

## **Implementation of Plant Performance & Reliability Monitoring (P2RM) to Darajat and Salak Geothermal Power Plant**

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### **Abstract**

Star Energy Geothermal Darajat II, Limited (SEGD) and Star Energy Geothermal Salak, Ltd (SEGS) are the geothermal power generation plants located in West Java, Indonesia. SEGD produces 271 MW steam that consist of three unit power generation plants. Unit 2 (95 MW) and Unit 3 (121 MW) are operated by SEGD, while Unit 1 (55 MW) is operated by PT Indonesia Power (IP). SEGS produces around 377 MW steam and consist of six units. Unit 4, 5, 6 with respective capacity 65.6 MW are operated by SEGS and the other 3 x 60 MW (Unit 1, 2, 3) are operated by IP. Total power generation of Darajat and Salak geothermal fields are about 498 MW that is delivered to Java-Bali electricity grid.

In order to ensure the safe, reliable and efficient power generation, SEGD and SEGS implement a program named Plant Performance & Reliability Monitoring (P2RM). The purpose of P2RM is to provide the Operation and Maintenance teams with specific requirement to review the geothermal power plant: (1) Monitor reliability, integrity and performance or efficiency, (2) Provide predictive analysis of critical equipment condition, (3) Record items that need improvement and manage efforts to mitigate problems, (4) Communicate the findings and recommendations to asset team and management. The scope of P2RM covers end-to-end surface facilities starting from steam wellhead up to main transformer. It comprises all mechanical (rotating and static), electrical, instrumentation & control, auxiliary equipment as well as structural and landslide monitoring.

This program integrates the six components of a management system cycle: Leadership: Scope, Purpose, Objectives; Procedure & Standard; Resources, Roles, Responsibilities; Measurement & Verification; Continual Improvement. By implementing this program, technology support and collaborative efforts of multifunctional teamwork, P2RM program have provided significant contribution in achieving the business plan targets that consist of power generation, Reliability Factor (RF) and Capacity Factor (CF). At the same time, this program also reduces the production losses and reliability/integrity incidents.