Kajian risiko keselamatan pada kegiatan loading, hauling, dan dumping di Tambang PT. XYZ Tahun 2018 = Safety risk review for loading, hauling, and dumping activitity in mining at PT. XYZ in 2018

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Abstrak

Berdasarkan hasil kajian literatur, aktivitas hauling, loading, dan dumping merupakan aktivitas berisiko tinggi di pertambangan (Kecojevic dan Radomsky, 2004; MSHA, 2018). Pada tahun 2015 sampai 2018, di PT. XYZ telah terjadi beberapa kecelakaan pada aktivitas tersebut, sehingga menyebabkan fataliti. Oleh karena itu perlu dilakukan kajian risiko mendalam terkait tiga kegiatan tersebut di PT. XYZ. Kajian risiko dilakukan dengan metode failure modes and effects analysis (FMEA). Ditemukan 71 mode kegagalan potensial di PT. XYZ, terdiri dari 7 temuan tahap persiapan, 18 temuan proses pemuatan, 35 temuan proses pengangkutan, dan 11 temuan proses pembongkaran. Dari 71 mode kegagalan, 25% mode kegagalannya memiliki tingkat risiko sangat tinggi, seperti kerusakan ban dumptruck akibat batu tajam, kegagalan fungsi rem, ban bocor saat berjalan, unit loader menabrak batu besar ketika manuver, unit loader terkena pentalan batu dan mengenai kabin ketika pengisian, ban unit loader mengalami sayatan besar akibat ceceran batu tajam, unit dumptruck terperosok di permukaan labil, kendaraan ringan terjatuh saat berjalan di tebing. Oleh karena itu, perlu dilakuan peningkatan perawatan pada unit alat berat, lingkungan kerja aman, dan peningkatan kompetensi operator.

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Loading, hauling, and dumping activities are high risk acitivities in mining, based on the literatur review (Kecojevic dan Radomsky, 2004; MSHA, 2018). During the period of 2015 to 2018, there were several accidents related to loading, hauling, and dumping activities that causing fatalities at PT. XYZ. Therefore, detail risk assessment need to be performed of these three activities at PT. XYZ. The failure modes and effects analysis (FMEA) method was used in this study. 71 potential failure modes were identified, consist of 7 failure modes at preparation step, 18 failure modes at loading process, 35 failure modes at the hauling process, and 11 failure modes at the dumping process. About 25% of the 71 potential failure modes were very high risk level. They were dumptruck tire failure due to scattered sharp stones, brake failure while operating dumptruck, tire damage while operating, loader unit crahsed with big stones while maneuvering, loader cabin hit by hanging stones while loading, scratched tire of the loader unit due to scattered sharp stones, the dumptruck caught in the labile surface, and light vehicle fell down from benches. As recommendation, it is important to strengthen maintenance of heavy equipment, improve safe environment, and increase operator competence.