

DEP SPECIFICATION

PROCESS CONTROL DOMAIN - SECURITY REQUIREMENTS FOR SUPPLIERS

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DESIGN AND ENGINEERING PRACTICE



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The information set forth in these publications is provided to Shell companies 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 Units to adapt the information set forth in DEPs to their own environment and requirements.

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- 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.

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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 PCD IT security of control & automation systems to be supplied for use in Shell-owned Process Control Domains (PCDs), and is applicable to Suppliers supplying such systems or services on such systems.

This DEP covers both:

- Policy; addressing the Supplier's organization, IT security processes, technological solutions and governance of IT security
- Commissioning and maintenance of PCD systems

Supplementing this DEP, a suite of PCD Security (DACA) Design and Engineering Practice (DEP) specifications and guidelines provide guidance on how to produce a PCD Security Compatible solution.

This is a revision of the DEP of the same number dated February 2011; 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, 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.

1.3.2 Specific definitions

Term	Definition
PCD Security Compatible	When a Supplier's solution complies with the requirements in this DEP, the solution is considered by Shell to be <i>PCD Security Compatible</i> .
Network device	Electronic equipment that connects or manages network traffic; e.g., switches, routers and firewalls.
Compatible Supplier	A supplier is compatible with the Principal's security policy and standards when the supplier is compliant with this DEP. The Supplier cannot be compliant with the Principal's policy and security standards because part of it should be accomplished by the Principal
system	a combination of hardware and software components, which together provides a function or service. Where ' its systems ' is used in this DEP, this refers to all systems supplied and supported by the Supplier over the systems lifecycle.
Derogation	an authorised variance or exemption from a Process Safety requirement, with specified conditions.
Process Safety	the management of hazards that can give rise to major accidents involving, personnel safety, the release of potentially dangerous materials, and release of energy (such as fire or explosion) or both.
IT security	The equivalent to Process Control System Cyber Security, and Process Control System Cyber Security Controls.

1.3.3 Abbreviations

Term	Definition
ACL	Access Control List
APC	Achilles Practice Certification
AES	Advanced Encryption Standard
AV	Anti-Virus (Appendix 2)
CCR	Centralised Control Room (Appendix 2)
DACA	Data Acquisition and Control Architecture (Appendix 2)
DCS	Distributed Control System
DHCP	Dynamic Host Configuration Protocol
DMZ	Demilitarized Zone
EWS	Engineering Work Station
HIDS	Host-based Intrusion Detection System
HMI	Human to Machine Interface
ICMP	Internet Control Message Protocol
IPF	Instrumented Protective Function; All instruments and systems required to safeguard the process, including the hook-up of the instruments (initiators and end-elements) and wetted parts of the system.
IPS	Instrumented Protective System; equivalent to Safety Instrumented System (SIS)
IT security	In this DEP, IT security is equivalent to process control system cyber security, and process control system cyber security controls

Term	Definition
L1	Network Level 1 – Basic Process Control (Appendix 1)
L2	Network Level 2 – Area Supervisory Control (Appendix 1)
L3	Network Level 3 – Site Manufacturing Operations (Appendix 1). Equivalent to the Process Control Network (PCN)
L4	Network Level 4 – Site Business Planning (Appendix 1). Equivalent to the Office Domain (OD)
L5	Network Level 5 – Enterprise (Appendix 1)
MIB	Management Information Base
OD	Office Domain
OPC	OLE for Process Control
PAS	Process Automation System
PCAD	Process Control Access Domain
PCD	Process Control Domain
PCN	Process Control Network. This is equivalent to Network Level 3(L3)
PLC	Programmable Logic Controller
RDP	Remote Desktop Protocol (used by Microsoft Terminal Services)
SIS	Safety Instrumented System; equivalent to Instrumented Protective System (IPS)
SNMP	Simple Network Management Protocol
SSID	Service Set Identifier
TCP/IP	Transmission Control Protocol/Internet Protocol
TPA	Third Party Access (for Shell Global Infrastructure)
WMI	Windows Management Instrumentation

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 (19).

1.5 SUMMARY OF MAIN CHANGES

This DEP is a minor revision of the DEP of the same number dated February 2011. The following are the main, non-editorial changes.

Section/Clause	Change
General	With this revision, the DEP is no longer DEM1 status.
2.1	Entire paragraph re-worded
12.1	The SHALL [PS] statement previously in this clause has been changed to "shall".

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.