

DEP SPECIFICATION

HUMAN FACTORS ENGINEERING - DESIGN AND PROCUREMENT OF PACKAGED UNITS

DEP 30.00.60.18-Gen.

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DESIGN AND ENGINEERING PRACTICE



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1. INTRODUCTION

1.1 SCOPE

This DEP specifies requirements and gives recommendations for the Human Factors Engineering (HFE) aspects to be applied to the design and procurement of packaged units as well as the design of modules. Application of this DEP enables packaged units and modular designs to comply with the Human Factors Engineering requirements contained in the Shell Group HSSE & SP Health Standard and the HSSE & SP Control Framework Health Manual. Compliance with this DEP ensures that, as far as reasonably practicable, operators and maintainers working on the package unit or module should not be placed in situations with the potential for damage to their health or safety.

This DEP applies to packaged units and modules, where design scope exists and where DEP 30.00.60.20-Gen., is not adopted in its entirety.

This DEP does not apply to modifications of existing package units or modules.

This DEP is a revision of the same number dated February 2016; see (1.5) regarding the main changes.

1.2 DISTRIBUTION, INTENDED USE AND REGULATORY CONSIDERATIONS

Unless otherwise authorised by Shell GSI, the distribution of this DEP is confined to Shell companies and, where necessary, to Contractors and Manufacturers/Suppliers nominated by them.

Any authorised access to DEPs does not for that reason constitute an authorisation to any documents, data or information to which the DEPs may refer.

This DEP is intended for use in facilities related to oil and gas production, gas handling, oil refining, chemical processing, gasification, distribution and supply/marketing.

This DEP may also be applied in other similar facilities.

When DEPs are applied, a Management of Change (MOC) process shall be implemented; this is of particular importance when existing facilities are to be modified.

If national and/or local regulations exist in which some of the requirements could 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 with regards to the 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, the objective being to obtain agreement to follow this DEP as closely as possible.

1.3 DEFINITIONS

1.3.1 General definitions

The **Contractor** is the party that carries out all or part of the design, engineering, procurement, construction, commissioning or management of a project or operation of a facility. The Principal may undertake all or part of the duties of the Contractor.

The **Manufacturer/Supplier** is the party that manufactures or supplies equipment and services to perform the duties specified by the Contractor.

The **Principal** is the party that initiates the project and ultimately pays for it. The Principal may also include an agent or consultant authorised to act for, and on behalf of, the Principal.

The word **shall** indicates a requirement.

The word **should** indicates a recommendation.

The word **may** indicates a permitted option.

1.3.2 Specific definitions

Term	Definition
Exit Route	Continuous and unobstructed path of exit travel from any point within a workplace.
HFE Technical Authority (HFE TA)	The individual assigned as Technical Authority for HFE on the project in compliance with Business Unit and Group standards.
HSSE&SP CF	Shell Group Health, Safety, Security, Environment & Social Performance Control Framework
Human Factors Engineering (HFE)	A multidisciplinary science that focuses on the interaction between the human and the work system in order to design human-machine interactions that optimize human and system performance. See ISO 6385.
Packaged Unit	Equipment designed and supplied as a largely self-contained physical unit, and potentially mounted on a portable skid (skid-package) or as stand-alone module. Packaged units are generally designed, built and tested at the Manufacturer/Supplier's premises and delivered for integration into the overall plant or facility.
Validation	The assurance that the product, service or system meets the functional needs of the Principal. Example assurance activities include physical inspection during Factory Acceptance Tests (FAT), construction or FPD surveillance walkthroughs, participation in pre-startup safety reviews or audits to ensure that no new HFE risks have been introduced.
Verification	The evaluation that the design of the product, service or system complies with the HFE design and regulatory requirements. Example activities include review of contractual documents such as ITTs/Bid packages, detail engineering drawings, or 3D CAD models during the various stages of design development.

1.3.3 Abbreviations

Term	Definition
ANSI	American National Standards Institute
CAD	Computer Aided Design
FAT	Factory Acceptance Test
FPD	Flawless Project Delivery
HFE	Human Factors Engineering
HSSE&SP	Health, Safety, Security, Environment & Social Performance
ISO	International Organization for Standardization
ITT	Invitation to Tender
PPE	Personal Protective Equipment
SI	Système International (International System)
SPEP	Shell Pre-Engineered Packages
TA	Technical Authority
USC	US Customary
VCA	Valve Criticality Analysis

1.4 CROSS-REFERENCES

Where cross-references to other parts of this DEP are made, the referenced section or clause number is shown in brackets ().

Other documents referenced by this DEP are listed in (4).

1.5 SUMMARY OF MAIN CHANGES

This DEP is a revision of the DEP of the same number dated February 2016. The only changes are to DEP cross-references to reflect changes in the DEP library in 2017.