

Model code of safe practice

Part 2

Guidance on the design, construction and
operation of petroleum distribution installations

5th edition

EI MODEL CODE OF SAFE PRACTICE

PART 2: GUIDANCE ON THE DESIGN, CONSTRUCTION AND OPERATION
OF PETROLEUM DISTRIBUTION INSTALLATIONS

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CONTENTS

	Page
Foreword	12
Acknowledgements	14
1 Scope	15
1.1 Object	15
1.2 Inclusions	15
1.3 Exclusions	15
2 Planning of installations	16
2.1 General	16
2.1.1 Legislative requirements	16
2.1.2 Layout and design	16
2.1.3 Hazardous area classification	16
2.1.4 Prevention of leakage and containment	17
2.1.5 Risk assessments	17
2.1.6 Emergency planning arrangements	18
2.1.7 Pre-Construction and pre-operation safety reports	19
2.2 Security	19
2.2.1 Risk assessment	19
2.2.2 Boundary fencing	19
2.2.3 Gates and barriers	20
2.2.4 Access control	21
2.2.5 Additional security measures	21
2.3 Tankage layout and safety distances	21
2.3.1 General	21
2.3.2 Method of determining minimum separation distances	22
2.3.3 Installations for Classes I, II (2) and III (2) petroleum products	22
2.3.4 Installations for Class II (1) petroleum products	23
2.3.5 Installation for Class III (1) petroleum products and unclassified liquids	23
2.3.6 Storage of non-hydrocarbons	23
2.4 Tank bunds	23
2.4.1 Bunds – product containment	23
2.4.2 Bund walls – fire protection	25
2.5 Loading and unloading facilities	25
2.5.1 Road	25
2.5.2 Rail	25
2.5.3 Jetties and wharves	25
2.6 Roadways, Parking areas and pedestrian access	26
2.6.1 Layout	26
2.6.2 Vehicular access	26
2.6.3 Parking	27
2.6.4 Pedestrian access	27
2.7 Buildings	27
2.7.1 Occupied buildings	27
2.7.2 Service buildings, laboratories and stores	28
2.7.3 Boiler house, power plant and fire pump houses	29
2.7.4 Road tanker workshops	29

Contents continued

	Page
2.8 Storage of packed products in the open	29
2.8.1 Layout	29
2.8.2 Storage	29
2.8.3 Spillage containment	30
2.8.4 Containment volume	30
2.9 Drainage	30
2.9.1 General	30
2.9.2 Areas where surface water may be contaminated with oil	30
2.9.3 Areas where surface water cannot be contaminated with oil	31
2.9.4 Oil/water separators (including interceptors)	31
2.9.5 Ethanol release to soil and groundwater	31
2.9.6 Diesel release to soil and groundwater	32
2.9.7 Fire water	32
2.9.8 Foul sewage	32
3 Design and construction of plant, equipment and buildings	33
3.1 General	33
3.2 Electrical, and safety related control & instrumentation systems	34
3.2.1 General	34
3.2.2 Power distribution	35
3.2.3 Data transmission cables	35
3.2.4 Area classification	35
3.2.5 Electrical equipment	35
3.2.6 Circuits in hazardous areas	36
3.2.7 Equipment and protective systems for use in potentially explosive atmospheres	36
3.2.8 Determination of the presence of dangerous substances	36
3.2.9 Safety-related control systems	37
3.2.10 Overfill protection systems for storage tanks	37
3.2.11 Application of LOPA to the overflow of an atmospheric tank	38
3.2.12 Incorporation of SIL assessments into COMAH/Pre-Operations safety report	38
3.2.13 Construction/commissioning	38
3.2.14 Operation	38
3.2.15 Maintenance, inspection and testing	38
3.2.16 Modifications	39
3.3 Tanks	39
3.3.1 Standards	39
3.3.2 Design pressure	40
3.3.3 Tank fittings	40
3.3.4 Tank connections	40
3.3.5 Normal venting for fixed roof tanks	40
3.3.6 Emergency venting	41
3.3.7 Emissions control	41
3.3.8 Tank overfill prevention and high-level alarms	42
3.3.9 Design of automatic tank overfill protection systems	44
3.3.10 Proof testing of overfill protection systems	45
3.3.11 Manways	46
3.3.12 Stairways, gangways and ladders	47

