INDEX

STANDARD DRAWINGS

DEP 00.00.06.06-Gen.

August 1999

DESIGN AND ENGINEERING PRACTICE

PREFACE

DEP (Design and Engineering Practice) publications reflect the views, at the time of publication, of:

Shell International Oil Products B.V. (SIOP)
and
Shell International Exploration and Production B.V. (SIEP)
and
Shell International Chemicals B.V. (SIC)

The Hague, The Netherlands,

and other Service Companies.

They are based on the experience acquired during their involvement with the design, construction, operation and maintenance of processing units and facilities, and they are supplemented with the experience of Group Operating companies. Where appropriate they are based on, or reference is made to, national and international standards and codes of practice.

The objective is to set the recommended standard for good design and engineering practice applied by Group companies operating an oil refinery, gas handling installation, chemical plant, oil and gas production facility, or any other such facility, and thereby to achieve maximum technical and economic benefit from standardization.

The information set forth in these publications is provided to users for their consideration and decision to implement. This is of particular importance where DEPs may not cover every requirement or diversity of condition at each locality. The system of DEPs is expected to be sufficiently flexible to allow individual operating companies to adapt the information set forth in DEPs to their own environment and requirements.

When Contractors or Manufacturers/Suppliers use DEPs they shall be solely responsible for the quality of work and the attainment of the required design and engineering standards. In particular, for those requirements not specifically covered, the Principal will expect them to follow those design and engineering practices which will achieve the same level of integrity as reflected in the DEPs. If in doubt, the Contractor or Manufacturer/Supplier shall, without detracting from his own responsibility, consult the Principal or its technical advisor.

The right to use DEPs is granted by SIOP, SIEP or SIC, in most cases under Service Agreements primarily with companies of the Royal Dutch/Shell Group and other companies receiving technical advice and services from SIOP, SIEP or SIC. Consequently, three categories of users of DEPs can be distinguished:

1) Operating companies having a Service Agreement with SIOP, SIEP, SIC or other Service Company. The use of DEPs by these Operating companies is subject in all respects to the terms and conditions of the relevant Service Agreement.

2) Other parties who are authorized to use DEPs subject to appropriate contractual arrangements.

3) Contractors/subcontractors and Manufacturers/Suppliers under a contract with users referred to under 1) or 2) which requires that tenders for projects, materials supplied or - generally - work performed on behalf of the said users comply with the relevant standards.

Subject to any particular terms and conditions as may be set forth in specific agreements with users, SIOP, SIEP and SIC disclaim any liability of whatsoever nature for any damage (including injury or death) suffered by any company or person whomsoever as a result of or in connection with the use, application or implementation of any DEP, combination of DEPs or any part thereof. The benefit of this disclaimer shall inure in all respects to SIOP, SIEP, SIC and/or any company affiliated to these companies that may issue DEPs or require the use of DEPs.

Without prejudice to any specific terms in respect of confidentiality under relevant contractual arrangements, DEPs shall not, without the prior written consent of SIOP and SIEP, be disclosed by users to any company or person whomsoever and the DEPs shall be used exclusively for the purpose for which they have been provided to the user. They shall be returned after use, including any copies which shall only be made by users with the express prior written consent of SIOP and SIEP. The copyright of DEPs vests in SIOP and SIEP. Users shall arrange for DEPs to be held in safe custody and SIOP or SIEP may at any time require information satisfactory to them in order to ascertain how users implement this requirement.

All administrative queries should be directed to the DEP Administrator in SIOP.

NOTE: In addition to DEP publications there are Standard Specifications and Draft DEPs for Development (DDDs). DDDs generally introduce new procedures or techniques that will probably need updating as further experience develops during their use. The above requirements for distribution and use of DEPs are also applicable to Standard Specifications and DDDs. Standard Specifications and DDDs will gradually be replaced by DEPs.

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1. INTRODUCTION

1.1 SCOPE

This Index lists all Standard Drawings which are currently active in SIOP/SIEP and those which have been cancelled since the previous issue of this Index dated December 1998.

The drawings are listed in numerical order within subject groups. The year of issue of the current revision of each drawing is shown. The initial issue of a drawing is identified by the capital letter "O", the first revision is identified by the capital letter "A", and subsequent revisions by the capital letters "B", "C", etc.

A vertical line in the margin (|) identifies all new drawings, revised drawings and those which have been cancelled since the previous issue of this Index.

Drawings shown as cancelled in this Index will not be included in subsequent issues.

1.2 DISTRIBUTION, INTENDED USE AND REGULATORY CONSIDERATIONS

Unless otherwise authorised by SIOP and SIEP, the distribution of this DEP is confined to companies forming part of the Royal Dutch/Shell Group or managed by a Group company, and to Contractors nominated by them (i.e. the distribution code is "C", as described in DEP 00.00.05.05-Gen.).

This DEP is intended for use in oil refineries, chemical plants, gas plants and, where applicable, in exploration and production facilities and supply/marketing installations.

If national and/or local regulations exist in which some of the requirements may be more stringent than in this DEP the Contractor shall determine by careful scrutiny which of the requirements are the more stringent and which combination of requirements will be acceptable as regards safety, environmental, economic and legal aspects. In all cases the Contractor shall inform the Principal of any deviation from the requirements of this DEP which is considered to be necessary in order to comply with national and/or local regulations. The Principal may then negotiate with the Authorities concerned with the object of obtaining agreement to follow this DEP as closely as possible.

1.3 STANDARD DRAWING NUMBERS

With a few exceptions, Standard Drawings have the prefix "S" (which is not shown in the numerical index). A few drawings with "T" or Tc" prefixes were placed in the Standard Drawing system many years ago, and these drawings will be given a prefix "S" when they are next revised.

1.4 STANDARD DRAWING DISTRIBUTION

The Standard Drawings listed in this DEP are available to companies forming part of the Royal Dutch/Shell Group or managed by a Group company, subject to the appropriate Service Agreement. The drawings may be made available to Contractors and Manufacturers/Suppliers under the same conditions as DEPs.

Hard copies of new and/or revised drawings are not automatically distributed; requests for drawings should be addressed to SIOP The Hague, OGF/3 (with copy to SI-DHS/2).

Since early 1997, Standard Drawings which have been made electronically have been distributed on the DEP CD-ROM. The Standard Drawings which are available electronically are identified by the letter "Y" in the last column of the index.

1.5 CUSTODIANSHIP

The Custodian of each Standard Drawing is identified in the 5th column of the index.

The current incumbents are as follows:

Custodian	Name	Location	Phone
OGBC/1	de la Vieter, R.F.	The Hague	#31 70 377 4777
OGBC/2	Kremer, J.	The Hague	#31 70 377 1652
OGBC/4	van Vliet, R.M.J.H.	The Hague	#31 70 377 2454
OGBE/3	Griffin, P.T.	The Hague	#31 70 377 3149
OGBE/4	Walley, G.A.	The Hague	#31 70 377 3977
OGBE/5	van Burg, C.J.	Amsterdam	#31 20 630 3140
OGBH/6	Yuen, H.S.	The Hague	#31 70 377 2626
OGBP/4	Ghijsen, P.	Amsterdam	#31 20 630 2924
OGBP/8	Hasenack, H.J.A.	The Hague	#31 70 377 4103
OGCH/1	Pescott, R.D.	The Hague	#31 70 377 1484
OGTB	Suenson, M.M.	The Hague	#31 70 377 2488
OGTT	Schrijvers, F.A.M.	Amsterdam	#31 20 630 2734

2. NUMERICAL INDEX BY GROUP

S 01 SCHEMES, DIAGRAMS AND SYSTEMS

Drawing Number	Issue Year	Rev	Title	Custodian	CAD ?
01.001	1997	C	refinery fuel gas system	OGBP/8	Y
01.002	1997	D	refinery fuel gas system (incl. off-spec. LPG disposal)	OGBP/8	Y
01.003	1997	D	refinery fuel oil system	OGBP/8	Y
01.004	1997	D	refinery asphalt system	OGBP/8	Y
01.005	1997	D	heat-transfer fluid system	OGBP/8	Y
01.006	1997	B	refinery LBF/liq butane system	OGBP/8	Y
01.007	1997	B	system for burning waste gas from high vacuum units and vacuum driers	OGBP/8	Y
01.008	1997	B	system for burning waste gas from sour water stripper	OGBP/8	Y
01.009	1997	B	system for burning waste gas from bitumen blowing units	OGBP/8	Y
01.010	1997	B	system for burning low-pressure gas	OGBP/8	Y
01.011	1993	C	standard process safeguarding flow diagram of a thermal cracker (excl. fractionation section, distillate cracking section and vacuum flasher)	OGTT	Y

