

DEP SPECIFICATION

ELECTRICAL REQUIREMENTS FOR VENDOR SUPPLIED SKID UNITS FOR NORTH AMERICAN APPLICATION

DEP 33.64.30.30-Gen.

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DESIGN AND ENGINEERING PRACTICE



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

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1. INTRODUCTION

1.1 SCOPE

This DEP specifies requirements and gives recommendations for designing, manufacturing, testing, shipping and installing electrical equipment supplied on a skid for use in North American applications.

This is a revision of the DEP of the same number dated February 2015; see (1.5) regarding the 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, oil refining, chemical processing, gasification and distribution. 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 regard 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
Accredited Certification Organization	Organization that has been accredited by the Standards Council of Canada, in accordance with specific criteria, procedures, and requirements, to operate, on a continuing basis, a certification program for electrical equipment.
Authority Having Jurisdiction (AHJ)	Organization, office, or individual responsible for enforcing the local regulatory requirements. Consult with the Principal for the applicable AHJs for the specific installation.
contract documents	Documents comprised of a purchase order, specification, attachments, drawings, sketches, reports or any other contract-related documents provided by the Principal to the Manufacturer/Supplier.
Extra Work	Changes initiated by the Principal after approved drawings are submitted to the Manufacturer/Supplier to commence fabrication.
Location	The site where the new electrical facilities will be installed and operated.
Nationally Recognized Testing Laboratory Program (NRTL)	Program that is a part of OSHA's Directorate of Technical Support and Emergency Management. The Program recognizes private sector organizations as NRTLs, and recognition signifies that a laboratory has met the necessary qualifications specified in the regulations for the Program. An NRTL determines that specific equipment and materials ("products") meet consensus-based standards of safety to provide the assurance, required by OSHA, that these products are safe for use in the U.S. workplace. See DEP 33.64.20.10-Gen., Appendix 5 for additional information on NRTLs.
Observed	An Observed inspection or test means that the Principal and Contractor are notified of the timing of the inspection or test; however, the inspection or test is performed as scheduled, and if the Principal or Contractor is not present, the Manufacturer/Supplier proceeds to the next step.
Offshore installation	An installation located near open saliferous water, e.g., platforms, jetties, floating production storage and offloading vessels (FPSO).
Packaged Equipment	Assembly of equipment, including auxiliary devices, that is fixed on a transportable structure and that normally requires engineering, assembly, piping, and wiring.
Witnessed	A hold is to be applied to the production schedule and the inspection is to be carried out with the Principal or Contractor in attendance.

1.3.3 Abbreviations

Term	Definition
ACO	Accredited certification organization
AHJ	Authority Having Jurisdiction
CEC	Canadian Electric Code
CSA	Canadian Standards Association
ETL	Electrical Testing Laboratories
NEC	National Electrical Code
NETA	International Electrical Testing Association
NRTL	Nationally Recognized Testing Laboratory
PLC	Programmable Logic Controller
TAMAP	Technically Approved Manufacturers and Products
THHN	Thermoplastic High Heat-resistant (N) type coated wire

1.4 CROSS-REFERENCES

Where cross-references to other parts of this DEP are made, the referenced section number is shown in brackets (). Other documents referenced in this DEP are listed in (Part IV).

1.5 SUMMARY OF MAIN CHANGES

This DEP is a full revision of the DEP of the same number dated February 2015. The following are the main, non-editorial changes.

Section/Clause	Change
All	Restructured and clarified requirements, enforced shall/should.

1.6 COMMENTS ON THIS DEP

Comments on this DEP may be submitted to the Administrator using one of the following options:

Shell DEPs Online (Users with access to Shell DEPs Online)	Enter the Shell DEPs Online system at https://www.shelldeps.com Select a DEP and then go to the details screen for that DEP. Click on the "Give feedback" link, fill in the online form and submit.
DEP Feedback System (Users with access to Shell Wide Web)	Enter comments directly in the DEP Feedback System which is accessible from the Technical Standards Portal http://swwww.shell.com/standards . Select "Submit DEP Feedback", fill in the online form and submit.
DEP Standard Form (other users)	Use DEP Standard Form 00.00.05.80-Gen. to record feedback and email the form to the Administrator at standards@shell.com .

Feedback that has been registered in the DEP Feedback System by using one of the above options will be reviewed by the DEP Custodian for potential improvements to the DEP.

1.7 DUAL UNITS

This DEP contains both the International System (SI) units, as well as the corresponding US Customary (USC) units, which are given following the SI units in brackets. When agreed by the Principal, the indicated USC values/units may be used.