Contents continued

	Page
3.3.13 Gauging, sampling and temperature measurement	47
3.3.14 External floating roof tanks	48
3.3.15 Internal floating roofs.	49
3.3.16 Earthing and bonding	49
3.3.17 Buried and mounded tanks	49
3.3.18 Foundations and supports	52
3.3.19 Inspection and testing	52
3.3.20 Corrosion protection	53
3.3.21 Tank bunds	53
3.3.22 Tank bund construction for hydrocarbon storage and upgrading of existing sites.	54
3.3.23 Change in use	55
3.3.24 Tertiary containment	56
3.3.25 Geodesic domes.	56
3.4 Piping, valves and fittings	57
3.4.1 General	57
3.4.2 Piping code	57
3.4.3 Materials	57
3.4.4 Pipe thickness	58
3.4.5 Pipe joints	58
3.4.6 Valves	58
3.4.7 Flanges and fittings	59
3.4.8 Installation and flexibility	60
3.4.9 Thermal pressure relief.	60
3.4.10 Inspection and testing	61
3.4.11 Piping systems above or below ambient temperatures	61
3.4.12 Hoses.	61
3.4.13 Articulated pipe connections	61
3.4.14 Corrosion protection	62
3.4.15 Surge suppression	62
3.4.16 Segregation	62
3.4.17 Identification	62
3.5 Pumps.	62
3.5.1 Location.	62
3.5.2 Pump type and seal design.	63
3.5.3 Pump installation	63
3.5.4 Driving units for pumps	64
3.6 Compressors	64
3.6.1 Location.	64
3.7 Bulk road and rail loading and unloading facilities	65
3.7.1 Construction materials	65
3.7.2 Loading arrangements	65
3.7.3 Layout of road tanker loading and unloading facilities	67
3.7.4 Layout of railcar loading and unloading facilities	68
3.7.5 Railcar loading and unloading areas	68
3.7.6 Loading and unloading equipment for railcars and road tankers.	68
3.7.7 Vapour recovery system	71
3.7.8 Control for unloading operations	72
3.7.9 Platforms for top loading	72
3.7.10 Stray currents, earthing and bonding	73

Contents continued

	Page
3.7.11 Loading island emergency systems	73
3.7.12 Automated shutdown valves	75
3.8 Marine loading and unloading facilities	76
3.8.1 General	76
3.8.2 Equipment at jetties and wharves	76
3.8.3 Submarine petroleum pipelines	78
3.8.4 Protection against static electricity, lightning and electric currents	78
3.8.5 Vapour recovery systems	79
3.9 Vapour recovery and handling	80
3.9.1 General	80
3.9.2 Flame arresters	81
3.9.3 Design considerations	82
3.9.4 Vapour holding tanks	83
3.9.5 Vapour blower	85
3.9.6 Storage tank balancing systems	85
3.9.7 VRU reclaimed product	86
3.9.8 Impact of gasoline-alcohol blends on VRUs	87
3.10 Additive injection	87
3.10.1 General	87
3.10.2 Point of injection	88
3.11 Blending to tanker	89
3.12 Biofuel blending	89
3.13 Package filling and package storage buildings	90
3.13.1 General construction	90
3.13.2 Heating	90
3.13.3 Ventilation	90
3.13.4 Service doors, windows and skylights	90
3.13.5 Packaging machinery	90
3.14 Package storage areas outside buildings	91
3.14.1 Construction	91
3.14.2 Spillage	91
3.15 Drainage	91
3.15.1 General	91
3.15.2 Oil/water separators	92
3.15.3 Tank water bottoms	93
3.15.4 Loading island drainage	93
3.16 Safety and directional signage	94
3.17 Final project documentation	94
4 Operations	95
4.1 General	95
4.1.1 Compliance	95
4.1.2 Security	95
4.1.3 Staff	96
4.1.4 Facilities	96
4.1.5 Supervisory controls	96
4.2 Loading and unloading of road tankers	97
4.2.1 General	97
4.2.2 Use of a safe loading pass scheme	98