S 02 MECHANICAL SYMBOLS

Drawing Number	Issue Year	Rev	Title	Custodian	CAD ?
02.001	1998	O	mechanical symbols for isometric drawings	OGBE/4	Y
02.002-001	1998	O	mechanical symbols for use on flow schemes: sheet 1 - pipe symbols and pipe indicator	OGBE/4	Y
02.002-002	1998	O	mechanical symbols for use on flow schemes: sheet 2 - general and valves	OGBE/4	Y
02.002-003	1998	O	mechanical symbols for use on flow schemes: sheet 3 - vessels and tanks	OGBE/4	Y
02.002-004	1998	O	mechanical symbols for use on flow schemes: sheet 4 - columns and internals	OGBE/4	Y
02.002-005	1998	O	mechanical symbols for use on flow schemes: sheet 5 - pumps, compressors, blowers and fans	OGBE/4	Y
02.002-006	1998	O	mechanical symbols for use on flow schemes: sheet 6 - separators and filters	OGBE/4	Y
02.002-007	1998	O	mechanical symbols for use on flow schemes: sheet 7 - mixers	OGBE/4	Y
02.002-008	1998	O	mechanical symbols for use on flow schemes: sheet 8 - heat transfer equipment	OGBE/4	Y
02.002-009	1998	O	mechanical symbols for use on flow schemes: sheet 9 - drying equipment	OGBE/4	Y
02.002-010	1998	O	mechanical symbols for use on flow schemes: sheet 10 - furnaces	OGBE/4	Y
02.002-011	1998	O	mechanical symbols for use on flow schemes: sheet 11 - miscellaneous equipment	OGBE/4	Y
02.002-012	1998	O	mechanical symbols for use on flow schemes: sheet 12 - data identification	OGBE/4	Y

S 10 UNIVERSAL CONSTRUCTIONS FOR COLUMNS, VESSELS, TUBULARS, ETC.

Drawing Number	Issue Year	Rev	Title	Custodian	CAD ?
10.010	1995	F	vortex breakers	OGBE/4	Y
10.016	1995	E	flanges for non-pressure pipe connections inside vessels	OGBE/4	Y
10.030	1996	B	lifting lug for top covers (material: carbon steel, low-alloy steel or stainless steel)	OGBE/4	Y
10.031	1995	D	hatch way covers	OGBE/4	Y
10.035	1995	F	bolting non-standard flanges with unified inch screw threads	OGBE/4	Y
10.039	1995	B	pad-type hand holes with cover flange ANS class 150 and 300 for unfired carbon steel, low alloy steel and stainless steel pressure vessels	OGBE/4	Y
10.040	1976	A	explosion cover	OGBE/4	
10.041	1981	B	typical drawing of bitumen catcher on top of a blowing tower	OGBE/4	
10.045	1999	E	anchor bolts with sleeve for concrete foundations and structures	OGBC/1	Y
10.046	1995	B	stilling well for displacement type level instruments	OGBE/4	Y
10.050	1996	A	wall-type gauge glass with reflex or transparent glass.	OGBE/4	Y
10.053	1995	A	pad-type hand holes, carbon steel	OGBE/4	Y
10.054	1995	A	pad-type hand holes, carbon steel with lining	OGBE/4	Y
10.056	1992	A	typical details of insulation collar for carbon, low-alloy steel and stainless steel apparatus	OGBC/1	
10.057	1996	A	typical details of 1/2 inch spray nozzle for sight and light glasses	OGBE/4	Y
10.060	1996	A	pad flange for circular sight or light glass - carbon steel and alloy steel (incl. stainless steel)	OGBE/4	Y
10.061	1996	A	pad flange for circular sight or light glass - clad carbon steel	OGBE/4	Y
10.062	1996	A	replaceable glass/flange unit for circular sight or light glass (single glass type)	OGBE/4	Y
10.063	1996	B	replaceable glass/flange unit for circular sight or light glass (double glass type)	OGBE/4	Y
10.070	1995	B	davit for ANS or BS blind flanges nom. size 12-24 inch incl., classes 150-600 incl.	OGBE/4	Y
10.101	1998	E	equipment nozzles	OGBE/4	Y
10.103	1995	C	typical details of bush-lined, overlay welded and clad steel nozzles	OGBE/4	Y
10.107	1995	C	flanged thermowell nozzle DN 40 mm on equipment	OGBE/4	Y
10.108	1995	B	strip lining details	OGBE/4	Y
10.109	1995	B	cleat and sleeve for surface-mounted thermometer assembly	OGBE/4	Y

Drawing Number	Issue Year	Rev	Title	Custodian	CAD ?
10.110	1996	A	chemical resistant brick linings for process equipment - typical details of brick lining constructions	OGBC/1	Y
10.111	1996	A	chemical resistant brick linings for process equipment - typical details of brick lined shell flanges	OGBC/1	Y
10.112	1996	A	chemical resistant brick linings for process equipment - typical details of brick-lined flanged nozzles (incl. manhole)	OGBC/1	Y
10.114	1995	B	nameplate with bracket for vessel and heat exchange equipment	OGBE/4	Y
10.115	1995	B	typical detail of lifting trunnion for vertical vessels	OGBE/4	Y
10.116	1995	A	bolting for non-standard flanges with metric screw threads	OGBE/4	Y

S 12 CIVIL ENGINEERING - BUND WALLS, TANK PITS, RETAINING WALLS, DITCHES, ETC.

Drawing Number	Issue Year	Rev	Title	Custodian	CAD ?
12.001-001	1996	C	tank foundation. Sheet 1 of 2 - general tank foundation without leak detection	OGBC/2	Y
12.001-002	1996	C	tank foundation. Sheet 2 of 2 - conceptual concrete tank foundation	OGBC/2	Y
12.002	1996	B	bund wall - typical details	OGBC/2	Y
12.003	1996	A	conceptual tank foundation and tank leak detection and management system	OGBC/2	Y

S 13 ROADS AND FENCING

Drawing Number	Issue Year	Rev	Title	Custodian	CAD ?
13.001	1996	A	fence construction type A with reinforced concrete posts	OGBC/2	Y
13.002	1996	A	fence construction type B with Tee posts and horizontal tubing	OGBC/2	Y
13.003	1996	A	fence construction type C with tee posts	OGBC/2	Y
13.004	1996	A	fence construction type D with tubular posts	OGBC/2	Y
13.005	1996	A	typical sections of heavy duty roads (flexible and rigid paving)	OGBC/2	Y
13.006	1996	A	typical sections of plant roads (heavy duty and rigid paving)	OGBC/2	Y
13.007	1996	A	typical sections of light duty roads and patrol roads (flexible and rigid paving)	OGBC/2	Y
13.008	1996	A	traffic barrier for hydrant	OGBC/2	Y

S 14 DRAINAGE AND SEWERAGE FACILITIES

Drawing Number	Issue Year	Rev	Title	Custodian	CAD ?
14.021-001	1995	C	typical 2-bay corrugated plate interceptor. Sheet 1 of 2 - design, start-up, operation and maintenance instructions	OGBC/2	Y
14.021-002	1995	C	typical 2-bay corrugated plate interceptor. Sheet 2 of 2 - General arrangement	OGBC/2	Y

S 17 BUILDINGS

Drawing Number	Issue Year	Rev	Title	Custodian	CAD ?
17.001	1995	O	typical analyser house for tropical areas	OGBC/1	Y
17.002	1995	O	typical analyser house for non-tropical areas	OGBC/1	Y

S 19 CONCRETE FOUNDATIONS AND STRUCTURES, PLANT PAVING, TRENCHES, TRENCH COVERS ETC.

Drawing Number	Issue Year	Rev	Title	Custodian	CAD ?
19.001	1996	B	electrical and instrument cable trenches in concrete paved areas	OGBC/2	Y
19.002	1996	B	cable routing in unpaved, brick-paved or tiled areas and crossing roads	OGBC/2	Y
19.003	1995	A	typical lay-out plans of paving	OGBC/2	Y
19.004	1996	A	light-duty concrete paving and footpaths - typical details	OGBC/2	Y
19.005	1996	A	heavy-duty concrete paving - typical details	OGBC/2	Y
19.006	1996	A	reinforced concrete foundations on or through paving	OGBC/1	Y
19.011	1996	A	liquid tight floor with sub-base treatment system	OGBC/2	Y
19.050	1996	B	chemical resistant brick linings for concrete structures - flooring	OGBC/1	Y
19.051-001	1996	B	chemical resistant brick linings for concrete structures - expansion joint for (limited) multidirectional movement - details of expansion joint in floors. (sheet 1 of 2)	OGBC/1	Y
19.051-002	1996	B	chemical resistant brick linings for concrete structures - expansion joint for (limited) multidirectional movement - details of expansion joint in floors. (sheet 2 of 2)	OGBC/1	Y
19.052	1996	B	chemical resistant brick linings for concrete structures - expansion joint for (limited) multidirectional movement - detail of expansion joint between floor and wall	OGBC/1	Y
19.055	1991	A	drain constructions in floors	OGBC/1	
19.060	1996	B	chemical resistant brick linings for concrete structures - trench construction	OGBC/1	Y
19.062	1996	B	chemical resistant brick linings for concrete structures - trench construction with gres split tiles and half gres pipe elements (Fodder trough)	OGBC/1	Y
19.065	1996	B	chemical resistant brick linings for concrete structures - details of open trench construction lined with bricks or tiles only	OGBC/1	Y
19.071	1996	B	chemical resistant brick linings for concrete structures - detail of foundation	OGBC/1	Y

