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## **DECISION SUPPORT SYSTEM FOR MANAGING ELECTRICAL EQUIPMENT USED IN HAZARDOUS ATMOSPHERES**

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### **Abstract**

Areas within which could arise explosive atmospheres having high concentrations, therefore requiring special precautions so as to guard the health and safety of concerned employees, are considered to be dangerous. If the electrical equipment used in these hazardous locations is not properly selected and installed for operating in explosive atmospheres, they are likely to generate an ignition and to result in explosion type events with significant environmental and material damages and, moreover, with human victims. Being an extremely difficult field to manage and having major importance, explosion prevention requires quality decisions. The reaching decision person must choose the best solution for putting into operation electrical apparatus in explosive atmospheres, taking into account certain factors, parameters, and the requirements for explosion protection and safety. Nowadays, special IT programs-decision support systems provide assistance for the reaching decision persons from a wide variety of domains. Explosion prevention shall not make an exception, especially because it firstly aims to improve the occupational health and safety of workers who operate within potentially explosive atmospheres. Taking into account the foregoing, the current paper presents the development and operation of a decision support system (DSS) for managing the selection and installation of explosion-proof electrical apparatus which are supposed to be used in atmospheres with explosion danger caused by burnable gases, liquids, vapours or mists.

*Keywords:* DSS, electrical equipment, explosion-proof, explosive atmosphere, risk

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