



El Research report

Hazard and risk assessment for bulk liquefied petroleum gas storage events

RESEARCH REPORT

HAZARD AND RISK ASSESSMENT FOR BULK LIQUEFIED PETROLEUM GAS STORAGE EVENTS

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FOREWORD

El Research report: Hazard and risk assessment for bulk liquefied petroleum gas storage events provides guidance on hazard and risk assessment for bulk liquefied petroleum gas (LPG) storage fire and explosion events for installations such as those at petroleum refineries, import and distribution terminals and depots, and large industrial customer installations, where the storage capacity exceeds the UK Control of Major Accident Hazards (COMAH) Regulations top tier threshold. Most emphasis is placed on pressurised storage, as this is the most common, although refrigerated storage is also considered.

The guidance provided in this Research report is intended for use by operations managers, process safety engineers, safety advisors, design engineers, or other stakeholders in the bulk LPG storage sector. Applying the guidance set out here should assist attainment of legal compliance for safety, as well as satisfying other risk drivers; in particular, it should assist users to meet some of the pertinent requirements of the COMAH Regulations.

The guidance provided in this Research report should be of particular assistance to those needing to evaluate bulk LPG storage installation layouts and associated handling operations: it provides process information and input data on consequence assessment for fire and explosion events using modern software modelling packages. In addition, it provides guidance on risk assessment techniques (ranging from qualitative through to quantitative) and benchmarking against agreed risk criteria. In doing so, it facilitates a case-by-case risk-based approach rather than providing a set of prescriptive hazard consequence requirements.

Going forward, the intent is to adopt this Research report as Annex A in a 3rd edition of *El Model code of safe practice Part 9: Liquefied petroleum gas: Volume 1 – Large bulk pressure storage and refrigerated LPG*.

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This Research report may be further reviewed from time to time. It would be of considerable assistance in any future revision if users would send comments or suggestions for improvement to:

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Such comments have been considered and, where appropriate, incorporated. The EI wishes to record its appreciation of the work carried out by them and others who participated during the technical review.