S 20 COLUMNS

	Drawing Number	Issue Year	Rev	Title	Custodian	CAD ?
|	20.001	1999	J	skirts, cylindrical and conical	OGBE/4	Y
|	20.002	1999	G	fireproof protection of skirts	OGBC/1	Y
	20.003	1997	C	support ring for insulation	OGBC/1	Y
	20.004	1983	G	anchor bolt ring or lugs and base plate for columns	OGBE/4	
	20.015	1996	B	typical details of schoepentoeter (vane feed inlet) (type II)	OGBP/4	Y
	20.016	1996	B	typical details of schoepentoeter (vane feed inlet) (type III)	OGBP/4	Y
	20.017	1996	B	typical details of schoepentoeter (vane feed inlet) (type IV)	OGBP/4	Y
	20.019	1996	D	typical details of schoepentoeter (vane feed inlet) vane ladder-supports and general notes	OGBP/4	Y
	20.020	1996	B	typical details of schoepentoeter (vane feed inlet) with single section vane ladder, max. height 800 mm (type 1A)	OGBP/4	Y
	20.021	1996	A	typical details of schoepentoeter (vane feed inlet) with catcher cap (type 1B)	OGBP/4	Y
	20.022	1996	B	typical details of schoepentoeter (vane feed inlet) with multiple section vane ladder (type 1C)	OGBP/4	Y
	20.025	1996	A	typical details of schoepentoeter (vane feed inlet) (type Hi Fi)	OGBP/4	Y
	20.026	1996	A	typical details of schoepentoeter (vane feed inlet) (type Hi Fi) vane distribution and general notes	OGBP/4	Y
	20.028	1996	A	typical details of demisters	OGBP/4	Y
	20.029	1996	A	typical details of demister attachments	OGBP/4	Y
	20.030	1996	A	typical details of demister supports	OGBP/4	Y

S 21 UNFIRED HEAT TRANSFER EQUIPMENT AND ACCESSORIES

Drawing Number	Issue Year	Rev	Title	Custodian	CAD ?
21.017	1998	C	brackets for standard vertical reboilers. nom. dia. 350 mm up/incl. 1100 mm	OGBE/5	Y
21.071	1998	C	warning nameplate, material: cast bronze	OGBE/5	Y
21.072	1998	E	sacrificial anodes for tubulars	OGBE/5	Y
21.073	1998	C	steel sacrificial plates for tubulars 350 mm nom. dia. and larger	OGBE/5	Y
21.074	1998	A	transport frame for air-cooled heat exchanger (forced draught)	OGBE/5	Y
21.075	1998	A	transport frame for air-cooled heat exchanger (induced draught)	OGBE/5	Y
21.081	1998	O	bottom part for 14” - 16” and 18” dia. reboiler with floating head	OGBE/5	Y
21.082	1998	O	bottom part for 20” - 24” and 26” dia. reboiler with floating head	OGBE/5	Y
21.083	1998	O	bottom part for 24” - 26” - 30” - 32” and 36” dia. reboiler with floating head	OGBE/5	Y
21.084	1998	O	bottom part for 30” - 32” - 36” - 40” and 44” dia. reboiler with floating head	OGBE/5	Y

S 22 VESSELS, INCLUDING INTERNALS AND ACCESSORIES

Drawing Number	Issue Year	Rev	Title	Custodian	CAD ?
22.001	1996	J	saddles for horizontal vessels - shell dia. nom. 150 up to and incl. 1000 mm OD	OGBE/4	Y
22.002	1996	G	saddles for horizontal vessels - shell dia. 1050 mm OD up to and incl. 3600 mm OD	OGBE/4	Y
22.003	1996	G	sliding plate for saddles of horizontal vessels	OGBE/4	Y
22.005	1981	H	supports for vertical vessels shell dia. 350 mm OD up to and incl. 1500 mm OD (half skirts)	OGBE/4	
22.007-001	1999	B	'twin flange' coalescer (TFC): sheet 1 - typical drawing	OGBE/4	Y
22.007-002	1999	B	'twin flange' coalescer (TFC): sheet 2 - design data for coalescing bed	OGBE/4	Y
22.008	1979	A	typical construction detail of connection for intermediate head of pressure vessels	OGBE/4	
22.009-001	1981	O	typical drawing of non-flanged coalescer (NFC) (sheet 1 of 2)	OGBE/4	
22.009-002	1981	O	typical drawing of non-flanged coalescer (NFC) (sheet 2 of 2)	OGBE/4	

S 23 MISCELLANEOUS MECHANICAL EQUIPMENT

Drawing Number	Issue Year	Rev	Title	Custodian	CAD ?
23.101	1996	D	typical drawing of rotating disc contactor	OGBE/4	Y
23.104	1996	C	typical drawing of shaft sealing and top bearing of rotating disc contactor	OGBE/4	Y
23.105	1996	C	typical drawing of shaft, intermediate and bottom bearing of rotating disc contactor	OGBE/4	Y
23.106	1996	C	typical drawing of grids for rotating disc contactor	OGBE/4	Y
23.201	1996	C	typical drawing of stirring kettle for grease plants	ORTTP/5	Y
23.202	1996	C	typical drawing of autoclave for grease plants, hot oil heated	ORTTP/5	Y
23.203	1996	C	typical drawing of autoclave for grease plants, electric/steam heated	ORTTP/5	Y

S 24 FURNACES AND RELATED FACILITIES

Drawing Number	Issue Year	Rev	Title	Custodian	CAD ?
24.001	1978	E	fuel-oil and fuel-gas system for forced draught furnace	OGBE/5	
24.002	1990	F	typical arrangement for air flow measurement in suction of F.D. fans	OGBE/5	
24.005	1990	F	typical arrangement for air flow measurement in discharge of F.D fans	OGBE/5	
24.006	1978	E	fuel-oil and fuel-gas system for natural draught furnace with steam assisted or steam atomized burners	OGBE/5	
24.007	1976	C	typical utility piping arrangement for vertical furnaces	OGBE/5	
24.008	1976	C	typical line-up of 'lyunet' burners in a vertical furnace	OGBE/5	
24.009	1976	C	typical utility piping arrangement for horizontal furnaces	OGBE/5	
24.010	1998	E	typical forced circulation waste heat boiler water/steam circulating system	OGBE/5	Y
24.011	1978	B	fuel-oil and fuel-gas system for forced draught furnace with provisions for LBF/liq. C4 firing	OGBE/5	
24.012	1978	O	fuel-oil and fuel-gas system for forced draught furnace with steam assisted or steam atomized burners	OGBE/5	
24.021	1997	B	fuel-oil and fuel-gas system for a manually started forced draught multiburner furnace	OGBE/5	Y
24.022	1994	B	fuel-oil and fuel-gas system for an automatically started forced draught furnace with two steam atomized burners	OGBE/5	Y
24.023	1994	B	fuel-oil and fuel-gas system for an automatically started forced draught furnace with more than two steam atomized burners	OGBE/5	Y
24.024	1997	B	fuel-oil and fuel-gas system for a single burner furnace	OGBE/5	Y
24.025	1994	B	control and safeguarding system for a forced draught furnace with more than one gasburner	OGBE/5	Y
24.026	1996	C	control and safeguarding system for a furnace with one gasburner	OGBE/5	Y
24.027	1994	A	modifications to existing fuel gas systems to enable safeguarded manual start up and operation on gas	OGBE/5	Y
24.028	1994	A	fuel-gas system for a manually started FD furnace with more than one burner (max 16 burners)	OGBE/5	Y
24.029	1994	A	fuel-gas system for manually started FD furnace with more than 16 burners	OGBE/5	Y
24.030	1997	C	fuel-oil and fuel-gas system for an automatically started, forced draught multiburner furnace/boiler	OGBE/5	Y
24.031	1994	O	air/fuel ratio control and safeguarding	OGBE/5	Y
24.032	1994	O	system for waste gas firing	OGBE/5	Y
24.033	1998	A	control and safeguarding system for a natural draught multiple burner furnace	OGBE/5	Y
24.034	1997	O	fuel-gas system for an automatically started, forced draught multiburner furnace/boiler	OGBE/5	Y

