AI-Based R&D; Proposal Evaluation Report

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ML-Based Evaluation Scores

Metric	Score
Novelty Score	99.50
Financial Compliance	100.00
Final AI Score	73.41

Funding Recommendation

Recommended with Minor Revisions

Explainable AI Insights

• Proposal shows high novelty compared to past and ongoing projects.
• Budget complies fully with S&T; funding guidelines.
• Technical approach is feasible and well-defined.

Model Confidence & Risk

The model reports a confidence level of **94.87%** for this evaluation.

AI-Generated Evaluation Narrative

Title: AI-Based Real-Time Coal Mine Safety Monitoring System Evaluation Narrative: The proposed project, titled "AI-Based Real-Time Coal Mine Safety Monitoring System," demonstrates a compelling solution to address persistent safety challenges in India's coal mining sector. The project's objective to design an AI-driven system for continuous mine safety monitoring, predict hazardous events, and provide real-time alerts to operators is well-aligned with the industry's needs. The project's methodology, which includes the deployment of IoT sensors for gas, temperature, and vibration monitoring, data collection and preprocessing, training machine learning models for anomaly detection, and integration with a centralized monitoring dashboard, is comprehensive and technically sound. The expected outcomes, such as an early warning system for mine hazards, improved worker safety, reduced operational downtime, and a scalable solution for multiple mining sites, are promising. The project's relevance to the coal sector is evident, as it directly addresses critical safety challenges and aligns with Coal India Limited's mission to ensure sustainable and safe mining practices. The budget estimate of INR 30,00,000 appears financially feasible, and the proposing institution's prior experience in AI, IoT, and mining-related areas adds credibility to the project's execution capabilities. However, the AI component of the project could benefit from further enhancement. The current AI score of 73.405/100 indicates room for

improvement in the machine learning models' accuracy and predictive capabilities. It is recommended that the proposing institution conducts additional research and development to strengthen this aspect of the project. In conclusion, the AI-Based Real-Time Coal Mine Safety Monitoring System is a well-structured and financially feasible project that addresses a significant safety concern in