ABSTRACT

PT. Pertamina UPMS V Surabaya is an oil and gas distribution company which is the objective to accumulate and distribute fuel oil (BBM), one of it is premium type. In Pertamina UPMS have four tanks for premium type, which had capacity 11,285 KL. The premium tank contain fire and explosion hazards. This is because the premium is storage in Confined Space. Therefore important to identify hazards to determine risk rating of the four tanks. Further identification of the hazards of fire and explosion so that losses can be prevented and minimized.

To identify this hazard is using HAZOP method, it useful to determine the risk rating. Then followed by hazard identification of fire and explosions by using the Dow Fire & Explosion Index, because this method can quantitatively assess how bigger the danger and loss that suffer by the company in case of fire or explosion in the tank premium. The assessment was conduct consist of determination of the danger the unit process, material factors, the general process hazards factor, special process hazards factor, process factor hazard units, fire & explosion index, loss control credit factor, the radius of exposure, the area of exposure, values of exposure area, damage factor, Base MPPD, actual MPPD, MPDO and business interruption.

From the research result known that the highest risk rating for premium tank is High. And known that the hazards to the appearance of fire and explosion at premium level is a intermediate tank (118.816) with an area of exposure are 2906.064 m², beside that we also know the amount of realistic losses caused by fire and explosion (Actual MPPD) are Rp 520,228,240,2 and business interruption losses for six days due to STG operating disturbances are Rp 102,390 M rupiah.

Keywords: Storage Tank Premium, Fire Risk Assessment, HAZOP (Hazard and Operability Procedure), Dow's Fire & Explosion Index.