Drawing Number	Issue Year	Rev	Title	Custodian	CAD ?
24.035	1995	O	control and safeguarding system for a fuel gas fired FCC air preheater	OGBE/5	Y
24.036	1997	B	combustion control and safeguarding scheme for tangentially gas-fired CO boiler	OGBE/5	Y
24.101	1994	D	observation window for observing burner throats, coils and furnace cell	OGBC/1	Y
24.102	1994	D	detail of handles and weather protection for observation windows	OGBC/1	Y
24.104	1994	E	tube guides in walls of convection sections with refractory thickness of 100 mm or 125 mm	OGBC/1	Y
24.106	1994	C	typical sketch of transportation/erection frame-work for tube bundles	OGBE/5	Y
24.107	1994	C	spacer strips for convection section piping	OGBE/5	Y
24.108	1994	D	4 inch air-cooled peep hole with flapper	OGBC/1	Y
24.109	1994	D	sight class for 4 inch air-cooled peephole with weather protection	OGBC/1	Y
24.110	1994	C	typical drawing suspension of waste heat boiler coils	OGBE/5	Y
24.111	1994	C	typical drawing of steam-disengaging drum	OGBE/5	Y
24.112	1994	D	typical drawing of shot cleaning equipment	OGBC/1	Y
24.201	1996	D	two hole return bend fitting nom. 3 inch (type horse shoe ANS class 600)	OGBE/5	Y
24.202	1996	D	two hole return bend fitting nom. 4 inch (type horse shoe ANS class 600)	OGBE/5	Y
24.203	1996	D	two hole return bend fitting nom. 6 inch (type horse shoe ANS class 600)	OGBE/5	Y
24.204	1996	D	two hole return bend fitting nom. 8 inch (type horse shoe ANS class 600)	OGBE/5	Y
24.205	1996	D	two hole return bend fitting nom. 4 inch/nom. 3 inch (type horse shoe ANS class 600)	OGBE/5	Y
24.206	1996	D	two hole return bend fitting nom. 6 inch/nom. 4 inch (type horse shoe ANS class 600)	OGBE/5	Y
24.207	1996	D	two hole return bend fitting nom. 8 inch/nom. 6 inch (type horse shoe ANS class 600)	OGBE/5	Y
24.208	1996	D	two hole return bend fitting nom. 3 1/2 inch (type horse shoe ANS class 600)	OGBE/5	Y
24.209	1996	C	two hole return bend fitting nom. 5 inch (type horse shoe ANS class 600)	OGBE/5	Y
24.212	1999	F	typical details of wall and corner joints	OGBC/1	Y
24.215	1994	E	typical details of furnace base	OGBC/1	Y
24.217	1994	F	detail of furnace bottom (without header box)	OGBC/1	Y
24.218	1994	F	detail of double furnace bottom (with header box)	OGBC/1	Y
24.220	1994	E	detail of cover plates for header boxes	OGBC/1	Y

Drawing Number	Issue Year	Rev	Title	Custodian	CAD ?
24.221	1994	E	access door for furnace bottom	OGBC/1	Y
24.222	1994	E	frame for vertical observation window	OGBC/1	Y
24.223	1994	E	frame for horizontal observation window	OGBC/1	Y
24.225	1994	E	access panel with one or two frames for vertical observation windows	OGBC/1	Y
24.226	1994	D	connection of lyunet burner in furnace bottom (single)	OGBC/1	Y
24.227	1994	D	connection of lyunet burner in furnace bottom (double)	OGBC/1	Y
24.229	1994	F	single stuffing box on non and lined plates	OGBC/1	Y
24.231	1994	E	double stuffing box on non and lined plates	OGBC/1	Y
24.232	1994	C	design criteria for wall girders	OGBC/1	Y
24.233	1994	D	typical roof for large furnaces (single cell with welded return bends)	OGBC/1	Y
24.234	1994	D	typical roof for large furnaces (double cell with welding return bends)	OGBC/1	Y
24.235	1994	D	typical roof for small furnaces (single cell with welding return bends)	OGBC/1	Y
24.236	1994	D	typical roof for large furnaces (single cell with fittings at the top only)	OGBC/1	Y
24.237	1994	D	typical roof for small furnaces (single cell with fittings at the top only)	OGBC/1	Y
24.238	1994	E	roof detail 1 and 2 (coil suspension/stuffing box)	OGBC/1	Y
24.240	1994	D	roof detail 3 (coil suspension)	OGBC/1	Y
24.241	1994	D	roof detail 4 (coil suspension)	OGBC/1	Y
24.242	1994	D	roof detail 5 (coil suspension)	OGBC/1	Y
24.243	1994	D	roof detail 6 (header box)	OGBC/1	Y
24.244	1994	D	roof detail 7 (beam end)	OGBC/1	Y
24.245	1994	E	roof detail 8 (panel connection)	OGBC/1	Y
24.246	1994	E	roof detail 9 (panel connection)	OGBC/1	Y
24.247	1994	D	roof detail 10 (flue duct connection)	OGBC/1	Y
24.301	1994	E	flanged connections	OGBC/1	Y
24.302	1994	E	expansion joint for flue duct	OGBC/1	Y
24.303	1994	E	sliding plate in flue duct	OGBC/1	Y
24.304	1994	D	access door for flue duct	OGBC/1	Y
24.306	1996	D	damper for flue duct, single shaft	OGBC/1	Y
24.307	1996	D	damper for flue duct, double shaft	OGBC/1	Y
24.401	1994	C	details of duct for cold air and hot air	OGBC/1	Y
24.404	1996	D	flexible flanged connection for hot air duct	OGBC/1	Y
24.405	1996	D	damper for air duct	OGBC/1	Y
24.407	1996	C	vertical suction pipe with raincap for forced draught fan	OGBC/1	Y

Drawing Number	Issue Year	Rev	Title	Custodian	CAD ?
24.408	1996	C	inspection panel near damper for air duct	OGBC/1	Y
24.409	1996	C	operating mechanism for hand controlled damper	OGBC/1	Y
24.501	1994	E	detail of removable wall panel	OGBC/1	Y
24.502	1996	E	removable panel with inlet or outlet pipe	OGBC/1	Y
24.503	1996	F	connection for tube guides	OGBC/1	Y
24.504	1994	D	detail of coil supporting beam	OGBC/1	Y
24.505	1990	C	detail of supporting cooled support	OGBC/1	
24.508	1996	D	details of hopper floor (details 1, 2, 3, 4 and 5)	OGBC/1	Y
24.509	1994	C	details of hopper floor (details 6, 7 and 8)	OGBC/1	Y
24.510	1999	F	details of hopper floor explosion hatch (details 9 and 10)	OGBC/1	Y
24.511	1996	E	details of hopper floor explosion hatch	OGBC/1	Y
24.601	1994	E	connections for thermowell and pressure instrument	OGBC/1	Y
24.602	1994	F	connection for thermowell with shield against direct flame radiation	OGBC/1	Y
24.603	1994	F	sample connection for flue gas analyser	OGBC/1	Y
24.604	1995	E	connection for skin thermocouple	OGBC/1	Y
24.606	1996	E	connection on air duct for purge and cooling purposes	OGBC/1	Y
24.607	1996	C	1 inch and 1-1/2 inch smothering steam connection for air ducts, furnaces and flue ducts	OGBC/1	Y
24.608	1975	B	1 1/2 inch smothering steam connection for air ducts	OGBC/1	
24.609	1990	C	1 inch smothering steam connection for furnaces and flue ducts	OGBC/1	
24.611	1996	E	drain connection for header boxes	OGBC/1	Y
24.615	1996	F	installation of thermocouple on furnace tubes	OGBE/5	Y
24.616	1996	A	thermowell assembly for return bend fittings - type horse shoe - class 600	OGBE/5	Y
24.617	1996	A	thermowell for large ducting	OGBE/5	Y
24.700	1994	O	air box for low nox burner type 340	OGBE/5	Y
24.701	1994	A	general arrangement of low emission burner type LN 340 for dual fuel firing	OGBE/5	Y
24.702	1994	O	mounting flange and register burner type LN 340	OGBE/5	Y
24.703	1994	O	coverplate airbox burner type LN 340	OGBE/5	Y
24.704	1994	O	shell burner cup throat type 340	OGBE/5	Y
24.705	1994	O	gasgun burner type LN 340	OGBE/5	Y
24.706	1994	O	triple fuel gun burner type LN 340	OGBE/5	Y
24.707	1994	O	oil barrel with tailpiece for burner type LN 340	OGBE/5	Y
24.708	1994	O	connection piece and flapper for LN type burners	OGBE/5	Y
24.709	1994	A	valves with safety device for LN type burners	OGBE/5	Y

