

ABSTRACT

PT. Star Energy Geothermal is a private company that produces electricity. Electrical energy is obtained from geothermal steam, and geothermal steam obtained from steam wells. Geothermal steam will flow to the Geothermal Power Plant. Steam wells are located in a special area and drilled every 3 – 7 years. In the steam well area, many risks must be faced by the workers. This can be seen from the large number of hazard events related to the existing processes in the steam well area, one of which is the steam well testing process. The steam well testing process is carried out when a new steam well is drilled, the goal is to find out how much geothermal steam can be produced from one steam well. Based on the hazard event data owned by the company, there are 7 hazard events categorized as near miss and 5 hazard events categorized as hazard observation. These hazard events must be minimized in order to reduce the potential for work accidents. Minimization of hazard events is carried out by controlling risk with the first step being an analysis of the risk control hierarchy. This analysis is a process to analyze proposals with what kind of hierarchical level can be proposed for each event. The results of the risk control hierarchy analysis are proposals for each hazard event that has been adjusted to the level of the risk control hierarchy, among all of these proposals there are those that can be forwarded into a design, namely a proposal in the form of providing safety signs in slippery areas and at steam well area entrance. To design safety signs, a safety signs assessment process must first be carried out. Safety signs assessment is an activity to assess field conditions that will be installed with safety signs to find out the criteria for safety signs that are suitable in the area, from this assessment process it will be possible to know the location of the safety signs installation, field conditions, signal words that will be used on safety signs, height, models, reading distance and suitable materials used to design safety signs. In addition to carrying out the assessment process, anthropometric data used is also searched, the anthropometric data used is filtered according to the criteria for users who will read safety signs. After the results of the assessment and anthropometric data are obtained, then safety signs are designed with reference to the ANSI Z535 and BS ISO 3864 standards.

There are two types of safety signs designed in this final project, namely warning signs and prohibition signs. Warning signs serve to warn workers of slippery areas at work, while prohibition signs serve as a tool to prohibit local farmers from crossing the test field area for a moment and while the steam well testing process is in progress. There are four total design results, namely warning signs based on ANSI Z535 and BS ISO 3864 standards.

Keywords: Steam Well, Risk Control Hierarchy Analysis, safety signs, ANSI Z535 standard, BS ISO 3864 standard