SAFETY ASSESSMENT OF INSHAS AREA RELATED TO ENVIRONMENTAL EFFECTS FROM SURROUNDING FACTORIES

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ABSTRACT

The main safety objective require that a nuclear or radiation facility must be sited, designed, constructed, operated and commissioned in a way that assure that no hazards from ionizing radiation could occure on site personnel, the public, and the environment. On the otherhand many of a new activities such companies, factories, are established surrounding the nuclear or radiation site, that give rise to hazards on the nuclear site personnel due to its normal and accidental releases of dangerous and toxis gases. The present study considers that effects from surrounding industries on Inchas site which could happened. Two Egyptian research reactors are located within the nuclear research center at Inshas area, 30 km north east of Cairo. This area are crowded by different industrial plants. The releases from them has a hazardous and economical effects on the research center workers and the surrounding inhabitance. In the study, a meteorological regional specific data is considered all over the year, including a windrose characterization. It considered both normal operating conditions and an accidental situation. The results shows that there are a considerable risk due to normal releases in some areas downwind direction of the major releases, and a highly risk in areas subjected to major exposure. Regional maps of emission distribution, economical damage , pollutant concentration are obtained. The study helps to identify solutions to problems of atmospheric protection. It can be used as a decision support for the environmental, economic, and innovation planning at the national levels taking into consideration the national pollution standards and variety of existing emission sources.