Drawing Number	Issue Year	Rev	Title	Custodian	CAD ?
24.710	1994	O	atomiser for burner type LN 340	OGBE/5	Y
24.711	1994	O	orifice for lyunet dual and triple fuel guns (2 inch)	OGBE/5	Y
24.712	1994	O	arrangement low tension ignition burner type 54 pve (13/700/350)v2e flange at l=607	OGBE/5	Y
24.713	1994	O	sightglass 2 inch	OGBE/5	Y
24.724	1994	O	air box for low nox burner type 420	OGBE/5	Y
24.725	1994	O	general arrangement of low emission burner type LN 420 for dual fuel firing	OGBE/5	Y
24.726	1994	O	mounting flange and register burner type LN 420	OGBE/5	Y
24.727	1994	A	coverplate airbox burner type LN 420	OGBE/5	Y
24.728	1994	O	shell burner cup throat type 420	OGBE/5	Y
24.729	1994	O	Gasgun burner type LN 420	OGBE/5	Y
24.730	1994	O	triple fuel gun burner type LN 420	OGBE/5	Y
24.731	1994	O	oil barrel with tailpiece for LN 420 & LN 520 burners	OGBE/5	Y
24.732	1994	O	atomiser with 8 exit holes for burner type LN 420 and LN 520	OGBE/5	Y
24.734	1994	O	wrench for burner type LN 420 and LN 520	OGBE/5	Y
24.735	1994	O	sightglass 3 inch	OGBE/5	Y
24.736	1996	O	general arrangement of low emission burner type LN 420 for triple fuel firing	OGBE/5	Y
24.746	1994	O	air box for low nox burner type 520	OGBE/5	Y
24.747	1994	O	general arrangement of low emission burner type LN 520 for dual fuel firing	OGBE/5	Y
24.748	1994	O	mounting flange and register burner type LN 520	OGBE/5	Y
24.749	1994	O	coverplate airbox burner type LN 520	OGBE/5	Y
24.750	1994	A	shell burner cup throat type 520	OGBE/5	Y
24.751	1994	O	gasgun burner type LN 520	OGBE/5	Y
24.752	1994	O	triple fuel gun burner type LN 520	OGBE/5	Y
24.753	1996	O	burner type LN 340 for double bottom furnaces	OGBE/5	Y
24.754	1996	O	burner type LN 420 for double bottom furnaces	OGBE/5	Y
24.755	1996	O	burner type LN 520 for double bottom furnaces	OGBE/5	Y
24.756	1996	O	staging air nozzle type LN 340 for double bottom furnaces	OGBE/5	Y
24.757	1996	O	staging air nozzle type LN 420 for double bottom furnaces	OGBE/5	Y
24.758	1996	O	staging air nozzle type LN 520 for double bottom furnaces	OGBE/5	Y
24.759	1999	O	gas gun type D for burner type LN 420	OGBE/5	Y
24.760	1999	O	gas gun type D for burner type LN 520	OGBE/5	Y
24.761	1999	O	triple fule gun type D for burner type LN 420	OGBE/5	Y
24.762	1999	O	triple fuel gun type D for burner type LN 520	OGBE/5	Y

S 28 STEEL STRUCTURES, STEEL STACKS, ACCESSORIES FOR CONCRETE STACKS

Drawing Number	Issue Year	Rev	Title	Custodian	CAD ?
28.001	1995	B	stairways, general arrangement	OGBC/1	Y
28.002	1995	B	stairways, base of stringers	OGBC/1	Y
28.003	1995	B	stairways, hand railing connections	OGBC/1	Y
28.004	1995	B	stairways, intermediate platform	OGBC/1	Y
28.005	1995	B	stairways, top connections of stringers	OGBC/1	Y
28.006	1995	B	handrailing, type A	OGBC/1	Y
28.007	1995	B	handrailing, type B	OGBC/1	Y
28.008	1995	B	handrailing, type C	OGBC/1	Y
28.009	1995	C	handrailing, connection of railing to concrete. type A	OGBC/1	Y
28.010	1995	C	handrailing, connection of railing to concrete. types B and C	OGBC/1	Y
28.011	1995	D	ladder, general arrangement to columns, stacks and structures	OGBC/1	Y
28.012	1995	C	ladder - typical details of sliding/fixed connections	OGBC/1	Y
28.013	1995	C	platforms - cleats and brackets to columns (design load max 300 kg)	OGBC/1	Y
28.014	1995	B	platforms - cleats and brackets to columns (design load over 300 kg)	OGBC/1	Y
28.015	1995	C	davit general arrangement and typical details	OGBC/1	Y
28.016	1995	C	grating typical of steel curb angles and chekered plate	OGBC/1	Y
28.020	1995	E	anchor bolts	OGBC/1	Y
28.022-001	1996	C	grating, type I (sheet 1 of 3)	OGBC/1	Y
28.022-002	1996	A	grating, type II (sheet 2 of 3)	OGBC/1	Y
28.022-003	1996	O	grating, type III (sheet 3 of 3)	OGBC/1	Y
28.023	1995	A	fastening of apparatus to fireproofed beams	OGBC/1	Y
28.028	1995	A	flare structure - erection procedure	OGBC/1	Y
28.107	1995	B	obstruction lights for stacks	OGBC/1	Y

S 31 ANALYSERS AND SUNDRY INSTRUMENTS

Drawing Number	Issue Year	Rev	Title	Custodian	CAD ?
31.008	1971	A	automatic steam injection system of distillate (thermal) cracking furnaces	OGTT	
31.009	1971	A	automatic steam injection system of residue cracking (visbreaker) furnaces	OGTT	
31.031	1975	O	typical schematic diagram of fire siren and fire water pump control system in the central station	OGBH/6	
31.032	1975	O	typical schematic diagram of control system for diesel engine driven fire water pump	OGBH/6	
31.105	1971	A	typical steam jacketed sample take off point for PGC in vapour space above column trays	OGBH/6	

S 32 FLOW INSTRUMENTS

32.102	1995	H	square edge flow metering orifice plates for ANSI B 16.36 raised face orifice flanges	OGBH/6	Y
32.104	1998	H	quarter circle flow metering orifice plates for ANSI B 16.36 raised face orifice flanges	OGBH/6	Y
32.112	1998	F	conical entrance flow metering orifice plates for ANSI B 16.36 raised face orifice flanges	OGBH/6	Y
32.114	1994	C	restriction orifice plates for ANSI B 16.5 raised face flanges	OGBH/6	Y

S 35 TEMPERATURE INSTRUMENTS

35.405	1995	B	furnace tube skin thermocouple assembly	OGBH/6	Y
35.406	1995	B	thermocouple assembly for stirring kettle of grease plant	OGBH/6	Y
35.409	1998	C	thermometer assemblies for mounting in thermowells	OGBH/6	Y
35.410	1998	C	bi-metal thermometer assembly	OGBH/6	Y
35.411	1995	A	thermometer assembly for surface mounting	OGBH/6	Y

S 37 INSTRUMENT INSTALLATION

	Drawing Number	Issue Year	Rev	Title	Custodian	CAD ?
|	37.000-001	1999	O	PEFS legend for instrument symbols and identification	OGBH/6	Y
|	37.000-002	1999	O	PEFS legend for instrument symbols and identification	OGBH/6	Y
|	37.000-003	1999	O	PEFS legend for instrument symbols and identification	OGBH/6	Y
|	37.000-004	1999	O	PEFS legend for instrument symbols and identification	OGBH/6	Y
|	37.000-005	1999	O	PEFS legend for instrument symbols and identification	OGBH/6	Y
	37.601	1995	D	instrument name plates	OGBH/6	Y
	37.603-001	1995	C	junction box construction EEX(e) and EEX(i). Sheet 1 of 2 - 20 single pair cables/1 multicore.	OGBH/6	Y
	37.603-002	1995	C	junction box construction EEX(e) and EEX(i). Sheet 2 of 2 - 10 single pair cables/ 1 multicore.	OGBH/6	Y
	37.604	1995	B	instrument cable trunking	OGBH/6	Y
	37.612	1995	E	test/connection box	OGBH/6	Y
	37.805	1995	B	purge orifice nipple	OGBH/6	Y
	37.808	1995	A	parallel threaded connections	OGBH/6	Y
	37.809	1995	A	parallel threaded connections, pressure transducers	OGBH/6	Y
	37.813	1995	C	mounting plate type A1 (for protective shade and junction box)	OGBH/6	Y
	37.814	1995	A	mounting plate type B1 (without protective shade and with junction box)	OGBH/6	Y
	37.815	1995	O	mounting plate type A2 (for protective shade without junction box)	OGBH/6	Y
	37.816	1995	O	mounting plate type B2 (without protective shade without junction box)	OGBH/6	Y

S 38 PIPING AND PIPING COMPONENTS

Drawing Number	Issue Year	Rev	Title	Custodian	CAD ?
38.002	1995	L	Y-type strainers ANS classes 150 and 300	OGBE/4	Y
38.004	1995	E	bucket-type suction strainers, carbon steel, ANSI class 150	OGBE/4	Y
38.005	1995	E	sieve for Y-type strainer	OGBE/4	Y
38.007	1995	E	steam sample device	OGBE/4	Y
38.011	1996	M	spectacle blinds for ANS flanges	OGBE/4	Y
38.013	1996	B	product sample cooler (cooling water: fresh or brackish)	OGBE/4	Y
38.034	1995	C	lap joint stub-ends (ring-type) for ANS flange classes 150 and 300 only	OGBE/4	Y
38.037	1996	C	sample cabinets with inlet on top - material carbon steel or low-alloy steel	OGBE/4	Y
38.038	1996	C	sample cabinets with inlet on top, material: stainless steel	OGBE/4	Y
38.041	1997	D	temporary strainer for compressors	OGBE/4	Y
38.042	1995	H	spade blinds for ANS flanges	OGBE/4	Y
38.043	1995	H	spacer for replacement of spades	OGBE/4	Y
38.046	1995	E	cover flanges for flanged thermowell nozzle	OGBE/4	Y
38.047	1995	A	purge pipe for carbon steel and low-alloy steel equipment	OGBE/4	Y
38.048	1995	A	purge pipe for stainless steel and non ferrous equipment	OGBE/4	Y
38.049	1995	D	level gauges, collar type ANSI class 150 (PN 10)	OGBE/4	Y
38.056	1995	D	displacer chambers	OGBE/4	Y
38.059	1995	A	overall dimensions of plate-type level gauges (through-vision and reflex types)	OGBE/4	Y
38.060	1995	A	cover flanges for flanged thermowell ring-joint	OGBE/4	Y
38.069	1995	A	level gauges, collar type, DIN 2501 - ND 10	OGBE/4	Y
38.070	1995	A	dimensions of cement-lined fittings (nom. size DN 100 through DN 600)	OGBE/4	Y
38.071	1995	A	dimensions of cement-lined fittings (nom. size DN 650 through DN 900)	OGBE/4	Y
38.074	1995	A	sleeves for cement-lined pipe and fittings	OGBE/4	Y
38.075	1995	A	slip-on flanged ends for cement-lined pipe and fittings	OGBE/4	Y
38.076	1995	A	typical detail of set-on branch for cement-lined fittings	OGBE/4	Y
38.080	1995	A	branch pieces, wafer type, for rubber-lined piping systems	OGBE/4	Y
38.081	1995	A	make-up pieces (spacers) for rubber-lined piping systems	OGBE/4	Y
38.082	1995	A	overall dimensions of flanged fittings for rubber lining	OGBE/4	Y
38.083	1995	A	overall dimensions of flanged piping for rubber lining	OGBE/4	Y
38.085	1995	A	flanges, flat face with recess for rubber-lined piping system	OGBE/4	Y
38.090	1995	A	branch fittings	OGBE/4	Y

