

عنوان مقاله:

The Use of Failure Mode Effects Analysis (FMEA) and Analytic Hierarchy Process (AHP) Methods to Determine the Most Important Safety Hazards

محل انتشار:

فصلنامه آموزش بهداشت و ارتقا سلامت, دوره 6, شماره 1 (سال: 1396)

تعداد صفحات اصل مقاله: 5

نویسندگان:

F. Golkhani - *Occupational Health Department, Public Health School, Kerman University of Medical Sciences, Kerman, Iran*

M.R. Ghotbi Ravandi - *Occupational Health Department, Public Health School, Kerman University of Medical Sciences, Kerman, Iran*

S. Baesmat - *Occupational Health Department, Public Health School, Kerman University of Medical Sciences, Kerman, Iran*

F. Abasi Balochkhane - *Occupational Health Department, Public Health School, Semnan University of Medical Sciences, Semnan, Iran*

خلاصه مقاله:

Aims: Since the occurrence of hazards in the steel industry has often been multiple and complex, the aim of this study was to identify the risk assessment in this industry in order to study the roots and realities of the risks and the causes of their occurrence, as well as to find solutions to reduce these risks. **Instruments & Methods:** This descriptive-analytical research was conducted in the cement industry in Khorasan Razavi in ۲۰۱۷. FMEA and AHP methods were used to determine the most important safety hazards. The Risk Priority Number (RPN) was obtained from the multiplication of ۳ factors including severity, probability of occurrence, and probability of discovery. Risk tolerance was used for the acceptable and unacceptable risks in the FMEA method. **Findings:** The fluctuation of the flange and its breakage due to excessive water pressure in the furnace and lack of lighting for installation of the equipment in the furnace had a high risk. In the AHP method, the risk of breaking the flange was due to excessive water pressure in the furnace and lack of lighting to install the equipment in the furnace, which had a higher weight than the other hazards. **Conclusion:** Although in the developing countries, the use of risk analysis methods with a preventive approach is not common, these problems have been resolved by communicating with the industry by recent studies. It also emphasizes the use of decision-making methods to minimize the impact of judgments on risk assessment.

کلمات کلیدی:

Risk Assessment, Hazard Analysis, Analytic Hierarchy Process, Multi-Criteria Methods

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