

Title	Lines of Defence/Layers of Protection Analysis in the COMAH Context																																														
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Publication Date	1999																																														
Executive Summary	<p>A Safety Report submitted under the Control of Major Accidents Regulations 1999 (COMAH) should demonstrate that the risks arising from major hazards at the establishment are as low as reasonably practicable (ALARP). In many cases this demonstration will rely on some form of risk assessment. This report considers a number of risk assessment techniques using the Line of Defence / Layer of Protection concept and their usefulness in the COMAH context.</p> <p>Summary descriptions of several methods (LOPA, TRAM, AVRIM2 and PLANOP) have been prepared. The usefulness of the methods in the context of demonstrating ALARP in COMAH safety reports has been evaluated. Of the techniques considered, it is concluded that LOPA (Layer of Protection Analysis) is potentially a useful tool in performing risk assessments for COMAH purposes.</p> <p>TRAM and AVRIM2 were designed as safety report assessment or site audit tools and, in their current form, are not suitable for use as risk assessment tools. However, AVRIM2 in particular contains much information (in the form of checklists, matrices and generic fault trees) that might be useful in constructing a qualitative demonstration of ALARP.</p> <p>The PLANOP approach may be useful in circumstances where a purely qualitative approach is justified, although at present there is insufficient information available on the method to perform a detailed evaluation.</p> <p>SCRAM has been designed as a tool for prioritising accident scenarios for more detailed assessment and, at its present stage of development, is not suitable for use as a risk assessment method.</p> <p>Safety Barrier Diagrams provide a useful, graphical representation of system failure logic and the role of the various layers of protection (barriers) in place. However, as it is currently formulated, the method avoids any explicit calculation of risk. Therefore, barrier diagrams could be used in circumstances where a qualitative approach was justified, but would not be appropriate in situations where use of a semi-quantitative or quantitative approach was demanded.</p>																																														
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