

The risk assessment for an organophosphate pesticide plant

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The Risk Assessment for an Organophosphate Pesticide Plant The Risk Assessment for an Organophosphate Pesticide Plant Risk is everywhere and can be seen in the environment as either natural phenomena or inflicted by organisms. Risk is the probability or the potential hazard and its impact in a certain period of time (Ball, 2006). It is very important to consider how to assess risk as it may lead to a real disaster or danger. Because of this, risk assessment had been practiced. Risk assessment is a new field of science that started in the last 25 years of 20th century and undergoes development through the efforts of several government agencies like Environmental Protection Agency (EPA), Consumer Product Safety Commission (CPSC), Food and Drug Administration (FDA), National Institute of Environmental Health Sciences (NIEHS), Agency for Toxic Substances and Disease Registry (ATSDS) and National Institute for Occupational Safety and Health (NIOSH). It was in 1961 that the idea of risk assessment started based upon a paper on formal procedure for performing animal bioassays. During the 1970s formal risk assessment as a practice had been done regularly and in 1983, National Research Council published a book on the process of formal risk assessment (National Research Council, 1993). In connection with this, experts practice two types of risk assessments: quantitative and qualitative risk assessments. Quantitative risk assessment uses numbers and objects to measure the risk being considered while qualitative risk assessment is subjective which means the risk is based upon personal judgments backed up by generalized data (The Royal Borough of Kensington and Chelsea, n. d.). Humans have the ability to perceive the risk which makes the perception a psychological one. It is a psychological concept created to warn the public about the possible

danger. It is said to be a socially created phenomenon that may leave a real and long-term damage (Jenkin, 2006). Since risk perception is a psychological concept, it is best explained by the psychometric paradigm which tries to explain that risk is subjective and is bounded by four intentions: consider risk as subjective and not objective, include technical and psychological aspects in risk criteria, accept public opinions as interest and analyze the cognitive structure of risk judgments (Renn and Rohrman, 2000). Qualitative aspects of the risk are considered in measuring the potential hazard of a certain phenomenon. Here are the dimensions considered in using the psychological paradigm: immediacy, knowledge of exposure, expert knowledge, controllability, novelty, catastrophic potential, dread, severity, delayed, certainly fatal, increasing, preventability, inequitable, affects future generation, global catastrophe, easily reduced, personal impact and observability (Jenkin, 2006). To illustrate the importance of risk assessment, a situation about a chemical plant to be built is considered in this paper. The table below shows the data about an organophosphate pesticide plant to be built and whether the factors provided can be considered to exempt it from risk assessment. There are nine factors: nearest resident, nearest school, commercial zone, flight path, natural disasters, area flora and fauna, hazardous wastes and transportation. The greatest risk among the factors is the natural disaster which is earthquake because the fault is 0.5 miles within the facility. Table 1. Factors to Consider to Exempt the Risk Assessment for an Organophosphate Pesticide Plant

Factor	Current Conditions	Nearby Land Uses
Nearest Resident	0.5 mile up-wind from proposed plant; adequate buffer	Nearest

School 1. 3 miles from proposed plant; downwind (prevailing winds); too far from potential source; risk factor = extremely low Commercial Zone 1. 2 miles from proposed site Flight Path Within 500 ft of commercial jet flight path Natural disasters Active earthquake fault within 0. 5 miles of proposed facility Area floral/fauna Area surrounding the proposed site is rich in various animal and plant life. Hazardous Wastes Nearest hazardous waste disposal site is located 110 miles north of the project site. Transportation Proposed plant site located within 500 feet of a major interstate highway References Ball, D. (2006). Environmental health policy. England: Open University Press. Jenkin, C. (2006). Risk perception and terrorism: Applying the psychometric paradigm. Homeland Security Affairs II, 2. Retrieved from [http://www. hsaj. org/? article= 2. 2. 6](http://www.hsaj.org/?article=2.2.6) National Research Council. (1993). Issues in risk management. Washington, D. C.: National Academy Press. Renn, O. and Rohrman, B. (2000). Cross-cultural risk perception: A survey of empirical studies. Netherlands: Kluwer Academic Publishers. The Royal Borough of Kensington and Chelsea. (n. d.) Risk assessment and management. Retrieved from: [http://msl1. mit. edu/ESD10/block4/4. 2b_-_Risk_Assessment. pdf](http://msl1.mit.edu/ESD10/block4/4.2b_-_Risk_Assessment.pdf)