Contents continued

	Page
4.2.3 Procedures	98
4.2.4 Emergency action	99
4.3 Loading and unloading of railcars	100
4.3.1 General	100
4.3.2 Loading procedures	100
4.3.3 Discharge procedures	101
4.3.4 Safety precautions	101
4.3.5 Electrical earthing and electrical bonding	102
4.3.6 Personnel safety	102
4.4 Transferring petroleum products to and from ships	103
4.4.1 General	103
4.4.2 Testing of safety systems	103
4.4.3 Examination of pipework	103
4.5 Storage tank operation	103
4.5.1 General	103
4.5.2 Procedures	104
4.5.3 Tank gauging and sampling	104
4.5.4 Drainage of water bottoms from tanks	105
4.5.5 Floating roof tanks	105
4.5.6 Internal floating covers	106
4.5.7 Ethanol storage and handling	106
4.5.8 Fame/diesel storage and handling	107
4.5.9 Precautions to avoid static charges	108
4.5.10 Drainage of tank compounds	108
4.5.11 Precautions to be taken with tanks connected to vapour balancing systems	109
4.6 Vapour recovery systems	109
4.6.1 Vapour recovery system checks	109
4.6.2 Vapour recovery units	109
4.6.3 VRU maintenance	110
4.7 Pumps	110
4.7.1 Inspection and testing	110
4.7.2 Pump operations	111
4.7.3 Pump glands and seals	111
4.7.4 Suction conditions	111
4.8 Pipelines	111
4.8.1 General	111
4.8.2 Multi-product pipelines	111
4.8.3 Procedures for fuel transfer by pipeline	112
4.8.4 Operator responsibilities in pipeline receipt	112
4.8.5 Line clearing	113
4.8.6 Valves	114
4.9 Packaging	114
4.9.1 Cleaning and gas-freeing	114
4.9.2 Repairs	114
4.9.3 Filling	114
4.9.4 Storage	115
4.9.5 Handling	116
4.9.6 Mechanical handling equipment	116
4.9.7 Fork lift trucks, power trolleys	116

Contents continued

	Page
4.10 General facilities	117
4.10.1 Boilers	117
4.10.2 Hot oil heaters	118
4.10.3 Compressed air	118
4.10.4 Oil/water separators	118
4.10.5 Additive injection equipment	119
4.11 Emergency procedures	119
4.11.1 General	119
4.11.2 Fire	119
4.11.3 Accidents involving road tankers	119
4.11.4 Spillages	120
4.11.5 Contamination	120
4.11.6 Personal injury	120
4.11.7 Emergency exercises	120
5 Fire protection	121
5.1 General	121
5.1.1 Ethanol fires	121
5.1.2 Tank overflow detection for fire prevention	122
6 Maintenance and modifications	123
6.1 General	123
6.1.1 Introduction	123
6.1.2 Maintenance, planning and control	123
6.1.3 Management of changes	123
6.1.4 Safe systems of work	124
6.2 Safety of work on site	124
6.2.1 Assessment of extent of hazard	124
6.2.2 Safety precautions	125
6.2.3 Safety distances	125
6.2.4 Hot work in or near hazardous areas	126
6.2.5 Fire precautions	126
6.2.6 Confined space entry	127
6.3 Repairs, alterations, tests	127
6.3.1 Detailed instructions	127
6.3.2 Tanks and vessels	127
6.3.3 Pipelines, pumps, valves	128
6.3.4 Electrical	128
6.3.5 Records	129
6.3.6 Work on equipment in operation	129
6.3.7 Removal of equipment to workshops or outside the installation	129
6.4 Personnel	130
6.4.1 Planning and supervision	130
6.4.2 Temporary personnel	130
6.5 Equipment	130
7 Tank cleaning	131
7.1 General	131
7.2 Personnel	131
7.3 Planning	131
7.4 Equipment	131

