UNIVERSITAS
GADJAH MADA
Analisis Risiko Kesehatan dan Keselamatan Kerja (K3) Pada Pekerjaan Timbunan Filter Random Dengan Metode Hazard Identification, Risk Assessment, And Determining Control (HIRADC) Pada Proyek Bendungan Jragung Paket I dan IV
Adhitio Widi Asmoro, Ir.Agus Kurniawan, S.T., M.T., Ph.D.IPU.
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

INTISARI

Pekerjaan timbunan zona filter random pada proyek bendungan memiliki tingkat risiko keselamatan dan kesehatan kerja (K3) yang tinggi karena melibatkan penggunaan alat berat, mobilitas material, serta kondisi lingkungan kerja yang dinamis. Penelitian ini bertujuan mengidentifikasi potensi bahaya, menilai tingkat risiko, dan menyusun rekomendasi pengendalian risiko pada pekerjaan timbunan zona filter random di Proyek Bendungan Jragung Paket I dan IV. Penelitian mengacu pada konsep manajemen risiko K3 dan metode *Hazard Identification, Risk Assessment, and Determining Control* (HIRADC) dengan penilaian risiko berdasarkan matriks AS/NZS 4360:2004

Metode penelitian yang digunakan adalah deskriptif kualitatif. Data dikumpulkan melalui observasi lapangan, wawancara menggunakan teknik purposive sampling terhadap 30 informan yang terdiri atas operator alat berat, operator dump truck, spotter, pengawas lapangan, dan petugas HSE, serta didukung dokumentasi lapangan

Hasil analisis mengidentifikasi 23 potensi bahaya, terdiri atas 3 (13,04%) kategori high risk, 15 (65,21%) kategori moderate risk, dan 5 (21,73%) kategori low risk, tanpa ditemukan risiko ekstrem. Risiko tinggi ditemukan pada aktivitas *hauling* dan *loading*, yang meliputi dump truck kehilangan kendali atau terguling akibat kondisi jalan yang curam dan berbatu, ban dump truck terselip atau amblas karena akses jalan yang tidak rata, serta debu yang mengurangi jarak pandang pekerja di area quarry. Untuk mendukung hasil identifikasi bahaya, digunakan metode PLOR *(Problem, Location, Objective, Reference)* sebagai alat bantu dalam mendokumentasikan potensi bahaya dan penyusunan rekomendasi pengendalian berdasarkan regulasi yang berlaku. Pengendalian yang direkomendasikan meliputi rekayasa teknik, pengendalian administratif, serta penggunaan alat pelindung diri sesuai dengan prinsip hierarki pengendalian risiko.

Kata kunci**:** Keselamatan dan Kesehatan Kerja (K3), HIRADC, Timbunan Zona Filter Random,

UNIVERSITAS
GADJAH MADA
Analisis Risiko Kesehatan dan Keselamatan Kerja (K3) Pada Pekerjaan Timbunan Filter Random Dengan Metode Hazard Identification, Risk Assessment, And Determining Control (HIRADC) Pada Proyek Bendungan Jragung Paket I dan IV
Adhitio Widi Asmoro, Ir.Agus Kurniawan, S.T., M.T., Ph.D.IPU.
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

ABSTRACT

Earthfill construction in the random filter zone of dam projects involves intensive heavy equipment operations, large-scale material handling, and dynamic working conditions, making it one of the construction activities with a high potential for occupational safety and health (OSH) hazards. This study aims to identify potential hazards, assess occupational safety and health risks, and develop risk control recommendations for the random filter zone embankment work at the Jragung Dam Project Packages I and IV. The research is based on the principles of occupational risk management using the Hazard Identification, Risk Assessment, and Determining Control (HIRADC) method, with risk assessment referring to the AS/NZS 4360:2004 risk matrix.

Descriptive qualitative approach was employed. Data were collected through field observations, documentation, and purposive interviews involving 30 respondents consisting of heavy equipment operators, dump truck operators, spotters, field supervisors, and Health, Safety, and Environment (HSE) personnel

The analysis identified 23 potential hazards, consisting of 3 (13.04%) high-risk, 15 (65.21%) moderate-risk, and 5 (21.73%) low-risk hazards, with no hazards classified as extreme risk. High-risk hazards were identified in the hauling and loading activities, including dump trucks losing control or overturning due to steep and rocky road conditions, dump truck tires slipping or becoming stuck because of uneven hauling roads, and dust reducing workers' visibility in the quarry area. To support the hazard identification results, the PLOR (Problem, Location, Objective, Reference) method was employed as a supporting tool to systematically document potential hazards and develop control recommendations based on applicable regulations. The recommended control measures include engineering controls, administrative controls, and the use of personal protective equipment (PPE) in accordance with the hierarchy of risk control principles.

Keywords: Occupational Safety and Health (OSH), HIRADC, Random Filter Zone Embankment,