

Monitoring of Mercury Concentration in Fish in the Vicinity of Natural Gas Production Platform in the Gulf of Thailand

Piamsak Menasveta and *Somkiat Piyatiratitivorakul*

Department of Marine Science, Faculty of Science, Chulalongkorn University, Bangkok, Thailand

Thailand has developed the offshore natural gas exploration and production in the Gulf of Thailand since 1979. Prior to the installation of the wellhead and processing platforms, the environmental impact assessment reported the above world baseline level of mercury in the deeper layer of seabed. With this warning, the environmental effects of mercury in the vicinity of natural gas production platforms have been conducted since 1990. The present paper reported merely the monitoring of mercury in fish in the Erawan production platform, the oldest platform that has been operated since 1980. The methodology included the sampling and analysis of fish both in the immediate vicinity of the platform and at reference location which is at Pranburi coastal area. The samplings covered 8 years during 1993-2008. The results of 1993 study showed significant elevated mercury concentration in fish. The average mercury concentration was 0.556 µg/g (wet weight basis) and 41.6 % of fish had mercury more than 0.5 µg/g, the safety concentration recommended by the FAO. This was an alarming sign. Thai government authority asked the company holding the concession in this zone to make a prompt correction measure, and a long term monitoring program was funded by the government. The company later set up a hydro-cyclone device for separating mercury from the produced water before discharging it into the sea. In addition, the zero discharging practice was also adopted by using a deep-well injection. Monitoring results in the following years up to 2008 found a gradual decrease of mercury concentration in fish near to the baseline level of 0.200 µg/g. The percentages of fish having mercury concentration exceeded the safety limit of 0.5 µg/g were also decreasing.

Contact Information: Piamsak Menasveta, Department of Marine Science, Faculty of Science, Chulalongkorn University, Bangkok 10330, Thailand; Phone: 022185359, Email: mpiamsak@chula.ac.th