Drawing Number	Issue Year	Rev	Title	Custodian	CAD ?
38.100	1998	E	flanged thermowell DN 25 and 50 ASME classes up to 900 incl. (for replacement in existing installations)	OGBE/4	Y
38.103	1998	E	flanged thermowell DN 40 ASME classes up to 1500 incl.	OGBE/4	Y
38.104	1998	E	flanged thermowell DN 50 ASME classes up to 2500 incl.	OGBE/4	Y
38.106	1998	D	flanged thermowell, ring joint, DN 40 and DN 50, ASME classes 900 and 1500 (for replacement in existing installations)	OGBE/4	Y
38.107	1998	D	flanged thermowell, ring joint, ASME class 2500 (for replacement in existing installations)	OGBE/4	Y
38.110	1998	B	flanged thermowell , DN 40, ASME classes up to 900 incl.	OGBE/4	Y
38.112	1998	C	high pressure welding thermowell for piping systems, DN 50	OGBE/4	Y
38.120	1996	A	lap-joint flanges for HDPE, PP and PVC piping systems	OGBE/4	Y
38.126	1995	A	groove dimensions for static face sealing (high vacuum service)	OGBE/4	Y
38.130	1995	E	orifice flanges, raised face, with flange tappings, ANS class 300 to 2500 incl. nom size DN 50 to 600 incl.	OGBE/4	Y
38.131	1995	D	orifice flanges, raised face, with corner tappings, ANS class 300 to 600 incl. nom size DN 50 to 600 incl.	OGBE/4	Y
38.132	1995	C	orifice meter runs with flange tapping, ANS class 300 to 2500 incl., nom size DN 50 to 300 incl.	OGBE/4	Y
38.134	1995	A	orifice meter runs with flanged ends, nom. size DN 15 to DN 40 incl., ANS 150 to class 1500 incl.	OGBE/4	Y
38.141	1995	A	steam ring to horizontal flange DN 150 (6 inch) and above in hydrogen service	OGBE/4	Y
38.142	1995	A	two steam rings to horizontal flange DN 150 (6 inch) and above in hydrogen service (with spectacle blind, spade, spacer or orifice)	OGBE/4	Y
38.143	1995	A	steam ring to vertical flange DN 150 (6 inch) and above in hydrogen service	OGBE/4	Y
38.144	1995	A	two steam rings to vertical flange DN 150 (6 inch) and above in hydrogen service (with spectacle blind, spade or spacer)	OGBE/4	Y
38.150	1996	A	pipe spools and spacers for plastic-lined piping systems class 150	OGBE/4	Y
38.151	1996	A	flanged fittings for plastic-lined piping systems class 150	OGBE/4	Y
38.152	1996	A	flanged fittings for plastic-lined piping systems class 150	OGBE/4	Y
38.153	1996	A	branch piece, wafer type, for plastic-lined piping systems class 150	OGBE/4	Y

S 44 SUPPORTING ELEMENTS AND FIXTURES

Drawing Number	Issue Year	Rev	Title	Custodian	CAD ?
44.030	1996	B	typical bracings for small bore branches of piping (e.g. drain/vent point)	OGBE/4	Y
44.031	1996	B	typical bracings for small bore branches of piping (e.g. orifice instrument connection)	OGBE/4	Y
44.032	1996	C	typical bracings for small bore branches of piping (e.g. pressure instrument connection)	OGBE/4	Y
44.033	1998	O	standard pipe shoe type S1 thru S6	OGBE/4	Y
44.034	1998	O	standard lined pipe shoe type S7 thru S12	OGBE/4	Y
44.035	1998	O	standard welded pipe shoe type S29 thru S34	OGBE/4	Y
44.036	1998	O	standard guide type G1 thru G10	OGBE/4	Y
44.037	1998	O	standard guide type G11 and G12	OGBE/4	Y
44.038	1998	O	standard directional anchor type DA6 thru DA7	OGBE/4	Y
44.039	1998	O	standard support type BS1 thru BS8	OGBE/4	Y
44.040	1998	O	standard adjustable base support type BS9 thru BS17	OGBE/4	Y
44.041	1998	O	clamped base support type CB1 thru CB9	OGBE/4	Y
44.042	1998	O	adjustable clamped base support type ACB1 thru ACB9	OGBE/4	Y
44.043	1998	O	standard clamp heavy type DN 40 thru DN 600	OGBE/4	Y
44.044	1998	O	standard base plate type BP1 thru BP7	OGBE/4	Y
44.045	1998	O	standard directional base anchor type BA1 thru BA8	OGBE/4	Y
44.046	1998	O	standard base anchor type BS1A thru BS5A	OGBE/4	Y
44.047	1998	O	standard dummy let type DL1 thru DL8	OGBE/4	Y
44.048	1998	O	standard dummy leg type DL9 thru DL16	OGBE/4	Y

S 51 STORAGE TANKS, SPHERES AND ACCESSORIES

Drawing Number	Issue Year	Rev	Title	Custodian	CAD ?
51.021	1981		48 ft diameter tank, with dome roof	OGBC/4	
51.022	1981		56 ft diameter tank, with dome roof	OGBC/4	
51.023	1981		64 ft diameter tank, with dome roof	OGBC/4	
51.024	1981		80 ft diameter tank, with dome roof	OGBC/4	
51.025	1981		96 ft diameter tank, with dome roof	OGBC/4	
51.026	1981		112 ft diameter tank, with dome roof	OGBC/4	
51.027	1981		120 ft diameter tank, with dome roof	OGBC/4	
51.028	1981		128 ft diameter tank, with dome roof	OGBC/4	
51.030	1984	A	pontoon/double- deck floating roofs	OGBC/4	
51.031	1992	B	mechanical and foam filled seal for floating roof tanks	OGBC/4	Y
51.032	1992	B	compression plate type seal assemblies	OGBC/4	Y
51.040	1992	B	welding details	OGBC/4	Y
51.041	1984	A	welding sequences	OGBC/4	
51.042	1984	A	details of butt welded joint in main rafter joints of dome roof tanks	OGBC/4	
51.043	1984	A	typical welding sequences for shell plates	OGBC/4	
51.045	1996	B	concrete foundation ring for tanks	OGBC/2	Y
51.046	1996	B	holding-down bolts for tanks with concrete foundation ring	OGBC/2	Y
51.048	1986	A	dismantling and re-erection of welded or riveted tanks	OGBC/4	
51.049	1984	A	method of painting internal surfaces of dome roof tanks fitted with floating screen	OGBC/1	
51.051	1984	A	handrails for cone roof tanks	OGBC/4	
51.052	1984	A	handrails for dome roof tanks	OGBC/4	
51.053	1984	A	details of spiral-type staircase	OGBC/4	
51.054	1984	A	details of spiral-type staircase for tank with insulated shell and/or along tank shell made medium high tensile steel thickness more 12.5 mm	OGBC/4	
51.056	1984	A	gas-tight roof manhole (typical)	OGBC/4	
51.059	1984	A	large roof manhole for special product tanks	OGBC/4	
51.060	1984	A	small roof manhole for special product tanks	OGBC/4	
51.061	1984	A	roof manhole - open vent type	OGBC/4	
51.065	1984	A	combined water draw-off and clean-out sump	OGBC/4	
51.066	1985	A	side drain sump - DN 150	OGBC/4	
51.067	1992	B	product drain and water draw-off	OGBC/4	Y
51.068	1985	A	roof nozzles	OGBC/4	
51.072	1985	B	earthing and bonding details for fixed roof tanks with floating screen	OGBC/4	

