

Research report:

Guidance on available literature for assessing
and managing ageing plant at bulk liquid
storage facilities

RESEARCH REPORT: GUIDANCE ON AVAILABLE LITERATURE
FOR ASSESSING AND MANAGING AGEING PLANT
AT BULK LIQUID STORAGE FACILITIES

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FOREWORD

The purpose of this guidance is to act as a signposting document, for operators, to relevant industry technical guidance for assessing and managing a range of ageing assets at onshore bulk liquid storage and distribution terminals. The aim is to assist operators in assessing and managing through effective targeting and maintenance of plant. This document can provide a useful reference to relevant codes, standards and guidance and other information which may be of use.

Industry research was conducted to help contribute to the content of this guidance which also helped the authors to identify current good practice and identify any potential gaps in knowledge.

The document applies to civil, structural, mechanical and pipework assets at onshore terminals within the limits of a terminal boundary. This includes jetties and associated equipment, where present. Excluded are pipelines that extend beyond the site boundary, electrical, control and instrumentation (EC&I), electrical switchgear and buildings.

All parts of this document are intended to be applicable to assets at all points in their operating life.

Whilst this publication has listed other relevant guidance, this is by no means exhaustive nor does it attempt to assist in compliance. It is the responsibility of the operator to ensure that all measures are taken to comply with relevant legislative requirements.

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The project was coordinated by Toni Needham, Technical Manager (Energy Institute).

1 INTRODUCTION

This document has been prepared on behalf of the Distribution and Marketing Committee who have identified a specific need for a signposting document, which should provide an accessible resource for the management of plant commonly operated at onshore bulk liquid storage and distribution terminals. The aim is to assist the operators of such plant in assessing and managing ageing assets throughout their life. This should enable the efficient targeting of inspection and maintenance resources in order to mitigate potentially costly and hazardous failures through appropriate consideration of the associated risks.

Due to the large body of literature already available in the public domain, this is accomplished by referencing existing codes, standards and guidance which are applicable to the plant typically found at these distribution terminals. This approach avoids the need to duplicate the comprehensive data already developed by a number of organisations.

To support this process and ensure its relevance, a survey was circulated to a number of operators of onshore bulk liquid storage and distribution terminals. This ensured some reflection of the practices currently employed and issues encountered by operators relating to the ageing of equipment. An overview of the survey responses relevant to each piece of equipment considered in the following sections is included.

It is intended that this guidance is used by operators of onshore bulk liquid storage and distribution terminals, and those involved in managing inspection and maintenance programmes for equipment on these sites.

2 SCOPE

The following sections give a guide to documents which may be used as a basis for managing ageing equipment at distribution terminals. Some general information relating to ageing of this equipment is discussed, and any significant gaps in the available literature are identified where these exist.

Due to the wide range of equipment and product, and the range of degradation mechanisms that may occur, it is not possible to ensure that all equipment and all feasible degradation mechanisms are covered in this document.

2.1 INCLUSIONS

The document applies to civil, structural, mechanical and pipework assets at onshore terminals within the limits of the terminal boundaries. This includes jetties and associated equipment, where present.

2.2 EXCLUSIONS

This document excludes the following items:

- Pipelines extending beyond the site boundary.
 - These are usually inspected and maintained in a separate scope from on-site equipment.
- Electronic, control and instrumentation (EC&I) items.
 - These items are generally inspected and maintained in line with manufacturer instructions.
- Electrical switchgear and substations, generic items such as buildings.
 - These items do not generally have specific requirements for inspection and maintenance at bulk liquid storage facilities but will be inspected and maintained following the same guidance applicable to these items on all sites.