

## ABSTRAK

Abisena Galuh Ilhamy Putra. Analisis Efektivitas pemasangan *Rotary Antiblocking System Coal bunker* terhadap *Coal Feeder* untuk Keandalan Unit PLTU Banten 2 Labuan. Dibimbing oleh Dr. Ing. Andika Widya Pramono, M.Sc.

Permasalahan penyumbatan (*blocking*) batubara pada *Coal bunker* merupakan salah satu faktor yang dapat mengganggu kontinuitas suplai bahan bakar batubara ke *Coal Feeder*, yang berdampak langsung pada penurunan keandalan operasi unit di PLTU Banten 2 Labuan. Penelitian ini bertujuan untuk menganalisis efektivitas pemasangan *Rotary Antiblocking System (RAS)* pada *Coal bunker* terhadap kinerja *Coal Feeder* dan kestabilan pasokan batubara ke ruang bakar. Metode yang digunakan meliputi pengamatan langsung di lapangan, pengumpulan data operasi sebelum dan sesudah pemasangan *Rotary Anti Blocking*, serta analisis perbandingan terhadap parameter keandalan dan durasi gangguan. Hasil analisis menunjukkan bahwa penerapan RAS mampu mengurangi frekuensi *blocking* batubara pada *Coal bunker* hingga lebih dari 70% dan meningkatkan *availability Coal Feeder* secara signifikan. Selain itu, sistem ini membuktikan bahwa dapat menurunkan waktu *downtime* akibat penanganan manual dan memperbaiki kestabilan suplai bahan bakar ke boiler. Temuan ini menunjukkan bahwa pemasangan RAS merupakan solusi efektif dan ekonomis untuk meningkatkan keandalan sistem penanganan batubara di PLTU, serta berpotensi untuk diterapkan secara luas pada Unit Pembangkit dengan karakteristik operasional yang serupa.

**Kata kunci :** *Coal bunker, Coal Feeder, Efektivitas Operasi, Keandalan Unit, Kestabilan Suplai Batubara, Rotary Antiblocking System.*

## ABSTRACT

Abisena Galuh Ilhamy Putra. Analysis of the Effectiveness of Installing a *Rotary Antilocking System* on the *Coal bunker* toward the *Coal Feeder* for Unit Reliability at PLTU Banten 2 Labuan. Supervised by Dr. Ing. Andika Widya Pramono, M.Sc.

The problem of coal blockage in the *Coal bunker* is one of the factors that can disrupt the continuity of coal fuel supply to the *Coal Feeder*, which directly affects the operational reliability of the unit at PLTU Banten 2 Labuan. This study aims to analyze the effectiveness of installing a *Rotary Antilocking System* (RAS) on the *Coal bunker* in relation to the performance of the *Coal Feeder* and the stability of coal supply to the furnace. The method used includes direct field observation, collection of operational data before and after the installation of the *Rotary Antilocking System*, as well as a comparative analysis of reliability parameters and disturbance duration. The analysis results show that the implementation of RAS can reduce coal blockage frequency by more than 70% and significantly increase *Coal Feeder availability*. In addition, the system has proven to reduce *downtime* due to manual handling and improve the stability of fuel supply to the boiler. These findings indicate that the installation of RAS is an effective and economical solution to enhance the reliability of the *Coal Handling* system in power plants and has the potential to be widely applied to generating units with similar operational characteristics.

**Keywords :** *Coal bunker, Coal Feeder, Operational Effectiveness, Fuel Supply Stability, Rotary Antilocking System, Unit Reliability.*