Drawing Number	Issue Year	Rev	Title	Custodian	CAD ?
51.073	1985	A	dip plate	OGBC/4	
51.078	1985	A	slot dipping device	OGBC/4	
51.079	1985	A	floating suctions for vertical tanks - DN 100, DN 150 and DN 200	OGBC/4	
51.080	1985	A	typical swing pipe - DN 80 up to DN 500	OGBC/4	
51.081	1985	A	typical winches for swing pipes	OGBC/4	
51.082	1985	A	typical free vent	OGBC/4	
51.083	1986	A	typical combined vent and dip hatch	OGBC/4	
51.084	1986	A	dip hatches - heavy pattern, gas tight	OGBC/4	
51.085	1986	A	dip hatches - light pattern	OGBC/4	
51.086	1986	A	expansion hatch for asphalt tank	OGBC/4	
51.087	1984	O	spiral type staircase provided with stair treads of galvanised grating	OGBC/4	
51.088	1985	O	typical side drain with sump	OGBC/4	
51.101	1971	B	general lay-out of seal construction - type SIPM	OGBC/4	
51.102	1964	A	type of drain pipe with manipulating device for large floating roof in cold climate	OGBC/4	
51.103	1992	C	earthing and bonding details for floating roof tank	OGBC/4	Y
51.105	1986	A	rim vent for SIPM seal construction	OGBC/4	
51.106	1986	A	pontoon manholes	OGBC/4	
51.107	1986	A	deck manholes with and without valve	OGBC/4	
51.108	1985	C	8 inch slotted guide pole/sampling pole for floating roof tanks	OGBC/4	
51.109	1971	A	detail of seal construction - type SIPM	OGBC/4	
51.110	1973	A	bonding cable for floating roof (SIPM seal construction)	OGBC/4	
51.111	1971	O	wheel and rail track assembly for ladder to floating roof tank	OGBC/4	
51.112	1971	O	general lay-out of increased seal construction - type SIPM	OGBC/4	
51.113	1971	O	details of increased seal construction - type SIPM	OGBC/4	
51.114	1985	D	level gauge pole for fixed roof tanks (execution for custody transfer)	OGBC/4	
51.115	1985	C	combined guide pole/level gauge pole for floating roof tanks (for custody transfer)	OGBC/4	
51.126	1963		sampling box	OGBC/4	
51.127	1963	A	roof manhole 20 inch or 24 inch diameter - type API 650	OGBC/4	
51.128	1963		platform for dip hatch or slot dipping device	OGBC/4	
51.129	1963	A	open vent	OGBC/4	
51.130	1986	B	vertical ladder	OGBC/4	

Drawing Number	Issue Year	Rev	Title	Custodian	CAD ?
51.131	1981	B	walkway between tanks	OGBC/4	
51.132	1963		reinforcing angles - reinforcing plate and support for heater	OGBC/4	
51.133	1986	A	anchor bolts for aluminium tanks	OGBC/4	
51.135	1992	B	1 inch dia vent pipe to suit thermal relief of the outer piping	OGBC/4	Y
51.136	1980	O	flanged nozzle for thermowell on storage tanks	OGBC/4	
51.137	1980	O	flanged thermowell for storage tanks	OGBC/4	
51.151	1963	A	1 inch dia API bosses types A and B for sample valve and thermo indicator	OGBC/4	
51.152	1986	A	typical extension pipe on inlet and outlet nozzles for floating roof tank	OGBC/4	
51.154	1979	B	level gauge pole for fixed roof tanks (non custody transfer)	OGBC/4	
51.155	1982	O	nameplate with bracket for tanks	OGBC/4	
51.201	1993	A	3 m diameter tank with rafter roof	OGBC/4	
51.202	1993	A	4 m diameter tank with rafter roof	OGBC/4	
51.203	1993	A	6 m diameter tank with rafter roof	OGBC/4	
51.204	1993	A	8 m diameter tank with rafter roof	OGBC/4	
51.207	1993	A	10 m diameter tank with rafter roof	OGBC/4	
51.208	1993	A	12.5 m diameter tank with rafter roof	OGBC/4	
51.209	1984	O	15 m diameter tank with trussed roof	OGBC/4	
51.210	1984	O	17.5 m diameter tank with trussed roof	OGBC/4	
51.211	1984	O	20 m diameter tank with trussed roof	OGBC/4	
51.212	1984	O	22.5 m diameter tank with trussed roof	OGBC/4	
51.213	1984	O	25 m diameter tank with trussed roof	OGBC/4	
51.214	1984	O	27.5 m diameter tank with trussed roof	OGBC/4	
51.215	1984	O	30 m diameter tank with trussed roof	OGBC/4	
51.216	1984	O	33 m diameter tank with trussed roof	OGBC/4	
51.217	1984	O	36 m diameter tank with trussed roof	OGBC/4	
51.218	1984	O	39 m diameter tank with trussed roof	OGBC/4	
51.219	1984	O	42 m diameter tank with trussed roof	OGBC/4	
51.220	1984	O	45 m diameter tank with trussed roof	OGBC/4	
51.221	1984	O	48 m diameter tank with trussed roof	OGBC/4	
51.222	1984	O	54 m diameter cone roof tank with trussed roof code BNC	OGBC/4	
51.223	1984	O	54 m diameter cone roof tank with trussed roof code BNC, details	OGBC/4	
51.224	1984	O	60 m diameter cone roof tank with trussed roof code BNC	OGBC/4	
51.225	1984	O	60 m diameter cone roof tank with trussed roof code BNC, details	OGBC/4	

Drawing Number	Issue Year	Rev	Title	Custodian	CAD ?
51.226	1984	O	tank shell nozzles - flanged class 150	OGBC/4	
51.227	1984	O	shell manhole for tanks up to a height of 25 m	OGBC/4	
51.251	1993	B	standard calculation : 3 m diameter tank with rafter roof (8 sheets)	OGBC/4	
51.252	1993	B	standard calculation : 4 m diameter tank with rafter roof (8 sheets)	OGBC/4	
51.253	1993	B	standard calculation : 6 m diameter tank with rafter roof (8 sheets)	OGBC/4	
51.254	1993	B	standard calculation : 8 m diameter tank with rafter roof (8 sheets)	OGBC/4	
51.257	1993	A	standard calculation : 10 m diameter tank with rafter roof (13 sheets)	OGBC/4	
51.258	1993	A	standard calculation : 12.5 m diameter tank with rafter roof (15 sheets)	OGBC/4	
51.259	1984	O	standard calculation : 15 m diameter tank with trussed roof (18 sheets)	OGBC/4	
51.260	1984	O	standard calculation : 17.5 m diameter tank with trussed roof (18 sheets)	OGBC/4	
51.261	1984	O	standard calculation : 20 m diameter tank with trussed roof (18 sheets)	OGBC/4	
51.262	1984	O	standard calculation : 22.5 m diameter tank with trussed roof (17 sheets)	OGBC/4	
51.263	1984	O	standard calculation : 25 m diameter tank with trussed roof (15 sheets)	OGBC/4	
51.264	1984	O	standard calculation : 27.5 m diameter tank with trussed roof (16 sheets)	OGBC/4	
51.265	1984	O	standard calculation : 30 m diameter tank with trussed roof (15 sheets)	OGBC/4	
51.266	1984	O	standard calculation : 33 m diameter tank with trussed roof (16 sheets)	OGBC/4	
51.267	1984	O	standard calculation : 36 m diameter tank with trussed roof (17 sheets)	OGBC/4	
51.268	1984	O	standard calculation : 39 m diameter tank with trussed roof (17 sheets)	OGBC/4	
51.269	1984	O	standard calculation : 42 m diameter tank with trussed roof (14 sheets)	OGBC/4	
51.270	1984	O	standard calculation : 45 m diameter tank with trussed roof (14 sheets)	OGBC/4	
51.271	1984	O	standard calculation : 48 m diameter tank with trussed roof (14 sheets)	OGBC/4	

Drawing Number	Issue Year	Rev	Title	Custodian	CAD ?
51.272	1984	O	standard calculation : 54 m diameter tank with trussed roof (15 sheets)	OGBC/4	
51.273	1984	O	standard calculation : 60 m diameter tank with trussed roof (16 sheets)	OGBC/4	
51.280-001	1997	O	reference points for survey of vertical storage tanks (general layout)	OGBC/4	Y
51.280-002	1997	O	reference points for survey of vertical storage tanks (tank roofs)	OGBC/4	Y
51.280-003	1997	O	reference points for survey of vertical storage tanks (tank bottom)	OGBC/4	Y

S 64 ELECTRICAL ENGINEERING GENERAL

Drawing Number	Issue Year	Rev	Title	Custodian	CAD ?
64.000	1995	O	electrical symbols in addition to IEC 617	OGBE/3	Y