Contents continued

	Page
8 Closure, decommissioning and demolition	132
8.1 General	132
8.2 Closure	132
8.3 Decommissioning	133
8.3.1 General	133
8.3.2 Risk assessment	133
8.3.3 Tankage	133
8.3.4 Pipelines and pipework	133
8.3.5 Additive systems	133
8.3.6 Electrical	134
8.3.7 Utilities	134
8.3.8 Soil and groundwater	134
8.4 Demolition	134
8.4.1 General	134
8.4.2 Site safety supervision	135
8.4.3 Method statement	135
8.4.4 Demolition contracts	135
9 Health, welfare and protection of personnel	136
9.1 General responsibilities	136
9.1.1 Management responsibilities	136
9.1.2 Employees' responsibilities	136
9.2 Specific responsibilities	137
9.2.1 Health and safety policy statement	137
9.2.2 Protection of employees and others	137
9.2.3 Control of Substances Hazardous to Health (COSHH)	137
9.2.4 Protection of workers from the risk of explosive atmospheres	137
9.2.5 Arrangements to deal with accidents, incidents and emergencies	140
9.3 Guidance	141
9.4 Visitors to site	141
10 Training and competence	142
10.1 Training requirements	142
10.2 Training subjects	142
10.3 Competency records	143
10.4 Roles, responsibilities and competence	144
Annexes	
Annex A Glossary of terms and abbreviations	146
A.1 Glossary of terms	146
A.2 Abbreviations	153
Annex B Recommended minimum separation distances for installations handling Class i, ii (2) and iii (2) petroleum	155
Annex C Recommended list of records to be maintained at distribution installations	158

Contents continued

	Page
C.1 Statutory notification	158
C.2 Construction records	158
C.3 Operational records	158
Annex D Classes and characteristics of petroleum products	160
Annex E Personal protective equipment requirements	162
E.1 Introduction	162
E.2 Scope	162
E.3 Application	162
E.4 Precautions in use	164
E.4.1 Flame retardant overalls	164
E.4.2 Full body harness	164
E.4.3 Safety footwear	164
E.4.4 Hand protection	164
E.4.5 Safety helmet	164
E.4.6 Hearing protection	165
E.4.7 Hi-Viz	165
E.4.8 Respiratory protection	165
Annex F References	166

LIST OF FIGURES AND TABLES

	Page
Figures	
Figure 1	Overfill protection (tank levels). 44
Tables	
Table B.1	Location and spacing for above-ground tanks for product storage, Classes I, II (2) and III (2). 155
Table B.2	Minimum recommended separation distances for single 'small' tanks from site boundaries, buildings, process areas and fixed sources of ignition 156
Table B.3	Minimum separation distances for outdoor storage of packages containing Classes I, II (2) and III (2) petroleum at all installations 157
Table D.1	Petroleum classes 160
Table D.2	Typical commonly encountered petroleum materials 161
Table E.1	PPE requirements for routine operations at distribution installation operational areas (read in conjunction with E.4.) 163

FOREWORD

EI Model Code of Safe Practice Part 2: Guidance on the design, construction and operation of petroleum distribution installations has been developed to provide generic multidisciplinary guidance and good practice in the layout, design and construction of distribution installations and their equipment. It also provides certain information on the management and operation of such installations but is not intended to be comprehensive in this regard and many topics are supported by the use of cited technical references.

This Model Code provides recommendations for good practice. It is stressed that design and construction of plant and equipment should be carried out by competent people and that, in making provisions for safety, due consideration should be given to the effect of any additional circumstances, where general good practice may not be reasonably practicable. It is not intended that the recommendations in this Model Code should be applied rigidly to existing premises, where for a variety of reasons it may not be practicable to implement them.

It is primarily intended for use by those involved in the layout, design, construction, management and operation of new distribution installations, and those undergoing significant redevelopment.