1.8 NON NORMATIVE TEXT (COMMENTARY)

Text shown in italic style in this DEP indicates text that is non-normative and is provided as explanation or background information only.

Non-normative text is normally indented slightly to the right of the relevant DEP clause.

1.9 DATA SHEET

Data Sheet DEP 33.64.30.90-Gen. shall be used to specify packaged equipment.

The applicable Data Sheet sections shall be completed and returned by the Manufacturer/Supplier as part of the quotation.

2. GENERAL REQUIREMENTS

2.1 GENERAL

1. In the event of conflicts in documents, the Manufacturer/Supplier should contact the Contractor for resolution.

2.2 STATEMENT OF COMPLIANCE

1. The Manufacturer/Supplier of the packaged equipment and its ancillary equipment shall confirm that the equipment fully complies with the quotation and the whole system is properly designed, constructed and suitable for the specified duty.
2. All performance values established in the pre-ordering meeting or quotation (whichever is the later) shall be regarded as maximum or minimum values as applicable.
3. All the equipment forming part of the order shall be tested individually and in combination at the Manufacturer's works to prove its capability and compliance with the specification and the performance data.
4. If equipment proposed by the Manufacturer/Supplier cannot fully meet the requirements of this DEP, such exceptions shall be clearly stated in the Manufacturer/Supplier's proposal with cross-references to the applicable clause number(s) in this DEP.
 - a. No exceptions shall be allowed unless in writing in accordance with the Principal.
 - b. If no exceptions are taken, a specific statement to that effect shall be included in the proposal.
5. If any one of the components or the whole system does not comply with the specification and any agreed amendments, the Manufacturer/Supplier shall rectify and re-test the packaged equipment within a mutually agreed time.

2.3 LIFETIME AND RELIABILITY

1. The equipment (including auxiliaries) covered by this DEP shall be suitable for the specified operating conditions.
2. Equipment shall be designed and constructed for a minimum service life and uninterrupted continuous operations as specified.

It is recognized that "uninterrupted continuous operations for the service life" is a design criterion and that uninterrupted operation for this period of time involves factors beyond the Manufacturer/Supplier's control.

2.4 PRE-ORDERING MEETING

1. If deemed necessary by one of the parties involved, a pre-ordering meeting should be arranged to define clearly the overall scope of supply, individual responsibilities and test methods.

3. DESIGN

3.1 GENERAL

3.1.1 Electrical Code

1. Electrical facilities shall comply with the National Electrical Code (NFPA 70) for US installations.
2. Electrical facilities shall comply with the Canadian Electrical Code (CEC) for Canadian installations.
 - a. For Canadian applications, individual equipment and components shall be CSA (or equivalent) approved.

3.1.2 Area classification

1. All electrical components shall be tested and labelled by a Nationally Recognized Testing Laboratory (NRTL) (US) or ACO (Canada) for use in the area classification specified on the Data Sheet.
2. Equipment marking/labelling requirements shall be in accordance with NFPA 70 and the CEC.
3. If specified, the Manufacturer/Supplier shall provide area classification documentation for the packaged equipment.
 - a. Refer to DEP 80.00.10.13-Gen. for the requirements of area classification documentation.

3.1.3 Environmental conditions

1. Equipment shall be suitable for the environmental conditions specified on the Data Sheet (1.8).

3.1.4 Maintainability/accessibility

1. Orientation and installation of the equipment should take into consideration access for maintenance and replacement.
2. All electrical devices requiring external Principal connections (except motor power leads and heater leads) shall be wired by the Manufacturer/Supplier to terminal or junction boxes located near the periphery of the packaged equipment.
3. All terminal and junction boxes shall be readily accessible.

3.1.5 Suggested Manufacturers

Acceptable equipment Manufacturers/Suppliers are listed in TAMAP.

3.1.6 Equipment

1. All equipment should be rated for heavy-duty industrial service.
2. Electrical equipment shall be tested and labelled by an NRTL (US) or ACO (Canada).
3. If specified on the Data Sheet, additional properly rated disconnecting means shall be provided and mounted separately from the control panel for each incoming supply service that does not directly supply a motor.
 - a. This disconnecting means shall be in addition to disconnecting means provided for control panels.
4. All energy-isolating devices (disconnecting switches, circuit breakers) shall be capable of locking in the "open" or "off" position only.
5. Equipment, fittings, and materials should be installed in accordance with the Manufacturer's requirements and recommendations, and with all provisions of the NRTL listing.