

## ABSTRAK

Judul : Analisis Risiko Penggalian Pintu Terowongan Vertikal Waduk Jatigede Sumedang, Nama : Candra Arsyawan, Nim : 41115310067, Dosen Pembimbing : Ir. Mawardi Amin, MT.

*Gate Shaft* (Pintu Terowongan Vertikal) merupakan salah satu bangunan dari PLTA waduk Jatigede. *Shaft* adalah sumur yang digunakan untuk menempatkan pintu darurat dan pintu pengatur untuk pembangkitan tenaga listrik yang dibuat dari struktur beton bertulang. Penggalian sumur besar pada daerah tebing memiliki tingkat kesulitan dan risiko keselamatan kerja yang tinggi. Masalah utama penelitian ini adalah mengidentifikasi risiko keselamatan kerja, dan menentukan nilai risiko.

Penelitian ini bersifat kualitatif dengan melakukan wawancara dengan berbagai pihak yang mempunyai kompetensi dalam pelaksanaan penggalian *Gate Shaft* untuk mengetahui bagaimana kemungkinan terhadap berbagai risiko dan untuk mengetahui seberapa besar pengaruh risiko.

Jumlah risiko yang teridentifikasi dalam penelitian ini adalah sebanyak 38 risiko. Terdiri dari 6 risiko pada tahap persiapan yaitu tabrakan antar unit dozer, tertabrak dozer, Dozer terbalik, Tertabrak Dump Truck, dan Dump Truck Terbalik. Pada tahap pengukuran ditemukan 2 risiko yaitu yaitu terjatuh dari tebing dan terkilir. Pada tahap pengeboran terdapat 5 risiko yaitu terbentur *body unit drill*, unit drill terbakar, unit drill tergelincir, terjatuh dari ketinggian dan terkilir. Pada tahapan *charging* terdapat 2 risiko yaitu terperosok dan terkena arus listrik. Pada tahapan peledakan terdapat 7 risiko yaitu kecelakaan unit kendaraan, unit kendaraan terbalik, *flying rock*, terkena ledakan, *air blast*, *Missfire*, dan getaran. Pada tahapan *ventilating* terdapat 1 risiko yaitu terhirup gas beracun. Pada tahapan *scalling* terdapat 3 risiko yaitu tertimpa batu, terjatuh, terhirup debu. Pada tahapan *mucking out* terdapat 5 risiko yaitu *body unit excavator*, tertimpa material muatan, benturan antara bucket excavator dengan dump truck, unit dump truck amblas, unit dump truck menabrak excavator. Pada tahapan *shotcreting* terdapat 4 risiko yaitu risiko tertimpa material shotcrete, pantulan agregat, iritasi kulit dan mata, dan terhirup debu. Pada tahapan pemasangan besi penyangga terdapat 2 risiko yaitu terkena percikan api las, dan terhirup asap las. Pada tahapan pemasangan *rockbolt* terdapat 1 risiko yaitu terbentur *body unit drill*.

Terdapat 3 tingkat risiko yaitu rendah sebanyak 13 risiko (34,2%) yaitu risiko terkilir, terbentur body unit drill, terperosok, terpeleset, terbentur body unit excavator, tertimpa material muatan, benturan antara bucket excavator dengan dump truck, unit dump truck amblas, iritasi kulit dan mata, terhirup debu, dan terhirup asap las. Risiko sedang sebanyak 14 risiko (37%) yaitu risiko tabrakan antar unit, tertabrak dozer, dozer terbalik, excavator terbalik, tertabrak dump truck, dump truck terbalik, unit drill terbakar, unit drill tergelincir, kecelakaan unit kendaraan, unit kendaraan terbalik, unit dump truck menabrak excavator, tertimpa material shotcrete, pantulan agregat, dan pekerja terkena percikan api las. Risiko tinggi sebanyak 11 risiko (28,8%) yaitu risiko dump truck terbalik, terjatuh dari ketinggian, terkena arus listrik, *flying rock*, terkena ledakan, *Air Blast*, *Missfire*, Getaran, terhirup gas beracun dan tertimpa batu.

Kata Kunci : Identifikasi Risiko, Tingkat Risiko, Nilai Risiko, Penanggulangan Risik

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Gate Shaft (Vertical Tunnel Entrance) is one of the buildings of hydropower Jatigede dam. Shafts are wells that are used to place emergency exits and regulating doors for power generation made from reinforced concrete structures. The excavation of large wells in cliff areas has high levels of difficulty and high occupational safety risks. The main problem of this study is to identify safety risks, and determine the value of risk.

This research is qualitative by conducting interviews with various parties who have competence in execution of excavation Gate Shaft to know how the possibility to various risk and to know how big influence of risk.

The number of risks identified in this study were 38 risks. Consisting of 6 risks in the preparation stage ie collision between units dozer, hit dozer, reverse Dozer, hit by Dump Truck, and Reverse Dump Truck. In the measurement stage found 2 risks of falling off the cliff and sprains. At the drilling stage there are 5 risks that hit the body drill unit, drill unit on fire, drill unit slipped, fell from the height and sprained. At the charging stage there are 2 risks that are mired and exposed to electric current. At the blast stage there are 7 risks: vehicle accident, reverse vehicle unit, flying rock, blast, blast, missfire, and vibration. At the ventilating stage there is 1 risk that is inhaled poison gas. At the scaling stage there are 3 risks that fall on the stone, dropped, inhaled dust. At the mucking out stage there are 5 risks that is body excavator body, struck material of cargo, collision between bucket excavator with dump truck, unit dump truck amblas, unit dump truck hit the excavator. At the stage of shotcreting there are 4 risks that are the risk of striking shotcrete material, aggregate reflection, skin and eye irritation, and inhalation of dust. At the stage of installation of iron buffer there are 2 risks that is exposed to welding sparks, and inhaled welding smoke. In the stage of mounting rockbolt there is 1 risk that hit the body unit drill.

There are 3 levels of risk that is low as many as 13 risks (34.2%) ie risk of sprains, knocked body unit drill, mired, slipped, banged body excavator unit, struck the material payload, collision between bucket excavator with dump truck, skin and eye irritation, inhalation of dust, and inhalation of welding fumes. Moderate risk as much as 14 risks (37%) ie the risk of collision between units, hit dozer, dozer upside down, excavator upside down, hit by a dump truck, reverse dump truck, drill unit ablaze, drill unit slip, vehicle unit accident, inverted vehicle unit, dump unit trucks crashing into excavators, struck shotcrete material, aggregate reflections, and workers exposed to welding sparks. High risk as much as 11 risks (28.8%) ie the risk of reverse dump truck, dropped from a height, exposed to electric currents, flying rock, explosion, Air Blast, Missfire, Vibration, inhaled poisonous gas and hit rock.

Keywords: Risk Identification, Risk Level, Risk Value, Risk Management