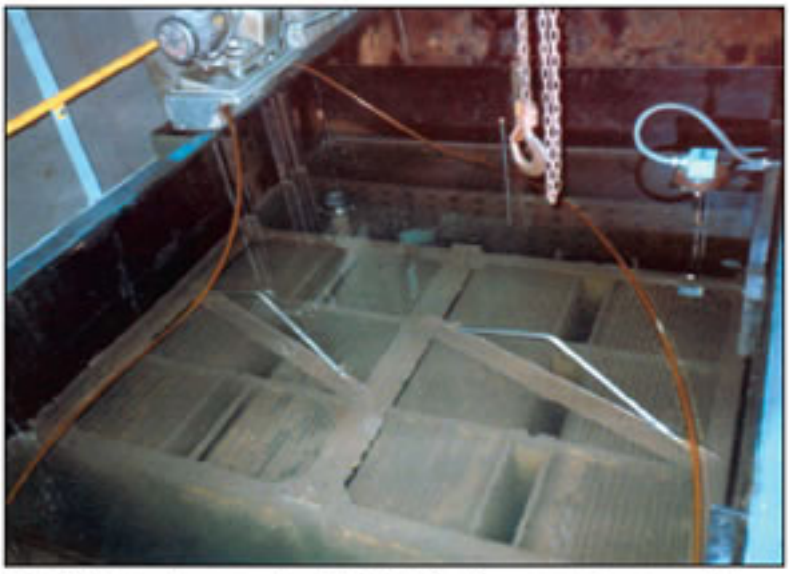

Fig. 2. Oil/water separator AFTER oil skimmer enhancement

Goding wanted to go even further, though. He researched a number of methods to remove oil from the separators and discovered that the installation of a “fl oating tube” oil skimmer with the separating device would eliminate the excess oil. After researching equipment, he turned to Oil Skimmers Inc., a manufacturer that uses fl oating tube technology.

Now, Mercer offers Compliance Master separators to its customers with Oil Skimmers’ Model 6V and Model 5H, which incorporate specially designed fl oating tube collectors that fl oat on the surface of the water. Oil adheres to the outside of the closed looped tube that is continuously driven across the separator’s surface and through a set of scrapers that remove oil. The oil then gravity drains into a collection tank. This movement of the tube draws the oil to itself and assures total surface oil removal.

Both skimmer models are designed to operate unattended on a continuous basis. Their looped tubes are long enough to cover large skimming areas and require little maintenance. In addition to being used on new oil/water separators, these skimmer units are available with mounting systems that allow them to be retrofi tted onto existing oil/water separators.

Welcome results

Goding's customers are pleased with the results of the attachment of the Model 6V and the Model 5H to their oil/water separators. Using Oil Skimmers' units in conjunction with his organization's separators, power gen companies have reported saving both time and money by not having to rely on traditional oil removal methods. These new systems also have eased the environmental concern of oil discharge. When discharges exceed the limit set by the Environmental Protection Agency (EPA), large fi nes must be paid. With the help of oil skimming equipment, oil discharges have been eliminated.

"By offering this product feature with our entire separator line, I become a more reliable, forward-thinking source for my customers," says Goding. "Our product offering is the only one of its kind in the oil/water separator industry. These oil skimmers solve the problem, and that's invaluable to me and my customer base."

Oil Skimmers Inc. offers customized oil skimming equipment and solutions for diverse manufacturing and industrial applications that require dependable, continuous removal of oil from process liquids and wastewater. The company has thousands of systems in operation, some of which have been in service for over 35 years.

Mercer International offers a full line of above- and below-ground separators, as well as existing system retrofi ts, that incorporate Oil Skimmers equipment. Mercer can furnish replacement of a client's existing brand of coalescer and internals with their proprietary components.