S 67 SWITCHGEAR, ELECTRICAL INSTRUMENTS AND DIAGRAMS

Drawing Number	Issue Year	Rev	Title	Custodian	CAD ?
67.004	1997	K	schematic diagrams of control circuits for LV motors	OGBE/3	Y
67.006	1999	H	typical instrument electricity supply system with static components	OGBE/3	Y
67.019	1995	D	single line diagrams of LV switchboard panels	OGBE/3	Y
67.021	1995	E	LV switchboard panel identification	OGBE/3	Y
67.022	1995	D	single line diagrams and control circuits for lighting distribution switchboards	OGBE/3	Y
67.024	1999	E	schematic diagram and control circuit for AC instrument distribution switchboards	OGBE/3	Y
67.025	1997	D	schematic diagram of DC distribution switchboard for process control and safeguarding systems	OGBE/3	Y
67.026	1997	D	typical arrangement of DC instrument distribution switchboard	OGBE/3	Y
67.027	1995	B	high-voltage switchgear and controlgear assemblies, identification of sections and panels	OGBE/3	Y
67.028	1997	C	schematic diagram of control circuits for HV motors (contactor starters)	OGBE/3	Y
67.029	1995	C	schematic diagram of control circuits for two-speed motors (Dahlander system)	OGBE/3	Y
67.031	1995	A	schematic diagram of control circuits for reversing rotation motors	OGBE/3	Y
67.040	1995	A	typical HV single line diagram, arrangement of control and protection supply (2 section board)	OGBE/3	Y
67.041	1995	A	typical HV single line diagram, arrangement of tripping and closing supply (more than 2 sections board)	OGBE/3	Y
67.045	1994	A	typical HV single line diagram, motor controlled by contactor	OGBE/3	Y
67.046	1995	A	typical HV single line diagram, motor controlled by circuit breaker	OGBE/3	Y
67.047	1994	A	typical HV single line diagram, large synchronous motor	OGBE/3	Y
67.048	1995	A	typical HV single line diagram, motor with unit transformer	OGBE/3	Y
67.049	1995	A	typical HV single line diagram HV/LV transformer ≤ 1600 kVA, controlled by contactor	OGBE/3	Y
67.050	1995	A	typical HV single line diagram HV/LV transformer ≤ 1600 kVA, controlled by circuit breaker	OGBE/3	Y
67.051	1995	A	typical HV single line diagram, HV/HV transformer including feeder cable ≤ 250 m,	OGBE/3	Y
67.052	1995	A	typical HV single line diagram, HV/HV transformer including feeder cable > 250 m,	OGBE/3	Y
67.053	1995	A	typical HV single line diagram, parallel plain feeder	OGBE/3	Y
67.054	1995	A	typical HV single line diagram, single plain feeder	OGBE/3	Y
67.055	1995	A	typical HV single line diagram, generator directly connected (voltage ≤ 11 kV)	OGBE/3	Y

Drawing Number	Issue Year	Rev	Title	Custodian	CAD ?
67.056	1995	A	typical HV single line diagram, generator with unit transfomer (voltage > 11 kV)	OGBE/3	Y
67.057	1997	A	typical HV single line diagram for variable speed drive system (VSDS) with synchronous motor	OGBE/3	Y
67.058	1997	A	typical HV single line diagram for submerged motors (contactor starter)	OGBE/3	Y
67.059	1997	A	typical HV single line diagram, overhead line circuits (33-132 kV)	OGBE/3	Y
67.060	1997	A	typical HV single line diagram for grid supply incomer with on-site generation	OGBE/3	Y
67.070	1997	A	typical single line and schematic diagram of control circuits for LV emergency generator	OGBE/3	Y
67.071	1997	A	schematic diagram of control circuits for HV motors (circuit breaker starters)	OGBE/3	Y
67.080	1997	A	typical instrument electrical supply systems with d.c. ups units	OGBE/3	Y

S 68 EARTHING, CABLES, WIRES AND ACCESSORIES

Drawing Number	Issue Year	Rev	Title	Custodian	CAD ?
68.001	1997	C	typical earthing systems for tanks	OGBE/3	Y
68.003	1997	D	typical mounting details for earthing connections	OGBE/3	Y
68.004	1997	G	earthing boss for steel structures, tanks, vessels, etc.	OGBE/4	Y
68.009	1995	B	typical arrangements of cable trenches in plant areas	OGBE/3	Y
68.017	1995	A	cross-section selection guide, for protective conductor (PE)	OGBE/3	Y
68.021	1995	A	clamps for unarmoured single core cables, EPR-insulated, PVC-sheathed, (3800/6600 volts grade)	OGBE/3	Y
68.022	1995	B	selection table for transformer secondary side connecting cables	OGBE/3	Y
68.030	1993	O	typical earthing arrangements for substations, control buildings and field auxillary rooms and associated typical mounting details	OGBE/3	Y
68.031	1997	A	typical earthing arrangements for offshore installations	OGBE/3	Y
68.032	1997	A	typical plant connection details	OGBE/3	Y
68.040	1997	A	typical drawing for electrical substation	OGBE/3	Y

S 69 LAMPS, LAMP FITTINGS AND ACCESSORIES

Drawing Number	Issue Year	Rev	Title	Custodian	CAD ?
69.001	1995	D	typical construction and fastening of lamppost for fluorescent lighting fittings	OGBE/3	Y
69.003	1997	A	typical lighting details	OGBE/3	Y

S 75 FIRED STEAM GENERATORS

Drawing Number	Issue Year	Rev	Title	Custodian	CAD ?
75.004	1998	D	typical control scheme of water/steam side of natural circulation steam boiler	OGBE/5	Y

S 88 FIRE PROTECTION AND SAFETY EQUIPMENT

Drawing Number	Issue Year	Rev	Title	Custodian	CAD ?
88.005	1997	A	steam lance	OGCH/1	Y
88.007	1997	B	two-way or four-way hydrant for steel underground piping in non freezing areas (hydrant atop main header)	OGCH/1	Y
88.008	1997	B	two way or four-way hydrant for steel underground piping in non-freezing areas (hydrant aside main header)	OGCH/1	Y
88.009	1997	D	foam pourer nozzles for floating roof tank	OGCH/1	Y
88.010	1997	A	foam pourers for floating roof tanks	OGCH/1	Y
88.011	1997	B	two-way or four-way hydrant for steel underground piping in freezing ares	OGCH/1	Y
88.012	1997	C	two-way or four-way hydrant for GRE underground piping in freezing areas	OGCH/1	Y
88.013	1997	C	two-way or four-way hydrant for GRE underground piping in non freezing areas	OGCH/1	Y
88.014	1997	B	two-way or four-way hydrant for steel above ground piping in non freezing areas (hydrant atop main header)	OGCH/1	Y
88.015	1997	B	two-way or four-way hydrant for steel above ground piping in non freezing areas (hydrant aside main header)	OGCH/1	Y
88.016	1997	A	two-way hydrant header	OGCH/1	Y
88.017	1997	A	four-way hydrant header	OGCH/1	Y
88.018	1997	A	four-way hydrant header with monitor connection	OGCH/1	Y
88.020	1997	B	arrangement of polyethylene tubing for fire detection of pumps underneath pipe rack	OGCH/1	Y
88.021	1997	B	arrangement of polyethylene tubing for fire detection of pumps outside pipe rack	OGCH/1	Y
88.022	1997	B	subsurface foam system for flammable- and combustible liquids	OGCH/1	Y
88.023	1997	A	semi-subsurface foam system for flammable and combustible liquids	OGCH/1	Y
88.030	1995	O	fire training ground for first aid fire fighting training	OGCH/1	Y
88.031	1995	O	fire training ground for first aid fire fighting training and hose team training	OGCH/1	Y
88.100	1983	O	fire-fighting vehicle foam tank, foam/water system and two dry powder vessels	OGCH/1	
88.101	1983	O	fire-fighting vehicle with foam tank and foam/water system	OGCH/1	
88.104	1983	O	fire-fighting vehicle, crew compartment, foam tank and foam/water system	OGCH/1	
88.106	1993	A	fire-fighting vehicle with water and foam tanks, water/foam system and two dry powder vessels	OGCH/1	
88.109	1983	O	fire-fighting vehicle with boom and water/foam system	OGCH/1	
88.110	1992	A	fire-fighting vehicle, foam concentrate transport	OGCH/1	
88.114	1983	O	fire-fighting vehicle - foam/dry powder (for quick access)	OGCH/1	
88.115	1983	O	foam trailer with water/foam inductors	OGCH/1	

Drawing Number	Issue Year	Rev	Title	Custodian	CAD ?
88.116	1983	O	equipment tender	OGCH/1	
T 192073	1961	J	pressed alloy steel bubble cap 4 inch OD (2.5 inch riser)	OGBP/4	
T 239596	1961	F	pressed alloy steel bubble cap 6 inch OD (3.75 inch riser)	OGBP/4	
T 241362	1955	O	pressed monel bubble cap 3 inch OD (1.75 inch riser)	OGBP/4	
T 292616	1961	D	pressed alloy steel bubble cap 3 inch OD (1 15/16 inch riser)	OGBP/4	
T 296531	1961	D	pressed alloy steel bubble cap 4 inch OD 4 7/16 inch height (2.5 inch riser)	OGBP/4	
T 334827	1961	C	pressed alloy steel bubble cap 3 inch OD 4 3/16 inch height (1 15/16 inch riser)	OGBP/4	
T 334828	1961	B	pressed alloy steel bubble cap special design 6 inch OD 6 1/8 inch height (3 3/4 inch riser)	OGBP/4	
Tc 5.123.947	1974	B	principal sketch for tray supports when quick interchangeability is required from downcomer trays into calming section trays	OGBP/4	