It is not meant to be a definitive guide to risk assessment techniques which are required throughout the entire life cycle of such installations. It assumes the reader has experience in this area and, when required, should follow up on the references given for risk assessment methodologies in the relevant sections.

Whilst written in the context of the United Kingdom (UK) legislative and regulatory framework, the principles set out in this publication can be similarly applied in other countries, provided national and local statutory requirements are complied with. Where the requirements differ, the more stringent should be adopted. A similar legislative and regulatory framework generally applies throughout in the European Union.

Key technical changes in the fourth and subsequent editions of this Model Code have been made in response to the publication of UK Health and Safety Executive (HSE) *Safety and environmental standards for fuel storage sites*. This was the final report of the Process Safety Leadership Group (PSLG), convened to drive forward standards in process safety leadership and to complete the implementation of the Buncefield Major Incident Investigation Board's (MIIB) recommendations. The main purpose of this report was to specify minimum standards of control which should be in place at all installations storing large volumes of gasoline; however, recommendations can be inferred for the atmospheric storage of Class I, II and III hydrocarbon products. For existing facilities, a review should be undertaken against the guidance in this Model Code for 'in-scope gasoline' tanks.

Numerous research documents continue to highlight areas of uncertainty with respect to large scale evaporating hydrocarbon cascades and the modelling of vapour cloud dispersion and explosions. Reports detailing the findings of such research may provide further guidance; however, no definitive recommendations have been developed to date which can be included in this Model Code.

The guidance in this Model Code should be considered as good practice. Operators of distribution installations should adopt good practice measures so far as is reasonably practicable. The HSE publication *Assessing compliance with the law in individual cases and the use of good practice* states:

'When reviewing health or safety measures on an existing plant, installation or situation (such as when considering retrofitting, safety reviews or upgrades), duty-holders should compare existing measures against current good practice. The good practice measures set out should be adopted so far as is reasonably practicable. It might not be reasonably practicable to apply retrospectively to existing plant, for example, all the good practice expected for new plant. However, there may still be ways to reduce the risk, e.g. by partial solutions, alternative measures etc.'

Although it is anticipated that following this publication will assist those involved in the layout, design, construction and operation of petroleum distribution installations, the information contained in this publication is provided as guidance only. While every reasonable care has been taken to ensure the accuracy of its contents, the EI cannot accept any responsibility for any action taken, or not taken, on the basis of this information. The EI shall not be liable to any person for any loss or damage which may arise from the use of any of the information contained in any of its publications.

The above disclaimer is not intended to restrict or exclude liability for death or personal injury caused by own negligence.

Suggested revisions are invited and should be submitted to the Technical Department, Energy Institute, 61 New Cavendish Street, London, W1G 7AR (e: technical@energyinst.org).

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Zaf Iqbal	BP Oil UK Ltd
Toni Needham	Energy Institute
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Technical editing and project coordination were undertaken by Toni Needham, Energy Institute (EI).

1 SCOPE

1.1 OBJECT

The object of this Model Code is to provide guidance on the design, construction, operation, maintenance and decommissioning of facilities at petroleum distribution installations.

It is not intended to preclude the use of alternative designs, materials and methods where these provide equivalent standards of operation.

1.2 INCLUSIONS

This Model Code covers the receipt, storage and handling of petroleum products at all locations and should be read in conjunction with the following HSE publications or their equivalents in other countries:

- HSG51 The storage of flammable liquids in containers;
- HSG176 The storage of flammable liquids in tanks;
- HSG186 The bulk transfer of dangerous liquids and gases between ship and shore, and
- Process Safety Leadership Group (PSLG) Safety and environmental standards for fuel storage sites.

1.3 EXCLUSIONS

This Model Code does not cover retail filling stations, facilities for the storage of liquefied petroleum gas (LPG) and bitumen, systems for the piped distribution and associated storage of heating oil and certain aspects of fuel storage at airports: technical guidance for these facilities/operations is provided in other EI publications (see Annex F).